

THE

HIDDEN

SCHOOL

PAPERS

The Hidden School Papers

EAAE Annual Conference
2019 Proceedings, Zagreb





The hidden school is contained behind/
within the visible school. // The hidden
school is often personified by a charisma
or identified with a specific space or
atmosphere. // The hidden school can
be embodied in topics that develop
outstanding skills. // The activities that
shape the most formative aspects of
an educational path are often informal
ones. // The hidden school can remain
unstated in the regular curriculum, and
therefore remains subjectively evaluated
or overlooked in administrative quality
assurance or accreditation.

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COLOPHON





1st floor
Symposium

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Foreword

The mission of the European Association for Architectural Education EAAE is to advance the quality of architectural education in Europe and thus of architecture in general. The EAAE is a forum for the generation and dissemination of knowledge and information on all aspects of architectural education and architectural research.

The Annual Conferences of EAAE would not be possible without a member school stepping in, taking the responsibility of organizing the event for EAAE, working very closely with the president and the council. To name just the last few: the Politecnico di Milano in 2015, TU Delft in 2016, the Université de Bordeaux in 2017 and the University of Porto in 2018. In 2019, we were very thankful for the commitment and generous support of the University of Zagreb, whose efforts brought together the representatives of over 130 architecture schools from all over Europe here in the capital of Croatia. We were also proud to be part of the celebrations of the Zagreb School of Architecture's centennial establishment.

With each of the EAAE annual gathering, as well as with our other formats such as the recently held first EAAE/ACSA Teachers Conference or the EAAE/ARCC Research Conference, we reach beyond the geographical boundaries of our individual institutional settings, addressing all educators, researchers and administrators who engage themselves for high quality architectural education. Our goal is to foster an international community of people and of institutions dedicated to the critical and constructive dialogue on all aspects of teaching and researching on architecture. We also connect to architecture professionals in Europe and in the world (Architects Council of Europe ACE, and International Union of Architects UIA), as well as to our peers in North America (Association of Collegiate Schools of Architecture ACSA, and Architectural Research Centers Consortium ARCC), but also to related academic fields (European League of Institutes of the Arts ELIA). In addition, we have a fruitful cooperation with VELUX, the main sponsor of the Annual Conferences.

Personally, I am convinced that a broad and open discussion — not only in academic and professional circles, but also with policymakers of higher education at national and international levels and with representatives of the building industry — is an

imperative for the future of the profession as well as for mastering current and future challenges in the design of the built environment. We need ever more architects who are socially responsible and critical citizens — committed to contributing in a meaningful, graceful and sustainable way to solving the problems of the cities and regions. In this conference we were able to open up perspectives for new projects, developments, commitments and important decisions by addressing issues which are not always on the daily agenda at our schools — but which are nevertheless crucial for our profession and its relevance for society.

Prof. Dr. Oya Atalay Franck
EAAE President





Talking About the Hidden in Architectural Education

The European Association of Architectural Education's annual conference of 2019 was held at the Faculty of Architecture in Zagreb from August 28th to 31st. Titled 'The Hidden School', it aimed to open a discussion on the substance and quality of architectural education, an architecture school's true character, the traits which — however explicitly or implicitly manifested — embody the school's culture and identity. The conference explored the subliminal quality of architectural education less apparent just by reading the curricula or following evaluation procedures, yet which represent a substantial quality or the culture of a school, quite clearly legible to those engaging in it. The invitation to explore this topic proposed five aspects of a school as triggers, focusing on tacit meanings situated between the lines of the syllabus, the spirit generated by students contributing to it or the educators personifying it, informal learning modalities, spaces it inhabits: the Educator, the Content, the Process, the Place, the Student. The scientific committee placed a question to the participating schools: "If the hidden school exists in parallel or as a background process, a self-generated search for fundamental answers, and its interpretation, manifestation or legibility has a multitude of facets, how can these aspects be captured?" Is it possible to assess the 'hidden'?

The topic of the conference emerged from discussions within EAAE's Education Academy, brought together by the motivating force of Johan de Walsche, on what we were talking about when talking about an architectural school, on what is measured and how it differs from what actually constitutes it. It was also an opportunity for introspection at the hosting school, the University of Zagreb's Faculty of Architecture, as the conference coincided with the centennial celebration of educating architects in Croatia and provided a forum to summarize what the school has built over a hundred years, but also open up discussions on where it is heading. Owing to the support and vision of EAAE president Oya Atalay Franck, the conference was also an opportunity to expand the reach of the association and open this discussion in a school itself hidden within the European context due to geography, economy and

recent histories. The conference and its accompanying events structurally looked up to the resonant examples of recent EAAE annual conferences held in Milan (2015), Delft (2016), Bordeaux (2017) and Porto (2018), combining key-note lectures by educators and practitioners, a call for contributions inviting the community of the EAAE to reflect on the proposed topics, an international student workshop, field visits, research project disseminations and accompanying exhibitions: “Young Talent Architecture Award 2018” of the Mies van der Rohe Foundation, “re:EASA Rijeka 2018” of the European Architecture Students’ Assembly, and “The Faculty of Architecture’s School: A Brief Autobiography” — the exhibition marking the centennial of the hosting school.¹

The conference was preceded by a self-organized student workshop exploring modalities of an ideal studio, called Course X and led by Zagreb students Dora Gorenak, Filip Pračić, and Marin Nižić. Aiming to conceptualize an ideal course by examining the modalities of knowledge transmission, relations to the ‘spirit of time’ as well as the discipline today, it took the shape of introspective self-analysis as a basis for exploring how knowledge and skills taught at schools relate to the moment as well as institutional frameworks. The public presentation of workshop results preceded the conference opening, offering a perspective on the ‘hidden’ explored from different cultural and educational backgrounds, outlining hypothetical modules and their implementation in various contexts, focusing among other things on process-driven courses embracing self-initiative, social engagement and intuition, empowering students in channeling and expressing their agency. To be able to establish such an environment, groups observed the supportive aspect of workshops, the desire to create an environment where connections are also based on caring, the necessity to move agency out of the institution, the need to shift importance from solution to problem statement and reaching out for feedback outside the immediate educational context.

Key-note lectures released insights related to the topic from various cultural backgrounds, inherited legacies, organizational and learning models, personal perspectives, research and practice. The conference was opened with an introductory provocation by Harriet Harriss, at the time of the conference newly appointed dean of the Pratt School of Architecture, focusing

1 Details of the program, summaries of exhibitions and events, as well as abstracts of all presented contributions, have been published in „The Hidden School — EAAE Annual Conference 2019, Zagreb: Book of Abstracts” (eds. Cavallo, R., Roth-Čerina, M.), ISBN 9789463661966





on a fundamental topic of the need to decolonize the curriculum and face the background of the foundation of schools, the sources of their initial wealth, the bias in knowledge production as well as marginalization, in order to take a frank introspective look into the legacies we inherit and address them today. The first key-note speaker she introduced was Will Hunter, founder and director of the London School of Architecture, whose lecture's structure followed the conference's topics to explain the unique model of an architecture school organized as a network rather than hierarchical framework, operating through a series of relationships, using the city as a campus and source of acquiring complex knowledge, teaching in vacant spaces, working in cooperation with architectural practices, with students paying through earnings at offices, working in a collaborative environment and nurturing critical practice, aiming for a school as a heterarchy. His talk was followed by Lesley Lokko, who at that moment was moving from the position of director at the Graduate School of Architecture at University of Johannesburg in South Africa, a program she established, to assume the deanship of the Spitzer School of Architecture at New York's City College. By intertwining context and content, she bared the hidden, secret, subversive backgrounds, but also those of resistance, that made the pioneering Transformative pedagogies program one which enabled students to find their voice and express their architectural identity through research and work, providing an important step in the decolonization of higher education of the postcolonial South African environment. The ensuing discussion concluded on advocating for fluidity of schools — the more it shifts away from the 'inside'-'outside' dichotomy, the more relevance it gains.

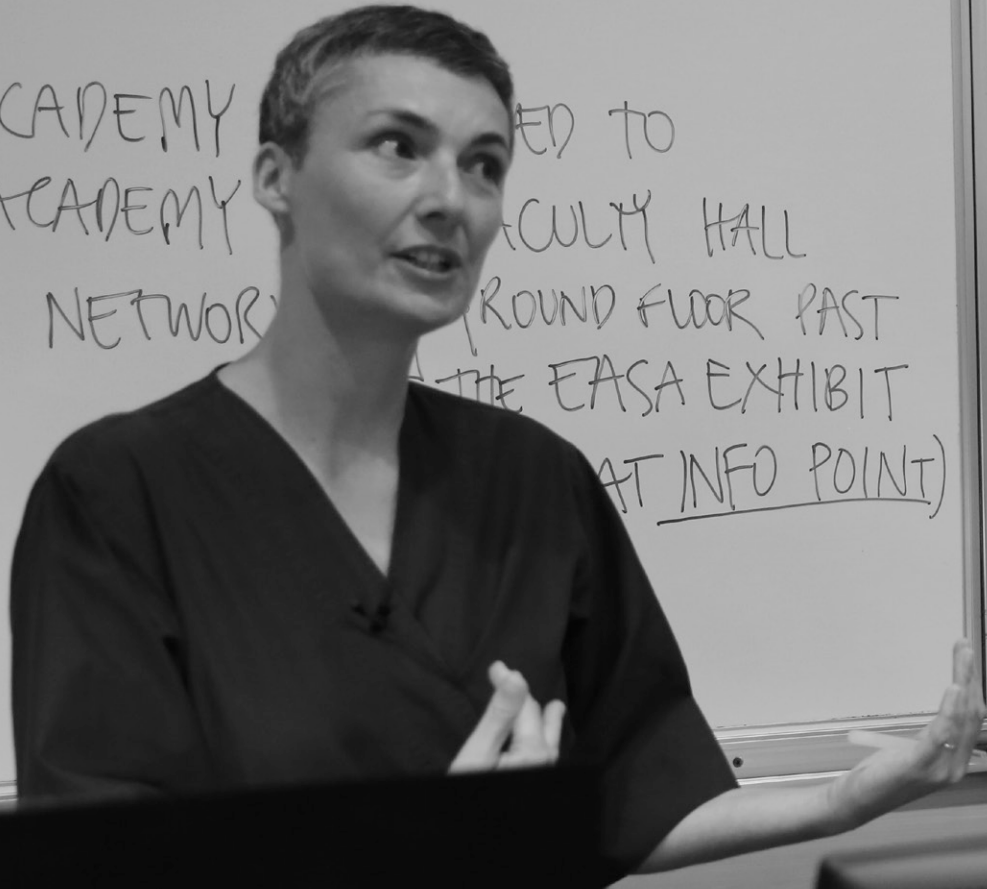
The second day saw an intense mix of parallel sessions and key-note lectures, research project presentations and international workshops (the account of the European Architecture Student's Assembly hosted by EASA Croatia in Rijeka in 2018, and the concluding presentation of the Erasmus+ strategic partnership exploring thresholds in architectural education, the diploma studio and obligatory practice, titled Exploring the Field of Interaction in Architectural Design Education) and concluding with a vernissage at the Museum of Architecture of the Croatian Academy of Sciences and Arts reflecting on the hosting school's centennial. Parallel sessions ran in three parallel streams on topics proposed by the conference call, further differentiating within the themes, but also zooming out in sessions discussing explorative strategies and reflecting on the hidden. The key-note lecture by Maruša Zorec, architect and professor at the Faculty of Architecture in Ljubljana, entered into a personal explication of the essence of our profession,

and how it translates into what we teach. Viewing teaching and practice as inextricably linked and very personal, she provided a glimpse into the specific educational culture of her school, comprised of many schools made up by vertical studios whose identities are shaped by the leading mentor, relating subjects of interest — beyond the program or time we find ourselves in — to her exhibition at the Venice Architecture Biennale in 2018 titled 'Unveiling the Hidden'. Momoyo Kaijima, founder of Bow-Wow and professor at ETH, expanded on her Architectural behaviorology program as a means of accessing local resources, studying typology flux through analytical drawing as an educational tool, and how this ethnographical research can be utilized as a means of communication to improve concrete situations, transposed into design-build workshops. The hidden aspect of this process is the implicit de-schooling, engaging in self-creating learning resources to architecturally understand life, scape and their interactions.

The third day informed the audience on the many activities undertaken within EAAE's working groups: Education Academy, Research Academy and Conservation Network, before the final key-note lecture proposed in duet by An Fonteyn, architect at noArchitecten and professor at ETH, and her student at ETH, Sara Sherif. They gave a most intimate look into the dialogue between teacher and student, and how it shifts shape and content, moving out of the immediate context of the school into travel, workshops, or working with other media. The lecture was a direct recount of letters the two exchanged from various points of departure, touching on many of the conference's topics in a most poetic manner. It shed light on the interactions between student and teacher situated in-between, not explicit in the brief nor the formal end of an educational module, evolving through time spent together, situated within a multitude of coordinates: geographical, inherited, points of reference brought in as a personal atlas which mutually grows through this exchange.

The conference was concluded by a final discussion moderated by EAAE president Oya Atalay Franck and joined by guests representing the international circle of institutions bonded by efforts to keep the discipline of architecture — architectural education, research and practice — interconnected and engaged: Thomas Vonier, president of the International Union of Architects UIA; Georg Pendl, president of the Architects' Council of Europe ACE; Rashida Ng, president of the Board of Directors of the Association of Collegiate Schools of Architecture ACSA; Hazem Rashed-Ali, president of the Architectural Research Centers Consortium ARCC; Don Gray, Chair of the

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Standing Conference of Heads of Schools of Architecture SCHO-SA; and final speakers An Fonteyne, professor at ETH Zurich and architect at NoAarchitecten with Sara Sherif, student at ETH. They reflected on the conference theme, triggered by the notion of 'inside' and 'outside' of the educational environment, mentioned or implied several times, making it clear this border should be blurred. The limit of the reach of a school is not in its physical boundaries, but now more than ever in its mental or identity boundaries. As they pointed out, a school should be of the society, integrated into it, and only then does it sustain its relevance — a school cannot exist on its own, independent of the societal or political context it operates in. When speaking of the profession itself, one can perhaps talk of an 'inside' as practice and the 'outside', pertaining to a struggle for significance within contemporary conditions of operation, or an effort to maintain idealism: architects on a constant quest for relevance and impact. The profession has a challenge to demonstrate how our skills are relevant for life on the planet, so how we learn to effectively engage and influence is as much a part of our upbringing as is the knowledge. The importance of the school being an active participant in its environment was therefore stressed, encouraging students to take a role and get involved in culture and society, lessening the distance of what is on the inside of a school and the outside world. However, the safe intimacy of a school must be protected to allow a boldness of topics in which everything can be questioned. This safe environment allows for failure as well — of the student as much as the teacher: the right to be wrong, to experiment without an imperative of excellence, bringing the discussion to the question of metrics and how we actually value or identify success. The school as platform for experimentation is beneficial to practice as well, and no barrier between the two should exist — fostering the relationship between education and practice does not just advance education, but also nurtures the reflective practitioner. Opportunities and tools for a shift in practice can start within a school, where problems are subjected to an abstraction: one acquires an approach, tools to tackle the unknown. More and more does the role from architect extend to architecturally thinking strategist, one with a deep understanding of the contemporary condition. This makes the importance of continuing joint efforts in research and discussions across the EU and internationally as valuable as ever, maintaining the conversation and establishing unity.

Finally, the discussion also, quite personally, opened the notion of hidden communications — the pervasive artificial stance of a student after entering a school, speaking in a new artificial language, clouding direct exchange between student

and teacher, leaving a lot unsaid. As one of the workshop participants, Petronela Shredlova, wrapped up: teachers talk among themselves on how to improve education, but students should be invited into the discussion more often, allowed to help and openly reflect. Looking within, many aspects are perhaps not hidden, just silent. A direct conversation within the school, as much as among the school and environment, would advance dissolving boundaries.

While looking back on the topic of the 2019 conference and putting this book of contributions together in a time of unprecedented change to many of the aspects we took as constant, one had to re-examine the starting hypothesis. The attempt to explore the less apparent aspects of architectural education still rested upon the belief that we have a school set in a physical space and that the nuances of interactions or processes take the form of verbal as much as non-verbal interaction. Compressing and flattening these interactions into a zoom/teams/meet screen opened up a new array of possible explorations, but also greatly affected many of the aspects and examples of the hidden discussed in this book. How does a devoted educator interact with students today, what medium does the informal in-between of a workshop or a studio shift into, how does a school relate to the virtual public space? Beside the explored aspects taking on new meaning, the implosion of the external into private space opened new facets of the hidden which are yet to be examined, and the questions our planet faced provoked an acute need to address issues of contemporary society and our environment. Taking the opportunity to invite the reader to stay in touch in these further discussions, we see this publication as marking a conclusion as much as a new start.

Mia Roth-Čerina and Roberto Cavallo





The hidden school can be observed through a range of tacit aspects or conspicuous specificities which make the educational path a unique one. It is the content that can be embedded within the syllabus, learned informally, personified by educators, the attributes and activities of students, or the spaces it takes place in. Looking into its separate manifestations is preceded by an account of inherited values systems and the shapes they acquire in specific contexts.

Can we discuss the hidden before addressing cultural subjectivity or institutional hierarchy? How are identities embedded into the modes of communicating processes and outputs? Is the hidden inherent to the epistemological multitude of architecture as a discipline?

Giovanni Corbellini

Sarah O'dwyer
Julie Gwilliam

Reflections on the Hidden

Both of Stuff and Not: A Teaching Experience in the Contemporary Condition

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KEYWORDS

architectural design, architectural theory, Italy, teaching

Architecture is a quite elusive discipline, both unleashed and restrained by a perennial calling into question of its own fundamentals. Being and becoming an architect means to cast a doubtful, unsatisfied, interrogative gaze on the world and especially on the world of architecture. Teaching such a (self-) critical discipline is, therefore, an intrinsically impossible task. Of course, syllabuses include specific competencies such as drawing, history, structures, law, economics... but when it comes to integrating them into the architectural project, any fixed framework becomes questionable, and it is precisely this questioning that makes design architectural, offering that necessary potential which can turn mere building into architecture.



At the entrance of the Corderie in the Venetian Arsenale, the 'Monditalia' exhibition curated in 2014 by Rem Koolhaas for the 14th Biennale displayed some cruel figures about the contemporary condition of the architect. One of the posters focussed on the relation between professionals and inhabitants in European countries along with the USA and China. While each Chinese architect can count on forty thousand potential clients, the numbers American or European practitioners deal with look far smaller (respectively 1/1,300 and 1/1,200). At the bottom of the list, highlighted in colour, Italy stands out with an astonishing 1/400 ratio, hardly comparable even to closer situations, like Portugal (1/688) or Germany (1/806).¹

Italians represent around a quarter of the European architects and our schools still 'produce' a lot of them. In recent years, this trend is slightly slowing down, with a parallel shrinkage of the educational offer and a decrease of its appeal. The 6802 places available in 2019 were roughly equivalent to the amount of applications, and the numerus clausus mechanism, which asks for a minimum level in a national admission test, further reduced the mass of rookies actually enrolled in our architecture faculties.² Nevertheless, their amount is still huge.

This long-lasting quantitative pressure has triggered many adverse side effects, both within and without the educational process. One of the most evident is that many of our graduates never started — and never will start — a career as an architect (Heyman, 2015).³ In this condition, architectural teaching faces the hidden task of hopefully maintaining good levels in the usual disciplinary applications while trying to become a positive asset for those who will spend their abilities in different, unpredictable

1 The 'Monditalia' exhibition, curated by Rem Koolhaas with Ippolito Pestellini Laparelli, was part of 'Fundamentals,' 14th International Architecture Exhibition, La Biennale di Venezia, Venice, 7 June-23 November 2014, curated by the Dutch architect. The poster about the architect/inhabitants density is included in the slide show available in the 'Venice Biennale 2014: Monditalia' webpage, <<https://oma.eu/projects/monditalia>> [accessed 20 November 2019].

2 The Italian Law, 02 August 1999, nr. 264, introduced the numerus clausus discipline in our University system and established which degree courses must apply it. The number of places available for the current academic year in architecture faculties in Italy has been published in the Minister Decree, 27 June 2019, nr. 592, in a specific attachment, <<https://www.miur.gov.it/documents/20182/1390866/D.M.++n.592+d+el+27-06-2019-+Allegato+Tabella+posti+Architettura.pdf/6f5779fb-f186-92d9-c7fd-a794c6b6d403?version=1.0&t=1561731046271>> [accessed 17 July 2019].

3 See Heyman S., 11 March 2015. 'In Italy, an Oversupply of Architects'. The New York Times. For a European survey and some figures about the professional situation, see Architects' Council of Europe (2019). 2018 Annual Report & 2019 Outlook. PDF, <https://www.ace-cae.eu/uploads/tx_jidocumentsview/ACE_REPORT_2019_EN_HDEF_ARCHIVE-compressed-min.pdf> [accessed 01 August 2019].

manners and fields, in order to enabling them to play a positive social role beyond building. This task is going to be increasingly crucial also beyond the Alps. In the aftermath of the subprime crisis, it became evident that the most established building markets will offer less and less possibilities to run a professional practice as architects to new graduates. What has been 'normal' in Italy in the last fifty years has started to affect also other countries, where population dynamics, economic trends, technological developments, ecological concerns, and other phenomena are dramatically changing the professional world.

ITALIAN MASS UNIVERSITY

With its long history of architectural overpopulation, both within the profession and the school, Italy offers a privileged experimental terrain, whose observation can highlight some of the challenges this situation presents to contemporary education. Our teaching system suffered the first 'demographic' impact in the 1970s, when the baby boomers arrived in mass at the university driven by a concrete hope of social improvement, a more widespread wealth, and an easier access to higher education, financed with public spending and opened in 1969 to all high school degrees.⁴ Out of a sudden, a very elitist institution became stuffed with people, coming from very different backgrounds, motivations, skills and possibilities. Especially architecture attracted lots of students, lured by its glamour (architects often featured in romance novels) and blurred disciplinary identity, which bridges arts, sciences, and humanities. When I enrolled at the IUAV (University Institute of Architecture of Venice) in 1978, I was one in eighteen hundred, and similar or bigger hordes were entering the other nine schools in Italy. As an immediate consequence, courses were overcrowded. The first year Architectural design studio I attended counted more than three hundred students, with one professor and no teaching assistants. We had to work out our group project with just three critics, one of them displaying the drawings while chasing the teacher along the staircase...

Things went a little better thereafter thanks to a sort of 'natural selection,' which reduced the number of students year after year. However, my last studio still counted more than eighty of us.

4 The protest of 1968 pushed the Italian Parliament to emanate the Law, 11 December 1969, nr. 910, which opened the access to higher education to five years high school degrees, independently from their field. Therefore, for instance, classic literature studies became accessible to people coming from technical Institutes, where neither Greek nor Latin were taught.

Working out projects exchanging experiences between professors and apprentices was impossible and both had to develop survival strategies. Self-teaching was unescapable and self-help groups of students rose up as a first response to the lack of contact with the counterpart. Many professors, on the other hand, went more theoretical and got somewhat obsessed by transmissibility of compositional rules and formal languages. Durandian apparatuses, made of fixed elements and their combinatorial mechanics, answered to both personal research issues and their teaching effectiveness. The increasing multitudes of students — and assistants — made these devices even more attractive for their promise to reduce the margins of interpretation and get to rapidly identifiable and assessable results. The archetypical and simplified grammar developed by the most prominent protagonists of 'la Tendenza' thrived in the overcrowded environment of Italian mass university and a similar approach to language issues marked an entire generation of teachers.

The architects who taught me — born around the 1930s — transformed design's weak systems of empiric tools in philosophical certainties, selling idiosyncratic poetics as scientific (i.e. deterministic) theories. Very soon involved in teaching and criticism, they both accepted and tried to resist, according to their leftist political commitment, the many building opportunities post war Italy offered them, fighting professionalism while running their professional practice. The sort of intellectual architecture prompted by this paradoxical attitude put reality into quotation marks, providing to their theoretical positions an effective, self-referential coherence. Personal languages became sort of religions imparted through punishment and very rare rewards (we worked hard to skip the assistants and get harsh comments directly from the professors, who usually reviewed only the projects that deserved their attention...).⁵

Obviously, those individual poetics were far from composing a consistent whole. Nonetheless, the contradictory sequence of different design experiences made some methodological sense, for both the explicit, specific teaching purposes and their accidental side effects. Secular attitudes could feed upon the conflicts among sects, which weakened their ideological efficacy: if something can frame the first 'European generation,' it could be looked for in the sharing of this sort of disenchantment. On the other hand, those who found something close to their sen-

5 Some of the issues here addressed are differently unfolded in three articles of mine. See: Corbellini G. (2018). 'Design By Research'. Villardjournal, 1; Corbellini G. (2018). 'Autonomy by Drawing: Gianugo Polesello on Route '66'. Footprint, 22; Corbellini G. (2018). 'Learning through a Distracted Reception'. Fuoco Amico, 6.

sibility had the possibility to worship one of the design ‘cults’ they met along the educational path. They were quite a lot and many old initiates of those academic ‘churches’ remained within the university as teachers. This is a quite obvious phenomenon, especially for approaches that leaned on self-reproduction as a way to affirm and confirm their relevance, but the Italian overcrowding of architects amplified it, because of the harsh competition that made often impossible to build up an academic career while dealing with the profession. Actually, good practising architects are now rather rare within the academia, which developed a recruiting system that promotes writing scholars — me included — rather than hands-on designers.

ITALY NOW

Anyway, both the epigones — and the epigones of epigones — of our masters and those who developed a more doubtful and independent attitude suffer a dramatic lack of charisma in comparison to the previous generation. For instance, in that 1982 of my last design studio at the IUAV, I had the possibility to choose between Vittorio Gregotti, Aldo Rossi, and Gino Valle: this is something unimaginable nowadays, for both the teachers’ condition and the students’ attitude. Neither personal prestige, when still survives, nor authoritarian methods seem to help us in catching our audience attention. Besides the rising issue of political correctness and a mutated balance of power, rude manners in the present Italian situation wouldn’t be credible. Our university system is traditionally geared towards ‘productivity’, with relatively low tuition fees and the possibility to attend courses virtually forever, failing and repeating exams dozens of times. In architectural design studios, this means projects endlessly negotiated over time until something ‘edible’ enough to get a sufficient mark comes out. Moreover, when in the 1990s the number of students with regular careers became one of the main parameters of higher education financing, any physiologic selection turned out less practicable. Professors were accordingly burdened by the responsibility of their teaching results, which is not a bad thing in itself, but took the educational exchange toward limited, less challenging goals. Consequently, almost everybody who pass the admission exam (a multiple-choice test hardly able to detect any design attitude) will graduate in architecture.

In the 1990s were also introduced the so called ‘scientific-disciplinary sectors’,⁶ which contributed to isolate design

6 Law, 19 November 1990, nr. 341, introduced the Disciplinary Sectors, further regulated by the Minister Decree, 30 October 2015, nr. 855.

from other, more specialized matters, like history, drawing, technology, restoration, etc. This disciplinary fragmentation, covertly aimed to multiply teaching positions (again a consequence of overcrowding), eventually developed into a landscape of conflicting power groups with autonomous goals and methods, gradually detached from the ones of the architectural project and populated by teachers just slightly interested in design issues. Architectural attitudes became paradoxically rare among architecture professors, so that students were progressively exposed to contradictory messages about roles, approaches, ways of thinking concerning the discipline.

By the way, faculties composed this way are both cause and effect of another anomaly. Regardless European recommendations and common sense, master theses in Italian architecture schools are more than often worked out without getting to an architectural project. Of course, some very valuable researches probe sophisticated historical or technical issues, but, actually, we graduate a lot of 'architects' unfocused on the fundamental tool of a discipline that the facts of life might take them to practice or control. I know very well, having tutored dozens of them, that undergoing a design thesis doesn't automatically assure good professional results. Nevertheless, the disciplinary weakness within architectural schools mirrors an even weaker role of design in our environmental transformation, as the mauled Italian territory sadly witnesses.

The 'Bologna Process', which at the end of the century introduced a quantitative measure of the students' workload, adding homework to the time spent at school for lectures and exercises, dramatically increased the presence of collateral disciplines in Italian syllabuses and, especially, their real weight (Slager et al, 2016).⁷ Minimum requirements about credits' distribution and aggregation suddenly snatched time to design, previously the main commitment of any architecture student. Credits measurability implicates furthermore an idea of linear connection between the effort spent and the results achieved: a concept that meets the students' expectations along with the society's ones and zestfully embraced by academic communication and programmes. Courses' briefs started to read like contracts, with precise declarations of the kind of

7 In 2011, at the University of Trieste, I made some comparisons with other schools in order to collect information for the new syllabus. This random survey on European masters in architecture showed that an Italian graduate attends in five years roughly half courses in architectural design (an average of fifty credits) than her colleagues beyond the Alps (about one hundred). For a discussion about the Bologna Process' consequences on art disciplines education see Slager H. in conversation with Oosterman A., Breddels L., and El Bahrawy A. (2016). 'After Bologna', Volume, 48, p. 131.

skills and competencies delivered and, again, measured in the exams.⁸ Basic disciplines came out therefore stiffened and transformed in sort of funnels supposed to deliver average knowledge, further simplified by the need for assignments to comply with the workload indicated by the credits. For instance, the monographic courses of architectural history I was offered in Venice forty years ago — with bibliographies of dozens of books on very specific topics and periods — disappeared completely, as far as I know, substituted by more traditional chronologic sequences and articulations. Thus, the experience of digging deep in the challenging complexity of something very idiosyncratic gave way to a shared, but more superficial collection of rudiments. The same happened with the teaching of drawing, now generally aimed to transmit standard techniques, completely independent from the projects represented. Even the training on the works of famous masters — Wright's or Le Corbusier, let's say — undergoes indifferently the same anodyne drawing system, as though they were so similar and the tight bond between design imagination and the personal toolbox that delivers it completely irrelevant.

CONTEMPORARY CONDITIONS

Measurability, linear productivity, shallowness, standardisation hardly apply to an intrinsically dissipative endeavour like architectural design, which asks for a continuous reworking of its premises and results. Architecture usually delivers very contingent and provisional truths: students used to predictable teaching assignments find it difficult to understand this negotiated practice, where almost nothing could be taken for granted.

This is however a quite widespread condition. Often my Erasmus students show the same bewilderment of the Italian ones and share similar attitudes. Our own complicated situation, of course, didn't develop in isolation from major global events, which are deeply impacting everybody's life, along with architecture and its teaching. The revolution in information technologies is undeniably decisive in the rapid change we are

8 In Trieste, it was mandatory writing the courses' briefs according to the so-called 'Dublin Descriptors': the 'Dublin Descriptors developed by the Joint Quality Initiative are proposed for adoption as the cycle descriptors for the framework for qualifications of the European Higher Education Area. They offer generic statements of typical expectations of achievements and abilities associated with awards that represent the end of each of a Bologna cycle.' Bologna Working Group on Qualifications Frameworks (2005). Framework for Qualifications of the European Higher Education Area. Copenhagen: Ministry of Science, Technology and Innovation, p. 9. At the Politecnico of Turin, there are parts of my own courses briefs I cannot modify.

living right now. Many clues indicates in its pervasive penetration the main reason of the growing unease in intergenerational communication that emerges in schools. This is not the usual, trite lamentation driven by nostalgia: even young professors find it difficult to achieve normal educational goals and schools multiply pedagogical tutorials for teachers, in an attempt to deliver complex knowledge in snippets.

Quite surprisingly, the technical gap between younger apprentices and the 'digital migrants' who try to teach them is not the main problem. Actually, professors are on average still better skilled in specific software applications than their students. What emerges is rather a different attitude toward learning. Everybody who lectures faces for instance a dramatic reduction in attention time. On the one hand, we are now used to an accelerated pace of everything, from football playing to narrative rhythms. On the other hand, an early addiction to hyper-connection, multitasking, contents on demand etc. seems to undermine the capacity to endure all the boring tasks any intellectual training entails. An incredible pressure of the present overwhelms us, luring our desire for immediate gratification and jeopardizing the sheer possibility to focus on a single task for a while. The depth of time comes out as flattened, blurring differences and hierarchies, making everything almost equivalent, interchangeable. Easy access, storage, and retrieval of information seem to magnify this effect. We conveniently outsource memory to our devices: no more need to remember telephone numbers, dates, names... But doing this, we are also reducing the 'materials' able to nurture intuition, build up connections, organise research paths.⁹ Virtual environments, operated through a limited set of standard interfaces (keyboard, mouse, touchscreen...), further detach us from physical manipulation and its key role in any process of comprehension, memorisation, and exploration of possibilities.

Another feature of the internet is that it works as a bidirectional communication environment. Actually, it thrives upon the information we eagerly provide just browsing contents. Those latter arrive to us selected according to our previous searches and behaviours. The web environment is therefore something individually tailored, so that different persons asking the same query on Google will get different results. Knowledge comes therefore as a sort of infinite mirroring

9 I know, this is the same argument Plato used against writing in the Phaedrus. It sounds very conservative, but it makes sense of our human condition, of beings made of flesh and bones.

effect, producing biased positions. Social media multiplied this effect, enclosing people in information bubbles virtually detached from everything provides different vantage points, interpretations, words, and languages. The success of these interactive web 2.0 technologies leans also on the exposition of the self they allow. Everybody becomes the star of a self-built narrative, firmly believing that her or his own ideas, affairs, vicissitudes are worth of others' attention: a situation further bolstered by the demographic dynamics in affluent countries, where less and less younger people grow up pampered by older generations. The willingness to learn, namely to experience a continuous questioning of our convictions, beliefs, opinions, faces therefore a harsh conflict with a strongly rooted urge of seeking attention and the need of reassuring confirmations of established positions.

Data banks, search engines, and social media are obviously part of a wider array of digital prosthetics. Applications and their algorithms smoothen the workflow, getting us rid of many repetitive tasks. Those routines offer, however, a sort of suspended territory where any creative endeavour explores promising mistakes, unexpected potentials, serendipitous encounters. They perform a very important role, for the sake of each single work and especially for training. Without undergoing the trial and error experience entailed with design it will be hard to educate those abilities still needed to play the role of curator digital machine are giving us, selecting inputs and outputs rather than working out the whole process. Again, the promise of linear efficiency introduces expectations at odds with the dissipative feature of architectural design and its logic, both in its education and practice.

Nevertheless, big data and artificial intelligence implicate even more challenging transformation scenarios, with the power of quantity able to overwhelm the 'traditional' scientific approach based upon the understanding of processes and their manipulation (Carpo, 2017). Specialized approaches, even those directly related to the information technology field, are probably going to face higher risks than architectural design. The 'last species of comprehensivists,'¹⁰ as Buckminster Fuller framed architects, seem paradoxically better geared to survive the ongoing automation and, maybe, find a way to thrive within the deep change it involves.

10 This Fuller's quote is reported by Wigley M. (2015). Buckminster Fuller Inc.: Architecture in the Age of Radio. Zürich: Lars Müller, p. 71.

A TEACHING EXPERIENCE

If the same issues that threatens architecture as a discipline give it the opportunity to become crucial, how to 'design' its teaching in order to take advantage of the above listed problems? In many years of didactic experience, I devised and tested some adjustment of what has been important in my own training, updating them along the way. The exposition at the IUAV in the 1970s and '80s to the high penetrating radiation of 'disciplinary autonomy' vaccinated me from an idea of architecture as something valuable in itself, disconnected from the facts of life that made possible its realisation. This 'purist' approach would ironically betray its identity as a tactical, ever-shifting, multi-disciplinary, inclusive, negotiating attitude. Yet, building up an architectural gaze is something I still aim to, even in the overcrowded, problematic educational environment of Italian universities.

My last experience at the Politecnico of Turin can resume some methodological devices I developed in order to cope with the present conditions. In the second semester 1919–20, I taught the first year design studio of the Bachelor in architecture. This course, recently introduced within the new syllabus and just started, has been thought of as an introduction to spatial comprehension and manipulation. Its maximum attendance would be of seventy-five students but, according to the above-mentioned decrease in enrolment numbers, I had about sixty apprentices. Given the six credits assigned and the crammed teaching schedule, the corresponding sixty hours of school time meant no more than one hour per student, including lectures. Therefore, usual critics and individual reviews were quite hard to perform. Most of the exercises were rapidly commented with video presentations, using a pars pro toto approach, namely focusing on some representative moods, errors, good ideas, attitudes as cases. Despite the fading attention of students and their disappointment in seeing their work skipped, compared with others, or pointed out as a negative example, some issues seeped in. Nonetheless, the demonstrative power of a drawing hand looking for a design solution is irreplaceable. My two assistants and I set up therefore individual tutorials, no more than three sessions of four hours, at an accelerated pace of ten-fifteen minutes for each student.

Besides those didactic tunings, the pressure of numbers suggested some further measures: an artificial context, devoid of the complexities of usual urban spaces or natural landscapes; a theme — the house — close to the daily experience; a project process split in exercises able to approach its complexity from different vantage points; and a teaching method based on the manipulation of examples.

The exercises concerned the reading and modification of the Hagen Island district, built in Ypenburg by the Dutch studio MVRDV in 2003. It is a polder development, made of row houses, that ironically interprets homely archetypes. This feature makes it both a background for different design possibilities and an illustration of a fair, simple, and interesting design interpretation. Each student worked on a residential unit, complete with house and garden, and proposed an extension and a new overall configuration.

Getting the ability to read usually precedes writing, therefore imitation, a decisive instrument in learning creative disciplines, is the main driver of this studio, which I accordingly called 'Copy & Paste'. However, since our 'writing' (designing) is a way of 'reading' (understanding contexts and the directions of their transformation), this course relied on the project as a tool of collecting and producing knowledge. Design examples provide shortcuts and act as instant contrast agents in interpreting conditions and selecting possibilities. Their use helps also in building up a personal 'library' of different approaches and projects, which form the necessary toolbox each architect uses to work out any design task. Students were asked to search and propose examples on their own along the ones provided by the teacher, in order to encourage their self-teaching attitude. They were also requested to imagine their clients' desires and needs, starting from randomly generated features, and to produce programmatic questions about their design task.

The relationship between words and things, the narrative binding between the architectural projects and their reasons, acted as a main educational apparatus. Discursive practices, which are intrinsically linear, work as representative media for space imagination, as scale models or drawings do. In other words, they perform a 'critical' function even before a critical attitude has been trained and achieved. This triggers a mutual improvement of the ability to 'read' projects and to 'write' them as sets of logically organized operations.

Did those tactical moves work? Unbelievably well, at least according to their premises. Design results were on average quite good, with some pretty convincing highpoint. Less easy to verify is the influence of the hidden intention of this course (and of my whole teaching effort¹¹): to enhance the students'

11 I published some books, variously intertwined with my teaching activity, where the relationship between design issues and discursive practices unfolds: Corbellini G. (2018). *Exlibris: 16 Keywords of Contemporary Architecture*. Siracusa: LetteraVentidue; Corbellini G. (2018). *Telling Spaces*. Siracusa: Lettera Ventidue. Corbellini G. (2017). *Dr. Corbellini's Pills: Tips for Architecture Beginners*. Siracusa: LetteraVentidue; Corbellini G. (2016). *Lo spazio dicibile: Architettura e narrativa*. Siracusa: LetteraVentidue.

critical, and especially self-critical, ability, in order to gear them towards the unexpected scenarios set up by the ongoing phenomena of virtualisation. The more electronic prosthetic applications will erase distances in time and space between desires and their realisation, the less built answers (and the authorial skills needed to produce them) will be requested. Even this profession so strongly entangled in materiality should undergo the translation of its own disciplinary instruments for spatial imagination into other dimensions. Exporting the architectural gaze into the immaterial is key to keep us in touch with 'reality' and get commissions.

Both of stuff and not.



Fig 1: 'Copy & Paste', Politecnico di Torino, Bachelor in Architecture, First year design studio, 2018-19, Giovanni Corbellini with Sarah Becchio and Paolo Borghino, additions to MVRDV's Hagen Island housing, first project proposals, 02 April 2019.

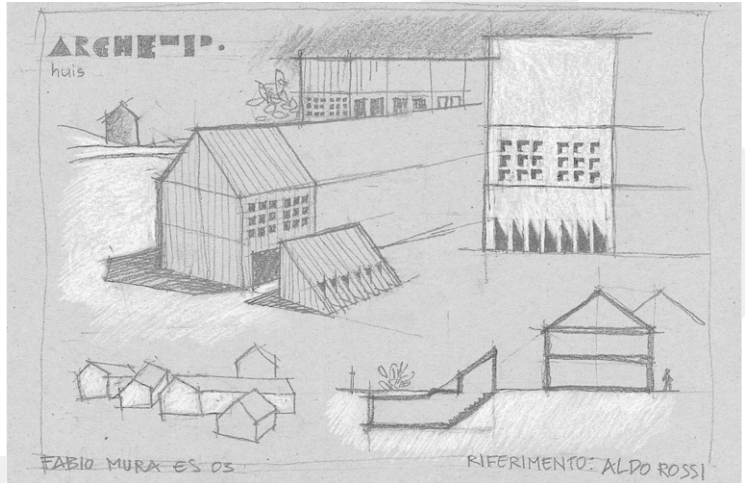


Fig 2: 'Copy & Paste', Politecnico di Torino, Bachelor in Architecture, First year design studio, 2018-19, Giovanni Corbellini with Sarah Becchio and Paolo Borghino, student Fabio Mura, first project proposal, 02 April 2019.

HAGEN PARASJET

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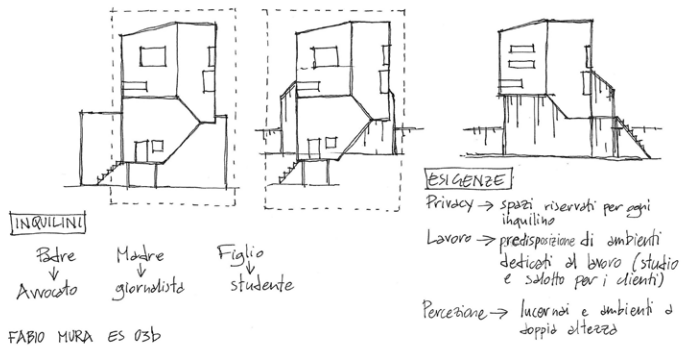


Fig 3: 'Copy & Paste', Politecnico di Torino, Bachelor in Architecture, First year design studio, 2018-19, Giovanni Corbellini with Sarah Becchio and Paolo Borghino, student Fabio Mura, second project proposal, 09 April 2019.

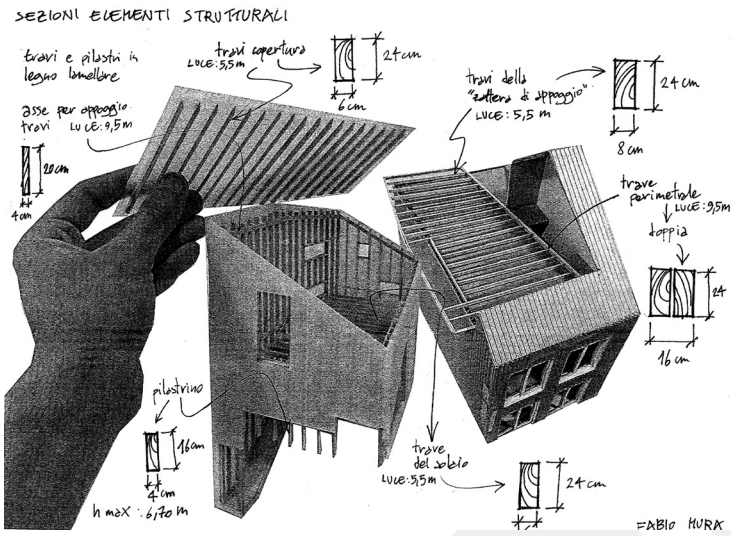


Fig 4: 'Copy & Paste', Politecnico di Torino, Bachelor in Architecture, First year design studio, 2018-19, Giovanni Corbellini with Sarah Becchio and Paolo Borghino, student Fabio Mura, design development, 28 May 2019.

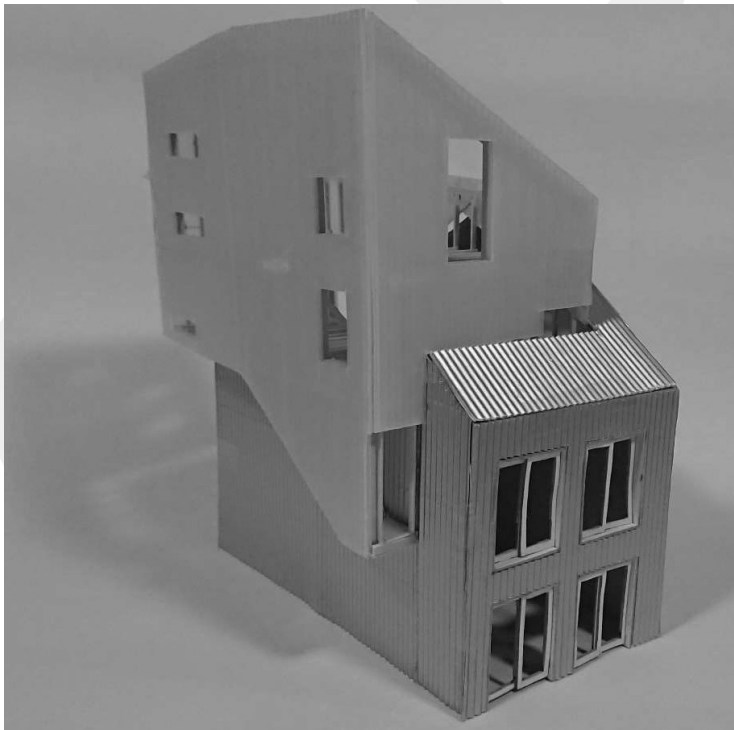


Fig 5: 'Copy & Paste', Politecnico di Torino, Bachelor in Architecture, First year design studio, 2018-19, Giovanni Corbellini with Sarah Becchio and Paolo Borghino, student Fabio Mura, final model, 11 June 2019.

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Ways of Choosing: The Role of School Design Culture in Promoting Particular Design Paradigms in Irish Architectural Education

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KEYWORDS

design culture, design paradigms, school culture, values in design,
personal design philosophy, design excellence, design process,
sustainability in design education

Architectural education must produce graduates which have demonstrated standards of knowledge, skill and competence for practice as an architect, who possess particular professional attributes and who are also aware of their civic responsibilities. As such, graduates are taught to question and direct design conditions from particular design paradigms and stances. In the context of two dichotomous design culture stances — Architectural Design Excellence (ADE) which prioritises aesthetic architectural ideals and space-making, and Sustainable Performance Excellence (SPE) which has technical prowess and the built environment response to social, environmental and economic sustainability as its focus — this paper studies the role of school design culture in Irish Schools of Architecture in providing the focus on what constitutes architectural design excellence, and what shapes the framework in which these ideas sit.



INTRODUCTION

Architectural education in Ireland — as elsewhere and with-in other professions — is a somewhat unique educational environment, as it must provide for both professional and academic requirements within its system. The necessities of the architecture profession compel architectural education providers to produce graduates which have demonstrated standards of knowledge, skill and competences as well as professional attributes necessary for practice as an architect, and who possess an awareness of their civic responsibilities; both in being bound by professional codes of ethics to act and to build in a way that has societal values at its heart but also on a broader, more ‘values-based’ system which asks student architects to develop as professionals who consider the interests of society as a whole (RIAI, 2009) to shape a better world. As such, graduates are taught to question and direct design conditions from particular points of view (D’Anjou, 2010) and to create “good” architecture through the application of dependable professional education (D’Anjou, 2011). The content and themes of architectural courses must therefore be both creative and technical, freeing and curtailing, locally responsive but universally responsible.

This particular dichotomous system is the focus of this study, and it is very much apparent where the need to engender graduates who can achieve excellence in architectural design sits alongside the necessity for them also to be capable of achieving prowess in technical design; particularly with the need for built environment generally and buildings specifically to respond to the environmental, economic and social requirements of sustainability and have a technically sustainable approach. Previous research by the authors undertaken in a similar UK context has described in depth this dual context of architectural design paradigms; one which focuses on achieving sustainable design (SPE: Sustainable Performance Excellence) and another which focuses on a more ‘traditional’ idea of excellence in design (ADE: Architectural Design Excellence). This previous research studied how both SDE and ADE are defined (Gwilliam & O’Dwyer, 2018a), how much overlap between these two fields of architecture exist in architectural precedents and prize winning architectures (Gwilliam & O’Dwyer, 2018b) as well as exploring the ways in which Irish practice and industry could synthesise these two fields in a more holistic design process that could deliver buildings that are concurrently beautiful and sustainable, equating to Holistic Design Excellence (HDE) (O’Dwyer & Brophy, 2017). The focus of this paper is the architectural educational system — where architects learn how to design

in a 'plenum' of minds — and thus where there a consensus signalling of ideas occurs to graduates about what constitutes design excellence, and what implicit values, philosophies and culture shape this excellence.

CONTEXT

Irish architectural education standards are governed under the 11 attributes and aspects within the EU Qualifications Directive (2013/55/EU); which relates to technical and aesthetic design abilities, knowledge of the arts, history & theory, urban design, regulations & technologies, understanding of structure, comfort and people, and buildings & the environment, the societal role of the profession and methods of investigation (EU, 2013).

What do architects learn in university?

These standards within the Directive support the creation of "good" architecture, but their interpretation by individual schools through frameworks for excellence and associated embedded design culture remains ambiguous, particularly regarding emphasis of technical and/or creative aspects.

Architecture schools teach an Architectural design process to students with the aim of engendering the above attributes. Whilst this process is not a linear rational practice, it does possess structure, components and procedures (Stolterman,



Fig. 1a: The SDE and ADE dichotomy

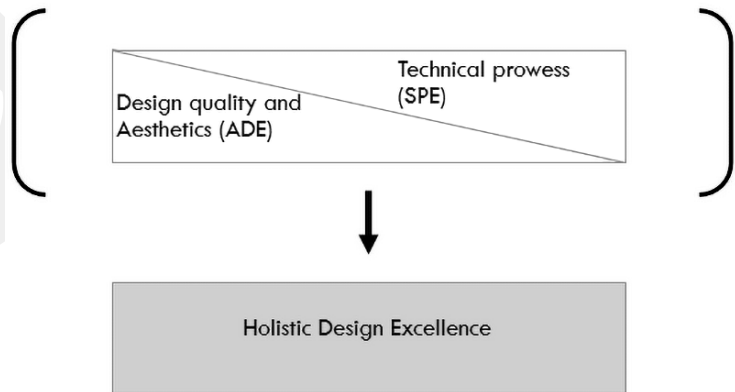


Fig. 1b: Towards Holistic Design Excellence

2008) and typically has embedded the generation of an underlying design concept (Heylighen, Neuckermans, & Bouwen, 1999). Integral to the design process' underlying framework of ideas is the design culture, philosophy and values each school of architecture nurtures in its students; the ethical code it imparts; and how it frames what the nature of architectural design excellence is. This hidden culture — and the resulting influence of the design paradigm lens it applies — is the focus of this paper.

Irish Architectural Education System

There are six schools of architecture in the Republic of Ireland (one yet to be accredited by RIAI) and two in Northern Ireland, ranging from those established in the early part of the C20th to this year. (Fig 2).

Although under different regulations and systems, the Northern Irish schools are included in the study as many students from the Republic attend Northern Irish architecture schools, and vice versa, teaching staff move back and forth between the two jurisdictions and many schools on the island of Ireland have dual accreditation of both RIAI and RIBA. Various routes of study options are available (Fig. 3a) and student numbers vary across the schools, with an average of 34 students per year of study (Fig. 3b), though two schools have numbers in the 50–100 range.

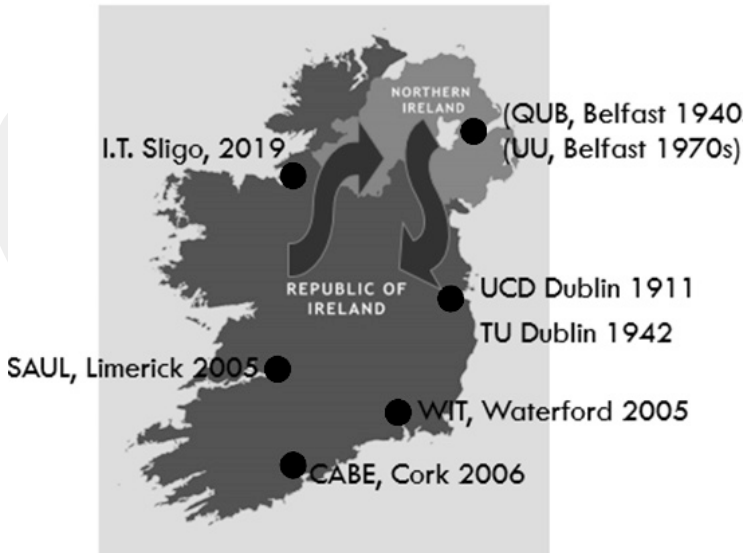


Fig. 2: Schools in Ireland, *Authors graph*

The Architecture schools are positioned mainly in Engineering and Science faculties, with a range of subject “bedfellows” ranging from Engineering to the arts (Fig 4), potentially causing cultural signalling or associations from these bedfellows.

The hypothesis emerges

This paper aims to study the framework for excellence of this often unstated, hidden design culture, and explores how each schools’ veiled culture emphasises particular decision making processes — whether based on belief systems or systems of reason and logic, inductive reasoning or deductive logic, experience or reality (Jones, 1962). It evaluates the current state of play in Irish schools of architecture in terms of the extent to which

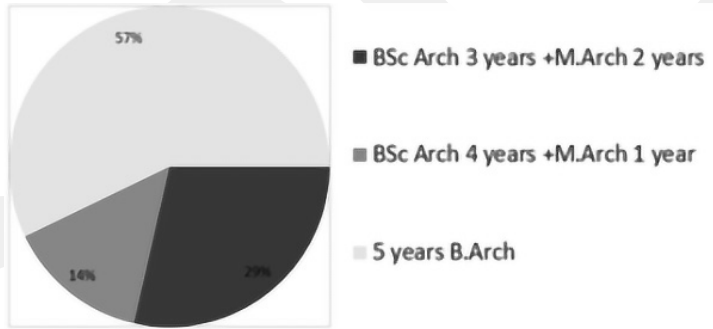


Fig. 3a: Study option routes, *Authors graph*

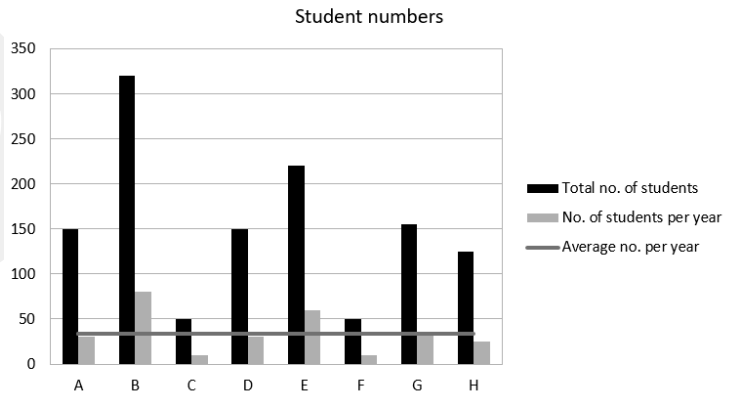


Fig. 3b: Student Number, *Authors graphs*

the nature of choices and actions designers make are arbitrary or are instilled with meanings by the designer and form “part of a certain way to envision the world” (D’Anjou, 2010, pg. 99).

It aims to study how design culture is defined and fostered, analyses how it may vary and appraises how it is instilled in students. It questions how much a graduate is moulded, motivated and controlled into their role (D’Anjou, 2010) as an architect; the “ways of choosing” (D’Anjou, 2011, pg. 141) instilled in them.

It questions whether a preconceived notion of professionalism should set the priorities of the school’s curriculum and how the balance is struck within school design culture between abstract and real-world subjects, both within the architectural school and in terms of the particular attributes instilled in their graduates; with a particular emphasis on how both architectural (ADE) and sustainable (SPE) design excellence paradigms are promoted within the culture. This understand-

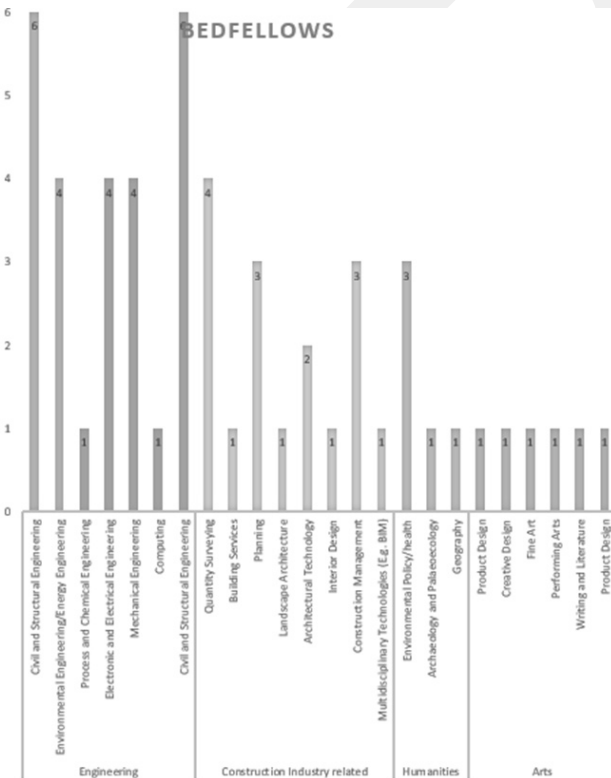


Fig. 4: Bedfellows: frequency of subjects/courses available within same faculty of all schools, Authors graph

ing is sought to establish how these two paradigms ADE¹ and SPE² might be resolved, where such a resolution takes the form of the future synthesis of architectural and sustainable design qualities in order to deliver architectural education processes, languages and design tools, through a new lens: Holistic Design Excellence (HDE).

As such this paper explores the relative influence, robustness and flexibility of school design culture as a vehicle for this synthesised HDE; and how this wider change may begin to be implemented through interventions in architectural education (Bamford, 2002).

METHOD

Position Statement

It should be noted that this paper is a development of earlier research themes and a summation of preliminary findings on research recently undertaken as part of a PhD programme of study which has the principal aim of establishing a process for the development of HDE in architectural education. As such any inherent author bias and assumptions resulting from this starting position are acknowledged, and indeed this acknowledgement is required for the *Pragmatist*³ research position and ensuing Grounded Theory approach undertaken for this phase of research.

Method

Purposeful sampling was used to select directional and leadership staff (e.g. heads of schools/programme leaders) of Irish architectural schools to participate in semi-structured interviews; following a grounded theory approach which deliberately delayed immersion in literature to avoid the formulation of theories based on existing ideas (Charmaz, 2016). It should be noted that whilst the grounded theory approach does

-
- 1 the pursuit of a more dynamic creative knowledge which relates to aesthetics, imagination and intuition
 - 2 and a more static knowledge related to benchmarks, and performance evaluation
 - 3 Followers of a Pragmatist research position start off with the research question to determine their research framework and view research philosophy as a continuum, rather than an opposing stance where objectivist and subjectivist perspectives are mutually exclusive. Pragmatism emphasises the methods which work best to address the particular research question, with Pragmatist researchers working with both quantitative and qualitative data as this enables them to better understand social reality.

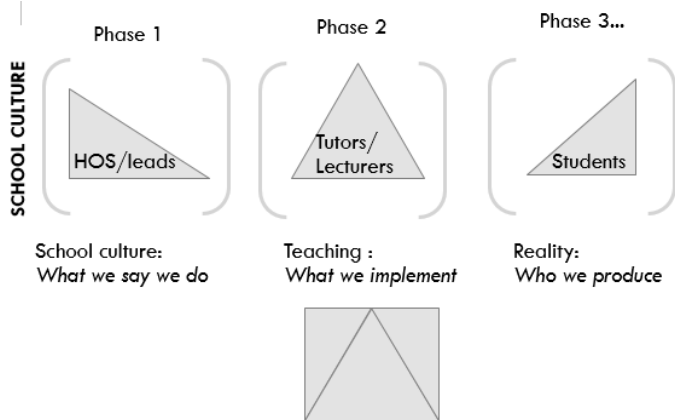


Fig. 5: Tripartite research map, Authors graph

not necessitate an involved literature review to drive the theories to be tested, D'Anjou in particular has been found to be useful as a key text in framing the particular theoretical paradigm considered here. Interviewees were selected as key figureheads who foster, maintain and promote the culture and philosophy of learning within each school (TCD, 2013) and who are thus ideally placed to explore the nature of the design culture of each of the Irish schools. The average duration of an interview was 74 minutes.

The semi-structured interview style was adopted to allow for the gathering of opinions, experiences and attitudes rather than 'facts' (Bryman, 2012; Wahyuni, 2003). Question prompts centred around personal, school and national design culture and probed attitudes to the role of professional processes within architectural education.

The potential limitations of basing evaluations on school culture on the views of individuals is acknowledged, however, this is Phase 1 of a 'tripartite' approach to exploring school culture (Fig 5); firstly, by interviewing directional staff, secondly by gaining the views of other teaching staff and thirdly student views. In this way a fuller picture can be gained in order to understand: what the school says it is doing, what is implemented, together with an understanding of the nature of the product of the education — the students, the type of professional that is being 'produced': in terms of graduate architects' world view and instilled values and attributes.

After each interview detailed notes and author reflections were prepared. Each interview text was transcribed and then initially manually coded. A core set of codes were initially derived from extensive reading and rereading of the interview notes

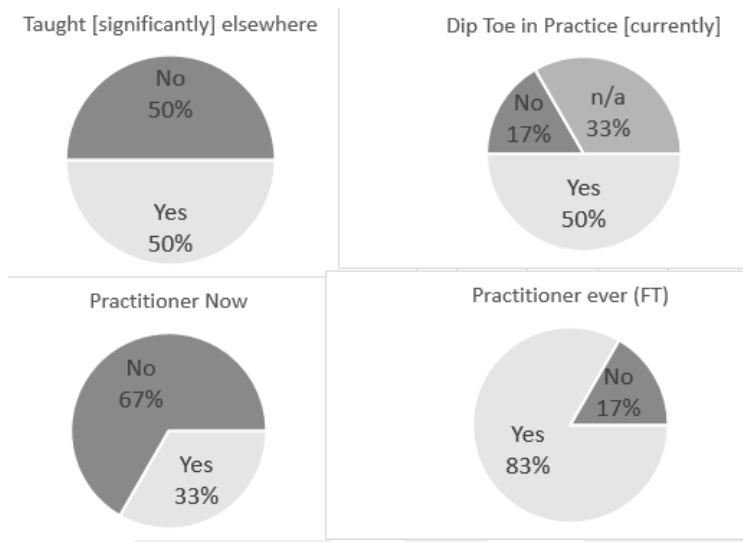


Fig. 6: Interviewees and practice, Authors graph

Teaching Experience

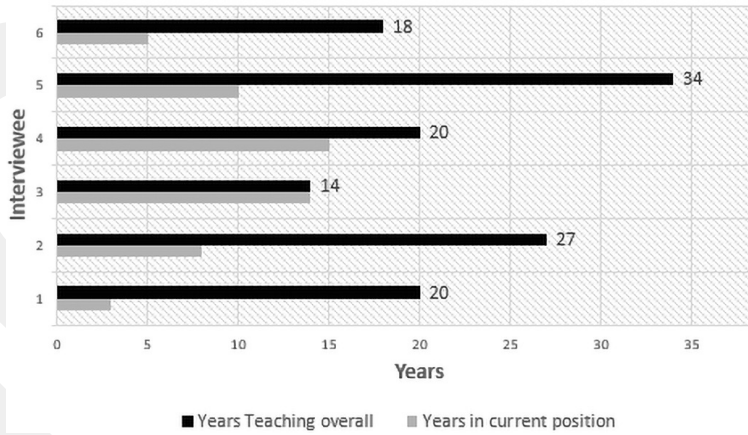


Fig. 7: Interviewees teaching experience, Authors graph

and reflections and expanded as the transcriptions were also read and re-read, and more detailed coding was undertaken. Qualitative analysis of the codes was performed initially in summarising and grouping the responses. Then, quantitative analysis was done developing the themes and establishing sub-themes and then counting instances of interviewee opinion which fell into these coded categories. Combining these two types of analysis enabled triangulation of findings, with generalisations supported by counts of instances of opinion and deviant cases with outlying themes and opinions to be in-

cluded, considered and discussed. This paper will summarise this initial manual coding and preliminary findings from the 7 no. Phase 1 interviews which have taken place, presenting emerging themes. It is intended that once further interviews have taken place and the interview phase is concluded, more refinement of these themes can be undertaken using detailed digital coding following the same analysis method.

Interviewees

There was a 50/50 split in interviewees who had taught in other institutions (which might either highlight their immersion in their own school's or place them in a position to compare to others). Most were no longer practitioners, though had been in the past, and half currently practiced in industry occasionally, (Fig 6).

All had at least 14 years' experience in teaching architecture, one with 27 years' experience, and all with at least 3 years in their current position (Fig 7). No particular trends were noted in terms of the relationship between teaching and practice; for example, the interviewee teaching the longest is still practicing whilst the second longest in teaching is not.

FINDINGS — DESIGN PHILOSOPHY

This section will discuss a snapshot of the emerging findings on the role of design philosophies in framing how design excellence is signalled to students, with a view to this being a possible window to the wider national design culture and profession.

Role of Personal Design Philosophy

It is not surprising that questions asking interviewees to 'define their current personal design philosophy' resulted in a multitude of broad replies. However, notwithstanding this a number of recurring themes could be identified.

Defining design philosophy

The most prevalent 'definition' described design as being about "people and spaces", that it was about making spaces "better" or "transformative" — that somehow the solution should be greater than the sum of the parts. This notion was as much about surpassing peoples' needs as merely responding to a brief, if not more so. Secondary meanings — in terms of those which were most frequently mentioned — included ideas about design as a craft, culture and climate, in not only "having,

holding, developing and realising ideas” but in communicating them, in making connections between ideas, with “making” as a way of contributing to a wider societal value. This latter description also pointed to the idea of values in general — about how design is about “ascribing and synthesising values”. Notably, what was inferred here from interviewee probing and evaluation is that the ‘values’ referred to here are equivalent to the school design approach — how the school ascribes values and meaning and how it defines “good” architecture, their framework for excellence.

Change in design philosophy over time

Interestingly, the majority (67%) of interviewees stated their personal design philosophy had not changed over time, suggesting a resolve in the philosophy that does not ebb and flow, and therefore perhaps is not easily open to change. This finding could be interpreted as signalling to the depth of a particular belief instilled in architects through education and the strength this gathers over time. Indeed, those teaching the shortest amount of time where those who said their philosophy had changed, with it seemingly more embedded in longer established educators. Of those who stated their philosophy had changed — whilst there was no strong correlation between their exposure to teaching in other schools and a potential change in their philosophy — exposure to different disciplines and university approaches, different life experiences as well as seeing architecture as an “expanding field” were the contributing factors.

Change in design philosophy over time

In terms of setting a school design culture in motion, there was an intriguing split between those who agreed that their own personal design philosophy aligned with that of the wider school culture (34%) and those that did not (33%), (with the remaining third being those interviewees who felt their school did not have a particularly strong culture). This alludes perhaps to the role of particular personalities in driving and forming school culture; as will be further discussed below.

Role of School Design Philosophy

Analysis distinguished two types of schools: those with a well-defined school culture, and those which consider school culture to be fluid. Also revealed was the importance of staff values in studio to temper this culture in the latter types of schools.

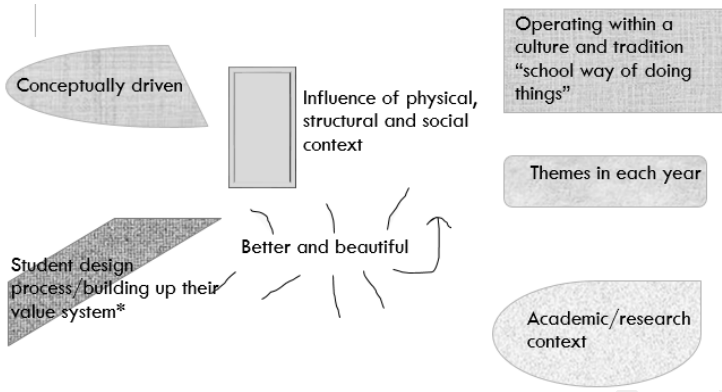


Fig. 8: School Design Philosophy, Authors image

Defining school design philosophy

Similarly to the personal design philosophy, the characterisation of the school culture⁴ is sporadic, though dissimilarly there are few identifiable trends and more difficult to group common recurring elements. The types of school cultures are described in a myriad of ways; as much about the content and the students as the context and wider society (Fig 8).

This is not altogether surprising in that each school is ‘setting its stall’ (in so far as comparison to other schools in the Irish context might be made) as a unique approach to understanding architecture and how architecture students might be educated.

Presence, Strength and Flexibility of School Design Philosophy

There was an ambiguity of feeling when interviewees were asked if their school had a definitive school culture, with 60% stating it did, and 40% not. Interviewees with a more defined school culture tended to have more long established staff compared to more rolling staff intakes where culture was not well defined; which correlates to the finding above in relation to the change of personal philosophy over time, where sense of culture is strengthened and deepened simply given enough time to do so.

4 In the context of this paper, “School Culture” and “School Philosophy” are interchangeable terms used to refer to the set of design values and philosophies that the school aims to instill in its students. It includes — though this list is not exhaustive — staff, students, context, research, curriculum, how the school defines architectural excellence and quality, graduate attributes and diversity. In this way “school culture/philosophy” is not defined in same way as “studio culture”; as it goes beyond studio to the wider modules, mechanisms, educators and context of the school as a whole.

Where it was perceived that there was no definitive school culture, this was stated to be due to the fact that the culture was still emerging/evolving, or that there were so many different educator passions and specialisms that this inevitably led to personality driven streams and themes within the school instead of a collated 'whole'. This perceived lack of a school philosophy was not necessarily viewed in a negative light, in fact one interviewee stated that they would be "suspicious of a complete hegemony of what's considered important". Indeed, it was viewed as a "living document", varying with staff interests and life "disruptors" that "stop you in your tracks". A converse problem caused by this was seen to be the sporadic approach that then ensues and a "dilution of energy"; with no themes, briefs or projects for particular years. Whilst this was not seen as a problem per se, it caused difficulties in the practicalities of teaching, and the embedding of particular [potentially ever changing] values and ideals within students.

Interviewees placed within well-defined school cultures on the other hand, did not feel that culture was flexible, but rather that it was hard to depart radically from and that the "default settings dominate", in both staff and students — curtailing experimentation or deviation in the education process.

Implementation of School Design Philosophy: the role of staff

The aforementioned potential tensions in the practicalities of teaching in schools without strongly defined cultures find unlikely bedfellows schools with strongly defined cultures when it comes to how school culture — and particular values and beliefs — are implemented in teaching and instilled in students, with similar trends found in both. Whilst some interviewees stated that the module briefs and descriptors used signalled the overarching culture and values (for that module if not for the wider school), all stated that what is then actually implemented is through the studio and the studio themes, which can be tempered through the studio tutors, process and discussions. What this translates to is though the school may set out its values and design culture in its school documentation, this is moderated— and can be manipulated — in its implementation through studio, so that in reality the students' schools 'produce'; the values they ascribe to and the way they are taught to view the world, is skewed and influenced by particular staff interests, values and passions.

The interviewee with the most well defined school culture viewed that culture as something students definitely feel, an expected "currency" in design, but still saw this as a result of the strength and longevity of the particular personalities

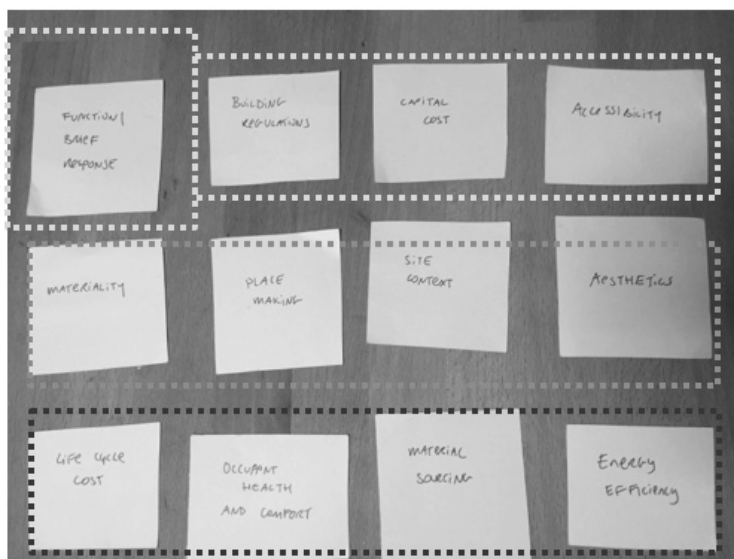


Fig. 9: ADE and SPE issues, Authors image

teaching within this shared culture and values; perhaps more akin to an orthodoxy modulated by passionate believers.

Teaching staff therefore ultimately decide which values and issues to emphasize, and which to ignore, what to signal to students has meaning, what is part of a “good” design architecture and culture and what can be disregarded. This potential culture moderation through studio process and staff was alluded to by all interviewees, albeit to varying degrees of depth.

Implementation of School Design Philosophy in teaching and students: the role of staff

This theory is reinforced when looking at the responses by interviewees on prioritising particular given themes/ issues which students should consider and emphasize in their designs. Interviewees were asked to rank a list of 12 issues (Building regulations, Capital Cost, Materiality, Aesthetics, Site context, Placemaking, Function/brief response, Material sourcing, Energy Efficiency, Life cycle cost, Occupant health and comfort and Accessibility) (Fig 9). This list of issues was filtered down from a broader list by the author, and cross checked by authors colleagues, as being a crude but fitting mixed representation of both the ADE and SPE design paradigms, albeit in a reductive fashion, and were used with a view to probing interviewees underlying emphases on particular design culture approaches.

Notwithstanding the acknowledgement that interviewees knew of the authors research interest in sustainable design and

the potential bias that could instil in interviewees responding with what they thought the author might want to hear, ADE themes were prioritised in the main over SPE ones. However not unilaterally and not starkly. Although much deeper analysis is required, what also emerged is that the emphasis given by interviewees here — though somewhat crude — did not wholly align with the school culture they had defined earlier. Again, this would suggest that each individual tempers that wider culture through their own philosophical lens.

Role of National Design Philosophy

With regards the national level, interviewees were asked about how evident they felt their school culture was to a wider national audience, and how it might differ from the culture of other Irish schools. Overwhelmingly, the perceived internal view of each school matched the external view, including cases where there was no clearly defined culture. When comparing and discussing the culture of other schools, qualities were identified as being both positive and negative, across and even within interviews (Table 1). This could be surmised as pointing to the particular lens each interviewee views the culture of other schools. It should be noted that it was very difficult to draw interviewees on what they meant by “good” or how they ascribe value to this term.

POSITIVES	NEGATIVES
"Good student work"	"Poor" Student work
"Good" staff (strong, smart, talented, amazing, respected, consistent, collegiate)	Ego-driven
Strong leadership; like-minded team of "passionate believers"/ "x-school way of thinking"	An orthodoxy
Admired strong links with "good" practitioners	Preciousness. Good practitioners do not always equal good teachers
Context as idea spark, liberating structure, of the place	Context as limiting, a confining structure, too 'x'-centric
Research profile;	Academic, elite, intellectualising;
Also storytellers, creative, discourse	Also divorced from reality
Diverse approach and themes	Sporadic, disparate, no overall ethos, "an operation not a culture"
Gets "best" students, a particular student intake type	Doesn't get "best" students"

Table 1: Positives and Negatives of School cultures

Design Philosophy Summary

Interviewees personal design philosophy in the main did not change over time, and only for a third of interviewees did it resonate with a wider school culture. This suggests two simultaneous things, one, that it is difficult to exert change in an individual's personal design philosophy (and so instilling a HDE philosophy where there is previously none would be difficult) and two, it is possible for educators to educate within a wider school culture that does not align with their own design philosophy (which indicates potential for educators to work within in wider HDE culture even where it does not align with their own values).

This freedom of an individual educator to go “off-piste” from the school culture within their teaching — in particular in studio modules — is reinforced when the wider school culture findings are reviewed. In schools with well-defined cultures there is less flexibility, however, in both scenarios educators can moderate and manipulate the wider school philosophy towards their own values, though this is achievable to a lesser extent within a well-defined — almost dogmatic — school culture. This suggests that were a HDE culture to be instilled at a school level, staff buy-in would be crucial— staff values would need to be translated to champion HDE issues and themes. These initial findings suggest ADE themes are still prioritised in the main. Further phases of research will gauge the depth of this assertion.

At a wider national level, the positivity and/or negativity of how a HDE culture might sit within the exiting national school culture is difficult to evaluate given the diversity of opinion on what is good or bad. These findings require deeper investigation in the further phases of research.

FINDINGS — WIDER CULTURE

This research then sought to cast the net wider to what student attributes architectural education generally should foster and to the role of professionalism in creating a school design culture with a view to assess the current state of play with regards to ADE or SPE leaning tendencies with schools.

School Culture and Student Attributes

This paper positions architectural education as a way of acculturation into being an architect. The nature and content of that education, and the context it occurs in are seen as key ingredients to the creation of the school culture and this process. To

that end, interviewees were asked which attributes or elements of the school design culture they would like students to possess.

Responses centred less on knowledge, or definitions about what kind of architecture students should be taught to create, and instead focused on the process of learning to be an architect — about creating particular design frameworks from which students could pull on and apply certain criteria. All interviewees expressed versions of wanting graduates to be researchers, synthesisers and critical thinkers who possess curiosity and are open and always learning. Alongside these central themes, attributes such as being good with people, having transferable skills, being ethical decision makers and “confident contributors” to society were all recurring theme responses.

All of these themes hinged on what kind of person a graduate should be and the life skills that should be imparted on them through the architectural education system. There was very little reference to the kind of designer they should be, bar the suggestion that they should draw on particular criteria within a design process; but no detail was offered on what those criteria are or should be. This suggests that interviewees wanted students to have a particular frame of mind, but what that frame of mind should be is yet to be fully defined. These emerging findings begin to imply that this frame of mind can be linked to the professed school design culture

School Culture and Professionalism

Interviewees were also asked about three aspects of professionalism as related to maintaining accreditation of their course:

- 1 meeting the criteria and review process of being a professional accredited course of architecture,
- 2 the criteria this process requires,
- 3 the influence of these aspects on the school design culture.

For each aspect, the complexity and critical thinking this theme ignited in interviewees was reflected in the number of conflicting elements given in the responses; indeed, one interviewee described their thought process on this theme as “constantly talking myself out of one thing and into another”.

In terms of the first aspect, the process is perceived to have both a number of positives and corresponding negatives: as a close review of what the school is doing and saying (+) but also demanding and burdensome (-) ; an enabling guide (+) but also too prescriptive and leads to a “compliance culture” (-); it will “root everyone out of their corner” (+) yet it can be orchestrated (-) and finally though it is helpful and supportive

(+) it is also perceived as a political process run by people with “axes to grind” (-).

The criteria that the profession require in the learning outcomes of each module and in the school as a whole again provoked a duality of response. While they were considered both durable and timeless; they were also seen as vague and broad. The need to set a particular benchmark was acknowledged — likened to “lik[ing] to cook with a recipe”. The criteria were also viewed as too rigid and narrow, while although they could be used for way finding in terms of ring-fencing themes and requirements within a potentially broad curriculum, it was considered that this tends to result in learning outcomes which are either too specific or too global. Finally, though the criteria were seen to be reasonably considered, many were viewed as “legacy” criteria, that were quite outdated.

Finally, in terms of the influence of professionalism on the school culture the same incongruity is seen; overall it is viewed as giving legitimacy to the education offered, with robust integration to the industry and the profession, the process considered to be clearly defined and deliberate rendering a visibility of what ‘learning to be an architect’ is. However, this also means that fluidity and spontaneity are difficult, with teaching “tending towards the default”. It was perceived that this had resulted in standardised and sanitised projects, where pursuing alternatives perceived as a “high stakes exercise”, ultimately leading to particular types of building/project types being pursued — or at least it was raised that the process “is [often] interpreted like that”.

Wider Design Culture Summary

These things taken together point to an uncertainty as to the overall value of the professional requirements for architectural education. However, what is apparent is that for better or worse they exert a reasonably consistent strong influence on the design culture of the school although the relative strength with which certain ADE or SPE elements within these requirements are applied remains unclear. In any event, the conflicting opinions suggest that the method of instilling a HDE culture in a school needs to go beyond criteria and standards, that although this leads with the stick, it needs to be balanced in some way with a carrot.

CONCLUSION

Results presented here reflect initial findings from a variety of viewpoints from interviews held with leaders within Irish schools of architecture on the role of personal and school design

philosophy and culture; exploring the degree to which cultures are implicit or explicit, fluid or rigid, freeing or restrictive.

This paper presents these findings from a particular acknowledged viewpoint — intending to uncover the current extent to which a particular ADE or SPE design culture might be apparent and encouraged and the ways of choosing either paradigm may potentially be emphasised within personal and school culture, wider national culture and the emphasis that the professional accreditation process makes on each layer of these design cultures.

While more detailed analysis and evaluation of responses presented here is necessary, an emerging theme can be reasoned from the preliminary findings of this first phase of research with directional staff; that of the strength of the mindset of the school culture as a lens through which the skillset of architectural students is moderated, and the confirmation of the importance and power of educators at the studio coalface of architectural education in driving this mindset. Beyond this, the desired student attributes, the wider school culture and the prescription process all influence this subliminal mindset culture.

This is reinforced through each aspect of the findings discussed. In terms of professionalism, though each school goes through the same process with the same criteria, each approaches and applies those criteria in slightly different ways; there is a freedom and flexibility within the regulation. This echoes other findings discussed here where it is a 'do as I say, not as I do' attitude; wherein each school applies the criteria with different emphases; sometimes explicitly but more importantly implicitly through the values that are subconsciously stressed in the studio teaching, and perhaps more tellingly which are ignored; signalling what is 'good'/'bad' architecture. Students read this very quickly, with one interviewee noting students "say what they think we want to hear". Ultimately the approaches, values and stressed aptitudes override the specific knowledge, skills and competencies required in a professional process.

Colloquially, within architectural discourse, themes centred around architecture as a mindset, as a vocation, as 'pure' learning tend to be related more to an ADE design paradigm centred around design quality and aesthetics, with their counterpart themes of architecture as a skillset, an apprenticeship, as 'training' rather than 'learning' related to the more technical performance driven SPE paradigm. Although ultimately both need to be considered in any architectural design culture in the promotion of an Holistic Design Excellence (HDE), what these findings suggest is that the ability of the mindset culture to be a lens through which particular skillsets are focused is a

powerful, robust design culture which is an appropriate vehicle in which an HDE design culture could be promoted. What remains to be determined is what such a hybrid HDE mind and skill set could look like and how it could be implemented.

In conclusion, these emerging findings suggest such change could not be solely implemented from a modifying of professional attributes required in graduates, or a changing of school culture in a formalised way, but also requires change in staff values and a signalling by staff through studio that HDE themes and issues equate to 'good' architecture. As such, the tools at the authors disposal to investigate this theme include the professional prescription process, the studio briefs and the degree of malleability of the minds of student mentors towards adjusting any purist ADE or SPE approaches towards a HDE mindset. Further phases will address these issues, with a view to asserting that it is through the lens of school culture mindset at all its levels; and developing the guidance and tools to implement this mindset, that a synthesising of ADE concepts with a SPE approach to form a in a hybrid HDE school culture mindset can occur, that will enable architectural school cultures to work towards transforming architectural education — both explicitly and implicitly — towards a Holistic Design Excellence framework for 'great' architecture and architects.

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What drives the content of design briefs placed before the student? What is the domain of teaching architecture and who is the architect that educators wish to produce? Is there a substantial frame within which an educator operates in order to achieve a required synthesis and how flexible is the path of achieving the mandatory set of learning outcomes? Where is the balance between abstract or universal and real-world subjects in developing a contemporary and timeless intellectual capable of a culturally and technically sustainable approach? What is the balance between local and universal, or do we aim to develop universal ability to adapt? How does the school communicate its set of values through the subject matter it puts forward?

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Towards a Methodology for Rethinking Modernity: Between Imagined, Realized, and Lived Space

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KEYWORDS

workshop, architectural design, architectural programming,
urban studies, modernity

The subject of this paper is twofold (1) towards review and revision of extra-curricular learning model in the form of a student workshop as an extended environment and a reflective arena, and (2) towards generating workshop content aimed at examining modernity in contemporary conditions of urban transformation. The paper is structured in three parts. The first part introduces the concept of an architectural workshop with a discussion of general methodological perspectives that shape this approach that takes place through three continuous stages during which students develop the process of analytical thinking, architectural programming and architectural design. The second part of the paper contextually and conceptually position the content of the workshop aimed at examining modernity in contemporary conditions of urban transformation between imagined, realized, and lived space. The third section introduces the content of two student workshops as an illustrative example of the implementation of methodology with specified assignments and substance..



INTRODUCTION

There is a global aspiration for continuous improvement of teaching curriculums and models in the field of architectural design, especially in response to the changing context and challenges of architectural education. The transcending disciplinary boundaries in architectural practice, shift from technical, engineering and technological to an equal social, humanistic and artistic perspective requires research and testing of new education models and explorative strategies which can be adapted to different topics, spaces and environments. New research areas and thematic frameworks within it, such as social transformation, climate change, globalization, urbanization and housing issues, are being continuously re-introduced and becoming more process and problem-oriented in order to rise the horizon within the context of architectural education and build the capacities for transferable learning of students.

Contemporary urban and cultural landscape has its own meaning, its own layered complexity, that cannot be studied only in the formal curriculums and methodological approaches. 21st century generation read those spaces quite differently then we used to. Therefore, we need enhanced teaching methods and tools, even different environments as it is definitely of high importance for students to appropriate it in their own way. Traditional teaching approaches and established programs thus require (1) the development of extended forms of the teaching process and learning that empowers students to develop their competencies and skills further and (2) the creation of specific contents and tasks in line with contemporary trends and topics that are tested in the local context.

A studio-based model of learning is the specificity of almost all architecture schools. The teaching process that takes place within the design studio model is characterized by a high level of interaction between all participants (students, teachers and external associates) and allows for equally critical and creative thinking of students. From a general perspective, the studio is an arena for the practical application of theoretical knowledge and methodological skills that students acquire through other types of courses and curricula such as compulsory courses that provide a basis for engaging in the architectural profession to thematic electives that are closely related to a particular research framework. In this order, there is the general aspiration to achieve a symbiosis between experiential and transferable knowledge through the studio-based model of teaching, as well as the integral application of design methods, techniques in

the design process. However, these goals have not yet been consistently implemented in the design studio curriculum structure. For these reasons, the thematic framework for improving the design studio curriculum has become a challenge for many educators and researchers in the field of architecture such as (1) bridging the inherent differences between study level and design studio culture (Gamble, Dagenhart and Jarrett, 2002), (2) the issue of hidden curriculum which refers to unstated values, attitudes, and norms which stem tacitly from the social relations of the school and classroom as well as the content of the course (Dutton, 1987; Dutton, 1991), (3) critical thinking and decision making in studio pedagogy and addressing cognitive styles in studio pedagogy (Salama and Wilkinson, 2007), and (4) the opportunities for technological enhancement of design studio (Crowther, 2013).

In this sense, we need a new agenda to establish a program that requires the critical thinking of students in positioning architecture in their own and overall cultural milieu. In order to address the issue and support the climate and trends within architectural design education, an extra-curricular learning model, based on the form of a workshop whose timeline allows rounded cycle of the design process in line with the regular timeline and general structure of study programs, was proposed within the curriculum at the University of Belgrade — Faculty of Architecture (UB-FA).

According to Schenkman (1955), the initial form of the workshop in education process was created in the function of exchanging information, options and experiences of participants, organized through group work, which is an essential feature of this form of learning. Bearing in mind that a workshop is an organizational form that stimulates the learning process and represents a short-term model that develops brainstorming and sharing ideas productively, the potential of a flexible and transformable learning environment within such a model is recognized. In that order, the general goal of the workshop is to empower students for the intense and effective development and application of scientific, professional and artistic achievements in the field of architecture, urban planning, architectural technologies and architectural engineering. The tendency is to make the future generation of professionals aware of an integral architect profile who has the capabilities of problem-based approach, professional involvement and action in a wide range of architectural and urban practice through (1) the inclusion of heterogeneous student profiles in relation to their study module and program level, and (2) the involvement of teachers and tutors from different departments of school.

The basic study program at the University of Belgrade — Faculty of Architecture (UB-FA) covers various curriculums and aspects that are autonomously examined from the architectural, urban and technological level. Especially, the teaching curricula for studies of modernity, that is a thematic focus of the paper, are established within different study programs and levels of study, which very often disables logical chronology of learning and an integral consideration of the phenomenology of modernity. Therefore, it is evident that a need to learn about modernity is there, different frameworks are established, but unfortunately, they are scattered all over the curricula lacking an amalgam that will unite all aspects.

UB-FA strives to create the continuous workshop program in order to enhance Design Studio Curriculum. The teaching and learning process at Design Workshops is structured around Design Studio Culture with the aim to improve methodology of design process and achieve synergy between experiential and transferable knowledge. It is important to point out that these workshops are realized in cooperation with other internationally recognised researchers, educators, schools and research networks. Thanks to its success and acceptance primarily by students, the number and thematic frameworks of workshops, as well as their complexity and variety, increases yearly. Some of this workshop realized in the last few years are: “Walkscape New Belgrade” (2015, with TU Munich), “Beograd Unbuilt — Project for Public Landscape” (2018, with ETH Zurich), “Unforeseen Impulses of Modernism: The Case of New Belgrade” (2018, with HS OWL: Detmold School of Architecture and Interior Architecture and the University of Antwerp, Belgium, with the support of the Reuse of Modernist project Buildings (RMB), DOCOMOMO Germany and Erasmus +), “Rural Shower” (2019, with Architectural Research Network ARENA), and “Among Scales” (2019, with Architectural Research Network ARENA).

The learning model which involved students from various study programs (architectural design, interior design, architectural technologies, architectural engineering, urban planning, urban design, integral urban development, sustainable development) and students from different levels of study (bachelor, master, integrated, doctoral) enabled the opening of cross-exchange of knowledge and skills and the development of an integral approach to research and design that is not present in any other position within the school, which is due to the dominant independence of the curriculum in line to school departments — Architecture, Urbanism and Architectural technologies. Furthermore, tutors, teachers and critics who

participated in the realization of the workshops were representatives of different departments, which contributes to the development of a comprehensive methodology that addresses a wide range of scales and aspects. In this sense, the proposed workshop model enabled transfer of ideas, knowledge and access through peer learning within a heterogeneous study program and an elastic thematic framework.

At the conceptual level, the model is based on a student workshop that takes place through three continuous stages during which students develop the process of analytical thinking, architectural programming and architectural design:

- 1 understanding the imaginary framework — implies a complex urban study of the planned spatial framework, retrospective of the urban morphogenesis and the development of the urban structure of the subject spatial framework through analytical architectural tools and methods,
- 2 mapping of realized patterns — identification of spatial-programmatic relations with the environment, user behaviours and lifestyles through architectural programming as a method for identifying and positioning a problem that becomes the subject of further research through design, and
- 3 recognition of lived space impulses — means the creation of spatial solutions in order to improve the quality of living and lived space through architectural design or the establishment of design principles and strategies.

Each of these phases contains a series of research inputs, while the produced outputs become inputs for the next phase, up to the final phase within which the design synthesis is established.



Fig. 1: Workshop Structure: Extended learning model. Workshop as Hidden School. Source: Authors.

The central approach of workshop is based on the design as a research methodology in order to understand complex relations between society and environment, and building creative capacity and critical ability towards strengthening social and ecological innovation through design. In this regard, several methodological perspectives can be distinguished:

(1) Dialogical — conversations at an appropriate level and changing communication modes: one-to-one, one-to-many, many to one, many-to-many, (2) Teamwork — focuses especially on collaborative practice generating ‘think back’ approach, (3) Knowing in action — reflective activity from different perspectives descriptive, interactive, critical, creative etc. (Schön, 1991), (4) Problem-oriented — defining the set of problems through the analytical process and solving them through the design process (Pena and Fock, 1969), (5) Inquiry-based — developing a design process as cyclical in character, so it includes a range of alternatives through research and experimental design questions (Zeisel, 1981), (6) Social Narrative — understanding the complex problems of contemporary society and the urban environment, and their narrative implementation in the conceptual framework of architectural design (Silverstein and Jacobson, 1978). This systematic approach allows generating creative values as an interface between context, framing and narrative.

The described methodology of the workshop was practically developed within a student interdisciplinary workshop “Unforeseen Impulses of Modernism: The Case of New Belgrade Blocks”, organized in November 2018 at the University of Belgrade — Faculty of Architecture in the framework of ongoing PhD research of Anica Dragutinovic¹. One of the most important contributions of the workshop was its integrally developed methodology which proved to be adaptable to other topics and spatial frameworks. Therefore, the same model was applied in the second workshop organized in April 2019 at the same faculty “Among Scales — Programming the Landscape Ecology: Toward the New Modernity of Belgrade” in the framework of ongoing PhD research of Aleksandra Milovanovic².

1 The first workshop, “Unforeseen Impulses of Modernism: The Case of New Belgrade” was authored and supervised by Anica Dragutinovic, M.Arch. Her PhD research is focusing on the evaluation and transformation of modernist housing blocks in New Belgrade, and the workshop is part of her PhD research.

2 The second workshop, “Among Scales — Programming the Landscape Ecology: Toward the New Modernity of Belgrade” was authored and supervised by Aleksandra Milovanovic, M. Arch. Her PhD research is focusing on reviewing and developing architectural programming methodology.

RETHINKING MODERNITY: BASIS FOR THE CONTENT OF THE WORKSHOP

A perspective for the modern urbanization of Belgrade is enabled in the first WWII period through (1) foundation of the institutional arena — the establishment of the first Urban Institute in 1945, (2) development of the planning arena — development of the new Master Plan in 1949–1950, and (3) development of a professional arena — the preparation of studies for the construction of future Belgrade, the consideration of new contours and physiognomy of urban morphology (Milovanovic, 2018). Based on parallel analysis of the planned, institutional and research framework and questioning modernity in line with rurality, industrialization and sociology of housing, with the basic aim of housing manifestation as a humanistic and material assumption of a socialist self-governing society, three developmental periods can be defined from the perspective of modernity:

- 1 the impulses of modernity: the period of establishing modern urban design principles and functional planning based on the 1950 Master Plan (Blagojevic, 2007),
- 2 the development of modernity: the period of development of the methodological apparatus for planning, programming and designing of housing settlements based on the General Development Report of 1966 in accordance with the dynamic, coordinated and planned development through five-year plans that enable the verification of what was conceived, planned and realized (Nikezic, et.al., 2019), and
- 3 the high modernity: the period of shaping the physiognomy of a housing landscape in line with the concept of the “archipelago of a settlement in the sea of greenery” based on the 1972 Master Plan (Djordjevic, 1972).

The described time point in the urban development of Belgrade is taken as a reference point in relation to which the development of a housing landscape is considered, and also its variability and conditionality in line to the spatial-morphological and content-functional system of the city. Defined periods of the landscape housing development, the paradigmatic changes in the principles, methods and techniques applied in the planning and design process of housing settlements from the level of the comprehensive territory of the city to the level of the single housing unit, or from the sociological level of the collectivization to individualization of housing space form the basis for studies of modernity in the territory of Belgrade at the present moment.

The spatial framework given students for research through the workshop is Belgrade city territory and it's focused on housing typology. Why housing typology in a thematic context of modernity? The territory of the Belgrade has dynamically started to develop on the basis of the very important Master Plan of 1950, which was under the influence of demographic growth, industrialization and the establishment of an institutional framework for planning which for a first time provide methodology for urban planning and design in line with modern principles and such circumstances enabled the re-examination of modernity, and also the relation of modernity with rurality. The new territory appeared: the empty-flat-land on the other side of the river Sava, opposite the historical Belgrade — New Belgrade (Dragutinovic, et.al., 2018). It was the main polygon for new concepts, the biggest construction field for providing housing for tens of thousands of inhabitants. New Belgrade was a housing laboratory with an experimental character at first, becoming a norm for the whole country in the end (Dragutinovic, et.al., 2019). Moreover, the largest part of the territory of the whole city planned and realized in that period was the housing typology that can be analysed through a multi-scale approach from comprehensive city territory to the single housing unit.

In classical curricula, learning about modernity, particularly about modern housing and specifically those social housing concepts imagined and built after the WWII is in three ways: (1) through history and theory of contemporary architecture with the aim of contextualization, identification and descriptive of social identities, architecture and urbanism, the relationship between practice and theory, the relationship between the visual arts and architecture, the relationship between art and science, the cultural aspects of architecture and urbanism, (2) through housing typologies in order to understand the complexity of the housing as technology of everyday life, to identify factors that determine the types and levels of housing in contemporary urban landscape and to study various morphological and structural manifestations of housing in space, and (3) through urban and social politics in order to study and position architecture as an integral part of the production, exchange and consumption of knowledge in society and ideological construction of identity.

These perspectives are here and there scattered all around the architectural agenda popping up whenever we need it. Reuse and sustainability of inherited housing stocks from the second half of the XX century is forgotten and pushed aside. However, a number of contemporary and challenging topics such as reuse, regeneration, sustainability, values and legacy and critical thinking on these topics is omitted. On the other side, how to incorporate new perspectives into formal curricula

that develop analytical thinking and systematization that are almost completely left out? How to develop a problem-oriented perspective on the topics of re-use and sustainability of modernist housing? These are just some of the issues that require thinking about specific assignments and environments for solving them. Abductive thinking is unimaginable — we value only those pieces of knowledge that were valued ones and believe we have read everything we need to know about those abandoned places. In that order, academia recognizes its historical, but not its contemporary values.

In the thematic sense, the realized workshops were focusing on contemporary trends, tensions and issues of architectural and urban practice through the relations of urban — rural, modern — post-modern, durable—ephemeral, compact—fragmented, public—private, individual—collective, towards the establishment of a new modernity. Therefore, the expanded agenda of the proposed model of the workshop is reflected in the challenges that have been established through the thematic framework and opens up possibilities for experimental research, model options and writing scenarios for future action.

CONTENT OF WORKSHOP 1: UNFORESEEN IMPULSES OF MODERNISM — THE CASE OF NEW BELGRADE

The Assignment

The main objective of “Unforeseen Impulses of Modernism: The Case of New Belgrade” workshop was aimed at generating and sharing knowledge around the topic of reuse of modernist buildings. The students were focused on (1) identifications and mappings of unforeseen impulses of Modernism, (2) reactions on space and interventions in space that were generated during the time, (3) understanding the needs and potentials; and at the end (4) suggestions of possible future interventions according to the identified elements, principles and impulses of modernism in the contemporary context of New Belgrade Blocks. The focus-scale of the research and design was on a level of the neighbourhood (a block). The thematic focus was directed on dialogue which emerges between private and public, open and closed, and articulation of the dialogue as materialized added value for the housing. The aim was to understand the contemporary context and the current condition of the New Belgrade blocks in order to identify the potentials for their improvement through introducing re-use as a method, and asking the questions such as: What could the impulses of modernism that we can read in space tell about the future interventions? And how to translate these impulses into the reuse tactics?

Substance

The search for possible answers to the set assignment was conducted through a series of methodological steps. Within the first step which is conceptualized as a photo-walk through a site visit, each group of students identified the phenomenon, or what is their focus in a process of searching for unforeseen impulses of modernism. They were mapping and framing the key relations (dialogues and impulses) in space using photography as a document, followed by a map. In the next step, students were visually reinterpreting the mapped phenomenon which become the subject of solving through design. The aim of future interventions was not transformation of the modernist morphology of space, but rather careful identification of important elements and “urban acupuncture” that would increase the functionality of block and support the community. Below are the results of the three groups that have studied the case of Block 23 in New Belgrade:

- 1 The first group was focusing on the landscape between the residential buildings — both on the micro level and landscape as a whole. Creating an imaginary grid from the in-between spaces of buildings and existing micro points in the landscape.

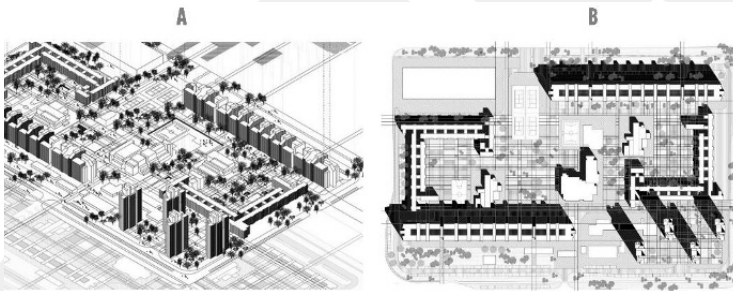


Fig. 2: (A) Axonometric view: Common Landscape, (B) Block Layout: Imaginary grid_in-between spaces. Source: Results of Workshop 1 — Students: A. Maksimović, N. Đurić, K. Dimitrijević, M. Božović.

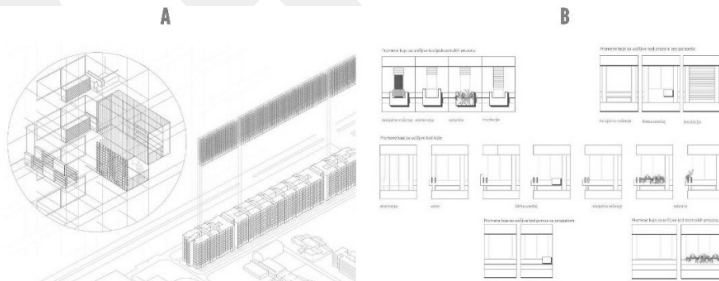


Fig. 3: (A) Axonometric view: Add-on structure, (B) Façade elements: Users' interventions / new needs. Source: Results of Workshop 1 — Students: Z. Stanojević, A. Stojanović, N. Lalić, O. Mišković.

- 2 The second group was focusing on the façade of the linear building, aiming to develop an add on structure that would integrate new functions. The user's interventions on the existing façades were mapped and classified — and therefore new needs were identified that were than integrated in the new structure.
- 3 The third group was focusing on the atriums — typical spatial element that emerged between the two residential tracts. It is important element for the quality of dwellings, and the students were focusing on improvement of atriums for outside — as public space. The proposed structure integrated into the void was transforming ambient characteristics of the atrium using light and reflection, therefore improving quality both of private and public space and increasing its usability.

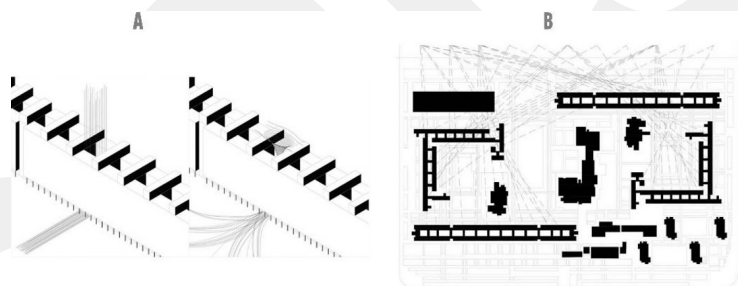


Fig. 4: (A) Axonometric view: Reuse of atriums, (B) Block Layout: Different types. Source: Results of Workshop 1 — Students: T. Ćirić, M. Ristić, J. Ristić, J. Korolja

CONTENT OF WORKSHOP 2: AMONG SCALES — PROGRAMMING THE NEW MODERNITY OF BELGRADE

The Assignment

The main objective of „Among Scales: Programming the New Modernity of Belgrade“ workshop was to look at current relational flows and gaps between urban and rural, architecture and nature, global flows and everyday life at the relevant spatial levels, from a geographical scale to the level of a single housing unit. In line with the spatial, administrative and sociological framework, five relevant scales of research have been defined:

scale XXL: territory — drawing an urban gradient, (2) *scale XL: morphology* — mapping morphological character, (3) *scale L: typology* — typological classification of housing patterns, (4) *scale M: program* — programming of architectural structure, and (5) *scale S: ambience* — collage sequences.

The case study-based research covers 9 different large-scale housing settlements that were planned and implemented over different time periods. This means that each of these settlements has different design principles and a programming framework, which requires students to recognize the phenomena of modernity and rurality at assigned spatial levels and accordingly develop methods for their systematization through drawing. First step was to recognize aspects and phenomena of modernity and then to illustrate them in recognized scales. In the second phase, students were expected to develop their own methodologies and approaches for research of the relationship between housing patterns and landscape. Research was approached primarily from the aspect of social and economic changes within society, and the way those aspects affect development of city's morphology, and also transformations of natural conditions.

Substance

The result of the workshop is recognized on two levels — the first is a systematic chronological review of the residential settlements developed in Belgrade in the period 1945–1978 with the identification of the planning framework and the principal spatial-morphological and functional-conceptual concepts, while the second part of the contribution is reflected in the created “identity cards” of individual residential settlements through the identification of recognized phenomena at the analysed spatial levels. In this sense, question of modernity was opened through three leading relations (1) modernity — rurality, (2) industrialization — sociology of housing, and (3) harmonization of urban planning — social and economic problems of housing, with the basic aim of housing manifestation as a humanistic and material assumption from the level of the comprehensive territory of the city to the level of the single housing unit, or from the sociological level of the collectivization to individualization of housing space. The results of the synthesis can be traced to three axes (1) a chronological line, that is, timeline of housing development, (2) a thematic line through which the development and changes in the relationship between housing patterns and ecological processes are monitored, and (3) a scale line through which the distribution of design principles from XXL to S scale.

1 First group research was approached primarily from the aspect of social and economic changes within society, and the way those aspects affect development of city's morphology, and also transformations of natural conditions as

a response to the assignment which implies identification of relations urban–rural, artificial–natural, within the case study of urban neighbourhood Banjica, in Belgrade. As a method of research on this case, students applied comparative analysis between urban plans and existing state, of the Banjica area, but also of the entire Belgrade. The balance and the way natural landscape and built structure compliment, and in a way, in-frame each other, as a recognized impulse within this case study, could become a pattern for living in the cities of the future.



Fig. 5: Topic of research: Morphology of nature, Case study: Urban neighbourhood Banjica, Belgrade (planned in 1970, competition design in 1971). Source: Results of Workshop 2 — Students: N. Askovic, M. Stojkovic, S. Todorovic.

- 2 The phenomenon of fortification was highlighted as a starting point for further research of the second group. Guided by this idea, students analysed the movement around and within the block, putting emphasis on recognizing flows and meeting points, which is clearly read through the parterre solution of the neighbourhood. Due to the phenomenon of fortress and movement within established structures on a wider and more narrow level, they observed plans, courses, zones, shaping, materialization, the ratio of full and empty both on the horizontal level of the parterre and the apartment, as well as on the vertical level of the facade.

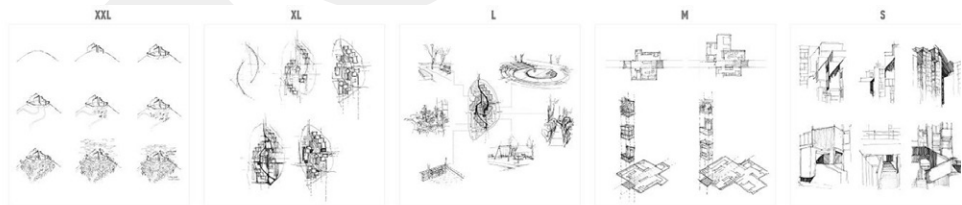


Fig. 6: Topic of research: Autonomy of nature, Case study: Urban neighbourhood Julino Brdo, Belgrade (realized in 1967–1970). Source: Results of Workshop 2 — Students: A. Andric, J. Baba-Milkic, K. Bankovic, M. Božovic.

- 3 The relations between the built environment and nature are depicted in maps through elements of nature. Students

recognized the impact of three social levels: society — group — individual and different map scales are determined by these three levels including: the formation of the greenery network on the morphology level, the scale of the territory of the city, connecting the greenery of the narrow part of the city with the greenery of its hinterland, the scale of typology focusing on the relation between the urban neighbourhood and the vegetation neighbourhood, the scale of micro substance, the ambient scale in line with the typology of the prefixes and the scale of the micro environment in line with the typology of the terraces.



Fig. 7: Topic of research: Vegetative neighbourhood, Case study: Urban neighbourhood Cerak Vinogradi, Belgrade (competition in 1977 realized in 1979–1988). Source: Results of Workshop 2 — Students: A. Andjelkovic, M. Milosevic.

CONCLUDING REMARKS

Workshop revision

The successful applicability of the teaching model of the workshop illustrated in this paper is recognized by several indicators that were evaluated after the workshops were completed:

- 1 Reason for participation in the workshop — All interested students are surveyed to express their intention and motivation to participate when applying for participation in the workshop. Based on the analysis, the need for students to further refine their design skills (methods, techniques and tools), as well as broaden the thematic research framework in order to strengthen the capacity to work on a studio-based projects and other courses is recognized.
- 2 Number of participants — The growing trend of students' interest in participating in workshops is recognized — 55 students participated in the workshop "Unforeseen Impulses of Modernism: The Case of New Belgrade", organized in 15 teams, 67 students participated in the workshop „Among Scales: Programming the New Modernity of Belgrade“ organized in 18 teams.

- 3 Type of participants — Participants in both workshops were students of all study programs at UB-FA (Bachelor, Integrated (5-Cycle Year) and Master Academic Studies — Module Architecture, Module Urbanism, Module Architectural Technology, Module Architectural Engineering) which allowed for a high level of student interaction horizontally and vertically, as well as sharing knowledge, competences and skills.
- 4 Type of critic / tutor — Tutors, teachers and critics who participated in the realization of the workshops were representatives of different departments of school (Architecture, Urbanism and Architectural Technology), which contributes to the development of a comprehensive methodology that addresses a wide range of scales and aspects.
- 5 Influence of acquired knowledge from workshops to work in the studio-based learning — Strengthening of students' capacity to understand urban transformation between imagined, realized, and lived space has been recognized through critical thinking, problem and process-based focus in designing more complex project tasks and programs.

The workshop model as a reflective arena, which is illustrated in this paper as an environment for learning and interaction between students and tutors, enables the transfer of ideas, knowledge and access through peer learning within a heterogeneous study program and an elastic thematic framework. Furthermore, tutors, teachers and critics who participated in the realization of the workshops were representatives of different departments, which contributes to the development of a comprehensive methodology that addresses a wide range of scales and aspects. The workshop is also a space for vertical integration of students in the school, so that the students of the bachelor level are empowered and encouraged in the work of master students who have a more advanced level of design skills and architectural knowledge. On the other hand, the workshop allows for a change of context compared to a studio-based model that has a very focused environment during the semester. By introducing the workshop as a compulsory part, that is, one phase, of the process of working in a design studio, students adapt to new challenges, new actors to discuss and test ideas, and new critics evaluating design solutions. Therefore, the expanded agenda of the proposed model of the workshop is reflected in the challenges that have been established through the thematic framework and opens up possibilities for experimental research, model options and writing scenarios for future action.

The transformation of the cultural landscape and urban morphology, which is intensively taking place at all spatial levels and time horizons, challenges architecture schools and teachers to confront contemporary urban problems and to include them as a subject of solving through design. Learning through design is as important as teaching through design, which means that the position of students and teachers in recreating content to rethink the future of urban space is equally important. Through the content of the workshops, it is clear that a broad thematic framework like modernity can have more focus such as (1) scale, (2) research questions and (3) expected outcomes. Each thematic focus set up in a similar way allows for flexible application in different learning environments and models. In this regard, the following outcomes for future development and testing of content frameworks can be highlighted: (1) understanding the multi-layeredness of urban space, (2) knowledge of different aspects, methods and techniques of analysing urban space and their synthesis in the formation of architectural principles, and (3) understanding of different urban needs and knowledge of specific relationships and processes in space towards establishment of an innovative approach to the issue of architectural design and urban planning that absorbs understanding of the needs of a contemporary society. By researching increasingly complex architectural and urban assignments, there is a need to foster integral thinking through practical and theoretical students' response to the complexity of the urban environment and the dynamics of social changes that have a reflection on the physiognomy of the city.

Author Contributions

Conceptualization and realization of the research: A.D., A.M., A.N., and J.R.T.; Writing the paper and editing: A.M., A.D., J.R.T. and A.N.

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Between Daedalus and Ariadne: 'Where's the Body?'

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KEYWORDS

Daedalus, Ariadne, body, architecture, movement, sensors, environmental audit, experiential.

This paper investigates the hidden body in architectural education, and the importance of place over space (Ingold, 2012), through three body, architecture, and movement research projects, where explicitly, at the centre of the architectural investigation, is the body. In the first research project, a mapping of the body in a social environment; in the second, an environmental and spatial audit of the places of drowning across the South West of the UK for the RNLI, reveals the mental and physical pressures that the body can be under; and thirdly, an installation project in the British Pavilion in Venice, which exhibits an experiential journey of mutability between architecture and the body. The position and context of the mythological Ariadne (Colomina, 2011) versus Daedalus (McEwen, 1994) as either architect or choreographer is graduated across the projects set with the ecological context of Guattari's, 'Three Ecologies' (1989).



INTRODUCTION: INTO THE LABYRINTH

The body in the curriculum of schools of architecture is easily lost. It is always implicitly there, as the architectural design process acts, both with and for the body. There is in many architectural courses a game of hide and seek through the curriculum, where in design exercises, the body fleetingly appears and disappears amongst building processes and technologies. Sometimes there may be a conscious battle of appearing and disappearing but more often the body is forgotten, lost from drawings, and models it unconsciously disappears from the radar of the design process.

This paper introduces three recent body, architecture, and movement research projects, by architecture postgraduates at AUB, where explicitly, at the centre of the architectural investigation, is the body. These projects examine the body and its movement through Guattari's, 'Three Ecologies' (1989), from the mental, through the social, to the environmental ecology, a thread is drawn out from the various contexts. Within and across the contexts the body is examined and tested placed in a battle between contrasting positions on the origin of the mythological architect (McEwen, 1997). The position and context of Ariadne versus Daedalus are explored through each of the following research projects. The projects can be seen as involving or processing 'maker' and, or 'designer' architects at different points through their contrasting involvement with and use of representation or making. The performative body research that moves between architecture and choreographer is reflected by the binary nature of the mythological metaphor between Daedalus and Ariadne (Colomina, 2002). The mythological metaphor and narrative games of the tools applied to the three research projects contrast with the real and contemporary nature of the projects. Often when the building comes to the fore in architectural education the body can disappear and slip away. In these research projects, building is in the background, while the activity of the body with its experience, recording, representation and interpretation is to the fore. These projects have a shared connection to the dynamic, moving, physical body, and interest in the 'place' of the body rather than the 'space' of the body.

The anthropologist Tim Ingold rallies against the term, space, as empty, detached, from the realities of life and experience', in his essay, *Place, Movement and Knowledge*' (Ingold, 2011). He also states that 'there is something wrong with the notion that places exist in space'. He identifies space as having a different line, an outward boundary, for example the space of the body being bounded by the skin. Place is delineated by movement, activity, inhabitation. Ingold does acknowledge, partially, the

geographer's (and by implication partially the architects) need for the term, space, as they explore, determine and measure, but he expects a return to 'place', or 'raum', with an added dimension, an embodied meaning, following the measuring and then the inhabiting of the space. The architect's role may take from anthropology, Ingold's world, but it also needs to be a geographer too, from time to time, in the process of design (Ingold, 2011).

This paper originally started out arguing for revealing, from within the hidden school, the movement of the body, as both maker and receiver of architecture, and the importance of place not space. It looked to define the hidden school, under the conference theme of the physical school of architecture building, as rather than a space for the making of architecture, a place, with the body of the students define the place. The abstract was originally submitted to the School of Architecture in the 'as a home or building' theme. What most makes the place of the educational process? The building or the students? The bodies of the architecture students, travelling on their educational journeys or the double height spaces of the architecture studios. — the place of education. When the programme emerged at the conference, the paper found itself, in the 'content' (curriculum) section of the conference. This appeared to raise the importance of the return of body's role in architectural education in the curriculum, and the need for its return and embodiment within the projects and research.

The origin journey of the body as defined through the Greek myth of 'the Minotaur and the Labyrinth as explained by McEwan sees Daedalus, the master maker as the archetypal 'first architect', for King Minos, he was the 'builder' of the labyrinth under the King's, Cretan palace (McEwan, 1997). In the myth, Theseus, who slays the Minotaur in the labyrinth, is given a thread by Minos's daughter, Ariadne. Theseus's journey through the labyrinth is mapped by the thread that Ariadne has given him so that he can follow that and is able to find his way out. This mapping is a representation of the space of a journey through the labyrinth. Beatriz Colomina argues that Ariadne is actually the first architect as she makes a representational architecture, not the 'building' Daedalus exhibits as his crafted, labyrinthine space. Ariadne, makes with her, puzzle-solving thread, a thread, that creates architecture, it represents the journey of the body and makes a drawing. She is seen as the necessary focus, and as the thread needs instructions, and a body to move it, Ariadne is a choreographer-architect, an agent of change, creating the line by not only providing the thread, but also telling Theseus the movements he needs to make with the thread in the labyrinth (Colomina, 2002).

From establishing a practice with choreographer Caroline Salem in the 1980s we have developed body and movement

related projects from performances to pieces of city. They investigate from the patterns of the body, the abstract movement to the perceptions and internal connections of body and architecture. The three recent body-architecture-movement research projects are part of series, defined as BAM5 and were undertaken with architecture postgraduate research students on the M.Arch. at the Arts University Bournemouth, a new professional postgraduate programme that explores the performative in the context of the three ecologies. In the first research project, a mapping of the body in a social environment, explores aerial notions of a social ecology with Zaha Hadid Architects; in the second, an environmental and spatial audit of the places of drowning across the South West of the UK for the RNLI, reveals the mental and physical pressures that the body can be under; and thirdly, an installation project in the British Pavilion in Venice, exhibits an experiential journey of mutability between architecture and the body.

RESEARCH 1 (BAM5) — 'GOING OVER' OR DAEDALUS DOMINATES

Spatial Mapping with ZHA in the AUB Gallery

The body movement mapping and thinking development for this project starts with a Zaha Hadid performance collaboration with choreographer Rosemary Butcher that took place in the Festival Hall in 1989 (Butcher, 2016). A composed battle of dynamic lines took place both through the collaboration and in the performance an overlay of the two, a mapping of the architects score was projected across the floor with black taped lines then the choreographer and dancers worked over the lines with their distinct movement, a body layer. It was a layered battle of both Ariadne and Daedalus, where both choreographer and architect were bidding to express their movement.

Following Zaha's final public engagement, opening the CRAB Drawing Studio at AUB, shortly before her death in 2017, Zaha Hadid Architects practice put on a special exhibition in the AUB Gallery, entitled 'Evolution', showing work past and future, in the AUB Gallery. In the first stage of the project a series of body movement workshops AUB Architecture post-graduate students, worked with choreographer Caroline Salem, followed by ZHA, and my practice, Moving Architecture to record, analyse and project representations of the movement taking place in the Gallery. This was done initially with drawings and video, then via movement sensors. These sensors were mounted on the ceiling of the gallery and collected the data of movement in this gallery space over the exhibition period.



Fig. 1.1: Performance Festival Hall Hadid-Butcher collaboration 1987.

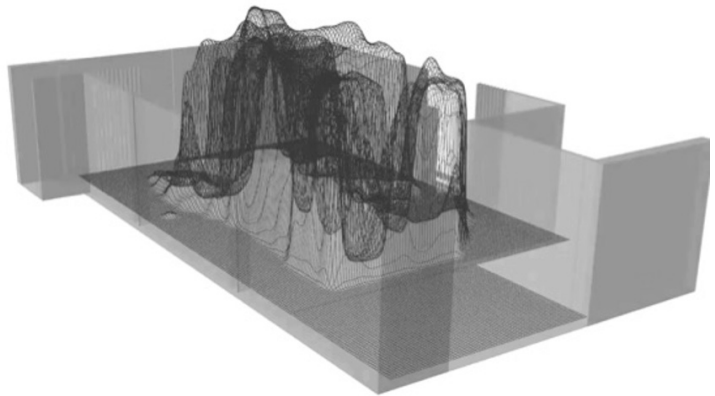


Fig. 1.2: Mapping of Gallery space from sensor info. AUB-ZHA col. 2018

The sensors were a part of another play with Daedalus mapping Ariadne, and an Ariadne moving to the exhibits, originally placed by Daedalus. The ZHA argument was that this recording could map and be used to comment on the 'popularity — success' of different sections and exhibits. This was of relevance to the ZHA Spatial Analytics team, where the sensors are seen as a feedback loop, to maximize the efficiency of the practice's offer in the particular area of office space planning.

The AUB interpretation was more alternative and creative as the information recorded by the sensors was collapsed into a data flow, and re-interpreted by the postgrads, making an experimental representational 'space', a making of architecture. They also used video mapping from their own camera's

and drawings rather than just the sensors to increase the 3D information. This research work was 'applied' in a creative educational environment and had educational value, yet the digital flow that emerged as used was only partial, and to some extent it was 'unreal', the complexities of the social movement and circulation in the gallery was simplified to a binary number.

This is in stark contrast to the sophistication of the interpretative performance and its movement language by the choreographer Rosemary Butcher over the ZH drawing, creating a distinctive context and film where Ariadne and representation, possibly Daedalus combine. The heat maps and data flow aggregate the individual's body movement, and starts to create a 'place', although in this opportunity area for interpretation of a social ecology at present ZHA in their interpretation of determined body attraction to exhibits, Daedalus and 'space' dominate in this process. ZHA Analytics did see it is a feedback data a 'Going Over' (Rosen, 1993) or watching and mapping of the movement, creating information for interpretation, while the AUB and choreographer interpretation returns and starts the rediscovery of the body

RESEARCH 2 (BAM 5) GOING UNDER — UNPICKING THE THREAD

RNLI Designing Out Drowning — AUB Architecture Environmental Audit

The research project 'Designing Out Drowning' was a RNLI Innovation project undertaken as a Knowledge Exchange Project to investigate the issues behind drowning and to project initiatives of how to develop new design approaches that can prevent drowning. A team of investigators and researches were assembled to investigate and reflect on drowning events across the South West. The AUB Architecture team focused on the environmental background from weather to geology relating to the events. The first stage was to visit the sites, analyse and understand the issues behind the drowning events. This understanding of the environmental ecology was combined with the social ecology research undertaken by another creative team to help unravel the combination of mental, social and environmental issues.

The work as architect researchers focused on 'sites' where drowning events had occurred across Devon and Cornwall. in each case the journey of the body was tracked and the environmental data collected, analysed and displayed the conditions of air, land and water recorded and mapped with models fabricated for further debate and discussion. The events included late



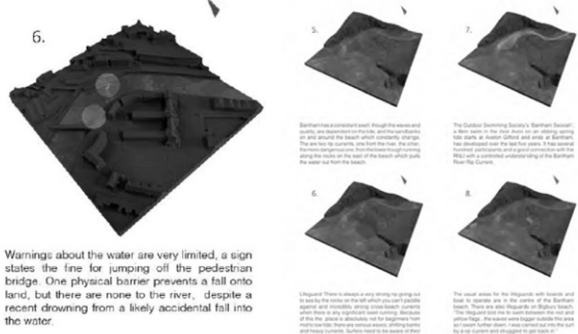
Fig. 2.1: RNLI DOD Environmental Audit — Bournemouth Pilot

night drownings connected to social activities in the centre of Exeter Quays in the cold water of the River Exe, cliff falls and jumps at Torbay and Newquay, and people cut off by tide and rip currents at Perranporth and Bantham.

An example of the process can be seen at Bantham where inexperienced swimmers, surfers, individuals and families are often caught out, on the south Devon beach which is famous for surfing. It picks up the southerly swell rolling off the Atlantic and with the right wind and tide can create some of the best surfing conditions in the UK. The rip current that runs across the beach, is understood and used by the experienced surfers to float out to beyond the waves, but for the inexperienced surfer and their families the running out of the rip current makes the surface look calm yet it can pull them out fast and make the unaware panic. There are life guards there in the summer to try and prevent potential drowning events.

The journeys of the inexperienced surfer were tracked and represented through models and drawings. The thread of a potential surfing tragedy starts with the weather and surf reports. Further along is the preparation, the journey, and then the experience of the site with its various landscape markers and events on the road from a home via Motorway to the 2 mile Devon lane from Kingsbridge to Bantham down to the car park and beach access. The mapping of the journey through to the fluid dynamics of the water across the beach ground mapping the rip currents and particular times is important as well as for other sites.

A series of 3D models were created and the stages of reaching the potential drowning event mapped out. In this second AUB Body-Architecture-Movement research project the body was followed, as though tracked from below, into the dynamics of the water. So through the labyrinth of events and decisions



Warnings about the water are very limited, a sign states the fine for jumping off the pedestrian bridge. One physical barrier prevents a fall onto land, but there are none to the river, despite a recent drowning from a likely accidental fall into the water.

Fig. 2.2: RNLI DOD Environmental Audit — The Sites, The Exeter Signage and the Bantham Narrative

of the time with the environmental conditions as a part of that labyrinth. The journey of the body, Ariadne's path, is unpicked, mapped and measures applied: temperature (air and water); time of the day and year; tidal and weather information. Daedalus was applied and tested through the environmental information from the body's intention to travel and across the 'space around the body'.

RESEARCH 3 (BAM 5) 'GOT TO GO THROUGH IT', ARIADNE AS ARCHITECT, WITH DAEDALUS MEASURER

AUB M.Arch. Installation: 'Mutability', in British Pavilion, 2018 Venice Biennale

The third research project for the Venice Biennale took as one of its origins the Percy Shelley poem, 'Mutability' (Shelley, 1816),

'We are as clouds that veil the midnight moon;
How restlessly they speed and gleam and quiver,
Streaking the darkness radiantly! Yet soon
The night closes round, and they are lost forever'

The aim was to create a bodily experience that was questioning and transformational, taking the body on a performative journey through an event installation. Body, architecture and movement were integral to the design and the day workshop event, the visitors were encouraged to participate. The structure was designed, fabricated, erected and performed by a group of M.Arch postgraduates, (Team AWE), it was installed in the British Pavilion, as part of Mutability event which also included a drawing workshop.



Fig. 3.1: Elements of the AUB installation 'Mutability' in the British Pavilion

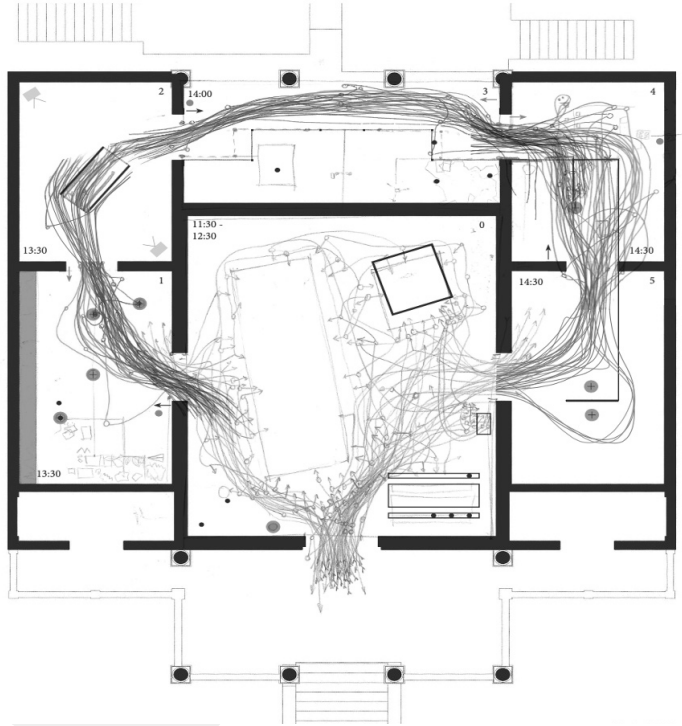


Fig. 3.2: Mapping of movement in British Pavilion during AUB installation

The British Pavilion for the 2018 Architecture Venice Biennale was politically and provocatively left empty by the curators to providing a space for reflection and events. AUB Architecture were invited by the British Council to create a one-day installation event, based around 'Mutability' it looked at changing identity, and nationality, via a rich metaphor of drawing, making, projections, reflections and travelling. A fabricated stick line defined the route as it travelled around the British Pavilion setting up an experiential journey.

This delicate inhabited frame, with its choreographed journey and erection was a fully embodied experience, with projections of the Grenfell Tower fire, and a mirror to view one self. It

worked for both for the M.Arch. students, and an overlay of two thousand visitors, reflecting, experiencing and drawing. Through moments of performativity, with T-Shirts, labels and questions, the installation questioned the audience. From where had people come? How did they see themselves? To where were they travelling? It questioned the quasi-national, the personal, using an installed, designed and pre-fabricated framed, journey, drawing a 'line' through the British Pavilion.

One of the precedents was the artists' Arakawa and Gins, who switched the object-subject, challenging the body with the installations in their Mitaka Apartments. The framed line was also a performative journey along with workshop activity of words and drawings. The intensity of the day and activity was represented through a series of drawings plotting the moving of the body which appeared to also weave a thread suggesting Ariadne as architect with Daedalus as visiting dancer choreographer, the measurer of the architect. This was an Ariadne-Daedalus combination, a place for architectural education, which was experienced and measured. In this third Body Architecture Movement project do the visitors become Daedalus, measuring their experience, or are they carrying Ariadne's thread?

CONCLUSION: UNPICKING THE THREADS

The three research projects place the body at the centre. The experiential of the body hones into view; as does the Tim Ingold's reference arguing for 'place' over space. They examine and emphasize the bodies journey. Architects often talk about the space around that body, with the use of space as a term implying it is neutral and to be manipulated yet, it is loaded with baggage and not neutral, it is always a place, even when everything is removed when it is loaded with the 'removal' of the body. Across all these projects the body is at the interface of the project, mapping, drowning, and experiencing, through a series of methodologies, space is questioned and it is answered by 'place'.

Ingold for his metaphor for this process quotes from Michael Rosen's children's book, 'We're Going on a Bear Hunt' (1993):

'We can't go over it,
We can't go under it,
Oh no!
We've got to go through it'

In the search for the hidden school there needs to a focus on the return of the body to the curriculum. It is the bodies link with the function, the ritual, and the performative, that needs

to be found and inserted through the curriculum. That is not just the geometric body, via the Bauhaus, and Oskar Schlemmer's 'Triadic Ballet', but an ecological body that can be seen emerging in the sixties through the Halprins, Anna, a choreographer and Lawrence, a landscape architect, also through the artist and architect, Arakawa & Gins, with the physical bodily challenges of their Japanese apartments. The Halprins appear to channel the sixties new-wave ecologies in America to their movement and landscape work, from the Pacific beach, to the water spaces of the city, and their dancing deck in the woods. For me this hidden school was found and developed via the EASA gatherings as a student in the 1980s in Delft, and the experiential journeying and descriptive workshop of the pioneering landscape architect and teacher Pär Gustafsson.

In the three projects there is a shift from the Daedalus making world to the analysis and representational questioning of Ariadne. This is the overlapping of the choreographic and the architectural, there is the application of reflective bodily video mapping and somatic practice, and the use of ecological, psycho-geographic with physical models setting up a wide landscape of overlapping bodily concerns. The first project with its mapping, 'going over it', and the second, 'going under', with its fluid understanding of the body and water, the third is 'going through it' with the experiential.

The three research projects from the AUB post-graduates see the emphasis on the body with different focuses across the mental, social and environmental ecologies of the three ecologies (Félix Guattari, 2014). The body being re-found and reviewed is part of the wider ecological understanding of architectural education it is key to creating an architecture that works at many levels. The body worker, or choreographer has understandings of inside and outside of the moving body that can respond in an experiential way giving and taking, revealing and concealing with wider space and environment around them. The architect working through the process of site exploration to fabrication to use and experience of the fabricated space has multiple opportunities to create a place rather than a space. As shown in these examples, the Venice installation focused on the mental ecology of the visitor, the ZHA project took the social ecology, of many bodies visiting the AUB gallery, while the RNLI discovered the body in the wider landscape of its journey where the extremes of land, air and water were tested as part of the bodies relationship with environmental ecologies. The hidden school with its hidden body needs the curriculum to bring forward the multiple opportunities to work within the connected body (mental), with a series of interconnected bodies (social) and across and within a landscape (environmental).

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Students' Approach to Participating in Informal Education: The Case of Betonart Architecture Summer School

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KEYWORDS

architecture education, informal education, workshops
in architecture, summer school, Betonart Architectural
Summer School

The way of learning and performing practice, the tools and methods that are being used for it and the spaces that these processes take place are shifting with the change of information and technology. Under these circumstances architectural education has faced difficulties in being up to date in particular about curriculum, program and physical requirements. While instant solutions give instant results, it is inevitable that rooted solutions will be encountered to keep up with this rapid change. For this reason, countless “informal education” activities are being implemented, such as competitions, workshops, assemblies, forums, publications, etc. This paper focuses on BASS (Betonart Architectural Summer School) as a case to understand the motives of participating in such activities from the perspective of architectural students. It tries to demonstrate that students are aware of the importance of informal educational activities, furthermore they are increasingly demanding.



INTRODUCTION

The place of formal and informal studies in architectural education has been discussed in various platforms for a long time. In particular, the effects of supporting formal education (planned vocational training in educational institutions affiliated with the Higher Education Council) with informal experiences (such as seminars, interviews, exhibitions, workshops, technical trips, which do not have a formal feedback such as course credits or internship) have been the subject of many scientific studies.

In Turkey, the architecture students' formal learning processes coincide with many informal education practices. Architecture students participate in many informal activities mentioned above, and even play an active, participatory, and responsible role in the organization of these activities. Students often contribute in these activities to where involvement is voluntary, and there are no concerns about grades. They even sometimes prefer such events to formal education activities.

The reasons why the student devotes the time remaining from formal education or the time required to spend in formal education for informal education practices (in other words, the motivation of the student to participate in informal education environments) gives an idea about the student's approach to formal and informal education. Within the scope of this study, which investigates the effects of the physical and social components of the educational environment on students' motivation, Betonart Architecture Summer School (BASS/BASS), which is a free and applied informal education activity that has been held since 2002, is examined as a case.

In the first part of the article, the current paradigms in contemporary architectural learning environment are revealed. In this perspective, informal and formal education concepts are specified, and their scope is concluded. The second part of the article examines the program, functioning, and unique characteristics of BASS, which is one of the longest-running study programs held by a non-profit association in Turkey. In the last part of the article, the case study is being analyzed comprehensively in terms of social and physical components of the educational environment. The theme of this article is elaborated extensively in the thesis titled "Investigation of Students' Motivation in Informal Architecture Studies: The Case of BASS" defended in Yildiz Technical University.

CONTEMPORARY FORMAL AND INFORMAL ARCHITECTURE EDUCATION

Architecture is technological as the oldest occupation of mankind, theoretical as the sophisticated knowledge and ideology, commercial as the office practice, academic in terms of institutional education practices, perceptual and artistic in terms of its products and cultural qualities, economic in terms of its products' existence, social in terms of its functions, political in terms of priorities and choices, urban in terms of its use and context. It is a theoretical, cognitive and individual practice due to the characteristics of the design process (Teymur, 1995). The education of this multi-layered discipline exists as a wide ranging area of research and discussion in national and international areas, being discussed in academia, technology, economics, politics, theory, pedagogy, philosophy, sociology. History, content and scope of architectural education; the relationship between architectural education and architectural profession, effects of economic, technological, sociological changes in the profession on architectural education environment; globalization in architectural education and accreditation processes related to globalization; lifelong learning and out-of-school (formal, informal, etc.) learning environments are among the main topics discussed in architectural education. Many paradigms affect architectural practice and architectural education (Salama, 1995). In recent years, these have been presented around the world with their environmental, social, economic, political, and technological aspects world (Nicol, D.; Pilling, S., 2000). In Turkey and the world, alternative education methods and practices are explored in many schools of architecture. Architectural education, which is different from other disciplines, includes many non-traditional practices within its formal boundaries.

According to the table adapted by Rogers from "Lifelong Learning Comment 1 1985" (Table 1) traditional education programs, memorization and repetition, linear and concrete development, adherence to teacher-determined models, individual-competitive effort, static and rigid processes, rational content learning, as information provider teachers underline categorized learning, cultural unity, isolated learning spaces, separation from society while in alternative education; values such as the excitement of learning, holistic learning (ethics, intellectual, physical), respect for the individual, collective effort, creative and sociable (problem-centered) processes, teachers as contributors to learning, interdisciplinary learning, cultural differences and partnerships, life-circles, cooperation with society are emphasized (Rogers, 2004). Today, it

can be stated that alternative learning styles are frequently tested and applied in many countries of the world, especially in architecture schools.

TRADITIONAL EDUCATION HIGHLIGHTS:	ALTERNATIVE LEARNING VALUES:
Programs	Excitement and love of learning
Memorization and repetition	Holistic learning (ethical, intellectual, physical)
Linear and concrete intellectual development	Diversity and personal esteem
Conformity to models set by teacher, individual/competitive efforts	Co-operative/collaborative efforts
Static and rigid processes, rationalist	Creativity and intuition process
Content learning	Learning, problem-centered
Teachers as an information provider	Teachers as learning facilitators
Compartmentalized learning	Interdisciplinary learning
Cultural uniformity	Cultural differences and commonalities
Isolated teaching environments	Life-based environments
Separation from community	Community partnerships

Table 1: Rogers's adaptation from *Lifelong Learning Comment 11985* (Rogers, 2004)

Terms related to education vary across disciplines and countries as well as across time (Werquin, 2008)(Rogers, 2004). Classifications related to education have also been made many times in different ways. Many pedagogues and thinkers have agreed on the classification created by Coombs and Ahmedin 1974 as 1. formal education (common-public education), 2. non-formal education, and 3. informal education. However, Michigan State University has divided education into four categories: 1. incidence (completely unplanned), 2. informal (partly planned and partly unplanned), 3. non-formal(out-of-school), and 4. formal (in-school). This classification was not accepted by those who thought that only planned learning could be called "education." Those in this view expressed incidental learning through the concept of "informal learning" instead of informal education. Over time, these concepts have been used interchangeably in the literature (Rogers, 2004). Thinking that learning can take place in any condition and everywhere, education is a deliberate action, Rogers uses the term "informal learning" for the incidentwhile he uses "informal education" for "personalized, contextual learning programs" (Rogers, 2004).

According to Werquin, the concepts of formal, informal, and non-formal education should be defined concerning each other

in line with the main characteristics such as whether there are the learning objectives, whether it is intentional or not, and whether it leads to a qualification (Werquin, 2008). Ciravoğlu considered “informal education” as practices out of the formal curriculum (Ciravoğlu, 2001). Within the scope of this study, these informal environments 1) where “informal learning” took place, 2) which the student voluntarily participated and 3) did not seek any formal interest such as grade concerns (ECTS, extra credit), were evaluated as “informal education.”

Informal architecture activities diverge across programs (meeting, workshop, competition), the institution or people that organize (student/company of building materials/NGO/University), the field of activity (local/national), the actors involved in that activity (the roles, disciplines, and ages of the actors) and, the time, duration and the location (country-city) and space of the activity. There are many informal education activities for architecture students in Turkey. Many competitions are organized by or independent of the Chamber of Architects. Architecture journals and architecture publications appear periodically. Various events, such as seminars, exhibitions, and workshops, are held in cooperation with academia and industry. In schools, students hold multiple meetings, talks, and discussions and make publications as out-of-lecture activities with student clubs or more formal communities. There are also workshops held in Istanbul Design Biennale, which we might call as an informal learning environment in itself and Venice Architecture Biennale, Pavilion of Turkey for students of architecture in the context of international activities. In 16th International Architecture Exhibition of the Venice Biennale, the Pavilion of Turkey covered the informal research program “The Shift/Vardiya” which aimed to be a space for production, meeting and encountering for more than one hundred architecture students visiting the Biennale weekly through a shift, during 25 weeks, between May 26 and November 25, 2018 (Vardiya/Shift Curatorial Team).

It can be believed that the most common of all these informal practices is being short-term workshops. If looked at the workshops held in Turkey or frequently attended by students from Turkey, it's observed that these workshops are different from each other in terms of history of the activity (for how long is it being held?), actors (organization, participator, coordinator), activity area (city, space) time of the activity (During the semester, out of semester, weekday, weekend etc.), space (city, workshop space) and output (concrete output, intellectual output). In the workshops, applications and / or participation is usually free of charge. There are mobile workshops as well as those taking place in a particular city. Although most of

the workshops are carried out, out of the semester, especially the activities organized by the academy are planned according to the academic program. While the workshops held during the semester are shorter, those held between the semesters can last longer. These works can be annual, biennial, or monthly. Workshops may possibly be held in specific workshop space, as well as in different spaces, transforming those spaces into learning environments. Few of these workshops provide an opportunity for students into practice.

The workshops are unique activities that are difficult to classify under specific categories that appeared in the search for/as alternative education. They can be organized by different individuals and/or institutions for various purposes, for different groups of either local or national students. These are activities that have the potential to strengthen cooperation between industry and academia, which can be sustained through financial models such as sponsorship or donations, which are usually free of application fees. They may consist of one or more workshops, be single or continuous. The workshops are not limited to a specific topic, time, or space, where different actors are involved, where inter-actor roles are flexible, and a comprehensive, multivariate, and flexible program is realized in a short time. In the workshops, theory and practice often come together, achieving not an outcome but a process-oriented work. They are considered as rapidly changing, which can follow up to date, critical and experimental environments where collective activity and production take place (İmamoğlu, 2019).

Informal education environments differ in many ways from formal education, which occurs at a given time, following a specific curriculum, and ultimately aiming to achieve an absolute gain. Reading informal education through the parameters that shape formal education brings in many problems. This study does not intend to classify informal education environments, but only to understand the effects of some components of formal education on their equivalents in informal education:

- A. Organization
- B. Content
- C. Output and evaluation
- D. Learning environment

A. Organization: Organizers and sponsors in informal education take the position of the institution(s) in formal education. Different actors play a role in this part, which can also be called the organization team of the activity. They organize these activities for different purposes. As in the case of EASA, some practices may be organized by students to discuss the problems of architectural education, co-create and build, or they may be organized

or supported by industrial institutions, organizations/associations to create a synergy between industry and academia. These kinds of activities take place in schools as well, in addition to the curriculum. These activities, which are organized to increase the prestige of the school, contributing to the researches and enhancing the social interaction among the students, are considered in the informal category even if they take place in-school and are not obligatory, and the students do not have the grade concerns. Professional chambers and NGOs also organize and host such activities in line with their mission and vision.

B. Content: The curriculum in formal education is partially included in informal education. In most informal education programs, the path that instructors will follow in their environment is planned, though not step by step. As in formal education, this plan is not based on the goals and observations set by an institution, but rather on a content determined by the executives and occasionally even by the participants. What informal education is about and, more specifically, its conceptual framework is fundamental here.

C. Output and Evaluation: In formal education, it is important to achieve the target outcomes by following the curriculum. In informal though, the motivations of the participant, such as obtaining a specific loan and having a certificate, are not important concerns.

D. Learning environment: Informal education environments are mostly process-oriented environments. At this point, in this study, the characteristics of the learning environment affecting the process in educational contexts are examined in detail.

EXAMINATION OF APPLICATION FORMS

Exploring the reasons of students to participate in informal education environments, BASS, which is a continuous, practice-oriented workshop and has various and fixed features in which the effect of variables such as city and theme in participation can be observed, has been chosen as an example. The fact that BASS is free of charge and does not stipulate the success paving the way for more students applying for, has played an effective role by selection.

Within the scope of the research, the application forms of approximately 1000 students who applied to BASS between 2012 and 2017 were analyzed. Diversity was considered when

Applications of BASS 2012-2017

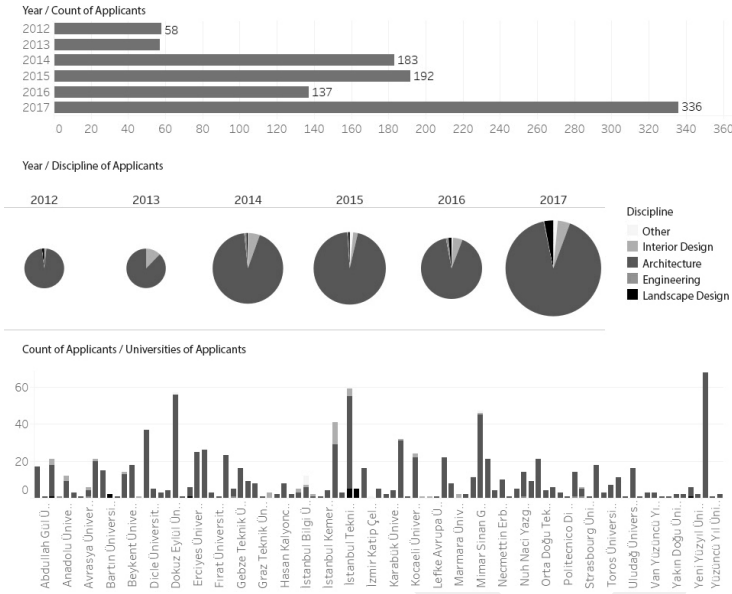


Fig. 1: 2012-2017 count of applicants-universities-disciplines

Components of Informal Practices

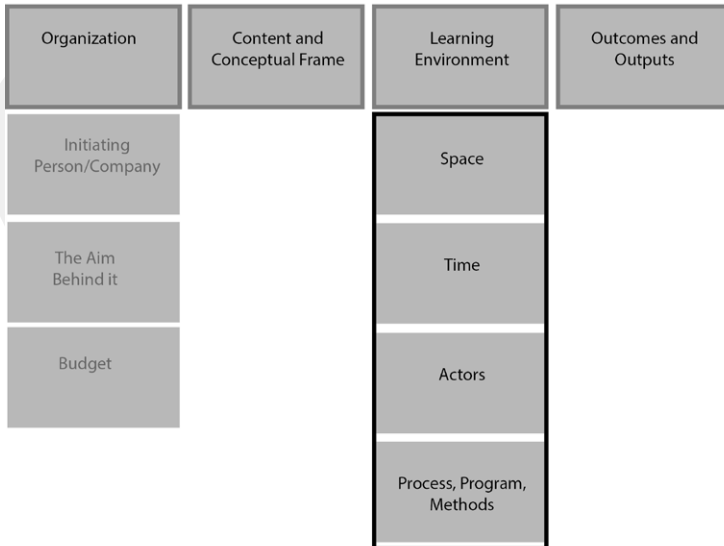


Fig. 2: scheme that shows components of informal education practices

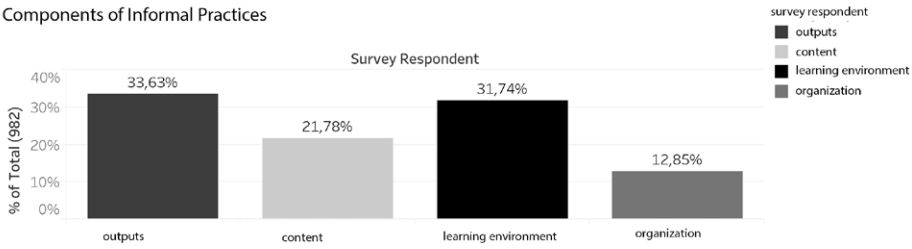
selecting the research group. Curator diversity (single curator or curatorial group), the scale of the activity (object scale or urban scale), the region (Black Sea, Marmara, Central Anatolia...) have been considered.

When the number of applications is analyzed by years, there is a continuous increase except for the decrease observed in 2016. Although the reasons such as the networks used to announce BASS in that year, the number of people reached, the curator of the theme of that year are effective in the number of applications, the current socio-economic and political conjuncture of the country cannot be considered independent from the participation of the students in such activities. Considering the increase in the number of applications between 2012 and 2017, it can be stated that 2016 is related to the situation of the country rather than the lack of student interest.

It is noticed that the diversity of disciplines of the students who applied by years increased as well. Although BASS is only open to the participation of architecture field, students from different disciplines have been applying to take part in the process in recent years, although they did not meet the application requirements. Nine hundred sixty-three applications were received from 96 different schools for six years. While a similar number of applications are accepted each year from state schools, the numbers of applications of private schools vary. Regardless of the city in which the Summer School will take place, a large number of applications are taken from the major schools, while the number of applications from relatively new universities in Anatolia are made according to the city where the event will take place. While the effect of the variables such as city, curator, and theme of BASS on participation motivation differs according to the year, features such as working with concrete, making applications, and working with participants from different schools are mentioned as the motive for each year. The reasons for this motivation were explored through the educational environment components.

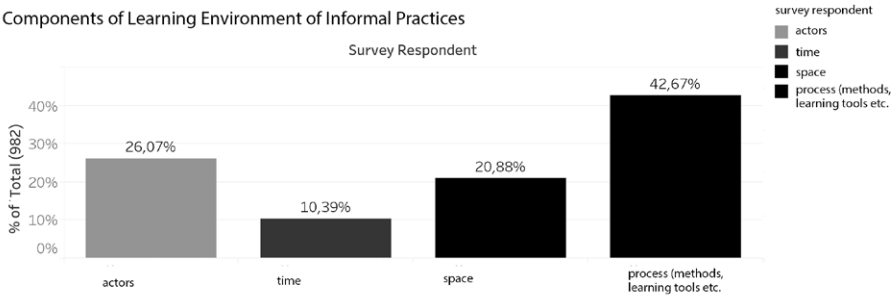
An average of 20 students attends summer school each year. The students are selected after evaluating of the open-ended question in the application form, which measure motivation for participation in the workshop. Criteria such as gender, class (grade), and whether the student has participated in similar activity before are also effective as selection criteria. The answers of the students were investigated through keywords and concepts. Each answer was examined and coded for the respective component. Among the responses of the students, it was discovered that educational output was effective for

Components of Informal Practices



Color shows details about Survey (BASS Application Forms (BASS Application Forms 2012-2017) Respondent. The marks are labeled by % of Total Applicants (982).

Components of Learning Environment of Informal Practices



Color shows details about Survey (BASS Application Forms 2012-2017) Respondent. The marks are labeled by % of Total Applicants (982).

Fig. 3: scheme that shows percentage of components of informal practices and components of learning environment in informal practices. Source: bass application forms. 2012-2017

33.63%, the education content and theme for 21.78%, the institution organizing the education for 18.85%, and 31.74% for characteristics of the process.

BETONART ARCHITECTURE SUMMER SCHOOL

If BASS is classified and analyzed according to components:

A. Organization

APME Pan European Survey, which was conducted in 2001-2002 with the participation of Sweden, Spain, Netherlands, Italy, France and Germany to measure the perception of cement and concrete in the public, showed that the attitudes towards the cement industry and cement and use of concrete as a material was negative (Survey, 2001-2002). After this survey, studies were carried out, aiming at changing the negative perception in Turkey and Europe regarding the qualified use of concrete (Becan, 2019). In Turkey, Turkish Cement Manufacturers' Association (TCMA) planned a summer

school for architecture students suggesting that education is important in this regard. Betonart Architecture Summer School BASS was organized for the first time in 2002 to break down the negative perception of concrete, contributing to architectural education, and combining theory and practice in architectural education. While planning of BASS, Blitz Concrete Research organized by Netherlands Institute of Cement (ENCI) in 1999 was taken as a model, while shared opinions in the meeting with the head of the department of architecture in Turkey was benefited.

Being organized regularly in a different city each year since 2002, with the participation of architecture students from Turkey, BASS is called “summer school” because it has a comprehensive program and that it is different from summer schools organized by the schools out of the semesters. This workshop aims to teach the students applying concrete material. BASS is a free workshop. There is no fee for the participation of the students. Besides the food, drinking, and accommodation fees of the students, all materials, tools, etc. are covered by the event organization. With these features, the workshop is accessible to all students.

BASS is organized every year in a different city with a specific theme. Thus, within the activity, there is the possibility to discuss current issues and to have the opportunity to draw the attention of students in different areas of interest, as well as to support the participation of students from every region of Turkey.

When the students know the organizer institution, they can choose the program because they are aware of the previous activities. Within the scope of the organization, the person/institution that organizes, coordinates, supports in terms of moral and material can be considered. In the case of BASS, these are fixed components, namely Turkish Cement Manufacturers' Association (TCMA) as the organizer of the event and teams, sponsors, and supporters (TCMA member cement companies, cement factories, municipalities, schools, publications) that organize the event organization as variable components.

B. Content

BASS mainly focuses on the use of concrete material. Consequently, concrete is the main subject of the activity. Moreover, BASS works with a different curator every year and examines concrete within the framework of the theme decided by that curator.

The curator, which is determined for every year's workshop, develops a theme considering the city where the event will be held that year and invites the moderators in line with that theme.

Concrete is examined through the theme chosen that year. The approach to the material changes according to the theme and the scale of the activities performed. Until now, BASS, under the themes of Concrete as a Material and a Texture, Encounter, Forming the Concrete, Intersection and Connection has taken place in Ankara, Istanbul, Trabzon, Kayseri, Edirne, Kocaeli, Izmir, Mersin, Canakkale, Isparta, Balıkesir, Afyon, Ordu, Adana, and Bursa.

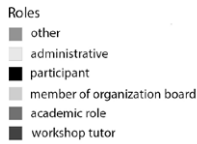
The program not only intends to teach concrete to students but also aims to teach them by applying concrete. Therefore, making the application by using concrete material builds up the core of this workshop. Although the studio process in the workshop and the workshop process in which concrete is used form the basis of this workshop, the position of these two in the program is not fixed. Sometimes the studio activity may come after the practice, and sometimes the two may walk in parallel throughout the whole process.

Even though the program is determined by the curators and moderators, some of the content of the program remains constant. Various cultural activities such as city tours, field researches, forums/seminars, video/movie activities, social activities such as juries, dining together, and entertainment are spread to the 2-week program.

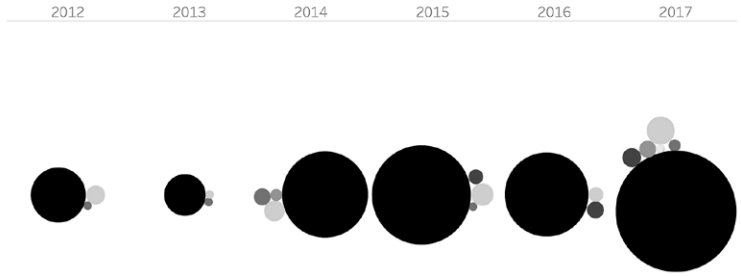
C. Output and evaluation

Physical outputs of different scales have been achieved at BASS to date. Public space arrangement, urban furniture, concrete objects, and sculptures were produced. The program does not specify a final product, although various products have been obtained and exhibited at BASS. The program is process oriented.

The research covers only the motivation of the applicants to participate in BASS and does not include any final evaluation. But to have an idea about their views, the booklets (Collective, 2012) (Collective, 2013) (Collective, 2014) (Collective, 2017), prepared after the Summer School have been examined. The short answers and comments to the question “What did this challenging design and application process leave you with?” reflected that it has broadened their knowledge and changed their perceptions about the nature of concrete. They had the opportunity to use tools and construction materials they have not known before, and to carry out a design and application process from beginning to end. One of the 2013 participants highlighted that after he attended BASS which he evaluated as a 3-stage process (analysis, design and application), he faced a phase that he never took into account which was the experience of architect-employer relationship (Collective, 2013). One of the participants in 2014 stated that what



Roles that Architecture Students Take in Workshops



Roles of Students in Informal Environments (color) and distinct count of BASS applicant no (size) broken down by Year. The data is filtered on Type of Practice (main categories), which keeps "workshops, assemblies and design weeks."

Fig. 4: roles that architecture students take in workshops. Source: bass application forms. 2012–2017

characterized this workshop environment was that they had the opportunity to experience three different roles in a time: master, practitioner architect and designer (Collective, 2014) Almost all students have underlined the pros of the social environment of BASS in these booklets. They referred to friendships developed in such a short time.

PAB Architecture founders, one of the first participants of BASS and later involved in BASS with roles such as curator and moderator, state that the most important outcome of BASS is its continuity, pluralism and serious knowledge accumulation with its history of nearly twenty years (PAB, 2019).

D. Learning environment

When the components of the learning environment are considered separately, it is noticed that the process is the component that affects student participation the most. Methods such as finding the possibility of one-to-one application, working with moderators, doing group activity; means such as working with concrete material and finding opportunities to use different analog and digital tools, and the process which is diversified with various cultural activities instead of only workshops are effective at the rate of 42.67%.

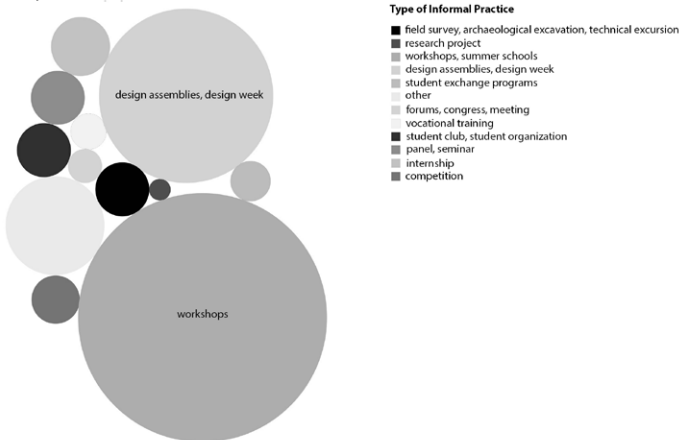
Actors: Actors in the learning environment have a second place with 26.07%. Informal education environments allow different actors to be encountered. Students can come together with students from different schools and cities. It also has the opportunity to work with instructors and professionals from

different disciplines, cities, and schools. Students can also come together with artisans and craftsmen from different disciplines (carpenter, blacksmith). R & D teams related to concrete and cement participate in the workshop throughout the organization. Architects and designers join the workshop as a jury member to evaluate students' presentations. At BASS, students can come together with architecture students from schools that provide different education from their school, along with a carpenter, blacksmith, and an engineer specialized in concrete. Students attach importance to meet with different actors.

Time: The fact that the activity takes place in summer and out of school is also effective. Many activities take place during this period. The students state that they want to spend their time efficiently by joining BASS. It can be seen as a productive summer vacation activity.

Space: Space is also effective in students' participation. The theme of that year and the institutions supporting the activity are also effective in determining the space. Betonart Architecture Summer School is hosted by schools in some years, in which case students generally produce on campus and stay in the dormitory of the school. In some years, the main sponsor and host is a cement factory. In the application forms, the students of architecture stated the importance of studying in different cities. They think that understanding the city will contribute to their professional and personal development. Although the effect of the city varies in the motivation of applicants in different years, it is 20.88% in general.

Diversity of Informal Practices in Architecture Education



Type of informal practice (color) and distinct count of BASS applicants (size).
Source: BASS Application Forms 2012-2017.

Fig. 5: diversity of informal practices in architectural education. Source: bass application forms. 2012-2017

Process (Methods and Materials): Students do individual and group work. This group work takes place in a different fiction every year. Some years, students start working individually and then continue with group work through the selected project. Sometimes each group is led by a specific moderator, and in some years, all moderators are involved in all groups. Various pedagogical methods are dynamically adapted to the workshop process according to the context of the subject.

RESULTS

The common idea of those who are engaged in architectural design education is that this education cannot be limited to studio and school. The observation area of the architecture student is the whole world; therefore, it is part of the learning environment (Yürekli, H., Yürekli, F., 2004). It was observed that the students who received architectural education were aware of this situation and applied to informal education activities with this awareness. The results indicate that students are aware that informal education will contribute not only to formal education but also to lifelong learning. In today's atmosphere, where the boundaries between formal and informal education become uncertain, students are involved in informal education to keep pace with the speed of change.

It is regarded that the students give importance to the process as much as the output of the education. Even though students who participate in informal environments are expected to produce outcomes, and ideas, to develop professionally and personally, the informal characteristics of the educational environment are as important as these outcomes. The student-sattach almost the same significance to social (actors, personal and professional development, etc.) and physical components (time, space, tools used). They agree that BASS, which takes place at different times, with different actors, in different places, with various tools and methods contribute to their personal and professional development. In the process where intensive, playful, and new techniques are used, the roles are more fluid than informal education, and the places where the workshop is held also allow students to relate to the context.

BASS, which is an excellent example of being a continuous summer school, providing an opportunity for knowledge about a specific material and usage of it and being free of charge, makes an essential contribution to architectural (and informal) education in Turkey. This study reveals that today, the importance given to informal education studies is increasing, and the students are aware of the contributions of these activities to their professional life.

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The Handprint, the Shower of Gold, and Thingness of Architecture

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KEYWORDS

reason, hand, light, shadow, myth, practice, dust

Architecture is an eminently artificial human enterprise but subject to natural laws and principles residing somewhere between the mineral world and vegetation. It is eminently archaic, as the dominant epistemologies, pragmatic conditions and techniques may change, but fundamental notions, ideas and principles remain where they have been ever since the construction of the first shelter. Architecture is also eminently thingly. As a thing, every work of architecture is in opposition to our broken world of events. For better or for worse, in actual practice this opposition settles in the act of construction, as a project becomes a building: material, structure, space.



CONCEPTION OF PERSEUS — ABDUCTION OF PERSEPHONE

To grasp a beautiful thing or some difficult idea — the language clearly pronounces the hand—to—mind connection. In the world of things, this connection manifests itself in a HANDPRINT that a humble craftsman leaves on a handy mud brick, the most ancient, most ordinary and most simple building material made of the same element we are made of — the earthy powder. The standard hand—pressed and sun—dried mud brick Hassan Fathy and his Nubian masons rescaled for the New Gournia project consists of ordinary earth from the site, sand from the desert, straw and water, the exact proportions depending on the required specific weight of the brick determined as a part of a wall, a vault or a dome. It is made smaller than the usual bricks to facilitate the handling and profiled with two parallel grooves drawn diagonally with the fingers from corner to corner of the largest surface. The craftsman's handprint enables the brick to stick to a muddy surface by suction once built into the right place (Fathy, 1989). For Richard Sennett's *Craftsman*, to grasp something implies physically to reach for it, and mentally to understand rather than simply perform the operation (Sennett, 2008). In Fathy's and his craftsmen's actual experience it meant more. In New Gournia, the craftsmanship was tailored not to the simple material needs of the people but to the material and spiritual needs of the "trinity" owner, architect and craftsman (Fathy, 1989). It was elevated to a heroic level, biblical certainly not in terms of physical proportion, and not only because of the biblical building material involved. Ten thousand years old tradition of building with dust, mud, plaster, adobe, from the ground of Jericho to the suspended Mocárabe domes of Alhambra was brought alive, a mythical experience as it were. In transition from essence towards presence, the craftsman's handprint on the New Gournia brick uncovers the thingness of things: their purpose, shape and matter. "Things" are in plural here because the thingness of each brick involves its final cause — the thingness of the pediment, the wall, the vault, the dome, and the whole building.

The mythical "Host of Many", the lord of shadows and everything inside earth including roots and springs, minerals and gems, lurks from the interior of a cave and comes into the light only briefly, to abduct the beautiful Proserpina (Evelyn-White, 2005). His strong grasp leaves the shadow on her white flesh, made known by the hand of Gian Lorenzo Bernini. Like that spirited craftsmen from New Gournia, the great artist uncovers the properties of the material — the stoniness and the whiteness of the white stone. Leaving his handprint, he virtually

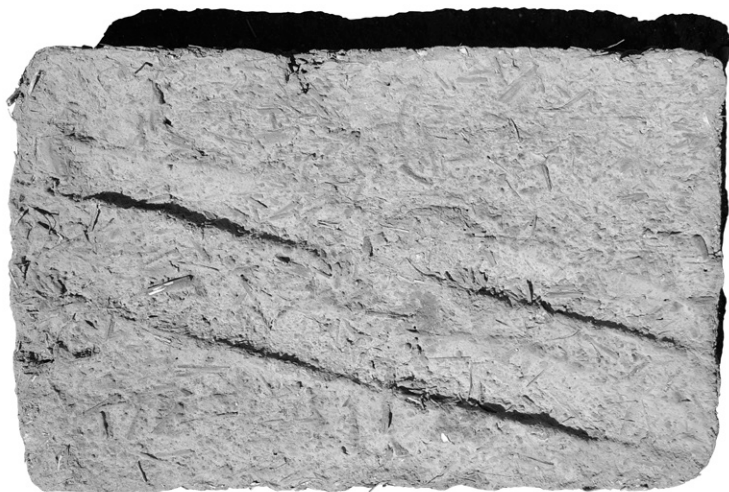


Fig. 1: Mud brick from New Gourna, Egypt, collection KI

brings things to life, chiseling shadow and light from the perfect block of Carrara marble. Taking a second look into whiteness through Sir Isaac Newton's prism, Johann Wolfgang von Goethe found color exactly in this area of transition between shadow and light, the mythical cave and glade — sunset and night, twilight at dawn and morning shine. With the sunset first comes the yellow as the light dampened by darkness, with the sunrise first comes the blue as the darkness weakened by light. Goethe was not interested in laboratory splitting of light in controlled dark—room conditions. Instead, he emphasized the phenomena and the perception of the actual phenomena found in nature. In this sense, a direct observation of how the sequences of colors appear and disappear against darkness and lightness above the silent sea surface may be edifying. As a giant mirror, the sea surface magnifies the sunrise and sunset spectacles.

“Should your glance on mornings lovely
Lift to drink the heaven's blue
Or when the sun, veiled by sirocco,
Royal red sinks out of view —
Give to Nature praise and honor.
Blithe of heart and sound of eye
Knowing for the world of colour
Where its broad foundations lie”

— *the lines from his witty didactic poem Zahme Xenien VI summarize Goethe's doctrine of colors, Die Farbenlehre (1810).*

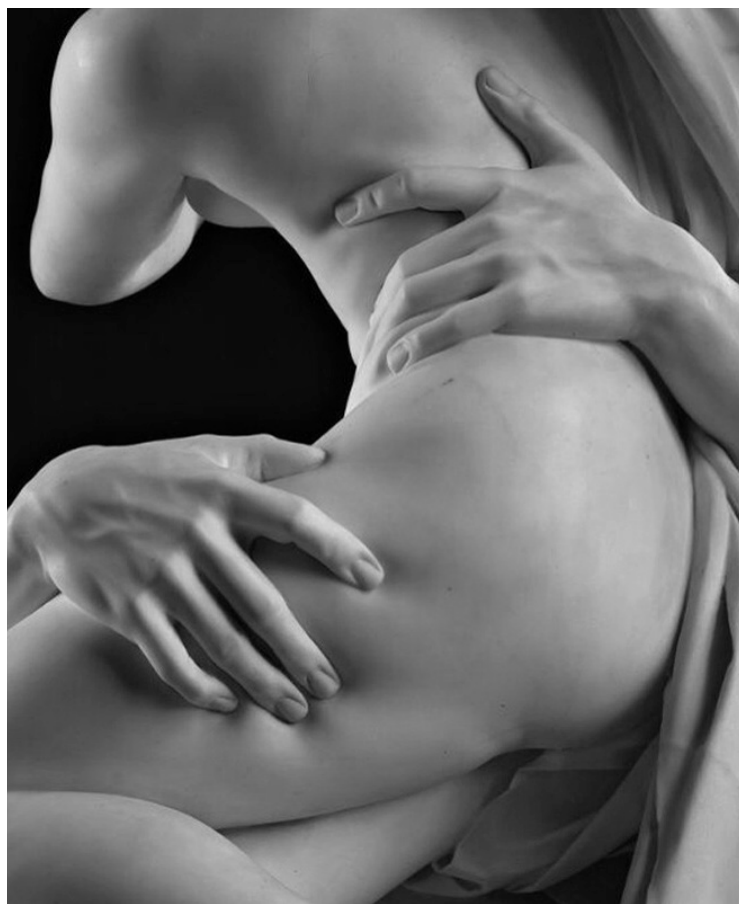


Fig. 2: Gian Lorenzo Bernini, Abduction of Proserpina, 1622, detail

Ridiculing the mechanistic *Spiegel hüben* — *Spiegel drüben* point of view, Goethe grasped that color is produced from the light, as much as by the thing itself on which the light falls — a property of its material and a consequence of its shape. In architecture, it is the zenithal light which virtually brings things to life. Within the *Mocárabe* dome in Alhambra the color appears from the adobe plaster, the spectacle of space from the thing itself. This chiseled receptacle of light from above is a celebration of the world of things. Suspended from heaven as it were, it is the best physical proof of the impossibility of emptiness as understood by Aristotle: the superlunary world is filled with aether, the quintessence, while in the sublunary world of the four natural elements the air, the liquid or the solid matter would infuse the void if it miraculously existed for some infinitely short moment. The medieval idea about the very first appearance of the blue from the darkness before the division of



Fig. 3: IVANIŠIN. KABASHI. ARHITEKTI, Conception of Perseus — Abduction of Persephone, 2018 (photo: Miljenko Bernfest, 2019)

waters, “Let there be Light,” is beautifully illustrated with the folio from the Nuremberg Chronicle (1493). It shows a double circle inscribed within a square with the inner circle filled with light blue pigment dissolving into the white towards the upper third of the circle. Probably the most verbatim celebration of zenithal light in architecture is the Quranic inscription in the dome of Hagia Sophia by master calligrapher Kazasker Mustafa around 1850. In place of the Pantocrator a “highly appropriate replacement” according to Titus Burckhardt, the Verse of Light (Burckhardt, 2009) is placed atop the golden dome, above the row of forty windows around the base, a bucket of golden light as it were, from outside and from the thin layer of gold itself. Metaphorically and literally — “God is the light of the heavens and the earth. The symbol of His light is a niche wherein is a lamp. The lamp is in a glass, and this glass is a radiant star. (The light) is nourished by a blessed olive tree, which is neither of the east nor of the west, whose oil would all but glow though fire touch it not. Light upon light. God guideth to His light whom he will, and God striketh symbols for man, and God knoweth all things” (Burckhardt, 2009). The mythical lord of sky and thunder from whom nothing can be hidden becomes the SHOWER OF GOLD — in Ovid’s words — and enters from above into the beautiful princess’ hidden chamber, to turn her dark prison into a pleasant place. According to Pausanias, Danae’s uncle Proetus employed the antediluvian monsters to erect the cyclopean walls of Tiryns (Pausanias, translated by W.H.S. Jones, 1918), the most primitive monumental structure. Most probably, her father Acrisius employed the same primitive technique and same primitive builders in construction of the underground chamber without any definite outside appearance made to

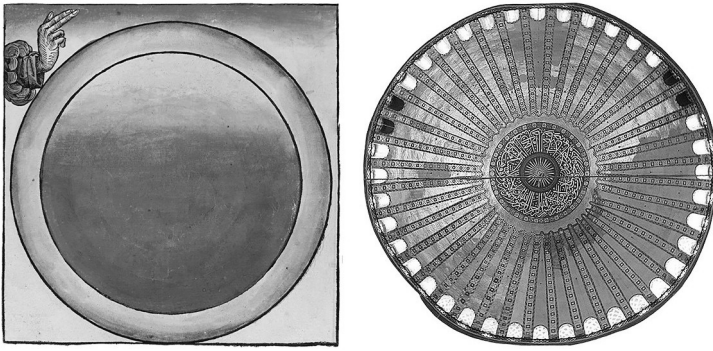


Fig. 4: “Let there be Light,” from Nuremberg Chronicle, 1493, and Verse of Light in Hagia Sophia dome, 1850

protect Danae from the suitors. Only when the air enclosed within the cyclopean walls was infused with light from above and thus given some qualities of liquid and solid matter, did Danae’s chamber become the original, primordial architecture. The mythical lord of sky and thunder from whom nothing can be hidden becomes the SHOWER OF GOLD — in Ovid’s words — and enters from above into the beautiful princess’ hidden chamber, to turn her dark prison into a pleasant place. According to Pausanias, Danae’s uncle Proetus employed the antediluvian monsters to erect the cyclopean walls of Tiryns (Pausanias, translated by W.H.S. Jones, 1918).

The mythical lord of sky and thunder from whom nothing can be hidden becomes the SHOWER OF GOLD — in Ovid’s words — and enters from above into the beautiful princess’ hidden chamber, to turn her dark prison into a pleasant place. According to Pausanias, Danae’s uncle Proetus employed the antediluvian monsters to erect the cyclopean walls of Tiryns (Pausanias, translated by W.H.S. Jones, 1918), the most primitive monumental structure. Most probably, her father Acrisius employed the same primitive technique and same primitive builders in construction of the underground chamber without any definite outside appearance made to protect Danae from the suitors. Only when the air enclosed within the cyclopean walls was infused with light from above and thus given some qualities of liquid and solid matter, did Danae’s chamber become the original, primordial architecture. Elias Torres proposed a mental exercise of imagining oneself closed in a dark bottle, a canister or some other container with a tap, and the sensation of zenithal light in the interior of the container when the tap opens (Torres, 2009). The myth about how Perseus, the ideal hero who fights the darkness, was “conceived with joy beneath a shower of gold” (Ovid, 1958.) explains the discovery of space

down in the world of things as a divine arrangement. In *Mysterium Cosmographicum* (1596), Johannes Kepler explained the spatial analogy between the world of four natural elements and the celestial spheres, in other words the sublunary world of things and the outer space. The discovery exemplified with the model of the Solar system as the concentric nest of five Platonic solids / Euclidean geometric bodies divided by inscribed and circumscribed spheres, whose spacings relatively match the distances of the six known planets from the sun came to him in the middle of a lecture. It displays his truly remarkable, in a way architectural spatial sense. In *Astronomia Nova* (1609), Kepler explained how, beside this spatial sense, it was the divine arrangement which enabled him a look into depths of space in the right moment and in the right direction, to clearly see the motion of celestial bodies. He arrived at Tycho Brahe's observatory in the moment they were observing the acronychal position of Mars, and it was only the observation of Mars which could have led Kepler to the discovery of the harmonious order of the Universe (Donahue, 2004). While observing the orbit of Mars from the moving platform displaced from the geometric center of the Universe, he was seeking to determine the nature of the broad Universe. While investigating the nature of the Universe, Kepler was also investigating the way he was able to investigate — the interaction of the visible parts of the Universe with our senses, the interaction of our senses with our mind, and the interaction of our mind with the Universe as a whole. The coherence between the laws of cognition and the laws of physics, i.e. the fact that the laws of physics are within the grasp of our mind, is reflected in his discovery of the celestial bodies' orbits and the characteristics of light and vision as special cases of a single conception of the conical function (Director, 2006). Hence he included in *Paralipomena* to Witelo, his major study in optics (1604), the anatomical plate by Felix Plattner showing the conical sections of the human eye, emphasizing thus the causal and formal connections between perception and vision (Kepler, 2000).

In Kepler's beautiful vision of the outer space, the planetary orbits did not simply occur in a dark void governed by mysterious gravitation forces. They are the consequence of the immaterial species which the solar body emanates rotating as if on a lathe, analogous to the immaterial species of its light. Rotating itself, this species carries the bodies of the planets with its strong grasp. This Latin word related to the verb *specio* has an extraordinary wide range of meanings. It is also the Latin equivalent of the Greek $\epsilon\lambda\delta\omicron\sigma$, Plato's word for his forms or ideas. William H. Donahue, translator of *Astronomia Nova* chooses to leave this word untranslated since

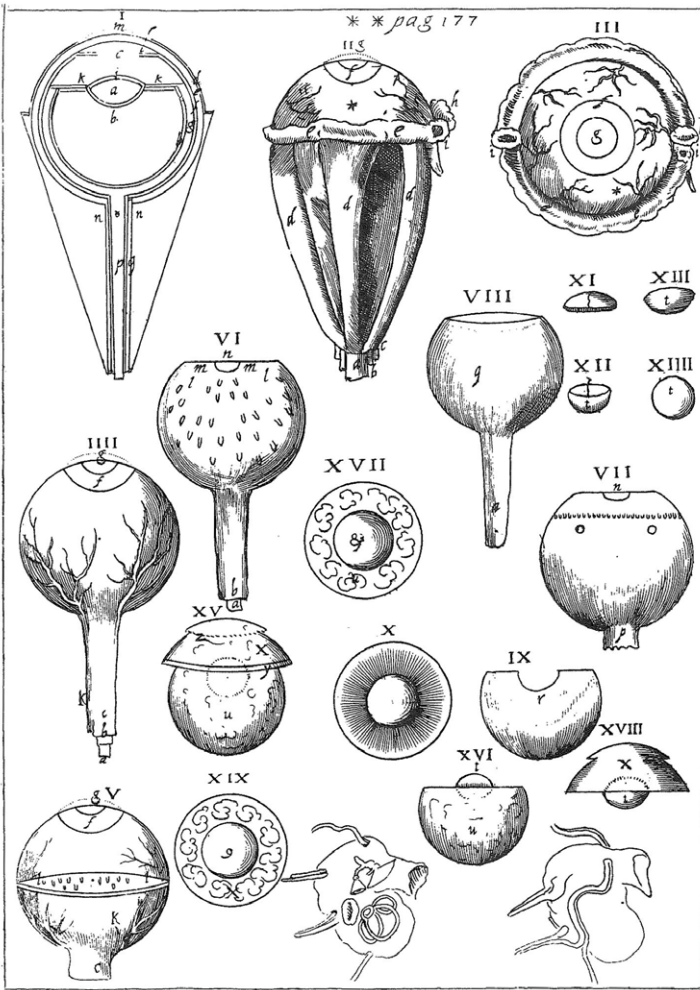


Fig.5: Felix Plattner's anatomical plate 49 from Johannes Kepler's *Paralipomena to Witelo*, 1604

there is no English word that can embrace so many meanings (Donahue, 2004). Kepler illustrated the movement of planets in the outer space with the circular river paradigm and sailor revolving his oar through the aethereal air, reminiscent of the ancient Egyptian vision of the celestial dome as the goddess Nut dressed in stars and water. Brought down to earth into the Danae's chamber, architectural space first appeared as something similar to aether, something more than the volume of air enclosed within a chamber and lit from above. It is also the species — form, image, appearance, kind, property, quality, type, surface, semblance, emanation, spectacle, atmosphere — of the actual building — the quintessence and the THINGNESS OF ARCHITECTURE.

THINGS, NOT EVENTS

Actually, and metaphorically, from the idea to the completion of a building, every work of architecture is within many a hand's grasp. Larger a work of architecture in terms of size, programme, site requirements, public interest etc., ever more hands get involved. The immediate matter of an architectural project is the ink or even less material digital media. As a physical fact, a project relates the imperishable forms to the actual presence. This relation involves nonverbal thinking (Mitrović, 2011) in terms of space, volume and shape which we project into material and structure whilst drawing scale plans, sections and details, detailing formwork plans, building digital three-dimensional models, applying building standards, calculating and writing ever more detailed descriptions. It would be possible, yet not plausible, to produce an architectural project entirely made of words and numbers instead of plans and sections. But, no matter how detailed, a project can never fully describe the building which is its final cause. Manifold agents enter the mind—to—hand connection already within conception of any project, and particularly within its construction as the contemporary cyclops take it in their hands. Questions appear along this non—linear way: Which color on a steel cylinder skin would best uncover the hand trace of those unknown agents? Would it be possible in thingness of this tense surface, to preserve a trace of heat involved in its production, the unintentional little imperfections which make it appear the skin of a giant reptile? Or, exactly which shape would show the right measure of shadow on a surface of a solid concrete wall? How to keep at least some properties of the liquid compound before it cools in casting? Can a curtain really be the thingness of a wall? How to substantiate the intended thingness of the project—in—progress into material presence: form, image, appearance, kind, quality, type, surface, semblance, emanation, spectacle, atmosphere? Whilst answering such questions aimed beyond simple materials and techniques, thin layer of glossy paint, specially designed formwork, opacity of concrete, translucency of Proconnesian marble blocks cut this way or another, we discover the thingness and the quintessence of architecture, first, through a project, second, throughout construction, and even afterwards — until the building turns to dust.

Architecture is eminently artificial human enterprise: die Baukunst, the art of building. In *Die vier Elemente der Baukunst*, Gottfried Semper defined the hearth as the first, moral element of architecture with three other elements grouped around it as “the protecting negations or defenders of the hearth's flame against the three hostile elements of nature,” the roof against



Fig. 6: Acanthus, Mali Lošinj, photo: author, 2016



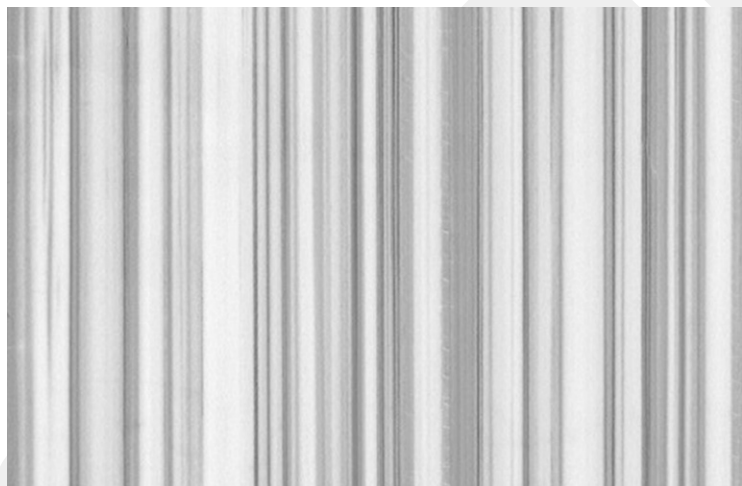
Fig. 7: Flutes in karst, limestone, Mt Velebit, photo © 2016, Tihomir Marjanac

water, the enclosure against air, and the mound against earth, with wild fire now domesticated in the center (Semper, 2011). Architecture is not mimesis of nature, and yet it is subject to natural laws and principles residing somewhere between the mineral world and vegetation: the principles of growth and distribution of loads against its own weight, the principles of resistance to forces of nature, the principles of formation of the earth's crust, mineralization of organic material and erosion. Architecture is eminently archaic, as the dominant epistemologies, pragmatic conditions and techniques may change, but fundamental notions, ideas and principles remain where they have been ever since the construction of the first shelter. Cyclops on the antediluvian construction—field are still there, in spite the ever—increasing mass of standards and rules, recipes and techniques, supposed improvement of natural and artificial materials. Architecture is also eminently thingly. “Architecture, like its great teacher, nature, should

choose and apply its material according to the laws conditioned by nature, yet should it not also make the form and character of its creations dependent on the ideas embodied in them, and not on the material?”, so Semper. Elaborating on the Vitruvian discovery of architecture around the camp fire, he went back to the origins while rejecting antiquarianism, the materialist way of thinking, and the mimesis of nature. To the four elements of architecture he associated primitive techniques, *ur*—crafts, which evolved around them — ceramics and metal works around the hearth, water and masonry works around the mound, carpentry around the roof, and the art of weaving around the enclosure. Thus, he subordinated not only bare materials and techniques but bare purposes too, to the things which constitute a work of architecture: the hearth, the roof, the enclosure, the mound, and consequently the chimney, the corniche, the window, the stairs, the railings, all the way to the smallest fittings and details.

Not coincidentally, that same year Semper first published his *Four Elements of Architecture*, 1851, The Great Exhibition of Industrial Works of All Nations opened, housed in the temporary structure virtually without any mound, roof or enclosure. In *Winter Notes to Summer Impressions*, horrified Fyodor Dostoevsky described his visit to the exhibition in summer 1862. The enormous stream of people, the perpetual event through the first building in modern history built to contain virtually anything, Heaven brought down to earth devoid of any metaphysical content... presented to Dostoevsky a perfect architectural paradigm of the world whose “brotherly fellowship and spiritual unity” were irretrievably broken, as Father Zosima would have phrased it. Since the exhibition building did not have any special name, Peter Sloterdijk assumed that it was Dostoevsky who named it the Crystal Palace, “as it were, immaterialized and artificially temperature—controlled building,” the herald of our time, a perfectly neutral background instead of architecture, and instead of the old world of things the celebration of the new world of events.

Firmly anchored in the world of things, a thing itself made of things, every work of architecture is in opposition to this world of events. For better or for worse, in actual practice this opposition settles in the act of construction, as a project becomes a building: the mound, the hearth, the enclosure, the roof; the actual material, structure and space. In academia, this final cause of a project is usually out of reach. Hence is the most difficult part of our project courses the moment of substantiation of the intended thingness of the project—in—making into the material presence: form, image, kind, emanation, spectacle, atmosphere. Functional schemes and area calculations are of



Figs. 8, 9: IVANIŠIN. KABASHI. ARHITEKTI, Curtain Wall: Fluted Concrete, Proconnesian Marble, 2019

little help here. Floor plans, sections, elevations, digital models, along with the analysis of relevant paradigms and examples suffice in the distribution of uses and the definition of basic spatial relations within the projected building and around the project site. Scale models and mockups, along with three—dimensional images and videos do bring students closer to the actual experience. Yet, only the authorities of well—substantiated contents of project courses and well—chosen project sites may virtually bring students closest to the unscalable final cause. Teacher’s actual experience in construction and ability to transfer this experience along with all other theoretic, “artistic” and “scientific” aspects of architecture is crucial in broaching this end.

CONCLUSION: THE PROJECT BRIEF

The state of the education of future architects indeed is in the bidirectional cause—and—effect relation with the general state of architecture as a profession, discipline, venture, practice and as the actual art of building in the actual present. This actual present has at least three aspects: an ever—changing array of pragmatic conditions is subject to the dominant epistemologies (die Zeitgeist; “the will of the epoch...), together they are subject to the set of fundamental notions, ideas and principles (...translated into space”). Clearly, the pragmatic conditions for the most part concern the practice, and there is no reason to translate them verbatim into the schools of architecture. Any overemphasis into this direction would only intellectually impoverish the future architects. The education of future architects in general and particularly the project courses should concentrate around the second and the third aspects. In any ambitious school of architecture, they do. It is precisely the confusion of the hierarchy of those two aspects which makes the moment of substantiation of the projects—in—progress difficult. As a result of this confusion, the fundamental notions which inform the project are often marginalized and project courses tend to concentrate around irrational “artistic” and pseudo—rational “scientific” issues with technical or humanistic overtones. An overemphasis is put on the verbalization of the “process” and on the “research” but without much interest in the final cause and any clear idea what can be classified as the project—related research which would eventually contribute to the final cause. In the most extreme cases, students are taught how to speak, behave, and even think in certain ways instead of how to solve architectural problems. With nostalgia for good old times and uncritical enthusiasm for new trends, especially those coming outside the realm of architecture, i.e. with the elevation of the current epistemologies to the position of the fundamentals, the species gets lost in an ocean of words and concepts — the dead end. “Instead of beauty — branding,” instead of Ovid’s *Metamorphoses* — Google Translator and Google Search, instead of site visits — Google Earth.

How to guide the studio projects beyond the banality of mechanical problems (is the project sustainable?), historical reference (is the project new and different?), and vague concepts (what does the project stand for in social, political and whatever other terms?)? In other words, how to communicate the thingness of architecture to students of architecture immersed into this ocean of words and concepts?

The ideal project brief which would surmount the ocean of words and concepts and explain the natural principles inherent



Fig. 10: Peter Paul Rubens, Head of Medusa, 1617

to works of architecture could be described as: (1) closer to place than to program, with the scope of place extended beyond the immediately visible, (2) archaic but not primitive fostering thus the interest into questions of architectural practice beyond the bare techniques, (3) that which puts the fundamental architectural notions such as form, volume, structure, material, space in the center of interest pertaining thus to the world of things instead of the world of events, and (4) relating the mind to the hand — the sublime myth to the everyday practice. The pre—archaic world was surrounded by the circular river Ocean, the brim towards the darkness inhabited by horrifying creatures. In the climax of his myth, Perseus had to fly westwards beyond the stream of Ocean in the frontier land towards Night and decapitate the chtonic monster who used to be a beautiful woman — the triumph of faith, hand and mind over schizophrenia, vanity and darkness. His bravery in the name of wisdom was justly rewarded with the permanent place up there in the starry firmament. In the happy conclusion of her myth, his sister Persephone divided the seasons between the mineral and the vegetative worlds governed by the natural principles of growth and weathering, composition and decomposition, which govern the world of architecture as well:

*“But Jove (with equal justice to his brother
And to his stricken sister) cut the cycle
Of the revolving year; and for their claims
Six months to each, with Proserpina goddess
For half the year on earth, the other half
Queen with her husband; then at once her face
And spirit changed, for even dark Death noticed
A weary sadness spreading through her veins
Now changed to joy; who, like the sun when held
Behind grey mist and rain, now showers down
His light through clouds and shows his golden face.”*

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The Hidden Spaces of Everyday Life: Learning from the Quotidian

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KEYWORDS

everyday, architectural education, place,
mapping, narrative, transformation

The paper explores the notion of the 'everyday' in architectural education through the examination of six educational and research projects from the academic institutions of the authors in respectively Istanbul, Turkey and Aarhus, Denmark. The paper unpacks how the projects engage with topics of the everyday in various ways. A comparative analysis orders the projects according to how specifically they address particular everyday situations and to what extent they aim to transform the spaces and social interactions of the sites they engage. The analysis is contextualised through social and architectural theories of the everyday by among others Henri Lefebvre. The conclusion argues for the importance of continuous re-engagement with the everyday for architectural education.



INTRODUCTION

A comparative study of teaching and research projects forms the foundation of our answer to the Zagreb EAAE 2019 Annual Conference. The projects originate from Istanbul, Turkey and Aarhus, Denmark, where we are academically engaged. We set out looking for ‘the subliminal quality of architectural education’ addressed by the call by attempting to identify particular ways of engaging with architectural topics or contexts beyond what an academic curriculum or an architectural assignment can describe directly. We looked for concepts or methodological approaches that would enable us to map out relations and trajectories beyond the specificities of the individual studio or research project.

This search turned out to be a challenging task. The projects we examined vary in many ways. They stem from different contexts. One line of study projects originates from the metropolis of Istanbul. A city with a deep and complex history, culturally layered and characterised by rapid urbanisation. Another range of projects originates from the context of Aarhus a comparatively small town in the western part of Denmark. From the perspective of Istanbul, Aarhus might appear as a quiet and ordered place with modest and manageable urban and architectural problems and challenges although the thoroughly regulated planning (post-)welfare society occasionally challenges architectural creativity. The projects, originating from the two locations, address the context in different ways responding to the unorganised in-betweenness of Istanbul or the well-organised planning of Aarhus. The studio and research projects reflect our various roles in architectural education. The Turkish examples stem from the bachelor and master education, including international workshops as well as a research project by one of the paper’s authors. The Danish cases are all carried out by PhD students. We aligned very diverse projects to plot trajectories of ideas and concepts through them. What appeared to us after some shuffling around was a common interest in learning from everyday life.

Interests in overlooked, ordinary and pragmatically organised spaces and events characterised the projects we selected. We wanted to focus on how these spaces and events outside, in the margins of, or even in opposition to, conventional architectural awareness and intentions provide a continuous source of architectural discovery and learning. After examining the teaching and research projects, we attempted different ways of organising them to highlight possible relations and shared interests. We discussed whether it might make sense to classify them according to design intent, design methodologies, or to scale. Finally, we decided that it would make the most sense to abandon the

idea of organising them according to a single overarching theme. Instead, we chose to present them like pearls on a string based on locally shared concepts or methodologies. It is important to stress that the linking is our reading of the projects using the everyday as a lens and an educational perspective. We make no claims of unpacking the projects in their totality and cherry-pick topics of relevance for the paper's discussion. The alignment of projects is a provisional tool that allows us to organise a path through several very diverse projects that will enable us to establish a more structured discussion of an architectural engagement with the everyday in an educational perspective.

PROBING EVERYDAY SPACES

The PhD research of Espen Lunde Nielsen directly address the everyday as stated in the title of the dissertation *Architectural Probes of the Infraordinary: Social Coexistence through Everyday Spaces* (2017). Nielsen researches the everyday informal

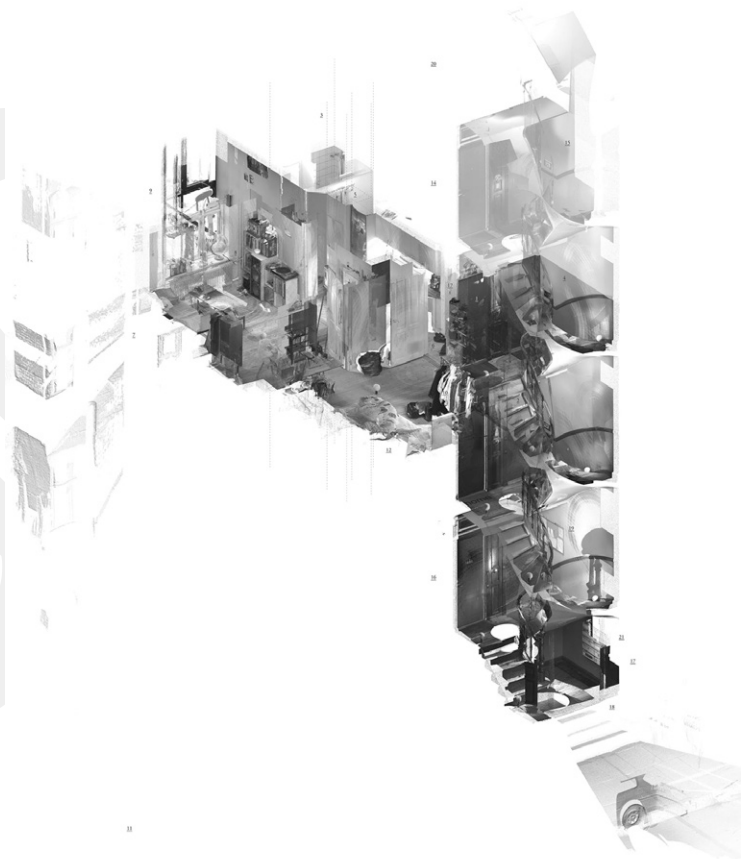


Fig. 1

spaces such as stairways, the laundry, or the fast-food place. He explores the role of these neglected spaces in social coexistence and exchange. The portraiture of such spaces in literature, film and other art forms inform the research. It displays a deep fascination with the spaces as they exist, and the research does not show any overt ambition of changing or improving them. The work appears instead to be informed by adoration and perhaps a touch of nostalgia for these quiet, overlooked and slowly disappearing spaces. It celebrates the importance of the unplanned and unpretentious in-between. As part of his research practice, Nielsen designs and constructs appliances that record and document



Fig. 2

spaces. The devices may be a door spy camera or a hot-dog stand surveillance camera that records and prints an image on a thermal strip every time a customer makes a purchase. The meticulously crafted apparatuses are far more than passive tools of documentation. They become autonomous works of art that enter into complex relationships with the everyday spaces they record and becomes part of critical practice.

NAMING EVERYDAY LANDSCAPES

Katrina Wiberg's PhD *Waterscapes of Value: Value creation through climate adaptation in everyday landscapes* (2018). She examines the necessary climate adaptations of towns that result from increased precipitation caused by climate change to discover the potential for urban design that the adaptations might hold. The research project engages the topic through multiple methods, but in the context of this paper, we chose to focus on the mapping of 'The Wet City'. This name refers to the wet or frequently flooded areas of a city concealed behind place names, contour maps and watersheds. Industrialisation introduced drainage and sewer systems that made these areas habitable. The distinction between wet and dry regions does, however, become relevant again as increased rainfall due to climate change overloads the drainage systems and leads to renewed flooding of the previous wet areas. Wiberg explores how toponyms already embed information about flood-prone areas through their reference to the presence of water such as 'moor', 'brink', 'brook' and 'spring'. The rediscovery of this common collective knowledge of the landscape is mapped onto geodetic maps to contribute to contemporary engagement with flood-prone cities.

HUNTING FOR EVERYDAY SPACES

The research paper *Social Media as a Source of Design in Architecture* by one of this paper's authors maps everyday experiences somewhat similar to Wibergs' (Akin, N.E. and Dagdelen C, 2019). The research discusses how social media posts can become a tool for collecting everyday observations and experiences of numerous users. The shared SoMe posts are distributed on graphical maps based on geotagging to discover urban areas of particular interest for urban improvement or development. The central concept of the research is to tap into the collective knowledge of inhabitants. The aim is to uncover detailed information about space that will provide input to the decision-making processes of artists, architects, entrepreneurs or local authorities to better meet the existential needs of people living in the city. The research proposes that the

classification systems developed by Christopher Alexander in *A pattern language: towns, buildings, construction* (1977) might serve as a starting point for sorting information and identifying relevant domains and areas for the SoMe-driven ‘spatial hunt’.

TRIGGERING EVERYDAY SPACES

The *Network Architecture City* 2015–16 Spring Semester Elective course at the Istanbul Kultur University Department of Architecture is another example of employing digital technologies to engage with the everyday. The design studio supported the development of architectural design practices that can improve city life. The studio explored this through a focus on the repetitive activities of everyday life within defined urban areas. It offered an opportunity to investigate the dynamics of the city, create maps, identify problems and produce innovative solutions. The solutions aimed at improving urban life and social interaction through information technology and social media rather than through the design of buildings. Students were asked to develop concepts for apps and writing projects that were ready to apply for funding to start a practice. Mustafa Enes Çiçekçi’s *Water network* is one of the resulting projects. His project proposes to reactivate the historic water fountains distributed all over Istanbul. The project designs an app that makes users aware of nearby fountains and reminds them to drink water. The fountains have been redesigned to require several users to collaborate in activating different levers to release drinking water. The physical and digital design simultaneously address health issues, historical awareness and social interaction by inviting citizens to join playful everyday activities.

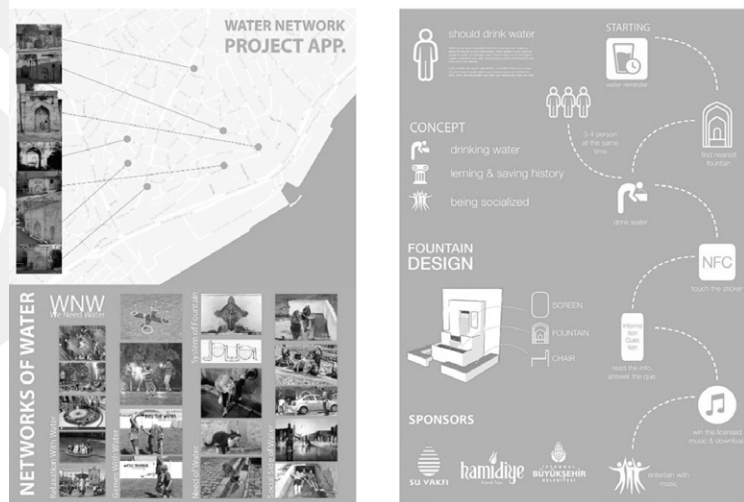


Fig. 4

THE NARRATIVES OF EVERYDAY SPACES TRANSMUTATION

Istanbul also forms the context of the *Network Architecture City* workshop, which was an international ERASMUS-funded interdisciplinary study of urban patterns. Orhan Pamuk's novel *The Museum of Innocence* (2010) and the museum of the same name formed a starting point for the workshop. The museum is located in Çukurcuma in Istanbul where the novel also takes place. The museum exhibit objects collected by Pamuk in the 1970s. It weaves tangible everyday objects intimately together with the fictional love story of the protagonists Kemal and Füsun in the domestic and public spaces of the Çukurcuma. The students of the workshops were invited to explore the city and make an architectural survey of the traces and patterns of everyday life as it unfolds in the area. Dilan Celik, Eline Billiet, Marije Ruisrok and Eszter Barna responded to this invitation by exploring the worlds hiding behind the facades of the buildings of Çukurcuma. They were looking for differences in the life lived in the individual apartments as well as the contrast between the inner domestic life and the outdoor street life. Interviews with local inhabitants uncovered personal stories that influenced the design. Large drawings of the interior spaces mounted on the public facades formed the final presentation. They offered a glimpse of the richness of the secret inner lives of the city to the passers-by.



Fig. 5

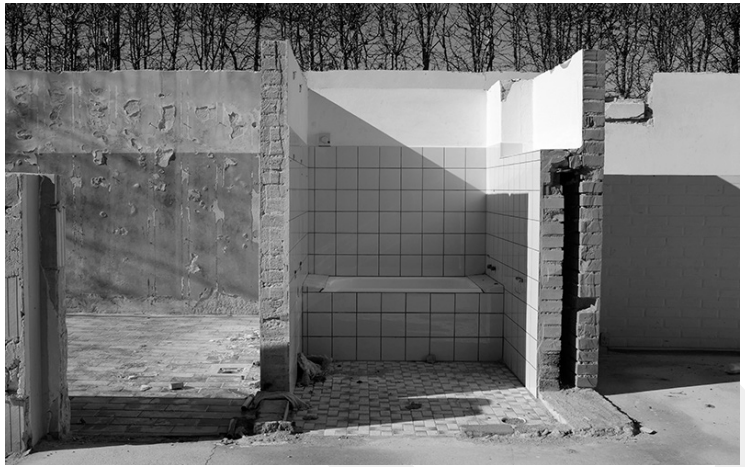


Fig. 6

THE TRANSFORMATION OF EVERYDAY SPACES

Mo Michelsen Stochholm Krag's PhD *Transformation on Abandonment: a new critical practice?* (2017) carried out research on the change of peripheral areas in small urban communities in Thy in the western part of Denmark. These communities are subjected to migration towards the denser urbanised eastern regions of Denmark, which leaves behind abandoned and decaying urban areas and buildings. Currently, authorities respond to this development by tearing down the abandoned houses, and the empty plots remain as scars in the urban fabric. Krag challenges this practice by developing alternative ways of engaging the problem. The houses scheduled to be demolished are torn down partially, cut up and left behind as sculptural ruins. The demolitions are carried out by students as part of teaching workshops, which allows the students to 'design' the ruins, experience traditional building techniques and enter into dialogues with local inhabitants who are invited to share memories of the place through theatrical installations and citizen meetings. Krag enters into dialogue and document the citizens' responses and interactions as part of his research on contemporary engagements with architectural heritage.

TWO SHARED TOPICS ACROSS THE PROJECTS — THE PARTICULARITIES AND THE TRANSFORMATION OF THE EVERYDAY

When we examined the diverse group of projects more closely, we identified two themes addressed explicitly or implicitly by the projects. The first theme relates to the particularity in

engaging with the everyday. Some projects are interested in the specific character of a particular site and its users as they unfold in the everyday. Espen Lunde Nielsen's imaginative apparatuses meticulously capture and document the detailed in-between spaces of everyday life. The Network Architecture City workshop similarly engage in the individuality of the daily life of the inhabitants in Çukurcuma — whether they are real or fictional. Both projects employ narratives as an architectural tool to explore the hidden, forgotten, or even imagined and dreamed up stories of social relations and spatial patterns. They adopt narratives as an architectural tool as it provides a more relatable structure to singular events.

Other projects are more interested in extracting generalised information from the myriad of activities and interactions of individuals engaged in their daily lives. Wiberg focuses on the hidden waterscapes of the city revealed in toponyms. Akin et al. analyse social media and big data to uncover concealed preferences of urban inhabitants. They are both occupied with the collective intelligence arising out of the manifold and commonsensical engagement with the everyday and not least how it can be mapped to inform future architectural design and planning processes.

A second theme relates to how the projects engage with the everyday. Some projects appear content to observe and document the everyday without any explicit intention of transforming it. Nielsen's probes celebrate the everyday spaces but make no suggestions for alterations or improvements. Perhaps, the fascination with these lived-in spaces relates exactly to their existence outside the domain of architectural design and order? Wiberg and Akin's research does also not point to specific changes in the everyday but from another perspective. They are less concerned about celebrating the everyday and instead takes it as a starting point for mappings that lay the ground for future transformations based on further interpretations. Other projects aim directly for change and improvement. Krag's project is an example of the latter. The partial demolitions of buildings engage, and perhaps even provoke, the local inhabitants. They are challenged to face the demographic and spatial changes in their urban context. Still, they are also encouraged to share their memories and build a renewed collective understanding of their village. The *Water Networks* project employ a somewhat similar strategy. Istanbul's inhabitants are invited to form new social relations and deepen their public awareness as they engage collectively with the city's historic water fountains.

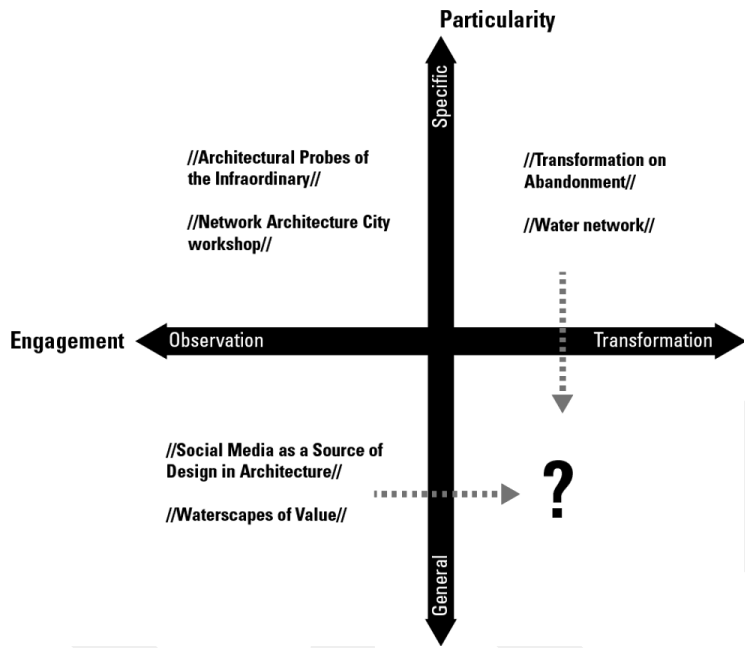


Fig. 7

We can place the six projects in a diagram with four quadrants reflecting the two themes: engagement and particularity. Nielsen and *The Network Architecture City Workshop* takes up the first quadrant due to their focus on their study of specific everyday spaces through observation and narratives. The projects of Krag and Çiçekçi also engages with specific everyday spaces but actively seek to transform buildings and social behaviours. Akin and Wiberg map general aspects of the everyday through observation without proposing immediate transformations of these spaces. None of the projects is placed in the fourth quadrant of projects aiming to transform the everyday on a general level. We might, however, speculate that the mappings of Akin and Wiberg would help inform architectural design that would lead to transformations of the everyday on a more general level. Or that the specific transformations of Krag and Çiçekçi might form models or precedents that would have a widespread impact beyond the engagement with a particular building.

CRITIQUE OF EVERYDAY LIFE

In a broader perspective, we can align these findings to the discussion of the everyday as it has unfolded since the mid-twentieth century. This discussion originates in Lefebvre’s ‘Critique of everyday life’ (1991 (1947)) followed later by ‘The Production of Space’ (1991), but also unfold in Vaneigem (1983 (1967)), De-

bord (1991 (1974)), and de Certeau (1980). In Lefebvre, we find an understanding of the everyday as more than the ordinary and trivial occurrences of uneventful daily life. It is an ideologically charged field always under threat of being subjected to commodification and control by commercial and political interests who wish to pacify the population. As a consequence, the everyday also holds potential for freedom through rejection and resistance to the normativity of mass culture.

More recently, the engagement with the everyday resurfaced in the late 1990'es. Books like 'Architecture of the Everyday' (1997) edited by Steven Harris and Deborah Berke makes a plea for an architecture that is emphatically un-monumental, anti-heroic, and unconcerned with formal extravagance. 'Everyday Urbanism' (1999) by Margaret Crawford and John Kaliski argues against the aesthetic concerns of 'New Urbanism' focusing instead on the specific activities of daily life. The authors propose an empirical approach that strengthens unnoticed existing situations and experiences that occur in everyday life. Crawford and Kaliski are interested in the concerns, activities and visual cultures operating on the outside of the prevailing norms of architectural culture.

We see a resonance of these discussions in the projects discussed above. Their different foci and methods enter into cautious and nuanced engagements with the everyday. They demonstrate an awareness of the everyday as a charged field. This field holds the potential to inform and qualify architectural design and secure its relevance to the needs and interests of its users. But also, an area that architects should approach cautiously in order not to overdesign and determine the use of space, leaving little freedom to its users.

THE HIDDEN SCHOOL OF EVERYDAY

The everyday is certainly not hidden due to lack of attention or awareness. It is also not absent from architectural curricula as the examples show. But the everyday provides a hidden, subliminal quality to architectural education as an open invitation to engage and re-examine its charged field. It allows students to question and define the purpose of architecture in curious encounters with everyday lived life, whether it focuses on understanding, housing, or empowering its users. The discussions of the everyday include questions of authorship and inclusiveness: who are designing and for whom. But also, of the limits and boundaries for architecture. Should architecture attempt to support the intimate details of everyday life or instead provide open frameworks for the unfolding of individual needs and expressions? It also encourages students

to develop new methods and tools. The most relevant architectural response to everyday life space might not always be the design of new buildings. It might lead to other forms of expression, different outcomes as alternative forms of solutions to an architectural approach to urban problems. Maybe it is better to destruct in meaningful ways than building? Perhaps the design of an app that helps ease life in a rapidly growing metropolis is more relevant than an architectural design? Maybe there are insights to be gained from concepts and approaches from other fields outside of architecture like art, literature, politics, activism or performance?

This drive to discover and include what is not part of architecture might still be considered as a hidden aspect of architectural education. It may be straightforward to encourage the curiosity of students and ask them to look for new ways to understand and reformulate architectural relevance and programs. Still, it is far more challenging to create space for the unpredictable outcomes of this curiosity in an architectural curriculum. It might happen through particular studios or electives driven by inspired and motivated supervisors, or it might arise as bottom-up initiatives from students that criticise a perceived lack of relevance of their architectural education. It might happen through meticulous observation of the surroundings or by engaging the dreams and desires of users. In any case, the hidden aspect of architectural education relates precisely to the need for constant discovery and critic of existing ways of understanding architecture.

APPENDIX

The study project *Network Architecture City (NAC)* was an Intensive Program project which was supported by the European Union/ERASMUS program for the 2012–2013 academic year. Forty students and 10 teachers attended from the Technical University of Delft, Sint Lucas University, Pecs University and Istanbul Kultur University that acted as host. Third and fourth-year BA students participated. Participants: *Istanbul Kultur University, Turkey (host)*: Esra Fidanoglu (Project Leader), Gonca Arik. *The Technical University of Delft, The Netherlands*: Susanne Komossa, Nicola Marzot, Alper Alkan, Jorge Mejia Hernandez. *Sint Lucas University, Belgium*: Tomas Ooms, Johan Verbeke. *Pecs University, Hungary*: Bálint Bachmann, Tamás Molnár.

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The educators and the educated, the program and the places are agents of the educational process. How do they interact, and how does this interaction induce learning? In what way does formal education organize and manufacture these interactions? What happens when students become teachers, or places become content? What are the tacit examples of informal learning? In what way do informal educational experiences foster expanded study and bring benefits back to school? What examples of informal learning are individual, collective, supra-institutional or institutional? What is the role of accessible media or open-source communication platforms in manifesting the hidden school?

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The Process

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A Design-Build Experience: Kilyos Boathouse

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KEYWORDS

design education, design-build studio, hidden curriculum, learning by doing, horizontal learning

As a part of the stated curriculum of MEF University Faculty of Arts, Design and Architecture, Design and Build! Studio (DBS) is a compulsory summer programme for students completing their first year in architecture and interior design. Within the framework of Design and Build! Studio, the school communicates its set of values through emphasizing learning by doing, horizontal learning and underlining the process. This paper discusses how a design-build studio can be a distinctive hidden quality of an architecture faculty through the case of Kilyos Boathouse project conducted in Summer 2018.



BACKGROUND

Design studio is established as a norm in design education to the extent that it now imposes nature of instructor-student regardless of the content of the education. Even though it amplifies well accepted learning theories such as learning by doing (Dewey, 1938) and reflection in action (Schön, 1985); design studio legitimates hierarchical social relations (Dutton, 1987) and falls behind in engaging real-life situations. Design-Build studio (DBS), on the other hand, is distinctive from a typical design studio in its engagement of real clients in real-time settings (Sara, 2004; Hinson, 2007; Anderson and Priest, 2012) and is regarded as an asset to address the missing content in architecture education (Morrow, 2014; Harriss, 2015). For this reason, design-build studio is considered as a pedagogical alternative (Canizaro, 2012) for extending the institutional confines of the design studio (Anderson & Priest, 2012).

In architecture schools, educators act consciously to structure knowledge and practices in hidden ways while recognizing the stated curriculum. Learning by doing, horizontal learning and underlining the process over the final product could be a few examples for these hidden ways. Dutton (1987) describes this as ‘hidden curriculum’ referring to unstated values, attitudes, and norms which stem tacitly from the social relations of the school and classroom as well as the content of the course. Design-Build studio also has the potential to connect this diversity of unstated values, attitudes, and norms that are unevenly scattered along the undergraduate study.

While design-build studio is a widely used pedagogic means, these distinctive hidden qualities are not discussed thoroughly in literature. Motivated by this, we aim to develop a better understanding of the topic through a design-build studio case and specifically address the following question: *How a design-build studio can be a distinctive hidden quality of/in an architecture faculty?* While addressing this question, the paper investigates the ways through which design-build studio becomes a pedagogical alternative and structures different components of design education. The focus will be on the perspective of the students and tutors, to reveal how DBS empowers them to restructure conventional ‘hidden curriculum’.

To explore these questions, a design-build studio setting was observed by the authors as a ‘living laboratory’ for five weeks in Summer 2018. Following an overview of how design-build studios at MEF University Faculty of Arts, Design and Architecture are operated as a pedagogical practice, the second section introduces a design-build studio case to show how it addresses the missing content in design education. The third section discusses

the hidden qualities of a design-build studio and the soft skills that students acquire in a DBS. Semi-structured interviews that are conducted with four students involved in the project will be one of the bases for the critical overview of the ability of the design-build studio to be a pedagogical alternative. In these last two and conclusive sections, the paper scrutinizes the further possibilities of the design-build studio to be a core tool to structure different components of design education.

DESIGN-BUILD STUDIO AS A PEDAGOGICAL PRACTICE AT MEF FADA

At MEF FADA¹, design studio is prioritized with an intensive course load of 12 hours a week and is regarded as the core of education where students are encouraged to learn by doing and experimenting. In parallel with this, Design-Build Studio (DBS) is one of the primary pedagogic means that communicates the central values of the school as early as the first year of undergraduate studies. DBS extends this environment beyond the boundaries of the school and provides a new setting where students exchange knowledge and knowhow, develop skills and form an alternative vision of the professional practice. Within the DBS programme, students are introduced to the construction site for exploring materiality and tectonics through hands-on experience. Moreover, they raise awareness of place, climate and local culture while they are dealing with the challenges of an architectural project.

The programme is scheduled at the end of the first-year studies as a summer school for valid reasons. DBS projects are not integrated into regular design studios even though most of the faculty members take part in the organization. This makes it impossible to be run simultaneously with the stated curriculum. In addition to this, a majority of the projects require working outdoors and good weather conditions. However, the necessity of working during summer term limits the design and construction process which then eventually limits the scale and complexity of projects. The limited scale and complexity of projects fit the first-year students' level of knowledge and prepares them for the second year education.

A committee of faculty members serves as the liaison with clients to secure the design-build projects before the summer program begins. The lack of experience of the first-year students for setting up a project themselves is making faculty

1 MEF University Faculty of Arts, Design and Architecture <http://fada.mef.edu.tr/en>

members responsible for this. Moreover, a comprehensive consideration of various design build projects is necessary to match the scope and scale of projects with the number of the students and the available construction equipment and hand tools of the faculty.

Due to the uniqueness of each project and the relationships between MEF and its partners, it is hard to come up with an encompassing scheme of partners. Nevertheless, tutors and students get involved with clients and partners from diverse backgrounds through several meetings before, during and at the end of the project. In parallel with these, students are responsible for having preliminary research about their project theme and being ready with their tools and work suits on the first day. From that point on, tutors, students and clients/using community work together for developing the brief, budget and design which then followed by on-site construction by the students with the feedback from the tutors and the client.

DBS projects pursue public interest and are usually carried out with clients such as public authorities, public schools and NGOs. Projects usually last three weeks that cover a week for developing the brief and design, and two weeks for the construction. In each project, roughly fifteen students and two tutors take part for building usually a small scale timber structure in various spatial contexts such as playgrounds, bridges, classroom interiors, pavilions and shades. Projects take place either in small towns and villages in Anatolia or Istanbul. There are also some projects conducted with international collaborations in Yerevan and Gazimagusa.

Collaborators sponsor the projects in several ways. First of all, MEF FADA provides woodworking tools, equipment and logistics alongside the design service and construction labour by the students; second, clients provide material supply, accommodation and food where necessary; and third, industry partners offer services for complex construction processes such as piling or deep foundation.

The programme starts with a briefing about the health and safety risks of a construction site. At the beginning of each project, all students join a training session for operating woodworking equipment and tools. High-risk woodworking tools such as table saw and circular saw have limited access for the first-year students, which are either operated by the tutors or experienced student assistants. On the other hand, first-year students develop hard skills to use machines such as jigsaws, drills, electric screwdrivers, and basic construction tools such as spanners, screwdrivers and handsaws after their training session.

Unlike a typical design studio, there is no individual performance assessment at the end of a DBS. Students fail only if

they do not attend to the programme or have a disciplinary situation. Instead of individual assessments, a public celebration becomes the climax of the successful completion of the project.

The following section introduces the Boathouse Project as a case to discuss how design-build studio structures different components of design education. Following diverse design build projects — namely playground, bridge, hub for hiking trail, viewing deck — Boathouse was a project by FADA that is closest to the definition and scope of a building in the conventional sense. Accordingly, it required a larger workforce and a longer construction period with a higher number of work-items. Unlike a typical DBS, the project is conducted in two shifts (35 students in total) in an extended period of 5 weeks.

A DESIGN-BUILD STUDIO CASE: KILYOS BOATHOUSE

The Boathouse project is designed and built at Kilyos Beach in Istanbul for Bogazici University Marine and Sailing Club² to store their equipment such as small sailing catamarans and windsurf boards while providing a space for club members to gather. The Boathouse project is part of the 2018 Design and Build! program and completed between 18 June–21 July 2018. Thirty-five first-year students, four experienced student assistants and three tutors designed and built the project for five weeks with the support by Bogazici University for materials and accommodation, ZETAS³ for groundworks, and TORID⁴ for timber supply. In addition to this, Bogazici University Marine and Sailing Club members provided voluntary support for logistics. The Boathouse is awarded both for the Turkish Architecture Yearbook 2018⁵ and Project Awards for Architectural Students⁶ in Turkey.

2 Bogazici University Marine and Sailing Club,
<http://www.sailing.boun.edu.tr/>

3 ZETAS (ZETAS Foundation Technology Inc.)
<http://www.zetas.com.tr/index.php?dil=EN&id=0>

4 TORID (Turkish Association of Forest Products Industrialists and Businessmen) <https://www.torid.org.tr/>

5 Turkish Architecture Yearbook is an annual selection of professional architectural projects distributed by Arkitera Architecture Center <http://www.arkitera.com/haber/turkiye-mimarlik-yilli-gi-2018-icin-secilen-projeler-belli-oldu/> <http://www.arkitera.com/proje/kayikhane/>

6 ArchED Association for Architectural Education,
<https://www.mimed.org.tr/>



Fig. 2: a team of students discussing the design of the facade with the tutor



Fig. 1: meeting to discuss and organize the design process



Fig. 3: students presenting their design in a formal meeting



Figs. 4-6: view of the construction site from north, east and south





The project site is located in a small valley hosting endemic sea daffodils at Bogazici University Kilyos Campus in the northern coast of Istanbul which is widely known for its northeaster wind and serious rip current. While the site characteristics allow training activities for sailing, it also poses a danger for inexperienced swimmers. Nevertheless, the area is a popular weekend attraction for Istanbulites. This unfamiliar working environment contrasting with its features provided a new experience to students for growing away from the formal setting of the design studio and confronting with a real client in a real-time setting. Students also remarked that this confrontation helped them to realize the limitations of a real construction site that they have not considered before.

The Rectorate of Bogazici University provided accommodation for the students and tutors, and storage for construction materials and equipment. This allowed students to save time for accessing the site and to develop better communication with others. Students and tutors stayed in shared dormitory rooms and followed the regular eating hours for breakfast, lunch and dinner which eventually regulated the working shifts. The morning shift was starting at 08:30 until 12:30, afternoon shift was from 13:30 until 17:00, and the final shift was starting after dinner at 18:00 till sunset around 20:00. These shifts were overlapping with the necessities of the limited timeframe and allowing an intensive design and building process. Students underlined the significance of this intensive working process for helping them to leap forward in their learning experience.

Working spaces were allocated for material and equipment storage, model-making, drawing, presentations and meetings aside from the construction site. During the construction phase, these spaces transformed into a studio for design development and a woodshop for manufacturing building elements since the beach conditions were not suitable for woodworking. Due to the publicly accessible location of the construction site, equipment and materials were installed and collected every working day for security reasons. Furthermore, voluntary club members joined the students every morning for setting up a shade tarp over the construction site by using their sailing skills. These arrangements helped students for adapting a working discipline and taking responsibility at the worksite as well as collaborating with the client for performing the worksite routines.

The project is funded by MEF University for the logistics, tools and equipment, and Bogazici University for the accommodation, materials and supply. Building materials for the timber structure are donated by TORID. During the design phase, Bogazici University Civil Engineering Department provided static project consultancy. None of the building phases

was subcontracted to professional teams except the piling phase in the first week. ZETAS Foundation Technology offered a free service for this complex construction process. Working together with operators, donors, collaborators and contributors helped students to understand the complex phases of an architectural project besides designing and building.

Location, scheduling, working arrangements, financing and partners of the Boathouse project are elaborated above to identify the general setting. In brief, this setting provided a confrontation with a real client in an unfamiliar location and required working in collaboration with various partners within intensive work conditions. This setting accommodated both challenges and opportunities during the design and building processes.

DESIGN PROCESS: CHALLENGES AND OPPORTUNITIES

As revealed in the preceding sections, the complexity of the process and setting of the design build studio is a fertile ground to create a pedagogical alternative to the conventional practice of design studio. Architecture education usually stays away from reality's normative pragmatism, while architectural practice was constrained by necessities of regulation, organisation and control. It creates an enduring gap between education and practice (Dodd, 2015). As this paper and the research on design-build studios demonstrate, they bridge this gap by addressing the missing content and constraints in architecture education (Morrow, 2014; Harriss, 2015). Moreover, as the Boathouse project demonstrated, design-build studio is invaluable environment to convert these real-life settings into a controlled and cooperative design process that can assess the successes and failures of design education in real life. Regarding the validity of the education, the feedback from professional practice is hard to get. DBS is a unique and manageable opportunity for the tutors to observe real-life consequences of their educational choices. Boathouse project provides a reflection on introducing the soft skills to real-life design process and ensuring strong engagement of the students.

The brief of the Boathouse requested space for the equipment and modest social activities of the Sailing Club. The vagueness of the brief constituted a challenge and opportunity. Club members presented their needs and introduced their equipment as a design brief to the extent that it predefined the volume and specified the climatic conditions needed to store the equipment but fell short of defining the social use of the space. Thus, negotiating the requirements of oversized equipment, limits of available construction materials, and vagueness of the social functions of the boathouse was the

initial and main challenge. At this stage, the participatory design was instrumental to adopt soft skills in a sophisticated design process. Participatory design was an intensive process lasted for one week at the beginning of the DBS programme. Both of the student teams (35 first-year students in total) were present alongside the student assistants, tutors and the voluntary club members. Students were divided into four teams led by the student assistants and prepared their design proposals to present. In the presentation session, everyone has had a say. Proposals were then discussed with the club members and voted for a decision. One of the proposals was selected to develop further with the participation of all teams.

Based on students' comments on interview questions, working together with others and closely with the tutors boosted their self-confidence in conveying their opinions to a wider audience. Students are conscious of the benefits provided by this experience for their professional careers and the project. Students remarked that they were eager to develop it further together by feeling a greater responsibility to something beyond themselves. Resulting from the participatory process, all participants embraced the design decision. They took the project seriously and were more motivated to complete the work compared to their regular individual studio projects.

The dynamic form of the boathouse demonstrates the fruitful outcome of the design process that negotiated practical constraints and design concerns. The design consisted of two masses that are in harmony with the natural topography and local climate. Two attached masses pointing the coast, are designed for storing larger equipment like mini catamarans, pole; and smaller equipment like windsurfing boards, kiteboards in each one. The dimensions of the masses are determined by maximization of their storage capacity. Accordingly, the interior is designed for the changing needs of the club to provide a flexible capacity of interior space. Practical solutions such as detachable steel bars that store the mini catamarans allow the larger body of the structure to become a single volume. While managing these constraints and concerns within the masses, design of their exact form and relationship created room to debate architectural concepts of balance, rhythm, and composition as in design studios. With a dynamic gesture masses of the design gravitate to opposite directions and recalls the enthusiastic and active nature of the newly established club at the university. As the large mass stretches towards the sea, it defines the deck and open spaces for social activities. Similarly, the façades of the masses are designed with a limited range of materials: plywood, transparent and metal deck sheets. Differences in materials

and textures separate the two masses of the overall design from each other. The permeable façades of the design let the strong prevailing winds pass through, lets the sunshine in, and provide comfort conditions in the interior.

In an extraordinary way, the collaborative design of the boathouse was shaped by the debates of a large group of 35 students. The debates were the venue to talk to peers and clients about all aspects of design. These were unique occasions that empower students to articulate their ideas in the complexity of a real-life scenario but out of the mainstream narrative. That is invaluable in an architectural world dominated by star architects. As our interviews reveal, the ability to accomplish for public good becomes a milestone for the students towards becoming socially responsible designers qualified with the necessary soft skills.

CRITICAL REFLECTIONS

Interviews revealed that there are distinctive thresholds in architecture education which can be observed through the (soft) skills students acquire. Based on the responses of students, these thresholds are categorized within the study years. For instance, the first-year education is linked with understanding the conception of architectural design ideas and imagination; the second-year is related to engaging in the development of technical and conceptual processes simultaneously, and the third-year is associated with developing a capacity to work with limitations in complex design tasks. In addition to these, students remarked that DBS has a unique position for helping them to build self-confidence in conveying their opinions and taking initiative, to work together as a group, and to adapt intensive working conditions. These reported soft skills are linked to the pedagogical goals of the project, which can be named as learning by doing, horizontal learning and underlining the process.

The first pedagogical goal of the project is learning by doing. Direct engagement enables learning through several processes, and the design-build studio is a relevant setting to enhance them. In this context, students grew away from the formal setting and relocated in an unfamiliar context to confront a real-world subject. They were responsible with developing a fully-fledged design proposal, making presentations to communicate with the client, keeping working setup in order as well as the building site, tracking material supply, and building the design in a limited timeframe. Students used woodworking tools after having health and safety training and they undertake the shared work items as workgroups each day.



Figs. 7-8: students building

Fig. 9: interior view









Figs. 9-12: exterior and interior views of the building

The second goal of the project is horizontal learning. Instead of delivering top-down instructions, educators' position was ruling out the hierarchy by working, living and making decisions together. In this sense, the working setting was an extension of the studio culture, including sex equality among work sharing, team set-up, and dedication to the project. Moreover, each student was responsible for their work items as well as they were responsible for the whole group. Student assistants were exchanging their experience and knowledge with the first-years while they were sharing the responsibility. They were learning from each other.

The third goal is to underline the process over results of the project. Within a limited timeframe and limited experience, the process is always emphasized considerably more than the final product. In this context, openness was one of the crucial characteristics that led to a direct dialogue with the client through a series of meetings with the Sailing Club members for developing the design together. During the building phase lasting four weeks, several adaptations were made as responses to challenges and opportunities.

Besides these pedagogical aspects, students noted that they spent their after-work hours for exchanging their past experiences and future expectations with their peers. These conversations, as they stated, created a sense of belonging to the school community and the field of architecture as early as their first year. This sense of belonging is also enhanced by extracurricular accomplishments such as working as interns in recognized architectural offices. They consider their design-build studio project as an asset within their portfolio for initiating these internships. This kind of professional validation can also be a signifier for the success of an architecture faculty and a motivation for the students and graduates.

It is important to admit the limitations encountered during the Boathouse project even though a coherent and comprehensive outcome was aimed for the study. Firstly, designing and building tasks in detail level were too complex for the first-year architecture students. From time to time, their limited skills and knowledge was a barrier for understanding the project holistically. Secondly, climatic conditions were challenging such that there were day-long breaks. Thirdly, late arrival of the fundamental building materials caused delays for initiating the construction. This situation restricted students' engagement during the building phase within the first group.

To conclude, the design-build studio is one of the central characteristics of the school. As a common experience, all the students get involved in this organization as early as the first year; and they become a part of the faculty culture. Participa-

tion of all of the faculty members in design-build studios also provides an introduction for a mutual acquaintance among students and tutors. Moreover, projects include a social aspect either for community service or for community involvement enhancing the purposefulness which then empower the connection with the real-life situations. Overall, the design-build studio setting is a unique hidden quality for architectural education besides its well-known curricular qualities.

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Client: The Rectorate of Bogazici University, Bogazici University Marine and Sailing Club

Donors: MEF University, Bogazici University, TORID, ZETAS

Awards: Turkish Architecture Yearbook 2018, ArchED Project Awards for Architectural Students in Turkey.

Project Duration: 5 weeks (18 June–21 July 2018)

Studio Schedule: Monday to Friday 08:30–20:00

Rethinking the Crit

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KEYWORDS

rethinking the crit, feedback, student led

Assessment in architecture and creative arts schools has traditionally adopted a 'one size fits all' approach by using the 'crit', where students pin up their work, make a presentation and receive verbal feedback in front of peers and academic staff. In addition to increasing stress and inhibiting learning, which may impact more depending on gender and ethnicity, the adversarial structure of the 'crit' reinforces power imbalances and thereby ultimately contributes to the reproduction of dominant cultural paradigms. Our collaboration on an alternative to the traditional model was supported by the Teaching & Learning National Seminar Series fund which helped us organise an international symposium to debate the 'crit' in 2016. We have recently been awarded further funding which has allowed us to pilot alternative feedback methods.



INTRODUCTION

The ‘crit’, short for ‘criticism’, is an assessment practice central to the education of the architect, internationally. Its core aims to place the student at the centre of the learning experience by presenting their work to a jury for feedback. In principle, it should allow the student to develop critical thinking and creative skills through learning-by-doing in the active participation in a crit. This principle has its roots in the psychologist, Jean Piaget’s “constructivism framework” which argues that people produce knowledge based upon their experiences.

The ‘crit’ also aims to foster a culture of learning and reflective practice as described by Donald Schon in *The Reflective Practitioner — How Professionals Think in Action*, 1983, so the student gains agency over their education.

Because crits take place in architecture and art schools, it might be assumed that they serve these educational ends. However, there is a great deal of evidence — both empirical and critical — to suggest that crits encourage conformity rather than creativity, and that they serve to reinforce a hierarchy between tutor and student rather than the ideal of both participants operating equally in open-ended learning.

The other consequence that research has found is that the crit re-enforces dominant cultural paradigms due to the established hierarchy between tutor and student.

As the architect and academic, Helena Webster describes it: “The research undoubtedly brings into question the hitherto accepted intention that the [crit] is a collective and liberal celebration of individual student creativity and achievement. Rather, the collective findings suggest that the [crit] plays a central role in the design studio pedagogy, derived from a pre-existing ‘apprenticeship’ model, which results in the reproduction of dominant notions of architectural habitus.” (Webster, 2005, p. 265)

We have re-examined several assumptions about this method of assessment and review, and through action research we are proposing a more reflective, student-centered, intrinsically motivated education. In particular the assessment method is re-imagined to inform deeper learning.

This has taken the form of a pilot programme run for the last two years with 3rd Year at TU Dublin Bolton Street, from which traditional crits have been replaced with student-centered learning and dialogue. With the benefit of a recent funding award from The National Forum for the Enhancement of Teaching & Learning, we propose to extend this pilot to other architecture and art schools, including CIT Crawford College of Art & Design in Cork, UCD in Dublin, and SAUL in Limerick.

WHAT IS THE 'CRIT'?

The 'crit' system began in the 19th Century at the École des Beaux-Arts in Paris, where originally juries of tutors assessed a student's work behind closed doors; this 'closed jury' system became an 'open jury' in the 20th century, where tutors commented on work in public in front of the student's peers. The main advantages of this format is that all students can hear feedback from reviewers on each other's projects, in order to learn about their own work, and that students gain some experience in presenting their work.

According to Kathryn Anthony in *Design Juries on Trial*, 1991, 'Crits are an opportunity for the student to present the process and solution to a design problem. The crit should be providing the student with encouragement as well as stimulus to continue exploration.' (Anthony, 1991, p. 2). Donald Schon argues that conversation about architecture — the 'crit' — is the essence of the design education process. Schon sees the 'crit' as an equal debate between student and tutor, or an exchange of learned opinions rather than delivery of facts. While both of these authors correctly state what the crit should be, in practice the crit does not have this effect.

THE CRIT IN PRACTICE

We consider that in practice, these ideals are in conflict with the reality of the student experience whereby the negative aspects of the crit clearly inhibit learning. The first of these negative aspects is the actual physical position of the participants. Anthony talks about the physical barrier between the students and their classmates that is formed by the staff. Then, there is also the timing of the crit during the course of a particular project. An example of this negative aspect is that the same form of crit is used in the formative and summative assessment of the student's work. Thirdly, the crit as a model of either assessment or feedback is time-intensive and often attended by students who are inattentive due to the repetitive nature of the presentations.

Critically, Reyner Banham's essay, 'A Black Box: The Secret Profession of Architecture' compares this studio teaching method to "a tribal long house," (Banham, 1996, p. 295) and argues that in practice the ideal of equal learning is replaced with enforcing a code of conduct, establishing attitudes and values that are then played out in the profession. Students absorb aesthetic, motivational, and ethical practices as well as language and even dress as outlined by Thomas Dutton's *Voices in Architectural Education, Cultural Politics and Pedagogy*,

1991 — broadly speaking what the philosopher, Pierre Bourdieu refers to as “habitus” (Bourdieu, 1991, p.1) i.e. embodied habits of seeing, acting and thinking. Students may come to regard the tutor’s approval as indicative of approval by other powerful groups in society, on which they are dependent for status and earning ability.

In practice, therefore, the crit places the tutor as the person who knows ‘the’ correct solution to every difficulty, with the crit being seen to endorse ‘acceptable knowledge.’ (Dutton, 1991, p.29). Dutton pointed out the main problem with the traditional crit format is that it is not dialogical and because of the structured asymmetrical relations of power. Therefore, the potentially adversarial structure of the crit reinforces power imbalances and thereby ultimately contributes to the reproduction of dominant social structures.

In addition, this power imbalance increases stress and inhibits learning, which may impact more depending on gender and ethnicity.

This paper looks at the attempt to change the dynamic of the crit into a dialogue. The crit is reimaged as a discussion between all the staff, the students and the person whose work is being discussed. This new dynamic also explores Foucault’s ideas on the spatialisation of power which were referred to by Kathryn Anthony in her work *Design Juries on Trial*, 1991.



Fig.1: The Crit as power imbalance, April 2018.

SO, WHAT CAN WE DO TO ADDRESS THIS?

In Milton Cameron's *The Jury's Out: A Critique of the Design Review in Architectural Education*, 2014, and Anthony's *Design Juries on Trial*, 1991, their research indicates that the most successful design studios are those where traditional power relationships are broken down. These are studios where the students become actively involved in the process, and where they have the opportunity to discuss their work with jurors and with each other, all within an environment of mutual respect. The most successful variations to the traditional jury format, from the students' point of view, are those where they are more involved in the process.

Assessment in architecture schools has traditionally adopted a 'one size fits all' approach by using the crit throughout the design process. We focus on four main constraints of the crit as follows:

- 1 Crucially, the social and time pressures involved mean that crits don't allow for collaborative or peer learning.
- 2 The crit also focusses on verbal feedback with little or no space for written feedback.
- 3 The crit is dependent on physical space and time and therefore could be seen to be inflexible to advances in on-line learning
- 4 The crit focuses on each individual work which places more pressure on individuals to preform to the jury, as opposed to widening the discussion to overall themes of design.

Our proposed feedback system attempts to address these core issues by being cognisant of the different design stages during project development, and by aiming to provide a more student-centred, equitable, and collaborative approach to learning.

Based on Anthony's *Design Juries on Trial*, 1991, and Christine Mc Carthy's *Redesigning the Crit*, 2011 at Victoria University we developed a series of aims to achieve this new method of assessment and review. Alongside each aim, outlined in the table below, different methods were proposed such as 1. round-table feedback; 2. written feedback, 3. online review and 4. 'red dot' review

PILOTING AN ALTERNATIVE APPROACH TO ASSESSMENT AND REVIEW THROUGH ACTION RESEARCH

Based on the table above, we ran a pilot model, delivered in collaboration with colleagues, of these new feedback methods over a full academic year with third year architecture students at TU Dublin Bolton Street. This comprised four stages de-

signed to support the student through the design process over a semester:

1) *Round Table Review*: For the first stage we adopted the Harkness method, established in 1930 with a gift from Edward Harkness at the Philip's Exeter Academy, as described by John Barton in his presentation at the seminar, "Rethinking the Crit", 2016 whereby tutors sit alongside the students in small groups of six to discuss and, crucially, draw different approaches to designing their scheme. The emphasis was on group collaboration, so students and staff were encouraged to take part as equals in the learning process.



Fig. 2: Round Table Review, TU Dublin, April 2019.

2) *Submission: Closed Juries & Open Feedback.* The second stage focused on assessment as a reflective tool. Students were given a deadline to submit work, which was subsequently reviewed by tutors in private, after which they provided both marks and written feedback. This was issued to students in private giving them time to reflect, and was then followed by a meeting where the students met individually with tutors to discuss the feedback as outlined in Milton Cameron's *The Jury's Out: a Critique of the Design Review in Architectural Education*, 2014, and Anthony's *Design Juries on Trial*, 1991.

McCarthy and Cameron both identify the importance of the students working to a specific deadline and also the need to all staff time to work towards in depth feedback and allow time for both staff and students to reflect and consider. The architects and researchers Rosie Parnell and Charles Doidge, co-authors of *The Crit: An Architecture Student's handbook*, 2000, with Rachel Sara and Mark Parsons, refer to the value of written feedback as a basis of reflection and progression.

3) *Online Learning :* In the third stage the student's work was presented on the internet. Students were asked to upload their project to an online community in groups of ten made up of the students, staff and external practitioners. Comments were invited and the online learning provided for greater debate and ensured it was not bound by a specific time and place. The students then summarised the online comments along with their drawings in a presentation.

Online leads to seeing the work together as a dialogue. Staff and students speak first to describe what they see and then the student discusses their intentions.

4) *'Red Dot' Review:* In the fourth and final stage, based also on Cameron's method and also Doidge, Parnell, Sara and Parson's approach in their book, *The Crit: An Architecture Student's handbook*, 2000, students and staff viewed an exhibition of all the students' work. Based on Professor Ledewitz's approach, the students and staff were then invited to place one red dot by the scheme that they wished to hear discussed.

Doidge and Parnell describe these broadly as student led discussions. They argue that a selection of a number of reviews are more likely to form a better learning example for the year in that it is less about the individual's work in turn and more about specific learning outcomes and problems that all the class encountered. The staff mark the pinned up work in pairs and separates the marking from the final review. The student gets marks and written feedback at the start of the day so as to aid their reflection.

Evaluating the pilot model

Following the pilot scheme, students completed an anonymous evaluation of the process. The main benefits they identified were:

- 1 Clarity of feedback: 'Constantly know where we stand;' 'Assessment was made clear, feedback sheets were incredibly helpful.'
- 2 Stress reduction and productivity: 'Not having to stress about pin-ups and instead using the time to actually do the work;' 'It is more of a conversation;' 'Less draining than a crit.'
- 3 Peer learning: 'Seeing other students' working process and how their schemes are progressing;' 'Like a conversation.'
- 4 Changing the Power Imbalance: 'The simple positioning, seated around a table of work, is something I find makes me less nervous and equal or level with a tutor.' 'The discussion between students and teachers was good and very engaging, because generally, in crits, you don't interrupt.'

Staff and external reviewers believe that stages one and two have been successful in producing a higher standard of work and a more inclusive atmosphere in the studio. Various staff members gave feedback and said 'The students were more engaged with the process and there was a good discussion'; I do like the round table review system and was particularly impressed by [students'] willingness to offer constructive feedback on each other's work.' (Various Staff, 2018)

The third stage was possibly the least successful in that the time given for practitioners was perhaps too short for comments online. In the presentation stage the students and staff seemed to move into a more familiar 'crit' mode. Some staff found this regressive however others thought it could offer a way forward: 'Could the future be a combination of round table reviews with a final presentation on the wall?' (Various Staff, 2018)

The fourth stage was seen as more successful from a staff and student point of view. 'Interesting discussions;' 'Students were engaged in looking at all the work'. 'Student participation was high'. (Various Staff, 2018)

The pilot model has delivered useful findings. By adapting each stage of the design process to different methods of feedback, this emphasises more usefully specific learning outcomes for students and better teaching practices for staff. In addition, by customizing feedback, participation increases, and stress levels are reduced due to more transparency and equality

between tutors and students: The students' work and process is at the centre of the learning and not the presentation or outcome. Reducing the stress of assessments also has a positive impact on design progress.

CONCLUSION

The pilot model for 'rethinking the crit' demonstrates how peer learning and evaluation impacts on the student's overall ability to improve their critical judgement and empowers them in their learning. Reflection, critical evaluation and an appreciation of the participation and contribution by all, are key to this alternative mode of assessment and review, the core of architectural, artistic or any equivalent design-led education.

McCarthy, Cameron and Anthony to a degree argue that a reformist approach is called for, rather than wholesale change. An approach that recognises the relevance of a variety of review methods for different teaching contexts, rather than the adoption of one model to cover every situation.

By adopting this current model, we believe a reform of the crit can make educators and students engage in an open dialogue, centered on mutually engaged learning and can thereby develop a new pedagogy in architectural education.

As described by the artist, Kurt Ralske, in his essay, "The Crit", our core aim should be in education, as in art:

"Meeting as equals on the playing field of art, all participants leave the encounter a bit richer." (Ralske, May 2011)



Fig. 3: Equal partners in learning, SAUL, 2018

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Horizons and Conscience

A Qualitative Study of Designing for Student Life in Africa

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KEYWORDS

collaboration, Global South, student, wellbeing, agency

At no other time has a student's knowledge of the world seemed greater and that same world seemed smaller than now. Their global awareness and ethical perspective have developed throughout childhood thanks to education, digital communication and access to international travel. Can meaningful work and geographic and cultural variety satisfy their outward and inward gaze? Is this the deeper motivation in joining a school of architecture? As they imagine their future, how can we help them put their values into practice and reinforce their belief that others' lives can be improved through their agency as an architect? This paper explores four phases of an ongoing internationally collaborative live project between The Mackintosh School of Architecture at The Glasgow School of Art in the UK (MSA) and The School of Architecture and the Built Environment (SABE) at The University of Rwanda (UR).



INTRODUCTION

Educating students to become citizens as well as professionals would enable them to prove that both school and profession have not outlived their usefulness. (Gloster, 2015)

The illiterate of the 21st century will not be those who can't read and write, but those who can't learn, unlearn and relearn...Alvin Toffler, "Rethinking the Future" (Toffler, 1970)

What kind of a world does an architectural student imagine as they look beyond the Academy towards their future professional life? What horizons can they see which we instructors cannot? Does that picture engage their moral compass, tracking the pressing contemporary issues from planetary environmental crisis to the fragility of the Global South? How different is that perspective if they are a student in say, Europe or a student in Africa? When their own future is unclear, how can they design the human future for others? This is reality for the emerging student generation. At no other time has a student's knowledge of the world seemed greater and that same world seemed smaller than now. Within this vortex of positive and negative influences, there is, we believe a sincere search by them for personal values and identities as they search for a way to work within the world they inhabit. How do we help empower students of architecture to address the challenges of their future?

Such strong external global drivers shape their consciousness and values. "Horizons" could be seen as the sixth thematic area of this EAAE conference which seeks to identify the 'hidden school' beyond the curriculum. "Horizons" is didactically linked to "Conscience"; the former involving looking outwards and the latter involving looking inwards. Academia has an important responsibility in stitching these together by compelling us to look both outwards and inwards concomitantly. Outward and inward looking encapsulates the very essence of being human. What meets the outward and inward gaze of our students?

The authors of this paper believe that when students are able to apply ethics within their chosen discipline, a transformation occurs from 'profession' to 'vocation'. How can we nurture ethical practitioners who are inspired to make their world a better place through their chosen discipline? Is the answer simply to experiment with educational initiatives which require students to respond in ways that are beyond a traditional academic curriculum? Mary Colwell makes an eloquent and powerful plea when she writes,

“We urgently need engineers of the soul — men and women with the skills needed to build bridges from our inner, secret lives to the hard realities of a climate-stressed world...” (Colwell, 2019)

This paper explores four phases of an ongoing internationally collaborative live project between The Mackintosh School of Architecture at The Glasgow School of Art in the UK (MSA) and The School of Architecture and the Built Environment (SABE) at The University of Rwanda (UR). The project’s ambition is to provide a transformative vehicle for students by using a collaborative model for the design and procurement of barrier-free student hostel accommodation in Rwanda. Through this project, students from MSA and UR are identifying the ideal conditions for participatory design, practice-based research and a procurement process which accommodates the highest standards of user-informed design. It also aims to highlight a ‘bottom up’ student-perspective exploration of the issue of hostel life. Similarly, the research focuses on the student’s conscience and horizon, rather than the educational instructor’s. We hope this helps to bring out originality and value to the research.

Several narratives have been collected from Rwandan staff and students, who for their first time have had the opportunity to participate in a live project through a Global North/South collaboration. Participating students have had the opportunity to reflect on their own personal experiences of accommodation options related to their academic journey. It is against this backdrop that the excitement and celebration of a new process of participatory design and innovative procurement of the hostel project emanates. Indeed, the project aims to explore how architecture students can better address the lives of clients, including campus hostel dwellers and what anthropological insights and methods could contribute to our (staff and students’) deeper understanding of the hostel phenomena.

As a result of engagement with this project, further narratives are emerging from the University of Rwanda’s senior management, who believe that any forthcoming infrastructure project in UR ought to be state of the art and inclusive in design. Similar initiatives to rehabilitate classrooms in Nyagarate campus and recreation facilities in Rukara campus are ongoing. The University Vice Chancellor sees the barrier free hostel project as an expression of the values of the Institution, which aspires to be fully inclusive by giving all learners every opportunity to reach their full potential.

WHY LIVE PROJECTS?

Almost all European and US schools of architecture are involved with what, within academia are generally known as ‘live projects’; i.e. projects which are typically executed outside the Academy and which are “... *defined in terms of students experiencing not actual construction but a working relationship with an external client...*” (Brown, 2014) The ambition of such projects is often to expand the student’s pedagogic experience by moving (literally) outside the hothouse atmosphere of the studio and lecture theatre to raise awareness of the link between social issues and architectural ideas (Salomon, 2011) in an immersive and experiential manner. Live Projects can expand students’ skills and abilities by challenging them in ways the studio curriculum cannot. Through the application of such projects, students begin their individual practice with a tangible professional dimension because they “... *are taught skills beyond their courses and given increasing responsibility within the context of the project constraints and they are also expected to develop professional accountabilities and attitudes...*” (Brown, 2014)

Live project sites are often geographically close to the university campus for good practical and community-based reasons. There are other non-local situations however where long standing human needs can be addressed by the practical application of students’ innovative thinking. The Global South and other low income nations contain many such conditions that offer receptive laboratories for this type of investigation. The pressing planetary issues mentioned earlier have a heightened significance in The Global South because their consequences are often extreme and life changing. Despite the risks of stumbling into political/ethical naivety, or privileged self-righteousness, as Emily Pilloton has rightly cautioned against, (Pilloton, 2010) it is arguably in Global South contexts that a student’s horizons and conscience can directly inform their work in a fully holistic manner, resulting in a fruitful theatre for the development of ‘ethical practitioners’.

WHY AFRICA?

Agenda 2063 Aspirations for the Africa We Want

An Africa whose development is people-driven, relying on the potential of African people, especially its women and youth, and caring for children. (<https://au.int/en/agenda2063>)

Africa is a youthful continent. Over 65% of the continent’s population is below the age of 35 years, which is both an opportunity and

a challenge for Africa. From 2035 onwards it is expected that the number of young people reaching working age in Africa will exceed that of the rest of the world combined and will continue every year for the rest of the century. This impending demographic dividend is expected to add to Africa's economic importance, something which is seen as positive and an important surrogate to sustainable development (Malonza, 2018).

According to the UN, Africa's urban population is expected to more than triple over the forthcoming 40 years, from 395 million in 2010 to 1.339 billion in 2050, corresponding to 21% of the world's projected urban population (UN, 2014). By 2025, it is projected that Africa will have more than 100 cities with at least a million inhabitants, including at least 15 large cities, each with at least five million inhabitants. Between 2015 and 2045, the population of urban Africa is expected to increase by an average of 24 million people per year.

“Three centuries of slave trade, from around 1500 to the early 1800s, were followed by a century of brutal colonial rule. Far from lifting Africa economically, the colonial era left Africa bereft of educated citizens and leaders, basic infrastructure and public health facilities.” (Sachs, 2005)

There are a number of reasons why Africa has been chosen. One obvious one is to help the next generation of African-based architects employ socially enlightened and environmentally friendly urban thinking in the design of their own human future which faces unprecedented urbanization. After all, the planet's climate crisis has been largely a result of the West's carbon-based industrial activities and it could be argued that, to put it bluntly, we owe Africa this. But perhaps also because high quality design expertise exists in Europe's Schools of Architecture and we have a responsibility to share that. Collaboration with the emerging generation of architects facing the challenge of designing a built environment in sub-Saharan Africa is one particular option. We believe that in order to bring together students' horizons and consciences, all European Schools of Architecture should be actively and energetically involved in collaborative projects set in sub-Saharan Africa.

WHY RWANDA?

The Rwandan Government has particular expectations that its architecture students are enthusiastic learners and innovative thinkers who will contribute significantly to the country's construction industry and overall development. Given that there were only 10 qualified architects in Rwanda in 2008 at the time of SABE's establishment, (and all educated outside the country), it raises questions about the role of academia in empowering youth vis a vis a culture of critical, independent thinking.



Fig. 1: 'Gacaca'community discussion, Rwanda: "justice among the grass"

What motivates a student to study architecture? When considering joining an architecture programme, Rwandan students admitted to the architecture programme express contrasting emotions of excitement and panic. Excited to be the future architects of such a remarkable country but panicking about the long hours that they anticipate in what is typically a more time-consuming academic journey than other disciplines. This is a familiar picture for architecture students across the world, however for Rwandan students, there is the added pressure of finding the confidence and critical independence to conceptualise architectural problems and solutions within a culture known for its reticence and introversion. Does such a student have adequate space and time to evaluate the environment they are trained in? Perhaps for them, more than any other, their place of residence has a special role as a welcoming sanctuary and home in which to spend the few available spare hours of leisure they may have. These challenges alongside those created by their academic programme will impact on their personal horizon. Humans are social beings and our everyday is shaped by the experiences of life we encounter. Given a chance to decide on which campus they might join, student residential accommodation can be one of the key issues that students take into consideration when applying to a university.

Available campus accommodation in Rwanda is generally poorly designed and constructed, resulting in cramped dormitory spaces where privacy is compromised. Students eat unhealthily (due to poverty and lack of choice) and seek

employment to cover living expenses despite opportunities being scarce. This results in a lack of concentration and ability to fully focus on academic work. Student horizons are severely restricted as a consequence. Conditions for able-bodied students are challenging but for those with any form of disability, it is almost unbearable. In this project, student designers from the Global North and Global South address their fellow students' difficulties by combining empathy with creativity. The health and welfare of university students is critical to their personal education and development as well as to the success of the university and country. A university can be a significant influence on the formative development of the next generation of citizens who will shape and lead that country. It should be a place where horizons and conscience are nurtured, not thwarted.

The university influence numerically matters because Rwanda is urbanizing rapidly. Between 1970 and 2012, Rwanda's population increased by 16.9%. Although the current urbanisation rate is 18.4%, it is envisaged to reach 35 percent by 2024 (Republic of Rwanda, 2012). The university influence scientifically matters because the sustainability that academia seeks is a process that aims to impact development of all aspects of human life by resolving conflicts between competing goals in a city such as environmental responsibility, economic efficiency and social cohesion (Hasna, 2009). In this perspective, since Kigali is by far the most rapidly urbanizing city in Africa and is seen as the gateway of the development of the country, in support, the government has launched a series of policies and a legal framework to promote healthy urbanization.

Rwanda's Vision 2020 strategy seeks to address questions like; How do Rwandans envisage their future? What kind of society do they want to become? How do they construct a united and inclusive Rwandan identity and what are the transformations needed to emerge from an unsatisfactory social and economic situation? (Rwanda Environment Management Authority (REMA), 2017). The authors agree that Vision 2020 as a Horizon for Rwanda was timely for a nation healing from the wounds of the 1994 genocide, a period when the conscience of every Rwandan needed to be uplifted and better aligned towards a more promising future of their country.

CHALLENGES IN GLOBAL NORTH/SOUTH INSTITUTIONAL COLLABORATIONS

Our joint ambitions extend beyond live project collaborations to the establishing of a joint academic programme between a European-based partner and an Africa-based partner. This latter ambition generates particular institutional challenges.

At GSA for example, for any new academic programme involving an international academic partner to be established, that international partner needs to satisfy one of two key QA criteria. They must either be an acknowledged world-class leader in the discipline of specific interest or alternatively, there must be evidence of an existing deep research relationship between the two institutions. According to the QS World University Rankings, there are no universities on the continent of Africa in the top 100. In fact, African Universities only begin to appear on this league table at no. 198 (University of Cape Town) followed by no. 400 (University of Witwatersrand). The only African universities listed in the top 1000 are all based in South Africa, which sends a particular message that there are essentially no world-class universities on the African continent. We consider it unacceptable to ignore Africa as a context for collaborative work using this criterion. Rather, to consider any future joint academic programme with an African partner, we are nurturing a deep research-based relationship founded on shared interests and values and collaborative activities.

THE PROJECT

“Of all the variables conspiring against full-immersion pedagogies, the academic calendar is one of the most insidious.”
(Hughes, 2014)

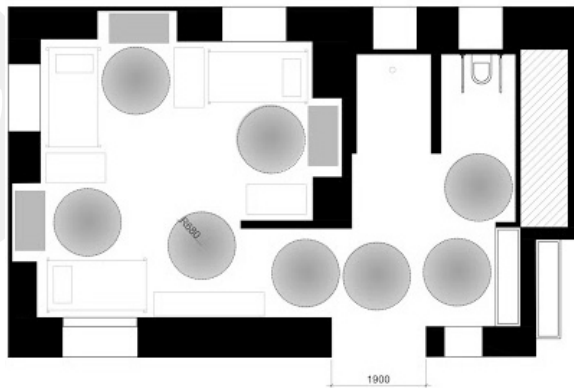
In the last five years, a number of small groups of MSA students in Glasgow have chosen to develop research-informed live design projects for real clients in two African countries as their stage 4 research project. The first involved the design of a community sports facility in Accra, Ghana for disadvantaged teenagers. Developed in collaboration with an Accra-based secondary school and a Ghana-based sports charity, their clients were three Ghanaian community workers of a similar generation. After two years of desktop development taking the design to a planning application stage including two site visits and client presentations, the project stalled due to difficulties encountered with the Department of Education in Accra.

The second project (now in its fourth year of development) examines student wellbeing through the design for a barrier-free student hostel accommodation for the University of Rwanda in their Huye Campus, outside Kigali. Phase 1 involved MSA students using digital platforms to understand and navigate complex institutional structures in Rwanda and establish effective communication protocols with key individuals in UR. Phase 2 involved a second student group exploring the topic of design methodologies for Global South conditions. This resulted in a

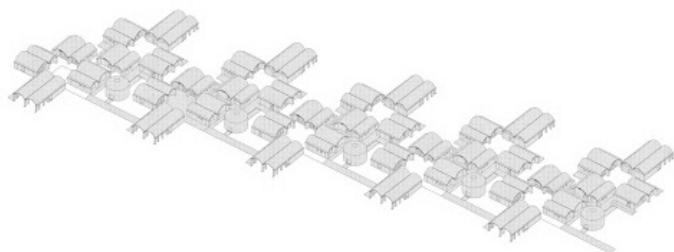
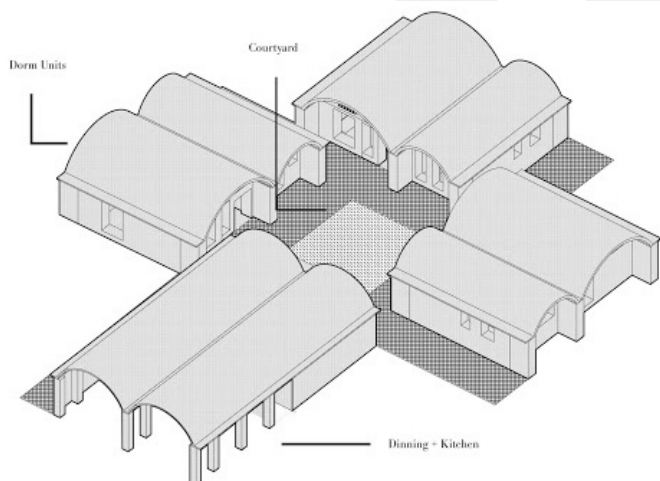
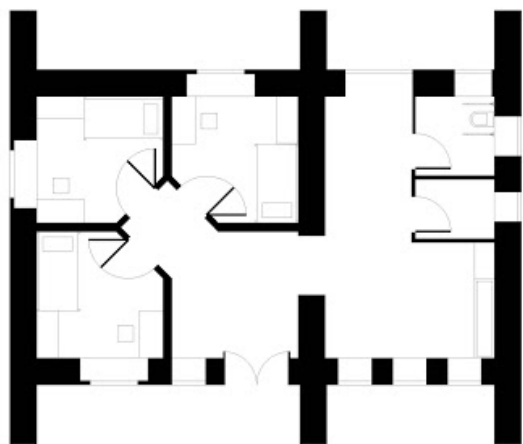
design for the student accommodation which was presented to the University by our external consultant Dr. Lynn Legg, an NHS Research Fellow and special consultant to the UR Vice Chancellor, Professor Philip Cotton. This phase of development was greatly helped by the strong personal support and involvement of the UR Vice Chancellor himself, and the leadership and support of a UR project champion and collaborator, Dr. Josephine Malonza, the founding Dean of the School of Architecture and the Built Environment at The University of Rwanda.

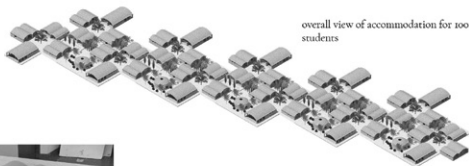
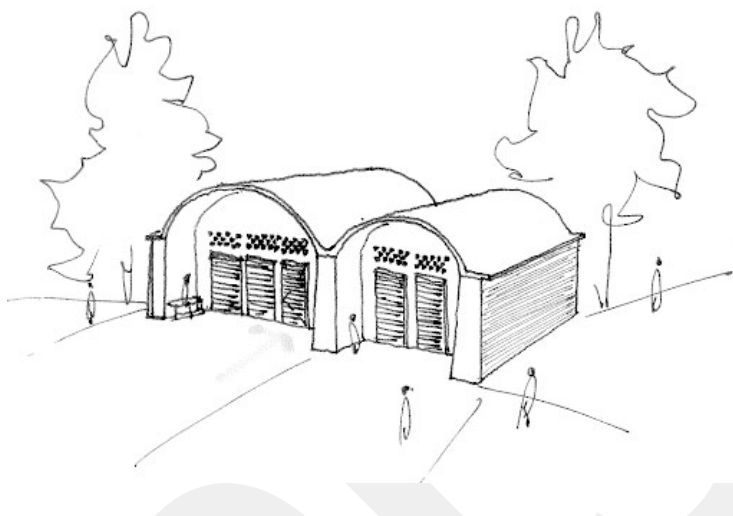
THE DESIGN PROPOSALS

The students were able to make contact with Rwandan students in the UK and from them and Dr. Legg, learn more tangibly what student life was like in that country. Addressing issues such as low building skills, student privacy, designing spaces to socialise, eat or cook, or grow vegetables, student income generation, all helped establish a design criteria which students used to shape their architectural solution. [Figs 2–6] The resulting design is a cluster of single storey repetitive vaulted brick pavilions housing sleeping and sanitary spaces, intermingled with separate kitchen/social spaces, all arranged in an informal courtyard sequence. This ‘student village’ model creates a potentially fruitful mix of private and public internal and external spaces, configured from domestic-scaled pavilions which could facilitate a phased development if needed and which could also accommodate different topographic situations (the site was not known at the time of designing). [Fig 7] Specifying brick meant also that cheap, local, low skilled labour could be utilized in the construction process, while minimizing imported specialist expertise and products.

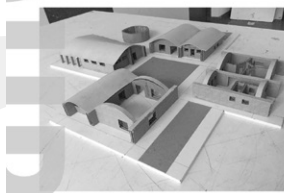


Figs. 2-7: Design proposals by MSA students





overall view of accommodation for 100 students

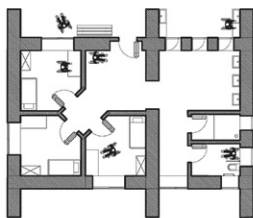


model of courtyard

Our vision is for **INCLUSIVE** residential student accommodation for everyone - **BARRIER-FREE LIVING**. Our design incorporates productive **GARDENING** to support student **COOKING** and nutrition. The design balances the needs of student **PRIVACY** as well as **SOCIABILITY** and it is responsive to both Rwanda's climate and **LOCAL CONSTRUCTION** and **MATERIAL** use, making it both environmentally and socially **SUSTAINABLE**.



plan of courtyard

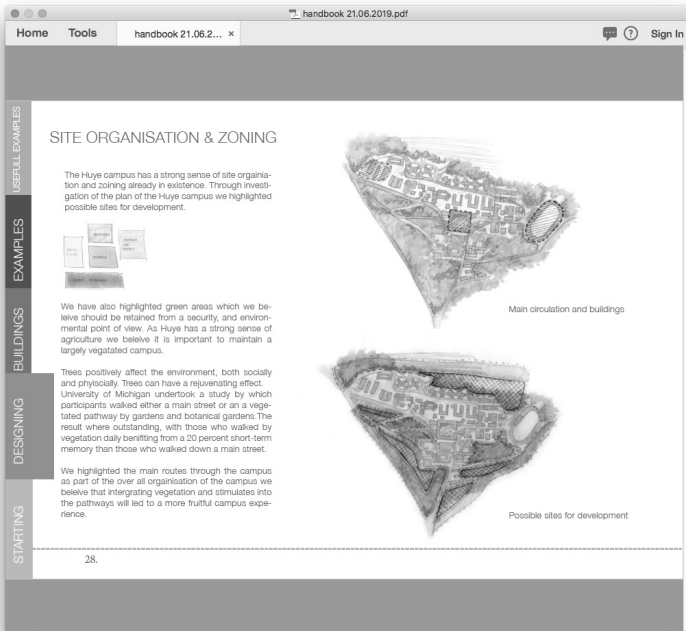
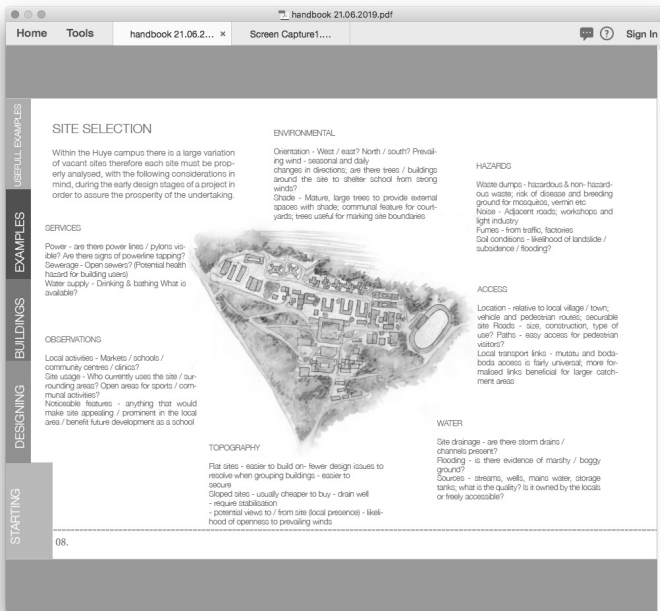


plan of dorm unit



render of the courtyard

OUR VISION



Figs. 8,9: Extracts of Handbook, Phase 3

From their research into student life in Rwanda itself, a number of issues of student wellbeing informed the configuration of the architecture. Privacy and sociability informed the choice of individual rooms separated by solid brick walls

as well as communal kitchens and social spaces. The need for income generation and healthy eating influenced the inclusion of productive landscapes where both new practical skills and fresh vegetables could be developed. Specifying brick opened up opportunities for students to get involved in the actual construction alongside the professional builders.

An inclusive, barrier free environment informed the design and dimensions of the generous circulation routes both externally and internally, facilitating ease of wheelchair and other sensory impairment access. It also created pleasant routes which students and their helper(s) could navigate in a relaxed manner. There is no doubt that the build area per student in their scheme is more than existing norms in Rwanda and it is unlikely to remain in the current configuration as it progresses through a real procurement process. However, it represents an ideal, which forms the basis of further design development once financial limits are firmly established.

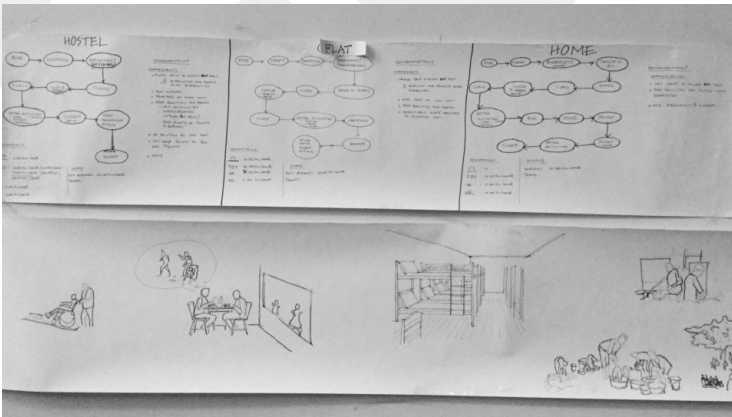
Phase 3 involved a third group of MSA students exploring the wider issue of procurement processes for self-build community projects which had educational as well as estates ambitions. [Figs 8,9] This study took the existing design proposals from Phase 2 and framed it as a community self-build project, resulting in a design guide/handbook full of practical navigation assistance in taking a project from nothing to something which was presented to UR senior staff. It covered a wide range of topics ranged from how to assess a site, through to practical building skills. Phase 3 concluded with a collaborative MSA and UR staff/student research-capacity building workshop in the Kigali campus in September 2018, which created the opportunity for students to explore their values and agency in action. [Fig 10]

The workshop in Rwanda involved the Rwandan students critiquing the established MSA design as well as creating new visual material articulating important aspects of student life which would impact on any student hostel as well as drawings and models. [Figs 11,12] Funding limitations meant that only one MSA student joined the fourteen Rwandan students for the workshop. This student's role developed quickly, supporting the students in their digital, visual and three-dimensional material which was presented to the UR VC and Deputy VC at the end of the week's work. [Fig 13] In the current phase (4), two MSA students (English and Nigerian respectively) have expressed a research interest in the topic of funding projects of this nature.

The School of Architecture and the Built Environment (SABE), in Rwanda is excited about the project. Staff and students believe that the study stretches beyond a conventional academic project, extending into a design-thinking laboratory. It offers a chance for MSA and UR students to think differently and



Fig. 10: Staff & students at workshop



Figs. 11, 12: Initial sketches by Rwandan student exploring student life

become more and more accommodating to society at large. SABE's view is also reinforced by the voice of visiting faculty from various universities in Nigeria, who have argued that the issue of student behavior is a key factor needing examining in developing new hostels in University campuses around the world and particularly in Africa. From their experience through various case studies in Nigerian universities, they have emphasized that student behavior is not well enough understood. As a result, the process is largely led by assumptions made by university management in the formulation of what turns out to be a rather restrictive architectural design brief. This limited understanding of student behavior and need for particular facilities provision is then interpreted by architects through their design decisions, with unsatisfactory and uninspiring results.

The twenty Rwandan students who took part in the collaborative summer workshop were enthusiastic and hope to see the hostel project implementation come to fruition in the near future. [Fig 14] Some would struggle to endure more than a semester of conventional campus hostel life and have had to seek alternative accommodation. They hope that during their tenure as students, they can still have an opportunity to reside in a suitable student hostel as conceptualized through this project. For female students, this project presents a potential solution to an urgent issue. They need to reside in secure accommodation near school due to the long hours and nights spent in studio classes but would prefer to do so in a well-designed purpose-built facility with good access to kitchen, sanitary and social facilities. As the students make models and work on presentations for the School or University Senior Management for this phase of the project, it is inevitable that their interest will grow and deepen regarding similar in-depth and participatory design pathways.



Fig. 13: Models of design by Rwanda Students



Fig. 14: Site visit enthusiasm

CONCLUSIONS

The project demonstrates how excellent student accommodation could be realized to meet the particular needs of student life, while also being the vehicle for valuable educational and research opportunities. It explores how student participants are challenged to consider what their agency and practice might be in the future. It questions how their hidden ‘horizons’ and ‘conscience’ can be brought into the open to inform their design process, further reinforcing the idea that the person of the architect can make a difference for the better, regardless of geographic locus and cultural audience. It explores how collectively and collaboratively these personal and private attributes can be seen as the foundations of a new “hidden school” of global dimensions based on which, sustainable interventions begin to emerge.

The ambitions for our student hostel project are twofold. From a Rwandan perspective, it is to create an inclusive bottom-up procurement process which could impact positively on the design of hostel accommodation for Rwanda students, by involving students in that very process. It provides an immersive educational experience helping define what the role of an architect is in Rwanda’s future and results in a building which impacts directly and positively on the next generation of students. From a European perspective, it is to create an opportunity for architecture students to bring their global ethics and creative motivations together through the vehicle of

an innovative, collaborative North/South architecture project which identifies clear human needs. It reinforces their instinct that an architect from Europe can help transform people's lives across different cultures through building.

Is the output of the GSA and UR research collaboration knowledge + empathy? Is the solution to the question raised at the beginning of this paper simply the addition of academic modules for 'universal design' for students of architecture, construction management, estates management, landscape design, so that they all can be suitably enlightened and informed about the issues the project is exploring? It is probably too early to answer these as it is difficult to draw out satisfactory conclusions from a project still in progress. So far there has been a very enthusiastic meeting of minds, highly positive responses, foundations for collaboration, high level university support and engagement throughout the project's different phases. There has been a general appetite from everyone for inclusive, student-centered engagement in this live project. There are ongoing challenges of funding any collaborative event which involves both student cohorts, whether it takes place in Europe or Africa. There are the challenges of funding the actual building project itself. As the project has not yet been constructed it limits any kind of comprehensive reflection. Even research-informed buildings require inhabitation, lives to be led to reveal whether the claims and ambitions made in an academic paper such as this have been met and fully realized. Dissemination of the project's development has included the 2019 accessibility advocacy in a collaborative regional dialogue between National Unions of Disability Organisations from Rwanda and Uganda [Fig 15].



Fig. 15: UNAPD Conference Panel, 2019.

There is significant student appetite for such collaborative North/South projects, something which appears to encourage the horizon/conscience dynamic referred to earlier. Yet education is not only for students, but also for academic and administration staff and the communities around us. The project is ongoing and continues to engage students' interests and conscience. This result points to the need for transformational thinking around architectural education. The paper recommends a more pragmatic and dynamic approach towards providing adequate and satisfactory facilities to not only accommodate student hostel life but also that which touches on procurement modalities to ensure value for money through innovative interventions into procurement processes.

A replication of this kind of approach into other higher institutions of learning will go a long way in inspiring prospective students. There are amazing opportunities to exchange ideas and methodologies of teaching architecture. South has lots to learn from North and North has lots to learn from South. Exchange programmes create an opportunity to make projects or design studios more context-specific by paying attention to inclusion, effect and evidence. The collaboration further helps to sharpen the conscience and the horizon. It becomes a springboard into the future, where students have to face real clients, real live projects, and the complexities of navigating and delivering real architecture.

ILLUSTRATION CREDITS

- Figs. 1, 11,12,13 Christopher Platt
Figs. 2-9 GSA
Figs. 14,15 Josephine Malonza, UR.

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What drives the content of design briefs placed before the student?
What is the domain of teaching architecture and who is the architect that educators wish to produce?
Is there a substantial frame within which an educator operates in order to achieve a required synthesis and how flexible is the path of achieving the mandatory set of learning outcomes? Where is the balance between abstract or universal and real-world subjects in developing a contemporary and timeless intellectual capable of a culturally and technically sustainable approach?
What is the balance between local and universal, or do we aim to develop universal ability to adapt? How does the school communicate its set of values through the subject matter it puts forward?

Dag Boutsen

The Place

Barbara Coppetti

Rossina Shatarova

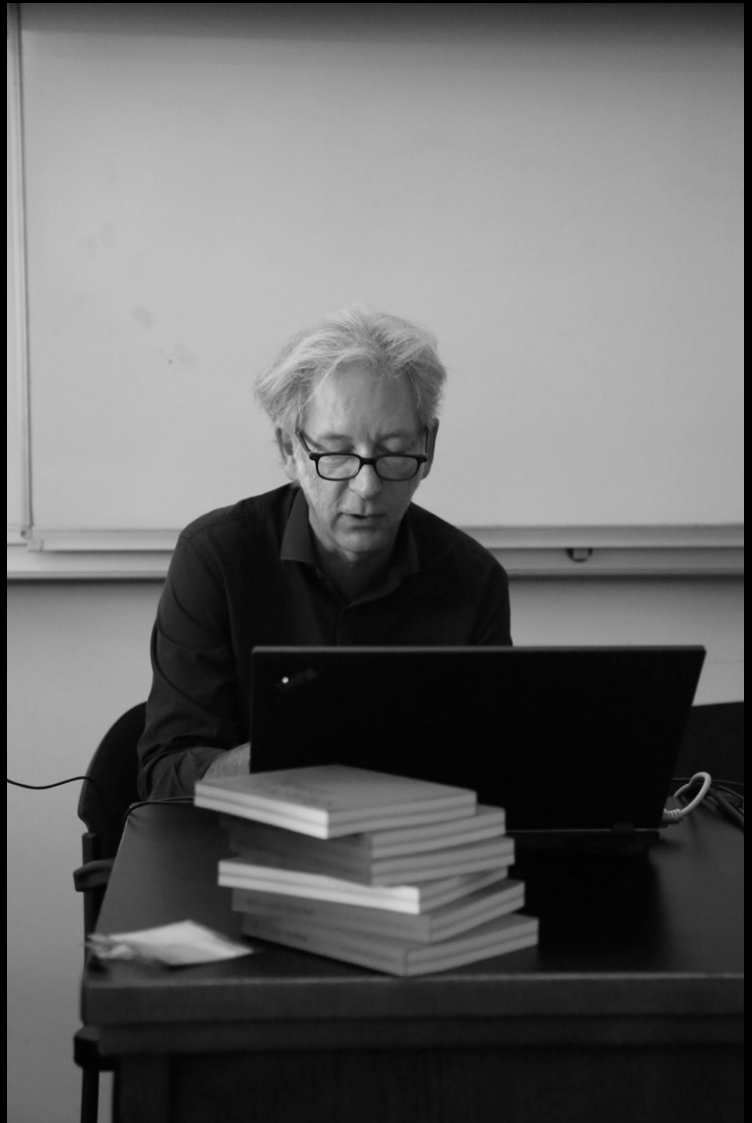
Problematic Flexibility as an Asset for a Thorough Reflection on Architectural Education

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KEYWORDS

experimental teaching, (de-)schooling, playing field,
nomadic school, shared space

This paper is exploring the benefits and assets of an educational experiment without clear ownership. More specifically, it is about a form of democracy of doing in almost all the phases of a continuous exercise in the WTC1-tower in Brussels. An unintended lack of control over the different event processes led to a curious form of critical thinking about the “context” for architectural ‘schooling’, which is generally understood as necessary. The very special experiment contains many more elements than anyone could have foreseen.



For one and a half years, the 24th floor of the WTC tower 1 in Brussels functioned as the spectacular spatial setting for architectural education. The KU Leuven Faculty of Architecture, Campus Sint-Lucas Brussels, partially moved to the WTC complex in the nearby North Quarter.

This paper is exploring the benefits and assets of an educational experiment without clear ownership. More specifically, it is about a form of *democracy of doing* in almost all the phases of a continuous exercise in the WTC1-tower in Brussels. An unintended lack of control over the different event processes led to a curious form of critical thinking about the “context” for architectural ‘schooling’, which is generally understood as necessary. The very special experiment contains many more elements than anyone could have foreseen. The lack of control was, as it turns out, probably intended and in fact a condition for the success of the experiment and its numerous outcomes. Therefore, the book ‘*WTC Tower Teachings*’ that was produced after the end of the trajectory as a rich compilation of perspectives can in itself give rise to a new momentum to carry out another reflection. This article literally (passages from the book in Agency FB) and figuratively refers to the reports in the book. However, the circle is not simply closed in this



Fig. 1: WTC 1 Tower

way. The article also aims at explaining how this experiment fits in more general theoretical understandings of education and the use of space.

A RATHER BANAL REASON FOR THE START OF AN ADVENTURE: THE NEED FOR SPACE

Pragmatism

It was at the start of the academic year 2017–2018, that the KU Leuven Faculty of Architecture, campus Sint-Lucas Brussels, partly moved to the 24th floor of the WTC 1 Tower. After being empty for years, the WTC complex was now welcoming temporary occupants to take over some floors. Design studios, theory classes and elective courses were installed at the bare floor of 1100 square meter, having no partitions and provisions whatsoever and being equipped with basic facilities only.

According to Carl Bourgeois, vice-dean of the Faculty of Architecture, “*the point of departure was the limitations of the faculty’s accommodation on Paleizenstraat, the so-called Meurop Building, named after the former furniture shop at that location. In the background, there was a year-long search*



Fig. 2: Campus Paleizenstraat

for a specific identity, in terms of school infrastructure and pedagogy, that could grant Campus Brussels a defined place between Campus Ghent and Campus Brussels. The overnight decision to seize the opportunity to organize a temporary school dépendance at the WTC Tower formed a blueprint for what later became known as WTC24. It was basically a copy-paste of the school programme at Paleizenstraat.” (Boie, G. (2019). *WTC Tower Teachings*. Brussels, KU Leuven Faculty of Architecture)

Intuition

At the same time, and as a kind of opposition to this rather pragmatic background, another angle prevailed over the functional necessity: the intuitive feeling that this experiment could surpass all other previous experiments and lead to profound forms of critical sense among all participants and far beyond.

After all, this move made it possible to “break in” into the real city of Brussels from the ivory tower that is the Meurop. The lion’s share of the campus residents are white Flemish people although the campus is situated in one of the most multicultural parts of the big city. The fact that the WTC-tower itself, certainly on the higher floors, was a safe haven in the midst of a tumultuous environment would not be a disadvantage. The decision to move was not democratically taken or widely supported due to time constraints and the steps to manage the move could hardly be prepared. This try-out therefore certainly caused ‘productive conflicts’, as planning and the making of plans, core business of a faculty of architecture, were deliberately left out. Careless policy entailed risks. And unforeseen expenses.

Faculty’s DNA

However, this try-out is obviously linked to the Faculty’s mission and vision on *Educating Tomorrow’s Architect* as described in ‘Doing it the Belgian Way’, a publication that featured as a supplement to Volume 50: Beyond Beyond. In today’s society, the search of practitioners, researchers and all possible cross-breeds to add a dimension to space and make sense of it, is no longer an individual endeavor but a collective process, where authorship in design and research become plural, where scales are blurred, disciplinary fields coexist, and different forms of synchronism rule.

In other words, investing in openness on an open WTC-floor seemed at the start of the experiment to be an adequate way

of adding dimensions. Richard Sennett speaks about qualities such as synchronicity, incompleteness and porosity in contemporary space production. Design processes are more than ever part of an uncertain and incomplete process, where the spaces left blank become the most interesting ones.

Moreover, the constant search for possible answers in the international quest for the most appropriate application of research within and through a faculty that values design expertise often leads to an improved 'construction of subjectivity'. According to Catharina Dyrssen, we can accept that through art most research problems are not 'pure', but often contradictory and vague, impossible to regulate, open for interaction, and where logical thinking is naturally intertwined with associative and intuitive conceptualization. (Dyrssen, C. (2011). *Navigating in heterogeneity: Architectural thinking and art-based research*. Routledge), then for sure an open landscape for open-minded thinking about urbanism and architecture would lead to similar characteristics.

The described faculty vision and current international research paradigm in the discipline of architecture were an important addition to the pragmatic starting point solely based on the space limitations in the Paleizenstraat. The deliberately 'open-ended' mission and the unanswered research question are naturally embedded in the transition period of the so-called *academization* of the architectural education within the university context (generally referred to as the "Bologna process"). Put differently, a rather classic and well-defined school-concept has been avoided for the sake of a widest possible range of positions on architecture.

In sum, the faculty thus entered an unpaved path in full compliance with its DNA. Policy decisions based on intuition form part of this DNA. The question whether the move was going to be ever justified, could be ignored at that time.

AN INTERNAL REFLECTION ON ARCHITECTURAL EDUCATION: INFLUENCE OF SPACE

'You are here'

The WTC tower buildings, standing idle for years, came to symbolize the hollowing out of urban life by corporate real-estate interests in the Belgium and European capital. Awaiting intervention, a few floors were opened for temporary use, to which the faculty responded. This pragmatic starting point — as explained above — unintendedly gave birth to the more fundamental questions this paper tries to answer, being: What is the importance of the space in which education

takes place? How does the space of a school influence the educational process and outcomes? Do the social or cultural contexts in which the school is placed make a difference in the inner and outer perception of a school, or the subject matter? What are the differences between so-called remote islands, i.e. schools that are isolated, and schools directly embedded into the surroundings, or even extrapolated and scattered into them?

An educational experiment obviously hidden in between

As such, there are a number of elements that came together on that floor. First of all, there is that exciting experience of an open floor in a dilapidated “skyscraper”, as a remnant of a utopian capitalist “robbery project”. Namely, the Manhattan project as “urbicide” of one of Brussels’ most lively, popular neighborhoods, the Noordwijk, with the Antwerpse Steenweg as the central axis of popular entertainment. Nowadays, and this is the second elements to be lighted out, the office district is becoming empty and is in urgent need of a radical renewal by breaking through the monofunctional setting in which it currently thrives. In addition, there is the Maximilian Park at the back of the tower. This place became widely known in Belgium over the last years, as it was turned into an improvised urban refugee camp for asylum seekers, therefore symbolizing the problematic dimensions of this issue and, even more so, the way it is handled within Belgian politics and society. All of this thus formed a rich and at the same time always debatable context, which directly or indirectly determined the conversation in almost every discussion.

Then there also was the constellation of hip activities that have ‘occupied’ the tower with all sorts of temporary use, creating a sort of buzz or hype: Jubilee and other artists on floor 25, the architectural office 51N4E on the 16th floor, then AWB (Architecture Workroom Brussels) that also brought a Rotterdam architecture biennial to Brussels with ‘You are here’, an exciting exhibition about the urbanism of the transition. We were able to seamlessly plug in with our ethics lessons.

The quote explains how this process of “plugging in” was to be felt by all those who were part of this experiment.

Some design studios organized themselves as an ‘authentic’ design agency. Some of the students claimed a dedicated workplace. The education went far beyond the abstract study of the social drama unfolding in the North Quarter, it was right in the thick of it. There could not have been a better settling-in period. Moreover, the education became part of the reconquest of the North Quarter.



Fig. 3: Debate



Fig. 4: 360° panorama

The 360° panorama functioned as an attraction, certainly when organizing open classes and public events. The commuting students got to know Brussels from a great height. It was much easier to invite guests up to the eagle's nest of the WTC. An empty floor for education: it appealed to the imagination. The all-encompassing view did astonish visitors. The meaning of 'Brusselisation' could be felt in each person's body, could be explained by looking in any direction and it charged every design transaction with meaning. Going to school at WTC 24 became an element of pride rather than shame.

Craftsmanship and intellectual sharpness

As described in 'Doing it the Belgian Way', the faculty substantiates its pedagogical principles from three concerns: EMBRACING (complexity), EMBEDDING (in the local), and LEARNING (cyclical relearning and unlearning).

Related to the first concern, the faculty says that *embracing complexity* is definitely about the difficulty of making things easier, thereby considering that intellectual sharpness and creative craftsmanship are two necessary ingredients. Intellectual sharpness means abandoning the linear, result-based methods of design in favor of sensitive and tentative approaches. The open WTC24-floor obviously welcomes these experimental approaches.

The importance of craftsmanship is typically seen in projects of the faculty's students displaying humble craftsmanship out of scarcity. Most of the models are handmade. Digital drawing tools are employed to produce plans and isometrics rather than to experiment with complex 3D modeling or parametric design, and manual drawing is still a valuable tool. Not because of any taboo on the use of contemporary technologies, but as a consequence of a thorough exploration of what traditional techniques still have to offer.

Needless to note that the open WTC24-floor again triggered new paths in the described world of craftsmanship.

The second of the three concerns EMBEDDING (in the local) is probably even more important in regards to the WTC-experiment. Embedding means making an integral part of the surroundings. It implies positioning within and engaging with an existing context. Embedding occurs in other ways besides adapting or negotiating, such as opposing and contrasting. The question how to connect with diverse worlds meaningfully demands rethinking of concepts like 'integration', 'multicultural', 'authentic', and 'contextualization'. Embedding can be situated on two levels: firstly, embedding the project itself; and secondly, taking position, as designers or planners, through an intervention, pronouncing a discourse.



Figs. 5 & 6, Craftsmanship

Teachers, as well as students have been searching for answers to unpronounced questions. The particularity of the floor space, the context of the space, the embedment of the space and hybrid relation between openness to the surroundings and closeness because of safety regulations heavily contributed to the tone of the experiment. In other words, an equivalent space for so many thoughts would have been impossible to find.

The WTC24 was an event in the pure sense, happening (almost) accidental, based upon decisions made in a rush, raising enthusiasm among some, causing confusion among others, and forcing all those involved to rethink the school apparatus from scratch.

The third concern, on its turn, can best be explained within the scope of another concept, being the “de-schooling space”. This is relearning. This connection is made in the chapter underneath.

THE EDUCATIONAL EXPERIMENT AS A BROADER CONCEPT: ‘DE-SCHOOLING’-SPACE

The school as COMMONS: the gaping void of the office floors was hastily filled with a minimal school infrastructure. It entailed many tables on trestles, chairs, a kitchen unit, a printer, two projectors, a few lockers and toilets. More was not necessary.

Un-school-like

As Lieven De Cauter states, for him, WTC24 was perhaps one of the most unforgettable teaching experiences of his entire career. And that tells something, because he had the chance to teach at elite artistic schools, such as the Berlage Institute in Rotterdam and the dance school P.A.R.T.S. While these have been unforgettable experiences for the most part, WTC24 still stands out. He hopes the school has also understood the importance of a nomadic education and will continue to swarm across Brussels, looking for places to experiment with temporary occupations and uses: heterotopian places that lend themselves to de-schooling, to retraining for reconfiguration, to horizontal relationships between students and teachers who share a spatial laboratory with a large swarm of nomadic intelligence. For him, WTC24 has provided proof that temporary swarms of this kind offer a huge opportunity for an exciting and decidedly un-school-like education.

Unlearning

The ongoing Bologna process in Flemish education forces the faculty, to constantly rethink its inner rationale. Where conventional learning is based on telling, on production knowledge, architectural learning revolves around showing, adding to the

discourse told: questioning knowledge and making artifacts as an illustration of one's progress, and adopting a position on how to make the world we inhabit.

Changing external societal or professional conditions that transform practice, and advances in tools to make and visualize architectural ideas, call for different approaches to the production of knowledge and its proper questioning or testing. They introduce a level of uncertainty that we need to embrace.

This third concern, next to Embracing and Embedding, thus is immensely integrated in the WTC 24-experiment. The mentioned uncertainty challenges the traditional idea of creativity and learning as a progression towards a final project. Dealing with this kind of uncertainty requires a form of learning which is indeterminate, in the sense that one has to be able to accept any result as a point of departure for new inquiry, to keep the learning process open.

School in exile

The openness of the floor became the main programme of the Faculty. According to Joachim Declerck, the experiment can be defined as a 'democracy of doing'. Withdrawing from the school is, as Gideon Boie nicely states, the only way to rediscover the 'free space' of school. We wrote, he continues, a manual on education as a self-organising learning play. In the end, apparently the manual was not that easy to follow, but at least it set the tone.

THE EDUCATIONAL EXPERIMENT AS A SUBSTANTIAL REPORT: "WTC TOWER TEACHINGS"

Open call

Because of the highly interesting and educational nature of this explained experiment, the faculty has published a book on this episode. This publication was entitled "WTC Tower Teachings" and stemmed from the desire to formulate the lessons learned of one and a half years of experiences at WTC24 and to use these lessons as a sounding board to think about the future of the Faculty of Architecture. The initiative to script the short history of WTC24 was put in the hands of an editorial team that assembled (ex-)students, professors and staff alike. The call for contributions was open to everyone and sent out to students, professors, and casual visitors. Doing so, the common editorial process was a moment in which all those involved could not only script the lessons learned — as if the WTC24 was a scientific experiment (something it was certainly not) — but also find the necessary time to bring WTC24 to a close.

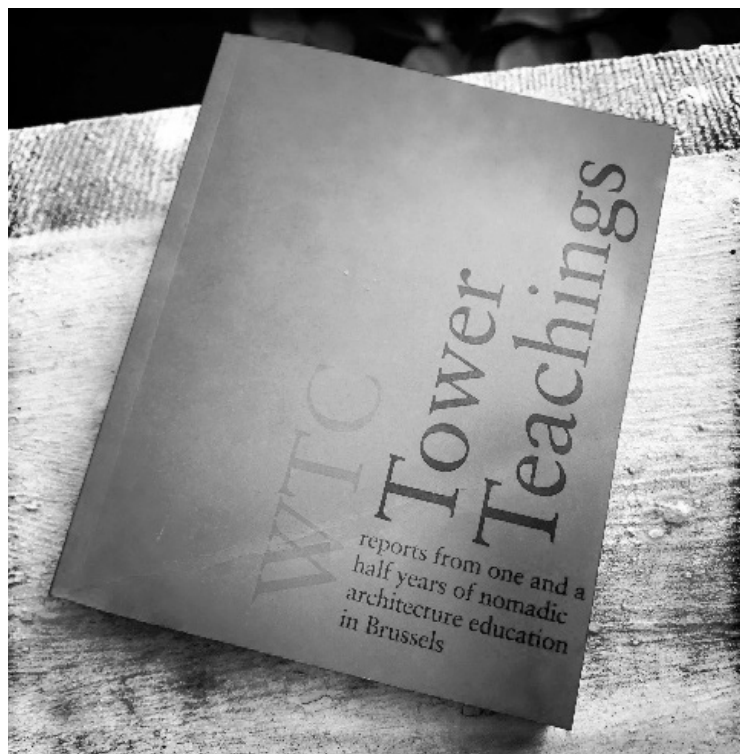


Fig. 7: book “WTC Tower Teachings”

Open content

The citation underneath explains the structure of the book and thus reveals its main characteristics.

The pile of texts are organized in three parts. Under the heading of ‘EXPERIENCE’, the first set of texts give the reader a feeling of what it was like to teach and learn architecture at the bare 24th floor of an empty office building, theorizing upon the many enriching experiences and frictions. The second part ‘WORKS’ includes texts that scrutinize the scholarly results produced at the 24th floor, in the design studios, mixed media courses, elective courses, special project weeks and special public workshops. The third part ‘CONTEXT’ provides the reader with an insight into the temporary occupancy of the 24th floor, both in terms of the organization and infrastructural context, and the (historical and actual) real estate interests in the Brussels North Quarter.

In addition to factual data, the three parts regularly contain critical comments or negative comments. The book is therefore an experiment in itself. The open call and the democratic attitude were based on the wish not to ‘control’ the content. In

other words, the report of the educational adventure in book form is totally related and analogous to the experiment itself, which thus led to the to the above described curious form of critical thinking about the generally understood necessary context for architectural '(de-)schooling'.

THEORETICAL REFLECTIONS

The abovementioned experiment can be connected with a few the most influential theoretical reflections that have been in made in architectural research on the human use of surrounding spaces, which is the aim of this last and concluding chapter of this paper.

Closing the loops

As such, the experiment can be connected with two theoretical ideas. On the one hand, the idea of *Closing the loops*. This implies you're not DONE until you've returned your environment to a stable state. It is precisely what the experiment never wanted to achieve. According to Asli Çiçek, the WTC embodied the dream of a revolutionary act, maybe even the desire to create a legend. But the experiment's short life means that it can only serve as a good memory of just what is possible.

On the other hand, the *open loop* thought is ought to be connected as well. The previous chapters have shown that an amalgam of problems, such as practical problems, the problematic origins of the WTC complex, the problematic embedding of the building in its direct environment and the intriguing and ongoing problems within academic architectural education have resulted in a thorough reflection on architectural education. Obviously, uncontrolled and free thinking and acting were a condition for this.

Mindful physical presence

In "*Supports: An Alternative to Mass Housing*", John Habraken argued some 50 years ago that it is people themselves who 'make' their surroundings, with the support making it possible for them to do this within the broad sociocultural context of society. By extension, the support allows for changes in layout and use over the course of time. The analogy with the WTC24-project can be made as well. In that case, the people are the users of the floor, the support is the open floor and the architect is the faculty board.

According to Habraken, the support cannot be neutral, because then you are doing a disservice to the process. In the WTC24-project, the support is all about atmosphere as a conscious physical presence in the space. German philosopher Gernot Böhme argues that in modernist architecture it

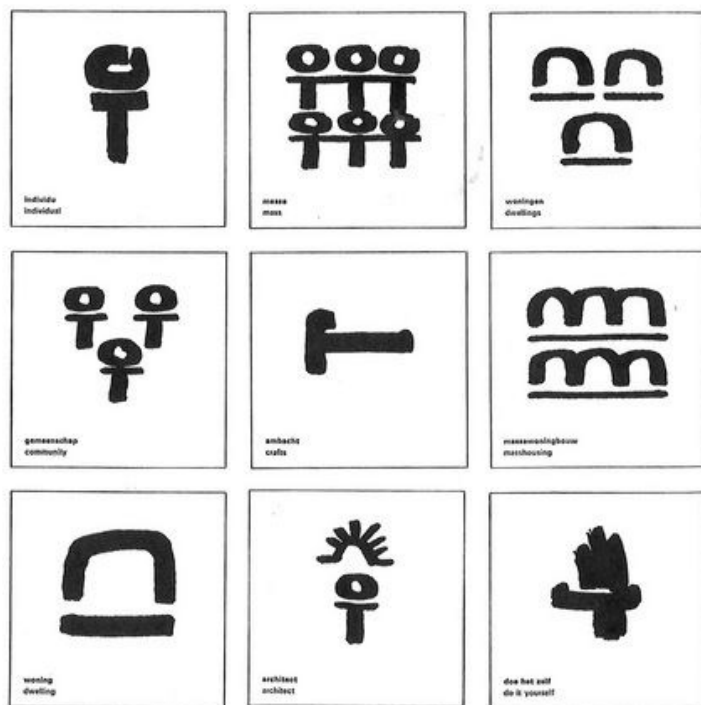


Fig. 8: *Open Building*, John Habraken

was of no real consequence that spaces for mindful physical presence were created, and human needs were no criterion. Only rationality, construction technology and functionality defined building. The WTC24-project showed, paradoxically, that mindful physical presence was possible in an extremely neutral and modernistic space only because of a deliberate lack of control and ‘too much’ flexibility.

Use as Form

At the centre of Fabio Vanin’s research and most of Latitude’s work is the limit condition in which architecture and design disappear, fade away to the back of the picture. During study visits in Lisbon and Maputo, the distance between physical and ephemeral architecture became evident to Fabio. The use of the space emerges in the forefront and an architecture of human logics and rules is therefore revealed. Uses and ways of appropriating space reveal a hidden, less immediate, sometimes invisible architecture that represents its deep meaning and relates to key social themes such as inclusiveness, identity and memory.

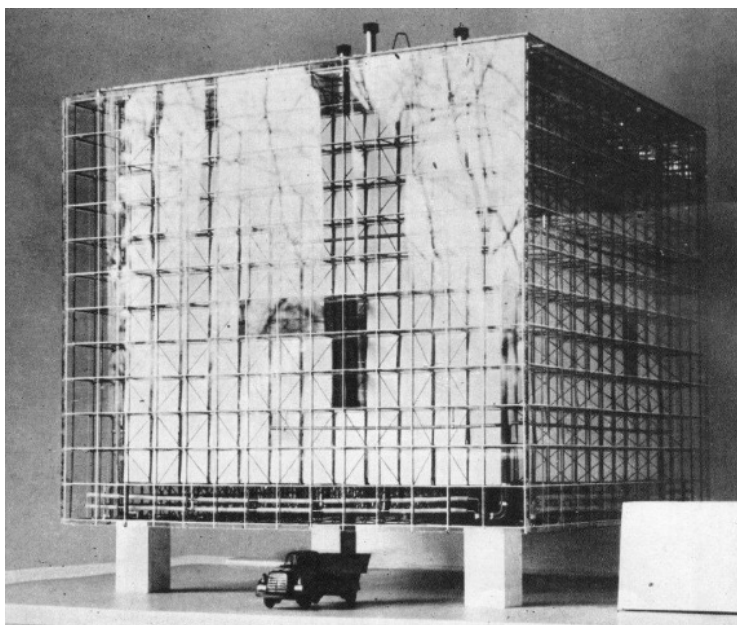


Fig. 9: *Open Form at Yale school*, Oskar Hansen

When we replace architecture with the WTC 24-project in Vanin's way of thinking, the use of the 24th floor became the form of the experiment. Focusing on the process, subjectivity and creation of frames for individual and group expression, the free space became an instrument that could be used and transformed by its users and adapted easily to their changing needs. Oskar Hansen's Open Form ideas of frame composition and subjectivity, presented as his Open Form Theory at the CIAM Meeting in Otterlo in 1959, was all about developing strategies of indeterminacy, flexibility and collective participation.

CONCLUSION

This article extensively reflected on the WTC24 experiment of the faculty of architecture. This originally stemmed from a pragmatic need, but soon developed into a pedagogical project.

It can be looked at from the perspective of 'educational democracies'. The project could only arise in an environment of indecision, and an (un)conscious retention of control and control mechanisms. The experiment contains many more elements than anyone could have foreseen. A lot of them are described above. In this way, the project can certainly be labeled as a social-psychological experiment. In that sense, the word 'innovation' does not seem to be covering the full experiment. Unpredictability, on the other hand, appears to be more appropriate.

Updating the Spatial Figures of Learning

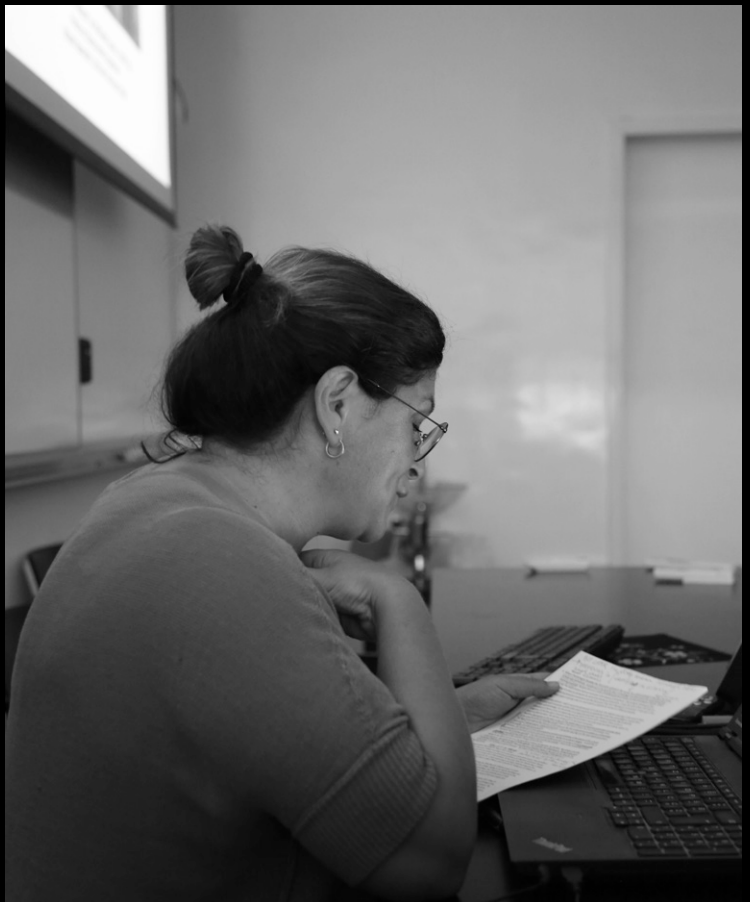
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KEYWORDS

open campus, shared school, informal spaces,
alternative paths

The educational institution represents the basis of civil society: any great empire or civilization began to be considered when it developed a structured educational system capable to educate aware citizens participating in public life. Retracing the etymological origin of the term school, the latter suggests a hidden component which should still be at the basis of the idea of contemporary school. The word comes from the Latin *schola*, which derives from the ancient Greek *scholè* that means to take care of free time. The *scholè* was the time in which one rested from the effort of daily life, to devote himself to study and reasoning. The proposal in this paper is that the first hidden layer of architectural education is to give back to the school its authentic meaning of *scholè*, place of the *otium*, where the love of knowledge lives. The Place on one side and the Educator on the other are the first components to update our universities: open campus, informal spaces, off-the-record paths + innovative teaching are the main tools to pursue a better quality of architectural education.



Schools, fundamental institutions in civil society, are advancing and experimenting with new educational models at all levels with the aim of making them a place of life, an environment for learning which is open to the varying didactic approaches and rapid changes of recent decades. University education, but not only, must be innovated to cater for and better promote personal and diverse development processes so that everyone can receive support and nurture their own specific abilities.

Flexibility and dynamism are the cornerstones of the new didactic approach, taking the place of the passiveness, coercion and imposition so prevalent in the theoretical and detached educational models that have now been completely superseded.

Emphasising the close connection between architecture and pedagogy, common economic, environmental, social and educational problems underline the urgent need to modernise school buildings and university campuses. This need for change involves the key structures; from the concept of hosting students and the entire educational community to questions connected with energy performance, better and reduced environmental impacts, the modernisation of materials and technologies. Campuses, as hubs of excellence, and schools, as public community buildings, should identify themselves as new institutions that are recognisable in the local context of the neighbourhood, the urban fabric and the city, but also at global level in terms of comparison with other institutions.

An ongoing phenomenon is certainly the stimulus for modernisation in terms of internationalisation and social integration through inclusion policies and participation. At all levels of schooling, teaching spaces are subject in major European cities, to programmes for the replacement of obsolete school buildings, projects for the redevelopment and modernisation of facilities, and tenders for the designing of new school structures.

ROOTS: PERIPATETIC SCHOOL AND PAIDÉIA IN CLASSICAL GREECE, SCHOLA AND OTIUM IN ANCIENT ROME

As part of this reflection on the educational institute as the basis of civil society let me delve back into the past to identify the necessary foundations on which I base my argument. The great empires and civilisations in history only began to be considered as such after having developed a structured education system that was able to produce informed citizens capable of participating in public life. In my opinion there is a dimension in the etymology of the word *school* that should be present in the idea of the contemporary school. The word derives from the Latin *schola*, which in turn comes from the Greek *scholè*, which meant 'free time'. *Scholè* was the time in

which one rested from the exertions of daily life and focused on studying, reasoning and thinking.

In the Lyceum, the great Greek school of philosophy founded by Aristotle, also known as the “peripatetic school” (Peripatetiké Scholé in Greek), members would meet at the Gymnasium of Athens, close to the temple dedicated to Apollo Lyceus, and walk informally “peri”, i.e. around the perimeter of the building surrounded by a colonnade, conversing with each other. During their walks, the members of Aristotle’s school would embark on informal debates and philosophical and scientific dialogues while moving around from place to place, always in motion. A practice that fitted with the concept of dynamic learning, of learning during the act of walking together outdoors. The main contemporary theories and concepts of innovative didactics include a hypothesis analogous to that of Aristotle’s peripatetics: the practice of learning through active, diligent and dynamic work that simultaneously involves both groups of teachers and learners.

The present crisis¹ afflicting the school classroom, as the only place where teacher-led educational activities can take place, forces us to consider the value of experiencing places, spaces and their differences as a key aspect of education. Architects are taught that observation and experience inevitably imply the presence of a physical body: a body that measures the distance or proximity of things as well as the degree to which they change over time (at night and during the day, for example, or the differences in light depending on the seasons)². As part of the work we carry out in the design workshops I have been holding for years, the Architecture Experiences class involves the planning of itineraries aimed at improving the programme of ex-cathedra lessons. Experiencing places enables students to gain knowledge of all of the scales of architecture and the landscape: from distant horizons to the local features of the overall architecture, to specific environments, materials and

1 Official Journal of the Italian Republic. Law 107 / July 13th, 2015, *Reform of the School* [main source: Gazzetta Ufficiale della Repubblica Italiana, Legge 107 del 13 luglio 2015, *Riforma della Scuola*]. The school system has been completely reformed, to guarantee autonomy for the purpose of a better training offer. The aim of the Reform is to affirm the central role of school in society, raise education levels and student skills, tackling socio-cultural inequalities, prevent and recover school dropout. Creating an open school as innovative research and teaching laboratory means proposing citizenship participation and education processes, to guarantee the right to study and equal opportunities.

2 B. Coppetti, “L’esperienza del passato prossimo” in “*Imparare Architettura. I laboratori di progettazione e le pratiche di insegnamento*” by J. Leveratto, Atti del VII Forum ProArch, Società Scientifica Nazionale dei docenti di Progettazione Architettonica, ISBN 978-88-909054-6-9

details. Through a familiarisation process, the collective experience of architecture in the 20th century sought to construct a sphere of communicable meaning, knowledge that was lasting because it was direct; an awareness that would ideally form part of everybody's cultural baggage.

At the same time there was also the humble ambition of introducing the educational concept implied in the complex Ancient Greek term *Paidéia*. As well as teaching, *Paidéia* also implies the ethical and spiritual growth of children in order that they may become mature and fully-formed citizens. An elevated form of culture able to guide their harmonious integration in society, in a field of application whose disciplines, overseen by the Muses, included Art, understood as the all-pervading truth, elements of history, rhetoric, dance, religion and music (U. Galimberti). The education and human formation implied in *Paidéia* constituted the pedagogical model during the golden age of Athens in the 5th century B.C., a time when the fruits of its continuous quest to achieve the ideal form of civilisation and morality that engaged man as a whole flourished.

Subsequently, the Roman word *schola* recognised the original idea of leisure, rest and time dedicated to growth, philosophical dialogue and science. In the first etymological dictionary of the Italian language, Ottorino Pianigiani³ proposes a connection between the original meaning of the term *schola* and the spaces around the baths of the Roman spa, called *schola-labri* and *schola-alvei*. These were areas where people could converse and share ideas as they waited their turn. In this context, traditional etymology, as well as a number of contemporary scholars (Tenuta, 2013)⁴, draws a distinction between *otium*, the free time of privileged citizens who were able to dedicate themselves to their studies or to reflection, and *negotium*, the time spent taking care of the practical aspects of life and financial affairs. *Otium* was a moment connected with excellence and elevated lifestyles that formed part of the *schola*. However, over time the sense of dynamic learning implied by term was completely lost and it became associated with a motionless abstention from all activities, a habitual and self-indulgent form of laziness. I believe that we need to find a new sense of balance between the Roman *otium* and *negotium* because in the contemporary world we devote most of our time to *neg-otium*, i.e. negotiating, quantifying and evaluating all and sundry, including education and the results we expect. A misleading aspect because it

3 Etymological Vocabulary of the Italian Language by Ottorino Pianigiani, vol. 2, Rome-Milan 1907

4 <http://www.edscuola.eu/wordpress/?p=34688>

forgets that the etymological root of *neg-otium* ‘denies otium’ and therefore denies the time dedicated to reflection, thought and the search for meaning implied in the Latin meaning of the term *schola*.

I want to nail down one other key moment in the ancient history of our schools, the point in time when the meaning of the term *schola* was definitively changed to refer to a specific place, to the school building constructed for educational and learning purposes. The Palatine school founded by Charlemagne was the first public school in the world. Charlemagne created a circle of intellectuals from all over the Carolingian Empire — those who had developed an innovative international atmosphere over the course of the 9th century — in a specific location. Charlemagne developed the meaning of school as an institution for moral and intellectual education, a school which, at the time, was unique in not being dependent on the ecclesiastical institutions. It was therefore the first public school free of ideological constraints. A major step towards the ambitious goal of uniting a huge empire consisting of many different populations.

A COMMON PROJECT, ACTIVE LEARNING AND SHARED GOALS

The common hypothesis that it is possible to see inside our schools and all levels of education stems from our need to develop a widespread ethical responsibility towards environmental issues connected with controlling resources. The commitments of the UN, the numerous protocols signed by many countries to protect the environment (the main ones including the 1997 Kyoto Protocol on global warming, drafted by around 180 countries across the world) and local actions to inform and raise awareness of the issue have, over time, led to the general acceptance that our resources are limited and that we need to monitor and reduce our consumption as a result. An awareness that involves individuals and the collective, that brings together educational communities and students in an effort to adopt a common and shared approach. An interdisciplinary issue that is shaping new forms of teaching, that involves all age groups, all educational institutions whether public or private, and that also specifically regards the discipline of architecture.

Inside the hidden layers of the School, as well as strengthening an overarching project that involves the environmental, social and economic sustainability of our existence in the world, I think we must also adopt an approach that regards students as an essential resource for the future. Students who are the main protagonists of their own education, thinkers and scholars that

love knowledge, researchers in love with knowledge and fonts of energy, ideas and proposals. My Architecture Experiences class is creating key moments of across-the-board action: the students react to stimuli and become protagonists in significant architectural spaces. The students are actively involved during inspections and studio visits, making drawings and sketches, taking measurements and photos. They collaborate, they exchange thoughts and opinions, asking for more information and posing problematic questions that involve the essence of living, constructing, composing. Questions that rarely emerge when they attend passive teacher-led classroom lessons with projections of images and designs in dimly-lit rooms.

In terms of the quality of teaching we must always remember that university education represents an impassioned decision to learn more and expand our knowledge; it isn't mandatory, it isn't a place of coercion because university isn't just about studying, it is also culture, sport, art, vision and sharing ideas. In this regard the Bauhaus was a pioneer and remains fascinating to this day because of the innovative concept of teaching it adopted, centred on the close connection between practical activities and theory. The blend of anti-academic intellectual positions, unconventional teachings and the mythical emancipation of women saw the Bauhaus school adopt a radically new and modern vision of everyday life. New forms of civil life, the experience of a new perception of the corporal sphere, the role of music in the school and its imaginative parties were all examples of its close affinity with the spirit of the time, *L'Esprit Nouveau*, and its continuous and vibrant commitment to truly multidisciplinary experimentation.

As such, I believe that among the hidden layers of the contemporary school we can find the real meaning of the Roman scholè, a place where a love of knowledge thrives through study and theoretical research, and also rediscover the sphere of practice, observation and experience. In my opinion the abstraction of (too) many educational experiences from real life in architectural design severely limits our ability to learn from the teaching provided over time. The Campus space on one hand, as the main site of students' everyday experience, and Lecturers on the other are the first elements through which to update our universities: the hypothesis of an open campus, of informal spaces, of unconventional or alternative physical-spatial and pedagogical courses, together with the radical updating of teaching methods, represent the tools for pursuing higher quality architectural training. The hypothesis of opening and adjusting the boundaries that codify the forms of coexistence on the campus or the school premises makes it possible to reclassify school spaces with open and

permeable public spaces. At the same time these could become key structures for giving form to the space inhabited by human beings in their individual or social dimensions. The focus of my research is the updating of the spatial figures of learning in the knowledge that the distance between current and future public schools will be drastically reduced with new methods of active learning and coexistence, through inclusion and sharing strategies, through actions capable of addressing and mending the fractures, contradictions and problems that characterise them.

PROJECT ACTIONS IN THREE CASE STUDIES

In parallel with the promotion of didactic innovation processes and the development of policies for the internationalisation of universities, the urban and architectural regeneration of school spaces has assumed a central role in all socio-educational contexts that intend to embrace the rapid changes of recent decades. Below I will analyse the processes of regeneration and adjusting to the new conditions in three case studies (Milan Polytechnic, Bocconi University of Milan, department research study “A shared school”), which specifically involve the up-dating of the spatial figures of learning.

Milan Polytechnic

Milan Polytechnic has invested lots of resources in creating a more welcoming, forward-looking university. As well as constructing various student houses from scratch and improving existing buildings, in 2017 it opened a worksite to redevelop the Bonardi Campus. “The development process around Via Bonardi that began in the post-war years created an overload of buildings without following a single project and resulted in an area notable for its poor environmental quality and lack of free spaces. Because of this the university launched a project to redevelop and reorganise the area in an attempt to improve the quality of the buildings and their functionality; the plan is to increase the number of open spaces and study areas available to students and to improve the quality of the environment through the creation of large green spaces. The new university campus stems from an idea by Renzo Piano given to Milan Polytechnic and from the enhancement and development of the original idea by Odb-Ottavio Di Blasi & Partners”⁵. The project, currently in

5 <https://www.polimi.it/en/the-politecnico/university-projects/construction-sites/new-architecture-campus/>

the works, is focused on the creation of two pedestrian axes that cross the campus, the first running from east to west from via Ampere to via Ponzio, and the second going from north to south from via Bonardi towards the centre of the campus. A new system of open and tree-lined common spaces connects the ground level of the city with the campus's wood 3.5 metres below street level. The project on via Bonardi involves the development of a new low building, for classrooms and labs, whose roof is designed as a public square at ground level. From this new urban space it will be possible to see the crowns of the trees in the university area. A project centred on the two sections which generate a new relationship between the existing volumes thanks to the redevelopment of the open space which from a car park is transformed into a tree-lined connecting space for students, a place for informal socialisation, leisure and recreation.

At the same time Milan Polytechnic is seeking to modernise in the area of educational innovation with the aim of providing its professors and researchers with a specific pedagogical background that integrates traditional teacher-led approaches with processes in which the students play an active role.⁶ The goal is to stimulate active learning, involving students in the solving of real problems, fostering their creative potential and development of soft skills also through the appropriate use of digital tools and content. "The role of education systems is no longer that of replicating existing social systems but of creating the necessary conditions for the invention of new worlds. Can the fact that students are not what they used to be constitute an alibi? Perhaps not. We adults have also changed over time and even the world is not how it once was. In the world in which we live, if education is not profoundly reshaped in terms of its goals and methods it could, as Davidoff argues, become a tool for forming the most effective vandals on earth. And perhaps we can no longer afford to run this risk. Goals and the means of achieving them take form reciprocally. This is the same in all human contexts and also in the field of education. If we propose to rethink the goals of education, we must also reflect seriously on its methods and styles." (S. Sancassani, 2019). On this premise, planning and introducing educational innovations means posing ourselves the problem of moving from a teacher-led and transmissive approach to one in which learning processes are centred on the student. Processes that stimulate their active, creative and collaborative dimensions are the cornerstones of the learning experience at a time of

6 Milan Polytechnic, Susanna Sancassani for METID Learning Innovation 2019, Pedagogical models and practical approaches to educational innovation

rapid evolution and substantial change. To find solutions that are not simply a replica of those identified in the past, the key competences are those defined by the 4 C's: collaboration, creativity, communication and critical thought. Competences that make it possible to lean on specialist knowledge and skills when faced with new problems. Through a process that brings soft skills into play, the improvement of the learning experience must extend as far as the scope of the architectural design discipline: a collaborative group effort that stimulates creativity but at the same time creates a solid basis of scientific knowledge and humanist cultural components which together are able to drive informed critical thinking.

Bocconi University

The Bocconi University case is emblematic for the gradual and pervasive development process which has continued unabated around its historic site since it was founded in 1902. The main milestones are summarised in order to emphasise the periodic need for the change, adaptation and extension of its spatial configurations.

The rationalist building of Giuseppe Pagano and Gian Giacomo Predeval, opened in 1941, was designed according to an open but rigorous plan; it was flanked in 1956 by a building that hosted the canteens and the student residences, designed by Giovanni Muzio. After the further extension of the Aula Magna and the library with a number of departments in the 1960s (Giovanni Muzio 1963), the next development took place in the 1980s when a rooftop extension and some additions to the existing volumes created new surfaces. Designed by Ignazio Gardella, an elliptical building known as "the velodrome" and containing new classrooms was opened to the north of the Campus on via Sarfatti in 2001. The subsequent project of Grafton Architects (2003–2008), carried out following an international call for tenders, marked an important and decisive moment in the redesign and radical transformation of the university's spaces: the vigorous new volumes clad in Ceppo Lombardo stone and the large window of the underground Auditorium on Viale Bligny create a modern monument that refreshes the identity of Bocconi University. The internal courtyards, open to the public as well as citizens, are accessible new urban spaces. The main public square has become an active and established part of the city, giving the Campus an interesting new urban boundary that is innovative but at the same time strong, tactile and authoritative.

Another development characterising the ever-changing and dynamic Bocconi University Campus is an expansion to

the south that incorporates the former area of the Centrale del Latte, an abandoned site that hosted the municipal milk collection and processing factory that served the entire city of Milan. The project by international architecture firm SANAA belonging to Kazuyo Sejima and Ryue Nishizawa involves close interaction with the surrounding urban fabric. The green and connecting system will involve the existing Parco Ravizza and the cycle/pedestrian path will open up the sports and leisure centre with gyms and Olympic-size swimming pool to the city.⁷ The sinuous forms of the new campus that will emerge from the connecting open spaces and greenery of the park will host new residences for students, new spaces for teaching and offices, resulting in a modern campus layout that is innovative on the international panorama and at the same time attentive to local requirements.

“A shared school for a culture of happiness”, a research study

My third case study on the modernisation of the spatial figures of learning relates to the project I am carrying out at the Department of Architecture and Urban Studies at Milan Polytechnic. Covering architecture, pedagogy and social action, the research study entitled “*A shared school, for a culture of Happiness*” focuses on the innovation of teaching and on re-thinking the role of the public education institution for schools, in the age range of 5 to 14 years.⁸

Based on the observation that the public school education model is no longer able to meet the social needs of the modern world the Government, through the 2016 Stability Law and in cooperation with banking foundations, set up a fund to combat child educational poverty in order to support experimental measures to remove the cultural, social and economic barriers that prevent minors from fully accessing educational processes.

The primary goal of the partnership set up for the “A shared

7 Bocconi University, new Campus in Milan: https://www.unibocconi.eu/wps/wcm/connect/bocconi/sitopubblico_en/navigation+tree/home/campus+and+services/bocconi+urban+campus/new+campus

8 The “*A shared school for culture of Happiness*” project was the winner of the Nuove Generazioni 2017 competition [<https://www.conibambini.org/bando-nuove-generazioni-5-14-anni>], a Fund for combating child educational poverty. Project leaders Cooperho and the La Fucina association with the Municipality of Rho. Scientific Committee: Prof. Monica Guerra, Prof. Francesca Antonacci of the Department of Human Sciences for Education, Bicocca University Milan; Prof. Barbara Coppetti for DASTU — Department of Architecture and Urban Studies, Milan Polytechnic; Barbara Mitelli, Marina Alini for the Humanistic Coaching School of Milan.

school” project is to stop the gradual educational impoverishment identified by the school’s stakeholders.

From a pedagogical perspective the project aims to trial and export an action model that makes it possible to affect important changes in the sphere of public schools. These must be able to modernise in order to meet the need for change imposed by modern society without losing their educational mandate as a place for the learning and growth of every individual. In fact, the school environment continues to symbolise the key institution of learning for families and a reference point in the daily lives of children. Their belonging to complex cultural and social contexts, not just related to their geographical origins but also connected with their age, social class, habits and ways of dealing with emotions, is certainly one of the reasons for the inadequacy of the responses of modern schools.

The inability to manage different habits, reactions and emotions connected with structurally distant roots leads to dissatisfaction and the impoverishment of the educational and development action of schools. In addition, the organisation of public schools is regulated by structures and resources that must be supported in such a way that the transformation foreseen at various levels (EU, Ministry of Education, University and Research, local authorities) is both real and positive. The new educational project proposed in the study introduces a method of learning that involves the entire being (mind, body, emotions) and enables relatives to identify hidden talents and abilities. “A shared school” therefore favours the model of an open and common school, a democratic place for growth, meeting, exchange and enrichment where children can experience sensory relations.

In parallel, from an architectural and spatial perspective, the school will be redesigned in qualitative terms through a project to redevelop collective spaces and modernise the identity of the places. A spatial modernisation project to be realised via minimal actions, measured against the sense of belonging to the school of the children, the teachers, parents — in other words, the entire educational community.

The aim is to redefine the sense of recognition between the school and all those who frequent it: an architectural project that gives new identity to the spaces, offering new interdisciplinary perspectives in places where critical social issues, marginalisation and sometimes even violence seem to prevail.

By looking after the premises, taking care of school spaces like the garden, the trees, the play area, the canteen and all reception areas, it will be possible to reconfigure areas often viewed as weak and marginal. The project also aims at reflecting on the technical components of health, safety and energy efficiency of the school building.

In the “A shared school” project the modernisation of the identity of the public school simultaneously involves both the pedagogical/didactic and architectural and spatial aspects, but it is also important to work in tandem with local voluntary associations. The complex and indispensable network that has been formed, together with the municipal council of Rho, local businesses, neighbourhoods and groups operating in the local area to raise awareness of specific cases, is generating an interesting joint venture experiment. The three schools that have signed up for the project form part of the two Franceschini and Anne Frank *Istituti Comprensivi* and are holding the first meetings to identify the classes and teachers which, on a voluntary basis, will actively take part in the joint architectural design activities, workshops and humanistic coaching sessions. In the fertile and vibrant test bed of the Franceschini Medaglie d’Oro school we have already launched the collaboration and joint design process relative to the modifications that the students and educational community would like to make to their school and the adjacent public park.

TAKING CARE OF PLACES AND TAKING CARE OF PEOPLE

The updating of the spatial figures of learning and the aim of the research the group is conducting involve the redesign of existing apparatus. Adapting and opening the doors and the fences of schools with inclusion and sharing strategies, with actions that address and treat the fractures, contradictions and problems that characterise them, can certainly reduce the distance between present and future public schools. The hypothesis of opening and adjusting aspects like the boundaries of the school, which traditionally regulate methods of coexistence, can redefine the spaces through new permeable connections. In parallel with trialling new ways of learning and living together, the notion of opening the school premises to the neighbourhood, to intergenerational cultural, recreational and educational daytime and evening activities would certainly make the school a recognisable and vibrant hub. Dedicating time to discovering the specific skills of each person and reserving space for the individual in relation to the group are key objectives of the Shared School architectural and pedagogical project.

The project for the redevelopment and care of the spaces of state schools that is being developed, together with the other phenomena taking place not just in Italy but all over Europe in the area of university education, necessarily focus renewed attention on the emancipation of every individual who, regardless of their origins or age, must strive for self-satisfaction and self-fulfilment.

This can happen through education and the management of one's emotions, gradually leading to independence, and through the culture of happiness experienced by those who achieve complete self-fulfilment. An aspect that follows on from the ancient idea of human learning implied in the Greek *Paidéia*, where the complete formation of the individual came about by studying the disciplines guarded by the Muses: poetry, art, music, history, comedy, tragedy and dance. Mythical figures that embody a specific idea of harmonious integration in society, reflection of the supreme ideal of civil society where sensitivity and emotions have time, space and ways to express themselves.

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Fig. 1: The School of Athens by Raphael, 1509–1511, fresco in *Stanza della Segnatura*, Vatican Museum, Vatican, Rome

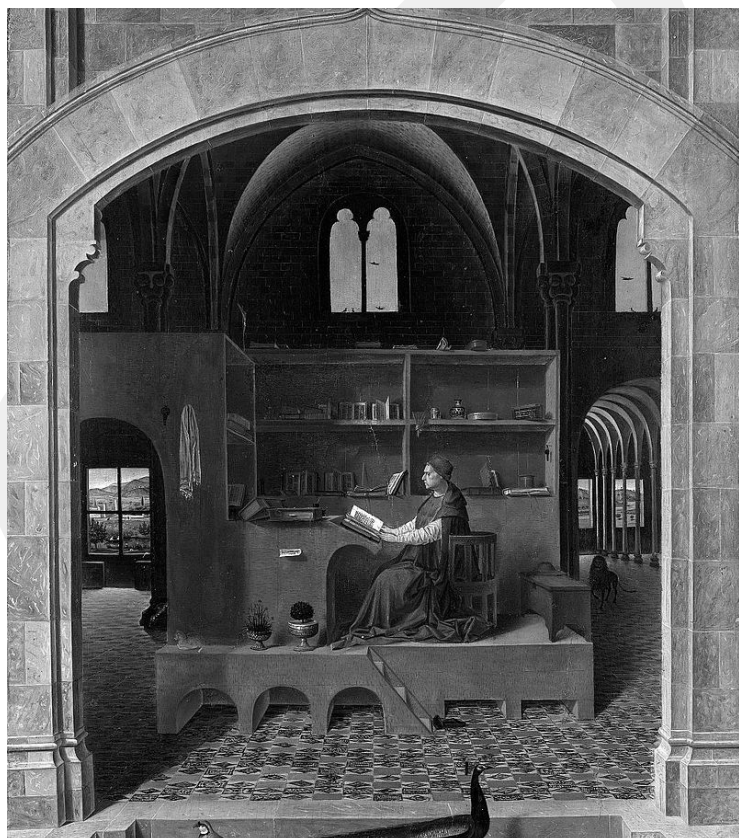


Fig. 2: St. Jerome in his study by Antonello da Messina, 1474–1475, painting conserved at the National Gallery of London



Fig. 3: The urban value of the new Bonardi Campus at Milan Polytechnic: from Giò Ponti, Piero Portaluppi, Giordano Forti Project (1953–61) to the Vittoriano Viganò Building (1970–85) to the new pedestrian path between the trees designed by Renzo Piano, (2015).



Fig. 4: The urban value of the new Bocconi Campus in Milan. Grafton Architects (2003–2008) on Viale Bligny and SANAA 2015: the University is expanding to the south, incorporating the former area of the Centrale del Latte (former milk collection and processing plant for the entire municipality of Milan). The striking forms of the new campus will revitalize and interact with the surrounding urban fabric.

IMAGE SOURCES

Fig. 1 The School of Athens' by Raffaello Sanzio, 1509–1511, fresco in Musei Vaticani, Rome

Fig. 2 St Jerome in his study by Antonello da Messina, 1474–1475, painting in National Gallery London

Fig. 3 The urban value of new Campus Bonardi in Polytechnic University of Milan

Fig. 4 The urban value of new Bocconi Campus in Milano

Effects of Restorative Environments on Creativity in Case of Architecture Education

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KEYWORDS

architectural education, architectural creativity, creativity, meditative spaces, neuroscience of creativity, restorative environments

Creativity is a mental process, and cognitive psychology has focused on this subject, especially in the last century. While neuroscience concentrates on creative processes; new data emerges. When we consider architectural production as a creative process, the "free association REST thinking mode" focuses on the principle of free circulating thought, allowing relaxation and free-thinking to lead to new connections (creative moments) in the brain. The paper aims to focus on how spaces affect the creative process in case of architectural education, production, and creation. If REST mode — as relaxation, meditation, and awareness — supports the process of creation, how do restorative (calming, meditative) spaces and environments affect this process as well? With this approach, students will be questioned with quantitative methods to collect data about the effects of faculty and meditative environments on the creative process.



INTRODUCTION

Creativity happens when a thought comes up to surface in mind, it has a complex nature, and it does not happen in a tabula rasa condition. As Andreasen states, the interaction of human thoughts with socio-cultural situations create this phenomenon (Andreasen, 2006). Portillo defines creativity as an interconnected and multidimensional construct involving person, process, product, and place (environment/ press). The environment and a person's creativity are connected (Portillo, 1996). One of the main intentions of this paper is to address the relationship between creativity and its supportive environment in the case of architectural education, which can be defined as a design study that gets its origins from creativity. Freeman categorizes creativity with the stages such as: Preparation, Incubation, Enlightenment (A-ha moment), Affirmation/Verification (Freeman, 1971). Following that organization, we can consider that the first two stages are extraordinarily complex, intricate, and interactive processes, and in case of architectural education and its environmental necessities, designs should be answering to this complexity and interactivity as well. On the other hand, as Andreasen researches, the A-ha moment process is dependent on meditative and restorative times, and during that time the brain can be more creative and make more connections, which can become a new thought and a creative idea.

Andreasen deepens to the A-ha moment stage and even though creativity is a complex process, while the brain is in the REST (random episodic silent thought) mode, which is described as "free association", the mind is relaxed and focused onto only one subject such as breath, it creates new synapses and connections by picking up topics from the unconscious fountain of knowledge that has been collected (Andreasen, 2006). The psychologists researched with experiments such as divergent thinking questionnaires and declared that, in the REST mode, while the mind is quiet, meditative, and free-thinking, the brain generates new creative ideas.

This paper is derived from a cognitive psychology book of Andreasen that focuses on the neuroscience of creativity and the REST mode (Andreasen, 2006). With this data, the paper traces neuroscience of creativity in architectural education environments, within the relationship of REST mode, searching on the effect of meditative and restorative environments on creativity. After reaching the research about REST mode where our brain is in relaxation and meditation, our creativity is getting higher, paper asks in order to support creativity, can restorative environments play a role in creativity?

As DeBono declares, it is important to consider creativity as the primary source in any kind of thinking and as inseparable from life itself (DeBono, 1993). Guilford describes that creativity, like many other activities, is a behavior that can be developed and learned (Guilford, 1950). This paper focuses on the neuroscience of creativity and its supportive environments that can develop this ability in architectural education.

Thus, the paper aims to ask, what is the effect of spaces to this REST mode and creative process? Can meditative and restorative environments support the REST mode and enhance creativity during architectural education? As Andreasen noted, the source of unconsciousness brings about a creation process as the result of new connections and synapsis during the free movement thought (Andreasen, 2006). Working in this sense, accepting that creativity is a complex process and that it depends on senses, observation, culture, field, stimuli, and tests, the paper aims to focus on how spaces affect the creative process in case of architectural education, production, and creation. If REST mode supports the process of creation, how do restorative (calming, meditative) spaces and environments affect this process as well?

As a case study, a questionnaire is prepared and asked to third- and fourth-year students of İTÜ Architecture Faculty, in order to get data from the results whether restorative spaces and meditative moments support their creativity in the design process and how is the creative process affected by the environment? As neuroscience declares, our environment has many effects on our behavior. Thus, to develop the creative process in architecture education, learning environments should inherit related qualities. The result of the questionnaire is expected to give feedback about architecture education environments and trying to reach the response if the meditative spaces are affecting the creative process positively.

WHAT IS CREATIVITY? HISTORICAL BACKGROUND OF CREATIVITY.

Creativity is a mental activity; as Andreasen describes, it happens when a thought comes up to surface in mind. However, this definition is missing some parts (Andreasen, 2006). Creativity does not happen away from everything in a tabula rasa environment or state of mind. The interaction of human thoughts with socio-cultural situations creates a phenomenon not only individual but also systematic scale. Our word 'create' evolved from "*creare*" which means to produce, to do, and to bring into being. From the 17th century until the beginning of the 20th century, creativity was considered as equal to

intelligence. At the beginning of the 20th century, creativity's relation to genetical factors and psychological sicknesses have been researched. Scientifically, the scientists tried to define creativity by the 20th century, with the spread of psychology as modern science. In the 1950s, scientists supported the tie between creativity and intelligence with many experiments. Moreover, by the 70s, creativity researches gained speed.

Roger MacKinnon, who researched creativity, investigated architects by using many variables, including intelligence. He was trying to reach the relation of the intelligence levels of architects with their creativity. In this research, architects have been grouped in three levels: Highly creative, creative and not creative. It can be interpreted from this phase of the research method that the researcher used interval scales for the architects to classify his variables, grouped them with his categorization on three levels. Later, he found out after the IQ tests that each architect had similar IQ scores, varying around 120. Therefore, this research declared that intelligence does not have a strong relation to creativity because the ones who are highly creative did not have any IQ score difference with the un-creative architects.

Mihaly Csikszentmihalyi stated that "creativity results from the interaction of a system composed of three elements: The first one is the knowledge field that is composing the components of culture that contain symbolic rules (Csikszentmihalyi, 1996). The second one is a field of experts who recognize and validate innovation; the third one is the individual that brings novelty into the domain. Each of the three main components affect the others and every component is necessary in creativity but not enough, in and of itself, to produce the novelty.

With Andreasen's interpretation, components of creativity are originality, utility, and the necessity of production. Therefore, generally, creativity starts with the "individual," continues by the "process," and searches the ways of conceptualizing. When it finds out the solution, the product is being formed. For cognitive neuroscience, these processes are very impressive.

Nancy Andreasen as a neuroscientist and a pioneer on cranial visualization (calculating the brain functions and qualities on living humans), developed the visualization of brain technologies. Cranial visualization is an important innovation that helps to research on human talents and brain typologies such as: How do we feel sympathy for others? How do we change the rhythm of the brain during meditation? Or, eventually, how can we benefit more from the creative talents of the brain? This visualization technique helped scientists to reach these profound questions. Andreasen researches this technique on how do acts such as feeling, thinking develop in the brain.

CAN CREATIVITY BE DEVELOPED?

For the first time in Utah Research Conference¹ in 1959, researchers argued about creativity and its relationship with education, also if it can be developed. As Guilford describes, like many other activities, creativity is a behavior that can be developed and learned. Even with limited borders, creativity can be raised (Guilford, 1950).

The learning environment in which learning and creative activities take place should provide students the ground on which creativity can flourish more readily (Hasirci, 2000). There are also arguments about whether creativity is latent potentiality or an improvable characteristic (Potur, Barkul, 2006).

“We still know very little about creativity, but we know the situations that develop creative behaviors. The only thing that should be done is to bring up the potential and to be able to do that we need to release it. An individual’s creativity is mostly suppressed by experiences or education; therefore, he cannot use the full potential. Nevertheless, if he is aware of himself, then he can run all the potential of his creativity” (Parnes, 1963). It can be noted that if creativity can be increased, in this process meditation and releasing creativity, restorative environments play a crucial role to enhance the mindfulness and awareness of the individual that leads to the enhancement of creativity.

NATURE OF THE CREATIVE PROCESS

Xanadu is described as some dreamy inspiration space described in a work subsequently inspiring a creative process, Samuel Taylor Coleridge’s poem called *Kubla Khan*; or, *A Vision in a Dream: A Fragment*. In this poem, he metaphorically explained the creative and inspirational atmosphere as a physical space — environment. He wrote the book in the 19th century, and it is the most expressive book that has ever been written in history about creativity. The poem explained *Xanadu* as a space covered by the walls where the Kublai Khan builds a palace. Throughout the poem, Coleridge gives clues about creativity and expresses that it is a complex and uncertain process that is out of the control of the individual. During the ‘70s, creativity works have gained speed, additional to individual situations, and researchers also focused on neural conditions during the creative processes. Hence, there have been questions such as: What is the importance of individual

1 The third (1959) the University of Utah Research Conference on the Identification of Creative Scientific Talent, held at Alta, Utah, June 11–14, 1959.

factors on creativity? How conscious is a creative process? Is it a result of a conscious try? How vital are divination and inspiration? How does creativity affect social environments? These questions have been added to the searches on conceptualizing scientific creativity researches. Therefore, researchers started to calculate the character and cognition. These studies ended up with experimental cognitive psychology.

Csikszentmihalyi in 1996 describes the creative process, not as linear but a complex structure that has been formed by overlapping of multi-layers, which has five stages. The first stage is Preparation: Becoming immersed in problematic issues that are interesting and arouse curiosity. The second one is Incubation: Ideas churn around below the threshold of consciousness. The third stage is the A-ha moment/inspiration: When the puzzle starts to fall together. The fourth stage is Evaluation: Deciding if the insight is valuable and worth pursuing. The last one is the Result: Translating the insight into its final work.

Koestler mentions Henri Poincaré's process as a mathematician while defining the creative process (Koestler, 1964). Poincare was studying Fuchsian theory for many years and got stuck in the theories. During restless nights he experienced a moment where he was not in a sleep mode; subsequently, he articulates his theories after that release experience. Followed by these experiences Poincare defines the conditions of creativity as following: A long research process; second: attention to subconscious thoughts and senses; third: techniques and methods through which we can develop the thoughts coming from subconscious levels. Followingly, Patrick, in 1955, prepares a definition after the statements of Poincare supporting them with research and the definition of creative stages as: First: Preparation; second: Incubation; third: Inspiration/a-ha moment; last one: Verification. (Freeman, 1971: 41). Following that organization, we can consider that the first two stages are extraordinarily complex, intricate and interactive processes, and in the case of architectural education and its environmental necessities, should be answering to this complexity and interactivity as well. Figures 1 and 2 explain the related spaces to these stages.

Scientists researched what is happening during the creative process with two methods. The first one is with IQ tests and the second one is by looking into inward techniques. In this second technique, their research focuses on the mental processes during the creative act and on divergent-convergent thinking. Many psychologists use this method in creativity tests and investigate how a person responds to a specific question creatively (divergent) or how they respond with a specific response (convergent).



Fig. 1: Kew Gardens Hills Library, photo by Michael Moran (21.11.2019). Retrieved from <https://www.curbed.com/2018/5/24/17389648/library-architecture-teens-public-space>

Fig. 2: Photo from ITU, Architecture Department's design studios. Photo by the author.

Figures 1 and 2 explain the complex and interactive quality of the creative process and show the interactive environments (that support first two stages of creativity stated by Freeman); for data sharing, preparation, research, data hunting, exhibition, sharing, learning from each other which are all dynamic and intricate processes that need suitable environments such as gathering, exhibiting, sharing, experimenting.

HOW DOES THE BRAIN CREATE?

Free association is a method that has been used by many psychologists such as Freud and Wundt. It has evolved from association psychology. It is a method not focusing on events that

are related to a chronological and conscious way but on thinking processes. Writers such as Joyce, Faulkner, Woolf used this method of “stream of consciousness” a lot. These inspiration moments can be called sleeping awake, brain-storming, or dreamy moments, where we go out of emotional inputs and we can access only by releasing, relaxing, and thinking with the flow without any conscious try, which is an essential act for creativity.

Andreasen focuses on the “stream of consciousness” technique with cranial visualization technology and searches how and where the brain creates subconscious thoughts. When it is focused on the “stream of consciousness,” it can be noted that during this process the thinking process is supported by chronological memory (autobiographical memory). This memory is related to how we relate the events with our individual level and constitutes the center of self-awareness and consciousness. However, during the “stream of consciousness” the memory that is being triggered is much more interesting. Here the chronological and autobiographical side is used less. Therefore, there is a knowledge fountain or source in deep layers we cannot access by conscious acts but only with meditations, dreams, rituals, and released time-lapses, and this is an essential source for the creativity.

When Andreasen calculates the mind activities during the relaxation times, she concludes that the brain is not “empty” during these restorative times; it is very “active.” This released state triggers the free-associated thought experience, and if there is no talk, there is a silent association happening. This silent free association thinking mode can be called as REST (random episodic silent thought); during this process, the brain’s secondary cortices are active. This is a part of the brain; we can call it evocation cortex as well. It receives new data from frontal, parietal, and temporal lob’s senses and connects these data in different and innovative new ways. Therefore, new ideas are born. The secondary cortex is one of the latest parts that has evolved in the human body. It evolves until the age of the mid twenty’s, and it keeps creating new connections. Instead, in chronology dependent memory, the brain’s memory part is being activated so we remember the things we have done in daily life and we use it mostly in memorizing. These parts are not active during the REST mode. Therefore, the more the brain is free from possessions and released, the more it uses complex parts and creates new connections from the fountain of knowledge. “And that leads to a new mathematic function, a new song, a new concept design, etc. While creativity evolves, the brain makes a freer association of ideas.” (Andreasen, 2006). In REST mode –that activates the unconscious parts– many connective cortexes are related, and many synapses have been

created where these actions transform into new ideas and new inspirations. These moments occur mostly with looking-inward moments, where the thought is not linear and sequential and where unconscious processes play a role. The association of ideas freely comes up to surface; thus, the brain starts the creative process by dissolving. It creates connections between the symbols, words, and thoughts that have not been used as connections.

STAGES OF CREATIVITY	QUALITY OF SPACES
1 st Preparation	Complex, intricate, interactive
2 nd Incubation	
3 rd Inspiration/A-ha moment	Restorative, meditative, releasing
4 th Verification	

Table 1. Explaining the creative stages and their differentiating qualities to define different needs. Prepared by the author, from the interpretation of Andreasen's (2006) theories and Freeman's (1971:41) creativity definition and categorization.

ENVIRONMENTS THAT ENHANCE CREATIVITY

It has been explained in the previous parts that relaxing, meditating, and releasing moments support and enhance the creativity and the REST mode. Therefore, this part asks if restorative, calming spaces can activate our creativity and REST mode? To be able to support the REST mode, what should be done in case of creative environments? Architectural education is being the focus as a creative process, and after this part, the paper focuses on how to enhance the creativity in architectural education by environmental design. How can meditative, restorative, calming spaces interact and activate our creativity during REST mode? Neuroscientists declare nowadays that we can focus on one sole object (it can be our breath or a landscape) and by free association of ideas or by meditation, we can support our brain to create, with secondary cortex, new connections from the subconscious level and tie up new ideas to each other, that come up as "inspirations".

Kaplan, Kaplan, and Ryan (1998:67) described a restorative environment as a place to rest and recuperate, and they stated that "natural settings are particularly effective for this" (pp.67). A natural landscape can produce a restorative experience and can renew a person's cognitive powers and they are described as spaces with the following characteristics: "quiet fascination; wandering in small spaces; separation from distraction; wood, stone, old; and the view from the window (Kaplan, Kaplan, & Ryan, 1998).



Fig. 3: Tanner Fountain at Harvard University, photo by Alan Ward. (21.11.2019). Retrieved from <https://www.asla.org/awards/2008/08winners/312.html>



Fig. 4: Metropolitan State University, Library's Labyrinth Garden. (21.11.2019). Retrieved from <http://www.bestcounselingschools.org/best-campus-meditation-spaces/>

Figures 3, 4 & 5 refer to restorative environments that can support the REST mode by creating a meditative state and supporting the creative process in educational environments.

CASE STUDY

As a case study, twenty architecture students from third and fourth grade at the Istanbul Technical University (İTÜ) Architecture Faculty have been interviewed to form an idea if the restorative environments are supporting the creative process



Fig. 5: Carleton College—Japanese Garden. (21.11.2019). Retrieved from <http://www.bestcounselingschools.org/best-campus-meditation-spaces/>

at an inspirational level. Also, if their creative process is being affected by the environment?

As neuroscience states, our environment has many effects on our behaviors. Thus, to develop the creative process in architecture education, learning environments should inherit related qualities. During the preparation of the questionnaire, behavioral answers are expected from the students. To be able to prepare the questions, creative processes, types of each process, and categories have been researched. The questions are focusing on the students' design process, tracing their creative moments, their design project's creative moments, and the effect of the environment on this creation. The questions are constructed on the thought that the creative process needs different types of spaces because it also includes four different types of periods. While we gather the data and synthesize these data, students need very sophisticated and interactive atmospheres, but while developing and creating a new thought, what kind of spaces/environments are supporting this creative formation? There are quantitative methods to evaluate the results of this research paper. More than open-ended, mostly closed-ended questions are asked in the questionnaire.

It is kept as simple, short, understandable as possible. It has been thought that by the third year of architectural education, the creative process and understanding of this formation will be more apparent by the students.

The literature review on creativity, neuroscience of creativity helped a lot while preparing and grouping the systematic structure of the questions. In the paper, it can be expressed

as the dependent variable; creativity, independent variables are the architectural education environment's quality.

1. If we divide the architectural design process into three parts as preparation, A-ha moment, and conclusion:

(a) Which of the following from the box below explains the necessities of the first step: preparation? (as we do the exchange of ideas, chat, communicate, research, observe, etc.)

Complexity, meeting, interaction, and playfulness have been selected by %70 of the students.

Comfort	Meeting	Open-wide spaces	Individuality	Interaction
Complexity	Simplicity	Calmness	Nature	Natural light
Playfulness	Freedom	Discipline, rules	Other:	

(b) Which of the following from the box above explains the necessities of the second step as we call a-ha moment/inspiration? Nature, comfort, individuality, calmness, and wide spaces are being chosen by %70 of the students.

2. Until now, where/ in which kind of atmospheres did you receive creative insights, thoughts about your designs?

Quiet, comfortable, home comfort has been selected by %80 of the students. The rest of the students (%20) have chosen the limited time, complex places.

Calm quiet places	Limited places	In nature	Other
Uncomfortable places	Crowded places	Home comfort	

3. During your design moments when you stuck, what do you do?

I sleep, wonder, and walk, do nothing, try to relax, refresh, have been chosen by %90 of the students. Go to café, play football, socialize, get upset, try have been chosen by %10 percentage of the students.

Change the place	Go to cinema	Sleep	Read
Try to draw	Get upset and try	Wonder, walk and do nothing	Research examples
Refresh, shower, pray, meditate, try to relax	Play football, bicycle	Chat, fb, go to cafe	Other

We can notice from this question and answers that: Relaxing, refreshing, and restorative environments play a crucial role in design and creativity.

CONCLUSION

As it can be noted from the results of the questionnaire, incubation and preparation, processes are complex and need multi-actor, interactive dynamics. On the other hand, inspiration, a-ha moments depend on individuality, calmness, comfort, quietness. The creative process does not continue in a linear way; it has a complex, overlapping dynamic; that is why creative environments and, in the case of this paper, architectural education environments should be designed through this hypothesis, where the restorative environments activate our REST mode.

Design and creation have a complex system, needing (random episodic silent thought); interaction, playfulness, and restorative, meditative environments as well. Following the creativity stages and their definitions, each stage has its supportive element. During the preparation and incubation process, students should have complex, dynamic, and interactive spaces to support these stages where they learn and share. However, A-ha moment/inspiration times and the REST mode should be supported by restorative spaces and calming areas where students can activate their creative parts of the brains.

The responses of the students to the questionnaire overlap with our hypothesis.

- Incubation and preparation processes are complex and need multi-actor, interactive dynamics.
- Whereas inspiration & a-ha moments depend on individuality, calmness, release, comfort, quietness.
- The creative process has a complex, overlapping, dynamic quality; that is why creative environments and architectural education environments might be designed through this hypothesis.
- Creativity needs both interaction, complexity, playfulness, and also restorative and meditative environments as well in order to activate the REST mode.

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APPENDIX 1:**Questionnaire:**

1. If we divide the architectural design process into three parts as preparation, A-ha moment, and conclusion:

(a) Which of the following from the box below explains the necessities of the first step: preparation? (as we do the exchange of ideas, chat, communicate, research, observe, etc.)

Comfort	Meeting	Open-wide spaces	Individuality	Interaction
Complexity	Simplicity	Calmness	Nature	Natural light
Playfulness	Freedom	Discipline, rules	Other:	

(b) Which of the following from the box above explains the necessities of the second step as we call a-ha moment/inspiration?

2. Until now, where/ in which kind of atmospheres did you receive creative insights, thoughts about your designs?

Calm quiet places	Limited places	In nature	Other
Uncomfortable places	Crowded places	Home comfort	

3. During your design moments when you feel stuck, what do you do?

Change the place	Go to cinema	Sleep	Read
Try to draw	Get upset and try	Wonder, walk and do nothing	Research examples
Refresh, shower, pray, meditate, try to relax	Play football, bicycle	Chat, fb, go to cafe	Other

Read Between the Walls Spatial Dimensions of the Hidden School

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KEYWORDS

spatial dimension, walls and spaces, environmental
psychology, social phenomenology

The spatial dimension of a school transforms an abstraction into a situated phenomenon. In doing so, the context intentionally or implicitly affects education. The potential impact the physical environment and the implied connotations it carries on one's experience in and of it, is best argued by common sense. In the sense that architecture can be considered as a means to curate scenarios, anticipate and influence behaviour and even create a narrative, architecture is an agent in what composes the hidden school. In the case of educational spaces for architecture, the built environment is particularly influential as it is not only a representation of the idiosyncratic nature and program of an architecture school but also a reflection of its attitude towards the discipline and a statement about its aspirations and culture. Every aspect of an architecture school's physical presence can be interpreted as a statement about its character and spirit, despite the fact that those analyses may be inconclusive hypotheticals. A school's location and context can be related to both its self-awareness and its attitude towards the outside world.



INTRODUCTION

Education cannot be confined by the walls of an institution. Any environment has the potential of being a learning environment. The famous image of Louis Kahn in conversation with students, sitting on a meadow, listening to him talk, is the ultimate proof. That is as evident in Kahn's own words. *"I think of school as an environment of spaces where it is good to learn. Schools began with a man under a tree, who did not know he was a teacher, discussing his realization with a few who did not know they were students... the existence-will of school was there even before the circumstances of a man under a tree"* (Kahn, 1961, p.148).

So where does that leave architecture? Is the built environment a factor in the process of education and is the case of architecture schools somehow different? Referring to the last question first, a pivotal point for this text is the contestation that schools of architecture are not the norm and should be examined individually, as an exceptional phenomenon, because of a unique additional property, inherent to them — the one of a kind designer-building-user relationship. In addition, despite taking into account the general trend towards more open, flexible and collaborative learning environments, including various informal, intermediate or "third" spaces, the room required for any design-centred education still significantly differs and greatly surpasses the conventional configuration of classrooms, lecture halls and learning commons.

"Architecture schools are not typical academic buildings" (McManus, 2018, June). This is a direct reflection of the process and method of architectural education. The idiosyncratic nature of an architectural program has its spatial implications. In order for a building to meet the primal requirements for an architecture school it has to provide for a wider spectrum of spaces usually not present elsewhere. In addition to lecture halls and class rooms, administration and faculty offices, recreational and learning commons, it needs to accommodate studio spaces for individual and group work as well as storage, display areas for crits and pin ups, maker spaces: drafting or media ateliers, analogue and digital fabrication labs and craft workshop spaces, etc. Not only do schools of architecture *"suit the specific needs of a school and take on the pedagogical challenge of educating students by example"*, writes McManus (2018), but more often than not they are considered a representation of an institution's attitude towards the discipline. This notion is visible in official school information, in the language academic and administrative staff use when referring to the space for education, as well as in project descriptions by architects themselves and the argumentation they provide for their concepts.

Odile Decq (2016), acclaimed architect as well as director of the Confluence Institute for Innovation and Creative Strategies in Architecture in Lyon, who has on many occasions proclaimed that *“The best space to teach architecture in is a simple box”* (p.5), manifests this conviction in the environment of Confluence. According to its official webpage: *“The spatial organization of CONFLUENCE reflects its articulated pedagogy and generates an innovative educational structure in architecture. The spaces merge pedagogical spaces, working and living spaces as well as virtual and physical experimentation laboratories. By building the school’s architecture as a physical manifestation of its pedagogical diversity, students benefit from an open, diverse and collective body of knowledge. The whole structure acts as efficient research stimulating reflection, interactions, and individual initiatives.”*

Identification between a school’s culture and its physical environment is also apparent in the Architectural Association London School of Architecture description, again published on its official webpage, categorized symbolically under “Bedford Square”, the schools address: *“Today the AA retains the many unusual, idiosyncratic qualities of the kinds of ‘found’ event spaces that generations of students and teachers have embraced as the essential character of our school. The stately Georgian rooms in Bedford Square appropriated and transformed in to L-shaped lecture halls, members’ rooms, a central bar and other shared social spaces... represent a domestic, non-institutional architecture, unusual for any school, anywhere.”* The AA is currently undergoing an expansion as part of a masterplan strategy. Clare Wright (2017, September),

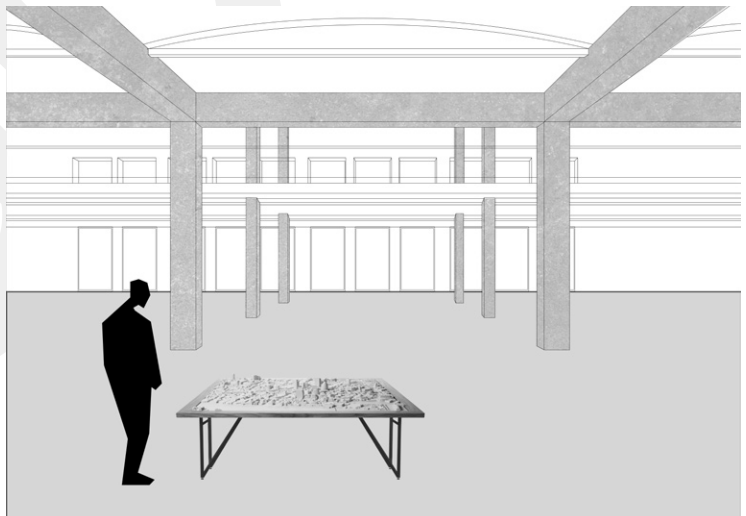


Fig. 1: A studio space at Confluence Institute School of Architecture in Lyon

one of the cofounders of the practice of Wright & Wright Architects, commissioned for that project, describes the school's culture through its architecture: *"The Architectural Association conducts its pedagogical alchemy in a labyrinthine terrace of grand Georgian townhouses in London's Bloomsbury. Intimately intertwined with the school's sense of identity, the buildings form a responsive and still-evolving armature for activities."* Former director of the AA Brett Steel also attributes educational properties to the spatial configuration of the school: *"... having the bar in the middle, through which everyone passes and helping to create the sorts of informal encounter that can be just as effective as formal set-piece teaching"* (Melvin, 2012, October). Attention to the bar and its décor is also paid by Peter Cook (2012, September), a distinguished academic of the Association, who depicts the lively cultured club-like atmosphere of the AA in the 60s, *"which represented more than a century of elitism, arrogance, freedom but, most of all, a cosmopolitanism encouraged by the presence of an expensive chandelier and a creative use of the wine or whisky bottle or likelihood that Nervi, Bucky Fuller or Gropius might pop their head round the door"*.

An important note to be made here is that the remarks above concern solely the intent behind a particular design; in other words, the spaces, conditions and situations which architecture plans for and attempts at. In that sense, they are subjective. Still, the Confluence and the AA are barely the only schools of architecture where there is a relation between ethos and space. Some other examples can aid in clarifying how place, program and culture are interconnected in the case of educational spaces for architecture and reveal what the



Fig. 2: A room at Architectural Association London School of Architecture

built environment hides. There are several facets of the spatial dimension to be considered.

Every aspect of an architecture school's physical presence can be interpreted as a statement about its character and spirit, despite the fact that those analyses risk being inconclusive hypotheticals. A school's location and context can be related to both its self-awareness and its attitude towards the outside world. This is applicable on all scales: from geographic position from a global perspective to the very local intermediate surrounding territory. Integration in the urban fabric, for example, suggest active involvement in the life of the city (Strelka Institute). An architecture school's situation within a campus environment, or in proximity to other faculties, can be interpreted by an effort towards stronger identification and multidisciplinary (TU Delft). A central location implies status and speculates about an established institution (The Bartlett School of Architecture). Decentralization of a school on the other hand can be considered a statement towards a globalized world or an attempt to spread its influence via satellites (Columbia Studio X). Schools which are more introvert often seek undisturbed isolated environments far from the public gaze and retrieve to no-man-lands (Black Mountain College). The periphery is often favored by alternative or experimental educational projects (Open city). Some even explicitly choose literally underground locations as if to underline their existence on the fringe (The Public School). The practical need of more space in relation to a programs' focus on real projects is another reason for leaving the traditional schools' premises (AA Hooke Park). Change in location can also demonstrate a shift in focus and agenda (The Berlage).

Where a school is situated does indeed make a difference. However, the spatial organization of a school and the over planning concept are the main indicators of what its educational objectives and ambitions are. Collective studio spaces aim for a culture of collaboration (NTU Learning Hub). Emphasis on learning commons blur the lines between informal and formal learning (Abedian School of Architecture). A definitive statement about the importance of flexibility and reconfigurations with regard to the dynamics of architectural education is the blank enclosed space, a mere envelope to house the knowledge production within it (The Confluence). In contrast, a variety of facilities and spaces, conducive to a multifaceted process, is a mark for seeking excellence on all levels (ETH Zurich). Some schools, refraining from major changes in the curriculum, demonstrate a similar approach towards the places that host them (MARCHI). In the case of spaces reappropriated for architectural schools, the choice of a building is symptomatic.

Some occupy architectural landmarks, despite their confined difficult to adapt or expand spaces (AA), whereas others barely need walls at all and decide on large industrial buildings with plenty of room and open space (SCI-ARC).

Despite the fact that there are many factors determining where and how a school is built, a lot about its nature can be revealed by the building and context it occupies. There is more to the setting that translates to hidden meaning. Form and volume can have a symbolic meaning as in the “Gate of Creation” (CRGS at Universidad de Monterrey). Image is among the messages that architecture conveys. Many schools have opted for high profile architectural designs to serve as their emblem (Cooper Union). The desire to consolidate under one roof a fragmented school is also reason for new construction, in addition to the need for space and representation (Gerrit Rietveld Academy and The Sandberg Institute). In some cases, school edifices purposefully interpret heritage and legacy through by introducing historical building elements in the design (Qatar University). In others, the token of tradition, culture and reputation is simply a grand old tree (University of Tokyo). The vision of a school can also be declared through its engineering, efficiency or construction (UC Berkeley). Materiality and construction are another feature that is often used as a vehicle for a schools’ aspirations in architecture (Carleton University School of Architecture). Even the design of the furniture within the school or the detailing can be revealing of the essence of its underlying culture (Bauhaus).

The hidden school may present itself in every aspect of a space, place and its architecture. You just have to read between the walls. *“It is difficult to empirically evidence how place affects higher education, but few would disagree that the role of the buildings and landscapes that make up a university transcends function. They are part and parcel of the learning experience. Through its physical estate, a university can reinforce the high ideals of scholarship, transmit its institutional values, and nurture social bounds. The campus is one of the most valuable assets at any university’s disposal”* (Coulson, Roberts and Taylor, 2010, preface). Architecture schools as built structures are not just containers of human activity. They are inevitably a part of a school’s identity, as well as a reflection of what often remains hidden or implicit. That is why architecture matters and the space where education takes place matters. As David Helfand (2013, June) puts it when elaborating on the idea behind the unconventional Quest University and its circular design: *“We built the methodology into the concrete”*, placing a great emphasis on the ever present link between the environment which houses education and the pedagogy itself.

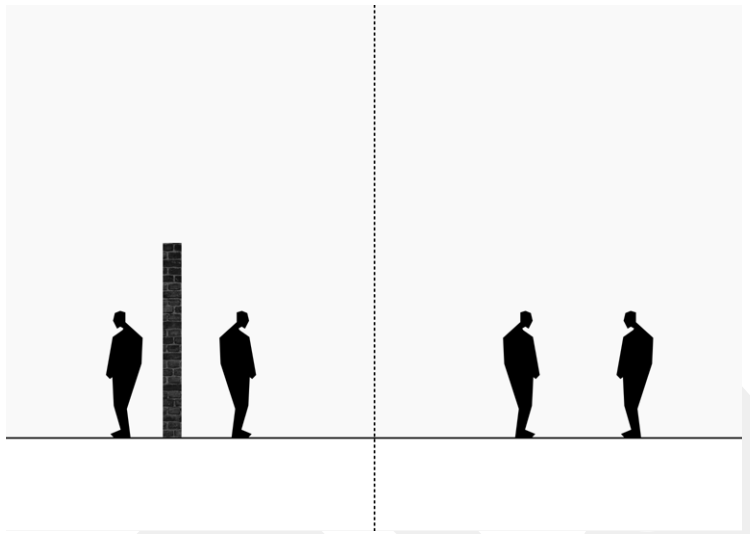


Fig. 3: An illustration of the spatial and social dimension of a wall

The spatial dimension of a school transforms an abstraction into a situated phenomenon, translating meaning through matter. In doing so, the context intentionally or subliminally affects education. The potential impact the physical environment and the implied connotations it carries on one's experience in and of it, is best argued by common sense. Consider the following example. A wall marks a boundary. Its function vary: to protect, to enclose, to constrain, to separate and differentiate between spaces, to redirect and flank. Erecting a wall, however, is an intentional design gesture. Mark Wigley (2014) often remarks that an architect designs walls at the areas of most "uncertainty" and "hesitation". That is so because the wall is a barrier or a limit. It fortifies, divides and isolates. It defines a space as an entity and provides a threshold. *"The function of the traditional wall as a protective entity became visionary once it disappeared from the world... However, the fortifying architectural wall never ceased to exist. Its trace is found... in boundaries, which perform different functions as dividers. The edge between these boundaries defines territorial limits and offers spatial definition between two different and opposing sides. The edge is a non-place — a residue of the mental separation"* (Daou, Huppertz and Phuong, 2015, p.73). So be it the Berlin Wall, the notorious *Tilted Arc* in downtown Manhattan by Richard Serra or the screen wall between the real and artificial world in the movie *The Truman Show*, a wall inherently is a boundary. That associative property is translated into one's embodied experience of a physical wall.

The existence of a wall between two entities, creates a spatial and psychological separation between them and therefore it hinders interaction to such an extent that they may not be aware of each other's presence on the opposing sides. In the alternative setup where there is no wall between two entities, several possibilities arise. There is literary room for anything to happen. The lack of a wall does not necessarily mean that the entities in question are to interact. However, what it does mean is that the act towards or against interaction is not limited by an external force. There lies the difference a single wall can make — to allow for or to reject scenarios. The example of the wall is oversimplified and seemingly reduces a complex system with both spatial and social implications to architectural determinism. Nonetheless, the purpose of the wall illustration is to demonstrate how every single composite of the built environment possess inherent potential to affect actors and actions within it: on the one hand through objective spatial properties, on the other — because of both semantics and semiotics. This suggests that architecture can be considered as a means to curate scenarios, anticipate and influence behavior and even create a narrative. In that sense, architecture is an agent and a factor in human activity, including the process of education.

Architecture does have the capacity to affect pedagogy. Yet, spatial policy is just as potent in terms of impact on education as any physical and concrete spatial tool. How the framework set by architecture is governed and appropriated on an institutional level is of utmost importance. Still, one should be reminded of the significant discrepancies, often unwritten but more often than not evident, between rules, guidelines, actual possibility and what is considered the norm in academic behavior. Referring once again to the case of the wall, policy makers are those who have the power to erect invisible walls where there are no physical ones. In a similar manner, they can create openings where they see fit. The porosity of a wall, be it a literal or a metaphorical one, is a matter of spatial policy — a significant hidden attribute of school culture. Who do you separate, how you divide, when do you isolate, why do you limit? Rethink the situation of the two entities on opposite sides of a wall in the real context of a school. Who are the two entities? Teachers and students. Administration and academic staff. Researchers and practitioners. First-year students and last-year students. Local and foreign students. School members and general public. Different sexes, different departments, different educational processes... What one is allowed and respectively prohibited within a school's walls is a matter of policy. Space allocation and utilization, opening hours, security measures, availability of access, right to use and transform the environment are all part of spatial management strategies and are within the toolkit of policy makers.

Seemingly small acts of spatial tactics may result in great consequences (studious and social) for space users and can speak volumes about the culture and vision of an institution. According to Harvard University Graduate School of Design's spatial policy statement: *"In order to guarantee that the school represents itself with a unified message... any GSD affiliate is allowed to use GSD rooms."* Drew Faust (2018, April) — Harvard University's President, reasserts that *"the architecture of our buildings, the spaces inside, among, and around them, and the pathways between them shape who we are as a university"*, as she introduces a placemaking committee, composed of faculty, students, and staff, aiming *"to create new spaces that will draw our increasingly diverse and interdisciplinary community together and enhance the intellectual, social, and cultural life..."* Consider the impact a joint canteen, a unisex bathroom, a 24-hour workshop, permission to hold classes outdoors, hot desks instead of offices or a collective teacher-student research space can have on the academic community, the education process, or the learning outcomes. If in coherence with each other, built architectural infrastructure and administrative management, can seamlessly foster a stimulating learning environment and induce a sense of ownership, collective responsibility and self-identification within students and faculty members.

What remains missing in the equation of architecture plus spatial policy, is the unregulated self-organized appropriation and use of school's space by students, teachers, staff and external parties. As mentioned above when illustrating both the intent behind a design project of a school and the influence of institutional tactics towards the spatial realm, the absence of a wall (an architect's decision) and unconditional access to a space (an administrator's decision), do not necessary result in the creation of a vibrant communication-conducive learning environment. If space is a prerequisite and provides a framework, policy is an amplifier and provides the hospitable condition, the true mark of a potential is how space is appropriated, experienced and enlivened by people. In this combination of factors lies the tacit essence of the school as a place.

As Jonathan Hill (2003) frames it in the forward of his book *Actions of Architecture. Architects and creative users*, investigating the relationship in question: *"Architecture is made by use and by design"* (p.1). On the one hand, a school's built environment resonates with people and has an impact on them. On the other hand, the user of space reciprocate, and though this interaction, constitute a social space. Juhani Pallasmaa (2012), who has on numerous occasions written about embodied experience of space, argues: *"As we enter an architectural*

space, an immediate unconscious projective identification and exchange takes place. We occupy the space and the space settles in us” (p. 54). Environmental psychology and social phenomenology reassert the relationship between the environment and its user on the basis of interdependences between person, environment and behavior, as well as a systemic view on patterns, structures and interaction models between spatial and social entities. In addition, post-occupancy evaluation reports, be their methodology often imperfect, serve as much needed concrete information on the topic (Boys, 2010) (Preiser, Nasar and Fisher, 2007). Sophisticated evidence aside, determining whether a school space “works”, and understanding what it reveals about an institution, is usually not a challenge for an observer: *“I enter a building, see a room, and — in the fraction of a second — have this feeling about it (Zumthor, 2006, p.13).* This is not to say that outcomes of architecture and policy can always be predicted with certainty, nor that the reactions of users will be similar to one another. For sure not in the case of architecture schools (Saval, 2015, September). Stephen Holl (2002, July), in a comment related to his office practice no longer being accountable for the design of Cornell University’s Milstein Hall, remarked: *“Like a brain surgeon operating on his own brain, making architecture for an architecture school is a peculiarly difficult challenge. I’ve been involved in the process of five different architecture schools over the past 13 years and believe it is one of the most difficult architectural commissions.”*

The notorious example of Milstein Hall can serve as a case study for the social space of an architecture school building and how it is relatively perceived by different agents within it. After unsuccessfully working with several teams of architects, after an architectural competition whose winner did not go on to design the building, after facing serious opposition from faculty and students at Cornell Architecture Art and Planning Department, as well as some concerns from the general public, OMA and Rem Koolhaas eventually realized the building, which opened in 2011, 12 year past the initial commission. Since then the building has received some severe critique regarding several nonstructural malfunctions and failure to comply with safety regulations, while at the same time being awarded one of the highest accolades in the field by the American Institute of Architects. The response to the project and its realization has been controversial. However, in an official statement published on the departments webpage, former deans of AAP Kent Kleinman, Gale and Ira Drukier, who have been involved in decision-making regarding the building, seem to agree that *“Milstein Hall is an extraordinary new addition to AAP’s suite of buildings, providing the academic and physical ‘center of gravity’ for*

the design arts at Cornell. Milstein Hall makes it possible for AAP to radically reconfigure the way design is taught. From a pedagogical point of view, the building is transformative.” Shohei Shigematsu (2011, September), partner at OMA and one of the architects responsible for the design, talks about how it exceeds the office’s ambition and expectation: “to serve as a pedagogical platform for the architecture, art and planning departments — an open condition that could trigger interaction and discussion”, given that according to him “students and faculty are already beginning to use the space to generate unexpected results that go beyond what we had planned.” In the opinion of an objective observer — New Yorker Journalist Thomas de Monchaux (2011, November): “It’s encouraging that during their first fall there, students have dubbed a favorite pin-up spot, perched at the far edge of a cantilever under the moody Ithaca sky, not a familiar architecture-school nickname borrowed from the language of incarceration, but something altogether lovelier: the Dance Floor.” Last but not least, the final word of those who occupy the Milstein Hall on a daily basis — the students. The first reaction is positive as reported by Daniel Aloi’s (2011, August) from the Cornell Chronicle: “I can’t believe it’s ours. We got the facilities that reflect the caliber of the program...Not only is this going to be our new home, but everyone has a new attitude... Everyone has this new-found sense of pride for the program.” Although many of the opinions coincide, only time will tell whether students spend time on the above mentioned *Dance Floor* and if the place proves to be as conducive to the pedagogical vision of the institution as intended and expected. If in symbiosis, the triad formed by architectural intent, institutional spatial policy

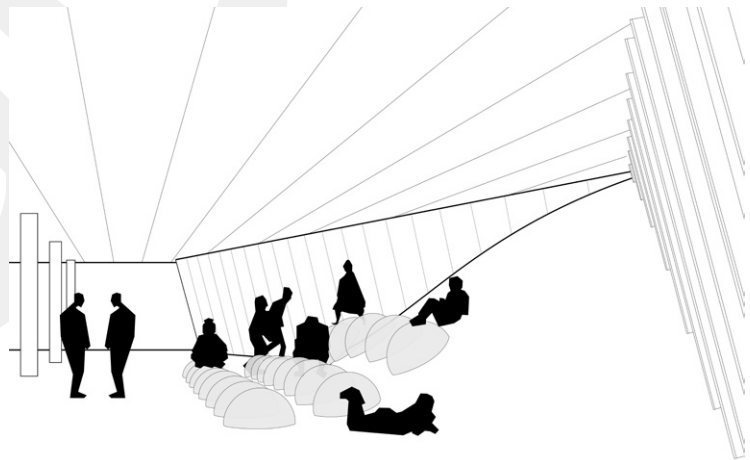


Fig. 4: The social space under the cantilever of Milstein Hall

and self-driven spatial appropriation (not to be mistaken with Henri Lefebvre's spatial triad, though informed by it), can yield the anticipated results (Lefebvre, 1992).

And as for the walls themselves... Despite being much more than just bricks and mortar, they are far from enough. The true potential of architecture in relation to school culture lies between the walls. In his writing *Architectural Manifesto*, Bernard Tschumi (2012) speculates: *"Architectural space will be defined by ideas as much as by real walls. Architecture will be the tension between the concept and the experience of space."* This notion recognizes space *"as constituted through interactions"*, *"heterogeneous"* and *"always in the process of being made"*, meaning that any process or any being has spatial agency and can create meaning within matter (Massey, 2005, p. 9). As an architect and an actor in architectural education, I consider this understanding empowering. It is indeed the very reason why I argue that the social space of a school (the walls as well as the actions and actors within them) is instrumental to an institutions' culture.

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LIST OF FIGURES:

- 1 A studio space at Confluence Institute School of Architecture in Lyon
- 2 A room at Architectural Association London School of Architecture
- 3 An illustration of the spatial and social dimension of a wall
- 4 The social space under the cantilever of Milstein Hall

Note: All images are original.

What distinguishes an architecture student from students in other disciplines? What are their common traits? The teaching process is greatly influenced by the exchange between the teacher and the student, and reciprocally determined by their mutual dedication. What motivates a student, and how do schools describe their prerequisites? Can resilience be taught? What are the aspects of horizontal learning? What role does peer-to-peer learning play in self-directed study and independent enquiry? The Bologna Agreement emphasizes the need for students to act as independent learners, but can for instance designing one's own trajectory produce a clash with regulated outcomes?

Simon Beeson

Dua Al Maani

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The Student

Extramural but not Extracurricular: Revealing Hidden Learning through the Personal Development Portfolio (PDP) in Architectural Education

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KEYWORDS

extramural, motivation, collaboration, entrepreneurship, employability

This paper considers the introduction of a Personal Development Portfolio into our assessment for architectural education. When revising our undergraduate course structure we moved to a fully integrated model, where assessment was based on a portfolio or 'body of work' produced during a ten-week studio project. These projects introduce, develop and integrate understanding and ability of the key knowledge and skills of the curriculum; design, communication, realisation (technology) and contextual studies. Each year of study also includes one unit where professional knowledge is also assessed. Alongside these 'learning outcomes' we introduced a PDP: a separate report documenting and reflecting on everything that falls outside the predicted aims of the project.



“You have brains in your head.
You have feet in your shoes.
You can steer yourself
any direction you choose.”
(Dr Seuss 1997 np)

INTRODUCTION: ARCHITECTURE AT AUB

Students learn in the strangest ways and architectural education is not simply a training in methodologies and techniques, but should, I believe, embrace the full range of student experience in learning about architecture, the wider world, and themselves. In 2012 Arts University Bournemouth introduced the Personal Development Portfolio (PDP) as an assessed *portfolio* component of the architecture curriculum, with the aim of encouraging and evidencing student engagement and active pursuit of their own learning, ‘embedded’ in the curriculum (Gray et al, 2006, p20). The PDP activity, while additional to the core studio projects, is *not* additional to the curriculum, but an expression of a learning methodology. It might be argued that to assess this extra-mural work is an unnecessary ‘commodification’ of student engagement, but I would argue the opposite; that assessment is the currency of student achievement and that the value the educational institution places on extra-mural activity is an antidote to grade-conscious methods of education, opening up such assessment beyond narrow ‘regulated’ activity. This is perhaps particularly true in architectural education, where the content of our curriculum has to meet multiple levels of professional regulation. Our students are very grade-conscious and our role as educators must, in part, be to liberate them from anxieties of failure and risk-averse tendencies by being inclusive of diverse educational experiences. In guiding students away from grade-consciousness and towards life-long learning we should value the breadth and depth of *ad hoc*, spontaneous and opportunistic curiosity. Although there is a body of evidence for using the PDP in higher education, the application in architectural education, and in the broader creative arts, is rarer. While other course may or may not engage in *Personal or Professional Development Planning* (PDP), BA(Hons) Architecture is unique in the assessment of this component throughout the course. This paper discusses the strategy for embedding the PDP in an integrated curriculum, the learning opportunities offered by the PDP and the student experience.

AN INTEGRATED CURRICULUM

“Is a school a place, an institution, a set of facilities, a situation, a circumstance, an attitude, or a constellation of relationships for the transfer of acquired, invented, and accumulated knowledge, experience, and insight from one generation to another? Perhaps a school or the idea of a school as a condition of learning, of being open to discourse and discovery, can also be seen as something that we might carry with us wherever we go, whatever we do.” Raqs Media Collective (Madoff 2009, p74)

In 2007 Arts University Bournemouth, launched an undergraduate architecture course, written in a traditional structure of parallel units of studies in design, technology, and contextual knowledge. This course was Part 1 prescribed by the Architects Registration Board (ARB; the UK competent authority) and Validated by the Royal Institute of British Architects (RIBA). It was also written to comply with the Subject Benchmark for Architecture established by the UK Quality Assurance Agency for Higher Education (QAA). In 2010 the ARB and RIBA approved new graduate criteria and graduate attributes for UK architecture courses, that were also embedded in a revised QAA Subject Benchmark. These are derived primarily from the 11 points of the EU Directive 2005/36/EC on the Mutual Recognition of Professional Qualifications (EU 2005, article 46 1a-k, p47–48), but adds ‘sub-points’ and additional graduate attributes to differentiate between the ARB/RIBA Part 1 (three year undergraduate) and Part 2 (two year postgraduate). The six new Part 1 attributes (GA1.1–6) identify the level of achievement expected for undergraduate students after three years of study. The first five deal with architectural competencies: design, communication, technology, contextual studies and professional practice. However, the sixth attribute derives mostly from the QAA and common educational objectives of all BA degrees, while reflecting some of the professional development skills required in the graduate criteria.

“GA1 With regard to meeting the eleven General Criteria at parts 1 and 2 above, the part 1 will be awarded to students who have: (...)

GA1.6 ability to identify individual learning needs and understand the personal responsibility required for further professional education.

(ARB 2010/2019, p7. QAA 2010, p9–10. RIBA 2010, p62)”

In 2011 AUB required a five-year Periodic Review, and the opportunity was taken to re-structure the course to the new Criteria and Attributes, to be applied from academic year

2012–13. The new six attributes were taken as an opportunity to create a more integrated curriculum. With a small course and subsequently a small course teaching team, this assessment had become an increasing burden. Revisions would also address the heavy assessment load.

The first of the eleven points, “Ability to create architectural designs that satisfy both aesthetic and technical requirements”, expresses the problem by bifurcating design between aesthetics and technique, *poesis* and *techne*, brought together in practice, *praxis*. The traditional model of studio education expects integration to happen in the design studio, where the skills and knowledge of various lecture courses are applied, but not necessarily explicitly assessed. In the re-write there was an opportunity to integrate the knowledge in each unit by assessing the different attributes against a single design objective. In effect, the graduate attributes became the assessed learning outcomes. In a sequence of 40 credit/20 ECTS (10 week) projects four of the first five attributes would be assessed. These learning outcomes could be written progressively to constructive accumulation skills and knowledge. The re-write of the course had many advantages: level 4 (first year) units were reduced from eight units to just three 40 credit units, level 5 (second year) from five units to three 40 credit units; Level 6 (third year) similarly changed to a 20, 40 and 60 credit structure (held in common across many of the AUB degree final years).

RE-WRITE OF COURSE TO ATTRIBUTES

Having considered how the first five attributes might be integrated in studio projects via progressive learning outcomes, the sixth attribute posed something of a challenge and included general study skills that progress towards professionalism. These are the soft skills, often considered implicit in studio practice. As a creative arts institution we also give our students opportunities to collaborate, respond to external briefs or in other ways adapt their skills and knowledge to applications beyond the anticipated scope of a pre-conceived integrated studio project. Additionally, we identified an increasing problem of course engagement and student attendance. The reasons for student absence are many and various, and beyond the scope of this paper, but it was noticed that high engagement in study was perhaps the most influential variable on student achievement. The AUB prides itself on high employability rates and our graduate employers’ value ‘soft skills’ just as much as academic and design achievement. Several employers have remarked that enthusiasm, initiative and collaboration were



Fig. 1: Engaging with architectural education (Berlin 2019)

the three most valued attributes for graduates. This is hardly surprising when considering that most of our students will go directly from the degree into a year of professional work experience between Part 1 and Part 2 as the junior members of a design team. Employers want to appoint students who will join small, hard-working collaborative teams. And for graduates who pursue roles outside of conventional architectural practice, soft-skills are also essential.

It was decided to map GA1.6 to all activity outside the studio project, a fifth learning outcome in every unit. In assessment term this meant 80% integrated design studio and 20% “extra mural” activity. It should be stressed that none of the *extra-mural* activity is *extra-curricular*; the inclusive learning outcome captures experiences that enhance the students’ architectural education. All learning outcomes are evidence assessed, usually meaning a report documenting learning activity, include all appropriate evidence, often in A3 format although usually submitted as a digital PDF. As the student progresses, the evidence can vary to include multiple reports that document different individual and collaborative activity. Every 10 weeks, alongside the integrated studio project, each student submits evidence of their ‘extra’ activity.

PERSONAL DEVELOPMENT PORTFOLIO

The architecture PDP borrows from applications of Personal or Professional Development *Plans* suggested by Advance HE, the UK’s national network for teaching and learning in Higher Education (previously known as the Higher Education Academy). This notion arose from the ‘progress file’ suggested in

The Dearing Report (1997), “a means by which students can monitor, build and reflect upon their personal development” (Dearing 1997, p139–141, p372), with these aims:

- to make the outcomes and value of student learning more explicit, and
- to support the principles of lifelong learning.

(Kumar 2005)

These ideas are also expressed in the “level descriptors’ indicated by the QAA and common to all degree qualifications in the UK (QAA 2014). Included in all degrees are certain transferable skills necessary for employment:

- the exercise of initiative and personal responsibility
- decision-making in complex and unpredictable contexts
- the learning ability needed to undertake appropriate further training of a professional or equivalent nature.

(from the FHEQ Level 6 descriptor, QAA 2014, p 26)

The PDP may be described as students “learning to learn” (Allan 2003 np). While much research on architectural education concentrates on studio teaching (for instance Schön 1983), other student activity is less likely to be addressed. This is perhaps because of the vocational nature of study and the formal professional regulation of employment, such as the Professional Education Development Record (PEDR) required in the UK. However, I argue that the PDP is an excellent route into understanding the value of the PEDR (completed while in employment training) and the later role of Continual Professional Development (CPD) required of qualified architects by the ARB and RIBA. As has been observed, the Personal Development Planning allows students to reflect on learning, understand formative learning, expands learning beyond perceived boundaries of subject knowledge, and engages student motivation (Gray et al, 2006, p13).

There is no requirement for assessment as such in the notion of a learning report or progress file. However, we do have a requirement to define how all professional graduate criteria and attributes are ‘evidenced’. By adding a 20% PDP component we express the educational value of this submission, while ensuring all students participate in any required content and are encouraged to initiate their own contributions.

Perhaps more challenging is not whether PDP is assessed, but by what criteria it should be valued. Evidencing requires not

just participation and engagement in ‘extra-mural’ activity, but professional presentation, personal reflection, demonstrable initiative, curiosity, and risk taking, as well as the application of core and soft skills in communication, collaboration and professionalism. It is also predictable that any ‘open curriculum’ must address the issue of parity. Therefore, any pass standard should be based on a minimum acceptable participation, primarily in course opportunities offered to all students, while higher achievement might reasonably be based on individual initiative. This does not seem unreasonable, as the course structure is explicitly designed to support enthusiasm and initiative to improve all achievement. The ‘extra’ activity enhances skills that will be deployed and enhanced in the integrated ‘project’, and *visa-versa*. The PDP is an integrated element of learning, described in our Course Handbook as an ‘enrichment’ of the curriculum:

- The term **enrichment** is used to describe complimentary **enhancement activity** that you will undertake during your studies.
- They can occur within **all units** (except the Final Comprehensive project).
- They are assessed as part of the unit within **existing learning outcomes** (LO5).
- Learning outcomes include **sensitivity to enrichment activity**.

(AUB 2018, p16-17)

These first points define the common characteristic to all PDP activity. The second point applies because parallel to the Final Comprehensive Project (FCP) is the Professional Studies unit, and the PDP is required only in that unit. The third point identifies that the PDP is integrated into the unit assessment and must therefore be submitted with all other elements for that unit and passed, in accordance with university regulations. The fourth point of ‘sensitivity’ provides that any evidence submitted by the student in addition to studio project work can be assessed as evidence of enrichment activity. This allows students to ‘blend’ their enhancement experience and projects; the PDP may include work that either ‘spun off’ from the project (such as exhibitions, public presentations, wider collaborations) or project enhancements based on enrichment activity (additional skills or research that has coincidentally contributed to a project but was neither required or anticipated as part of the projects assessment). In other words, when a student

includes irrelevant work in the project reports it may be considered as enrichment activity, or, more likely, a student may apply and integrate skills and knowledge developed as enrichment activity in a project. Our attempt is to encourage individual enthusiasm and initiate, and 'capture' any relevant learning in the LO5 if it cannot be assessed elsewhere. In the first unit of second and third year students are allowed to include any relevant enrichment activity undertaken since the completion of the previous year. This will be unique to each student and is an encouragement to make the most of the long summer break.

Ten further points outline the type of activity anticipated in the PDP:

- Enrichment can include any element delivered to **enhance the curriculum**, examples would include visits, overseas trips, guest lectures, special workshops, lecture series (some shared with other courses), collaborative projects/workshops, inductions, external events, conferences, community/voluntary engagement.
- Some enrichments are **established parts of study**, such as HIDE (a collaboration with BA (Hons) Fine Art at Level 4), FAT (a collaboration with BA (Hons) Textiles and Fashion in Level 5), or the Friday @ Noon whole course lectures.
- Enrichments can be developed/evolved as **recurring collaborations** between courses or across levels.
- Enrichments may occur once, on an **ad hoc** basis, to enhance student experience.
- Enrichments may be **optional** (e.g.: Venice Biennale), but the course will monitor and facilitate parity between student experiences where possible.
- Enrichment activity may be **student-initiated** (either individually or in groups), staff-initiated, or externally (by invitation).
- Enrichments can be of many different types, such as the **Swiss cheese** perforation in the timetable allowing others to collaborate or **chocolate chip** opportunities (such as guest lectures/workshops), or **windows** into other worlds.
- Enrichment is an inclusive opportunity to allow **adaptability and flexibility** within the curriculum, made possible by the reduction of assessment points and the inclusiveness of some learning outcomes. They remove the perception of a straight-jacket curriculum and enable a **responsive**, enhanced curriculum to evolve within whatever resource (time, people, materials, equipment) is available.

This list is not exhaustive, but a starting point. In summary, activity in the PDP is likely to include opportunities offered and required by the course by all students in any of the units of study (including lectures, trips, collaborations), optional activity offered by the course (one-off or repeated participation by individual or limited numbers of students in *ad hoc* opportunities, either institutional or external), and activities initiated or participated in by students judged to be of value in their educational experience (including travel, visits, work experience, collaborations, or other creative practice, including sketchbooks). The three metaphors suggested are; the 'swiss cheese' or perforated curriculum, providing timetabled opportunities outside of the procedural project activity (including collaboration days or weeks set aside in the timetable for enhancement and short projects); 'chocolate chip' enrichments that enrich the curriculum either initiated by the course (such as guest lectures), student or group of students (including interdisciplinary working beyond project requirements); the 'window', opening the student experience to external 'fresh air' (including work experience).

AUB Architecture has now been applying the PDP for seven years. It has become an increasingly important element of our educational offer and student experience.

PDP IN ACTION

It has been argued above that there is value in the introduction of a Personal Development Portfolio in architectural education. To evaluate whether this is so, let us consider some of the activity submitted and indeed afforded by the inclusion of enhancement activity in the course curriculum. After the first year the PDP requirement includes a specific reflective comment at the end of each entry, making more explicit the perceived value to the student.

Guest Lectures: we hold regular guest lectures, every Friday at noon, open to all students of architecture across the five years of study, as well as staff and the wider AUB community. These talks can include prestigious architects, local practices, emerging practices, artist from other disciplines or graduates. These lectures also broaden the curriculum by bringing diverse voices and specialist knowledge to the attention of students. As with all such lectures, the value is partly in their unpredictable content: you never know where or when inspiring ideas might emerge from. Speakers present their own inspiration and methodologies, including unique methods of representation. Once a year we also host the RIBA Dorset annual lecture on Thursday evening in November. This is also open to local practitioners.



Fig. 2: Artist Aeneas Wilder leading a stick building workshop (2015)



Fig. 3: Field Trip Collaboration between architecture and fine art students (2018)

Students are expected to document these lectures in the PDP. Some use this opportunity to further research and respond to the lecture. Often lectures are followed by seminars, or in the case on artist Aeneas Wilder, a stick building workshop (fig 2. See also Beeson 2016).

Collaborations: we value collaboration between students. Over the years we have experimented with various ideas. In the first year we have a three-day collaboration with Textiles students. Small groups of students from each course engage with an open brief to explore the challenge of working together and share skills and experience. A collaboration with Fine Art students, “Field Work”, asks groups to respond to assigned themes

in the context of either the campus or an off-site location (fig 3), sometimes making direct interventions in a found site. Submission for the PDP usually includes a single document created by the group and submitted by each participating student. It is worth quoting student comments from the National Student Survey, an anonymised survey of all UK students in the third year of study. Students have an opportunity to make comments that are then returned to the institution along with statistical feedback.

“The opportunity for cross course collaboration at Arts University Bournemouth makes it unique and encourages students to work with students outside their course and learn new skills from this and apply to our own course.” (NSS 2019)

The AUB also organise cross course collaborations with live briefs. These AUB 24 collaborations are set one day and presented the next. They are not architectural but more general design challenges, where the students volunteer to participate. However, the architectural student brings a particular place-based spatial thinking and different representational skills to the group and students value these opportunities. As one student observed:

“Collaboration between different courses stimulated my creativity and brought further depth to personal projects as well as creating new connections with [students] outside my course.” (NSS 2018)

Visits: As with most courses we arrange trips to buildings and exhibitions. While sometimes these are specifically for a project, they are often of more broad value. The first year begins with our annual visit to the Serpentine Gallery Pavilion, London, designed each year by a different architect. The opportunity of a London visit also includes a visit to the Victoria and Albert Museum (V&A), home of a permanent architecture gallery. The visit sometimes coincides with special installations at the V&A for London Design Week. If possible, we will visit an architectural exhibition, such as the Renzo Piano exhibit at the Royal Academy in 2018. Other trips happen as and when the opportunity arises, whether to London or a regional gallery.

Every year a European city is visited, open to first- and second-year students, and usually for specific building visits. For instance, in 2019 we visited Berlin and took the opportunity to visit Dessau on the occasion of the Bauhaus Centenary. Other cities include Barcelona, Paris, Amsterdam and Rome. For younger students, these visits introduce significant



Fig. 4: Venice Biennale Photography Book by third year student Deniz Sayar (2018).

architectural experiences and engender the architectural love for travel. In Venice Biennale years, students are encouraged to visit during the summer break and document in their PDP (fig 4).

Students on study exchange have also been able to enhance their submission by reporting back on the unique opportunities they found while away, in addition to their design projects. In 2017, a visiting professor from China facilitated an exchange of four students to collaborate on a rural regeneration project. The course is open to all sorts of appropriate opportunities. As one student commented:

“The ability to collaborate with other courses has been very worthwhile. I have made valuable contacts from other courses and learnt different ways of thinking. Also, my course has given us lots of opportunities outside of the university and even outside of the country which has been very enriching.” (NSS 2018)

Skills: The PDP also allows us to broaden the curriculum into optional activity. Dr Willem de Bruijn leads print making and book binding workshops, derived from his own research and interests. Students experiment with screen printing onto different materials, such as local Portland stone. Often final reports in third year are beautifully bound (fig. 5). In addition to these opportunities, we accept sketchbooks, life drawing (from AUB events), films or animations as part of the PDP portfolio.

Events: Perhaps the most interesting opportunities evidenced in the PDP are the ad hoc invitations to contribute to



Fig. 5: Korean Exchange, Hongik University, PDP by Third Year student Sammie Pitter (2018)



Fig. 6: Layers of Bournemouth by Bryony Marshall, 2018, commission for BEAF with technical assistance from AUB Architecture students.

local architectural and arts events. In 2018 students helped artist Bryony Marshall complete a rammed earth sculpture, building the form work in our workshop and assisting the making, led by a student who had researched earth building (fig 6). This was part of the Bournemouth Emerging Artists Festival (BEAF). For BEAF 2019 another group constructed an exhibition of proposals for a temporary gallery. In 2020 students will volunteer to turn a department store into a pop-up gallery and theatre for BEAF. These projects offer valuable live-project experience



Fig. 7: First year students assembling the Pop-Up Museum at the Russell-Cotes Museum and Art Gallery, Bournemouth (February 2019).

with real clients. The courses' role is to triangulate between client, students, and institution, ensuring any health and safety issues are considered and providing logistical support. In 2019 we also created a pop-up exhibition at the Russell-Cotes Museum in Bournemouth, made by a group of first year students, including work by a wider group of student contributors, and using a student design exhibition system (fig. 7). We also have an ongoing relationship with the town of Poole and set our second-year projects there. This has included annual exhibitions in The Lighthouse Arts Centre and workshop events on planning ideas for the town, all additional to the main project and engaged in by either all students or volunteers.

Student-initiated opportunities: These represent the very highest level of engagement in the student's own education and personal development. Examples include collaborations with other students, such as the student who designed and built a set for a photographer student to photograph the collection of a fashion student. Another student spent a day making bricks in a Copenhagen factory. As demonstrations of motivation, curiosity, creativity and education these are the kind of activity traditional course might fail to capture.

CHALLENGES AND OPPORTUNITIES

Perhaps the greatest challenge educationally is to ensure parity of opportunity between all students. For this reason some opportunities are required PDP content from all students (such as the guest lectures) and we are careful to offer some

opportunities to all students. If students do not take the European trip we ask for alternative building or exhibition visits closer to home. Another example where parity is difficult is in work experience. One student spent some time on a holiday in Australia, including architectural visits, but also documented visits to his uncles building sites. Others find conventional work experience and internships. But these are all seen as additional enhancements to the PDP and not essential to pass. We often find ourselves encouraging some students to participate in opportunities if they do not appear to be taking them up. Equally, some students want to do everything and need advice on not taking on too much.

While parity of experience is an acknowledged issue, the assessment of the PDP is intended to encourage participation in extra-mural activity, not penalise non-participation. As noted above, engagement in learning is the single biggest influence on overall student achievement. Assessment balances the required engagement with the voluntary or self-initiated work. Most noon lectures are now recorded allowing all students access, even if they miss the event due to sickness. But we do expect students to demonstrate engagement in learning beyond the studio project as an essential part of their education and provide both timetabled events and support in completing their PDP. Indeed, the formatting of digital documents is introduced firstly through the creation of the PDP as the first document in first year.

Failure of a PDP is usually due to its complete omission or incompleteness, not its content. As a journal-like document we expect regular updating and maintaining the PDP on a weekly basis. Perhaps the most interesting aspect of assessment is our ability to award very high marks, especially at the beginning of third year, when students often evidence extremely beneficial engagement for an extended period following completion of second year. This often includes photographic books documenting summer travel, evidence of work experience, and development of the students own personal interests. Rather than being detrimental to the student experience, we have found the PDP a method by which we can re-affirm the value of assessment as something other than “box-ticking and bean counting” as it is often characterised. We value student engagement in learning by rewarding it as one of the central aims of education at all levels and as a key skill underlying professional and personal development. Students have even found it to be an enjoyable aspect of their time in architectural education at AUB.

“We are always encouraged to work that little bit harder and shown the value of extracurricular learning.” (NSS 2019)

Finally, it is worth quoting one last student comment:

“The opportunity and encouragement to collaborate with other students from different courses has given my work more depth and has developed in me an appreciation of all the arts as a whole. The opportunity to get involved with live projects, from both my course and others has helped to build on existing skills and learn new ones that I can take forward into work in the future. The weekly noon lectures are fantastic, they provide an insight into areas of the arts, which may have never been looked into previously, which has enriched my work.” (NSS 2018)

It is the aim of the PDP to capture this enriched student experience, encourage active learning, develop student confidence and empower them in their life-long learning.

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Developing Autonomous and Responsible Learners: A Hidden Perspective in First Year Design Studio

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KEYWORDS

student's experience, first-year experience, independent learning, engagement, design studio

The purpose of the design studio, which is the core of architectural education, is to educate the students to understand the nature of design, to think independently, to act in “designerly ways”, and to become “reflective practitioners”. The student must take on a new mode of learning, in which the main way to learn is by doing, and in which there is no one correct way to approach the design problem. The previous aspects associated with the studio — together with the open-ended, exploratory, and iterative nature of the design process — place the student at the center of the learning experience. Tutors in this context are facilitators of learning, rather than knowledge experts, and are expected to pay attention to the challenges that face students in adapting to this new learning environment and in assuming a new learner identity. Hence, this study employs longitudinal mixed approaches to uncover an emic perspective of the ways architecture students conceptualize learning in their first year and what distinguishes them from students in other disciplines.



INTRODUCTION

Several previous studies have explored particular aspects of design studios in some details (e.g., Schon, 1985; Fleming, 1998; and Craig & Zimring, 2000). Other studies have examined the social and epistemological implications of studio practices (e.g., Dutton, 1987; Heylighen et al, 1999, and Roberts et al, 2006), yet we have little research on autonomy in the context of studio-based subjects such as architecture. An understanding of learning autonomy in general is not sufficient. Rather, one must understand the teaching and learning requirements of one's own discipline to promote learning autonomy and responsibility most effectively.

Moreover, the first-year studio is of particular significance due to the challenges that face students in adapting to the new learning environment and in assuming a new learner identity. The first year plays a significant role in shaping students' attitudes and performances in subsequent years (Tinto 1993). It is typically the stage where students' expectations are reinforced or dispelled, ways of thinking established, and the foundations laid for the development of the autonomous learner. As such, the point of entry into university education represents a major event in the education of the individual and marks a transition that presents a variety of challenges to students.

Furthermore, students in architecture, deal with ill-defined (Reitman, 1965), ill-structured (Simon, 1973), and wicked (Rittel & Webber, 1973) problems, which generally grow more complex through the process of design. These design characteristics are often completely unknown to them when they arrive at architecture school, and even more challengingly, the problems are contrary to their experiences in their earlier education, which were mostly rule-based, procedurally driven, and based on well-defined problems with pre-defined strategies. This transition from the highly controlled, teacher-driven learning environment of schools to university, where the student is responsible for their own learning, is perhaps the biggest challenge of all for students (Murtagh, 2010). This is compounded by the students having little experience of design or other subjects that contribute to architectural study (Architecture Benchmark Statement, 2010). Students are thus confronted by a fundamental change to their principal mode of learning. Rather than acting as a recipient of knowledge, the student is required at an early stage to analyse problems and scenarios and construct knowledge pertinent to the specific context (Heylighen et al., 1999). Therefore, development of a personal knowledge is essential to create student's architectural identity, and consequently to learn to 'think as a designer'.

Additionally, in its annual survey of schools of architecture, the RIBA Education Statistics (2018) reported that there were more than 15,500 students in the UK's schools of architecture in the academic year 2016/2017, and numbers increased this year to more than 16,600. Courses in schools of architecture attracted more than 32,000 applications in the past academic year. Furthermore, more than 225,000 students are currently studying studio-based subjects, including design, and creative arts in UK universities (The Higher Education Student Statistics, 2018). With this increase in the number and percentage of students undertaking studio-based subjects, the current research is clearly vital — not only to architecture students, but also to the wider spectrum of learners in various studio-based programs. Accordingly, a study concerning students' reflections on their first-year experiences is necessary, providing a great opportunity for both learners and educators to develop their teaching and learning practices to ensure successful adaptation to studio-based learning and better facilitation of learning autonomy.

METHODOLOGY

In most recent studies, learning autonomy has been investigated in different ways. Some studies relied on quantifying it by asking participants filling a self-report questionnaires (e.g. Henri et al 2018, Scott, et al 2015), other studies made benefit of qualitative data such as participants' learning journals, diaries, interviews or open-ended questionnaires (e.g. Thomas et al 2015, Hamad 2018, McClean, 2009). Or through mixed method approaches (Brooman and Darwent 2012, Morris 2011, Xhaferi, and Xhaferi, 2011).

In our study, we aimed to provide useful insights from students' themselves about their evolving conceptions and expectations of learning in two approaches. To achieve this goal, we need no answer three main questions:

- 1 Do characteristics of maturity, and gender affect learning autonomy?
- 2 And in return, does autonomy have a positive effect on students' academic performance?
- 3 What are the key elements in design that support the development of autonomous learning?

Therefore, this research adopted a methodology that combines qualitative and quantitative methods. The rationale for mixing is that neither quantitative nor qualitative methods are sufficient by themselves to capture the trends and details of the problem in questions.

To answer the first two questions, and in order to gather data about the students' confidence of their autonomy, Paper-based questionnaires were completed by 34 students enrolled in BSc program within the Welsh School of Architecture at two time points (the beginning and the end of the academic year 2017/2018).

The Autonomous Learning Scale of Macaskill and Taylor (2010) was used as a quantitative research tool comprising of twelve questions and provides numeric value for students' learning autonomy level using a 5-point Likert scale. The ALS is a generic and not subject specific questionnaire and reported to have satisfactory concurrent validity and good internal reliability $\alpha = 0.78$ (Brooman & Darwent, 2014). It is widely available and has been in many investigational studies.

Of the 34 participants 25 were female and 9 were male. All students provided information about their age at entry to university, of which 32 were 17–20 years old, and 2 were older than 21. Students' responses were coded that the higher the score on the ALS the more independent the student is, and statistical tests were carried out using the software package SPSS V25.0 (IBM).

DO CHARACTERISTICS OF MATURITY, AND GENDER AFFECT LEARNING AUTONOMY?

Students' responses were analyzed to determine whether any significant age differences were present. A Pearson correlation test was run to determine the relationship between level of independence and age.

		ALS Score	Age
ALS Score N = 34	Pearson Correlation	1	-.281
	sig. (2-tailed)	0	.108

Table 1: Correlation between ALS and Age

The correlation coefficient relating students' independence of learning to age is -.281. The p-value (0.108) implies that there is no significant difference between the correlation coefficient and zero. Therefore, there is very little evidence of a relationship between age and autonomy of learning.

Moreover, a two independent sample T-test on the two means, with gender as the independent variable, suggested that there were no significant differences between the genders (The p-value, (Asymp. Sig. (2-tailed) is 0.749.)

		N	Mean	Std. Deviation
ALS Score	Male	9	46.22	4.23
	Female	25	45.44	4.25

Table 3: Group Statistics in terms of Gender

		f	sig.	t	Sig. (2-tailed)	Mean difference
ALS Score	Equal Variances assumed	.104	.749	.474	.639	.782
	Equal Variances not assumed			.475	.642	.782

Table 4: Relationship between ALS and Gender (Two Independent Sample T-test)

Does learning independence have a positive effect on students' academic performance?

A Pearson correlation coefficient was computed to assess the relationship between students' scores on the autonomous learning scale at the beginning of the year and their final marks in the design module at the end of the year. There was a positive correlation between the two variables, correlation coefficient (r) = 0.381, significant value p = 0.026.

Survey	N	Correlation coefficient	P-value
	34	.381	.026

Table 7: Correlation between ALS Score and Design Marks.

What are the key elements in design that support the development of independent learning?

In order to elaborate on the ALS findings and to gain a fuller understanding of the students' learning experience, regarding their engagement with and transition onto the course, we carried out 5 waves of semi-structured interviews with 10 students during their first years. The luxury of having face-to-face interaction with the students offered us the opportunity of gaining a clearer sense of their perspective on their first-year experience.

COMPLEXITY OF THE DESIGN PROCESS

In the design studio, students are usually tasked with researching a project site at the beginning of the year as part of their design project. They would then have to determine which resources to draw upon, critically evaluate what information they deemed relevant, and how to best represent their findings—ultimately requiring that each student defines the particular “design problem” for themselves. The same process happened for first year students in our study.

Students indicated that the open brief was the main motivator for their choice of what to design and learn, leading to a personal and meaningful learning experience. The open broad brief, and the fact that there is no singular correct answer for the design problem, encourages students to express themselves and their interests in the form of a proposed solution. This encouragement has a vital role in stimulating learning responsibility and autonomy by promoting students’ confidence in their choices and learning abilities.

Students interpreted the brief in different ways reflecting how they experienced the site and their different interests. One student reflected on this by giving an example on how she approached the design problem:

“I liked how houses in Lanzarote combine water and trees in the inside. So, I thought of using that for my space. To create a space where you can sit to watch the solar eclipse which I’ve been studying, and to be surrounded by water and trees, this way people can feel connected more to earth.”

Another one explained:

“They wanted us to do spatial expressions that represent architecture. It was challenging and very abstract; the brief was vague and accordingly everyone has a different thing to do. Basically, I was very interested in the rocks of Lanzarote and I wanted to mirror their colour and texture in my models, so my project became a kind of a museum of rocks.”

The broad design brief, accordingly, engages the students in complex processes of research into different variables, such as precedents, site, context, and so on, which helps them to interpret the design problem in various ways. In this way, students are able to go beyond the brief requirements and formulate their learning needs and objectives at a very early stage. As they develop their initial proposals and produce new ones, they come to accept responsibility for their learning and

the decisions that they make. Thus, the broad nature of the brief is a positive factor which makes the students co-producers in the learning process.

THE CULTURE OF FEEDBACK

Students also talked about the feedback they received during the year especially at crits. The UK's Quality Assurance Agency's standards for architecture (QAA, 2000) refer to crits as an integral teaching strategy that prepares students for professional practice. It is the principal method of feedback and assessment for design modules in architectural education (Parnell et al., 2007, McClean & Hourigan, 2013). Most of the students quickly recognised this — even during their first project — and recorded valuing the opinion of 'fresh eyes' on their work as well as the alternative design approaches suggested by critics.

A student compared the feedback students receive in architecture school with what they used to have during their secondary education or high school, by saying:

"In school I had similar things like oral exams, but they weren't the same because they didn't give feedback, just asking you a question or two. But here with crits there was definitely a lot of feedback."

Another student compared the feedback in architecture school with other disciplines:

"And one of my flat mates couldn't believe that I'm working all the time and I don't mind that. But I told her that for me it is different because my work has immediate results; I can see my product and I get feedback and learn fast, for her she has to study for six years and then hope that she has learnt it."

The positive attributes of the crit can be easily identified from students' narratives. For example, feedback is sufficient and applicable for their projects and students were able to use it to develop their learning. Students' comments on their crits were:

"It was more like a discussion with feedback; they weren't critical but made suggestions to make it stronger."

Unexpectedly, students perceived the diversity of opinions expressed during the crits in a positive manner; different and sometimes contradictory comments during the crit were seen as a positive aspect that provides richness to the learning process. Blythman et al. (2007) suggest that students seeing

tutors having contradictory positions and disagreements in crits is important as it demonstrates that there is more than one solution to a given brief. However, Smith (2011) explains that as the purpose of the crit is to provide feedback that contributes to learning, students should not be left confused by such differences of opinion and should finish the session with clear strategies to progress their work. Students in this study grasped this and commented:

"It's quite interesting to know what other people think about your work because sometimes they can tell you interesting information as they have different perspectives... it's very interesting."

Students easily picked up these advantages of the crit, and they actually preferred the process to having exams like other disciplines:

"I prefer crits over exams; I don't just learn how to improve my work, but I also learn from other students' projects and I learn when critics give feedback to them; it teaches you and even when it is negative, it's constructive."

However, the following comment reveals how some students perceive the crit as an assessment point in which the focus is on the mark and not the feedback. This misunderstanding of the purpose of the crit might result in reducing students' learning and undervalue the knowledge they gained during the year:

"My tutor said my work has improved but the mark is still the same, which means that I can't improve things or maybe I'm not capable, maybe I'm not good."

This might be related to the fact that some students, at their first year in architecture school, are likely to maintain previous learning habits and beliefs accumulated at school.

While the previous quote illustrate how students still put more emphasis on exam results, or in this case on the crit marks, just as they would in secondary school, some other students were able to realise the importance of self-improvement, and not marks, as a real reflection of their learning:

"I don't think grades are very important. The important thing is self-improvement and motivation; it's also important to work externally from the university and not just depend on it."

Another students commented:

"I'm proud of myself but the grades aren't the same as I used to get in high school. In high school I was used to getting high grades; here I got a whole range of grades...But it's fine, I don't mind it, I always try to do my best and that's it."

It could be argued then, that getting constant feedback and adjusting to different points of view is part of the transition from secondary to higher education, and what distinguishes architecture from other disciplines.

PEERS LEARNING

The students talked about becoming 'like a family' and 'being on a journey' over the year, supporting each other as autonomous learners and social beings and acknowledging their diverse approaches and skill levels. Students perceived the benefits of working in the studio together, and they reported that the informal teaching from one another was personally and academically valuable and made them more active:

"We help each other. My relationship with my course mates is important for the course and for my wellbeing".

During the year, the students confirmed this association between working around others in the studio and learning development. One student talked about how working with — and around — others motivated her to work more, which positively affected her learning:

"I prefer working from home, but now I spent a lot of my time in the studio and I feel like my design is getting better because I'm getting other students' opinion, I ask them for advice a lot, especially when it comes to drawing techniques."

Students' narratives corroborate the findings of a great deal of the previous work in this area. Chickering and Gamson (1987) suggest that collaboration with other students is a major contributor to success in education. They explain that good learning is collaborative and social, not competitive and isolated, and that working with others often increases learning engagement. Peer relationships are not limited on providing social support, with students talking about gaining further insights into their own work by reflecting on how their peers approached similar problems, which clearly identifies peer dialogue as a form of feedback. One student commented on this:

"You just go through others doing their work, and you go to your friend and tell them "I need to sort this issue, do you

have any suggestions” or do you like my model, or you just share your ideas.”

As explained previously, each student in the design studio deals with open-ended problems in their own way. Through analysis of students’ narratives, it is clear that students learned various skills such as drawing, model-making, and digital drawing from one another, realising and appreciating their different skill levels and the power of background diversity. It can be argued that student collaborations, whether for social or academic support, foster learning autonomy as they expose the students to a diversity of viewpoints, which enhances their self-awareness and self-critique. This confirms the conclusions of Thompson (2017), who suggests that the design studio supports a sense of belonging among students and that this feeling has a significant impact on the shaping of students’ architectural identities.

LEARNING ENGAGEMENT OUTSIDE THE DESIGN STUDIO

However, autonomy, as a vital aspect of learning, is not limited to the time and energy that students invest in educationally purposeful activities, but also reflects the efforts made by institutions to employ effective educational practices (Kuh et al., 2008). While the previous quotes illustrate how learning enjoyment affects students’ engagement, examples of engagement outside the studio and how they contribute to learning autonomy were also cited.

The first example was a field trip that students had undertaken between their design projects. This was an important feature that promoted engagement and motivated the students to work on their designs. They appreciated this educational strategy for gaining more architectural knowledge through exposure to different architectural styles and being given the chance to explore and experience the site from various points of view, something which could not be experienced through books or lectures and tutorials. The UK Quality Assurance Agency’s Standards for Architecture (2010) recommend study visits in the UK and Europe as an invaluable opportunity to experience a wide range of architecture and diverse cultural contexts.

The study trip was an opportunity for the students to see the site of their upcoming project, to comprehend its natural and cultural context, to reflect on it, and to be critical. This unique strategy allowed the students to develop their drawing and observation skills and to see and record what could be of interest in their design proposals, without being told directly what to do, thus increasing their sense of independence. In

this way, site visits and field trips enrich individual references, with consequences for future design projects in a non-formal or traditional way. A student commented on this:

“It was very beautiful. I learned a lot about the island, and a lot of students were inspired especially when we went to Cezar Manrique’s house which was designed within a series of volcanic bubbles and that was quite cool. It wouldn’t be the same if we just looked at pictures of the island instead of going there.”

In addition to their educational importance, site visits have a positive role in engaging students in their learning. Field trips in many disciplines (landscape architecture, art, geography, sociology, tourism and hospitality, etc.) are fundamental to the acquisition of visual, cultural, and theoretical knowledge outside the traditional classroom (Freire, 2011; Do, 2006; Krakowka, 2012; Scarce, 1997).

Moreover, students reflected on the field trip experience as bringing them closer to their tutors and thus creating a more supportive learning environment. Accordingly, the study trip can be seen as a useful educational tool for enhancing learning experience and engagement outside the design studio. In our research, the field trip benefited social interaction, as the students spent several days together, researching the site and socialising with locals and each other. They were engaged and entertained by the field trip, which made the educational experience more enjoyable, effective, and meaningful and resulted in an increased motivation to learn.

DISCUSSION OF FINDINGS

The results of the ALS survey did not show any significant differences among students’ gender. We found no effect of student maturity on their level of learning autonomy; students (aged over 20 at the start of their program) do not perceive themselves as more autonomous than other students, however, the numbers of students who aged over 21 was only 2, which means that sample size was too small in order to test it any meaningful way.

We also questioned whether there was a significant correlation between students’ overall marks in their first year and their scores on the autonomous learning scale. Previous studies have connected autonomy to success and better learning (Hamad 2018, Derrick, Ponton & Carr, 2005, Mattarima and Hamad 2011). In this research, the students’ marks in their design module were used to test if there was a significant correlation between students’ academic performance and their autonomy.

Students' design marks are considered a reflection of their learning, representing a balanced view of their performance over the year which assessed by a range of different staff to compensate any bias (Roberts 2004). The results of the survey described that the students who had higher scores on ALS than others, had gained higher marks at the end of the year. These results are consistent with those of previous studies and suggest that higher learning autonomy level promotes higher academic performance.

Furthermore, students' narratives have important implications for understanding how the design studio positively contributes to learning autonomy and responsibility. One of the central cognitive demands placed upon architecture students is engagement with the uncertainty inherent in design problems (Cross, 2011; Nelson and Stolterman, 2012; Lawson, 2006.) Design problems are ill-defined and ill-structured, and accordingly it is common that students may experience a status of being lost and uncertain. This uniqueness of the design problems in addition to lack of architectural knowledge may confuse students over the nature of the actions they must take and therefore they feel unsupported. This can be seen as an opportunity for them to move towards greater understanding of the self as a learner of design.

Moreover, engagement in learning — both inside and outside the design studio — leads to better learning experiences; and accordingly, the more engaged student is, the more independence and success can be expected. This confirms the previous research in this area that links engagement with effective learning. Knowles (1975) confirms that when students actively engage with their own learning, this increases learning effectiveness. Similarly, Dickinson (1995) explains that an active role in learning is linked to learning autonomy, as it leads to more effective learning. Finally, one recent study highlighted the importance of interest in promoting students' motivation to learn and its positive impact on active engagement in the learning process (Kahu et al., 2017).

This study also demonstrates that students are able to learn from different sources, including their peers and 'upper years', recalling the notion of 'relevant others' in Kesten's (1987) definition of the independent learner. The development of skills such as drawing techniques and digital drawing and modelling was a key outcome of informal learning in the design studio. Another outcome of students work side-by side was the identification of peer dialogue as a form of informal feedback that positively contributes to learning. This evidence of peer learning contradicts previous research findings that suggests students do not utilise each other as resources in the design studio (Argyris, 1981; Dutton, 1987).

Expanding on the previous point, the study also highlights the role of peers in facilitating students' transition into autonomy, recalling the concept of 'zones of proximal development' in Vygot-

sky's (1978) theory of learning. Students were able to develop skills to complete tasks by themselves, which they could not have accomplished at the beginning of the year. With the help of others, students not only learned how to complete these tasks, they also achieved them on their own and were able to share this knowledge with other students. This collaboration and willingness to share and transfer knowledge and skills is essential for promoting independence and shifting the focus away from the tutor as the only source of knowledge, moving towards a student-centred environment. From a constructivist perspective, students in this case would be seen as the active constructors of knowledge within the design studio setting (that includes both the physical context and the social interactions within it), and not just passive absorbers of knowledge.

In summary, students praised the different methods of learning in the design studio and the different experiences they had throughout the year, such as the field trip, which was seen as both academically and personally beneficial. They also enjoyed different aspects of the design process. In their approach to design, students did not limit themselves to hand drawings; rather, they used a combination of model making and computer modelling, which they learned informally from peers and the upper years. Students described how much they enjoyed their first year at architecture school, noting that they had acquired a variety of skills by the end of the year — despite not being entirely satisfied with their learning in some cases, or finding some of the learning aspects challenging. Both motivation and enjoyment promoted learning engagement and ownership, which led to learning responsibility. The students also positively compared learning in the studio context to the traditional method in high school and other higher education disciplines. This suggests that the design studio is positive environment for facilitating learning autonomy in higher education.

The students also showed evidence of positive change in their behaviour during crits as the year progressed, with growing confidence in their ability to express a more personal view. This indicates that their understanding of learning had developed over time, and it may also be attributable to various growing skills in practical knowledge (e.g., new digital drawing software).

Despite their growth through learning directly from their peers, students still expected these skills to be taught primarily by their tutors. Thus, while students must identify their own learning needs, it is also the responsibility of the university to recognise their needs and make provisions to meet them (Hodgkinson,1994). We should seek to provide broad knowledge to our students to create a learning environment in which they are encouraged to think critically and take on difficulties in

their learning. We must also understand our role as facilitators of independence, rather than knowledge experts, thus changing our traditional role of full supervision into one in which we share guidance and responsibility.

However, this should not be understood as an invitation to withdraw or neglect our role in the learning process; rather, we should gradually minimise the provision of guidance, to the point at which students have equal power over — and full responsibility for — their own learning. In this way, we can become more effective and efficient in fostering learning autonomy among our students, and students more motivated and better able to discover and accomplish their own learning needs and objectives.

In simple terms, facilitating learning autonomy, whether in the design studio or in any other learning setting, requires the formulation of more inclusive pedagogic strategies that explicitly accommodate students' diversity and individuality. It is also vital to address and identify shortcomings in our teaching practices and value the views of the student body.

LIMITATIONS OF THE RESEARCH

The current study has examined the experiences of first-year students in one architecture school in the UK, with a modest sample size comprises students who achieved high grades in their A-levels, with an imbalanced gender ratio. Accordingly, the generalizability of these results is subject to certain limitations. A follow-up research with the same students towards the end of their 3rd year might provide further insight into the long-term experience of learning autonomy in the design studio and how it develops and in what rates.

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Becoming Cosmopolitan Citizens Architects: A Reflection on Architectural Education Across the Nordic Baltic Academy of Architecture (NBAA). A Students' Perspective

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KEYWORDS

architectural education, NBAA network, citizenship, cosmopolitan

This paper presents findings from fourteen qualitative interviews conducted with students of architecture from eleven schools of the Nordic Baltic Academy of Architecture (NBAA). The interviews were analysed using the abbreviated Constructivist Grounded Theory (CGT) method. The findings reveal that students consider a meaningful architectural education one that helps them making ethical design choices. To do so respondents indicate that schools should help students find their inner compass, develop their professional skills, and ethical attitudes to think independently and make a difference in their society and beyond. Three narratives emerge which describe the multiple roles of an architect in our society: the dissident intellectual, the ethical professional, and the storyteller. On the basis of these findings and with the support of the work of Henry Giroux “Critical Theory and Rationality in Citizenship Education” and Martha Nussbaum “Patriotism and Cosmopolitanism”, a framework referred to as “Cosmopolitan Citizenship Architecture Education” is developed.



INTRODUCTION

In his seminal book *Pedagogy of the Oppressed*, Paulo Freire states: “those who authentically commit themselves to the people must re-examine themselves constantly” (Freire, 1970: 34). My commitment to my people, my students, started in 2004 when I began teaching architecture and design at the Iceland University of the Arts (IUA) ever since I have reflected on my *modus operandi*. During 2016 the diatribe between two starchitects, Patrik Schumacher head of Zaha Hadid Architects and Alejandro Aravena 2016 Pritzker Laureate, on the societal role of architecture caught my attention. Schumacher was accusing the architectural establishment of having transformed the Pritzker prize¹ into a humanitarian award rather one for architectonical spatial innovation (Keskey, 2016) whilst Aravena was stating: “We’ve never taught the right thing at university” as we are “incapable to prepare students for the real practice” (Winston, 2016). These statements made me pensive: is architecture’s main goal forms’ exploration? am I teaching the right thing? What is the right architectural education?

The answer to those questions could not be found exclusively in architecture’s books. Another perspective was necessary, and this came both from the subject of education and by initiating direct dialogues with students and teachers reflecting together on the meaning of architectural education.

This constitutes the base of my current PhD in Cultural Studies and Education at the University of Iceland (UI). My PhD is both an instrument for self-reflection and an investigation into current architecture education within the network to which my school belongs: the Nordic Baltic Academy of Architecture NBAA². Within it, professors and students meet and reflect on the nature and value of architecture education in the Nordic-Baltic context. The NBAA is composed of sixteen schools of architecture³:

1 The Pritzker award is the most important architecture’s recognition. A description of the exchange between Schumacher and Aravena can be found at: <https://architizer.com/blog/inspiration/industry/patrik-vs-pritzker/>

2 The NBAA is composed by 5,875 BA and MA students and 327 PhD candidates, 63% of whom are female, and 850 teachers 60% of whom are male.

3 The 25 of October 2019 two other schools have joined the network: Kaunas University of Technology KTU and Tallinn University of Technology TalTech

Denmark	AArch Aarhus School of Architecture, KADK Royal Danish Academy of Fine Arts
Estonia:	EKA Estonia Academy of the Arts
Finland:	Aalto University, TUNI Tampere University-Tampere University of Applied Sciences, University of Oulu
Iceland:	Iceland University of the Arts,
Latvia:	RTU Riga Technical University
Lithuania:	VDA Vilnius Academy of the Arts, VGTU Vilnius Gediminas Technical University
Norway:	AHO Oslo School of Architecture and Design
Sweden:	Chalmers School of Architecture and Design, KTH The Royal Institute of Technology, Umea School of Architecture.

My intention with this PhD is to seize the opportunity as an NBAA member to listen to different voices conversing and reflecting about something that is essential to teachers and students: the education of an architect and possibly to find valid answers to Schumacher and Aravena's statements.

Specifically, this paper reports both on influencing theories of citizenship education (Nussbaum and Giroux) and fourteen dialogues with students conducted within the NBAA network. Dialogues are, after all, the essence of education: "without dialogue there is no communication, and without communication there can be no true education" (Freire, 1993: 66).

THEORETICAL CONTEXT

Whilst the world of architecture education was lacerated by the debate between Aravena and Schumacher the world of design education was producing in 2016 an inspiring book edited by Elizabeth Resnick titled *Developing Citizen Designers*. I remember being struck by the combination of those two words: citizenship and designer. I started reflecting on citizenship, on its meaning and whether it could also create a territory for reconciliation in architecture education. Resnick opens the book referring to the words of Milton Glaser: "good design is good citizenship" (Resnick, 2016: 12) and by stating that designers have the moral responsibility to use their skills to address the social ecological crisis. In other words, "a designer must be professionally, culturally, and socially responsible for the

impact his or her design has on citizenry” (Heller and Vienne, 2003: x). *Developing Citizen Designers* not only encourages educators and students to embrace the notion of citizenship in design education but also provides numerous case studies that illustrate a design pedagogy capable of developing social awareness and prompt action. This reinforced my belief that architecture has therefore a strong societal role that goes beyond forms’ experimentation and as such it is the duty of an educator to expose students to this notion.

My interest on citizenship led me to the work of Martha Nussbaum “Patriotism and Cosmopolitanism” and Henry Giroux: “Critical Theory and Rationality in Citizenship Education”.

Nussbaum defines “cosmopolitan, the person whose primary allegiance is to the community of human beings in the entire world” (Nussbaum: 1994). A citizen of the world is a person with a unique identity, strong local bonds and acute awareness of the state of the world: of its problems, injustices, and possibilities. Nussbaum’s cosmopolitan education promotes the understanding that we are all unique, precious, interdependent, and relational beings. As such we need to learn to dialogue and collaborate in order to face the current crisis.

Giroux defines citizenship education as transdisciplinary, relational, holistic, profoundly political, collaborative, and instigative of hope for a better world. The primary focus of citizenship education is in fact to enhance the civic courage by stimulating “students’ passions, imaginations, and intellects so that they will be moved to challenge the social, political, and economic forces that weight so heavily upon their lives” (Giroux, 1980: 357)

Citizenship education is based on critical thinking, social awareness, and action competence.

Critical thinking starts by questioning “whether or not this society should be changed” (Giroux, 1980: 349), to do so it requires teachers “to be better informed citizens and more effective agents for transforming the wider society” (Giroux, 1980: 352).

Social awareness in education is developed when schools act as social platforms receptive of the society’s different voices and sensibilities. This is indeed not an easy task, but teachers have a formidable ally: the students. By allowing students to bring their diverse experiential knowledge into the classroom and therefore allowing them to participate in the learning process, teachers create the condition for citizenship education (Giroux, 1980).

Social activism in education is about igniting students with “a concern for social action” (Giroux, 1980: 352) so that students can have the courage to think critically and express their voices, beyond the classroom.

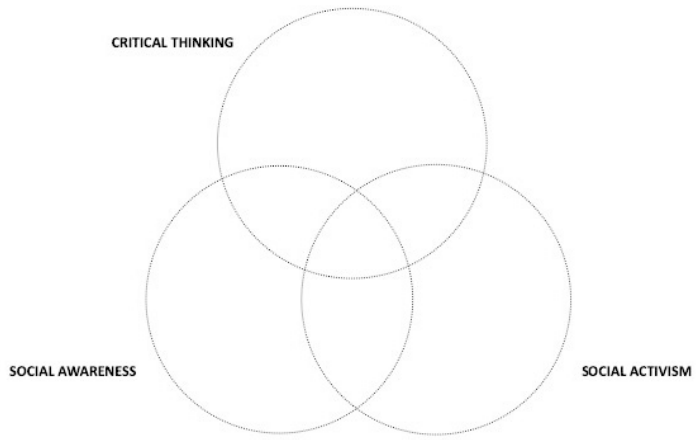


Fig. 1: Cosmopolitan Citizenship Education

When cosmopolitan is placed next to citizenship education it inspires individuals to work together. When Cosmopolitan Citizenship Education is placed in front of architecture it enables architects to reflect on their role and responsibility towards our common social and ecological environment and to use the design process as an instrument for the betterment of the world.

Cosmopolitan citizenship architecture education CCAE is therefore based on critical thinking, social awareness and activism, as such its mission goes beyond spatial innovation, and explorations of forms but it is about how people can live and flourish together in their relational environment. CCAA is about care for our common future. Becoming cosmopolitan citizen architects means learning to make ethical design decisions, decisions that are grounded in their social and environmental context and are equally influenced by the understanding of their local and global implications, ultimately, we are all connected as citizens of the world. As cosmopolitan citizen architects we must interrogate “the position that architecture occupies in the moral structure of the universe” (Westfall, 2006). Understanding that “a building is a form given to a moral proposition. When architecture is not a moral proposition, it is mere fashion” (Westfall, 2006).

But architecture is more than a building, it is about the social and ecological relations that are embedded in the process of making architecture and the evaluation of those relations (Deamer, 2015; Santanicchia 2019b). Architects have a social and ecological responsibility: to design spaces for our community in harmony with the nature, to pursue the spirit of social justice.

This purpose is by definition ethical (Collier, 2006). Architecture therefore involves moral choices that are subject to moral examination (Weisman, 1994; Santanicchia 2018). With this serving as a theoretical context it is now the time to dialogue directly with the students.

RESEARCH / PARTICIPANTS / METHODS

It is important to listen to the students to understand whether the notion of cosmopolitan citizenship education resonates among them. To do so dialogues with fourteen students from eleven schools of architecture were initiated and constitute the base of this paper. The schools were visited for at least three days during autumn 2018. Students' interviewed were either recommended by their deans or head of the programs or met spontaneously during my visit. They were five men and nine women, between 22 and 32 years old, in their 4th and the 5th year of studies. All interviews were conducted in the school settings except one which took place over Skype and one at the Finnish Museum of Architecture.

School	Gender	Age	Year	Length	Date	Place
Aalto	female	23	4	35:46	10/12/18	museum
Aalto	female	22	4	26:20	11/12/18	school's cafe
AHO	male	32	4	36:52	14/11/18	design studio
BAS	female	30	4	43:04	19/11/18	design studio
Chalmers	male	29	4	37:56	14/08/18	design studio
EKA	female	23	4	42:48	03/12/18	design studio
KADK	female	28	4	50:50	22/12/18	Skype
KTH	female	31	4	1:06:50	21/12/18	design studio
NTNU	male	28	4	48:20	20/12/18	design studio
VDA	female	24, 24, 25	5	43:39	22/11/18	dean's office
VG TU	male	24	5	23:24	22/11/18	dean's office

All interviews were semi-structured, initiated by four research questions:

- Q1 — What skills should students have after studying architecture?
- Q2 — How should these skills be taught?
- Q3 — How can the education of an architect be of special importance to our society?
- Q4 — Where do you see yourself professionally in 10 years' time?

The questions were designed to be sufficiently “open-ended yet directed, shaped yet emergent, and paced yet unrestricted” (Charmaz, 2014: 85). Question number three is obviously a “sensitizing concept” (Charmaz, 2014: 30) to encourage the interlocutors specifically to reflect on the societal role and responsibility of an architect in our society. This question is a way to start an inquiry on a topic which still causes ample discussions in the architectural world as witnessed by the Schumacher-Aravena’s diatribe (the latter being now substituted by Harriet Harriss dean of Pratt⁴). All interviews were recorded and transcribed for a total of 8 hours and 43 minutes. All participants received the transcripts and were invited to make comments or amendments if necessary.

Students were left unconstrained in their answers expressing their ideas and emotions regarding their educational experience. The interviews were analysed using abbreviated Constructivist Grounded Theory (CGT) method which helped me examine the data carefully before framing a specific hypothesis (Strauss 1987; Strauss and Corbin 1998; Charmaz, 2014). The abbreviated version was chosen because it would have been difficult to keep in touch with students from seven different countries. Through coding the student’s responses line by line, a total of 182 codes or conceptual labels emerged which were then grouped into 22 focused codes and consequently into three conceptual categories: “finding yourself: growing confidence”, “designing ethically: mastering competence” and “engaging with the society: forming consilience”. By continuous memos writing and constant comparative analysis, of the codes presented in each category, it emerged that these conceptual categories were part of a bigger narrative, that is about defining the role of architects in our society. The narrative describes architects as “dissident intellectuals”, as “ethical professionals”, and as “storytellers”. These three narratives were consistently present

4 <https://www.dezeen.com/2019/11/05/patrik-schumacher-harriet-harriss-architecture-long-hours-dezeen-day/>

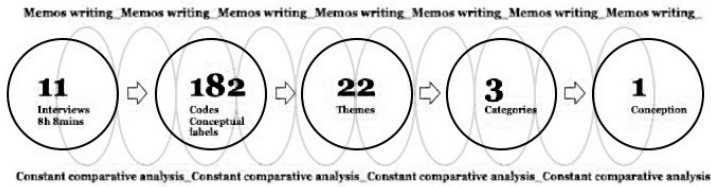


Fig. 2: Continuous memos writing and constant comparative analysis

in all the answers to the four questions. By listening closely to the students' voices, and their narratives strong connection emerge between them and the understanding of Cosmopolitan Citizenship Architectural Education. The intention of this paper is therefore to show the genesis of this conception.

There is no view from nowhere (Harding, 2015) and what we discover depends on our perspective and what we are looking for. What I have uncovered using CGT is itself a social construction of reality (Charmaz, 2014). The CGT allows me to acknowledge subjectivity and my involvement in the construction and interpretation of the data (Charmaz 2014: 14). Nevertheless, the validity of this paper depends fundamentally on the students' interviews conducted and their consequent analysis.

FINDINGS

The findings are organised in two ways:

First by presenting systematically the interpretation of the students' answers to the four research questions (Q1-Q4). Second, a more discursive approach is used to illustrate students' voices.

This two-way presentation of the answers is used to disclose more accurately students' responses who both answer the four questions, but also tell stories of what it means to be a student of architecture in a time of great ecological and social concern. Students tell three narratives that identify their perceived roles as future architects and citizens in our society and therefore by illustrating what a meaningful architectural education should be. These narratives refer to the architect as: a "dissident intellectual", an "ethical professional", and a "storyteller".

These narratives intertwine, overlap and run parallel through the entire conversations with the students. As such they need to be seen relationally, part of the respondents' understanding of their societal role and responsibility and therefore on the role of architecture education. Ultimately the whole findings constitute the foundation to build the conception of Cosmopolitan Citizenship Architecture Education CCAE.

To begin the answers to the four questions are hereby illustrated:

THE RESEARCH QUESTIONS

Q1: What skills should students have after studying architecture?

I think an architectural school should be foremost a place where you get to know about yourself
BAS, Bergen 19-11-2018

I think the responsibility of the school is to give the students a way of interacting with life.
RTU, Riga 29-12-2018

Respondents intend education in architecture to be a journey that moves from personal awareness to social activism for the greater good. This journey involves critical skills, professional skills, and social skills. Confidence is at the base of this journey, is founded upon critical skills, that is the ability to find your own interests your mastery, and the ability for being critical of the status quo and therefore being able to understand your context and act upon it. Competence is based on professional skills which are nevertheless inseparable from ethical and social considerations. Consilience is illustrated as the social skills fundamental for the collaborative nature of the profession, i.e. to bring together different people, materials, capital, knowledge and power for the making of any architecture. The codes to this answer are below placed in the three emerging categories and they can be read as belonging to a path that intends education as a journey to acquire both personal awareness and social activism or competence.

From the interviews it emerges a conception of architecture education where critical, professional, and social skills are the essential abilities that students of architecture need to acquire through their education.

Q2: How should these skills be taught?

I think we work too much alone, and that means that when we finish our university we do not know how to collaborate.
VDA, Vilnius 22-11-2018

I think at this moment we don't in our studies we do not take much in consideration the real problems of the world such as climate change.
AALTO, Helsinki 11-12-2018

Confidence, competence, and consilience can be supported in different ways, primarily by addressing the global and local context in which education itself takes place and by allowing students to work collaboratively. Respondents state that dialogues with teachers are considered to be the most powerful instrument in education. Through dialogues students learn to communicate. Schools should be attentive to the different needs of their different students and support them emotionally, helping them to build confidence to become distinct unique architects. Critical, professional, and social skills can be facilitated when schools operate as social platforms that reflect the diversity present in their society, when real problems enter the classroom, when students are asked to reflect on their nature and contexts, and when students can cooperate among each other and with people even outside the classroom. Respondents state that in order to develop their skills they need access to information (library, open sources, lectures, travels, and personal contacts with a diverse plethora of experts); they need to make tangible experiences: with materials, model-making, installations, emphasising the importance of craftsmanship, and also people who are not necessarily architects. Finally, students state that, internships are an essential component of architecture education as such students should be free to choose where to train according to their interests, even beyond the obvious choice of the architectural firm.

Q3: How can the education of an architect be of special importance to our society?

Sometimes I am questioning whether we are too focused on the making,
AHO, Oslo 16-11-2018

Architecture education should not just be about designing beautiful houses it should make us critical
Chalmers, Gothenburg 14-11-2018

Respondents feel that architecture education has the societal and ecological responsibility to harmoniously integrate people and their environment. This is a difficult, serious, complex, and collaborative effort that brings together different parties in the design process. The role of an architect is still seen as that of a facilitator of the process to either solve a problem or reveal important conditions. Respondents therefore envision the role of an architect as a leader who uses her professional mastery to ameliorate the society. Respondents therefore state that schools of architecture should encourage students to think independently and collaboratively, to act beyond the classroom to make a difference in the world.

Q4: Where do you see yourself professionally in 10 years' time?

Architecture... is a kind of ticket out to this question (what to do in your life)...

RTU, Riga 29-11-2018

Keep on challenging myself and that I am part of a bigger community of architects,

BAS, Bergen 19-11-2018

Respondents feel liberated professionally as they believe that their learned skills are applicable to different disciplines beyond the design and construction of buildings. Students want to operate according to their values and bring a positive contribution to the world, especially within their community. Students show little interest in working for big companies as they are seen as money-driven rather than moral-driven. What they wish instead is to run their own practice, in their community, and with friends, designing something "small" but meaningful. This does not mean closing their interests to the rest of the world but instead it means being active in the contexts that they know best and feel emotionally most attached. Finally, students show satisfaction with their schools and they wish to remain connected to them as future teachers.

THE THREE NARRATIVES

All students interviewed began their answers by recognizing the overwhelming scope of architectural education and questioning it as well if it is doing enough to prepare them to respond to the ecological and social crisis felt to be of paramount importance for the continuation of life on our planet. These fundamental concerns shape students' vision of architectural education to be intended as a social platform for personal growth and critical thinking, for social awareness, and collaboration with other people for a better world.

Three fundamental narratives consequently emerge, and they describe the architect as a "dissident intellectual", as an "ethical professional", and as a "storyteller".

— First narrative: The architect as a dissident intellectual⁵

5 Some of the codes associated to this category include: *Finding yourself, Working with your interests, Having a strong will, Coping with the stress, Feeling relevant, Understanding my responsibilities as architect, Being critical of your own actions, Growing confidence, Being critical of the*

This narrative is based on understanding the role of an architect as a person who is critical of the current reality and uses her knowledge and voice for ecological and social amelioration. This resonates tremendously with what bell hooks defines a dissident intellectual that is people that “are critical of the status quo and they dare to make their voices heard on behalf of justice” (hooks, 2003: 187). Respondents understand that even though architecture has a vivid image is not just a picture to be published in a magazine “*Architecture education should not just be about designing beautiful houses it should make us critical*” (Chalmers, Gothenburg 14–11–2018). This element of criticality of awareness is considered to be a foundation for their education.

Students know that architecture education is a lengthy and complex one process, nevertheless, they show a surprising optimism firmly believing in the importance of architecture.

Architects take so much time to mature because you really have actually study several fields. (RTU, Riga 29–11–2018)

Respondents believe that “*You can use that kind of process (architectural thinking) in many kinds.* (Aalto, Helsinki 11–12–2018) since architecture is about making sense of the world, dealing with its complexity, and finding solutions. But to be effective architectural education needs to act as a social platform capable of exposing students to different source of knowledge, learning conditions, experiences, and diverse points of views. Specifically, one student states:

teachers must be different so that they can support the students to find their own voice their own path and in that way they maybe find their voice and then can contribute to the society in some ways, or have an opinion and so on. (Aalto, Helsinki 11–12–2018)

Exposing students to diversity of thoughts is key for helping students to find their inner compass, their mastery, for developing the empathy and confidence that is needed to then position themselves as outspoken, critical, socially aware architects — that is to acquire the role of dissident intellectual, of a person that uses architectural thinking for the greater good. When

status quo, Growing personally, Developing critical thinking, Developing awareness, Finding your agency in architecture, Feeling responsible for the impact of your own actions, Expanding the role of an architect, Developing yourself...

students feel confident about their skills and optimistic about their future, they also feel liberated and empowered to imagine their many possible roles in the society. And they embrace the diverse possibilities with enthusiasm, as one student states: *“This is not the time to be in one cage to decide whether you are a professor or a practitioner, this is the time to be all over the place!!”* (RTU, Riga 29–11–2018)

There is therefore no singular dominant vision of what an architect should do. Architecture is plural and diverse, and an architect will bring her working method her critical collaborative capacities into every task that she is working on.

— Second narrative: The architect as an ethical professional⁶

Students are aware of the basic competences that are necessary in order to operate as architects: from having a good spatial understanding to the ability to visualise and test their ideas by using the appropriate software. A student says: *“What I think first of all is critical thinking, problem solving, spatial thinking, and basic skills to express your ideas like drawings. One very important thing is to have an opinion and not be afraid of expressing it.”* (VDA, Vilnius 22–11–2018)

Nevertheless, these competences alone are not enough to form a good architect. A student states it in these terms: *“I think that architects should not only have knowledge about using computer skills but also have the understanding of how to make architecture more social and think about other problems which are, I think, something of what we have to consider when we work tomorrow”.* (VGTU, Vilnius 27–11–2018)

Architects design buildings and processes, and the act of design is about making choices, the impacts of which reverberate in society and beyond. The architect should therefore be aware of her role and responsibility in the society and sensitive to the fact that to every design choice corresponds a social and ecological impact that needs to be understood and evaluated, not just in terms of costs and space but also in terms of its social and ecological value. Designing the right thing is therefore more important than designing the thing right. The latter is focused on the accuracy of the product, while the

6 Some of the codes associated to this category refer to: *Understanding how buildings work, Understanding what’s a good space, Understanding the design process, Learning holistically, Learning in perpetuity, Learning by doing, Learning to evaluate, Learning to synthesize, Learning to anticipate, Learning to research, Learning to envision, Learning to solve problems, Learning practical skills, Learning technical skills.*

former is based on critical thinking and reflects its context in the bigger picture. What are the potential social, and environmental effects on this act of designing? What power relations are shifted? What other options are there? What could be the long-term consequences? Who makes the decision? Who builds your architecture? In other words:

What is the story behind a beautiful building?

(Chalmers, Gothenburg 14–11–2018)

Students therefore do not want to be part of a system of ecological and social exploitation but want to operate as a positive, restorative force in their society and, most importantly, they need to believe that what they are doing is the right thing. One student puts in these terms: *“I just want to do something that interests me and make some impact, eh, like in a good way, for our environment and society”*. (Aalto, Helsinki 11–12–2018)

Students show empathy, sensibility and courage to operate ethically for the greater good of the society. Architecture is ultimately about how to be moral in the world!

— Third narrative: The architect as a storyteller⁷.

This narrative is based on the importance of storytelling. Architects are people that ultimately do not build but coordinate the social processes that are at the base of their work whatever that may be. Communication is fundamental in this collaborative process and architects need to learn how to engage and converse with the world. One student says therefore that: *“I think the responsibility of the school is to give the students a way of interacting with life with their field of work”*. (RTU, Riga 29–12–2018)

Consilience, i.e. the ability to link together principles and people from different disciplines, is therefore valued as an extremely important quality that an architect should have. As one student explains it: *“I think that the most important skill is cooperation and collaboration”*. (BAS, Bergen 19–11–2018)

This quality is fundamental for solving the on-going social and ecological crises. Consilience requires social and collaborative skills to operate as an activist and protector of the

⁷ Some of the codes associated to this category refer to: *Understanding people, Understanding the world, Understanding the social mission of architecture, Learning to communicate, Learning to collaborate, Conversing with the world, Expressing your opinions, Being a negotiator, Developing community, Conversing with the world*

common good. It is not just about problem solving but also about revealing important and cogent issues of our times and create sufficient consent and support to be able to tackle them collectively. One student illustrates it as: *“to be critical and to be able to work with others, and what I mean with this is the capacity to put your feet in somebody’s else shoes, so this is also in terms of empathy”*. (Chalmers, Gothenburg 14–11–2018)

Storytelling in this sense then refers to the ability of the architect to understand cogent issues, and to reveal them using architectural thinking and tools (models, diagrams, narration, photography, installations, publications) as vehicles for communication. To help students develop these skills, schools have to become platforms for socialization, allowing different knowledge and experiences to work together, as one student says: *“I think everything should be connected”*. (KADK, Copenhagen 22–12–2018)

DISCUSSION OF THE FINDINGS

An important aspect that needs to be underlined is that despite the fact that the interviews started with the specific question of Q1-*What skills should students have after studying architecture?*

Students’ responses began by illustrating the context of their education in a time of global ecological and social crisis. Respondents position themselves primarily as people who care for the Earth. The notion of care acts as a lens through which students not only look at the world but also want to act in order to ameliorate it as both professionals and citizens.

Respondents show awareness in understanding that architecture can both act as a source for good and amelioration but equally can further contribute to exploitation and ecological destruction. Respondents show scepticism towards big corporate firms, defined as entities which do not care enough, and seems much more inclined to work in their local context with people that they can trust and on projects that they feel passionate about. Working locally does not exclude them to be in contact with the world and use their established networks to collaborate on projects that cross geographical boundaries.

Respondents depict architects as ambiguous figure: leaders and good collaborators. Within this range each student needs to understand her own role. Some students want to explore the building side further, some want to explore urban issues, some want to write about architecture, some want to explore the managerial side. For all architecture education is intended as a journey that helps students find their own path and develop as autonomous individuals but equally to form people that can work collaboratively.

To deliver this dual task a plethora of rich and diverse dialogues with different stakeholders is intended as the best way to incite sensitivity to prompt ethical design solutions.

Architects are described (arrogantly?!) as a people who seek allies to battle for the common good<, however, it would be really important to understand whether these traits are specific among students in architecture or whether they are universally shared among students from different disciplines.

The three narratives: the dissident intellectual, the ethical professional, and the storyteller, tell complementary stories about the multiple roles of an architect in our society.

The whole findings point to the direction that a meaningful architectural education is one that helps students make ethical design choices. In order to do so education has to support personal growth through critical thinking, social awareness, and action. These findings resonate strongly with the conception of Cosmopolitan Citizenship Architecture Education CCAE.

DISCUSSION IN LIGHT OF THE THEORETICAL BACKGROUND

From the world of education, a person has emerged as leader and catalyst of change. She is a student and her name is Greta Thunberg. Greta simply says that education without a future has no meaning. She has become a leader that brings students and education in the frontline in the quest for a solution to the climate crisis. Friday 20th September 2019 will be remembered as the Global Climate Strike which is said to be the biggest climate protest in world history (Barclay, Resnick 2019). Students therefore feel that they are not just called into a cause, but they are the promoter of the cause itself. This is the context of this research, of its methods, of its dialogues and findings. Within this context the paper's intention was to provide an

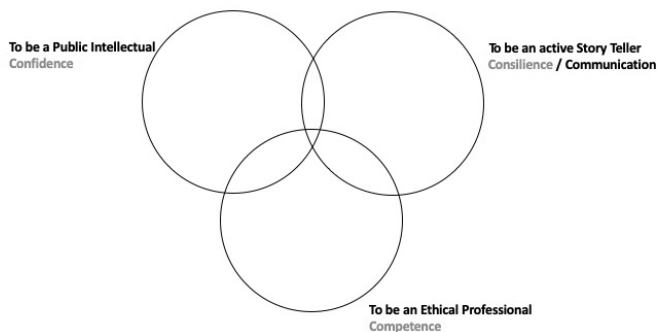


Fig. 3: The three narratives

interpretative and explanatory framework with which to understand the students' voices, their understanding on what it means to be a student in architecture in the current context.

Students from the NBAA capture the essence of their education as a journey to develop critical thinking to acquire social awareness, to instil social activism, to grow. The three narratives of: to be a dissident intellectual, a storyteller and an ethical professional, equally co-share the space of education and together they form the conception of cosmopolitan citizenship in architectural education.

CCAIE can offer an answer to both Schumacher and Aravena's statements "We've never taught the right thing at university" as we are "incapable to prepare students for the real practice" (Winston, 2016). We can teach the right thing when students can bring their experiential knowledge into the classroom, when we educators create the conditions that make us critical and engaged, when we help students nurturing their individual talents without forgetting that we are all connected and interdependent.

CCAIE is intended as a way to develop a more caring and intimate relationship among architects and their community which is based on social awareness and collaboration, driven by the desire to operate with care and social responsibility (Santanicchia, 2019). Becoming cosmopolitan citizen architects means learning to understand the social and environmental impact of design decisions and how those decisions can respond to the cogent issues of our society. This means becoming critical thinkers and outspoken intellectuals, guardians of our planet and its earthlings, and stewards for promoting the necessary collaborative change that we need for protecting life on this planet. Architecture education scope goes there-

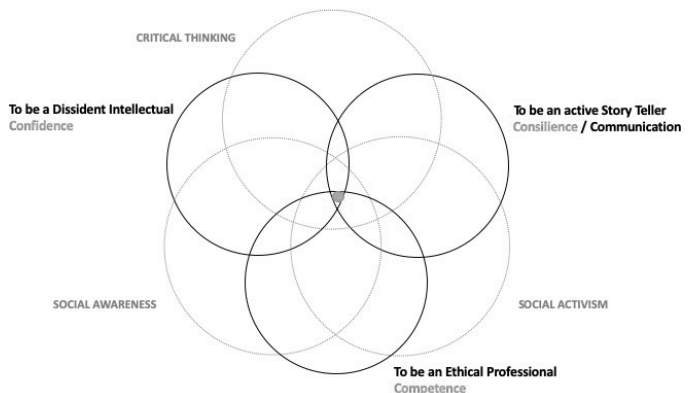


Fig. 4: The three narratives aligning with cosmopolitan citizenship in architectural education

fore beyond building's design, it is about how people can live and flourish together in an environment which is always both natural and man-made.

This requires education to be place-based and socially contextualized. It requires education to cross disciplinary boundaries. It requires education to be generous to welcome people from all walks of life. It requires education to aspire to be as diverse as the society it seeks to serve (Froud and Harriss, 2015). It requires education to be at the forefront of the change. It requires education to be about the common good and how we live together. And it requires students and teachers to work together, to dialogue to use critical thinking to discover together awareness and activism. It requires the confidence, competence and the art of consilience to be a public intellectual, and ethical professional and a storyteller. It requires care and courage.

These requirements are posed by the students interviewed, as such cannot be simply dismissed.

ACKNOWLEDGEMENT

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APPENDIX 01

Profile of the students interviewed

School	Gender	Age	Year	Length	Date	Place
Aalto	female	23	4	35:46	10/12/18	museum
Aalto	female	22	4	26:20	11/12/18	school's cafe
AHO	male	32	4	36:52	14/11/18	design studio
BAS	female	30	4	43:04	19/11/18	design studio
Chalmers	male	29	4	37:56	14/08/18	design studio
EKA	female	23	4	42:48	03/12/18	design studio
KADK	female	28	4	50:50	22/12/18	Skype
KTH	female	31	4	1:06:50	21/12/18	design studio
NTNU	male	28	4	48:20	20/12/18	design studio
VDA	female	24, 24, 25	5	43:39	22/11/18	dean's office
VGTU	male	24	5	23:24	22/11/18	dean's office

Aalto, Helsinki, 1 woman, 23 years old, 4th year. Length: 35 minutes and 46 seconds. Interview conducted at the Museum of Finnish Architecture the 10 December 2018. Student was introduced to me by the BA program director.

Aalto, Helsinki, 1 woman, 22 years old, 4th year. Length: 26 minutes and 20 seconds. Interview conducted at the Brooklyn Student Café at Aalto Campus the 11 December 2018. Student was introduced to me by the BA program director.

AHO, Oslo, 1 man, 32 years old, 4th year Length: 36 minutes and 52 seconds. Interview conducted at the AHO cafeteria the 14 November 2018. Student volunteer for the interview.

BAS, Bergen, 1 woman, 30 years old, 4th year. Length: 43 minutes and 04 seconds. Interview conducted in the design studio the 19 November 2018. Student was introduced to me by the dean.

Chalmers, Gothenburg, 1 man, 29 years old, 4th year. Length: 37 minutes and 56 seconds. Interview conducted over Skype. at the students desk the 14 November 2018. Student volunteer for the interview.

EKA, Tallinn, 1 woman, 23 years old, 4th year. Length: 42 minutes and 48 seconds. Interview conducted at the meeting room of EKA the 3 December 2018. Student was introduced to me by the head of the international office.

KADK, Copenhagen, 1 woman 28 years old, 4th year. Length: 50 minutes and 50 seconds. Interview conducted in Reykjavik the 22 December 2018. Student volunteer for the interview.

KTH, Stockholm, 1 woman, 31 years old, 4th year. Length: 1 hour 6 minutes and 50 seconds. Interview conducted in Reykjavik the 21 December 2018 as the student was visiting Iceland. Student was a former one from IUA.

NTNU, Trondheim, 1 man, 28 years old, 4th year. Length: 48 minutes and 20 seconds. Interview conducted in Reykjavik the 20 December 2018. Student was a former one from IUA.

RTU, Riga, 1 man 25 years old, 5th year. Length: 33 minutes and 33 seconds. Interview conducted at the students desk the 29 November 2018. Student was introduced to me by the dean.

VDA, Vilnius, 3 women, 24, 24, 25 years old, 5th year. Length: 43 minutes and 39 seconds. Interview conducted at the dean's office the 22 November 2018. Student were introduced to me by the dean.

VGTU, Vilnius, 1 man, 24 years old, 5th year. Length: 23 minutes and 24 seconds. Interview conducted at the Dean's office the 22 November 2018. Student was introduced to me by the Dean.

APPENDIX 02

Ethical consent: The questions asked were sent to the ethical committee at the University of Iceland which dispensed an ethical approval on the 19/10/2018 and send the response with an email 22/10/2018. To the students it was made clear about the purpose of this research project and that the privacy of the participant will be protected.

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Strong charismatic figures sometimes personify a school, leaving a lasting legacy forming its identity. Alternatively, they could be the less conspicuous educators just as able to generate meaningful educational experiences. They could be academy situated educators drawing upon a substantial body of research expertise, or they could be practicing architects teaching at architecture schools, informing the educational process with a vital connection to professional practice. Some are both. Is there a preference, or prevalence? What is the role of a teacher in the education of an architect? In what ways are they either a provocateur or a mediator? Which tools best encourage a student to conduct a creative research process? Should architecture teachers be taught to teach? Reciprocally, what forms of autodidactic expression begin to emerge?

Karl Otto Ellefsen

The Educator

Lovorka Prpić

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Provincial and Outdated? A Brief Discussion on the Globalization of Architectural Education

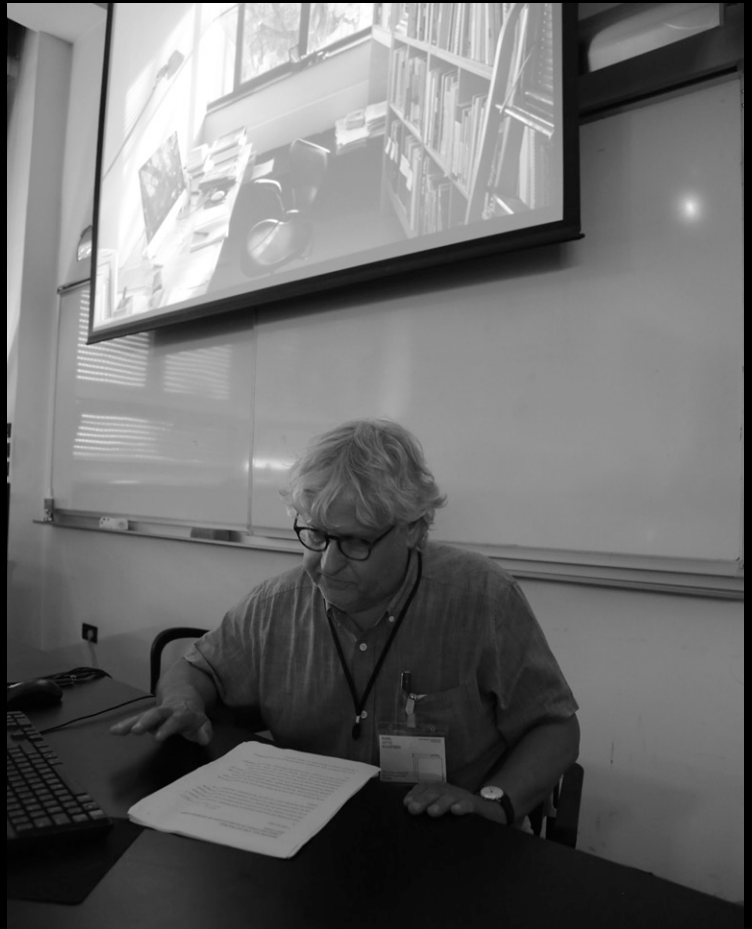
KARL OTTO ELLEFSEN

AHO Oslo School of Architecture and Design;
Central Academy of Fine Arts, Beijing

KEYWORDS

identity of a school

What happens to a school when education is an international commodity and teachers are recruited globally? Bringing in their own luggage and agendas and asking, “Why not do something else?” The school does not fall apart. Modern management keeps it running smoothly. In terms of educational institutions, a good reputation seems to sustain. Elaborated strategies define potential new roles for the school in the world. Does culture beat strategy, is there a ghost in the machine that cannot be removed? Or is the school transforming into something found anywhere in the world, and mostly mediocre? A few years ago, a known figure in the EAAE system stated that: “There is no such thing as a global curriculum in architecture”, believing that schools gave priority to and took care of their own identities. Was this a false statement? Discussing the relationship between school and society, is the concept of belonging still valid and possible to pursue? If so, what measures are relevant?



NO GLOBAL CURRICULUM?

I am contributing with some small comments on the globalization of architectural education. After a life as a teacher, I know a lot of schools, but the reflections in this talk is based on my experiences from the Oslo School of Architecture (AHO) and my 10 years long involvement with the Central Academy of Fine Arts (CAFA) in Beijing. Globalization in this talk is denoting the general and “the hidden school” is a name for “the specificities”, often linked to school traditions and the reinterpretation of tradition

During the twenty years I have been at the fringes of the EAAE, and in certain periods at the core of the EAAE system, the need for internationalization has been one of our main topics, reflecting the general European political agenda. I might remind you that the European Bologna Declaration was signed the 19th of June 1999, in 2019, twenty years ago. I have seen to that all the books coming out of the yearly EAAE symposiums are stored in our library, and consulting these, I find main headlines like, “Towards a common European Higher Architectural Education Area” (2002), “Bologna 10 years after” (2009), “What have we achieved, what have we lost?”, “Are we really more harmonized”. “Are we more transparent” etc.

In our event in Milan in 2015, we somehow concluded that the process of internationalization so far had not resulted in a “global studio” or a “global curriculum”. When the Bologna Process reforms came into effect some ten years ago, with the aim of making Europe’s variegated educational systems more compatible with one another, many believed that architectural training would become more uniform. But, our 2015 opinion was that schools rather tried to keep and develop their own identity, defining a “local” strategy to be able to cope with a “global situation”, to distinguish them and highlight their originality. Today I wonder if this conclusion was wrong.¹

THE HIDDEN

The “hidden” is hidden, not because somebody did hide it, but because we are not able to conceptualize it, or it might be so obvious that we do not think about it. My experience is also that this “hidden” is often talked about in rather one-dimensional terms, and not in its full complexity. Therefore the “hidden” might somehow vanish, normally not as a direct effect

1 Karl Otto Ellefsen, “Architectural Education Towards 2030”. Key note speech, EAAE Congress 2015, 27–30 August.

of a school policy, but as an unplanned, sometimes surprising side-effect of policies and strategies.

The complexity and differences in cultures, the countless incompatible languages and dialects, might be judged to be the most profound challenge to European cooperation, but this rather indigenous character is also a main European quality, distinguishing Europe from other parts of the world.

Architecture and urbanism as disciplines were international from the start. In Europe the disciplines merged with local vernacular traditions, interpreted modernism differently, unmounted modernistic practices in various ways, and developed different roles for the architect to perform in society.

Good schools are built by outstanding teachers. And architectural education is socially relevant and valid, linking to the culture and needs of a society. At least this was so in a small school close to the North Pole, started in 1945, right after the second World War as part of a process of rebuilding a nation. At the beginning education and practice merged entirely, teachers taught through their projects, students won competitions for substantial public commissions before they graduated. After a while the Oslo-school was molded into a tradition, a little national romantic from the start, cherishing the thousand-year-old wooden way of building, and indulging in the Norwegian landscapes filled with local character of place. So far to the north that characteristics like “ahead of the game” or “mainstream” had little meaning. New concepts and ways had to travel far and took time.

In a country where pragmatic needs set the agenda, the school established a corrective, defending architecture as works of art, as “unicas” — one of a kind —, educating master builders who knew the terrain, with a sense of place, in a material tradition of wood, stone, brick and concrete, working with experimental tectonics. Four generation of teachers, the last three educated in the school. A small academy, entirely studio based.

“The hidden”, we did not even give it a name — the Oslo-school — until five or ten years ago. Before that it was mostly described as “Nordic architecture”. And indeed it was a tradition little written about, and even talked about by its great protagonists, When I was a student in the 1970s and the school tried to customize me into it, it seemed not to relate to a written language at all, you were mostly taught by the teachers drawings, his or her pictures, and occasionally some grunts describing tectonics and detailing.

How to describe the “hidden”? Maybe a more illustrative concept is “school culture”. Trying to break it down I would say we are talking about a:

- a. set of values, ways of understanding architecture linked to local architectural culture. The school has been a keeper and a of a tradition and an intuition renewing the tradition,
- b. strong linkages to society and local architectural practice. The school being “relevant” locally, nearly immersed in society,
- c. an academy, studio-based, established ways of working, both as a library and a laboratory,
- d. a generous and resource-rich teaching environment.

Schools of architecture stem from the same sources and have been subject to international exchange of ideas from the very start, in terms of organization, pedagogy, curriculum and architectural inspirations and ideals. In the best schools translated and blended with local culture. Globalization of architectural culture should not be seen just as a further development of this situation, but as something entirely new: resulting in a global student marked (not limited to the schools with a tradition for international students), a global marked for young teachers trying to find positions to start out their academic careers, a need for proofs of quality situating schools in global rankings, a need for compatibility in terms of curriculum, and a vast, unlimited and always accessible gallery of world architecture. The schools had to reinvent themselves, using different kinds of coping strategies to adjust to and make the best out of the new frameworks.

WHY DO WE NOT DO SOMETHING ELSE?

During the 14 years I chaired AHO, we tried to develop strategies for the new situation.

We had been a school for building but did indeed broaden our scope. With a certain success we developed our quality and capacity as a research institution and a producer of doctorates. And we — enthusiastically encouraged by the Norwegian ministry of education — were nearly possessed with being international. We were among the first Scandinavian universities to abandon local language for English in the doctoral school and the PhD theses, the very first to do all teaching on the master level in English, and to not demand that tenured teachers should be able to speak the local language. One of the outputs of course being that students from all over the world applied and that most of the professionals applying for PhDs and teaching positions are none-Scandinavian speaking.

When I left ship — without looking back — the policy seemed to have been a great success.

But most policies and strategies for change in due time display unforeseen consequences.

This spring, the journal of architecture, *Arkitektur N*, presented the three Norwegian Schools. of architecture. AHO under the headline: “The Oslo-school, Fehn and Norberg-Sculz is no longer defining for AHO. Now the school approaches the world, the working life and a contemporary understanding of what it is to be an architect.”

Here Thomas McQuillan, dean of architecture, states — and I have no reason of suspecting him to give a false description of the Oslo school, he is an honest and intelligent man — that the school have no common architectural values. “We constitute a society with a common knowledge that we should be competitive and innovative.” For AHO the idea of an Oslo-school has been defining, but this has changed, he continues “There are more reasons for this, but an important factor is that we are an international community working and studying at the school, and we are generally more internationally oriented” ending a little embarrassingly with boasting benchmarking with Columbia and Harvard.²

Probably McQuillan is right, a fundamental change in the school has occurred, and one of the main reasons for this are school policies, making the academic environment, entirely international, bringing in people with other, of course just as interesting values and practices, asking “why do we not do something else?”.

A LOSS OR A NEEDED FULL REVISION?

There are two main challenges to architecture and architectural education today. The first is to develop inventive approaches that might make the world more sustainable and avoid the worst parts of the coming break-down, the second is to develop practices that have “relevance”. The first is absolutely crucial, the second essential for the architect to regain and eventually expand her role in society.

Seen in this rather sombre context, does it really matter that the “hidden” is forgotten? Not necessarily, but it is certainly possible to put up an argument underlining that the school has lost something both valuable and relevant. Then we have to expand our superficial understanding of the “hidden”. A quote from one of the founders of the Oslo-school, Knut Knutsen, says: “search for the simple and the natural, the quiet and insignificant,

2 *Arkitektur* 6. 2018. «AHO, Fra Oslo-skolen til internasjonalt studiested» Interview with Thomas McQuillan by Gaute Brochmann.

the primordial and again the natural”.³ Pointing towards values that were essential to the tradition; site-understanding, buildings merging with nature, humble expressions, short-travelled materials. The ability to identify the essential features of a specific place and then both utilize and respect them. An ethic stating that architects should accumulate an array of knowledge, impressions, and inspirations from the place and then synthesize them in a project that will be assessed and experienced through its highly tactile traits. In terms of pedagogy this means to strengthen the student’s sensitivity, to be able to critically familiarize themselves with program and local conditions. Working as though they are talking with and confiding in a friend.

The architects were educated for a specific task, to take part in local society and to provide tools for the modernization process. Every local society needs a dentist, and every town needs an architectural practice, knowing the terrain, able to culturally and socially communicate.

Like the very dentist, they knew their trade, their handicraft, as builders and planners or whatever. “Relevance” always means “Relevance to what”, and relevance in architecture most often means relevance to local society.

I like the concept “educational environment”, when we twenty years ago moved to our new localities, we were nearly frantic about the possibility of losing our school-culture. It turned out that the “hidden” was not carried by our premises, the old furniture that was thrown away, the administrative staff that was renewed, or the continuous stream of students. It was all about the teachers, and the researchers, how they are recruited and how they are selected.

The argument is not general. Many schools were from the start international and transcends more or less frictionless to be global. Others should not. We are only five million people speaking Norwegian, our national state is rather well functioning, and we indulge in the strangest activities like cross-country skiing and slow television. We are on the fringes of Europe, but has been culturally and economically part of the continent for a thousand years. We have always picked up inspiration from abroad, nearly everything we call Norwegian has been a translation of European ideas. I totally accept that an international teaching community do not merge into or is event professionally interested in this tradition. But we should not loose ourselves.

Will culture beat strategy, is there a ghost in the machine that simply cannot be removed? Or is the school transforming into something found anywhere in the world, and mostly mediocre?

3 Poster text from the 1950s, reprinted in Knutsen/Tvedten, Knut Knutsen, Oslo: Gyldendal norsk forlag 1982, s.276. Translated by the author.



Fig. 1: A teacher's castle

Fig. 2: The Oslo School of Architecture and Design, premises from 2001





Fig. 3: Front page, Byggekunst 8. 1963. Editor Christian Norberg Schulz



Fig. 4: Path to a spring water source in Jilin province, China. Architects Jensen and Skodvin

Fig. 5: Reusing tradition. Wall from Ningbo Historic Museum. Architect Wang Shu





Fig. 6: Relevance. Central Academy of Fine Arts deeply involved in village reconstruction in Banwan Village, Bouyei ethnic group. Guizhou province.

IMAGE CREDITS

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Fig. 3 Photo: Bjørn Winsnes

Fig. 4 Photo: Nongfu Springs

Fig. 5 Photo: author

Fig. 6 Photo: CAFA

Knowledge Production at the Borderline Territory: Phenomenology of a Transformative Encounter

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Keywords:

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Learning is a life-long process of growth and transformation through personal experience. Learning, like creation, takes place in relation. Life happens in the interval of matter. In the magnetic field of an active void— the space-time interval of change — a new form of life is created. Intention is to explore the incentive for knowledge production dynamics in the education of architects through a lens of relational phenomena. The key stimulus for production of knowledge is a transformative encounter with the dissimilar 'Other'. The process of learning architecture is examined through the phenomenology of perception as the epistemologically most suitable apparatus. Experience of the inside-outside relation in spatial perception of architecture is compared with the one in psychoanalytical dynamics. Winnicott's seminal concept of 'transitional space' is juxtaposed with a dynamic experience of transgressing porous architectural boundaries — both being analogs of the learning process.



In a culture of interconnectedness and change, architectural education is a complex experimental process. School-laboratory is an organized transient community of self-reflective individuals engaged within an active discovery-oriented atmosphere. Pedagogical approach is a nonhierarchical dialogue, individualized and emancipatory. Method can foster collaboration and/or induce instability; it sustains conflict, failure, and crisis. Reflective practice stimulates personality development in the process of individuation and actualization of potentials. Transformative encounter is an open process, an exchangeable relationship.

In the world of constant transformation, identity is constructed *in relation*, and not in isolation. The pedagogical aim is to provide stimulus for a radical interaction between daring subjects responding contemporaneously, instead of habitually (Ellsworth, 2005). In the process, architects-in-becoming must transcend their confining personal and social contexts. A transformative encounter of self with the world brings a change of standpoint — a paradigmatic shift. Learning-unlearning is a vital oscillating dynamic, a breakthrough of personal borders, entering-exiting, like inhaling-exhaling.

There is no doubt that my early background has incited a passionate personal interest for this subject particularly. After my brother and I were born, our family moved from Zagreb to a tourist town at the northern Adriatic coast. At the time, the nearby city of Rijeka was the largest shipping port of former Yugoslavia, and my father worked there as ship doctor. When we were still young children, our family used to take ocean trips on transatlantic merchant ships, and some intercontinental journeys lasted for couple of months. Moreover, we lived so close to the Italian border that it was normal to drive back and forth on a daily basis, even if just for a stroll in Trieste. Tourists that visited our town came from countries larger than ours, so we started learning their languages even before going to school.

Ours was a region of great national diversity and social dynamics, in constant flux. Diversity is the essence of education. Cultural differences I encountered and absorbed as a child enhanced my social awareness of ‘the other’, the capacity for comprehending and learning from that other. I feel a strong affinity to Édouard Glissant’s idea of a universal heterogeneous unity or ‘worldmentality’ (Glissant, 1997), of permeable borders between nations, their mutual benefit of cross-fertilization, overlapping of each other’s energy.

As a teenager I moved to the US to finish high school. It was an invaluable liberating experience; I started looking at reality

from a completely different perspective. And very soon, when the Balkan socio-political turmoil broke into a homeland war, all of a sudden, we woke up in a different country, in a different political and economic system.

Such critical and unstable life conditions demand of people to develop critical consciousness. It helped me to discover importance of contextualization — for context is necessary to understand the text. A necessity of self-teaching, an ongoing learning not restricted to a single discipline. Comprehension gained by lived experience is far more important than borrowed conservative knowledge. Erudition can be misleading; therefore, a need for *unlearning* through constant questioning and critical thinking; *experiencing* as a way of authentic inductive comprehension and learning.

I see distinct links between architecture and society, between pedagogy and society, and the importance of dialogue as the key tool for social progress. As Freire argues, liberation can be reached through education (Freire, 1989). In my case, the experience of psychotherapy was especially meaningful; a liberating dynamic of dialogue-crisis, having to erase previous ‘knowledge’ hindering my pursuit of self-actualization. Gradually, an awareness of my own private ‘oppression’ started to take its uncanny shape, and eventually a transformative power of generating a question: why?

To live in a marginal turbulent country in constant social and political transition; what does it really mean? Maybe the only way to live a free and authentic life is to live it in the margins, off-center (under the condition to be one’s own self and not referential, of course). To discover and live one’s own inner truth, as Emerson beautifully put it:

“To believe your own thought, to believe that what is true for you in your private heart is true for all men — that is genius. Speak your latent conviction, and it shall be the universal sense; for the inmost in due time becomes the outmost. A man should learn to detect and watch that gleam of light which flashes across his mind from within. Yet he dismisses without notice his thought, because it is his... Great works of art teach us to abide by our spontaneous impression with good-humored inflexibility then most when the whole cry of voices is on the other side. Else tomorrow a stranger will say with masterly good sense precisely what we have thought and felt all the time, and we shall be forced to take with shame our own opinion from another.”

(R. W. Emerson, Self-Reliance, 1841)

In one of the essays on architectural education posted in his famous blog, Lebbeus Woods (Woods, 2015) writes about the relationship between teachers and students as “equal partners” in that their roles depend equally upon each other. He offers an ancient example — Athenian academy — as the most basic sort of school, and the most famous of which is described in Plato’s Dialogues, where the teacher was Socrates. Woods writes:

“It is telling that Plato’s account of Socrates’ academy is called the ‘Dialogues’ and not the ‘Monologues.’ While a teacher such as Protagoras preferred to give lectures — monologues — displaying his wisdom, Socrates method of getting at the truth — which he believed was the goal of knowledge — involved the back-and-forth, the give-and-take, the vigorous exchange of views between individuals who were free to develop their own thoughts and understandings. Because these were bound to be different, the dialogues are filled with arguments and counterarguments which advance step-by-step, focusing on key questions, toward a conclusion. Socrates questioned everything, especially his own knowledge and assumptions. The conclusions arrived at by this method were not known in advance. It is easy to understand why the Socratic method has had such a great influence on Western science, art, philosophy, and learning — it frees the mind and liberates its creative powers.” (Woods, 2009)

Obviously, the pedagogical dialogue “is not between the teacher and the learner but rather among learners, of whom the teacher is one” (Vella, 2002).

Learning is never a monologue: it is a dynamic interactive dialogue between a person and their context — therefore, it is a systemic phenomenon. Learning, like creation, takes place in relation. Life happens in the interval of matter. In the magnetic field — a space-time interval of change — a new form of life is created. Transformative encounter with the world — this what Salman Rushdie calls a ‘shock of life’. As he poetically describes it: “Literature is made at the boundary between self and the world, and during the creative act this borderline softens, turns penetrable and allows the world to flow into the artist and the artist to flow into the world.” (S. Rushdie, as quoted by Pallasmaa, 2007) To paraphrase Salman Rushdie in relation to pedagogical process, we could speculate that teaching / learning is a process at the boundary between teacher and student; during the creative act this borderline softens, turns penetrable, and allows teacher to flow into the student and student to flow into the teacher.

The intention is to investigate phenomena that take place in the *active void* — a magnetic field in-between polarities — in the intervals at the *borderline territory*. The aim is to examine how complex experience of transgressing personal reference frames can trigger a process of growth. Transition between inside and outside is explored through cultural media of art and architecture, as well as through relational psychoanalysis. Phenomenology of the inside–outside relation in spatial perception of architecture is compared to the one in psychoanalytical dynamics.

CROSSING THE BORDER

In his book ‘Psychoanalysis and Architecture: The Inside and the Outside’ psychoanalyst Cosimo Schinaia recognizes an intrinsic ambivalence in the concept of border, for it simultaneously implies two contrasting functions: separation and interrelation (Schinaia, 2016). The former — separation — is a static domain of belonging; embracing tradition, identity preservation, exclusivity, reductionism, possible conflict, and eventual degradation. On the other hand, the latter function — that of interrelation — is a dynamic domain of displacement; it can be symbolized by bridge, transition, exchange, permeability, inclusivity, flow. The notion of border as dividing / isolating is essentially an intellectual construct, analytical and artificial; psychologically implying fear, and ultimately death. On the other hand, the integrative border, as active and synthesizing, belongs to the domain of Nature, creativity, love and life.

Latest findings in science have shown an innate interconnectedness in the universe — a natural osmosis existing both in microcosmos as in the domain of macrocosms. This actually confirms that the concept of border as separative is an artificial construct. Because borders are not established in order to separate differences — on the contrary; differences are the very result of creating borders.

Spatial boundaries between interior and exterior are the materialization of the human need for shelter and protection, and — at the same time — of man’s ancient fear of the unknown. Traditionally, threat ‘of the outside world’ was perceived in the exterior space; so, boundaries were established to eliminate the eternal discomfort of the unknown — of the uncanny. A century ago, Sigmund Freud wrote his famous essay “Das Unheimliche” (Freud, 1919). It translates literally as “un-homely” — that which is contrary to one’s sense of home; a threat to personal identity. In man’s fear of the uncanny Freud discovered an interesting paradox: The aim toward security never succeeds in eliminating the anxiety that causes it. What

actually causes the anxiety, is the suppressed knowledge. So what man fears is not outside, but within himself. And the only way to regain that knowledge is to step out of the protective identity frame and confront the unknown as it is — not as it is neurotically feared to be. This means to experience the world afresh, like a child — reality as it actually is, unhindered by fear or trauma, living the full potential of here-and-now.

To accept such challenge demands taking a huge risk — daring to leave the seductive security of stereotypes of the everyday, and to set on a journey of discovery — even though the anxiety of experiencing outer space may never vanish; because it is evolutionary, written in human genes.

As Elizabeth Ellsworth points out, learning is a risky experience to take. It is very interesting to discover the etymology of the word ‘experience’ is the same one as of the word ‘experiment’ — both of them originally implying: to risk, to try in the outside space (Ellsworth, 2005). Maybe this could explain why the experimental process that takes place at architecture school laboratory entails so much discomfort, and why gaining experience is not always easy. It involves learning “how to negotiate and act upon our own purposes, values, feelings and meanings rather than those we have uncritically assimilated from others” (Mezirow, 2000). According to Mezirow, the transformative process is circumscribed by a frame of reference. Frames of reference are structures of assumptions and expectations that frame an individual’s tacit point of view and influence their thinking, beliefs, and actions. It is the *revision of a frame of reference* together with *reflection on experience* addressed by the perspective transformation: a paradigmatic shift (Taylor, 2008).

Phenomenologist Merleau-Ponty, on the other hand, is immersed in experience, when he writes: “The world is wholly inside and I am wholly outside of myself” (Merleau-Ponty, 1945).

The first ‘journey of enlightenment’ recorded in history was published in Venice in 1499, and is attributed to Francesco Colonna (Pérez-Gómez, 2006). “Hypnerotomachia Poliphili” (The Dream of Poliphilus) is an illustrated pilgrimage toward Illumination through love.

The traveler sets on a journey of discovery — he leaves his place of origin, abandons the familiar, his comfort zone. In an act of displacement, he crosses the border. This new experience provides him with a shift in perspective — he becomes an outsider, a stranger, the ‘Other’. The position of ‘otherness’ is complex and unstable — constantly oscillating between extremes — certainty vs. uncertainty, known vs. unknown, attachment vs. detachment — being inside and outside at the same time. This creates a tension that attracts psychic

energy, motivates and animates perception. The traveler — just like Klee's 'teacher — "observes what goes unnoticed by the crowd" (Klee, 1925).

Displacement is a position of insecurity, but it also enables an anti-conformist attitude, open-mindedness, flexibility and curiosity. Lack of knowledge can even generate desire, passion for knowledge. Nomadic communication and transgressive ideas disturb the existing social discourse. Cultural crossbreeding is a fertile ground for innovation and discovery. It is a two-way street: "Energy of life enhancement can only come with the meeting of a stranger." (Sperber, 2016)

PHENOMENOLOGY OF MONTAGE: OVERLAPPING THE INTERIOR AND THE EXTERIOR

In visual arts, montage of 'fragments of reality' creates a magnetic field — a dynamic equilibrium between polarities. The space-time interval between the fragments challenges and stimulates the viewer, contributing to new understanding. The creative process starts with a sense that something is not as it should be; there is a puzzle, a conflict; a desire to be satisfied, thus having a stimulating effect upon the observer (Hill, 2003).

In architecture, montage of fragmented boundaries is a way of motivating desire to discover the space. The design process is seen as a relation, a dialogue between the project and the landscape. Such production of architecture as 'landscape' is inseparable of its *context*, in natural osmosis with the place. Its tools are integrating boundaries, an erosion of the borders between inside and outside. An implosion of landscape inside the house; where the Infinite enters. The goal is to intensify comprehension by means of de-automation of perception. Spatial multilayeredness of *in-between spaces* dissolves the boundaries between the interior and the exterior, stimulating desire to gradually reveal the space, through its flow and transparencies.

Phenomenology of such transition was ingeniously described by Herman Hertzberger for the 1985 Paris Biennale entitled 'Vu de l'intérieur ou la raison de l'architecture' (A View from the Interior or Reason for Architecture): "As we change from place to place, what we experience is a multitude of impressions which give rise to associations and echo degrees of interiority and exteriority within each one of us" (Hertzberger, in Nouvel, 1985).

Space-time intervals between interior and exterior create a complex spatial experience of integrating relationships. In the vertical plane, montage of fragments frames and re-frames the horizon through opening and boundary. In depth, montage of filters or layers along the path of architectural promenade, enabling passing through or stopping. A full sensory and in-

tellectual animation arouses. This *revitalizing irritation of senses* promotes action and change, motivating the desire to unveil the hidden. At the same time, it enables a metaphysical transition of personal borders; an immersion into one's own interiority in a pursuit for authenticity.

In relational psychoanalysis, there is an analogue in the *intersubjective osmosis* — a field between self and other, between inside and outside. As Winnicott explains in his seminal work 'Playing and Reality', it is a *transitional space* between the subjective space of the child and the objective space of the external reality (Winnicott, 1971). This inside–outside relation is an overlapping of two worlds, a juxtaposition of two cultural references. The psychoanalytic relational dialectic between inside and outside is a nonlinear dynamic process of alternating projections and introjections, of mirroring and transference.

Every genuine progression / learning challenges our capacity to tolerate the uncertainty — awareness of incoherent elements in the process of becoming, process of transformation. This is a crisis of fragile 'Self in transition' (Ellsworth, 2005). It is a process that investigates psychical and physical boundaries of self and other, our mind and the world, complexity of being inside and outside at the same time (Sperber, 2016). In this process a good analyst (or a good architecture teacher) is not self-referential and closed, but is patiently listening, open-minded towards other contexts, other frames of reference and other points of view, considerate for personal sensitivities.

A good teacher does not resort to criticizing the student, but rather applies a *positive psychology* approach, as suggested by Mihaly Csikszentmihalyi: "treatment is not just fixing what is broken; it is nurturing what is best, to build on strengths and learn from challenges." (Csikszentmihalyi, 2000)

ARCHITECTURE SCHOOL: A TRANSFORMATIVE ENCOUNTER

Architectural education of today — if it intends to educate individuals able to cope with the ever more complex demands of a dynamic world — needs to be transdisciplinary education. It needs to promote collaboration, the exchanging of ideas, and — especially — it must value students' personal experience. Teaching students to value their own authentic personal experience is an important lesson in self-reliance, ever more indispensable for computer generations. Csikszentmihalyi's seminal research showed direct correlation between personal experience and creativity: the bigger personal experience, the better creative skills and learning abilities (Csikszentmihalyi, 1996). Architecture students in design studios are motivated to think, reflect, ask

themselves about the purpose, essence of the task, encouraged to further research and experimentation. It is a mutual dedication — an open process of reciprocal interpretation, developing individual personal abilities, and actualization of potentials.

In the process of becoming oneself, self-reliance augments resilience of an individual, helping to deal with unforeseen circumstances of change and challenge. While fostering self-reliance in students, it is necessary to induce a shift in perspective regarding notions of 'success' and 'failure'. *Process of growth* is of greater value than the outcome (than perfection). The aim is not 'mastery' but embracing the transitional state as a phase in the process. As mentioned before, transformative encounter of self with the world brings a change in perspective — a paradigmatic shift (Mezirow, 2000). In the process, teacher is a catalyst: listening, observing, wondering, mirroring, responding: communicating authentically (Winnicott, 1971).

According to Csikszentmihaly, 'creative personality' contains conflicting traits, often alternating between contradictory extremes, and having a multifaceted perspective: it is "multitude, instead of one" (Csikszentmihalyi, 1996). Therefore, the teacher must be capable of dynamically operating at different ends of those polarities; switching from passionate to objective, from attachment to detachment. Moreover, the teacher must be aware of his/her own will to transform. The goal is developing the student's specific abilities. And the reward is the moment in which the student surprises him/herself (Winnicott, 1971). Or, as Ellsworth put it: "It is a discovery of emerging of a new self." (Ellsworth, 2005)

Learning is a vital dynamic of self-change, of the self-oscillating between creative dissolution and self-augmentation; like inhaling-exhaling, like entering-exiting. Aldo Van Eyck introduced the idea of architecture breathing: "that you cannot leave a real place without entering another. Departure must mean entry" (Van Eyck, in Nouvel, 1985). The transformative encounter is an open process, a two-way, exchangeable relationship.

In the field of psychology, a prerequisite for learning is 'unlearning' (Rank, 1932). These are two interdependent processes: in order to grow, and learn more creative ways of thinking, feeling, and being in the here-and-now, one must 'unlearn' self-destructive ways of thinking, feeling, and being in the here-and-now.

The process of *unlearning* starts with a new, transcultural experience, inducing a shift in perspective, followed by critical reflection, and a discomfort prior to discovery. "But there are also those who deliberately refuse to learn. New ideas suggesting new behaviors may be deliberately suppressed because they contradict established values and accepted traditions.

It is that the truth contradicts existing personal values, or that it demands facing unpleasant risks.” (Revans, as quoted in Pedler, Shih-Wei, 2014)

To ‘unlearn’ can also be to legitimate knowledges that are subjugated or silenced within existing, predominant theories, and practices. To develop ability to ‘unlearn’ — radically questioning power relations — can be a means by which people can become more innovative through resisting and transcending their confining social contexts (Unger, as quoted in Pedler, Shih-Wei, 2014). However, it requires a radical democratic context and self-reflective individuals able to express ideas and values that are not necessarily consistent with the dominant, institutionalised theories and practices (Chokr, as quoted in Pedler, Shih-Wei, 2014).

“To achieve progress, we have to look for new approaches and change the very way we think. Our common modes of thinking are organized in (specialized) professional fields and implemented through sophisticated organizational structures and processes. Yet, as the challenges before us become more complex and networked, innovation often seems to occur between disciplinary fields and outside of established organizations, for example, in the unstructured activities of startup ecosystems. Highly innovative people these days are often the ones who traverse disciplinary boundaries, who happen to bring deep knowledge and skills of several fields to bear on a problem or an opportunity, combining practices in a way that creates new value” (Gardner, 2006).

LIFE BEYOND THE BORDER

It is obvious that architecture education — that is, the process of both teaching and learning architecture — requires us to be deeply honest with ourselves, demanding an intense personal integrity. “But most of all, it demands that we stand open to experience, that we recapture our ability to see life and others afresh, as though through the eyes of a child, to learn how to tap into our intuition. It demands that we cease to seek refuge in what we know and constantly explore and learn from what we do not know. It demands that we live the questions rather than the answers.” (Zohar, Marshall, 2000)

Both in his art and in teaching at the Bauhaus, Paul Klee’s approach was inductive and phenomenological. By recognizing the big in the small, he discovered the hidden spirit of things. By observing the smallest manifestation of form and interrelation, he arrived at a conclusion about the inner essence — the formative reason of matters (Klee, 1925). From specificity to complexity, from local to universal — not unlike our Traveler:

“It is the mission of the teacher to observe what goes unnoticed by the multitude. He is an interpreter of signs”, he claims (Klee, 1925). Exactitude winged by intuition is a tool with which forms, derived from nature and culture, are transformed into signs which redirect attention from the surface to spiritual reality. Form is not an image, but a system for structuring an object.

Authenticity of expression results from a journey to one's own inner self and sharing one's own contemplative experience with another. As Thoreau said about the lake: “It is Earth's eye; looking into which the beholder measures the depth of his own nature.” (Thoreau, 1854). To dive into the lake means to cross the border, to enter a different kind of space in which different laws rule. Gaston Bachelard dealt with this in his ‘Poetics of Space’: “To go down into the water, or to wander in the desert, is to change space, and by changing space, by leaving the space of one's usual sensibilities, one enters into communication with a space that is psychically innovating. Neither in the desert nor on the bottom of the sea does one's spirit remain sealed and indivisible... For we do not change place, we change our nature.” (Bachelard, 1958)

In his booklet for Bauhaus students, Klee describes two kinds of spiral movement: “Lengthening of the radius creates a vibrant spiral. Shortening of the radius narrows the curve more and more till the static centre. The direction determines either a gradual liberation from the centre through freer and freer motions, or an increasing dependence on an eventually destructive centre. This is the question of life and death; and the decision rests with the small arrow” (Klee, 1925). Paul Klee's metaphysical arrow demonstrates duality between human ideological capacity to move and desire to expand his/her reach, and human physical limitations. Despite the paradox, Klee incites Bauhaus students to be winged arrows aiming high, at fulfillment and goal (Klee, 1925).

This is what Pérez-Gómez calls “architectural longing for ethics and aesthetics” (Pérez-Gómez, 2006); longing for a better and more beautiful world, driven by powers of Eros and Philia. Eros and Philia — love and empathy — are forces that have built our entire human world. Human desire for a better and more beautiful world is a desire of ethical and aesthetic nature. People constantly seek something; a lack is forever present. Manifesting as a spatial and temporal desire / suffering for the unobtainable, this immanent lack has a motivating potential, Pérez-Gómez argues. Might it not be used as a tool for production of knowledge? The aim is to reach the presence in here-and-now, a gap between past and future. This is the ‘active void’, the space-time interval of change; a life-productive borderline territory.

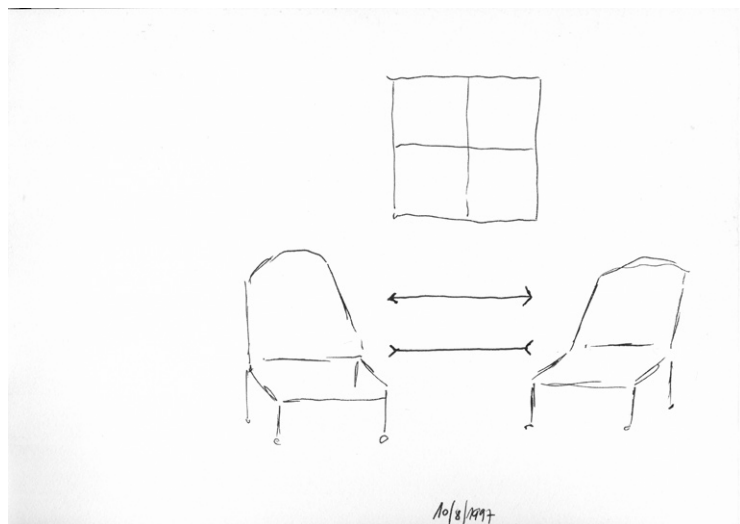


Fig. 1: My room, I and Thou, L.P., psychoanalyst, NYC, 1997
 (project author: Aleksandra Wagner)

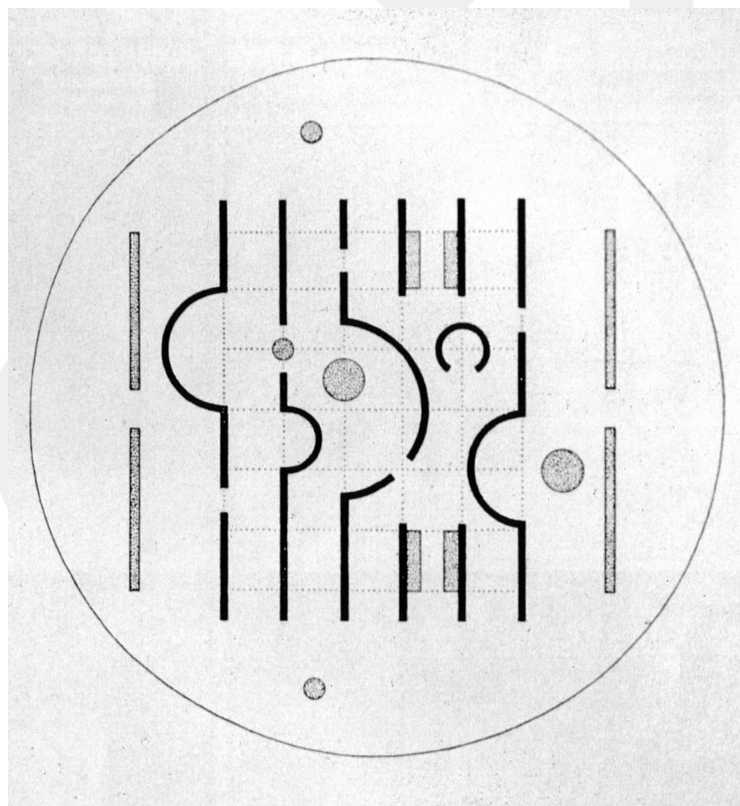


Fig. 2: Aldo van Eyck: Sculpture Pavilion, Sonsbeek Exhibition. Arnhem, 1965–66

III **37** **38**

37 **The Arrow.**

The father of the arrow is the thought: how do I expand my reach? Over this river? This lake? That mountain?

The contrast between man's ideological capacity to move at random through material and metaphysical spaces and his physical limitations, is the origin of all human tragedy. It is this contrast between power and prostration that implies the duality of human existence. Half winged—half imprisoned, this is man!

Thought is the mediary between earth and world. The broader the magnitude of his reach, the more painful man's tragic limitation. To be impelled toward motion and not to be the motor! Action bears this out.

How does the arrow overcome the hindering friction? Never quite to get where motion is interminate. Revelation: that nothing that has a start can have infinity. Consolation: a bit farther than customary!—than possible? Be winged arrows, aiming at fulfillment and goal, even though you will tire without having reached the mark.

38 An actual arrow consists of shaft
 point
 feathering
 (rudder)

The symbolic arrow is direction with point and feathering combined as point-rudder.

Equal length of the point-rudder and equal degrees of the point-rudder from the shaft, result in straight flight (Fig. 71: $a=b$; $\alpha=\beta$).

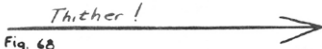
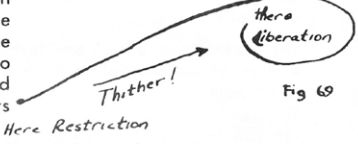
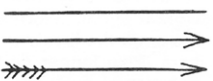
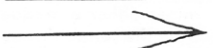
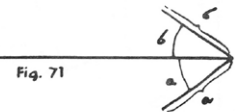






Fig. 3: Arrow, in: Pedagogical Sketchbook, Paul Klee, teaching students at Bauhaus, (teacher: Ivan Crnković)



Fig. 4a: A view from the interior into the left side (student-author: Lovorka Prpić, teachers: Paul Klee via Ivan Crnković)

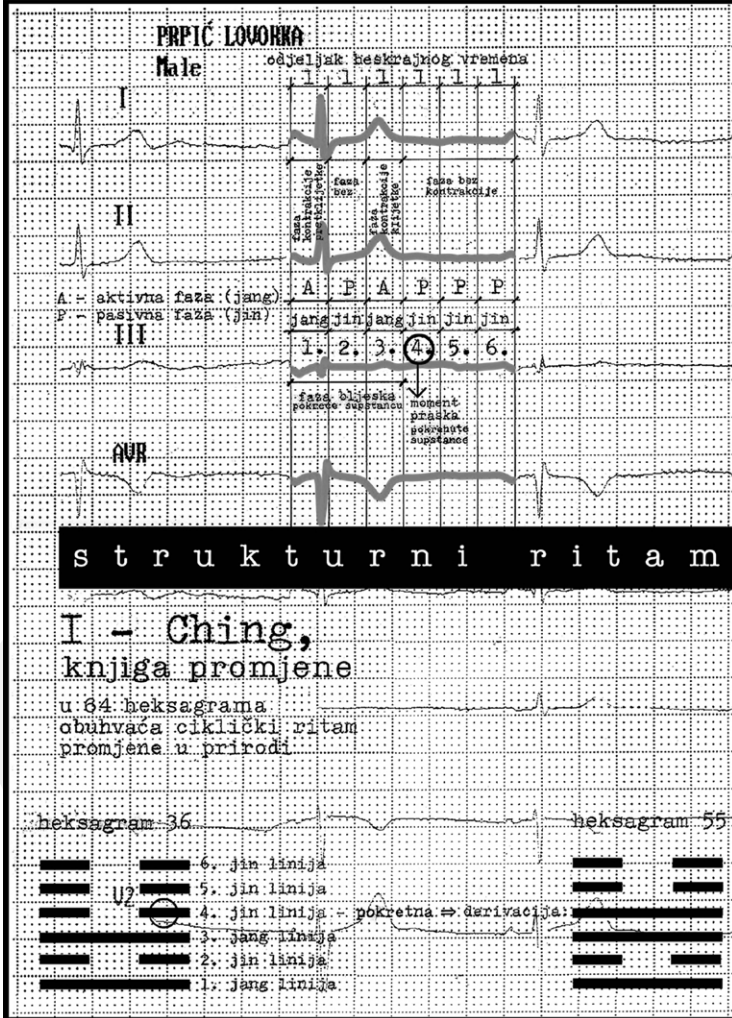


Fig. 4b: A view from the interior into the left side _excerpt (student-author: Lovorka Prpić, teachers: Paul Klee via Ivan Crnković)

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Searching for the Essence of Architecture at Porto School

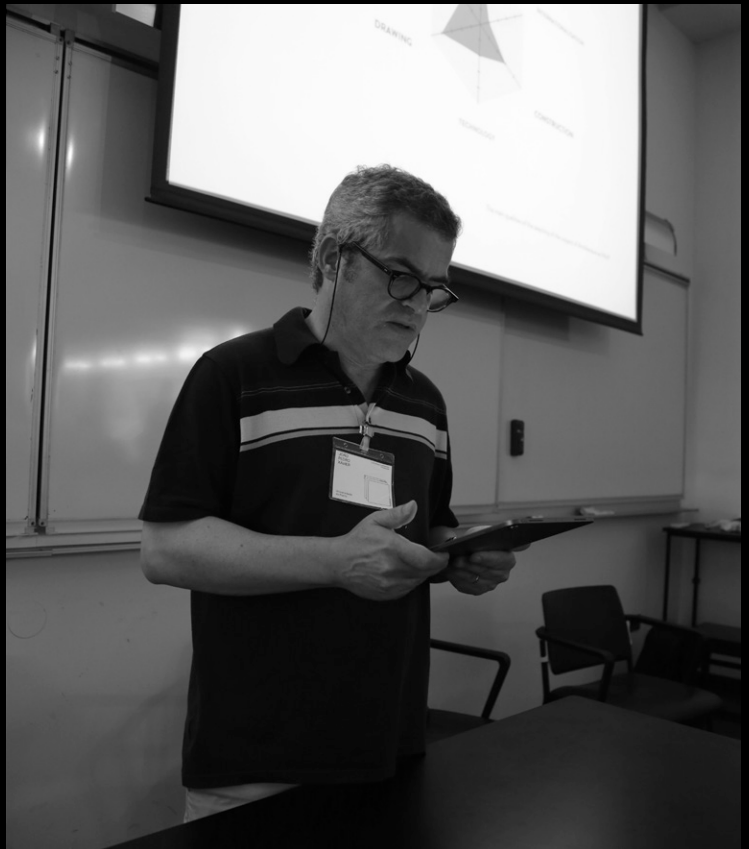
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KEYWORDS

School of Porto, master/disciple, radical pedagogy, learning spaces

The Faculty of Architecture at the University of Porto (FAUP), founded in 1979, and benefiting from the legacy of the School of Fine Arts (ESBAP), is internationally recognized and a worldwide reference in architectural teaching. Fernando Távora (1923–2005), Álvaro Siza (b. 1933) and Eduardo Souto de Moura (b. 1952) might be considered the three pillars of the school, although their contribution cannot be considered without their predecessors, the group of people they worked with and the Portuguese particular context. These masters' strong personalities — embodied in their pedagogical action — and the space where the didactics take place — actually a project by one of them — are omnipresent and might be considered the better “not so hidden” secret of the School. The three architects were linked in teaching practice, profession and life. They experienced a master/disciple relationship at a certain point, and later shared, as professors, a strong idea of the School.



THE BACKGROUND

The Porto School — currently titled Faculty of Architecture of the University of Porto (FAUP) — is an international reference in the architectural teaching, due to its rich history and characters and also to a pedagogical legacy that is still part of the daily life of its students. However, the path that led to the evolution of this widely known institution has not been linear nor even simple; instead, while looking backwards, it was the result of a continuous process of defiance against the repressive governmental forces, and acknowledgement of the urging needs of the local populations.

While it is possible to date the early origins of the Porto School to the second half of the 18th century, the real expression of an actual architectural course only began to show itself in 1836 with a Civil Architecture Class. Around five decades later, the *Escola de Belas-Artes do Porto* (School of Fine-Arts of Porto) — known as EBAP — was founded and, in 1911, a year after the Proclamation of the Republic, was at last created a definitive Architecture Programme.

Hence, since 1926 — the time Salazar started to arise to the power, firstly as finance minister and then as prime minister —, the School gradually became a stage of both debate and resistance against the dictatorial regime that firmly ruled the country until 1974. In fact, on the eve of the establishment of the New State, the 31 Reform — whose training focused on the doctrine of the *Beaux-Arts* — was set in motion, led by master José Marques da Silva (1869–1947). Despite his multiple efforts to adjust this curriculum to new times, in a couple of years later, its weaknesses became clear, instilling a growing sense of rejection within the academic community.

In the 40s — especially with the efforts of the architect Carlos Ramos (1897–1969), who became Dean in 1952 — the appreciation of the classic academism is progressively replaced by an acquired taste for the Modernism ideals. Moreover, during that time, the 1st National Congress of Architecture took place and, with it, came not only a stern critic to the regimen, but also new conjectures towards more modern practice and didactics of architecture. The year of 1950 marks a turning point for the Porto School and its name is changed to *Escola Superior de Belas-Artes do Porto* (College of Fine-Arts of Porto) — the ESBAP. From then on, it became clear that the study of modern international architecture did not have to imply a loss of a national character — a premise further explored with Survey of the Popular Portuguese Architecture in 1956.

A year later, the 57 Reform introduces a new study plan, which integrated a larger core of courses and reflected a more

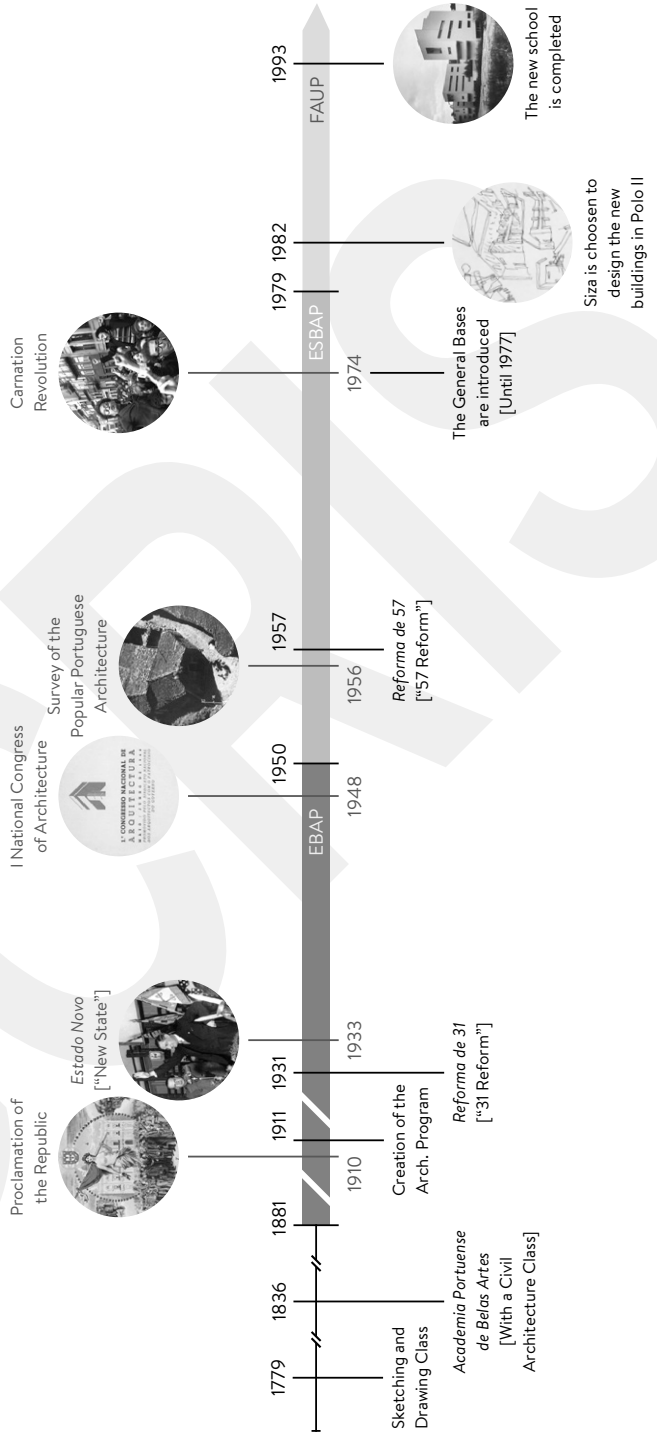


Fig. 1: Timeline — The Evolution of the Porto School

technical and scientific approach to architectural education. Nevertheless, during the 60s, it became clear that this kind of curricula was jeopardising the artistic profile — a quality that an architect should not give up. While taking profit from a slight opening of the fascist regime — right after Salazar's dismissal in 1968 —, as well as echoing the May's events in France, the School entered, in 1969, an experimental period where the societal and political issues became predominant, despite all the regime efforts to maintain it under control.

Eventually, in 1974, the winds of change began to blow in the Portuguese nation. There is finally the fall of the New State and the consequent instauration of a democratic regime. Around that same time, the General Bases for the Architectural Programme are established, consecrating autonomy to the various areas of the architectural discipline, while assuring their support to the teaching of Project.

Five years later, the School undergoes a new transformation: the Architecture Department is detached from the College of Fine Arts and becomes part of the University of Porto, reemerging as FAUP. Right after the unanimous decision of making Álvaro Siza as the architect responsible for the buildings that

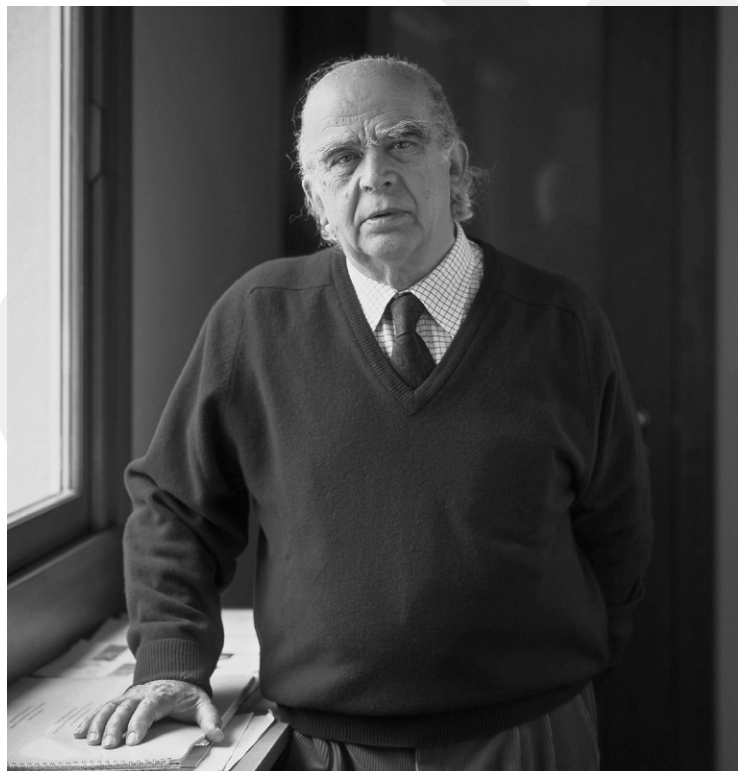


Fig. 2.1: Fernando Távora



Fig. 2.2: Álvaro Siza

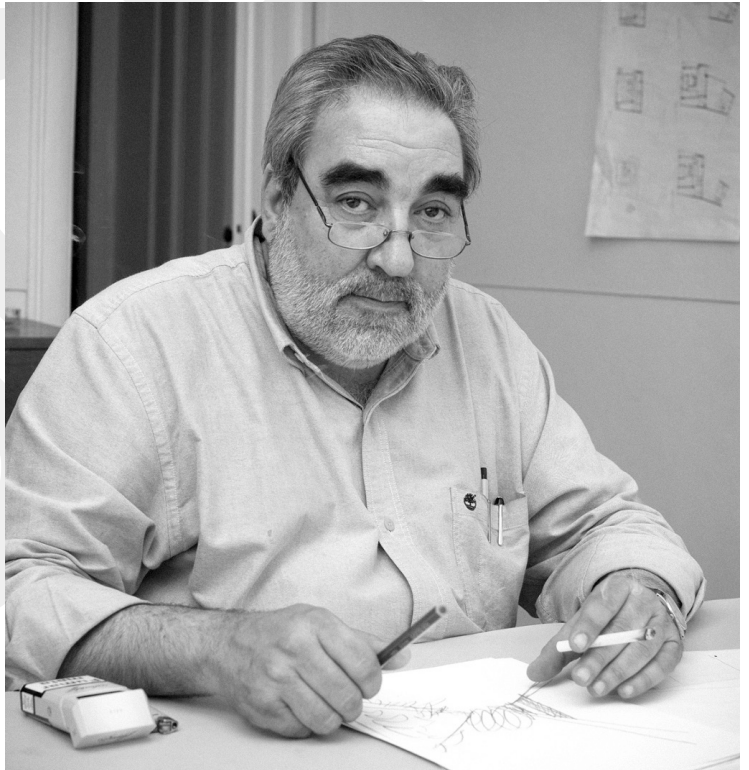


Fig. 2.3: Eduardo Souto de Moura

would accommodate this faculty in 1982, both the negotiation and the design processes commence immediately and, roughly ten years later, the new installations are finally complete.

Therefore, by understanding the evolution of the Porto School and its parallel with the Portuguese political and architectural context, it became that the critical spirit promoted within it allowed the artistic expression of Fernando Távora (1923–2005), Álvaro Siza (b. 1933) and Eduardo Souto de Moura (b. 1952). These three were undoubtedly dominant characters in the Portuguese architecture setting not merely by the way they diffused it internationally, but also how they overthrew the paradigm of the education of architects.

Even though the names Siza and Souto de Moura are not foreign to the general public — especially considering that they were the winners of the Pritzker Prize in 1992 and 2011, respectively —, the personality of Fernando Távora is not, unfortunately, so widely known. However, it is in him that those two figures found a mentor and future generations gained a timeless paternal reference. Even as a student, Távora showed an analytic and artistic sensibility that set him apart from his peers and allowed him to mould the School's identity.

Among these architects was built a strong academic and professional bond throughout the years — which some authors call a “master-disciple relationship” —, and the projects they designed together demonstrate the advantages of this affinity. Curiously, while teaching Siza, Távora was able to recognise his talent, just as, years later, Siza perceived the abilities of the young Souto de Moura. Thus, with these three characters, and many others, the School developed a unique approach to the problems of the architectural exercise: a symbiosis of classical



Fig. 3: Távora_s field trip with ESBAP students

methods with a critical integration of Modernism and tradition. Moreover, in the centre of that transformative process was Távora, the pedagogue.

In reality, his influence in the educational field is ongoing today, and his essay entitled *Teoria Geral da Organização do Espaço* (“General Theory of Space Organisation”) is an everlasting companion of the students at FAUP. Of course, that is due to his audacious attitude towards the quandaries that architects used to face and, somehow, still, do. Besides, no one could stay indifferent to his *joie de vivre* and the passionate way he addressed architecture: his classes were a stage of wonder as well as discovery and, there, his pupils could learn how to position themselves in the “historical” time.

Even though that may seem like a herculean task, it is, as a matter of fact, reasonably easy to achieve through the articulation between Drawing, History and Theory, and Construction — the significant domains that have been constant during the evolution of the Porto School. Consequently, with this procedure, each project turns into an understanding of its context in every aspect, whether they are geomorphological, socio-economical or even cultural.

Without a doubt, Távora, Siza and Souto de Moura comprehended this methodology, using it frequently in all of their works. In a lecture at FAUP, in February of 2017, Siza stressed the importance of that relationship — especially emphasising the use of drawing— as a synthesis tool of not only the visual qualities of a site but also of its phenomenological dimension. Furthermore, while photography is not discriminatory, capturing everything that appears in its field of view, the subjective quality of drawing allows it to be selective and integrate the fourth dimension of space: time. Admirably, these values transcended the pedagogical essence that has accompanied the history of the School, and they seem to have encountered



Fig. 5.1: House of Twenty-Four by Távora

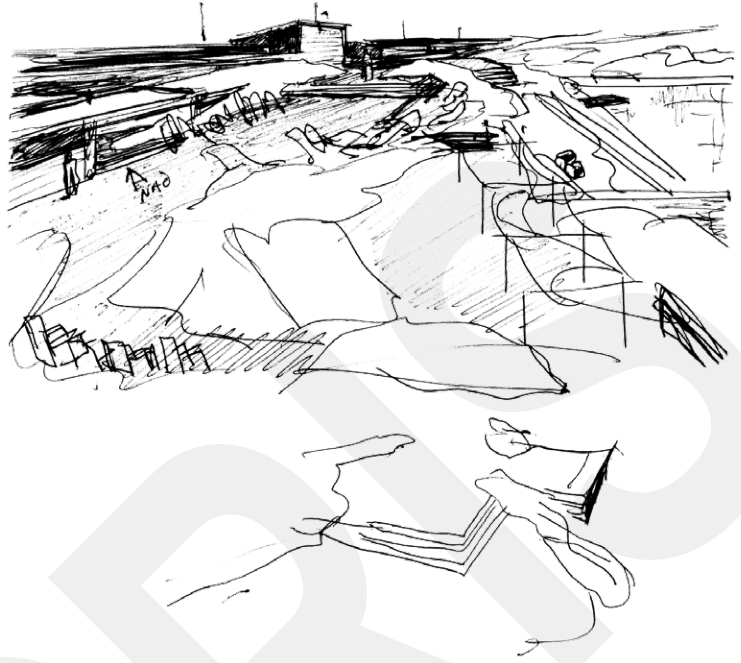


Fig. 5.1: Leça Swimming Pools by Siza

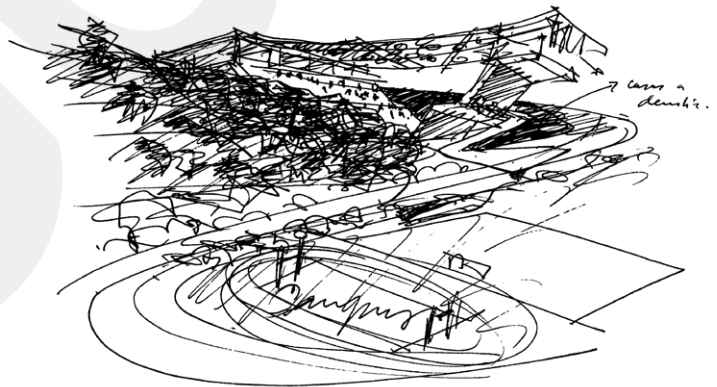


Fig. 5.1: Braga Municipal Stadium by Souto de Moura

their physical embodiment in the spaces of FAUP: its buildings prevail as a refined architectural ode to the vigorous resolve of its founders.

PLACE

Initially designed to accommodate 525 students — whose number duplicated in the last decades —, Siza thought this faculty as a mean of endorsing a close interaction among educators and learners. Thereby, in the first building of the new complex — the modest Carlos Ramos Pavilion—, it is possible to understand two qualities. The first and most immediate one is its familiar atmosphere and smaller scale, which tries to replicate the environment of a real architectural studio; and the second is how it keeps a respectful relationship with the preexisting garden and constructions.

Nonetheless, in this structure, inhabits a conflict that goes beyond its simple volumetry: a clash of a contemplative solitude with an energetic gathering of generations, resulting in the quiet conversation between past stories and future dreams. Although the small pavilion may have a collected character in intimate contact with nature, the set of towers is, in contrast, placed directly in the urban fabric. The new buildings stand

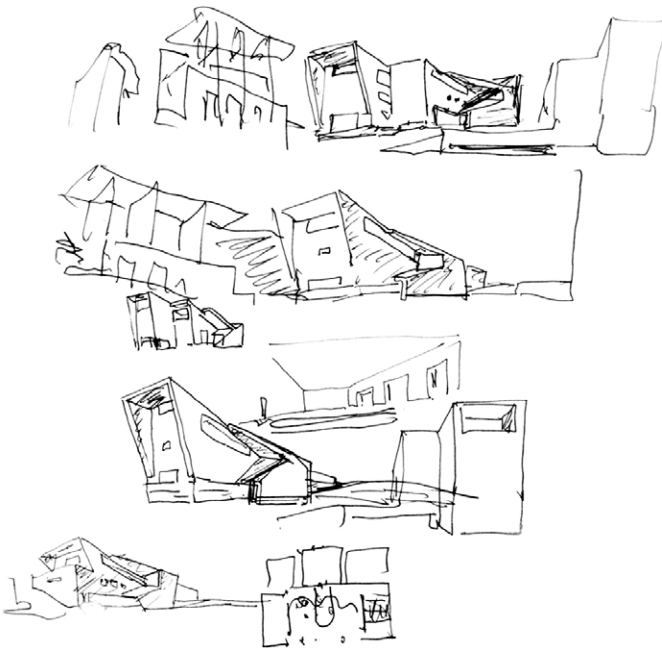


Fig. 6.1: FAUP Sketch

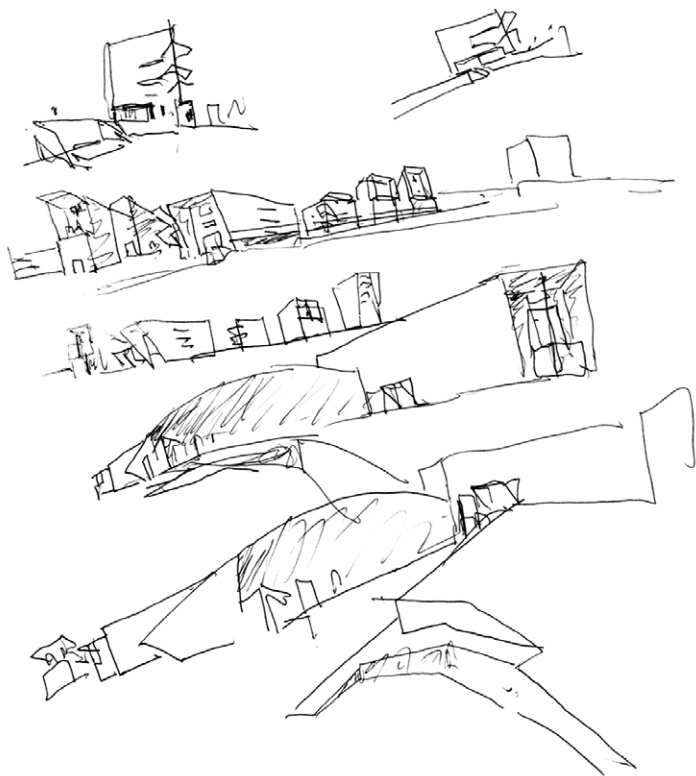


Fig. 6.2: FAUP Sketch



Fig. 7: Exterior view of the Carlos Ramos Pavilion



Fig. 8: Exterior view of the towers E, F and G

out as an open amphitheatre to the Douro River, the Arrábida Bridge and the city of Gaia and its absence of conventional limits — such as thick or tall walls, fences or even gates — is an invitation to the population to explore its exterior areas. In truth, Siza created a structure that offers its spaces to the city while keeping its integrity and iconic status.

However, it is certainly not desirable to examine a school without mentioning its prime learning spaces by excellence: the classrooms. Synchronously to what happens inside of the Carlos Ramos Pavilion, they should, individually, also mimic the ambience of an atelier, but, when articulated with each other in the different towers — corresponding to the many

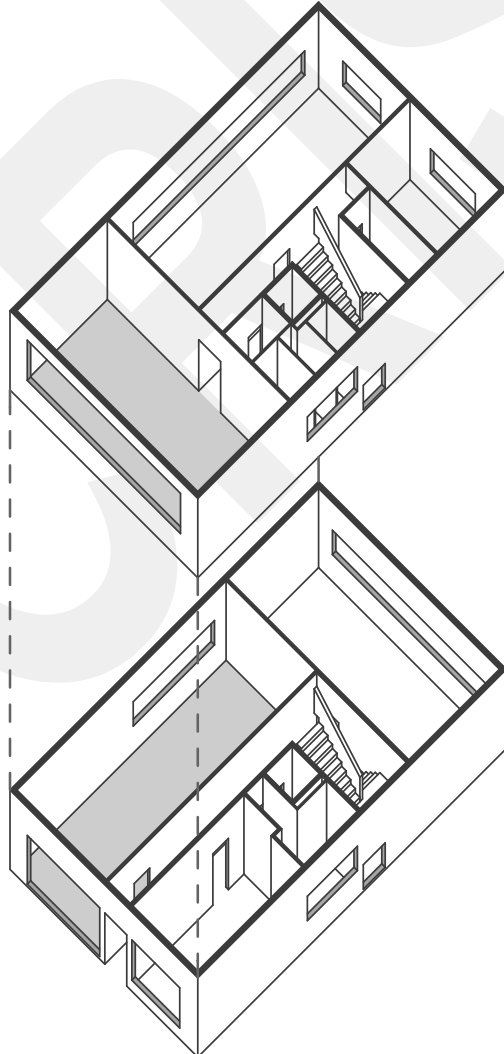


Fig. 9: Axonometry of the levels 2 and 3 of the tower F



Fig. 10.1: Interior view of the classroom F3.1

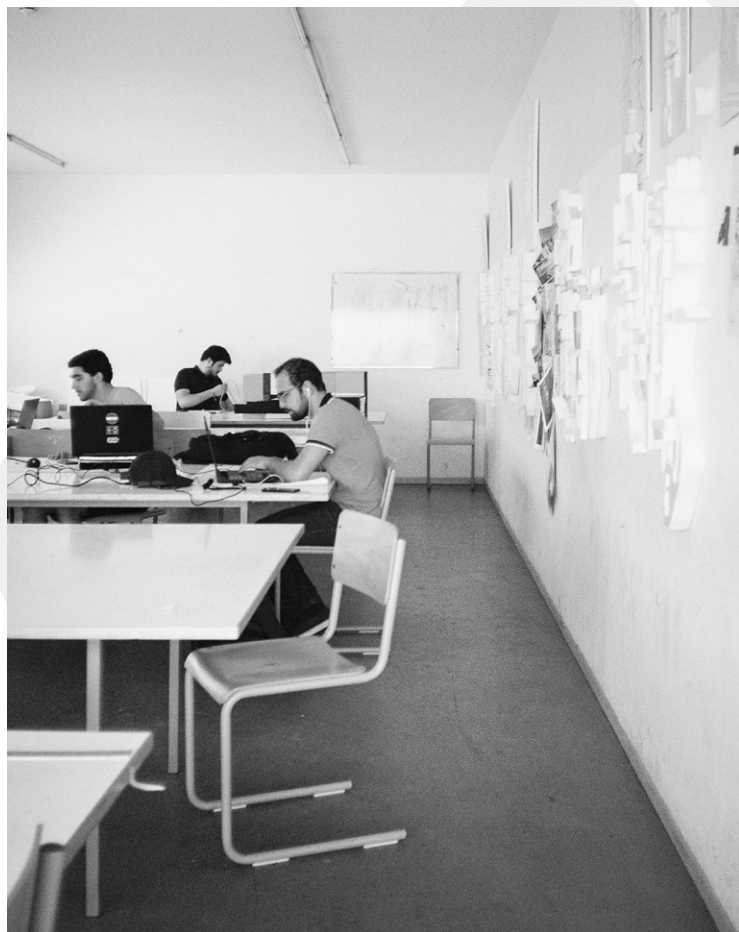


Fig. 10.2: Interior view of the classroom F2.1



Fig. 11.1: Interior view of drawing classroom

Design Studios —, they perform just as an ampler office. It is impressive one could tell to each curricular year a tower belongs just by the way its students take ownership of its spaces and constructive elements, like the walls, windows and doors. In this case, the classrooms' simple geometry conceals a lot more than what may initially meet the eye, distinctively in the way Siza was able to foresee some of the problems that would affect the modern architectural practice. Even though he designed them during a time where digital production was scarce in architecture — hence, being instead optimised for traditional drawing and cardboard models —, these rooms are incredibly versatile as they allow the necessary adjustments to accommodate contemporary computerised work. Aside from the canonical classrooms, there is one that stands out due to its unique spatialities. The drawing classroom— situated at the top of the tower H — captivates anyone that sets foot in it.



Fig. 11.2: Interior view of drawing classroom



Fig. 12.1: Interior view of the library from the entrance



Fig. 12.2: Interior view of the library to the entrance

The contrast between the constricting and wide spaces and the dynamic play of its ceiling and the openings that give rhythm to the whole composition profoundly enhance all the phenomenological experience intrinsic to the drawing class, whether the students are sketching objects, buildings or human figures. Whereas the towers E to H harbour the main didactic zones — at least to what concerns the Design Studios —, it is in the block B where the splendour of Siza's architecture reaches its full adaptability. There not only are located two unique classrooms (a quadrangular one, commonly known as “the big window room” and an elongated room one, generally used by

5th graders) and the three auditoriums of the complex — which two of them are adjacent and can either work as two smaller spaces or as a greater one —, but also the social areas par excellence, for example, the bar and the exhibition halls.

Also located in building B, the remarkable library is another emblematic background of the daily life of pupils and teachers alike. With a warm setting that deviates from the empty white walls that are patent throughout the faculty, this space mesmerises even the most distracted passerby — it is no coincidence that every day countless people stop by merely to visit it. Moreover, the primacy of the used materials and its intimate atmosphere create the perfect environment for both individual its users seem to attain a state of introspection and ataraxia.



Fig. 13.1: Main ramp of the building B [Level 1]



Fig. 13.2: Corridor of access of the towers [Level 1]

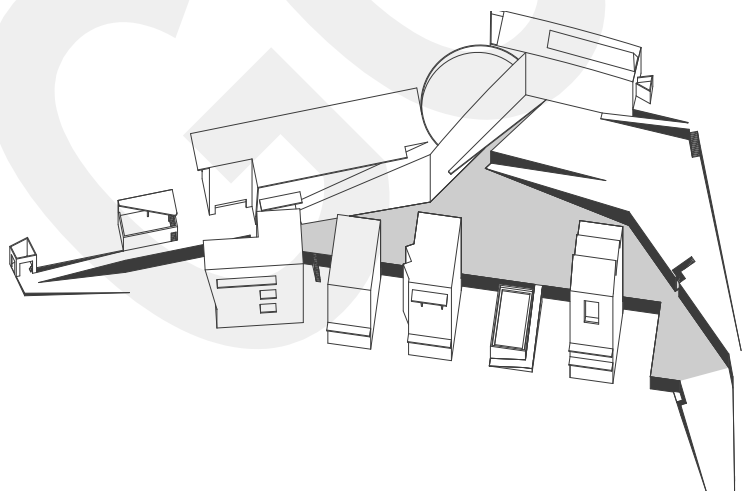


Fig. 14: Axonometry of the outer areas

Connecting all the main buildings at ground level, a sophisticated — yet unambiguous — system of transitional spaces permeates each area, at the same time it creates a spatial hierarchy that bestows the entire School upon an impression of kinetics and surprise. In reality, their use extrapolates the primary objectives of their function, and what could be contemplated as blunt paths, metamorphose into places of reunion: in them, loud conversations and joyful laughter fill the air, in a genuine sense of fellowship.

By all means, the teaching at FAUP is unquestionably not restricted to its more standard interior spaces as its outer areas have been continuously gaining importance in the many forms of creative expression of its pupils. Besides being an articulation between the many blocks, these zones work as an expansion of the classroom and its activities, conceding not just more area per student, but also an appropriate surrounding for big-scale models and tasks.

As expected, the permanent contact of the students with all those mixed spaces and settings enabled them to absorb the true spirit of the Porto School. Anyhow, this is not an easy chore. Siza's ability to synthesise in this project many influences — including references to his past works — makes the understanding of this building particularly challenging, which enables it to mature into an extraordinary pedagogical instrument. This premise is why pupils are invited to study the spaces of the faculty so intensively within several different



Fig. 15: Exterior view of FAUP

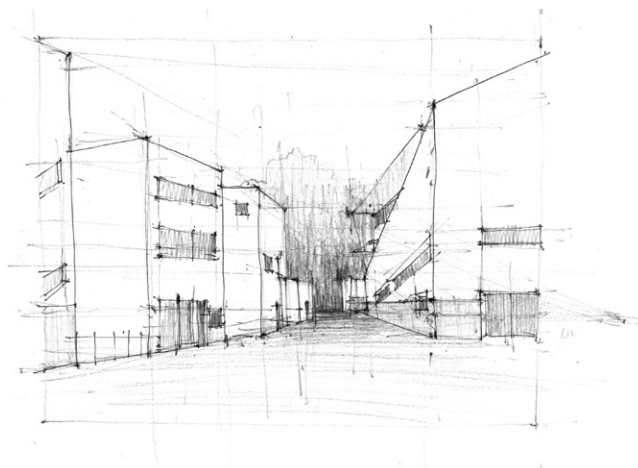


Fig. 16: Sketch of FAUP

courses within the Architectural Programme, including written Master's dissertations and even PhD thesis.

THE PEDAGOGY

The legacy of characters like Távora, Siza and Souto de Moura, whose maxim has always been learning by doing, still lives within the School today, especially in our methodological approach to the project. By making use of the statement of the Finnish architect Juhani Pallasmaa words: "University education needs to train wisdom: they have to, somehow, spread wisdom. But this happens in so few schools nowadays. We should go back to the practice of making."

The use of drawing — from hand-drawn sketches to 3D modelled renders — is considered a vital thinking instrument of addressing architectural challenges. This tool, allied with the comprehension of History and Theory, and Construction — resources that tend to defy architectural doctrines — is a trait that makes the teaching at FAUP so peculiar.

Thereby, the exercises proposed to the students in the different Design Studios are oriented so that they follow these masters' working methods while being supervised by teachers — usually considered acknowledged practitioners. In each project, the first conceptual ideas gradually unfold to increasingly more detailed designs, while approaching the accuracy and the obstacles of a hypothetical materialisation in the aimed site. Consequently, the use of drawing — from quick hand-drawn sketches to more elaborated 3D modelled renders — has remained an indispensable thinking instrument of addressing

architectural challenges. This distinct tool — allied with the comprehension of History and Theory, and Construction — is a trait that makes the teaching at FAUP so peculiar.

Although the previously mentioned disciplines are undoubtedly the core subtract of the Studios and the *ex libris* of the Porto School, there are a few weaknesses on the subject of Architecture, notably in the domains of technology, internationalisation, and social interaction. Even with these limitations, the School, as a whole, keeps working on finding new routes to evolve and establish “future traditions”¹.

Regarding the first problem, the technological domain has been gaining ground in recent years through a mandatory introduction of digital tools in both compulsory and optional subjects. New insights on the application of technology are emerging by exploring the relationship between its straightforward use and a broader universe of theoretical and material potentialities in architecture. Additionally, by using the automated technologies beyond their explicit geometric representations on screen, and by exploring their calculus capabilities — which gives an insight of a better approach to real contexts —, it will be possible to translate the advantages of digital fabrication into the School’s syllabi.

Nevertheless, there is insufficient practice and, consequently, little critical integration of automated technologies. Even if the training in this field implies a knowledge of the scientific domain of Drawing, the fast-growing diversity of computer-aided processes challenges its assimilation into Architectural Design, Construction and the History of Architecture itself.

Of course, the need for understanding the transformative character that digital technologies are introducing in the designing processes summons the realm of Architectural

1 “Future Traditions” was the name of the 1st eCAADe Regional International Workshop that took place at FAUP in 2013. According to the organisers: “To engender the theme, we construct the idea of “Future Traditions” based on two main motivations: — the recognition of the specific nature of the hosting school and city;— the vision about the current state of digital technologies in architecture, which is the underlying motif of the eCAADe events. On the one hand, internationally known as “the School of Porto”, the FAUP is a special place that considers traditions an important source of references and values for the education of future architects. (...) On the other hand, the debate around the impact of digital technologies in architecture is usually centred on the discovery of new possibilities for the discipline. However, the past and traditions can also play an important role in the future of architecture. After 50 years of technological assimilation, architects have today the necessary distance to embrace a critical reflection about how computers support the dynamics of continuity or rupture in the discipline”. [FUTURE TRADITIONS 2013:1st eCAADe Regional International Workshop (2013). Editors: José Pedro Sousa, João Pedro Xavier. Porto: FAUP Publicações, p.11.]

Theory. Moreover, its purpose also serves the necessity for a broader discussion on the architecture and architects' role in a contemporary world deeply portrayed by social, cultural and technological changes.

Thus, considering the manifest importance of digital representation in geometric exploration, conception, analysis and spatial communication, it seems indispensable to reinforce this component in the curriculum at two levels. On the one hand, it is mandatory to re-equate the teaching of CAAD (Computer-Aided Architectural Design) in relation to the rise of new processes such as photo or laser surveying, parametric and algorithmic design, performative analysis (solar, thermic, structural, *etc.*), digital and robotic manufacturing, GIS (Geographic Information Systems), and augmented reality. On the other, it is unquestionably urgent to reconsider the integration of BIM (Building Information Model) in order to ascertain, assess and reinforce architecture's position in favour of the growing preponderance — apparently irreversible — of this interdisciplinary methodology.

Besides, the construction of a new building on the faculty grounds — a Digital Fabrication Laboratory — is planned to increase the specialised academic production and the students' connection with the latest technologies. Although FAUP has a place with an equivalent purpose — in a partnership with the Institute for Systems and Computer Engineering, Technology and Science — to achieve the mentioned objectives, it is imperative to bring it closer to the School.

Concerning the aspect of internationalisation, the School's leading programmes (Master and PhD) attracts students from different countries, especially those from southern Europe and Latin America, given the culture and language proximity². However, the organisation of its curricula in annual and not on semestral courses makes the students' exchange much more difficult.

Despite the increasing volume of the incoming pupils associated with the Erasmus Programme — and other similar alternatives — along with the ones who enrol the Master Programme in the 4th year, the level of internationalisation is still deficient in comparison to other European colleges. Furthermore, the student mobility agreements are currently the main focus of the relationships established with the aca-

2 The use of Portuguese in classes is currently under debate. In fact, although most teachers speak or understand other languages easily — such as English, French, Italian and Spanish — enabling the integration of international students into practical classes, lectures are almost only given in Portuguese.

demic institutions all over the world and, as a consequence, the significant fraction of student exchanges is not equally reflected in the mobility of teachers nor even in the creation of international research networks.

Notwithstanding, there has been a collective effort within the many pedagogical departments to bring in foreign academics to participate in multiple teaching activities, like lecturers and reviews in the Architectural Studios. Conferences promoted by the School with relevant figures from the international background — addressed to not only its students but also a wider audience — are becoming more prevalent. Additionally, there has been recently an increment in the number of PhD candidates from other establishments, as well as postdocs seeking to integrate the local research teams.

While it may seem that FAUP is on the right track, there is still considerable room to improve. That is why the School strives to reinforce teachers' mobility, to grant greater curricular flexibility, and also to encourage more activities with other schools and networks of schools whenever the opportunity arises. Some of the latest initiatives have been workshops and summer schools, primarily intended for undergraduate and Master students from all over the world.

Synchronously, it is possible to say the same about social interaction and all the work that needs to be done. Although the School has actively participated in quite a few relevant social meaningful in the past — particularly in the early days of the post-dictatorship, namely within the SAAL process³ —, recently, there has been a detachment from most of the societal issues. That lack of communication is an obstacle in the development of urban territories, which is a crucial area to citizens and politicians alike.

Without the intention of promoting any political activism, it seems clear that the School needs to ensure that future architects are responsible and capable of acting in many different contexts. These qualities are especially valuable in those who have to deal with very challenging social realities where the architectural solutions may not be what would typically make magazine covers. For those reasons, it is compulsory to encourage more activities that would involve a more comprehensive commitment to social and environmental demands,

3 In Porto, during the operation SAAL (Serviço Ambulatório de Apoio Local), teams of students and teachers worked together in housing programs for people dwelling in "ilhas", densely populated areas with poor sanitation conditions in the backyards of traditional housing blocks. This operation was a well-known pedagogical experience, being later labelled as radical by the architecture historian Beatriz Colomina.

in cooperation with local public institutions and communities.

In this sense, there are already some experiences within the School in which the relationship between academia and regional government institutions is strongly encouraged. Whereas the latter constitutes a real scenario, it is through its symbiosis with the prior that is possible to test practical and theoretical conjectures that enable scholars to get closer to society's present needs and expectations. Therefore, by giving some tangibility to the exercises developed by the pupils and promoting a favourable debate to each institutions' interests, it is possible to narrow the distance between the academic and the real world, while promoting new artifices of applied research.

Consequently, a major curricular revision has been in progress at FAUP to address these questions. As a matter of fact, at the Centre for Studies in Architecture and Urbanism (CEAU), we have already been working on the metropolitan area of Porto in the fields of rehabilitation and heritage, social housing, public buildings and spaces, and urban planning. Additionally, there are also plans to expand its activities to other realms, preferably on partnerships with other schools and investigation centres.

To approach the School to society — and vice-versa —, it has to be guaranteed that its curriculum incorporates these themes more deeply, not just at its research centre, but also within its renewed Master and PhD Programmes.

CODA

“Architecture does not permit or accept improvisation, the immediate and directly transposed idea. Architecture is the revealing of a nebulously latent collective desire. This cannot be taught, but it is possible to learn to desire it.”⁴ Is this our hidden school?

4 SIZA, Álvaro (2008). “Sulla pedagogia”. In Casabella 770, Ottobre 2008, pp. 3-5. English translation, p. 107 (On pedagogy).

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