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School of Architecture(s) – New Frontiers of Architectural Education

EAAE Annual Conference—Turin 2023

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Editors

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EAAE Annual Conference—Turin 2023

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School of Architecture(s)

The Torino EAAE Annual Conference 2023 investigates the plurality of architecture as a discipline and the role of architectural education in training, questioning, and practising this plurality. This plurality is intended in terms of approaches, methods, topics, and values. The conference has been an occasion to think differently, reflecting upon the context of the discipline to understand the knowledge of the future, focusing on the question: what is Architecture in the age often described as post-architecture? This new perspective allows us to call into question some historical grounding principles of architectural education: the schools of architecture as a place where a style, a language is transmitted through the technique of the imitation of the masters, the everlasting character of the architectural artefacts built to last and the role of the architect as individual solely talented interpreter and author of architectural and urban artefacts.

A reflection on the ways of transmitting architectural knowledge, specifically design skills, in the age of post-architecture is needed. Several models of architectural education still coexist in the European context. Some of them still refer to the educational model of the Beaux-Arts. Settled in France at the end of the seventeenth century, this model was the first example of architectural schooling, further developed in the eighteenth century by François Blondel. It is still a pedagogical reference for many architectural schools. The central learning experience was structured around small independent ateliers where students learned directly under a “master”, following his direction and imitating his language and practice under a strict hierarchy. Two other activities completed the Beaux-Arts way of teaching: The annual Paris Salon, where the best students’ works were selected and displayed to the public, and the Parisian life of cafés, an informal extension of the ateliers, where design tendencies were discussed. Opposite to this model is the Polytechnic approach. Dating back to the Ecole Polytechnique, a military educational institution established in France at the end of the eighteenth century, this way of teaching aims to transmit technical-oriented knowledge, focusing on developing skills and competencies more than styles or tendencies. Contemporary schools of architecture tend to combine these two approaches with different balances. Some schools are still grounded on recognized masters leading the design approach of the school, while others decide to aim for the implementation of strategic topics to be developed through different learning experiences or to focus on specific design methodologies in order to build a school of thought more than a style of the school [1].

Thinking the Acropolis in Athens or the San Vitale di Ravenna in Italy as architectures built to last, together with Moneo we can say that buildings are always alone [2]. The architectures that have come down to us from the past have stood the test of time because societies have absorbed and inhabited them without distorting them. In the contemporary debate, however, we talk about the fragility of architecture and its temporary character. The contemporary question, however, is not the architecture itself but rather the modification of the reasons that determine its production. If Architecture was

celebratory in the past and built to restore authority and power, today, Architecture has seen this role reduced. In the past, only those with a role of power asked for Architecture.

On the contrary, today, the demand for Architecture manifests itself through countless possibilities and different objectives. The expansion of users with a demand for Architecture has increased the variety of designed themes. Furthermore, starting from the nineteenth century, the collapse of most travel restrictions has further increased the possibility of contamination, and what once belonged to a specific place is today worldwide spread—just think of the role that International Exhibitions have had in history. We can observe extreme situations in which the Eiffel Tower and the Egyptian Pyramids are rebuilt on a scale in Las Vegas, and in cities worldwide, we can see the same architecture resulting from a globalised culture. If contemporary architectures are often not designed for a specific context, they are more and more designed for a specific lapse, waiving the everlasting ambition of classical architecture.

At the same time, in parallel with the process of globalised homologation that seems to characterise a large part of the material outcomes of architecture in the contemporary condition, the complexification of production processes, the articulation of an ever-increasing number of subjects and demands, and the intensification in the possibilities of exchange, communication, and knowledge are radically transforming the profile of the architect [3]. The mandate that societies assign to architecture is constantly evolving and mutating and, as a consequence, the figure of the architect is also being actualised, leading to the redefinition of the central target of practice in a shift in which the construction and the building, the objects, lose centrality in favour of an ever greater focus on the individual, the community, and the subjects [4].

Furthermore, while it is true that the discipline's interest in community practices, in the participation and inclusion of citizenship in the city's production processes, and the social role of the architect-designer is not new, and that these themes have characterised the debate for a good part of the last century, the scope and the reasons for the rebirth of this interest today have radically changed and transversally reach all professionals, regardless of their civic and political engagement and positioning. It is a transformation of practice that is reflected in the image that architects have of themselves, both inside and outside the discipline, which explains the radical transformation of working methods, the articulated and diversified cultural production of architects' offices and collectives, and the urgent need to rethink and redefine the aims and purposes of the pedagogical proposals offered by schools of architecture, or rather, of architecture(s).

In this context, the conference endeavours to elucidate a contemporary, more expansive, and inclusive definition of architecture by examining six pairs of antinomian concepts. These pairs include architecture as a method and/or as a discipline; architecture of the Masters and/or of the topics; architecture for architects and/or for the community; architecture as avant-garde and/or market-oriented; architecture inside and/or outside the wall; and architecture disciplinary and/or extra-disciplinary.

Michela Barosio
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Building a Community Through a Design Build Studio Program

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Abstract. This paper aims to provide a comprehensive and critical assessment of the outcomes stemming from a Design-Build program, a pedagogical approach widely adopted by educational institutions worldwide. These programs are instrumental in equipping students with vital practical skills, often unattainable within the confines of a conventional studio environment. While the objectives of this program align with those of similar initiatives in various educational institutions, an examination reveals an unexpected and substantial outcome. Beyond its primary goals, the Design-Build program has played an integral role in instilling a culture of collaboration and camaraderie within the school, thereby significantly contributing to the overall success of its architectural education. All stages of the program consist of collaborative processes, instilling from an early age the importance of working together by helping each other than individual competition.

Keywords: Design Build Studio · Architectural education · public benefit · learning by doing · community · collaboration

1 Introduction

Design-Build Projects represent specialized pedagogical instruments within architectural education programs. They provide students with invaluable opportunities for hands-on, full-scale construction experiences, fostering the application of their creative abilities for the greater public good, and emphasizing principles of collaboration [1]. Worldwide, numerous academic institutions incorporate Design-Build Studios into their curricula, each employing various methodologies, and utilizing a range of tools [2].

Design-build live projects provide students with hands-on experience, enhancing their understanding of construction techniques, project management, and client communication [3]. Students develop a range of skills, including problem-solving, teamwork [4], and technical skills, which are critical for their future professional practice [5].

Design-build live projects offer significant educational benefits by providing students with practical, hands-on experience. They also positively impact communities by addressing local needs and fostering engagement [7]. However, challenges such as resource constraints, time management, and quality control must be addressed to maximize the effectiveness of these projects [8]. Best practices include strong partnerships,

comprehensive planning, and mentorship. Design-build live projects are a valuable component of architectural education, offering dual benefits of practical student training and community improvement. Future research should focus on long-term outcomes of these projects for both students and communities, and the development of frameworks to address common challenges.

In the curriculum of the Architecture program of MEF University, there exists a mandatory Design-Build Studio component for all enrolled students [9]. The inception of the DBS program was driven by a set of pedagogical and academic objectives. Over the course of time, we have observed unanticipated outcomes of this program that significantly influence our educational framework within the institution. These outcomes are the topic of the main discussion in this paper.

2 Structure of the Design-Build Program

When establishing the Design-Build Program the primary consideration revolved around its overarching objectives: What valuable experiences would the students derive from their participation in this program? This pivotal question naturally influenced every facet of program development. Through a comprehensive survey of analogous initiatives worldwide, we identified four principal goals: Practicing Architecture, Experiential Learning in Construction and Materials, Leveraging Architecture for the Public Good, Collaborative design. These goals are congruent with the objectives of numerous programs worldwide, as demonstrated in Table 1.

Table 1. List of stated goals of Design Build Programs

Goals of global Design-Build programs [1]	Goals of MEF Design build program
Hands-on experience	Experience of building their own design
Simulation of professional experience	Practice profession early on
Experimentation with materials, techniques	Experience with materials
Investigation of craft	Learn simple construction techniques
Collective design and building	Teamwork in design and construction
Community service through architecture	Using skills for public benefit

From the beginning the program emphasized collaboration as the most important goal. Collaboration occurs on different levels. First of all, all design is collaborative. Students work in teams on the design. Instructors make sure that everybody is involved in the decision making, which is the most challenging aspect of the design process. Also, all construction is collaborative. Instructors, assistant students and first year students all work in all aspects of the construction together as a team. In some projects, students are involved with the stake holders (a community, students from a primary school) and develop the program in collaboration.

The second question concerning the structural configuration of the Design-Build Program pertains to the scope and scale of its projects. As posited by Corser and Gore

[10], there are two predominant approaches within the realm of design-build programs. In the first approach, projects assume a public and large-scale character.

However, as Corser and Gore contend, these endeavors tend to be less conducive to the exploration of novel concepts. The exigencies of erecting intricate structures within condensed time frames and constrained resource parameters limit the scope for experimentation. Conversely, the second approach entails projects primarily geared toward the experimentation with ‘materials and processes.’ Nevertheless, they are impeded in their capacity to address broader public concerns. Commonly, such projects manifest as temporary installations.

However, a third approach emerges as a synthesis of the salient elements present in the previous two paradigms. In this instance, projects maintain their focus on public welfare, embodying a deliberate design to furnish essential functionality to a community. These endeavors assume a notably reduced scale, affording students the latitude to engage in unbridled experimentation concerning materials and construction techniques.

In our Design-Build program we have adopted the latter approach as our guiding principle. Our aspiration was to ensure that the projects, though on a relatively modest scale, would make a meaningful contribution to the local community. In addition to this, we aimed to infuse an element of ‘extraordinary’ design into the projects. This objective served not only pedagogical purposes but also carried cultural significance. In the physical landscape of Turkey, there is a notable dearth of well-designed public projects. Even in their small-scale manifestation, our projects assumed the role of exemplars, offering the public a glimpse of the transformative potential of architecture. Certainly, the definition of ‘extraordinary’ differs for students, people in the community, architects. What we try to achieve is to make sure that our designs are different from what the users have seen in their environment, involve elements of surprise, include well-designed details and also serving the initial purpose.

Another pivotal question that demanded deliberation in the formulation of our projects pertained to participant selection. Across the globe, many design-build initiatives enlist volunteers, involve students at advanced stages of their education, or are integrated into graduate-level programs. From its inception, our program was conceived with the intention of inclusivity, extending participation to all our students. An easier approach would be work with students who have performed the best in their first year, the ones who are the most interested and hard working or the ones with best construction skills. We deliberately have not chosen this path, in the projects we include students who have failed their courses, did perform badly in the studio, are not hard working at all. While this inclusivity is a commendable notion, it introduces evident logistical challenges. Given our institution’s annual intake of approximately 120 students, this commitment necessitates the execution of eight to ten projects on an annual basis.

The final inquiry regarding the program’s structure concerns the timing of these projects within the students’ educational journey. The optimal approach would be to involve students from various levels of experience, thereby ensuring each team benefits from a mix of students with both experience in design and proficiency in digital technologies. However, the Design-Build program was initially slated for the summer of our very first year. This decision was borne out of pragmatic considerations rather than

pedagogical ones. Given that the school was in its nascent stage, the primary aim was to initiate the program at the earliest possible juncture.

It is worth noting that conducting a design-build program solely with first-year students is atypical, given their relatively limited knowledge levels. Nonetheless, their enthusiasm to participate in the realization of real projects for genuine beneficiaries is consistently high. Had we been an established institution integrating a new design-build program into its existing curriculum, we would have likely explored alternatives, such as delaying its introduction to later academic years. This non-negotiable initial placement has had implications for various facets of the program and its impact on our academic institution.

2.1 Typical Process of a Design-Build Project

Since its inception in 2015, we have successfully completed sixty projects. These annual projects traditionally commence immediately after the conclusion of the Spring term. In recent years, our program involves a cohort of 120 students. The entire process, from design inception to construction completion, typically extends over a duration of four weeks, with the actual construction phase taking around one week. Project organization, stakeholder engagement, and sponsorship procurement are facilitated by the faculty before this four-week period. The design requirements are typically delineated during the Spring term through preliminary discussions with clients/users.

As the Spring term draws to a close, project proposals are presented to first-year students, inviting them to make selections. Subsequently, considering the students' preferences and considering factors such as group size and gender balance, the composition of project teams is finalized. Furthermore, we announce student assistantships and appoint one or two assistants for each project team. The selection process of assistants is merit-based, hinging on an evaluation of applicants' performance in the Design-Build projects they participated before.

After the semester's conclusion, project teams convene to receive the design brief. These interactions with clients/users transpire on-site or through online conferences when working in remote locations. The design process exhibits flexibility in its execution across various groups. However, as a foundational principle, we endeavor to involve all team members in collective decision-making. Typically, individual students or smaller subsets within the group generate distinct design proposals, which are subsequently scrutinized collectively. Instructors then facilitate a session where the most meritorious aspects of these proposals are amalgamated, culminating in the development of a final scheme that embodies the collaborative spirit of the team.

Following the finalization of the scheme, the design undergoes further development, typically by breaking it down into its components, with smaller groups assigned to the refinement of each part. During this phase, there is a focus on materials, details, and construction. Given that first-year students possess limited knowledge in these domains, instructors do offer guidance. At the culmination of this phase, 1:1 scale prototypes of joints are fabricated to ascertain the precision of the proposed details. The entire design process, from its inception to conclusion, typically encompasses a span of approximately two weeks.

The construction phase of a project typically spans one week. In most instances, adaptation to unforeseen site conditions is executed. Common challenges encountered on the construction site include material shortages, extreme climatic conditions, prolonged construction timelines, interpersonal tensions arising within the team due to demanding work and living conditions. Additionally, the progression of construction in many cases hinges on local support for materials and equipment, which may experience delays, consequently impeding the construction process.

Upon the completion of construction, we conclude our involvement in the project. Final phase of the project is the post-production process. The student assistants gather all material developed during the design phase, photographs and films taken during construction, make new drawings and renderings if necessary. In most cases the project is submitted to the annual selection of architectural projects in Turkey [11] (Fig. 1).



Fig. 1. Example of before and after a project.

3 Evaluation of MEF University Design-Build Program

Since its establishment in 2015, our Design-Build Program has garnered immense popularity among our student body. Despite the program's physically demanding nature, most of our students express a strong desire to participate in it repeatedly. This is possible since older students are afforded an opportunity to participate in the program by assuming roles as assistants.

It is noteworthy that, in several instances, the students who excel in the design studio may differ from those who excel during construction. This phenomenon has constituted one of the important outcomes of our Design-Build program. Several students, who encountered challenges during their initial year of design studios for various reasons, including difficulties in comprehending abstract concepts, difficulties in creating precise and immaculate designs, or a lack of enthusiasm for architecture, find themselves actively engaged in the physical act of construction. The tangible and concrete nature of the construction site often kindles an interest and passion for both building and, subsequently, design among these students. This newfound enthusiasm significantly contributes to their academic success when they return to school in the ensuing fall semester.

The program has played a pivotal role in expeditiously elevating our institution's profile within professional circles. Owing to the recognition garnered through the exhibition of several of our projects in the annual selection of architectural projects in Turkey, prominent architects have had the opportunity to acquaint themselves with our school's distinctive pedagogical approach. Over the span of six years, from 2016 to 2022, a total of nine of our Design-Build projects have been chosen for inclusion in these exhibitions.

Incorporating DBS projects into their portfolios has notably facilitated our students in securing internship opportunities at architectural firms internationally. An examination of the internship listings on our website [6] reveals a substantial proportion of our students engaging in internships at architectural offices spanning the globe. It's imperative to underscore that this pattern sets our students apart from their counterparts in Turkish architectural schools, where such a global reach is typically less common.

Annually, we administer a questionnaire to solicit feedback from our graduates, encompassing various dimensions of their educational experience. Among the survey items is an open-ended query pertaining to the Design-Build Studio Program. We have collated and summarized responses to this question over the course of four years, presenting the findings in Table 2. Notably, the response rate to our annual graduate questionnaire has consistently been substantial, with 45% of all our graduates participating and offering insights. The question reads like this: *'How do you evaluate the 'Design and Build' program that MEF University has been running since its first year?'* All the answers to this question are analyzed and summarized into relevant categories here for ease of comparison. For instance, this is an answer, translated into English: *'Most importantly, working with different students has made it much easier for me to embrace other people's ideas or put forward my own in a work environment.'* This answer is categorized into *'Collaboration skills'* category. Due to the open-ended nature of the questions, some answers can contain more than one statement, such as this: *'I believe it is the most productive program at the faculty. It not only instills confidence in students and teaches practical skills during their educational years but also leads to the emergence of projects that capture the attention of offices.'* In this case, answers would fall

into three different categories: ‘*Confidence*’, ‘*Construction skills*’, ‘*Looks good in the portfolio and job applications.*’

After employing this categorization method on all responses, it becomes evident that a significant majority (74%) of the answers align with the articulated objectives of the program, as presented in Table 2. This alignment is in line with expectations, as our program goals are congruent with the objectives commonly shared by Design-Build programs globally. (Table 1). A surprising outcome is the absence of responses that could be classified as ‘*Satisfaction of using skills for common good, public benefit*’ category. One plausible interpretation for this phenomenon is that the pursuit of public benefit is so intrinsic to the program that it is considered an implicit and fundamental aspect, obviating the need for explicit mention.

Table 2. Graduate questionnaire results (cumulative results of 2019, 2020, 2021, 2022 open ended question about evaluation of the design build studio). Comparison of questionnaire results with expected goals.

Goals of MEF University Design build program	Graduate questionnaire results	N
Practice profession early on	Learned a lot/Excellent beginning	72
Experience of building their own design	Practicing architecture/Design vs reality	27
Teamwork in design and construction	Collaboration skills	19
Learn simple construction techniques	Construction skills	16
Experience with materials	Experience with materials / Learning about details	16
Using skills for public benefit	-	-
		%74
	Responsibility / Confidence / Initiative	14
	Passion for architecture/Motivation/Fun	14
	MEF spirit / best experience at MEF	7
	Big difference with other schools	7
	Looks good in the portfolio and job applications	6
	Design as communication	4
		%26

Nonetheless, a noteworthy portion (26%) of responses deviate from the anticipated answers, as delineated in Table 2 and marked in orange. These responses can be categorized into two overarching domains. The first pertains to the acquisition of soft skills relevant to personal and professional development, (*Responsibility/Confidence/Initiative*)

and motivation (*Passion for architecture/Motivation/Fun*). These represent invaluable attributes for any educational institution to instill in its students. Notably, the cultivation of a healthy confidence, the encouragement of using initiative, and the fostering of a sense of responsibility are not exclusive to architecture education but are intrinsic to the broader spectrum of educational objectives. These essential skills are the building blocks through which students evolve into designers (or intellectuals) characterized by a distinct degree of individuality, transcending the role of mere technical practitioners. Motivation and a genuine affection for architecture, qualities that may not universally manifest at the outset of one's educational journey, constitute essential prerequisites for effective learning. It is imperative to underscore that instilling a fervent passion for architecture is among the most pivotal objectives in the initial year of architectural education [13]. These elements serve as the driving forces that underpin the entire learning process.

The second category pertains directly to distinctive facets of the program. Given that no other educational institution in Turkey offers a comparable program, our students perceive it as a unique opportunity to distinguish themselves. This distinctiveness further reinforces the first category by fueling heightened motivation among the participants. It is also worth noting that a substantial number of students underscore the program's role in encapsulating the 'school spirit,' signifying its defining influence on the character and identity of our educational program.

These responses are indicative of the students' profound sense of belonging and attachment to the school. Evidently, because of their participation in the DBS program, students perceive the acquisition of skills and values that are deemed indispensable to their educational journey. Furthermore, it appears that the program equips them with a distinct competitive advantage, setting them apart from other architecture graduates and expediting the initiation of their professional careers. To augment this list, one can include another category of responses, 'Collaboration skills,' underscoring the crucial role of collaboration within any cohesive community.

In consideration of these multifaceted factors, it becomes evident that a primary and unexpected contribution of our Design-Build program is the cultivation of a 'School spirit' among our students, fostering a strong sense of community. In architectural education, as in other domains of higher education, the cultivation of individuality in students is undeniably imperative. However, concurrently establishing an environment characterized by collaboration rather than competition, where all individuals experience a shared passion, mutual support, and collective motivation, holds intrinsic value. It is within this conducive atmosphere that most students can attain success, transcending the conventional archetype of the extroverted, ambitious, and self-motivated individuals, and ensuring that all students have the opportunity to thrive. Certainly, this is not to say that there are no students who have individual priorities, see themselves competing with their peers, complain about their grades being lower than their friends. Of course there are these students as well. However, beyond the results of the questionnaires, our studio environment is another proof of the collaborative spirit in the school. All our studios are located in a single space, all student working next to each other. Even if they wanted to, they cannot hide their work from anybody. The organization of space is another aspect where collaboration is promoted.

4 Conclusion

In summary, our Design-Build Program has exceeded our initial expectations and made substantial contributions to the overall success of our institution. While our initial objectives primarily centered around the practical aspects of education, such as material knowledge, construction experience, and problem-solving skills, we have discovered that the program's most significant impact extends beyond the realm of tangible skills.

The most profound contribution of the program lies in its role in fostering a sense of community within our school. It has cultivated a strong peer learning environment, shifted our institution from a competitive to a collaborative ethos, and cultivated a culture of diligence and commitment. Furthermore, it has ignited a passion for architecture in a substantial majority of our students, all made possible through the unifying role of the institution as a thriving community.

It is intriguing to note that this outcome has, in part, arisen from what was initially perceived as a challenge. Operating a Design-Build Program primarily with first-year students, despite their limited experience overall has, paradoxically, proven to be an asset. This approach has allowed us to engage all students right at the commencement of their educational journey, fostering a sense of community and shared purpose.

The key takeaway from this experience is not merely that every institution of higher education must institute a Design-Build Program. Rather, it underscores the significance of developing unique programs tailored to the particular ambitions and characteristics of the institution. Such programs can serve as a potent tool in cultivating a sense of community and, in turn, facilitate the attainment of the institution's pedagogical objectives with remarkable efficiency.

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