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Ephemeral Permanence
Architects as Change-Makers

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Abstract: Architects are crucial to creating a more sustainable building practice. Integrating availability-based design and build workshops with education enables participants to become potential change-makers. A two-week experiment in Denmark showcased circularity through a temporary structure based on reclaimed components and a complex site. The setup allowed deep-learning through personally experienced boundaries and regular reflection for both the interdisciplinary participant and teaching team.

Keywords: Education; Design and Build Workshop; Tactical Urbanism; Interdisciplinarity; Sustainability; Reuse.

Introduction

A Practice in Transition. The building practice is undergoing a massive transformation. Since the construction and operation of buildings causes a large amount of CO2 emissions and a high global demand for energy, alternative concepts for a more sustainable construction practice and operation of the built environment are needed (UNEP 2021). Architects are essential stakeholdersas they read site potentials, conceptualize the handling of new and existing buildings and landscapes and propose materials and moderate building processes. However, while researchers and practitioners have explored the circular use of materials, components and buildings, architectural education is still primarily based on new buildings. Embracing this complexity, the practice should critically reflect the use of the existing (Rockström et al. 2023). This design approach based on the availability of

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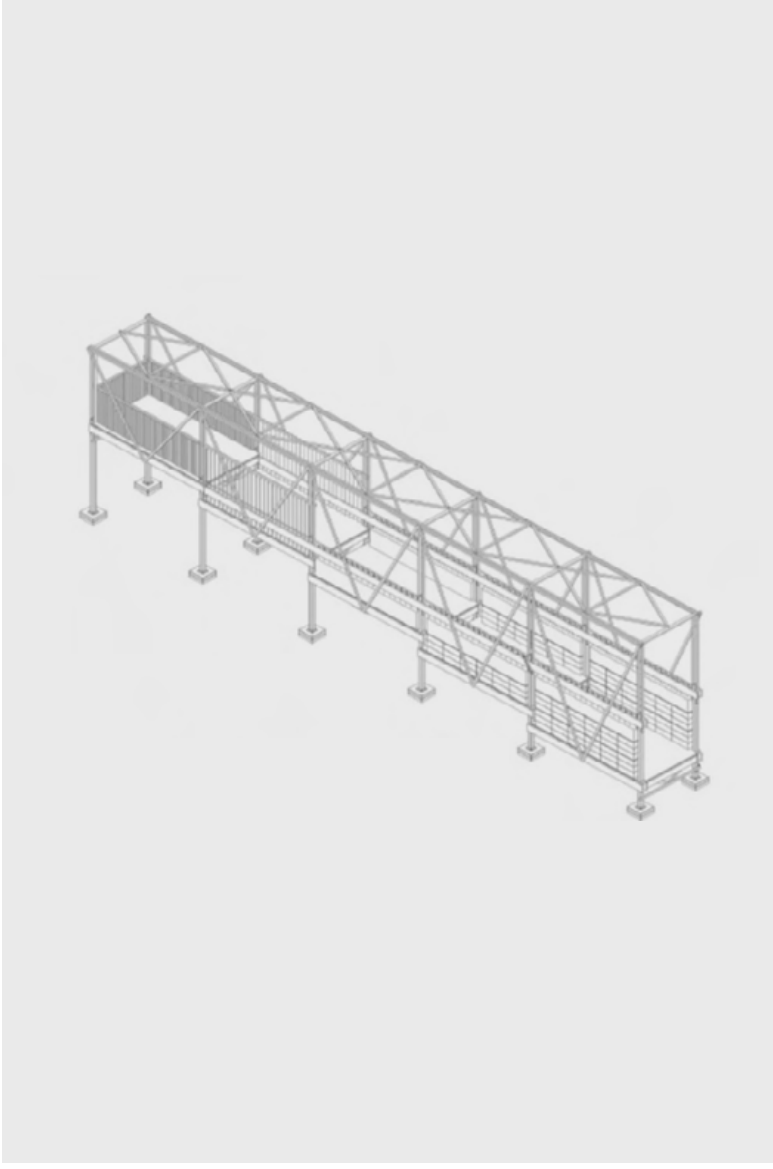


1.
Isometric view of the final project, 2022.
Illustration by the authors.

materials requires teachers and students to familiarize themselves with existing building components, buildings, and urban environments.

Availability-based Design and Build Workshops. Other than conventional studio teaching, design and build workshops allow participants to encounter not only the immediacy of a site's nature and the constructional reality of design, but also the consequences of limited resources, while also collaborating with peers with different skill sets. (Canizaro 2012). This visual contribution discusses a two-week educational experiment at a site in Aalborg, Denmark, which was conducted with eleven participants over ten days in the summer of 2022 and aimed at a multi-level implementation: Reusing building components, working with the site's ephemeral nature and contributing to the local community through the construction of a temporary structure.

Availability-based design inverts the design approach: The participants first look to appreciate the limitations and capacities of the existing and then design and build from there. In addition, the experience of manually building at a particular site connects the approach of design and build workshops (Canizaro 2012; Mohareb 2018) to the method of bodystorming which foregrounds the experiential dimension of architectural teaching practice. The original concept of bodystorming, stemming from interaction design, envisions a product as if it already exists and simulates its usage through improvised tools and physical actions to devise a solution (Schleicher et al. 2010). Similarly, in this case, participants dealt with a threatened site, as well as the limitations of existing construction elements. The participants' actions were intrinsically motivated by their positions as designers, builders, and community members. The teachers, from different disciplines, operated as coaches, listened to the observations and proposals of the group members, and moderated the decision-making processes (Schön 1987). In the following text, the stages of the workshop are described and reflected upon as phases of experience and the participants' growth is the main focus and complemented by the »intentionalities« (Canizaro 2012: 22) of the educators.

The Process of Designing and Building

Cold Open. In the cold open exercise the participants are confronted by material resistance. It spurs them into action to work on a small design challenge which will quickly expose them to the material or construction system used during the workshop. While success in conventional terms is not the primary goal, a gentle learning curve is desired to engage participants and boost their

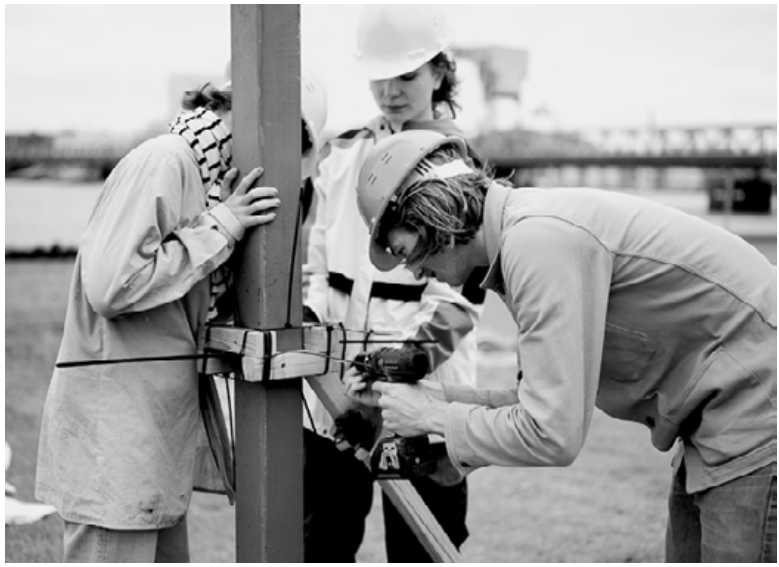
2. + 3.
Reading the site. On site – Aalborg Harbourfront.
Photos: Mario Rinke, 2022.

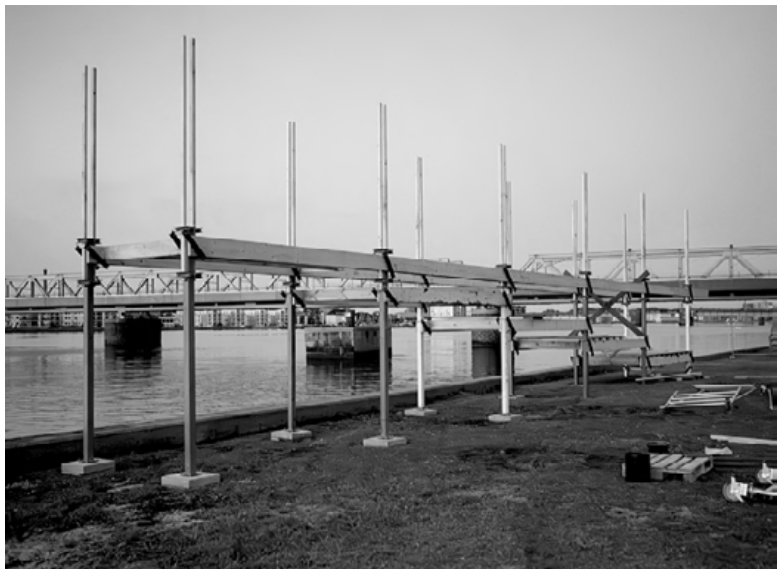
confidence. Participants with first-hand experience tend to be more attentive and receptive to explanations about materials and production processes. The learning phase concludes with a guided discussion that focuses on the participants' experience and personal growth by their sharing insights with the group into the hands-on learning necessary to develop embodied consciousness (Pallasmaa 2009: 13).

Reading the Site. As Burns and Kahn powerfully manifest: Site matters as a construct that guides our design focus and as experiential potential that shapes intention (Burns/Kahn 2005). The participants were thus tasked with investigating the specific nature and agency of the site. First, the municipality presented their concerns for the site, whereupon the participants collected impressions of it and translated them through individual sketches and notes. This was followed by calibrations in smaller groups and plenum which were motivated by the question: How can a temporary structure created by reused materials establish a social meeting place here? The group members observed dynamic influences on all site borders: The tidal flooding and its projected rising water levels to one side, a continuous flow of trains and people walking and cycling to the other side, while the gentrifying industrial area and green park created an intricate urban setting.

Reading the Material. Making the construction material the point of departure for the workshop helps to frame and connect the critical concerns of a design and build project. Identifying potentials by collectively reading the material, e.g., origin, type, weight, and workability is part of the inductive process that generates the circular metamorphosis in a craft-driven approach which combines thinking and doing into a continuum (Sennett 2009: 40). Purpose, utilization, design, construction, and fabrication become strongly interwoven due to empirical testing. The material bank not only serves as a source of components, but rather as a world of active materials, that the student joins forces with in anticipation of what might emerge (Ingold 2013: 21).

Design Exploration. With the aim of swiftly translating their impressions, the students began exploring design options in groups while activating knowledge from reading the site and tapping into the bodily material experiences from reading the materials. After a joint discussion on concepts, two ideas were selected to be developed into detailed design proposals via sketches and small-scale models. The design proposals, developed on day three, addressed material compositionand structural principles, including foundations and joints, the desired location on site, and the user experience.





4. + 5.
Material exploration. Skeleton structure.
Photo: Alessandro Tellini, Tina Vestermann Olsen, 2022.

Participants experienced the strain of having to move quickly between open non-binding explorations toward binding, practical decisions.
This necessitated the participant's ability to set aside personal preferences and pursue collective goals instead.

Mockups and Testing. Mockups, minimal viable prototypes, and tests serve as elements that increase confidence in the collective decision-making process after the design phase, which allows the group to manage the building process and capture the design's essence. The moment of rationalizing the construction is crucial to the whole process, where making in terms of architecture becomes construction (Lefebvre et al. 2021: 13). Inevitably, the numerous ideas from the design phase become simplified and problems on a global and local scale are addressed simultaneously. In doing so, recurring elements and modules are developed and get manufactured elegantly, allowing the group to control the building process by strategically repeating specific actions.

Making and Responsibility. The actual size of the group's design, 2 meters wide, 6 meters high and 20 meters long, surprised the group. After organizing groups, the construction, including foundations, rows of steel columns, wooden platforms and wall segments, was carried out in parallel. The group completed the work in six days, during which each participant gained confidence in performing various tasks and assuming routines as they changed groups to increase the number of new experiences they had with materials and processes. The final phase of responsibility was crucial as the weight of the components and the novelty of the process overwhelmed each individual: To ensure construction, they could only be makers as a collective. In addition, the participants also assumed responsibility for the local community's contribution to the public space as they proudly guided the first visitors around the structure and observed how their stairs provided new views of the landscape.

Conclusion

The workshop demonstrated that transferring the studio to the building site is essential to embracing the limitations of design. The contrast between the working atmosphere on-site and the design sessions in the campus studio allowed a productive distance: Field design for specifying and verifying the conceptand studio design for clarifying and rationalizing the project. Bodystorming allowed for a strong immediacy using actual materials on a

6. + 7.
Structural mockup. Preparing the modules. Finalizing the building
Photos: Mario Rinke, Alessandro Tellini, 2022.

real site. The planetary boundaries (Steffen et al. 2015), too abstract to the participants, became personal and communal boundariesthat influenced the project and the personal work stages.

Interdisciplinarity was also important. The participants learned that they could not solve the task alone with only their own skills, but must work together as a team of engineers, architects, and landscape architects. The same applies to the teaching team, who could emphasize and convey the complexity of the problems due to their broad expertise in urbanism, architecture, crafts, and engineering. The periodic reflection-on-action (Webster 2008) allowed for the crucial process of consciously comprehending and framing the boundaries and strategies.

After two weeks embedded on-site and equipped with tools and reclaimed components, the participants reflected deeply on the constraints they faced with locals, experts, and using their own skills. They sought to design and build as if the material was »borrowed« and still meaningfully anchored to its place, thus establishing a full-scale experimental showcase of radical circularity that they generously shared with the local community so they could experience and shape a culture of appropriation and adaptation. A further step to reach an even deeper cognitive process as change-makers could be to participate in evaluating the agency of the structure on site through, e.g. user observation, partaking in the disassembly process upon ending the on-site exhibition, tracing the journey of the used materials and disseminating the acquired knowledge and insight to peers.

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Photo: Mario Rinke, Alessandro Tellini, 2022.

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