



## Pre Architectura - Learning Through Space

### *Impact Case Study*

**András CSEH**

*Moholy-Nagy University of Arts and Design*

*Doctoral School*

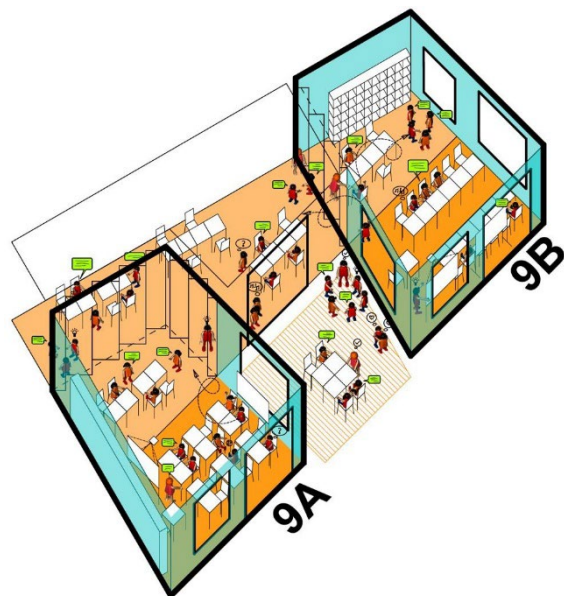
Year of completion:	2015
Discipline/field:	architecture
Type of Doctorate (e.g. PhD, DDes, ArtD)	DLA
Supervisor(s)	András Göde

### *Abstract*

Some of the theses of Pre Architectura are seemingly evident declarations. However, probably due to the general aim of acceptance in education-policies, these basic statements are so far absent from the literature of spatial learning and architecture education for children; therefore, their articulation appears to be essential.

1. Spatial learning, which is the essence of all architectural knowledge, effectively happens through spatial perception and creation tasks. Building, in terms of the 'Learning By Doing' form of architecture and spatial education, teaches about the spatial environment by definition.

2. Spatial learning as an activity provides the foundation of most learning processes. The development of spatial knowledge and environmental cognition develop the structure of the brain improving both the logic and memory system, and, therefore, are essential as the starting point of further learning processes. Spatial cognition happens in the hippocampus, which is also responsible for processing short-term memories into long-term memories. Since the hippocampus can develop throughout the entire lifetime of a human being, spatial learning exercises are beneficial at all ages.



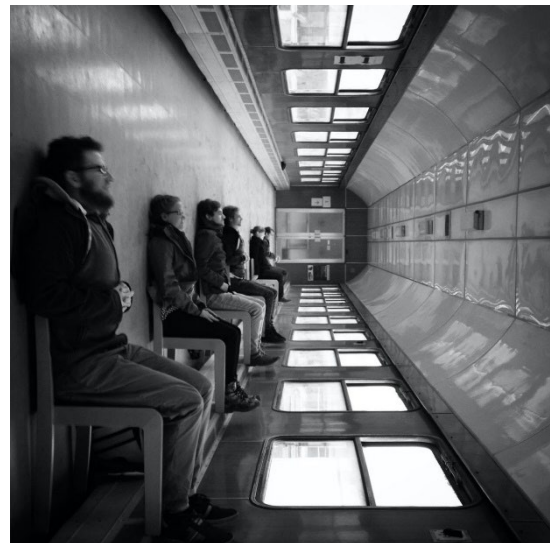
3. Experiencing architecture takes significant time and requires active participation from the participating person. Even though we perceive our built environment as instantaneous impulses, the process of reconstructing the surrounding space and understanding its layers consumes time and demands both unconscious and conscious work from the participant.

4. The cognition of an 'Inner 3D', when the self experiences its integration in the surrounding space, is different than the cognition of an 'Outer 3D', when the self is looking at the space from an exterior point of view. The spatial learning tasks and building in real scale, where the participant is surrounded by the space being discovered or created, provide the grounds for experiencing the 'Inner 3D' with an intensity of the learning event - the change from not-knowing to knowing as the ultimate human event, which is hardly present in contemporary educational curricula.

5. Space-philosophy and medium-philosophy provide yet undiscovered interpretations and guidelines in understanding spatial learning processes. The initiatives of philosophy have always been geared towards a deeper understanding of the world through the analysis of human existence in the agent and medium of its surroundings. The systematic structures of philosophical classics (e.g. Platon: *Timaeus*, Martin Heidegger: *The Origin of the Work of Art*), as well as the development of phenomenology (Maurice Merleau-Ponty), the explorations of intentionality (Edmund Husserl), and the initiatives of eventual philosophy (Slavoj Žižek), have parallel observations to spatial learning processes.

6. Discovering the spatial environment is an adequate and effective tool for teaching the learning process itself because the contrast between the familiar and the new therein easily triggers the Aha Moment, the learning event itself, which in new generations, who are used to multiple sensory irritation, is hardly within reach any more. Spatial exercises are applicable on many levels: physiologically, through stimulating the development of the hippocampus; psychologically, through space-learning instead of path-learning; and motivationally, due to the joy-experiences of gaining knowledge through the exercises.

7. The co-operation of children and university students of architecture in spatial learning is beneficial for all participants on multiple levels in the current educational schemes. The confrontation of the children's open curiosity and the students'





academic architectural knowledge results in a productive combination of knowledge and creativity, completing the existing curricula both on elementary school and university levels.

8. The presence of architects is necessary in spatial and architectural education. Spatial learning processes target understanding of the surroundings through the medium of architecture: space, which exhibits particular properties unlike any other field of arts or sciences. On some level of built environment education - either by teaching the children directly or educating the teachers and facilitators - the involvement of architects is indispensable as they are accustomed to the attributes and possibilities of space, a realm, which is hardly approachable for those who are not trained in architecture.

### *Summary of impact beyond academia*

The doctoral have been an open-source material even during the process to improve its communication strategies and impacts. Both theoretical and practical parts of the research were integrated into various curricula around the world, e.g.: the “How big is a tree?” workshop is used in Romania, Finland, Uruguay, etc. as the introduction to the transformation between natural and built environment to architects, pedagogues and psychologists.

On the completion of the DLA, a new curriculum was developed for the architecture BSc/MSc at Széchenyi István University by the researcher and Tamás Czigány, the head of the Department of Architectural Design. The curriculum was introduced in 2017 and continues to be a successful program of architecture education based on spatial perception and creation.

The various built environment workshops for children in different institutions were merged together at CAN EDU, the education division of CAN Architects, where the researcher is a co- founder. The program made special efforts to provide material for educators and students during the Covid-19 home schooling times.

Natural and built environmental education became an important issue during climate change, therefore the researcher was able to introduce subjects in these fields to kindergarten and elementary school teachers. This new pedagogy curricula was accredited and starts in 2022.

The researcher’s office, CAN Architects integrated the findings into their learning spaces. Through their school designs they introduced the theory and application of learning landscapes, learning clusters and their own innovation, the Learning Classroom. The methodology of the design became just as important, since these



processes turned out to become the largest participative design events in Hungary, even significant on an international level.

New informal and non-formal education spaces are developed by CAN EDU, led by the researcher - the Basalt School as a new outdoor learning toolkit has already started in 2021.

### *Underpinning research, context and summary of methodology*

The research aimed to respond to a need to enhance communication and understanding between architects and non-professionals, starting with an early age. It aimed to structure a prototype development of 'architecture education for children' in Hungary. However, due to both the theoretical and practical results en route, the focus of the research moved towards spatial learning processes: space as the elementary component of architecture and the development of human behaviour towards it from perception to creative use.

The 'learning through space' methodology embraces the current shifts in educational strategies, providing fundamental learning experiences for further education while particularly improving the human potential and competences instead of professional and factual knowledge.

Therefore, practical elements were introduced to children and tested in elementary schools, museum pedagogy workshops, and summer camps.

As an example for good balance between the theoretical and the practical, ARKKI in Helsinki, Finland played a significant role in the research. Pihla Meskanen provided a deep insight into built environment education - the interview with her was published separately and became one of the most referenced sources for the Hungarian education developers dealing with space.

To be able to introduce built environmental studies to schools, the national regulations of education had to be changed. 'Architecture', 'Environmental education' and 'Spatial learning' became integrated in the new Hungarian curricula, allowing all educators to officially teach through these disciplines for the first time. Cseh, A. was a member of the preparatory processes, proposing multiple changes in the regulations, some of which were accepted and implemented. In the following semesters, philosophy entered into the analysis of learning at the foundations of human existence. Space is considered to be the fundamental component and existential necessity of architecture, the thing that is behind all other aspects; therefore, using the methodology and results of philosophy as a foundational act of knowledge seems



to be an appropriate approach to uncover the processes behind architecture and spatial perception and action.

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## *Details of impact*

TérTan (Spatial Learning) - PA contained the proposal for a one-semester subject for university students. It was implemented at the Department of Architectural Design at Széchenyi István University. Its innovative approach to spatial learning led to the complete transformation of the architecture curricula at the university.

faLUÉPÍTÉS - The social design series of Széchenyi István University was complemented with PA workshops for the local children to involve the whole community.



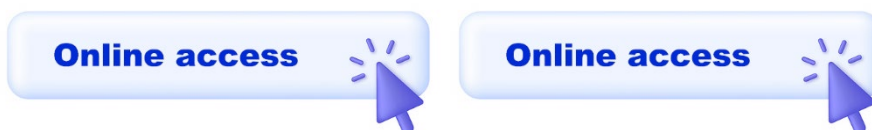
CAN EDU - On the base of PA methods CAN EDU was created. This is the educational program of CAN Architects (Cseh, A. is a co-founder). During the Covid-19 pandemic the CAN EDU Home Edition series contained 3 toolkits for students and teachers that provided spatial education workshops for home schooling environments (both in Hungarian and English).

CiudadN LAB - The Uruguayan initiative generates collaborative projects to create, prototype, rehearse and build innovative approaches to the spaces of the future. Cseh, A. with CAN EDU is on their international advisory team together with MIT Senseable City Lab (USA), Basurama (Spain- Italy-Brazil), Young Architects Society (Russia), the Design Museum (Finland).

KTT (Közösség-Tér-Település - Community/Space/Settlement) - A new vocational one-year training program for university, with the focus on participative design. The theoretical education is complemented with real field studies, design and building with a community in need. The spatial awareness part of the program is the implementation of PA, done by Cseh, A. and CAN EDU.

Scholae Piae - A revolutionary school design by CAN Architects (project arch.: Cseh, A.) with the largest participative design process in Hungary, involving over 800 students, teachers, parents and co-workers.

Turning Classroom - An innovative classroom design, based on PA principles and a multidisciplinary research (environmental psychology, interior design, acoustics, lighting design) led by CAN Architects (project arch.: Cseh, A.). The first built implementation is under construction.



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