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Thesisbook

Impulse Idea Image

The levels of abstraction in digital modes of architectural representation.

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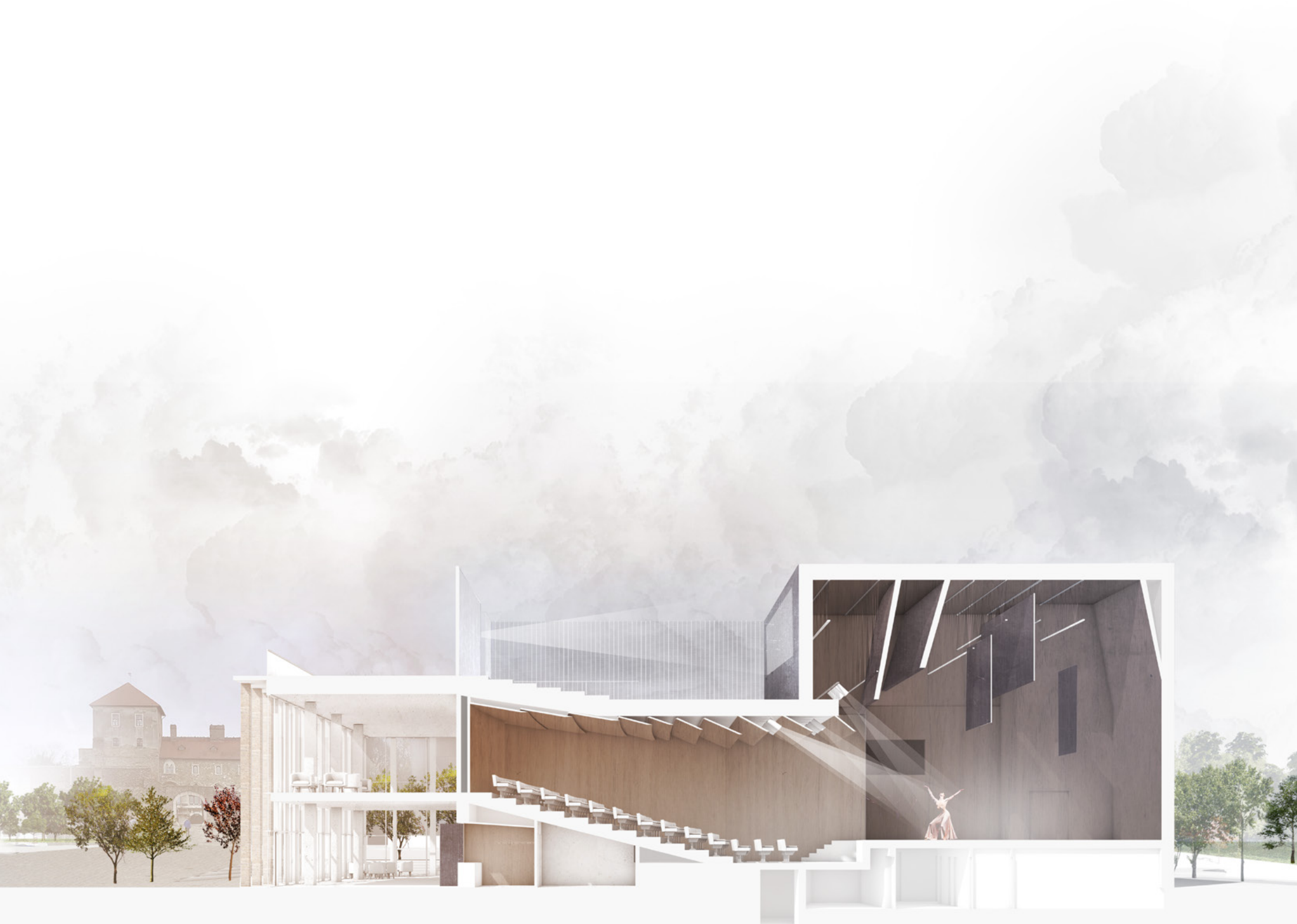
Budapest University of Technology and Economics Faculty of Architecture

Doctoral School of Architecture

2025







Tata szíve pályázatra készített metszetrajz, DJS

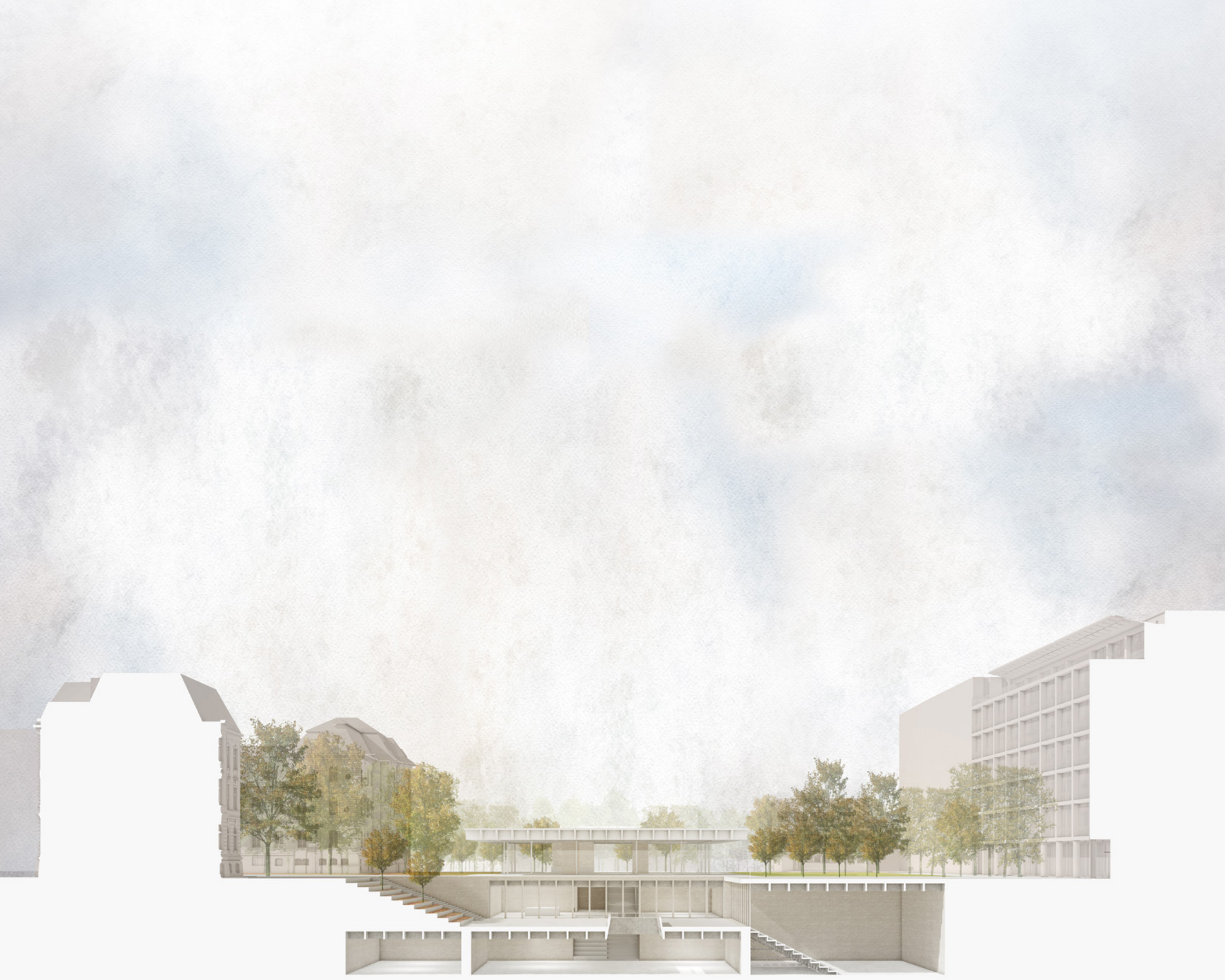
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Summary

In my dissertation, I examine the concept of digital architectural visualization. I attempt to provide a graphical overview of the past 25 years since the publication of Reality – Thought – Drawing, systematizing digital techniques beyond photorealistic representation, with particular attention to hybrid visualizations that combine analog and digital methods, as well as analog techniques adapted through digitization. As a parallel to the Reality – Thought – Drawing triad, I introduce the conceptual framework of Impulse – Conception – Image for digital works, where Impulse denotes the desire to create, Conception signifies the reduced, abstracted idea, and Image is the creation that emerges when the Conception is realized in a drawing, picture, or model.

From Impulse, Conception arises through functional abstraction. In the early phases of design, abstraction primarily serves to highlight essential elements. By omitting detail, the architect can focus on key proportions, composition, and spatial relationships. Depending on the methods of abstraction employed, this process leads to diverse outcomes in architectural visualization. Architectural visualization is thus a highly complex umbrella concept, encompassing a wide range of techniques governed by internal rules. In both professional and public discourse, however, it is often imprecisely and inconsistently defined. Terms such as visualization and rendering are frequently used interchangeably as synonyms, despite the lack of clarity regarding their distinct functions and purposes. To address this conceptual ambiguity, I establish a relational framework.

Visualization—whether analog or digital—is the communication of information through images based on abstraction, interpretable at different levels of complexity. All contemporary digital visualization techniques involve a certain degree of abstraction, determined both by the technologies employed and the context of their use. Such abstraction may be formal, functional, or semantic.



Építészet Ligete pályázat, térmetszet, DJS

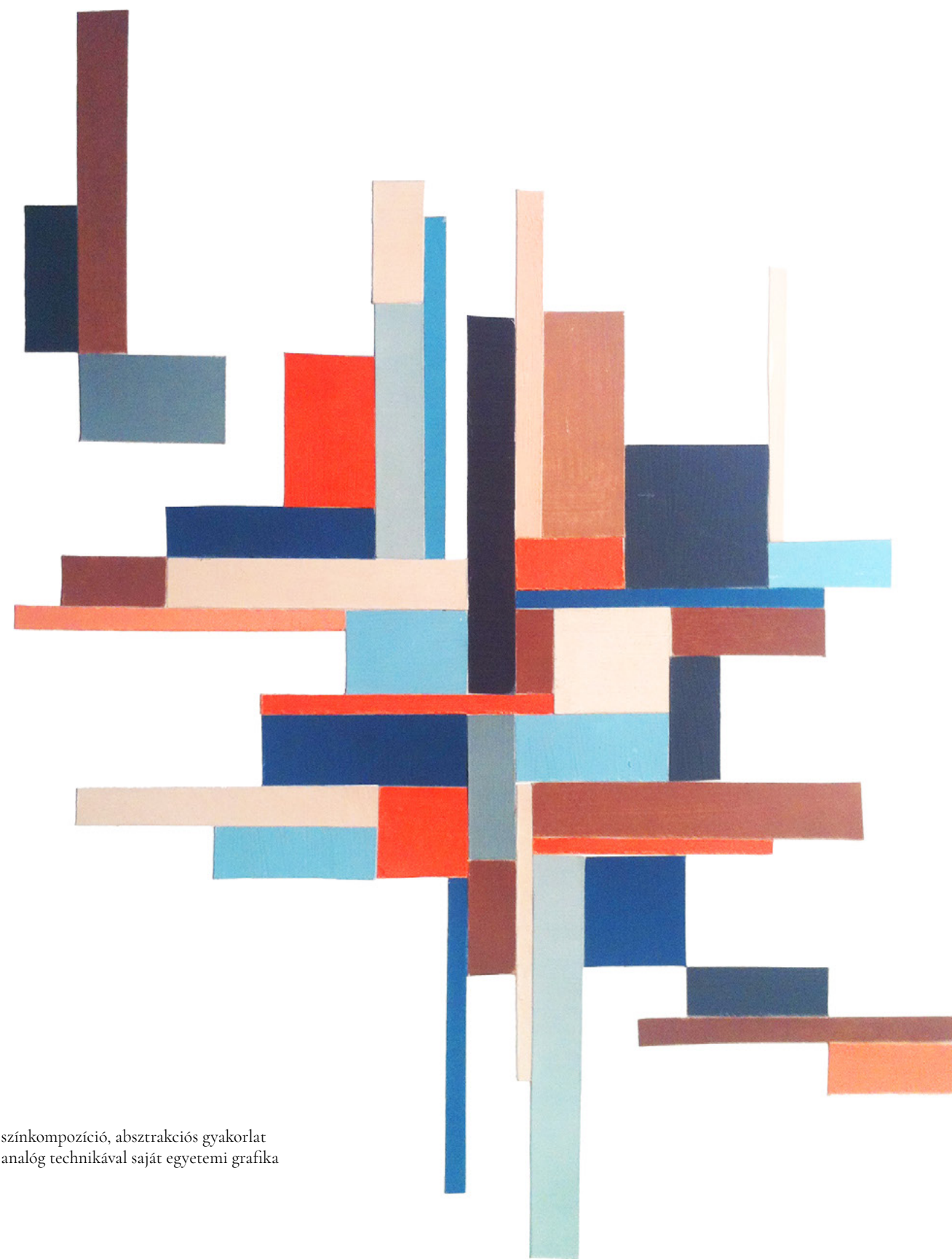
Digital visualization, as a collective term, encompasses various modes of representation that can be mapped in relation to one another according to their degree of abstraction. I chart these levels of abstraction by considering their technical exposure, engineering perspective, and artistic mode of expression. The resulting cartography—what I call the map of architectural visualization abstraction—provides orientation among diverse concepts and techniques.

This framework enables me to explore the dilemmas that emerge within architectural discourse around photorealistic rendering. The absence of abstraction is a defining characteristic of rendered photorealism. The conflicts surrounding realistic depiction stem from the pursuit of perfect lifelikeness, which, however, remains unattainable with the current technical basis of classical rendering.

As an alternative to photorealistic visualization, I present hybrid graphic approaches—works that embody abstraction by transforming Conceptions into Images, and that reinterpret analog methods within the digital environment. Post-digital architectural visualizations return to a more personal form of abstraction, digitally emulating the creative methods of the pre-digital era. This approach embodies an abstract, artistic perspective, revisiting analog techniques with contemporary digital tools. The post-digital graphic attitude responds to the dominance of photorealism in visualization by offering an alternative: a return to high levels of abstraction, and thereby to a more humane mode of representation. To illustrate the role of hybrid graphics in architectural visualization, I conducted interviews with representatives of contemporary Hungarian architecture. As case studies, I also examine their referenced projects, my own design works, as well as the pedagogical perspective of the Department of Drawing.

The closing chapter of the dissertation takes the form of a graphic manifesto. It summarizes the outcomes of my personal experiments and hybrid graphic practice.

The main conclusion of the dissertation is that hybrid approaches to creation allow the degree of abstraction to be precisely controlled, enabling the designer's intent to be expressed with accuracy. Instead of emphasizing the final visual outcome, this approach foregrounds the underlying relationships and design ideas. As a result, discourse on architectural projects can unfold in a more defined, personal, and meaningful way.



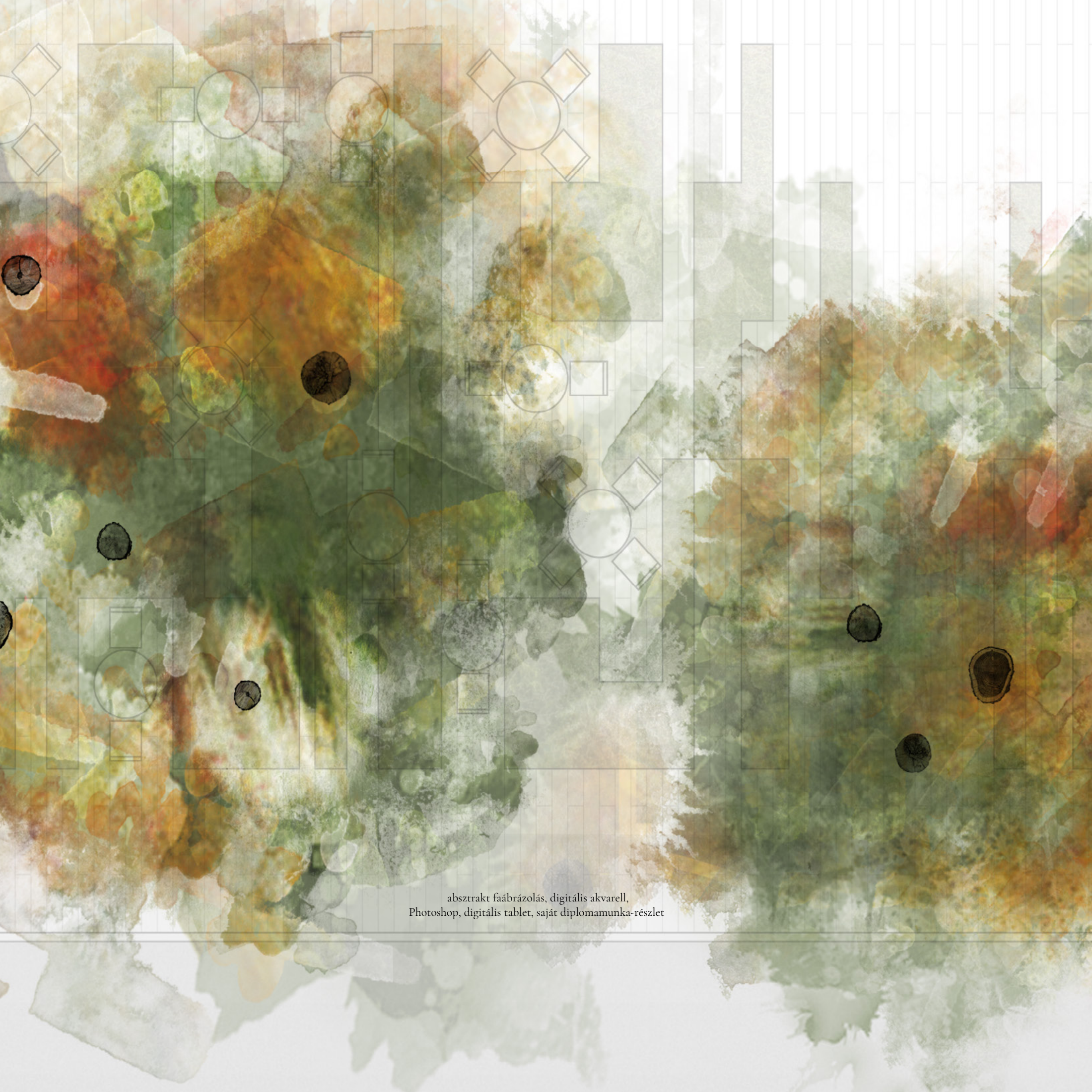
szinkompozíció, absztrakciós gyakorlat
analóg technikával saját egyetemi grafika

T₁

1st thesis

In the early phases of design, abstraction primarily serves to highlight essential elements. By omitting detail, the architect is able to concentrate on key proportions, overall composition, and spatial relationships.

In architectural visualization—whether produced as a tool for one’s own design process or shared for the purposes of communication—abstraction constitutes a fundamental instrument. It enables the author to direct the viewer’s attention, ensuring focus on core ideas rather than on visual noise. This form of reduction is particularly significant when the goal is the clear communication of a concept to a client, jury, or professional audience. Through the simplification of detail, the observer can immediately discern spatial relationships, structural logic, and compositional principles.



absztrakt faábrázolás, digitális akvarell,
Photoshop, digitális tablet, saját diplomamunka-részlet

T₂

2nd thesis

The variants of digital architectural visualization can be identified according to the type and degree of abstraction employed, which in turn depend on the intended purpose of the visualization.

Within architecture, different abstraction techniques serve distinct objectives depending on their role in the design process. Accordingly, digital visualization tools can be distinguished, identified, and categorized on the basis of the techniques applied and the technologies utilized.

Visualization—whether analog or digital—constitutes the transmission of visual information through abstraction, interpretable at varying levels of complexity. All digital visualization techniques currently in use rely on a certain degree of abstraction, determined by the technologies employed and by the mode in which the visualization is applied. This abstraction may be formal, functional, or semantic in nature.



axonometrikus vonalrajzra készített kollázs
Szentháromság téri zöldterületek megújítása pályázat, DJS

T₃

3rd thesis

Digital visualization is an umbrella concept within which a relational system can be established among different modes of representation, defined by their respective levels of abstraction.

The systematization of these methods is determined by the type and character of abstraction employed in each case. The relational framework among them is constituted by degrees of realism, technical–engineering abstraction, and artistic abstraction. On the resulting “map,” the various techniques, together with the specific abstraction-oriented approaches required for their creation, can be clearly identified.



tudatosan atmoszferikus látványterv
Diákváros - Nagyvásártelep pályázat, látványterv,
DJS, Szabó Levente DLA, Falussy Bence

T₄

4th thesis

The complete absence of abstraction is characteristic of rendered photorealistic representation. The conflicts surrounding realistic modes of depiction stem from the pursuit of perfect lifelikeness — an aspiration that, given the technical foundations of classical rendering, cannot be fully realized, yet.

Within architectural visualization, the absence or misapplication of abstraction produces images of “imperfect perfection.” A potential solution lies in the continued development of image-based techniques employing Artificial Intelligence, which already demonstrate the capacity to generate representations indistinguishable from reality.



posztdigitális technika: fehér modellre készített digitális kollázs
Hódmezővásárhelyi könyvtár pályázat, látványterv,
Deichler Tímea, Jakab Dániel, Fejérdy Péter

T5

5th thesis

Post-digital architectural visualizations return to a more personal mode of abstraction, digitally emulating the creative methods of the pre-digital era.

This approach embodies an abstract, artistic perspective that revisits analog—pre-digital—techniques through the use of contemporary digital tools. The post-digital graphic attitude responds to the dominance of lifelike representation in visualization by offering an alternative: a return to highly abstract, and thereby more human-centered, modes of depiction.

Az Egri Vár akadálymentes megközelítése pályázat, metszet, Deichler Tímea, Jakab Dániel, Répás Ferenc



T6

6th thesis

In the process of architectural creation, the use of hybrid graphics enables the designer to convey a more immediate, artistically oriented mode of expression compared to photorealistic renderings.

Within this hybrid approach, the degree of abstraction can be precisely controlled, allowing the designer's intent to be articulated with clarity. Post-digital representation shifts the focus away from the image itself toward the underlying relationships and design concepts, thereby guiding architectural discourse into a more clearly defined and personal channel.

