

# REFLECTION

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**Reimagining the national library:  
enhancing informal learning for the local  
community**

AR3AH115  
Graduation Studio Revitalising Heritage

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## Introduction

The studio focusses on the Koninklijke Bibliotheek (KB), the national library of the Netherlands. It is located on an improbable site, standing between large buildings and infrastructure, close to Den Haag central station. With a net floor surface area of 75,000 m<sup>2</sup>, KB is the largest building in the city. Many national libraries designed in the last century now face the challenge of renovation. KB, built in 1982, can be a classic representative. At the time of its design, the library primarily served scholars, with a strong focus on book collection and preservation. However, today, the core values of KB—openness, unification, innovation, and reliability—are not fully supported by the existing spatial conditions. The library lacks engaging informal learning spaces, has weak connections with the local community, offers limited leisure areas, and provides only a few spaces that are truly accessible to everyone. Additionally, its entrance is inconspicuous, and its operating hours are too limited.

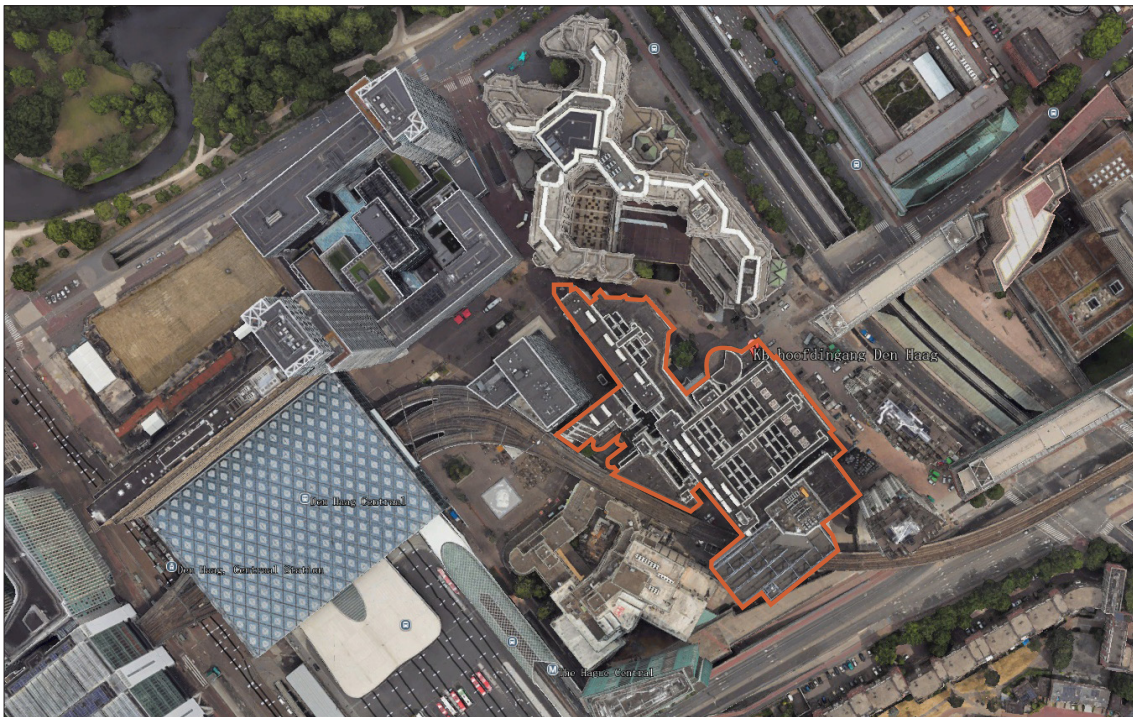


Figure 1: Satellite image of the site, 2025

Google Map, Jiang Zhu

## The research

Based on the current problems of KB, I proposed my main research question: How can the transformation of the National Library of the Netherlands integrate the local community by redefining its functions and spatial configuration to support informal learning? Supporting sub-questions include: 1. What are informal learning spaces in other libraries, and what are their spatial characteristics? 2. What types of functions and spatial configurations can support informal learning in other libraries? 3. What types of new informal learning spaces can be added in KB's renovation?

A mixed-methods approach was undertaken, including literature review, case studies, observations and surveys. They were used to answer the three sub-questions. Specifically, there are some literatures describing different types of informal learning spaces and the design factors related to these spaces. These were extracted and formed into a matrix. The matrix was then used to classify the case studies first, so that the common practices of informal learning spaces in the libraries could be obtained. For KB, I observed at fixed points in the areas accessible to all people in KB and filled in the information obtained in the matrix. Afterwards, I conduct surveys to obtain the library users' usage, evaluation, and expectations of the informal learning spaces in KB. At the same time, I understood the principles of book classification and the order of bookshelf arrangement, and look for the possibility of combining bookshelves with new functional spaces.

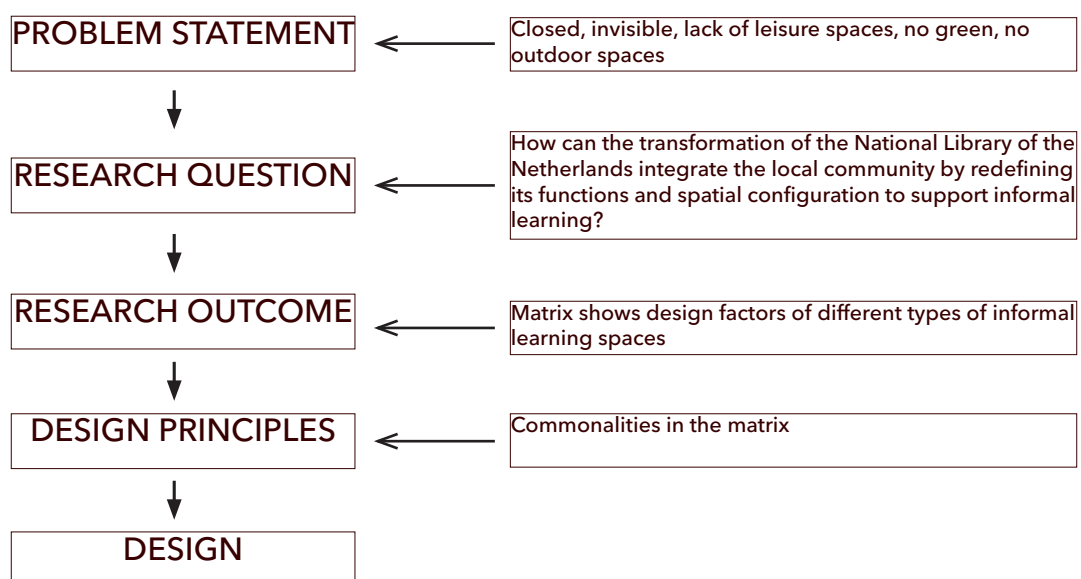


Figure 2: Diagram of research, Jiang Zhu

## **Relation with the graduation studio**

My graduation project explores how architecture can play a transformative role in revitalising public institutions. Titled *Reimagining the National Library: Enhancing Informal Learning for the Local Community*, my project is situated within the graduation studio *Revitalising Heritage*, which focuses on the sustainable and inclusive transformation of the National Library of the Netherlands (KB). Responding to the studio's themes of heritage, circularity, and accessibility, I aim to integrate informal learning spaces into the KB as a way to reconnect it with the socially diverse communities of The Hague. This approach not only reflects the architectural values of adaptive reuse and spatial innovation, but also addresses broader societal challenges such as urban segregation and lifelong learning. By combining spatial design with participatory methods like observation, interviews, and cognitive mapping, I ground my proposal in the lived experiences of users. In doing so, I hope to contribute to the discourse on how heritage buildings can evolve to support more equitable, user-driven, and socially sustainable futures.

## **From research to design**

After P2, I received a range of valuable comments. Uta encouraged me to further develop the crack concept beyond a façade gesture and to advance the design of the Digital Manuscript Museum. Paddy advised approaching the project through the lens of circularity. The delegate panel felt the connection between design and heritage was not yet strong enough, noting a lack of explicit value assessment of the building itself.

These insights made me realise that the research topic I proposed at P1 is only one strand of a larger research-through-design process. On the way toward the architectural proposal, I should not remain confined to the initial theme; I also need to engage other scales and systems—structure and details, site climate, rainfall, wind, sun paths, planting, and material performance.

The diagram clarifies the evolution of the overall design approach.

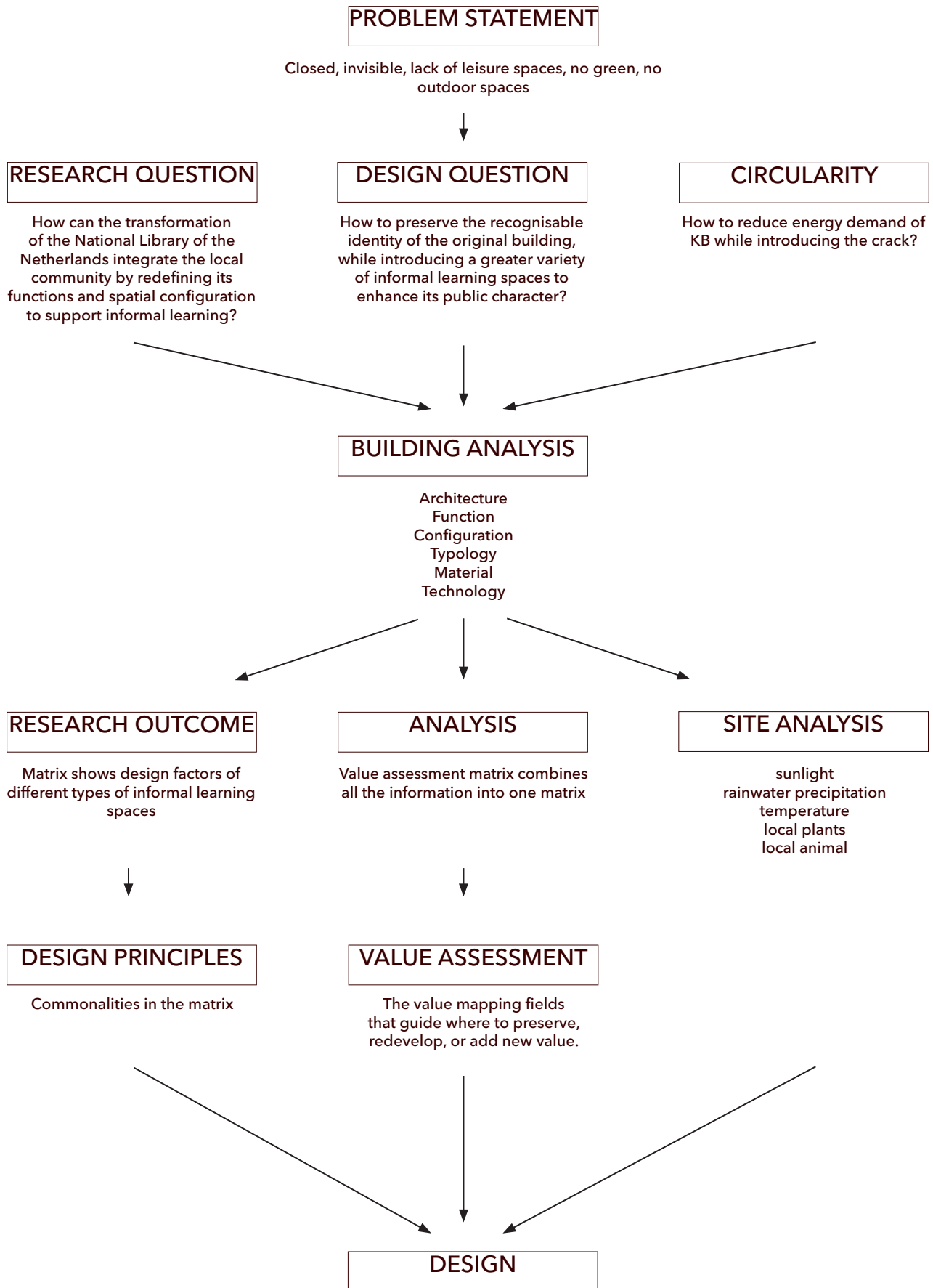


Figure 3: Diagram of research and design, Jiang Zhu

## Design Process

### 1) From "Crack" to "Breaking the ice"

During the tutorials, all three mentors pointed out that the word "crack" carries a negative connotation, especially in an architectural context, where it suggests danger or structural failure. This raised the question of how to express the design concept in a more positive and constructive way.

Looking back at the core intention of the project, the aim is to provide more public space for local people and to bring them together. In sociology, there is a term that describes the process of reducing distance between strangers – "breaking the ice." This perfectly reflects the kind of social transformation the design intends to support.

Visually, the KB has long been perceived by locals as an "iceberg." The project introduces a new public space that becomes visible from the city, effectively opening up this "iceberg." Through this opening, light, fresh air, and activity are brought into the building.

For these reasons, the project title evolved into "Breaking the Ice."

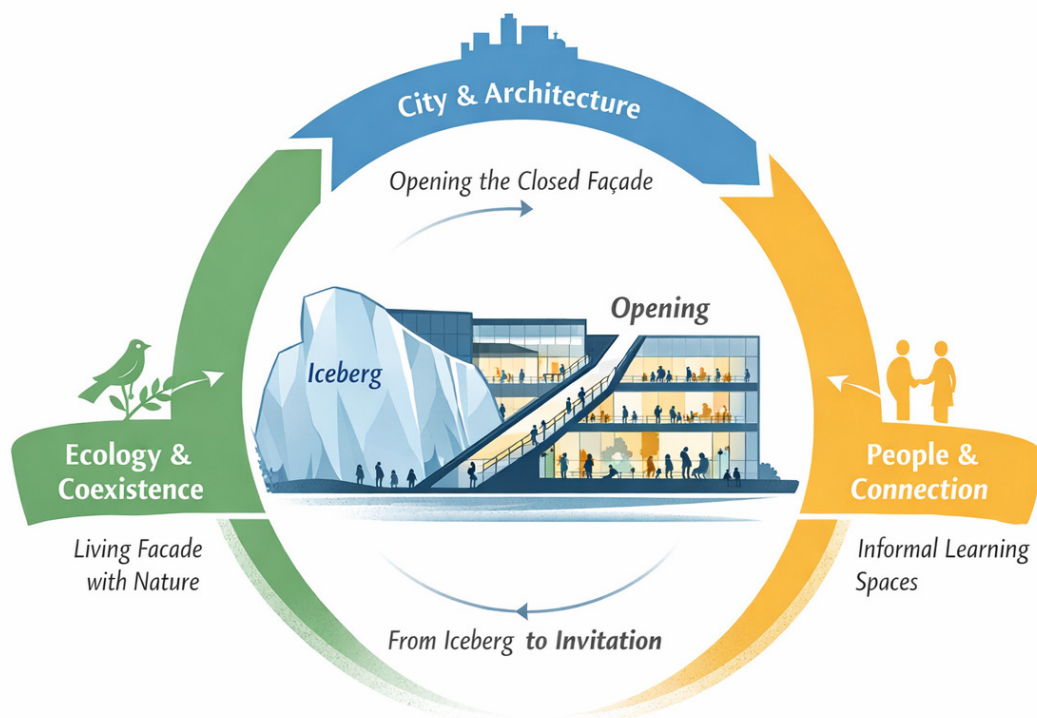



















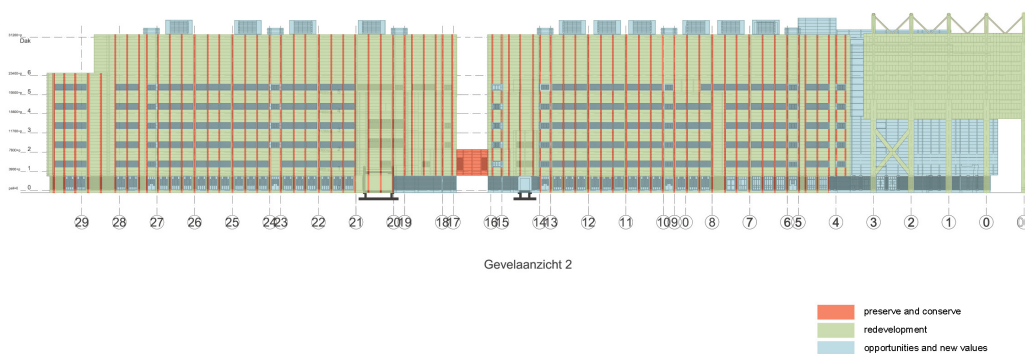
Figure 4: Breaking the ice, Jiang Zhu

## 2) Value & Assessment Matrix and Spatial Mapping

Responding to the delegate's heritage concern, I adapted the group-research method used earlier. I used not only the group's conclusions as directives, but also data from the P2 questionnaire and in-situ observation. They were entered into a Value & Assessment Matrix and mapped onto the priority façades. This produced layered value-importance fields that guide where to preserve, redevelop, or add new value.

	old, texture, material AGE	information, meaningfulness HISTORY	information, meaningfulness ART	USE	NEWNESS	RARITY	form, beauty, rhythm AESTHETIC	CONFLICT	OTHER
CONTEXT									
SITE				 Site conditions has to be kept for new traffic.				 Visible entrance & surrounding entrance.	
SKIN				 It can create a new lobby over level of 10.		 Great of corner, and zig-zag angle.	 Rhythm of structure, panel and bricks.	 Great facade & structure facade.	
STRUCTURE				 Information of structure & thickness of board layer.	 Steel structure and concrete.				
PLAN				 Modern style design, combining both form and function to create a new space.	 Higher connection of the ground floor.			 Overlap with surrounding space.	
SURFACES							 Great element, panel.		
SERVICES					 Digital service service.			 Membership & experience.	
STUFF									
SPIRIT	 Value in the city high and iconic.				 New gives the building over the facade.				

Value matrix



Value mapping

Figure 5: Value matrix and value mapping, Jiang Zhu

### 3) Environmental Comfort & Circularity

Following a tutorial with Paddy, I expanded research on environmental comfort and circular strategies: Dutch rainfall patterns, water typologies and reuse routes, seasonal sun angles, and material choices. The scheme now incorporates a rainwater collection system, extensive roof planting, and photovoltaics. The south-west façade becomes the design focus: a double-skin system with an inner glass curtain wall and an outer operable timber louvre screen; circulation stairs inhabit the interstitial zone. This both expresses the crack as a new urban figure and improves indoor environmental regulation (solar control, ventilation, and daylight).

The redesign of the National Library of the Netherlands is conceived as a thoughtful evolution—an example of sensitive transformation that retains the building’s recognisable identity while reimagining it as an open, inclusive, and future-ready civic space. Honouring the original architectural language, the intervention respects the façade’s rhythm and materiality, introducing precise openings to enhance permeability and visibility. At the heart of the proposal is a vertical system of informal learning spaces that fosters spontaneous exchange, personal growth, and shared knowledge. Leveraging the library’s proximity to The Hague Central Station, the scheme reuses the soon-to-be-vacant depot building as a behind-the-scenes manuscript museum, making conservation visible to the public. The renewal supports lifelong learning and social sustainability, strengthening the KB as a generous “living room for the city”—a heritage institution reimagined for contemporary needs. A massing diagram illustrates the subtractive strategy.

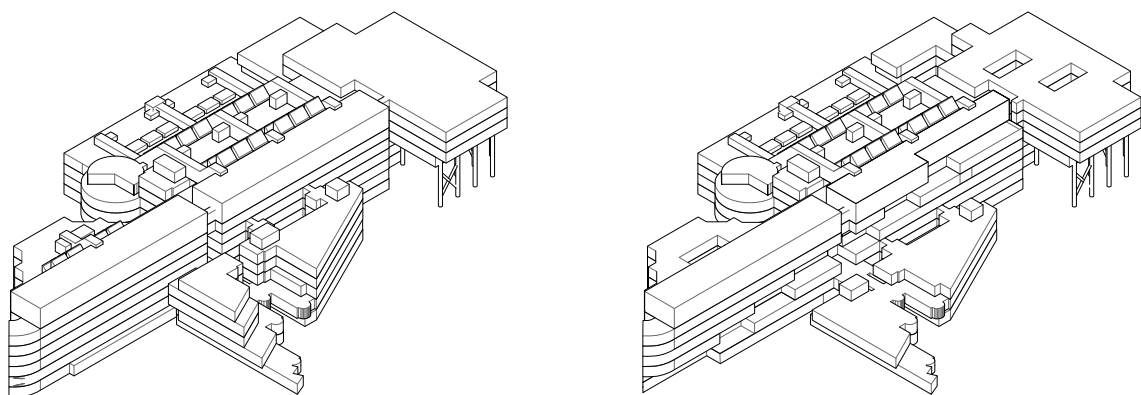


Figure 6: Massing diagram (left: before, right: after), Jiang Zhu

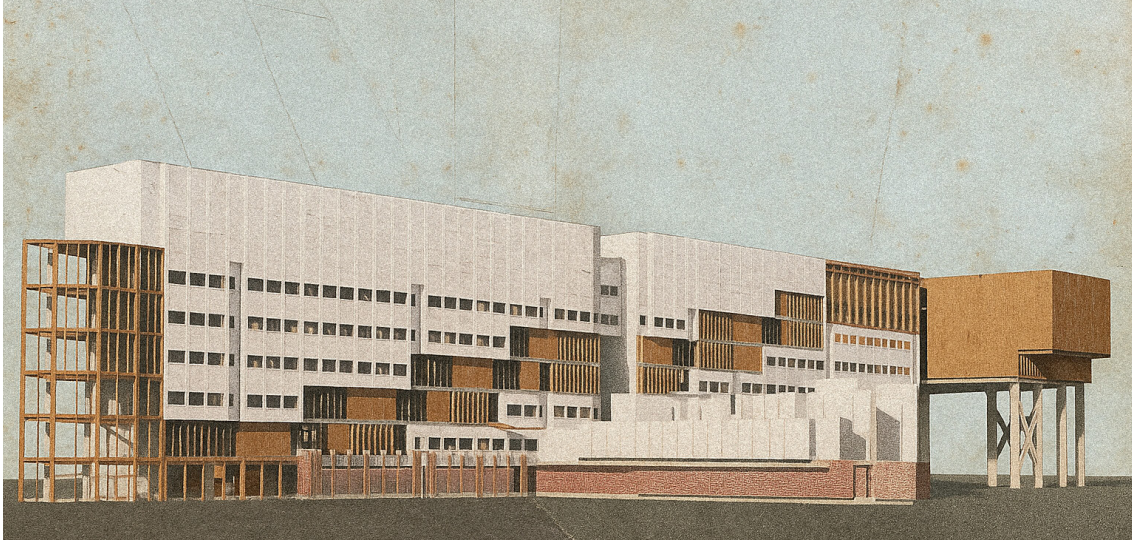


Figure 6: The renovation of the main facade, Jiang Zhu

### Optimization after P3

After completing P3, my work shifted mainly toward design refinement. Our tutor's key suggestions focused on calculating how much building material we had removed, how our design responded to the "3R Principles" (reduce, reuse, recycle), and how it addressed several aspects of the SDGs. These were directions I had not seriously considered before. As I looked for answers to these questions within my own design, I realized that the process itself became part of my design development.

Another major aspect was improving the details. In the past, when designing buildings, I tended to derive principles from history and patterns of human use. But once it came to further refinement, I often struggled to find a solid starting point. Most of the time, I simply chose a precedent that matched my personal aesthetic and copied it. As a result, construction details felt like mandatory forms to be filled out. I would hide them somewhere within the narrative and submit them without explanation. I think Paddy is a tutor who is genuinely skilled at guiding students to think. He repeatedly reminded me that details are also a part of design and storytelling. At first, I wasn't used to working across multiple scales at the same time. I used to believe building technology was only about structural and technical troubleshooting—something secondary to design. But when I brought what I thought was a sufficiently detailed drawing to Paddy, he asked me whether the large vertical slats could somehow be integrated with the birdhouse structure. At

that moment, I suddenly understood how to tell a story through drawings and why those drawings mattered.

We also discussed the design of the façade treatment—from my early, idealistic concept of a double-layer kinetic façade, to a much simpler vertical shading system after two rounds of refinement. There is never a perfect answer, but there can be a well-reasoned one—something that balances as many factors as possible instead of being driven solely by the architect’s personal will.

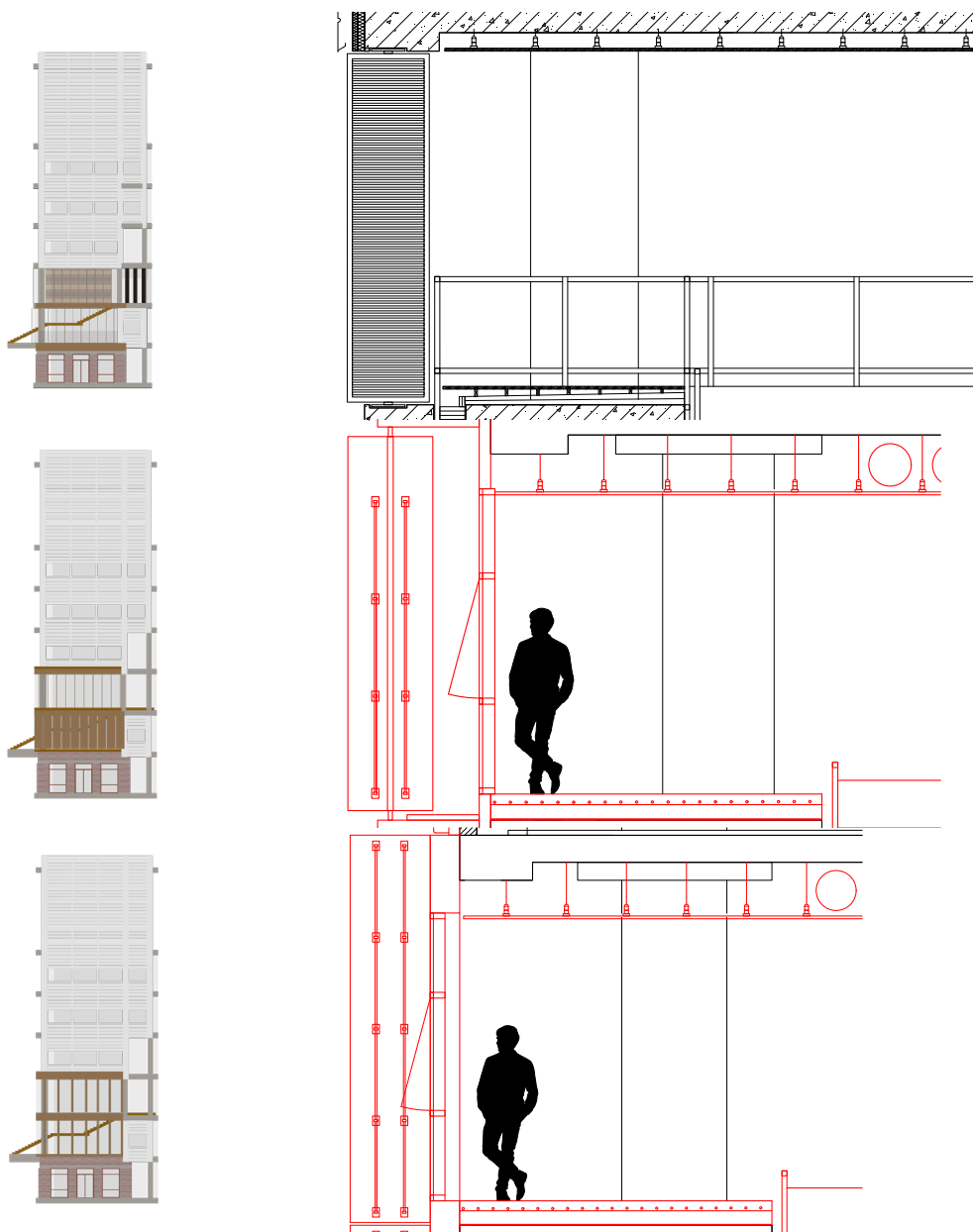


Figure 7: Three facade options, Jiang Zhu

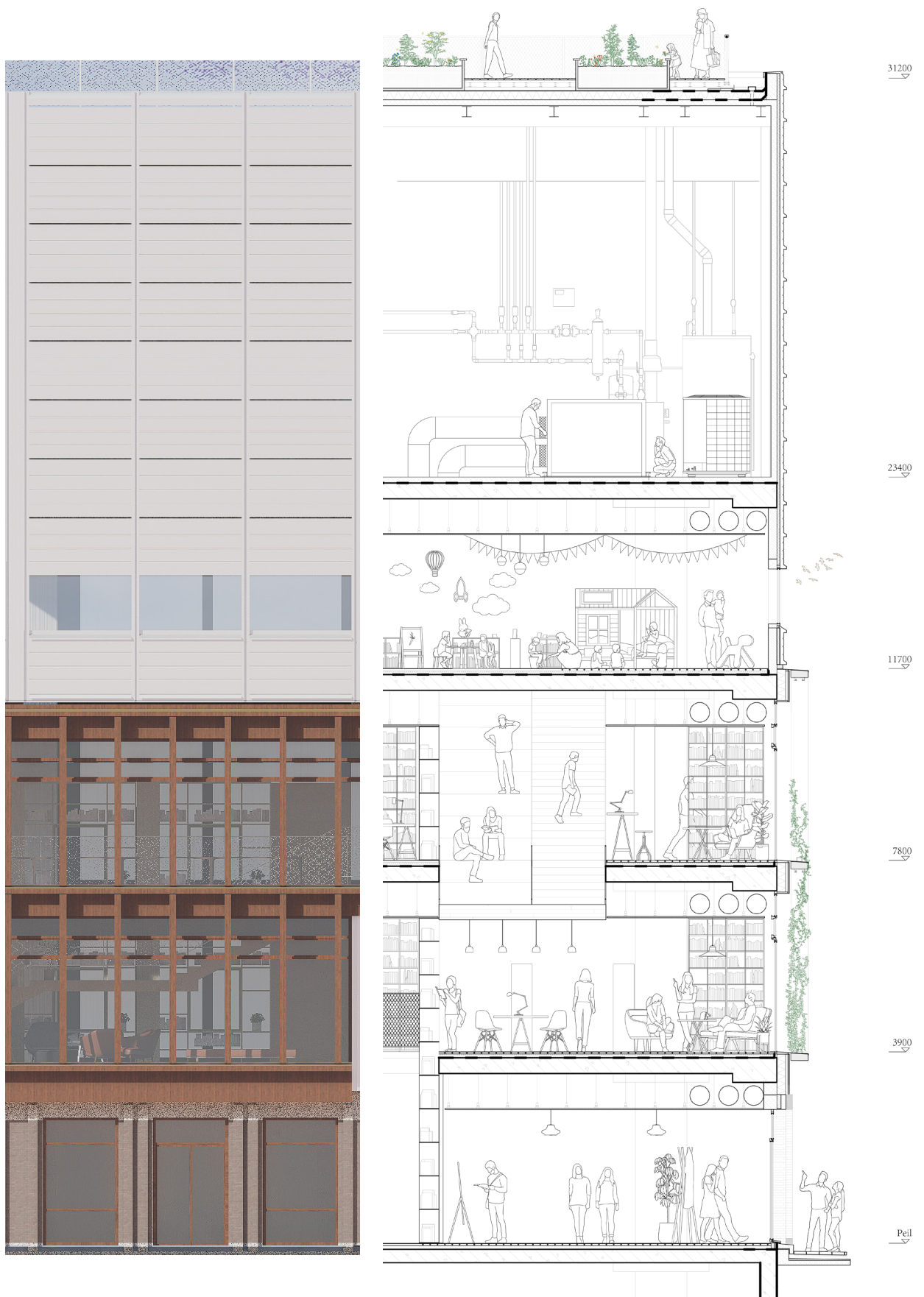


Figure 8: Simplified facade option (optimized again after P4), Jiang Zhu

## **Transferability of the Project**

Existing precedents and scholarship offer limited guidance for renovating a national library. Most literature on informal learning focuses on educational campuses; work on public libraries often centres on makerspaces/fablabs in new or fully refurbished buildings. There is very little research on informal learning in national libraries. The few available studies prioritise strategic and service transformations and rarely delve into spatial configuration.

This research addresses that gap by formulating design criteria for informal learning spaces in the KB, with emphasis on spatial design and physical configuration. Academically, it contributes a transferable framework that can inform future national-library transformations elsewhere. Socially, it aims to increase utilisation, enhance civic value, foster belonging and wellbeing, and ultimately support mental health through accessible, dignified public space.

## **Personal Takeaways**

The Value & Assessment Matrix proved crucial for reconciling subjective viewpoints. Different stakeholders often hold divergent attitudes toward the same building; the matrix enables a systematic synthesis of these positions in a single diagram. Equally important was translating subjective data into actionable spatial decisions: projecting matrix outputs onto plans, elevations, and sections, then using colour-coded layers to signal strategies for preservation, redevelopment, and value-adding interventions. After P2, I expanded both the matrix and the mappings to clarify what to preserve, what to transform, and where to introduce new value.

I also recognised that building technology is not only about feasibility; it refines the concept, aligning design intent with performance—reducing energy demand while improving comfort. Overall, this stage taught me that completing a design is not about fixating on a single idea; it requires moving fluidly across multiple scales and research lenses, weaving them into a coherent architectural proposition.

My undergraduate study helped me understand the breadth of architecture: I learned about different building types and how to appreciate their beauty.

My master's study, however, has led me into the depth of architecture. It filled the gaps in my understanding of materials and construction, and also made me rethink what "beautiful architecture" really means. How much energy is sacrificed behind the kind of beauty I used to pursue? What defines beauty in the first place? Renderings online always look perfect, but what about people's real experience of the building? How do we balance green design and aesthetics?

## **Critical Reflection and Positioning**

Looking back at the project, I recognize that my design process was not as efficient as it could have been. Compared to others who developed a single, well-supported intervention, my proposal appears modest but is in fact quite complex. This largely stems from the lack of clarity in my research outcomes, particularly the difficulty in translating them into precise spatial decisions.

Without clear spatial conclusions, the project entered a period of uncertainty. I relied on intuition but struggled to articulate it, which led me to address too many aspects of the building, including those not essential to the core intention.

In the early stages, my research focused more on social aspects than architectural questions, leading to an emphasis on interior conditions rather than spatial strategies. However, returning to architectural thinking – especially in terms of sustainability, transformation, and material reuse – proved to be a valuable shift.

Despite these challenges, this project marks an important step in my development. While the result may not fully meet my expectations, it has clarified my understanding of what architecture can address and the role an architect can take.

Reflection

March 2026

Master track Architecture  
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AR3AH115 | 2025-2026

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