

Restoring The Flow

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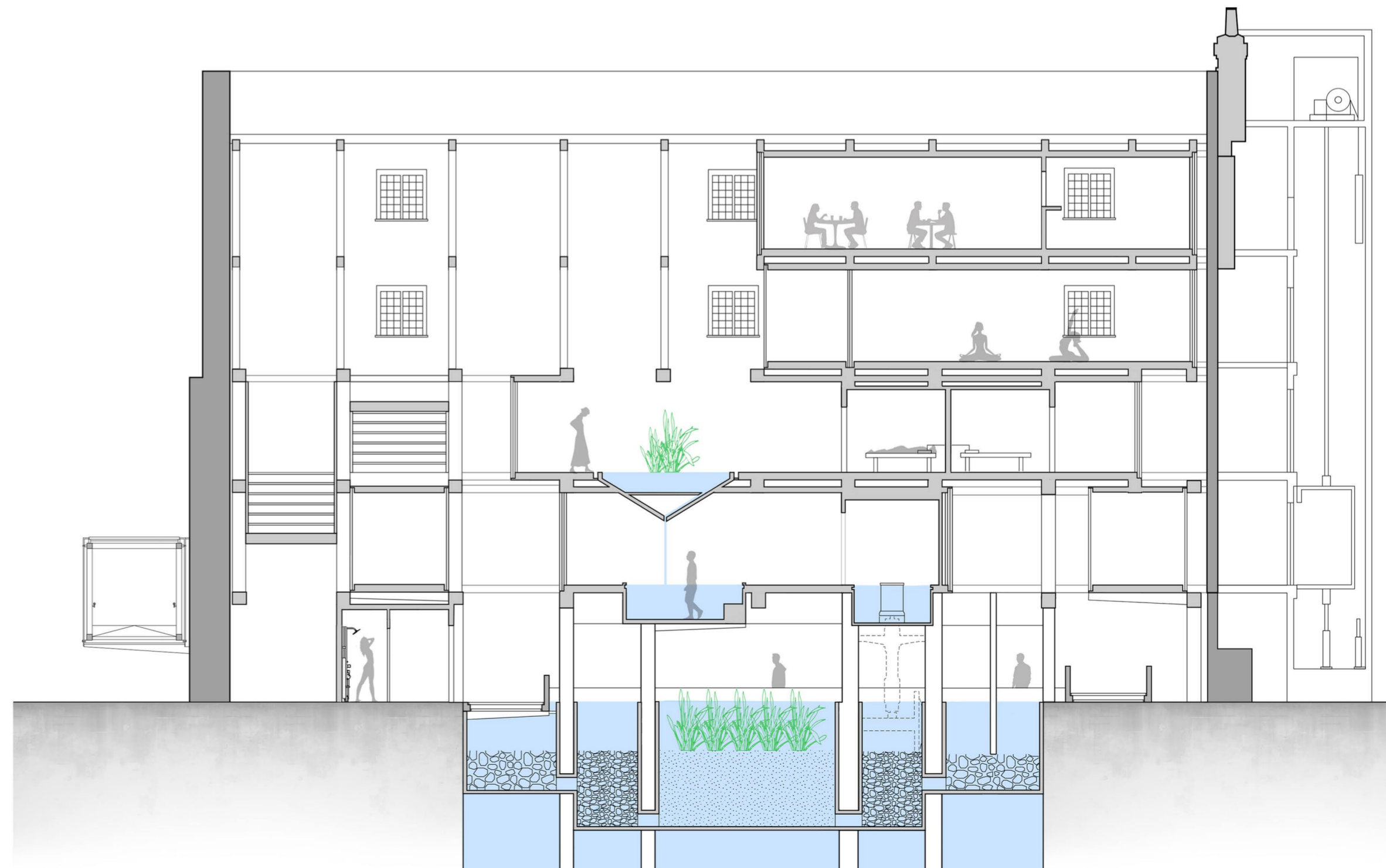
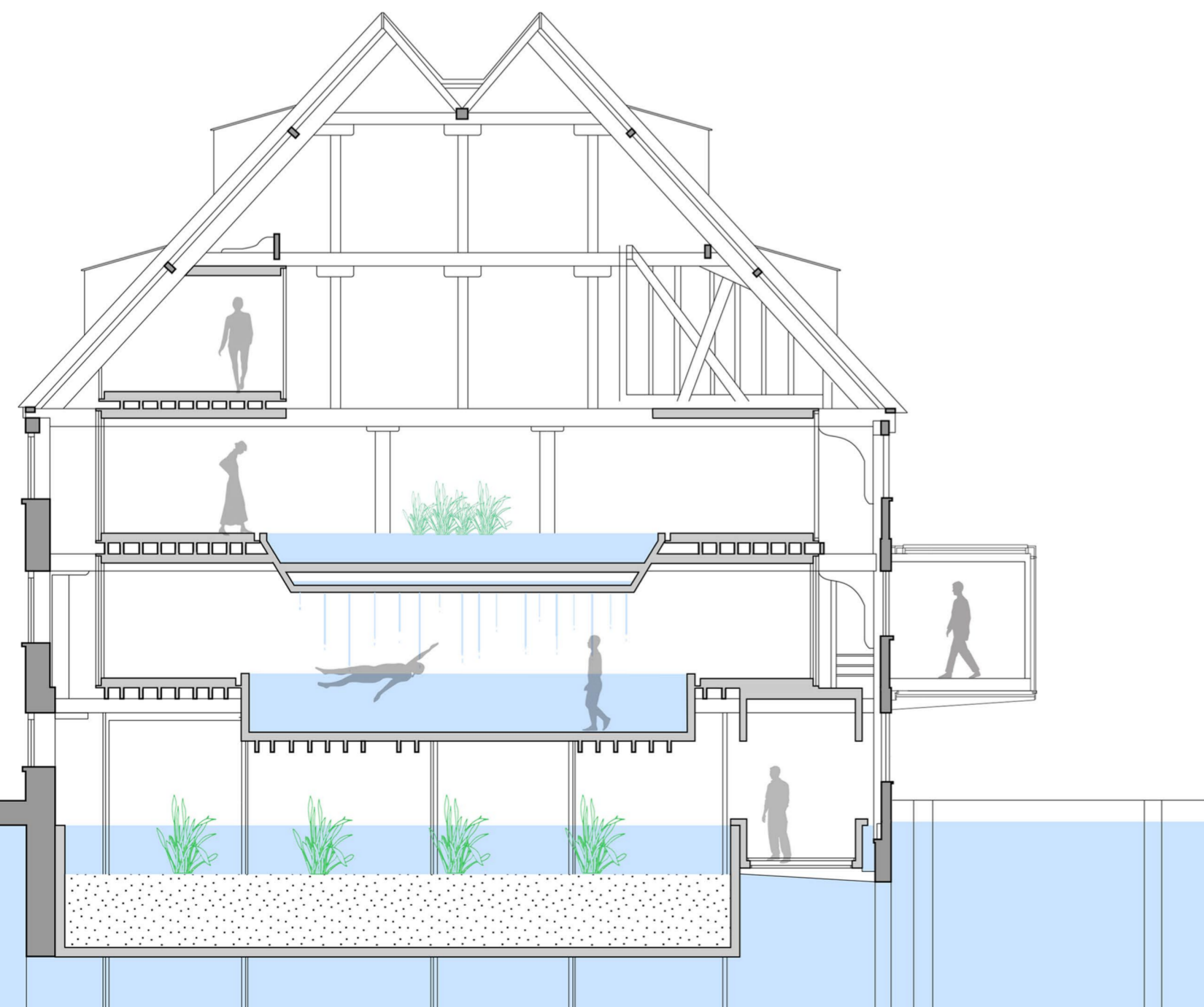
The project aims to breathe new life into the historical heritage while revitalizing the surrounding communities. It repurposes The House Mill, a major Grade 1 listed building as a sustainable spa based on the circulating flow of water.

The project embraces a natural water purification system powered by hydroponic plants with a firm commitment to sustainability. Contaminated water from the River Lea finds renewal as it passes through a designed hydroponic regeneration pond. Using a natural filtration system, hydroponic regeneration ponds restores the purity of the water and creates a harmonious balance between the building and nature.

Upon its transformation, the revitalized water returns to the River Lea, completing a cycle of regeneration. The spa allows visitors to embark on a multi-sensory journey, experiencing the sustainable economic cycle of water with their own eyes and bodies. Through immersive interactions and captivating visuals, guests gain a profound appreciation for the essential nature of water and the importance of responsible resource management.



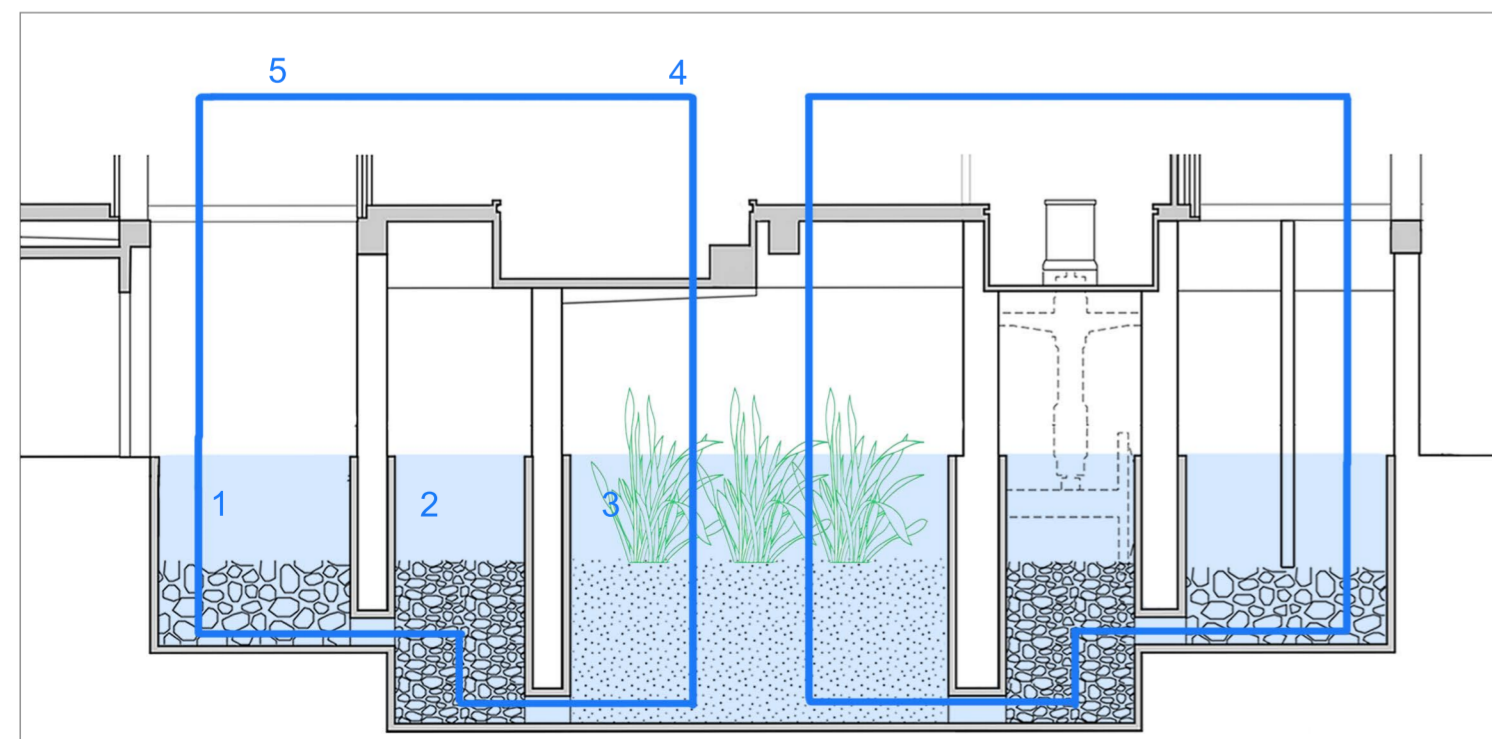
Second Floor - Hydroponic Regeneration Pond





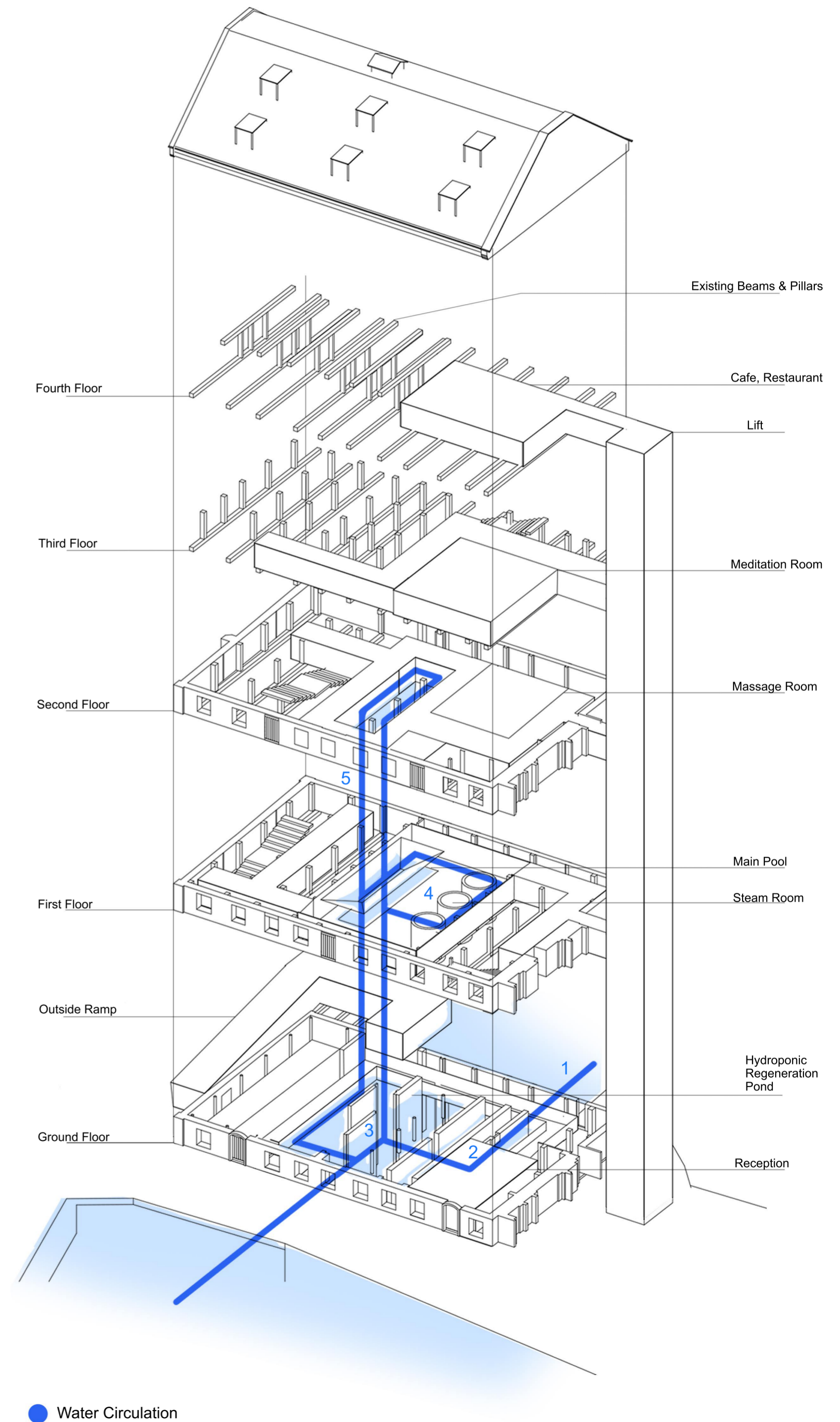
Ground Floor - Hydroponic Regeneration Pond

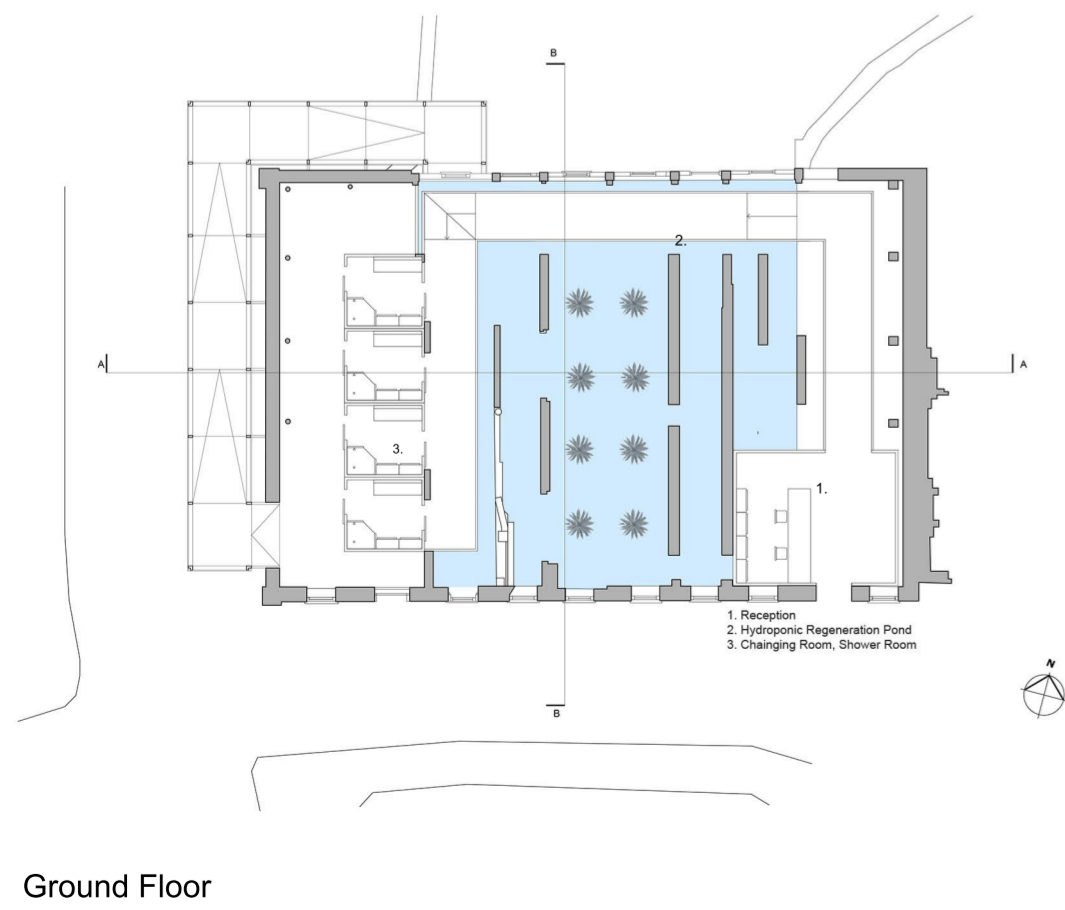
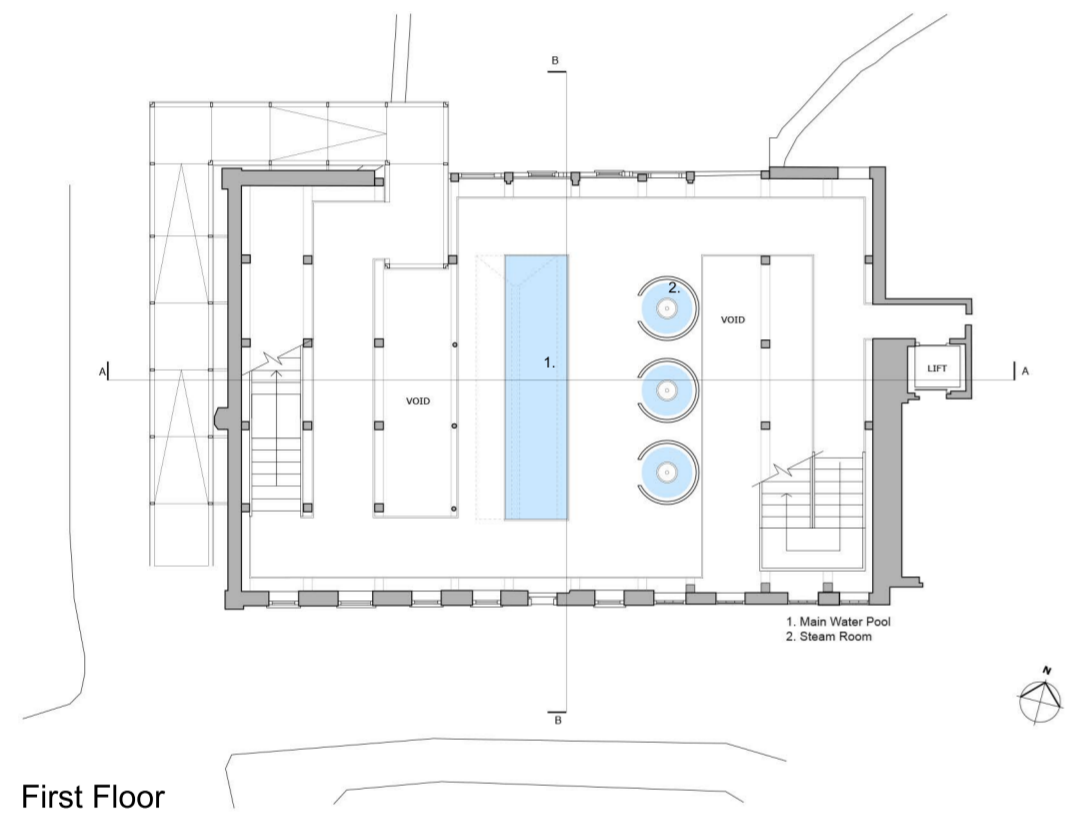
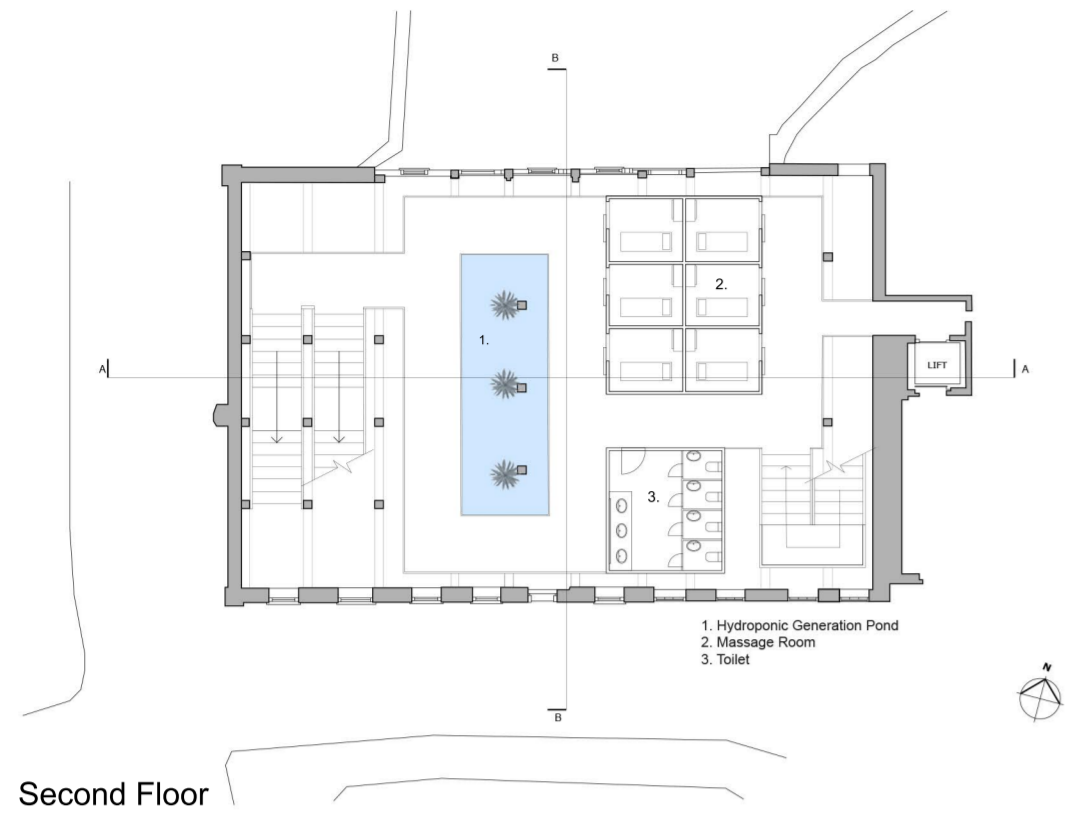
An essential water quality management problem for public bathing facilities uses hydroponic plant purification systems to achieve an environmentally sound and natural filtration process. A hydroponic regeneration pond is a balanced ecosystem where plant materials, microorganisms, and nutrients gather to create living water through gravel and sand filtration. A chemical- and disinfectant-free filtration system that purifies through a natural process. The hydroponic regeneration pond reused the space of the existing water mill to solve the problem of overflowing water in the high tide. A natural water circulation system was added to the historic heritage to create a sustainable interaction between architecture and nature.



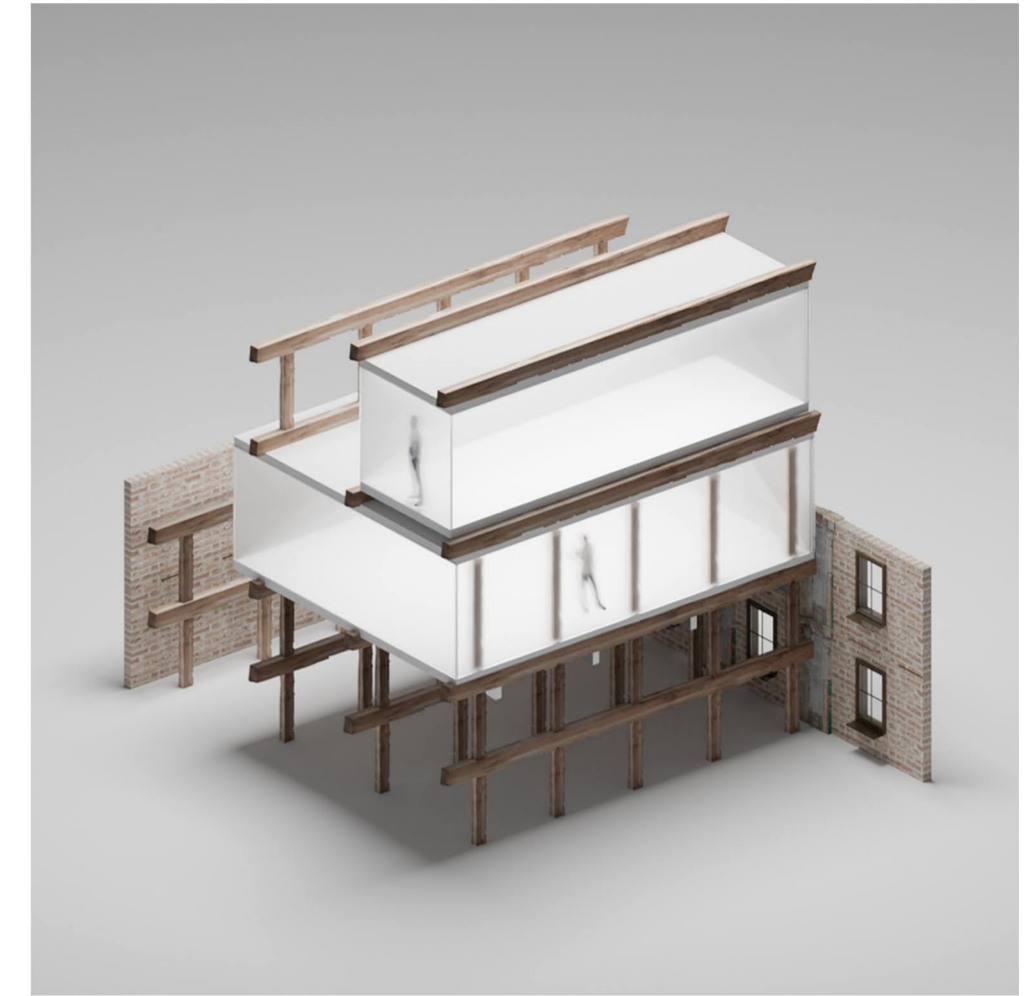
Water Purification Process

1. When the river is high tide, the river water naturally overflows the gravel bed. In this process, it goes through the primary filtration process.
2. Water naturally flows into the secondary filter by gravity.
3. At the end of the purification process, water undergoes a sterilization process in hydroponic regeneration ponds.
4. The purified water is pumped into the spa.
5. The water used in the spa is once again filtered and sterilized before returning to the river.





Spa Interior View (Ground Floor - First Floor - Second Floor)

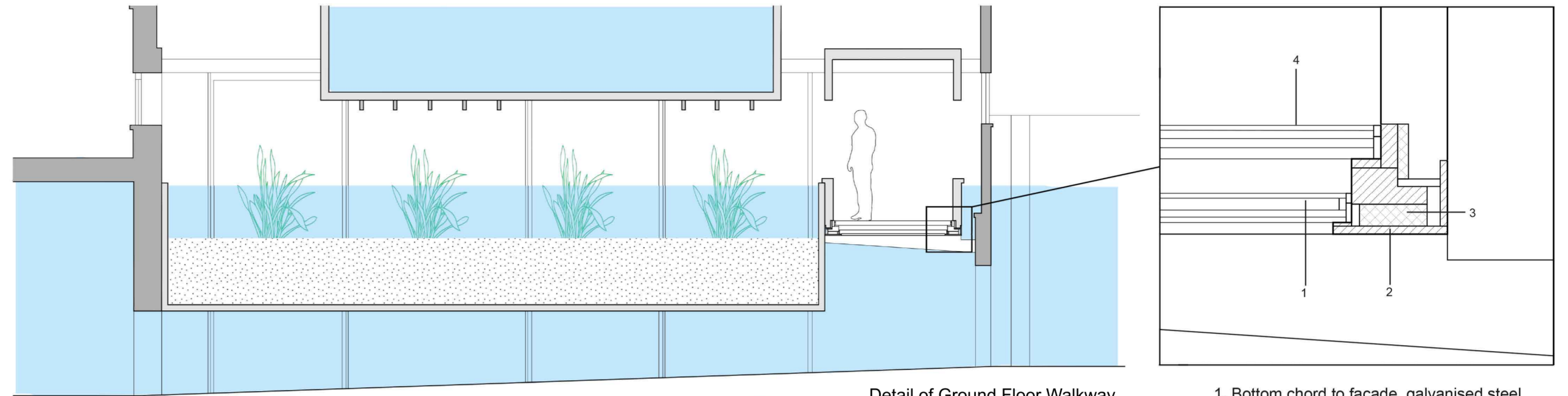


Concept Model

One of the most important elements of the project is the adaptive reuse of existing buildings. This project chose to add a new building by utilizing the wooden structure and brick walls of the existing house mill. The existing wooden structure and brick walls will support the new structure. And glass passages are installed between the wooden structures to create a continuous sequence. People walk between the wooden beams and bricks reflected in the glass. The visual effect reflected on the glass unites the old and the new. And the old space is projected into the new space to create a new journey.



A. Ground Floor - Glass Walkway

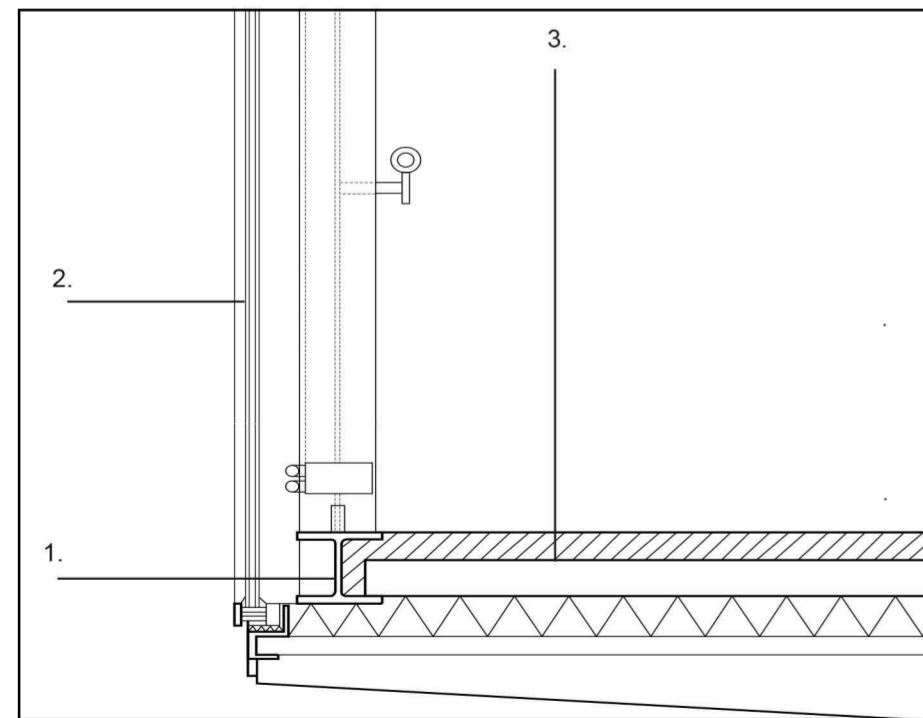


Detail of Ground Floor Walkway

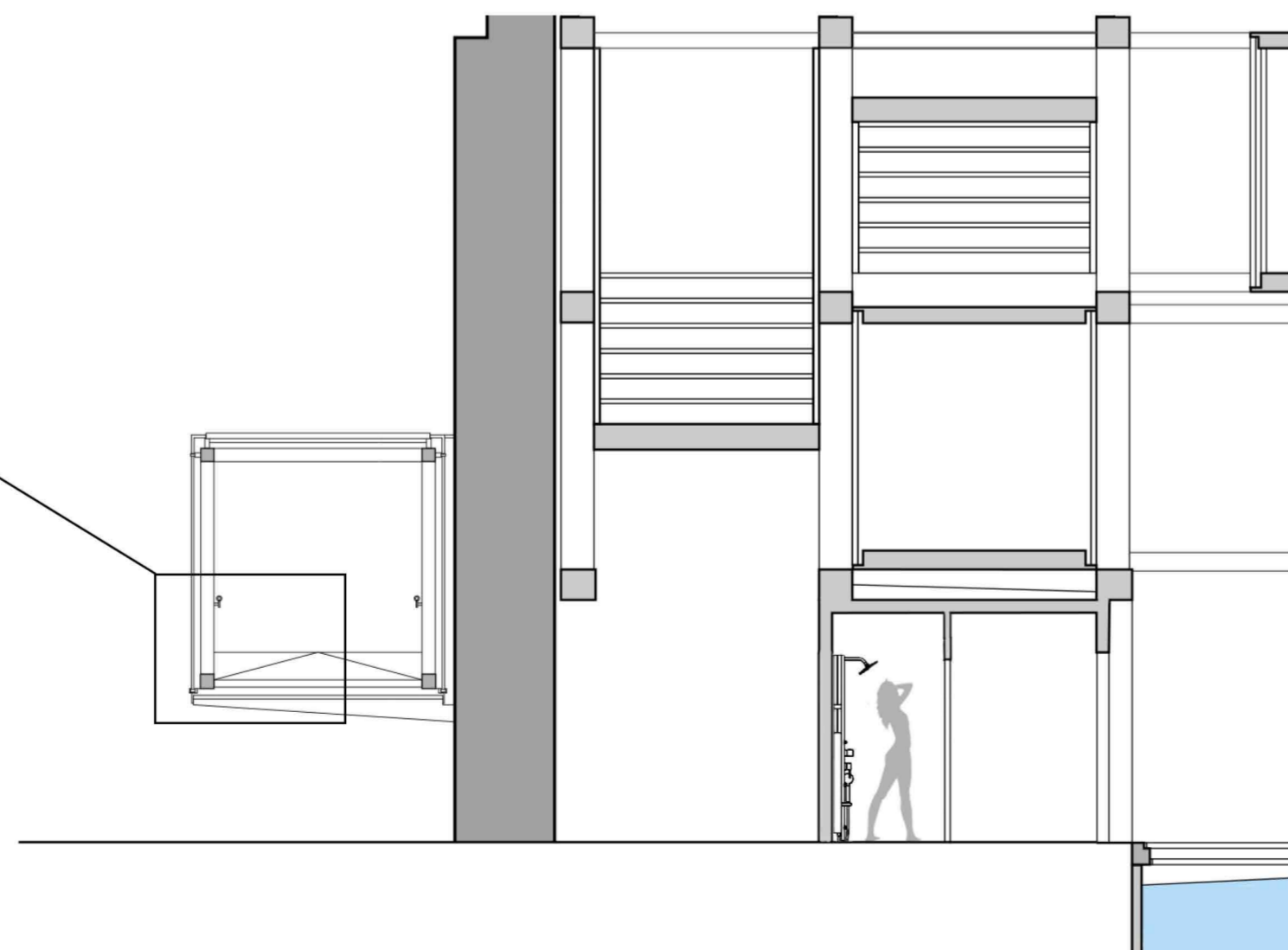
1. Bottom chord to facade, galvanised steel
2. Cover plate, 10 mm stainless steel
3. Thermal insulation, 30 mm unplasticised PVC
4. Glass floor:
 Wearing layer, 8 mm toughened safety glass, printed with dots to provide non-slip finish
 38 mm anti-bandit laminated safety glass
 40 mm air cavity
 green foil bonded to insulating unit
 8 mm float glass + 16 mm cavity +
 16 mm laminated safety glass

A. The ground floor walkway is the first space people encounter upon entering the building. The existing water mill was replaced with a hydroponic regeneration pond. People can watch the water being purified step by step as they pass through this corridor. The floor of the existing building was removed, and a corridor with a glass floor was installed in accordance with the high tide level. Through this, the visual effect of the building reflected on the glass floor at high tide maximizes the beauty of the water space.

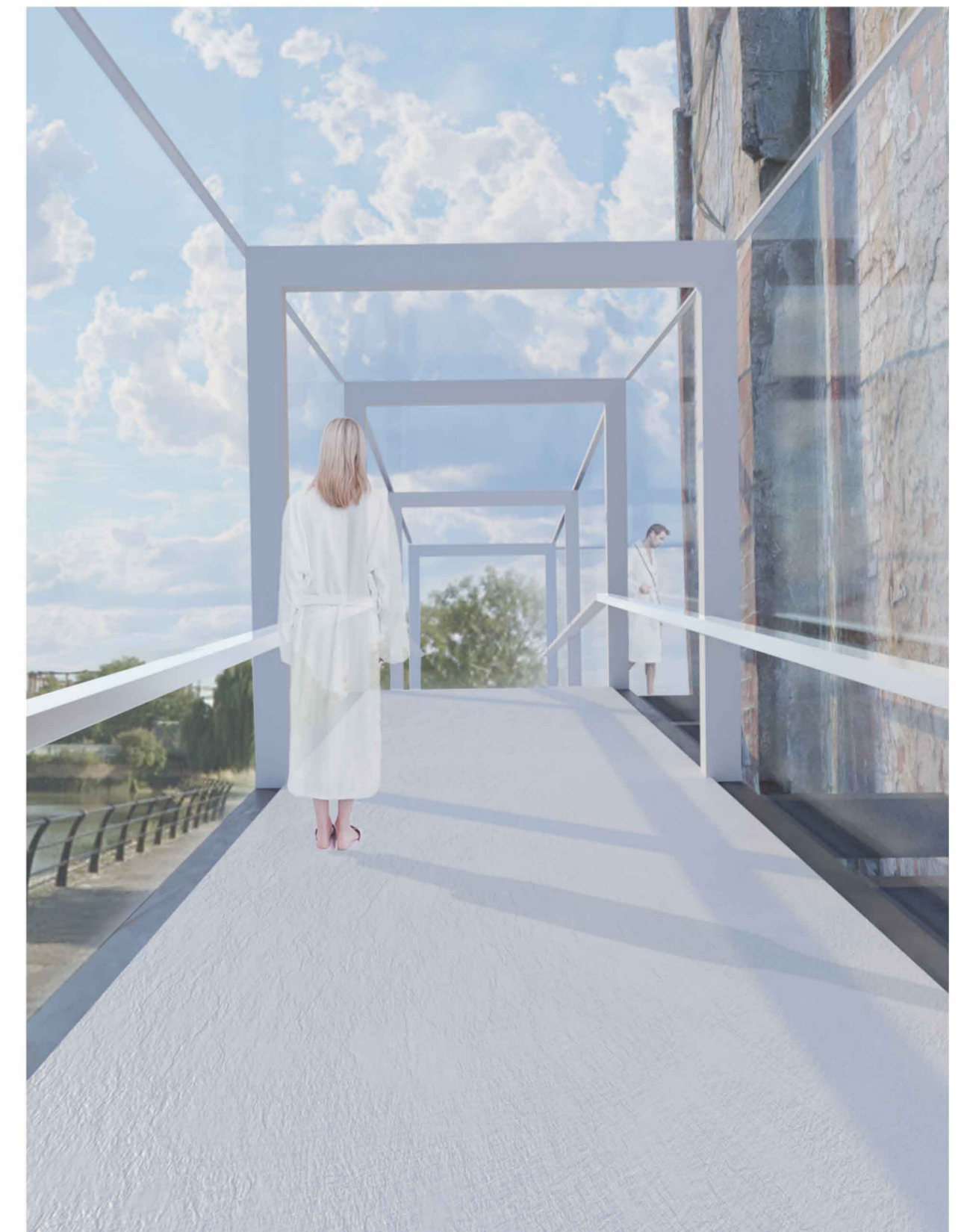
B. After changing clothes, people go to the spa on the first floor. The corridor connecting the ground floor and the first floor is connected by a ramp. This ramp starts inside the ground, passes through the outside of the building, and connects to the inside of the first floor. People experience the harmony between the building and nature through a continuous sequence connected by ramps. Historic architecture of the House Mill, views of the pristine River Lear, etc.



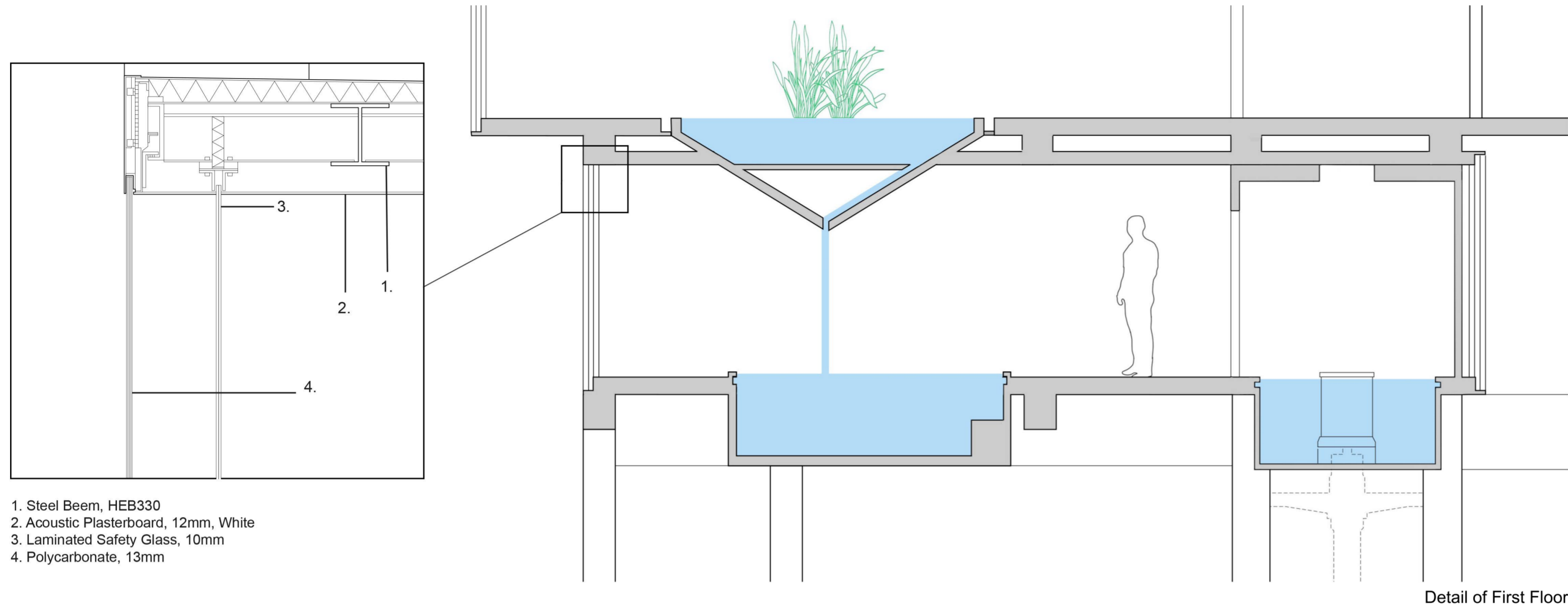
1. Steel I-beam 140mm deep
2. Double glazing : 5mm toughened glass
3. Floor Construction :
 60mm Cement and sand screed sealed ribbed metal sheeting
 84mm deep Aluminium sheeting 35mm deep



Detail of Outside Glass Ramp



B. Outside Glass Ramp (Ground Floor - First Floor)



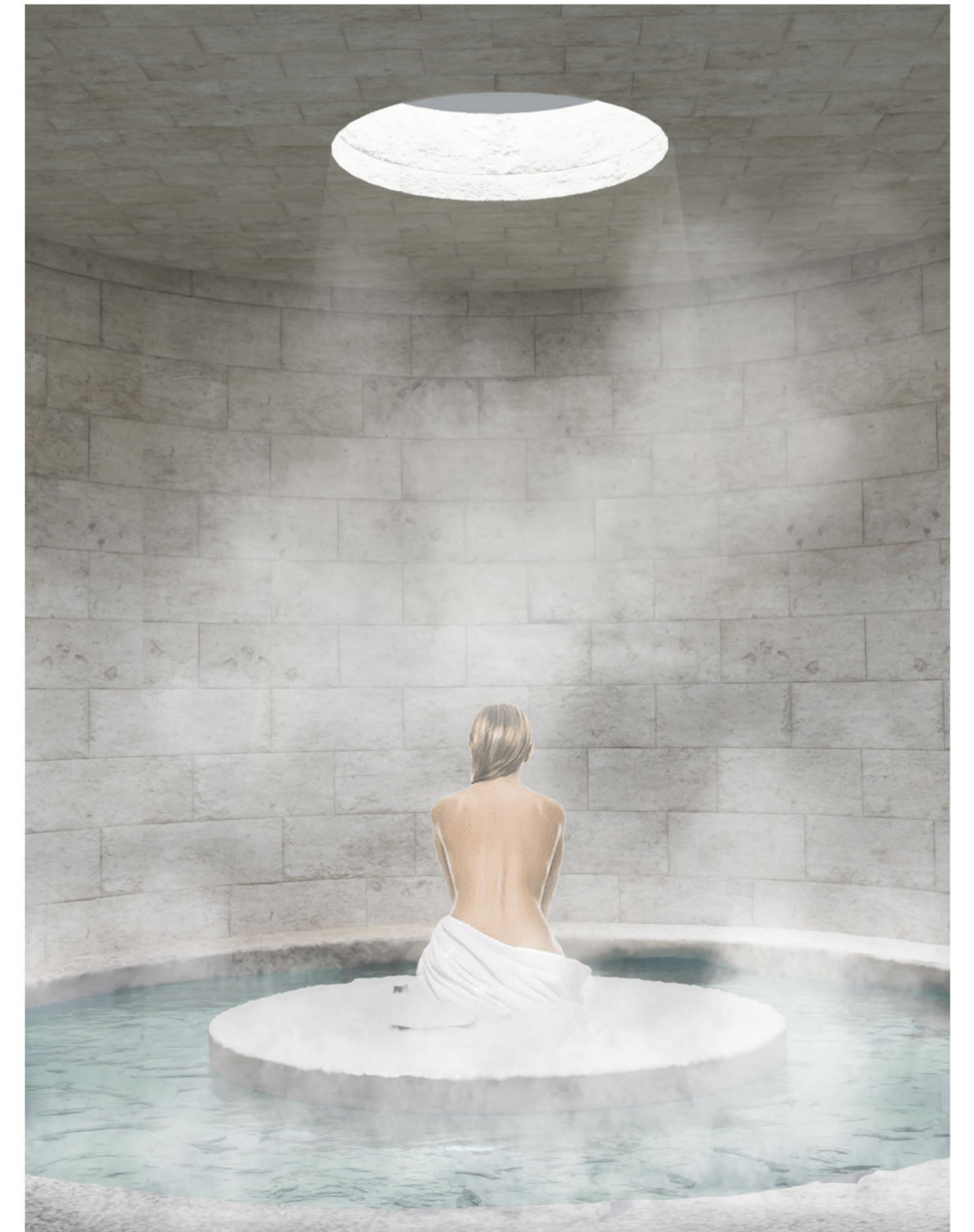
- 1. Steel Beam, HEB330
- 2. Acoustic Plasterboard, 12mm, White
- 3. Laminated Safety Glass, 10mm
- 4. Polycarbonate, 13mm

C. The spa main pool located on the first floor reused the hopper of the existing building. The visual effect of the hopper reflecting in the water expresses the harmony between the history of the existing building and the new space. And the hopper is connected to the hydroponic regeneration pond on the second floor, and the purified water falls into the main pool on the first floor. The auditory effect of falling water stimulates people's senses.

D. The existing millstones located on the first floor were reborn as steam rooms. A steam room made of millstone provides a private space. The polycarbonate material mainly used on the first floor controls the light coming from outside so that people can experience the water through more delicate senses. The first floor delivers various sensory effects to people through the water space created by the historical space and the new space, and allows them to experience the circulation of water.



C. First Floor - Spa Main Pool



D. First Floor - Millstone Steam Room