

Reading Dance Studios

Design Journal by Dennis Karolev

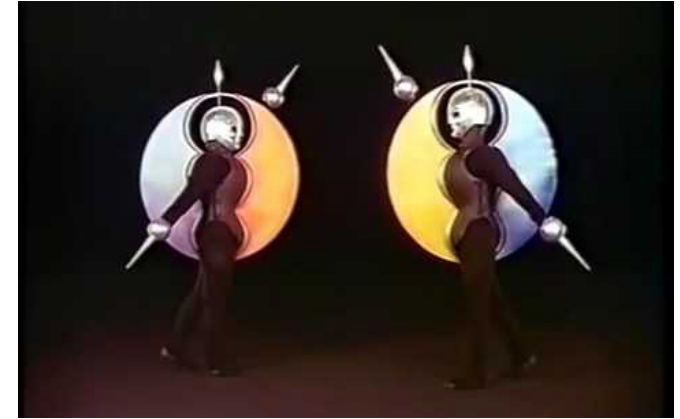
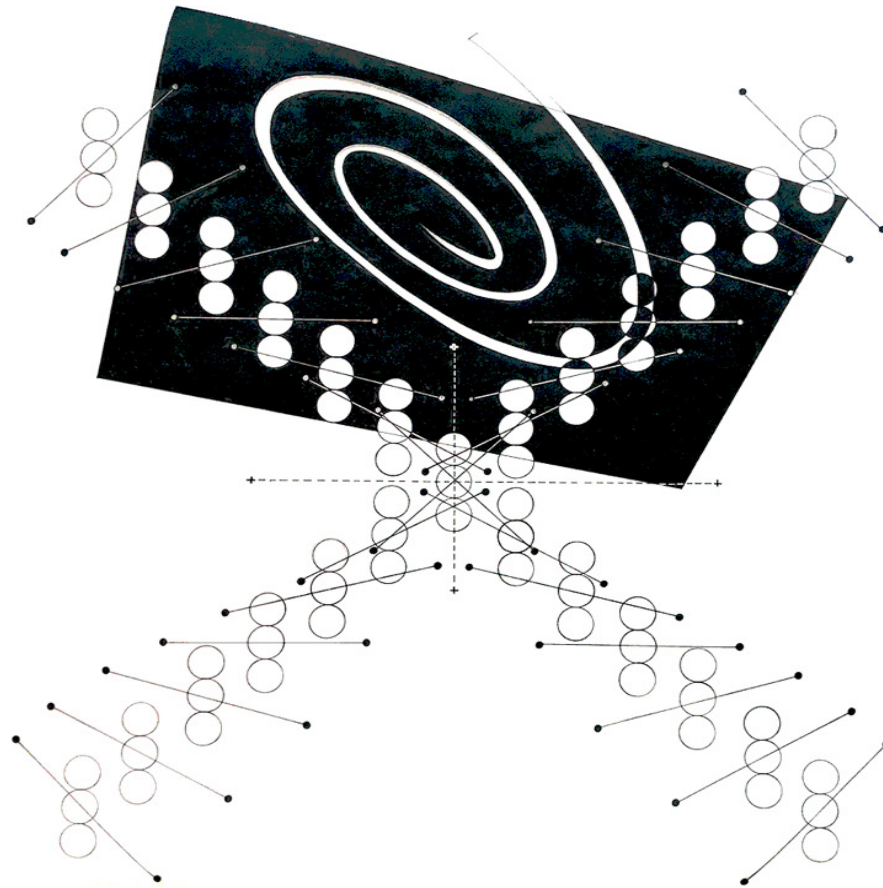
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Project Manifesto

My project uses the metaphor of the fabric in a search for alternative approaches towards generating spaces. This metaphor is translated into the architectural elements such as columns, floor slabs and roof structures that resemble a draped piece of fabric. This analogy acts as a link between the historical significance of the site and Reading in general as a cloth manufacturing town and the nature of the dance and movement - something that just like the form of a wrinkled piece of cloth is evanescent, natural and beautiful in its imperfections.

High-tech structures aim to celebrate organic shapes and irregular compositions, while accommodating the needs of a cultural centre in a sustainable and structurally efficient manner. The building is optimised in order to provide lots of daylight, views towards the river Kennet, enhanced river walkway and in general: a great experience both for the dancers and the wider public.



Costumes and movements from the third part of the Triadic ballet.
Credit: <https://www.youtube.com/watch?v=MsoDEDAQS28>

While the ideas of the Bauhaus revolutionised the fields of art and architecture in the early XX century, they have left a significant mark in the history of ballet too. Oskar Schlemmer - a Bauhaus teacher, sculptor and painter was concerned with applying the avant- grade ideas of time to ballet. The result was "Das triadisches Ballett" (The Triadic Ballet) - a performance so groundbreaking and controversial for its time that it would not seem out of place on the contemporary scene. Oscar Schlemmer abstracted the dance to a point where the unique costumes make it hard to recognise at the human being inside. The dancers have been turned into obscure sets of geometry, reminiscent of a Kandinsky painting. 12 different costumes were crafted for the ballet - each corresponding to a certain movement. Schlemmer described his work as "artistic metaphysical mathematics" and that explanation perfectly fits the geometrical nature of the dance. The Triadic Ballet consists of three parts - yellow, pink and black and all three convey a different atmosphere. While the first two are more fun and playful, the third 'black' part is very dark and ominous.

The Ye lower ship site



Fig.1 - The Oracle workhouse;
During the 17th and 18th centuries the Oracle workhouse was the main manufacturer of fabrics in Reading - providing work for the poor and having a fundamental role for the commercial growth of Reading.
Credit: Daphne Philips - Story of Reading, 1980

The Ye lower ship site is located in the town centre of Reading, next to the Oracle shopping centre and along the river Kennet. Currently the area is occupied by mostly commercial developments (see fig. 2) and at first glance seems to lack any cultural significance. However, since Reading was first founded centuries ago, the river Kennet has been the main axis of development of the city and has accommodated some of Reading's most important historical buildings along its riverbanks (see fig. 1). The river walkway in the Ye lower ship part remains unused and in a deteriorating state, however, the rich history of the site and its central location reveal opportunities for reconnecting with the rest of the river walkways and becoming a socially and culturally enhancing space.

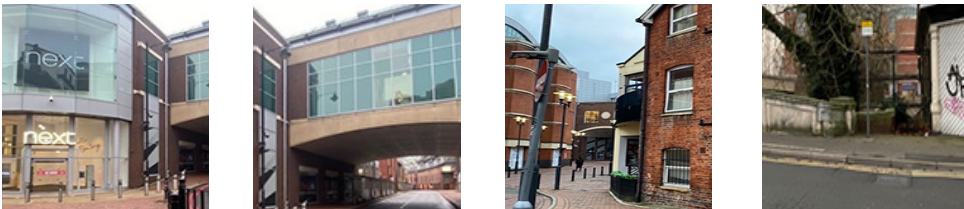
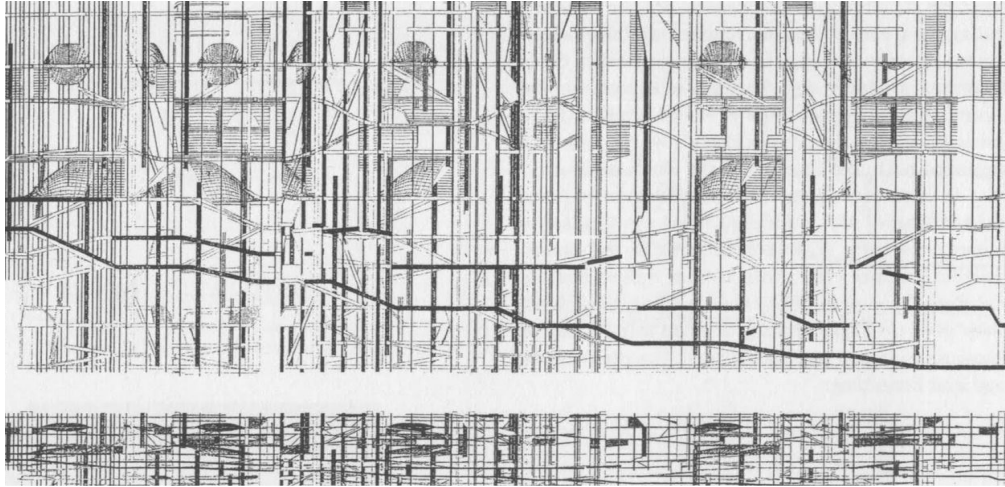


Fig.2 - Photos of site; showing parts of the Oracle development neighbouring with the Ye lower ship site and the deteriorating state of the river walkway (right).



Axonometric drawing showing the Ye lower ship site and river Kennet in green.



Jussieu libraries by OMA

This unrealised project by Rem Koolhaas uses warped floor slabs in order to question the ground datum and the modernist perceptions of space. In a paper-like manner, each slab is bending, sagging, folding or being cut through in order to accommodate the different functions of a public library. Whether it is the analogy of the folded paper or movements of the fabric, this canonical building by OMA and the Reading Dance Studio have a very similar approach towards creating spaces.

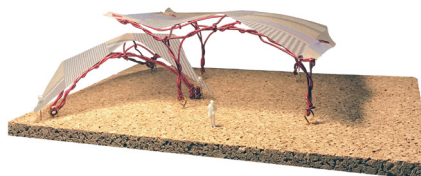


Gunta Stozl fabric designs

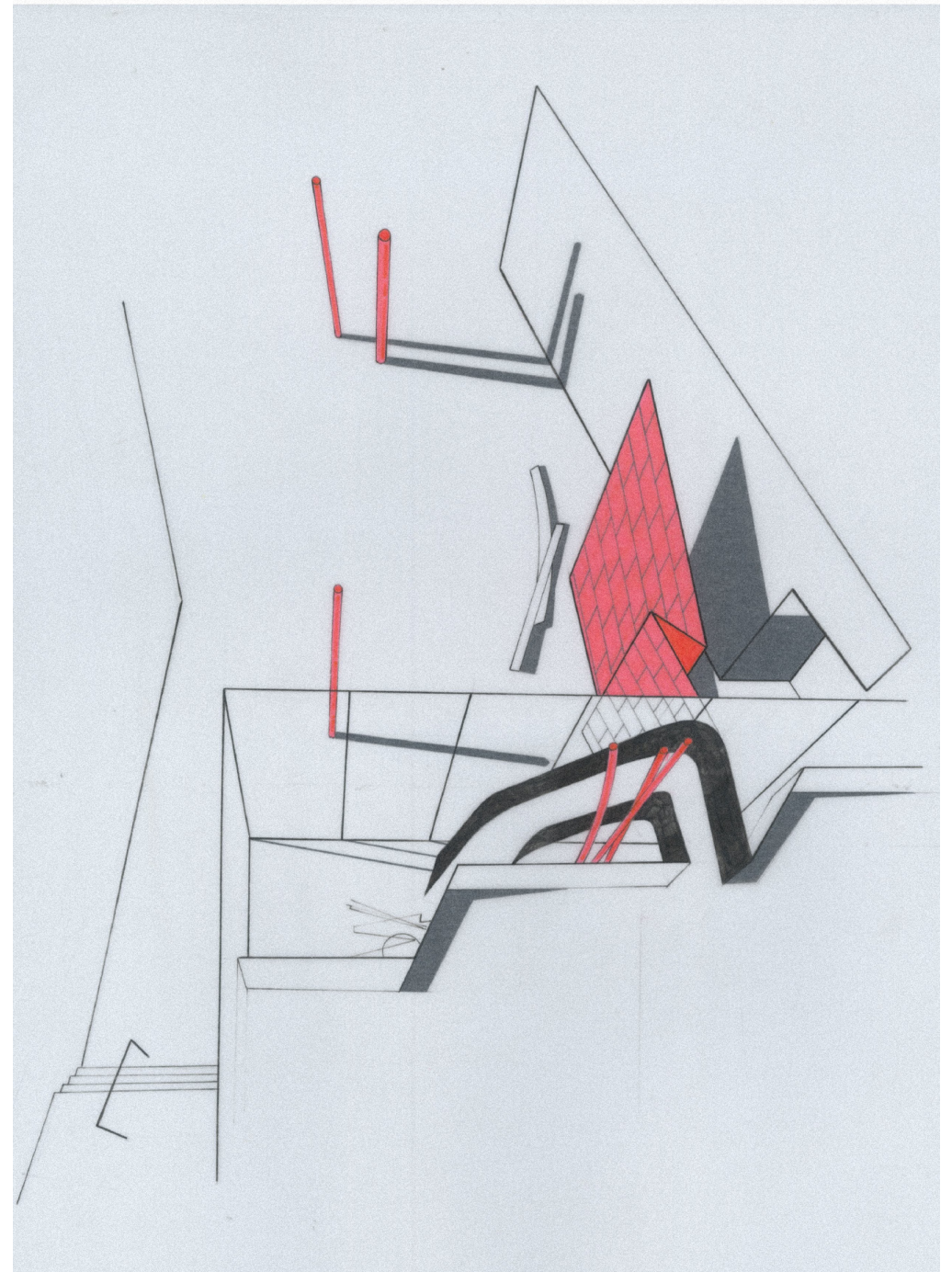
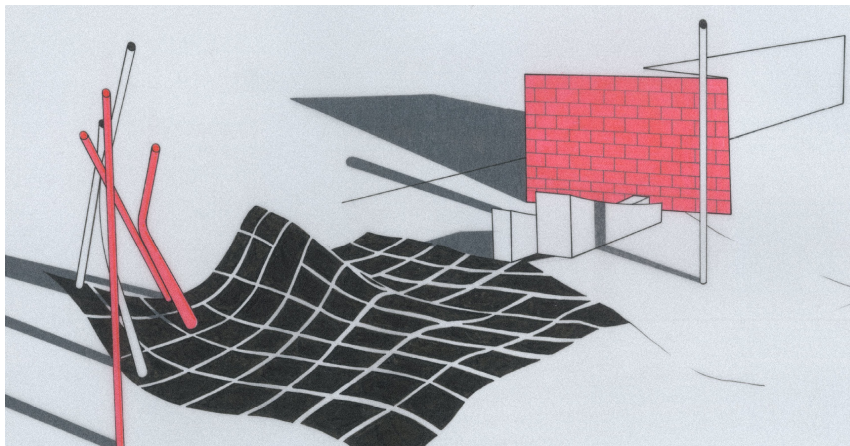
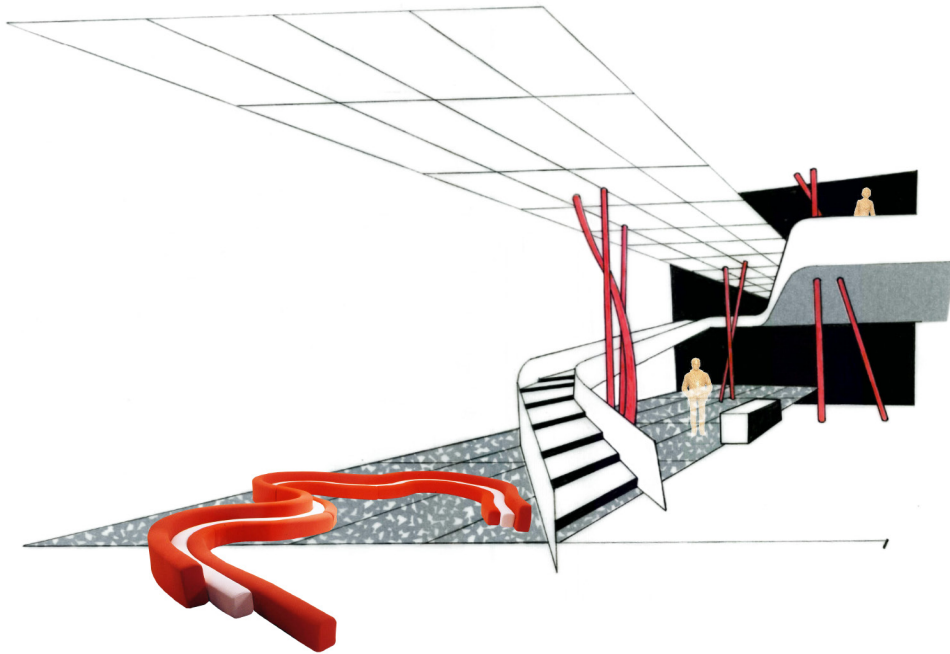
Names like Mies van der Rohe, Kandinsky, Paul Klee, Marcel Breuer went down in history and recall an immediate association with the school of Bauhaus, but the contribution of women to the school often remains untold, despite being quite significant. Although Gropius declared gender equality, the disciplines of architecture, sculpture and painting were still reserved for the "stronger sex". A woman would only be allowed to study "feminine" art forms like weaving or ceramics, but that did not stop them from mastering a craft and proving their artistic sensibilities and visions.

These fabric designs address important topics for the contemporary situation of the architectural profession - such as equality and gender discrimination. However, there is a lot more to be learned from them. Unlike the rigid nature of the Bauhaus ballet, a fabric does not comply with the limitations of Euclidean pure geometry. Rather, it folds, bends, wrinkles and stretches and each time it does a new unique set of forms is generated. Exactly these qualities allow it to become an accurate representation of dance and movement - something evanescent, natural and beautiful in its imperfections.

Concept model



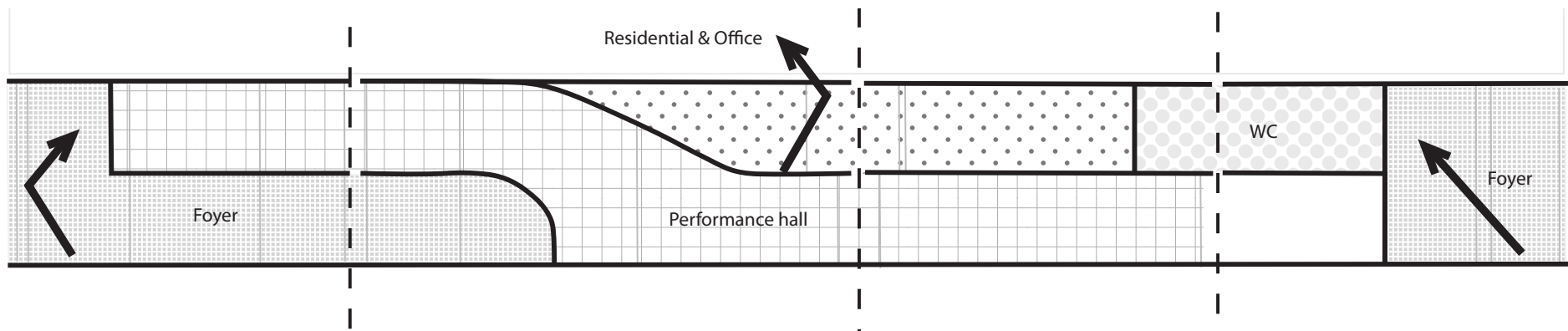
This physical model is an early attempt to generate an architectural language using the metaphor of the fabric. The bending and stretching become expressed through horizontal and vertical architectural elements such as the roof and columns. The geometries that resemble a draped piece of fabric, suggest a lightweight structure that works in compression in order to cover the large spans required by a dance studio.



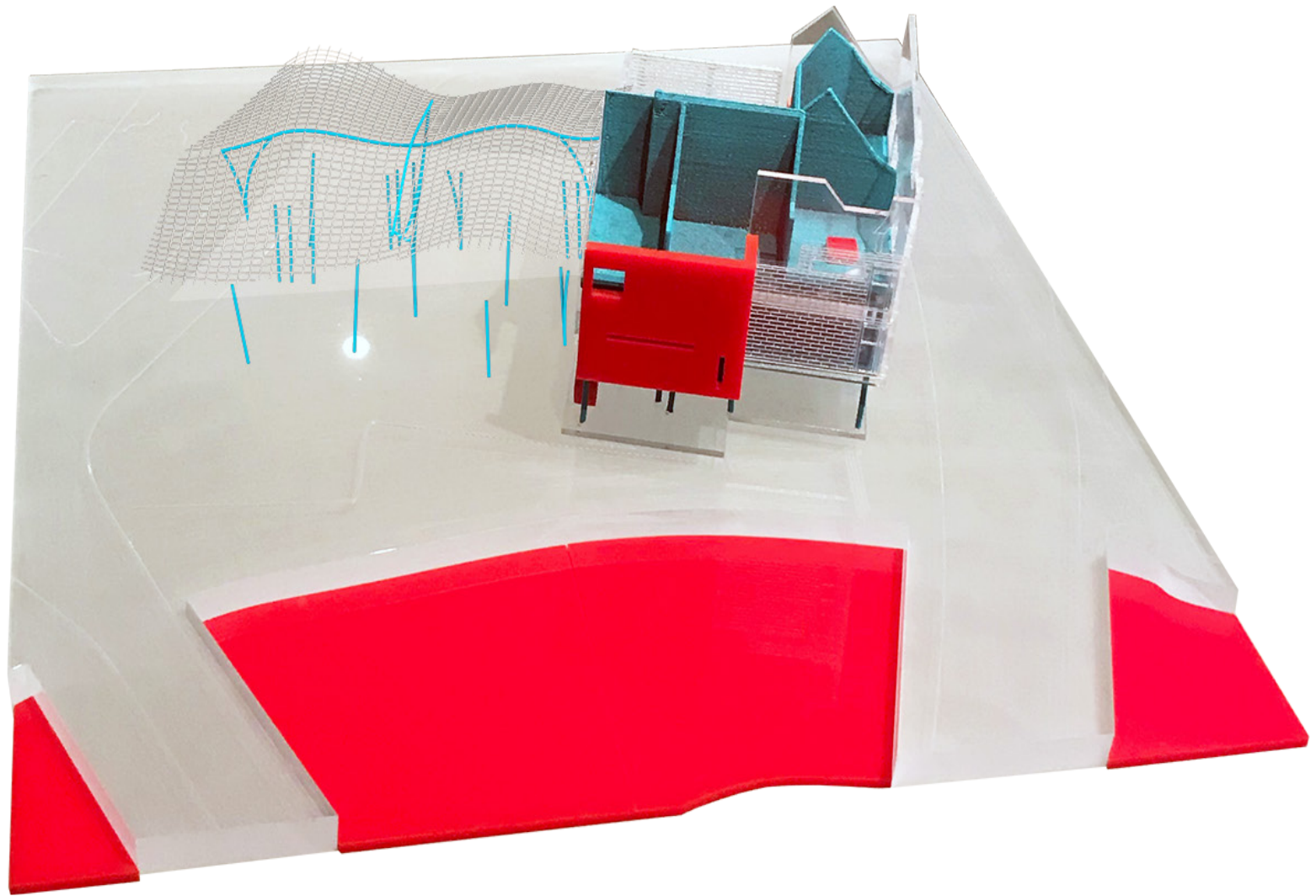
Massing strategy & relationship with historic facades

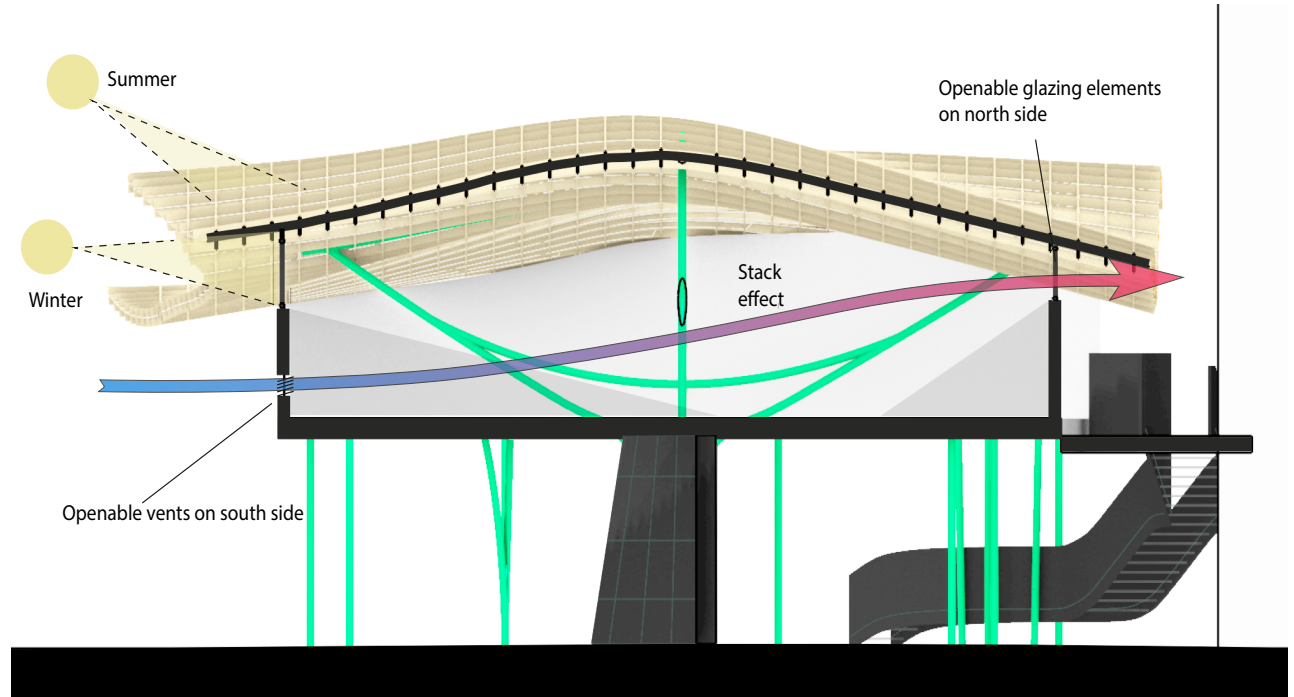
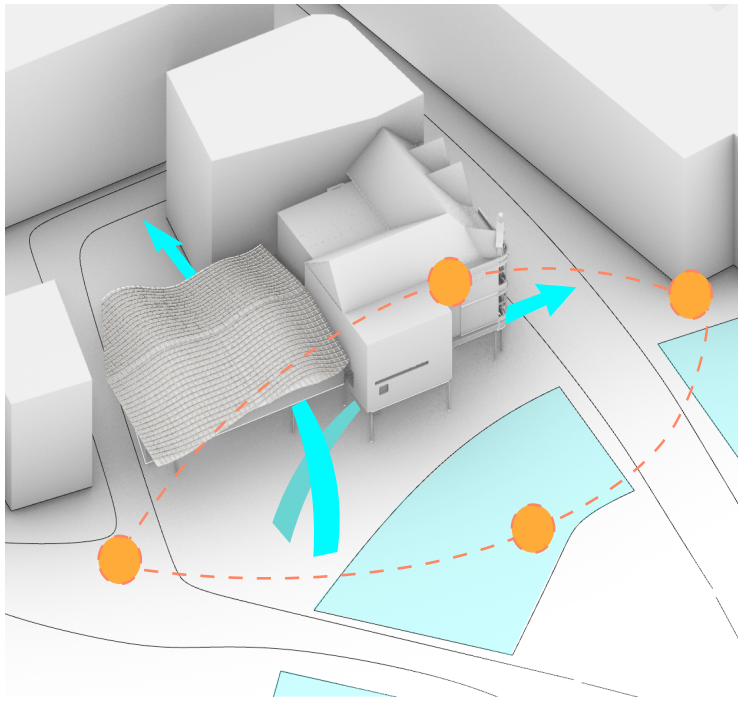
A unfolded diagrammatic section reveals the physical relationship between the different functions of the cultural centre. A main strategy of the project is to locate the most important spaces along the axis of the river (such as the foyer, dance studios, public plaza and residential unit). That way they gain access to lots of daylight throughout the day. Other spaces that do not require great amounts of daylight are landlocked at the back of the building.

For the visitors or the dance centre the promenade begins and ends with the foyer, making it the most important space of the building. For that reason it is a double height space, filled with daylight. The foyer can be accessed from either the east or west side (from Duke str. or the public plaza) - in a way it reinforces the axis of the river walkway and acts as a link between the realm of the Reading Dance Studios and the urban fabric of the town.



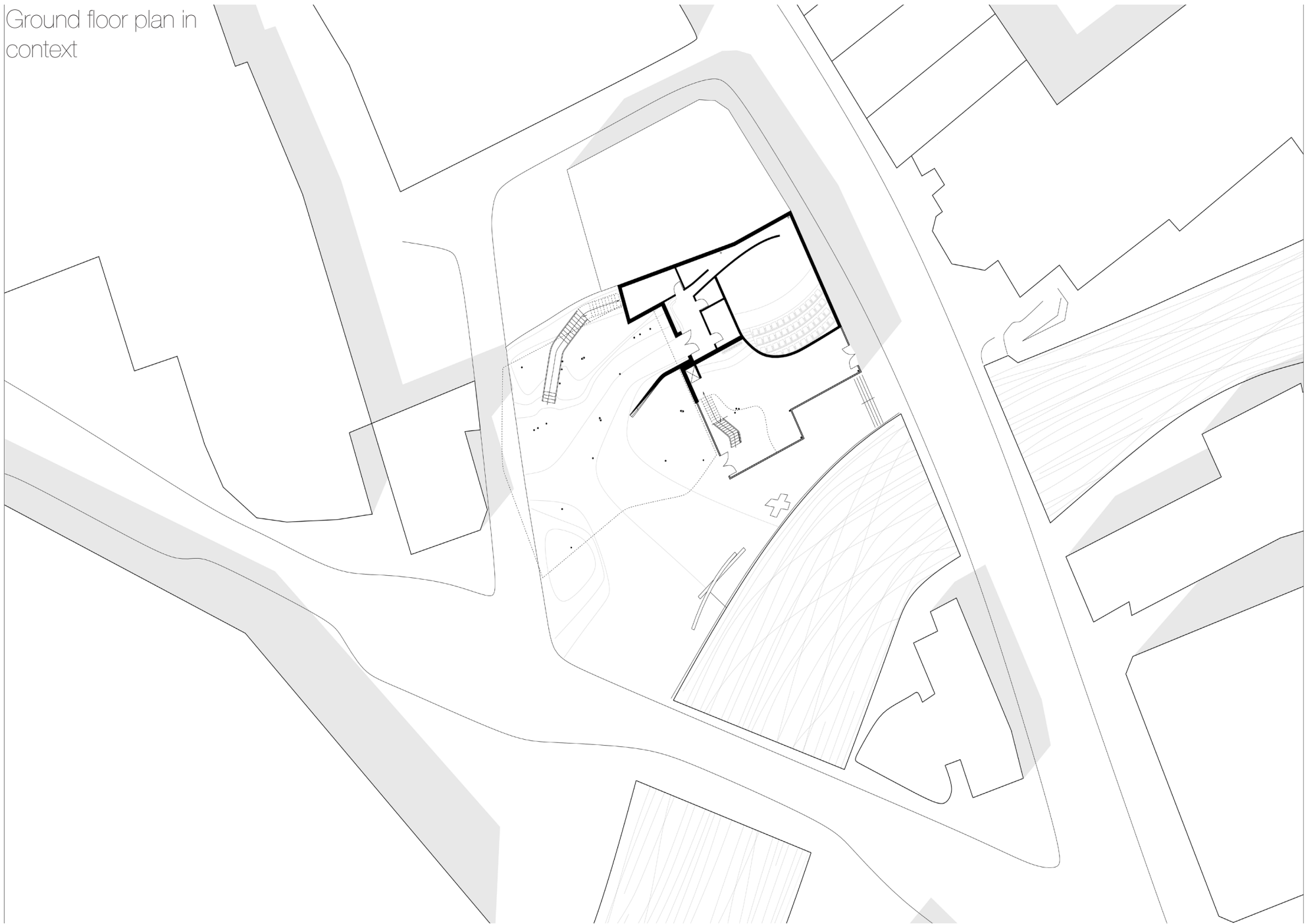
As well as manifesting the relationships shown in the diagrammatic section, this physical model reveals the relationship between the historic facades (shown with a transparent material) and the new intervention (shown in red and blue).



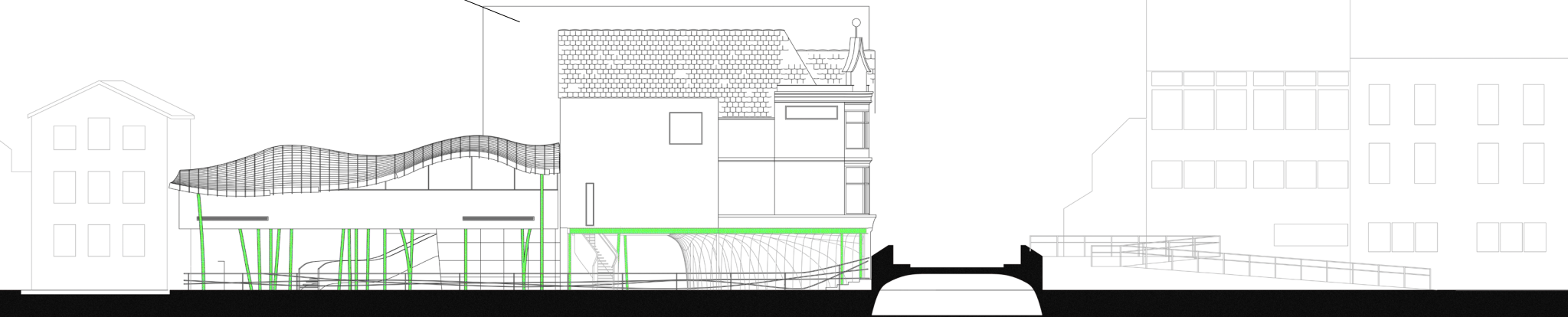
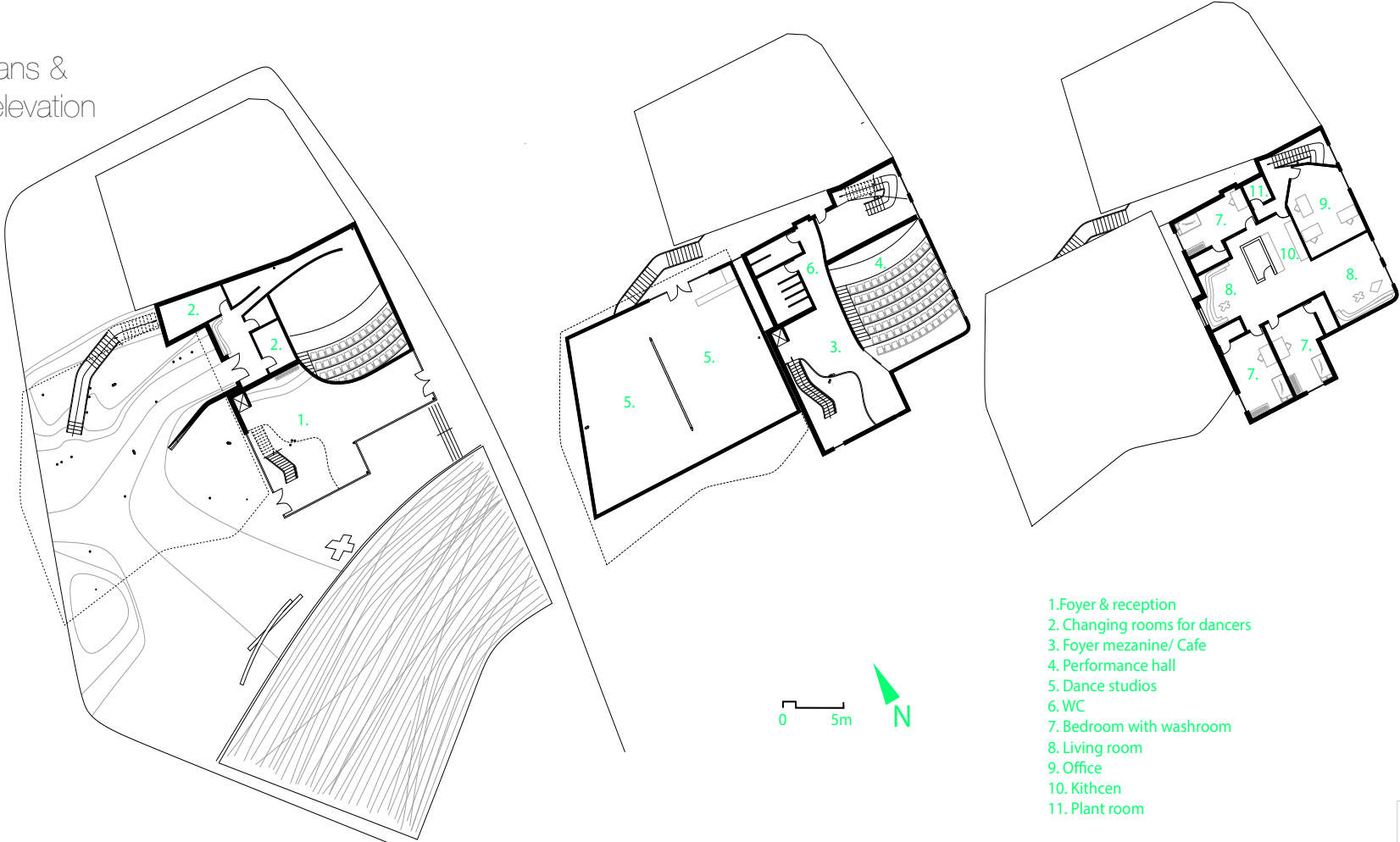


The environmental strategy relies mostly on the orientation of the buildings - facing the river. That way the building have access to daylight throughout the whole day and avoid the noise and pollution of the surrounding streets. A stack effect and cross-ventilation strategies optimise the ventilation in the building extension, while the overhanging roof protects its from overheating.

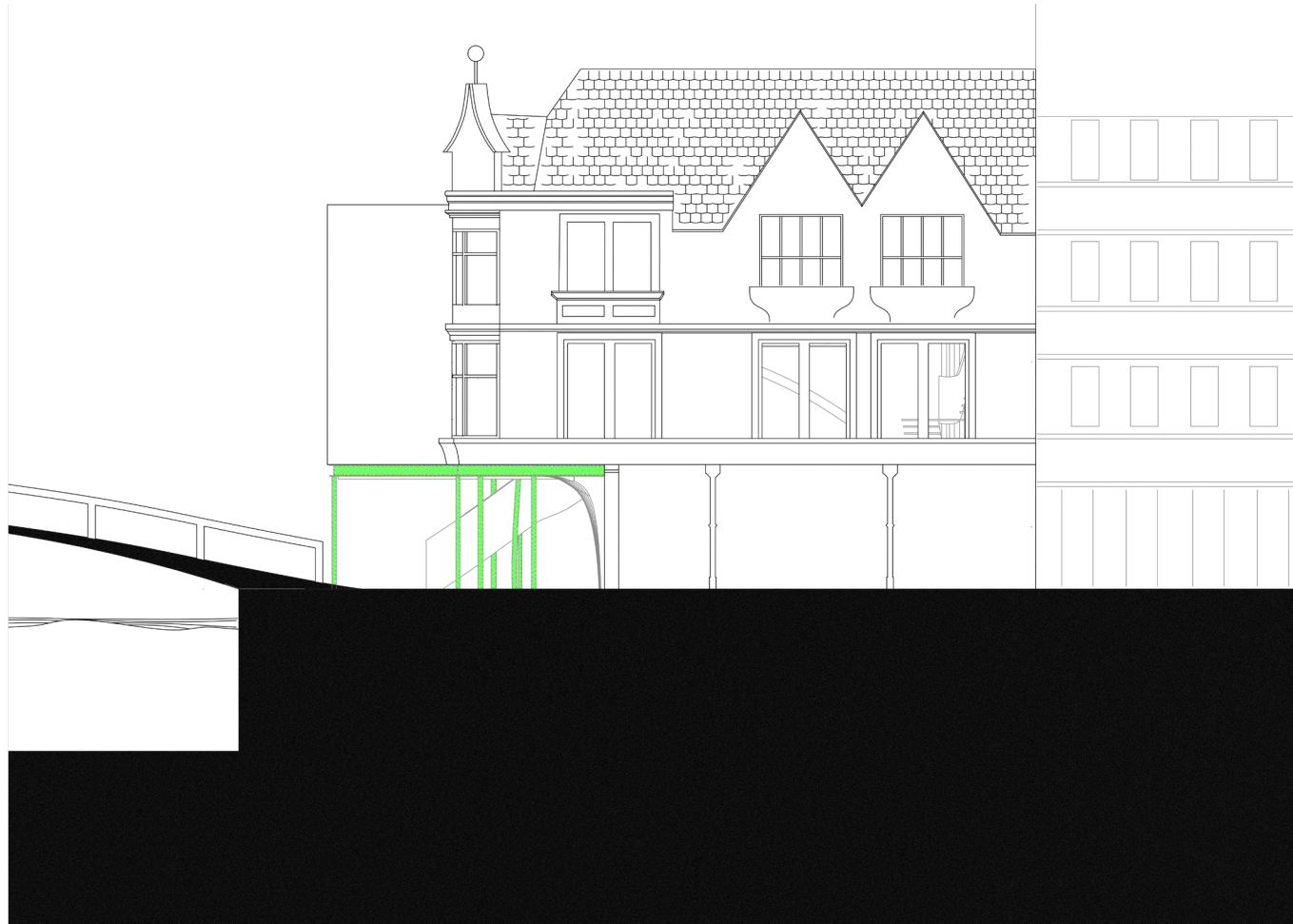
Ground floor plan in context



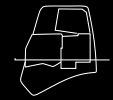
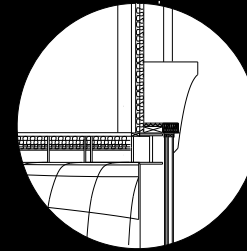
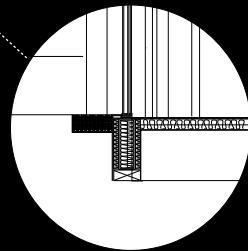
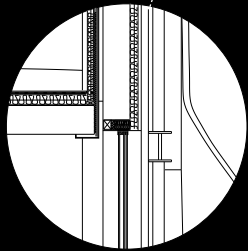
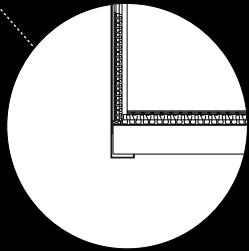
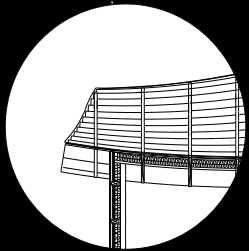
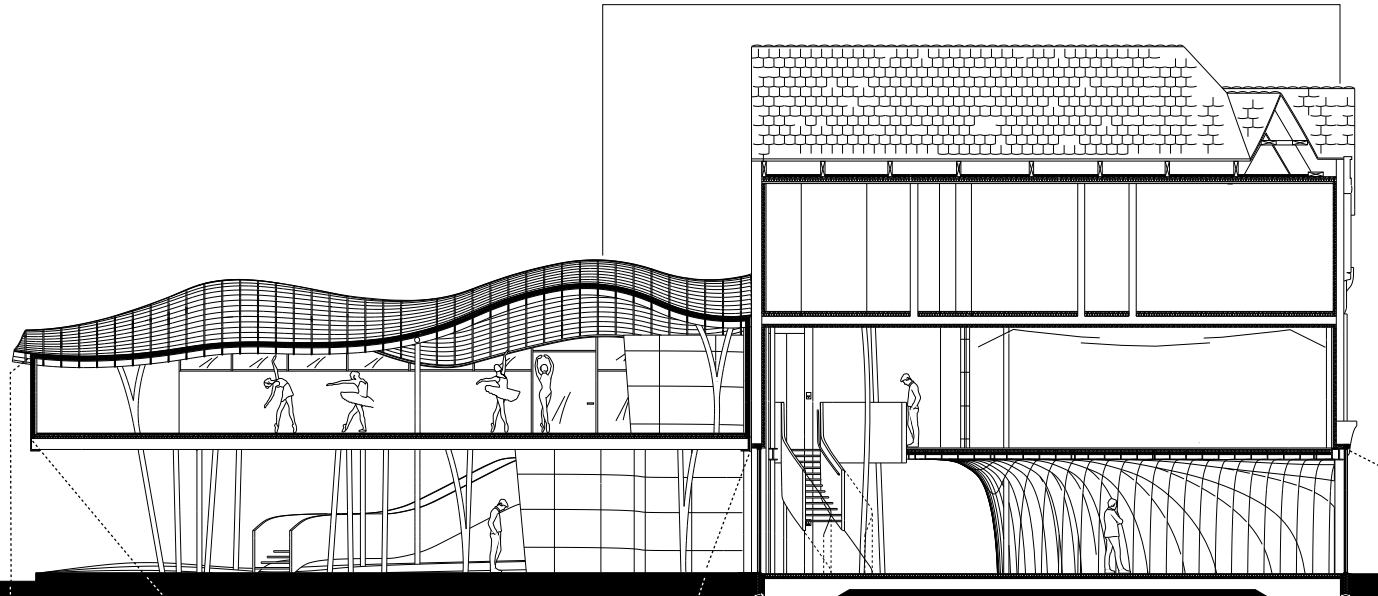
Floor plans & South elevation

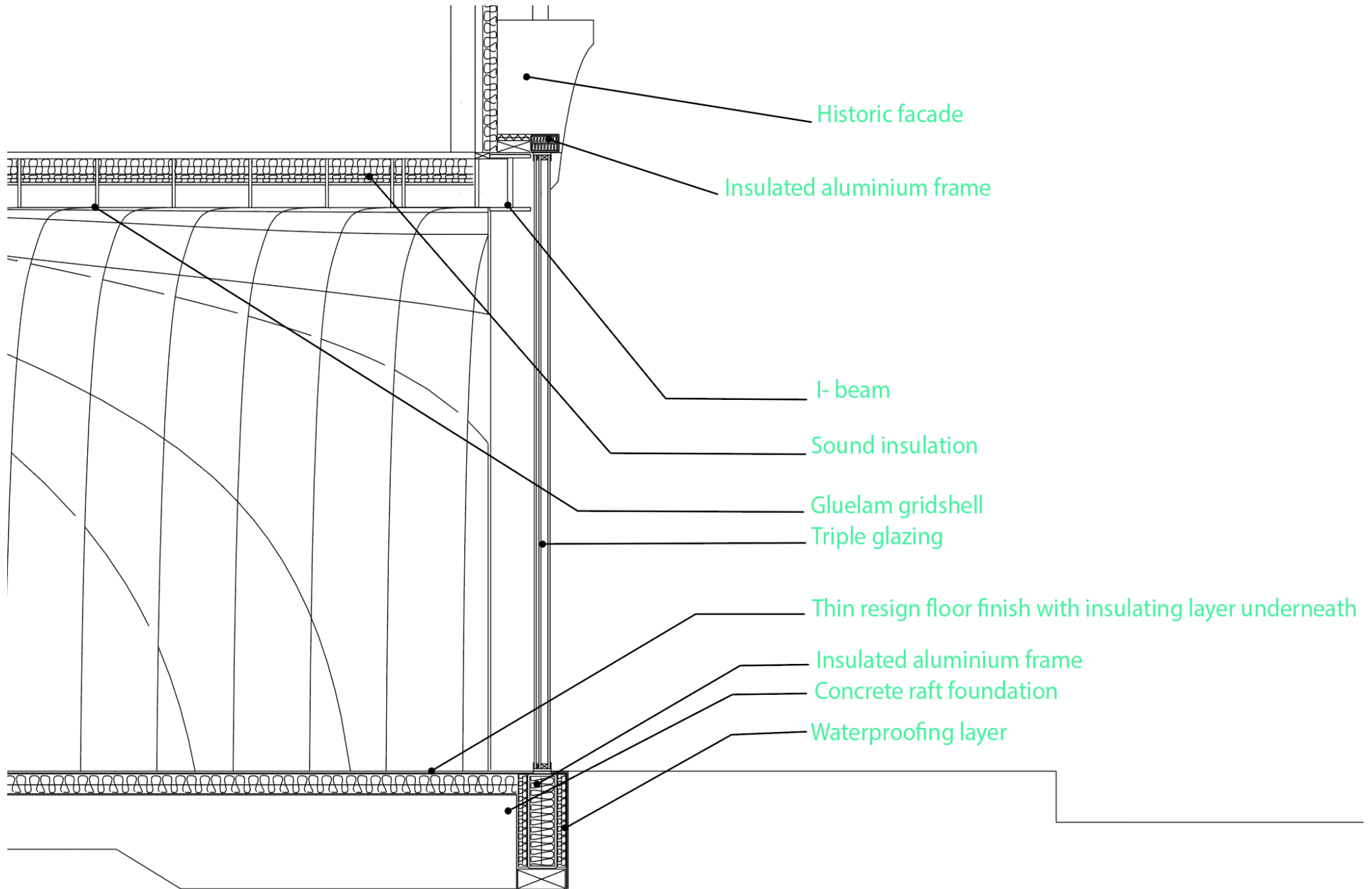


East elevation

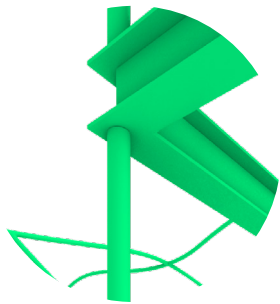
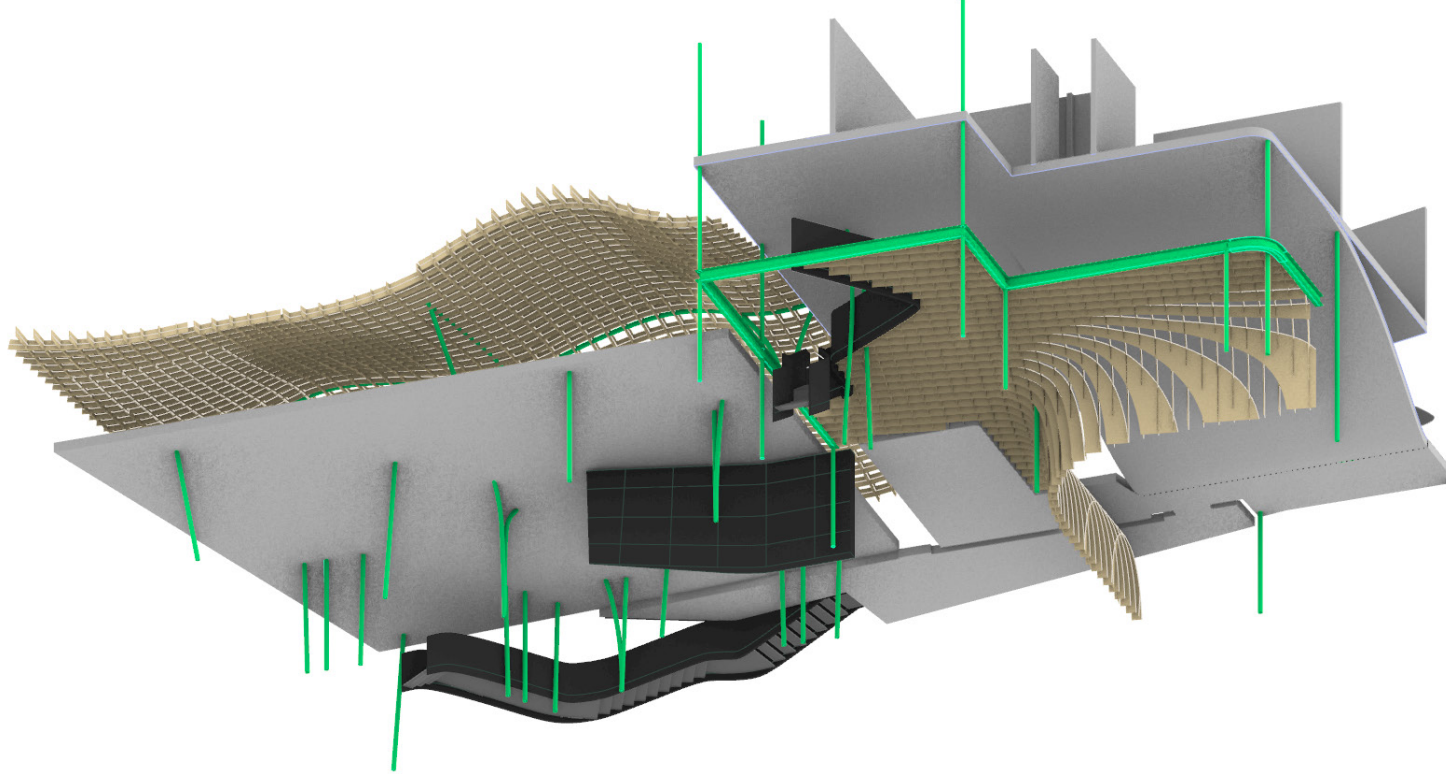


1:20 Detail section





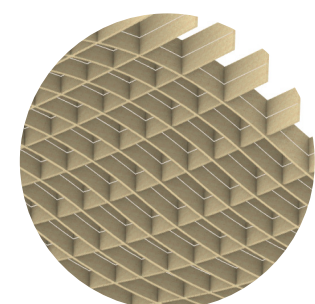
Primary structure



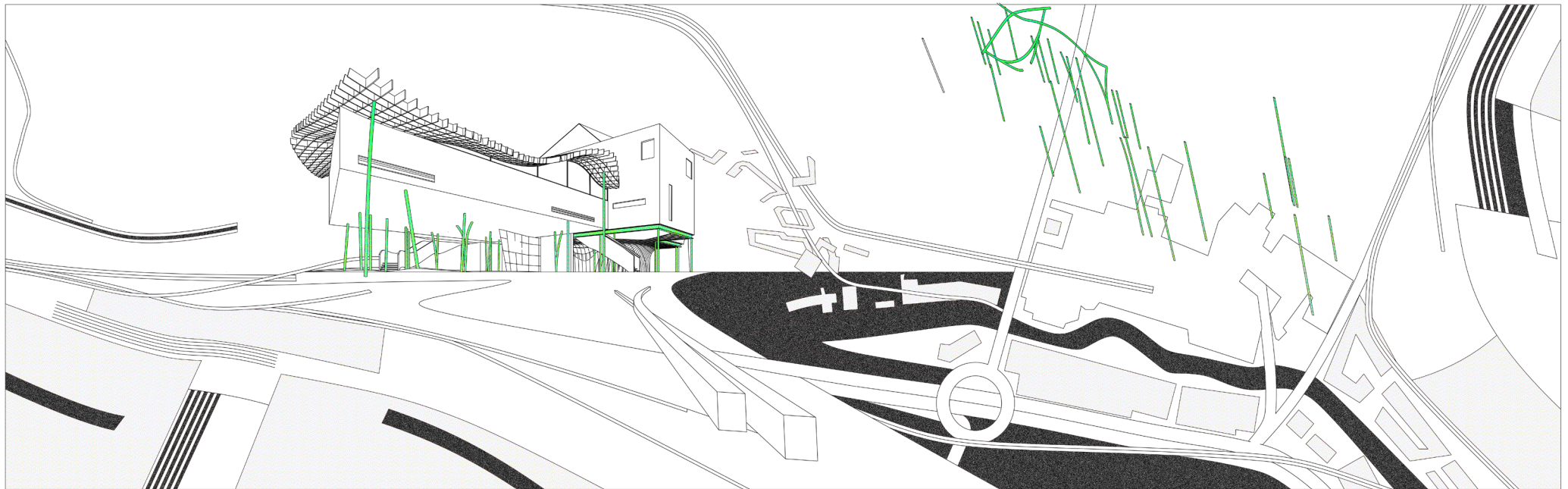
Steel structure remains expressed throughout the project and acts as a support for the timber gridshells and concrete floor slabs.



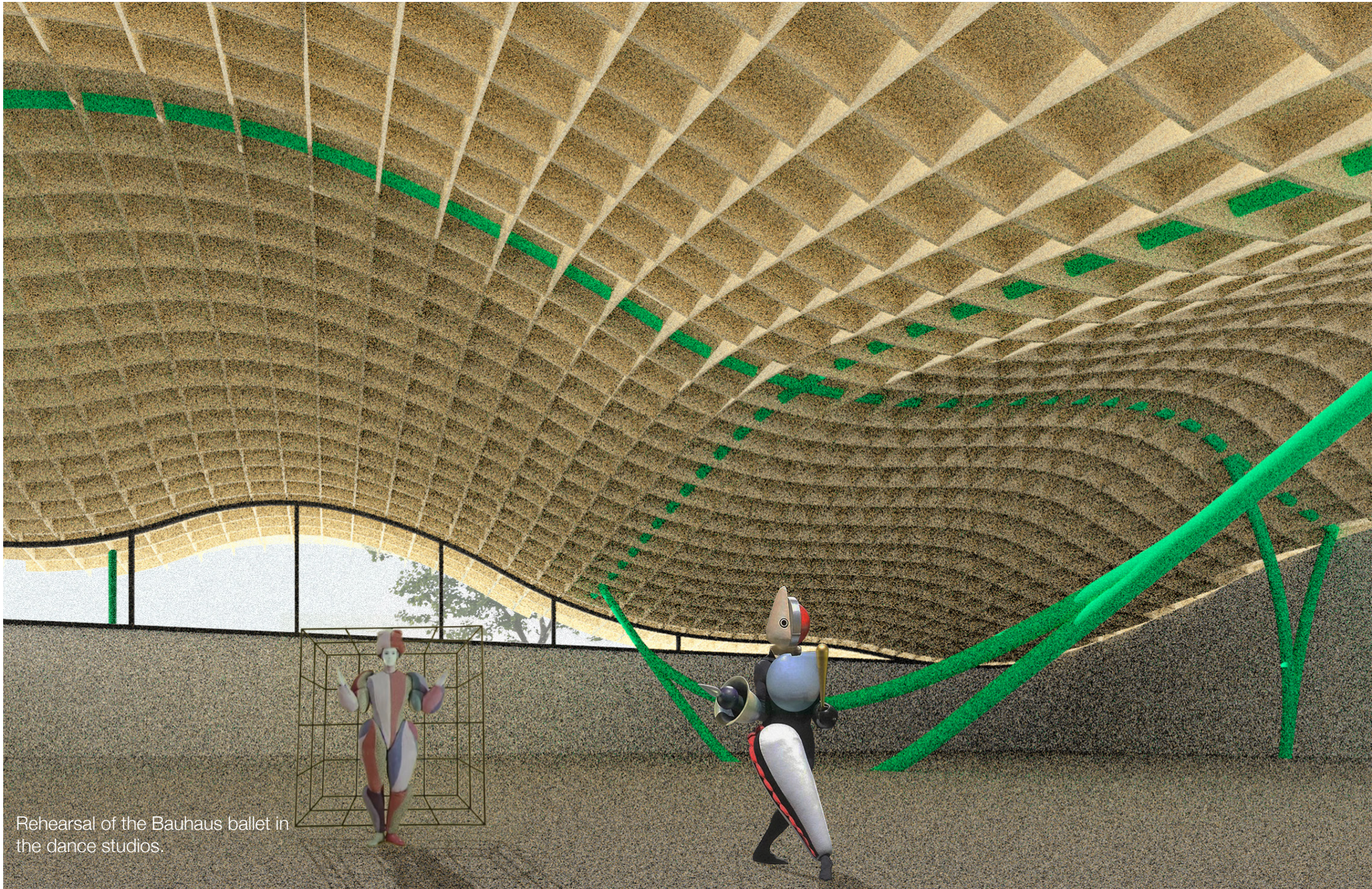
In the recent years researches have discovered the potential of carbon mineralization. If utilized by the construction industry this simple chemical process can make every building a carbon sink. Concrete has the potential to sequester tonnes of CO₂ and break the stigma of the most damaging for the environment material.



These lightweight structures achieve organic geometries and structural integrity with ease, while significantly reducing the amount of used materials in comparison with other building methods.



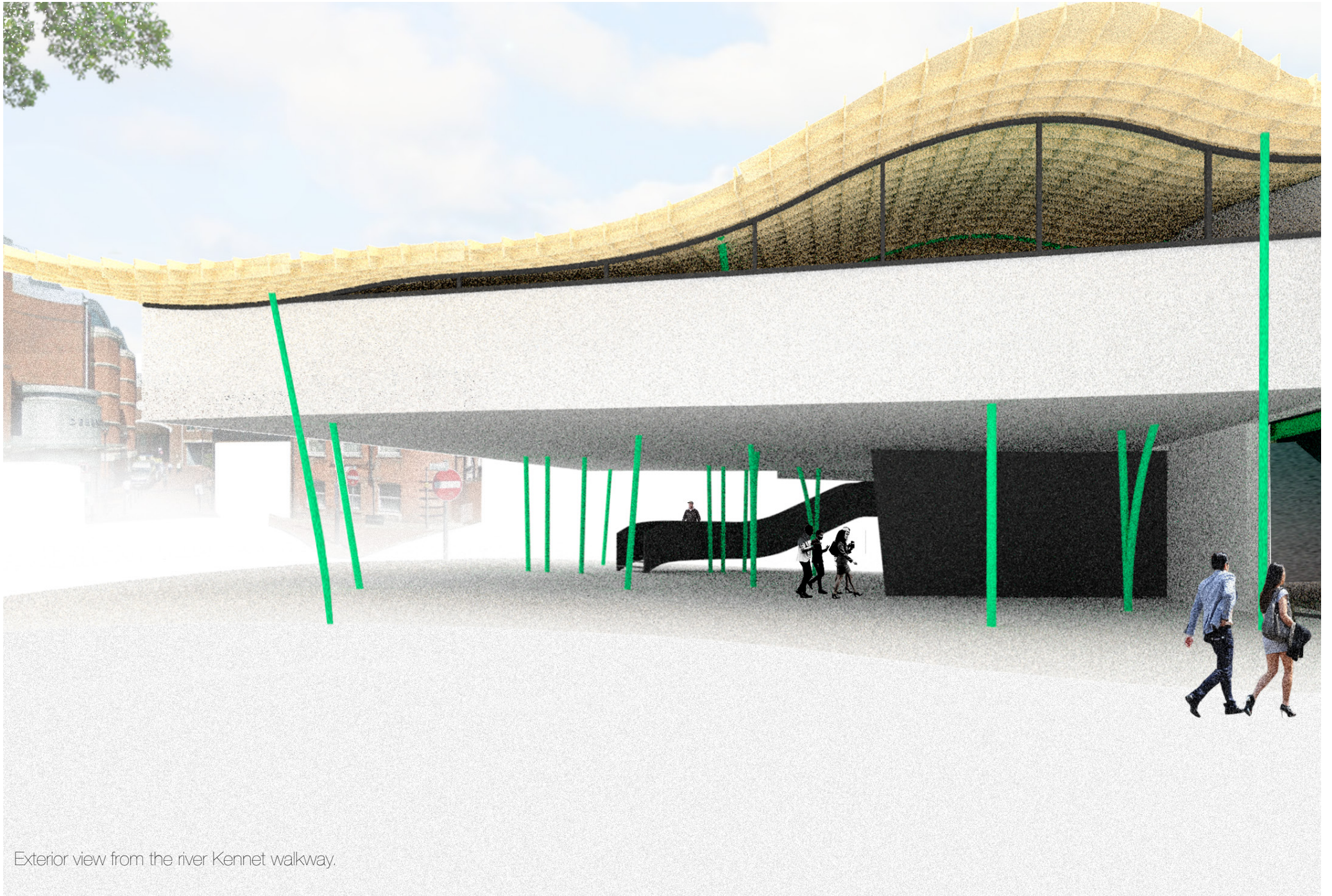
This composite drawing reveals the narrative of the project: on the very left a fabric design similar to those of Gunta Stozl can be seen morphing into a perspectival view of the project. The geometry and composition of the fabric design is very close to those of the gridshell structures and forest of columns. On the right side of the drawing the relationship between the proposal and the river Kennet is revealed (shown in black). The river is represented in two different scales, simultaneously shown as a part of the perspectival drawing and in a larger scale - as a part of the city. The green steel structures can be seen landing on the site.



Rehearsal of the Bauhaus ballet in the dance studios.



Interior view of the foyer.



Exterior view from the river Kennet walkway.