RSUA Early Career Architects Competition 2025

Entry no. 137

Design Statement

The Water Table

Silent Valley overflow, Mourne mountains.

Water, whether too much or too little, clean or unsafe, is a universal human preoccupation. Shelter and the provision of water define the origins of buildings and cities across the world. Today, we face a global water crisis, from melting glaciers to rising sea levels, drought to flooding. Global warming itself is expressed most acutely through water, with worldwide issues having been compounded by its mismanagement, overuse and underinvestment.

Northern Ireland has not escaped this water crisis. Near daily news articles report algal blooms in our loughs and beaches, incidents of pollution in our watercourses and stalled building development due to insufficient capacity.

It is timely, then, that this competition seeks proposals to increase public awareness, highlight the challenges, and showcase ideas for how water can better be integrated into our built environment.

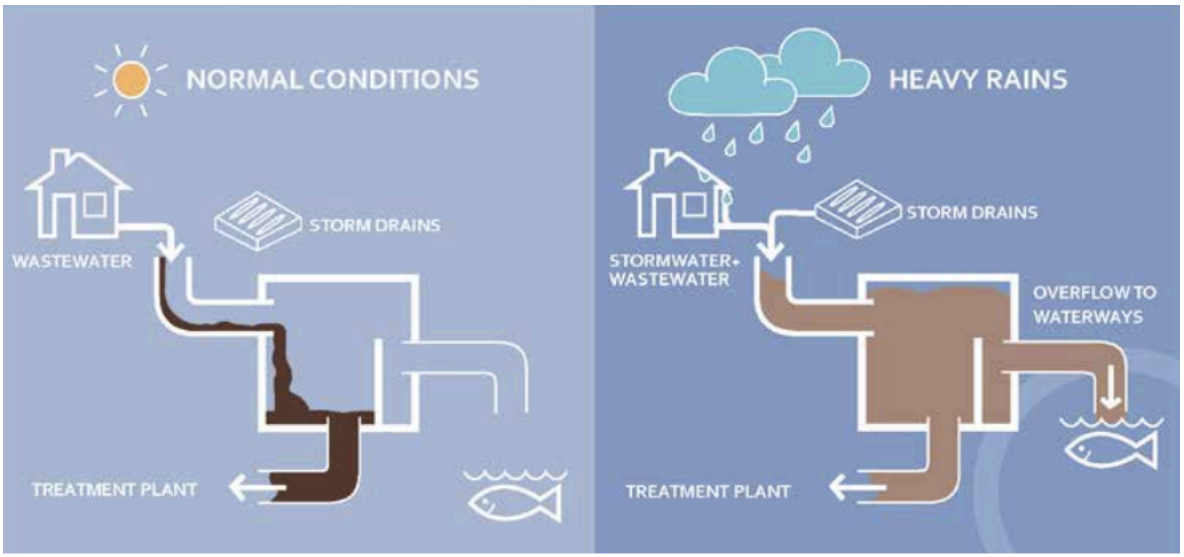
A Victorian sewer under the Shore Road in north Belfast.

Living With Water Programme 2015 - 2025

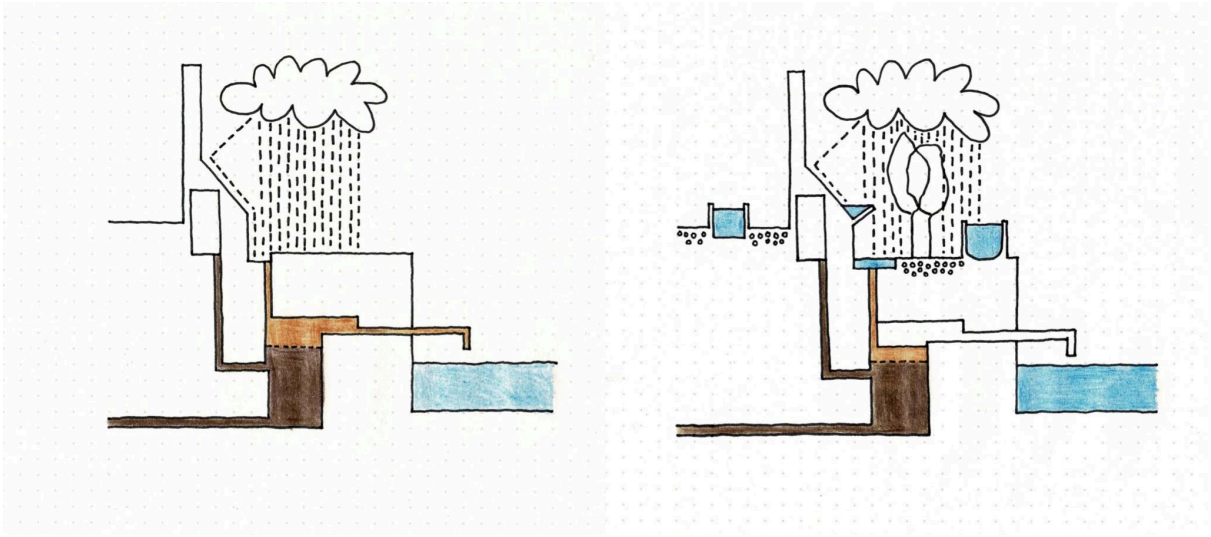
As a starting point for this project, we referenced the Department for Infrastructure's integrated plan for drainage and wastewater management in the greater Belfast area: The Living With Water Programme.

Drainage in Belfast was originally designed by Victorian engineers as a combined system, with both sewage and storm water flowing through the same pipes. This was due to the shape of our capital city, which is effectively a basin at the foot of various hills and in close proximity to sea level. Over time, alongside population growth and climate change, this ageing infrastructure has come under increasing pressure. Impaired by constraints to investment, the entire system serving greater Belfast today is operating beyond capacity.

Published in 2015, the LWWP presented an ambitious strategy for upgrade and management of our drainage infrastructure, to deliver long-term integrated solutions to the collective need for clean water in Northern Ireland. However, in February this year, NI Water announced that there is not enough funding available to deliver the majority of significant projects required. As a result, the LWWP has effectively been 'mothballed' by Stormont.



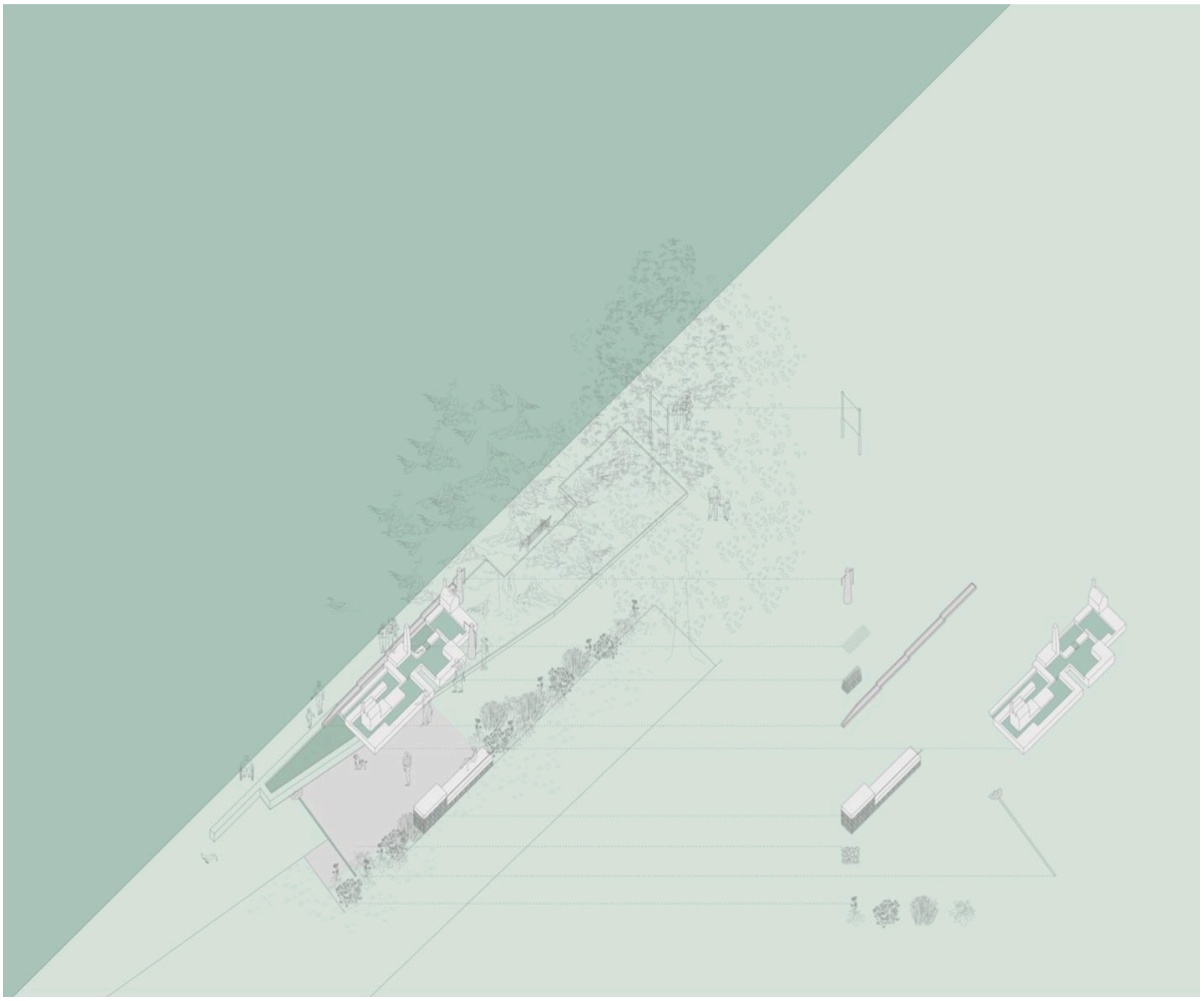
Combined sewer overflow diagram, extracted from the Living With Water Programme document.



Process sketch, exploring the opportunity to manage rainwater before it enters and overwhelms our combined drainage system. The arrival of rainwater into our sewers can be slowed by the use of SuDS, whereby rainwater can be attenuated, percolated and reused as greywater.

While we cannot reengage the programme in its entirety, we have used its recommendations as the framework for our design concept. The LWWP confirms that one of the biggest issues impacting greater Belfast is the amount of rainwater entering our wastewater infrastructure. Not only does it increase collection and treatment costs by allowing rainwater to mix with sewage, it causes increased instances of pollution and flooding.

As such, we have designed an installation which can educate the public about the combined system they are living with. Using the concept of Sustainable Urban Drainage Systems (SuDS) we are seeking to promote better management of rainwater, in order to ease pressure on the overall drainage system.



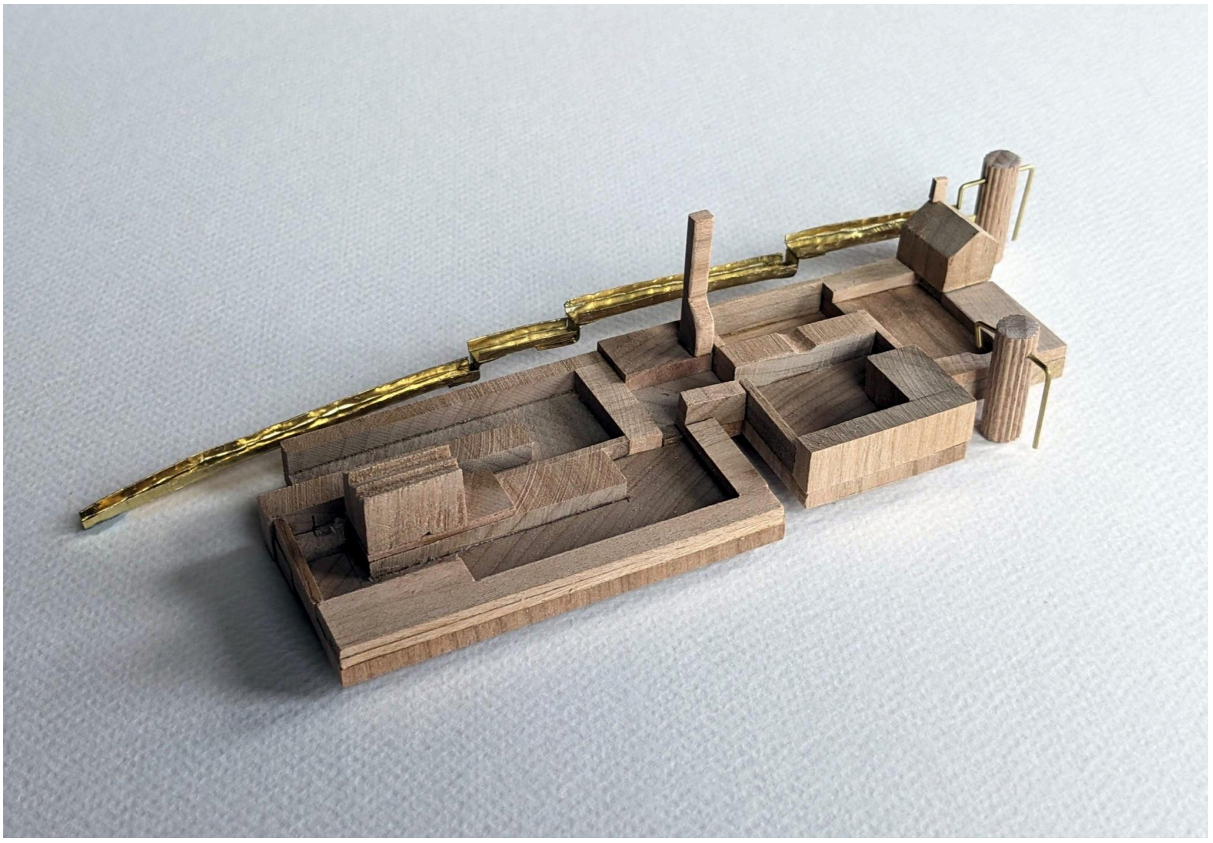
Axonometric view of The Water Table installation.

Design Concept - The Water Table

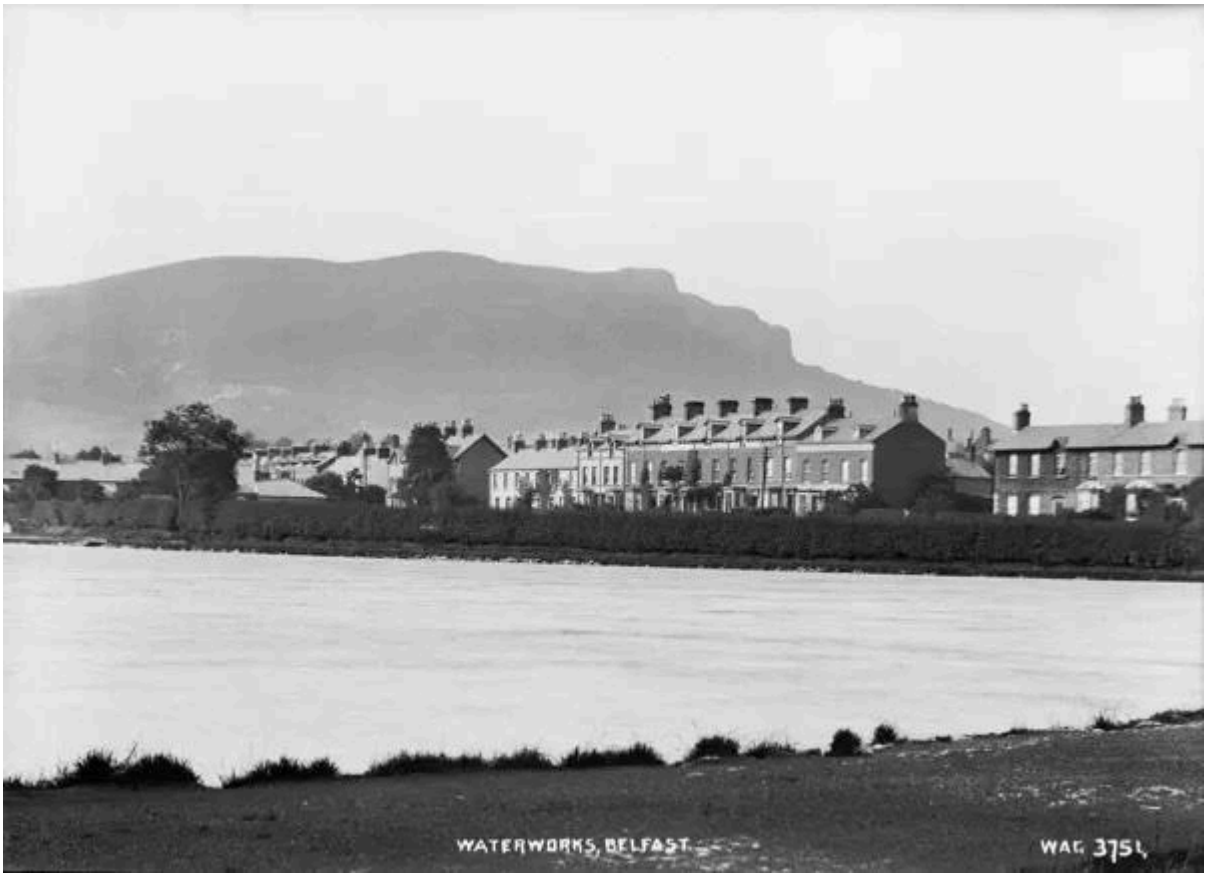
We propose the installation of a public table, with an associated bench and planting. The table is envisaged as a civic space, a venue which can be used by individuals or groups, to educate and promote public discourse about water in our society.

In addition to being a communal resource, the table literally brings the concept of water and drainage to the surface, making tangible infrastructure where it is usually out of sight and out of mind. The table is conceived of as an urban place in miniature, with several elements of city infrastructure represented at a comprehensible scale.

Two pumps draw small amounts of water to the table's surface. One represents the journey of foul water, travelling directly and swiftly from source to treatment in a planted bed. The other represents the potential journey of storm water, whose movement can be slowed down, to protect the system from overflowing. The storm water introduced to the table is diverted and held in an attenuation tank. Actual rainwater will enhance the volume of water passing through and it will come into contact with a series of controlling 'roofs' and 'gutters'. When the attenuation is full, an overflow will release the water along the next series of channels, before it finally discharges, in a controlled manner, to the planted bed. The bench works in a similar fashion, and the space between the two elements is laid with permeable paving, so that localised surface water can be absorbed to avoid flooding.



The Water Table, made at 1:50 from cherry and brass.



Cavehill, viewed from the Waterworks park, early 1900s.

Site Location

We have chosen to locate this public installation in The Waterworks, north of Belfast city centre. Now owned by the council, The Waterworks was first established in the early 19th century to supply water to the factories and residents of Belfast. Within 20 years demand had surpassed capacity and it was decided that, although no longer functioning, this significant piece of city infrastructure would be retained and adapted to become a public leisure park. Therefore, as a site of historic civil infrastructure, it is a fitting place to remind ourselves of the unique importance and challenges facing our water system. The Water Table is located directly adjacent to the lower swan lake, the backdrop of which features the roofs and gables of red brick terraces and the imposing topography of Cave Hill.

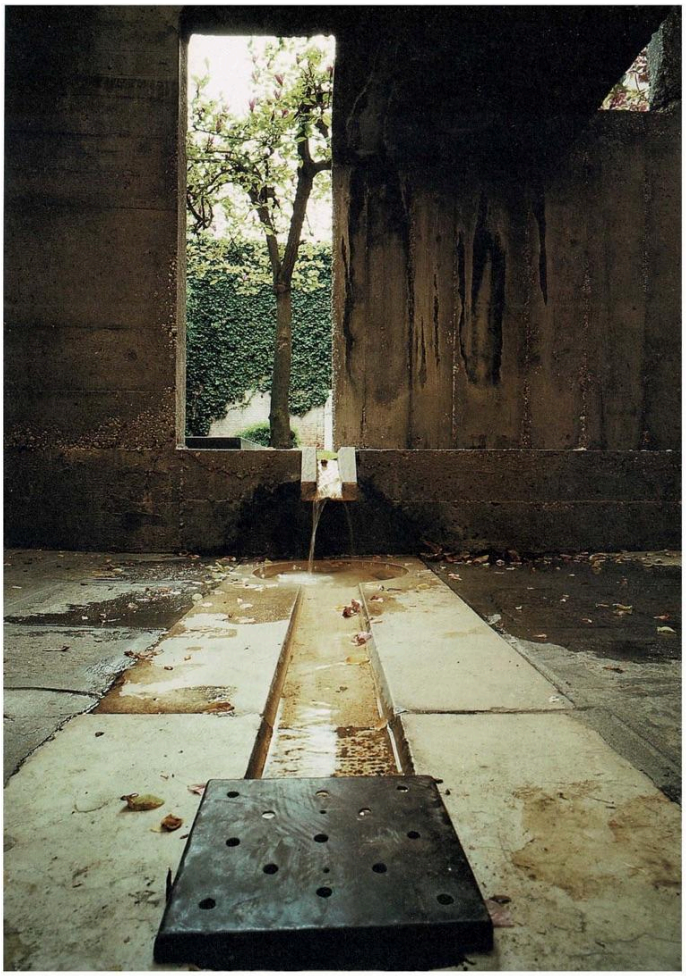
The site, adjacent to the lower swan lake. Looking north, towards Cave Hill.

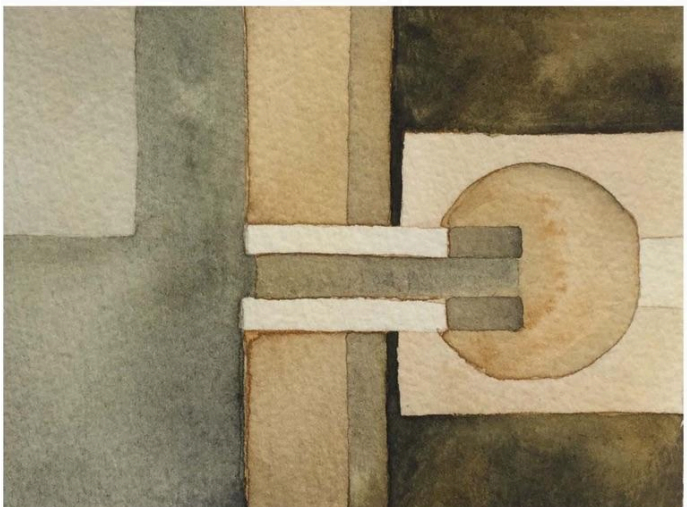
A disused sign post on the site will be recommissioned to display information about The Water Table project.

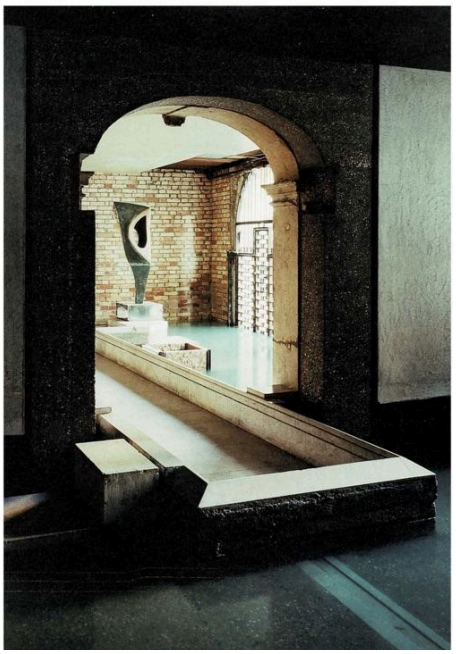
An advert from 1932, for clay products, made in Belfast; Waterside red brick gables, seen in Colin Middletons' '*Lagan, Ormeau Park*' painting, 1940; selected water-loving plants; brass expansion joint, Boher Buoy house, Belfast; clay basin, Studio Loho.

Construction and Materials

The material character of the proposal is intended to be tactile, yet robust. Where possible we have specified permeable surfaces, so that moisture can slowly move and percolate across the installation. Like the work of Carlo Scarpa in the Querini Stampalia Foundation in Venice, water is treated as a building material here too. Its movement, noise, reflections and volumes are changeable with weather and the seasons. The table top will be formed in clay, which can be moulded to form channels and vessels for the retention of water. At once utilitarian and tactile, clay is part of the fabric of red brick Belfast. The clay for The Water Table will be fired to dehydrate it, making it robust and durable. Brass will be used, sparingly, to form pumps and channels. These elements will not require maintenance, but rather they will be allowed to weather and develop patina. Both table and bench will be supported on filigree metal cages. These will be grounded with round stone ballast, which will allow moisture to slowly percolate through the gaps. The ground will be laid with permeable paving. Plants such as Yellow Flag Iris, wild Primrose, Ragged Robin and Forget-me-nots have been selected for the planted beds, on account of their ability to withstand moist soil.







Querini Stampalia Foundation, Venice, by Carlo Scarpa (1963). This project, where water is treated as a building material, has informed the layout of The Water Table. The vessels in Giorgio Morandi's '*Still Life*' (1955**)** have inspired the water attenuation elements on The Water Table's surface.

A woman and her child draw water from an outside water pump in Belfast, early 1900s.

Safety

In the first instance, the table and its infrastructure is intended to be accessible. The tabletop and bench operate at a range of levels, allowing for interaction by children and adults, both standing and seated. The water channels are designed to be flush with the ground to avoid tripping hazards, and the main thoroughfare path is retained at 3m wide along the full length of the installation.

Deep sections of water will be inlaid with a brass wire mesh cover, which will restrict physical access, whilst maintaining a visual connection. It will also serve to restrict obstructions from leaf-fall and litter.
The water emitting and collecting on the table is not drinkable. It will be suitably signified, and subtly guarded, to ensure public awareness.

The Waterworks generally has unguarded edges to the lakes, and so it is presumed that children are suitably supervised while in proximity to The Water Table and the waters edge.

Combined process work.

Collaboration

The LWWP recognises the importance of "organisations working together...to develop solutions". A significant aspect of this proposal therefore relates to collaborative working. To date, we have cooperated as a pair, acknowledging that differing interpretations and lines of enquiry are a valuable means of developing design ideas. We intend to carry this approach forward and will encourage shared reflection and pooling of resources among the design and delivery team. Collaborating with suppliers, fabricators, academics and the local authority will be integral to the process, and we hope to showcase the essential nature of working together to address not just the task at hand, but the wider issue of water in our society.