

The Living Wheel

Entrant 139

The Living Wheel

A kinetic sculptural tribute honoring Belfast's hidden waters beneath the surface and our collective resilience in confronting the challenges of global warming

The Living Wheel reimagines Belfast's hydrological heritage as a living, kinetic sculpture — transforming rainfall into energy, light, and awareness. Inspired by waterwheels and the city's buried rivers like the Farset, it honours the waterways that once powered Belfast's industry and shaped its name.

As water flows through the sculpture, it becomes a medium of motion and memory — highlighting the invisible rivers beneath our feet and inviting the city to reconnect with the natural forces that sustained its growth.

The Living Wheel is both public art and a working micro-power system. During rainfall, collected water drives vertical wheels that generate light, illuminating the sculpture and its surroundings. In dry spells, wind or the carousel can activate the wheel, symbolising resilience and shared responsibility for energy generation.

Built from low-carbon, recycled, and reclaimed materials, the structure embodies the principles of a circular economy and reflects the cleansing role of water in natural ecosystems.

It is a participatory installation — turning passive viewers into active participants. Visitors help power the wheel, making sustainability a collective act.

The structure becomes an embodied metaphor for resilience: in times of abundance, the water flows; in scarcity, we act. Just as no single energy source is sufficient to meet our climate challenges, the wheel cannot turn without both nature and human effort.

Ultimately, The Living Wheel is a public conversation piece — an instrument that turns the hidden hydrology of Belfast into visible motion. It invites play, reflection, and participation, celebrating water not only as a force of nature but as a catalyst for community and sustainable imagination.

Hydrology as Heritage - References & Inspirations

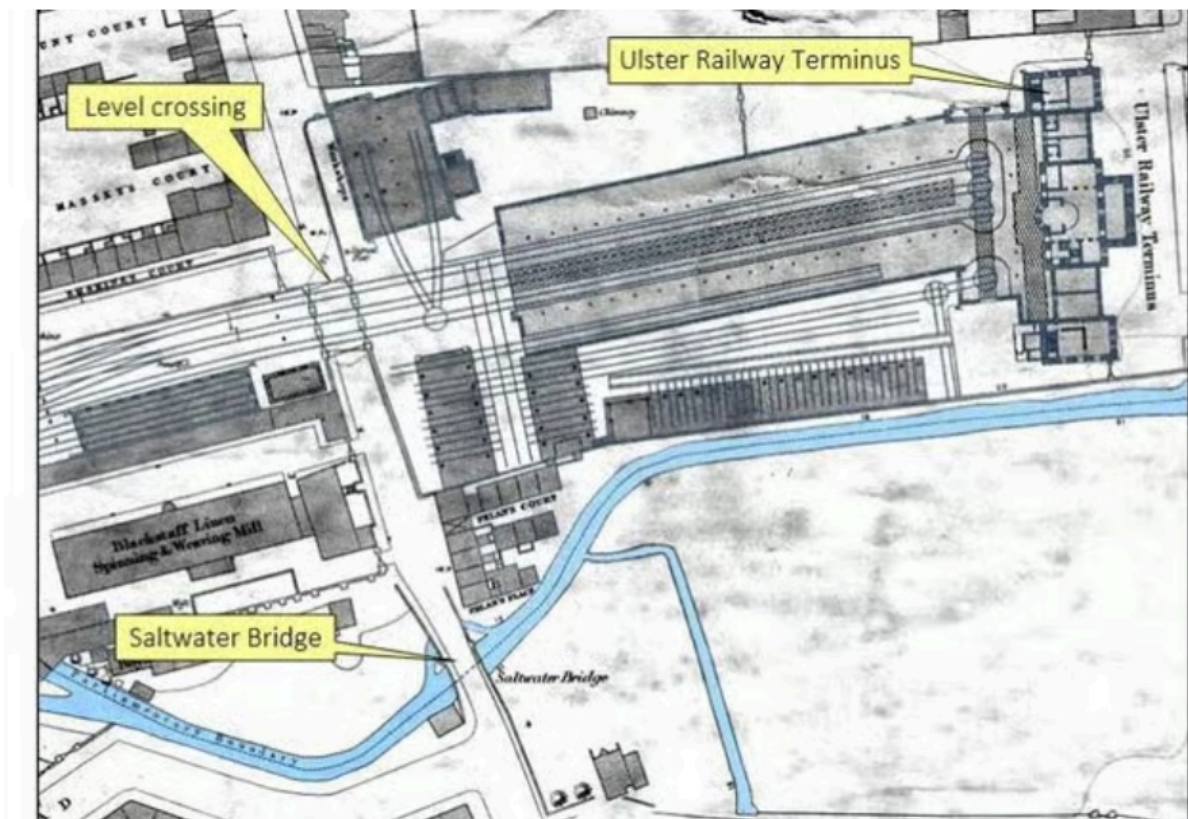
Once a city defined by rivers, mills, and maritime industry, Belfast's relationship with water has largely been buried — paved over by time, industry, and infrastructure. Hidden beneath our feet lie the culverted rivers that shaped the city's geography and economy: the Farset, the Blackstaff, and the Connswater — watercourses that once powered textile mills, factories and distilleries

By the early 18th century, Belfast's industrialisation was already taking shape. By the 1720s, a key crossing point — now the site of the new Transport Hub — was known as the Saltwater Bridge over the tidal Blackstaff. The original bridge has since been retained following archaeological investigations, and the surrounding new public realm, Saltwater Square, could provide a resonant and historically significant site for The Living Wheel, alongside other prominent water locations sites.





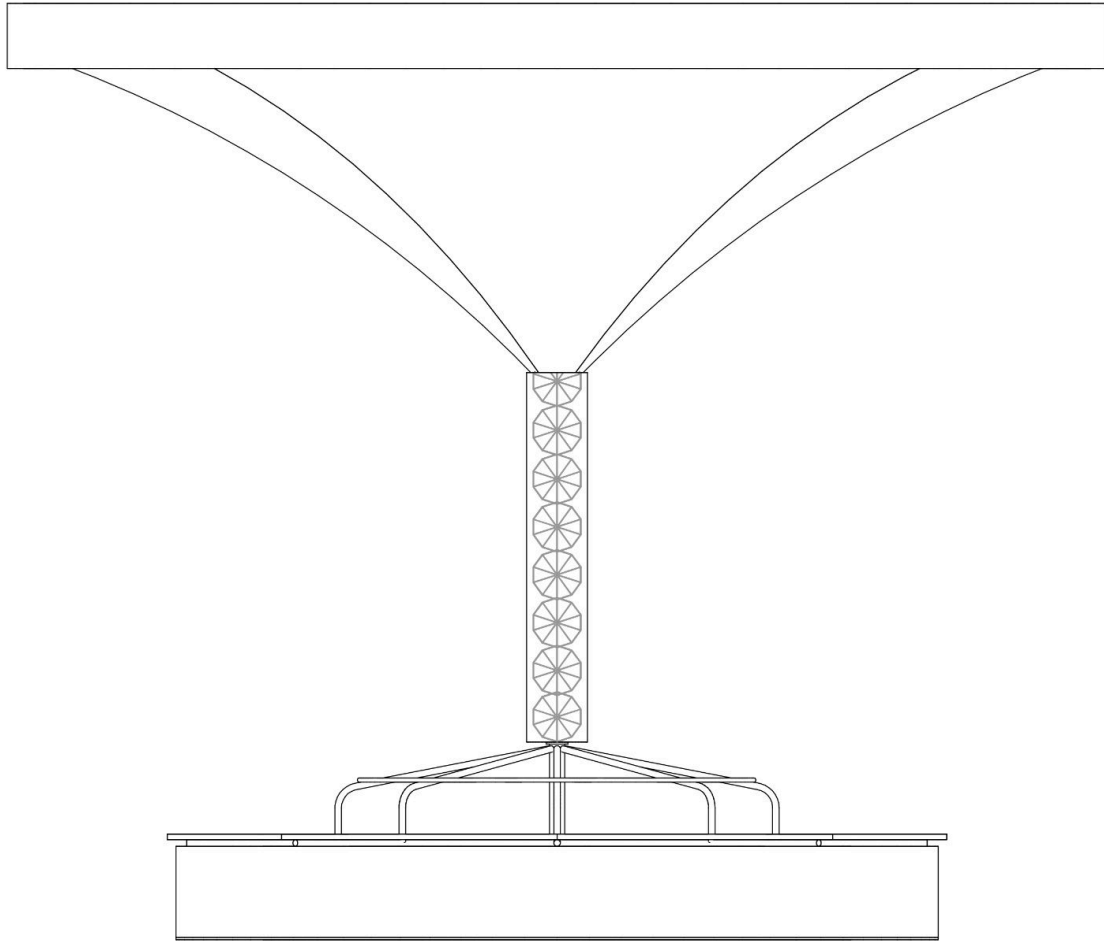
and DfC Historic Environment Division in line with Translink's statutory obligations.



The location of the Saltwater Bridge on Sandy Row according to an 1859 OS map. Photo: The Archaeological evaluation at Belfast Transport Hub on behalf of Translink by Irish Archaeological Consultancy Ltd.

Rainfall becomes a storytelling tool in this installation as it is channelled through the vertical wheels in a transparent structural column. The energy generated activated electricity and used to illuminate the installation — a living connection to the past.

The water then gently dissipates into the surrounding circular concrete base — or, during periods of high rainfall or tidal surge, is redirected via connected piping into the River Lagan, where it triggers a network of lights along the river's edge. In this way, Belfast's changing climate becomes a living part of the sculpture's rhythm — wet weather yields glowing trails of light, tracing invisible flows back into the public realm.



The installation also takes inspiration from the great Laxey Wheel on the Isle of Man — the birthplace of the project's designer and first knowledge of waterwheels. The wheel was built to pump water from the mines. It now stands as the world's largest working waterwheel and a powerful symbol of industrial heritage and environmental ingenuity.



Form, Function, and Fun

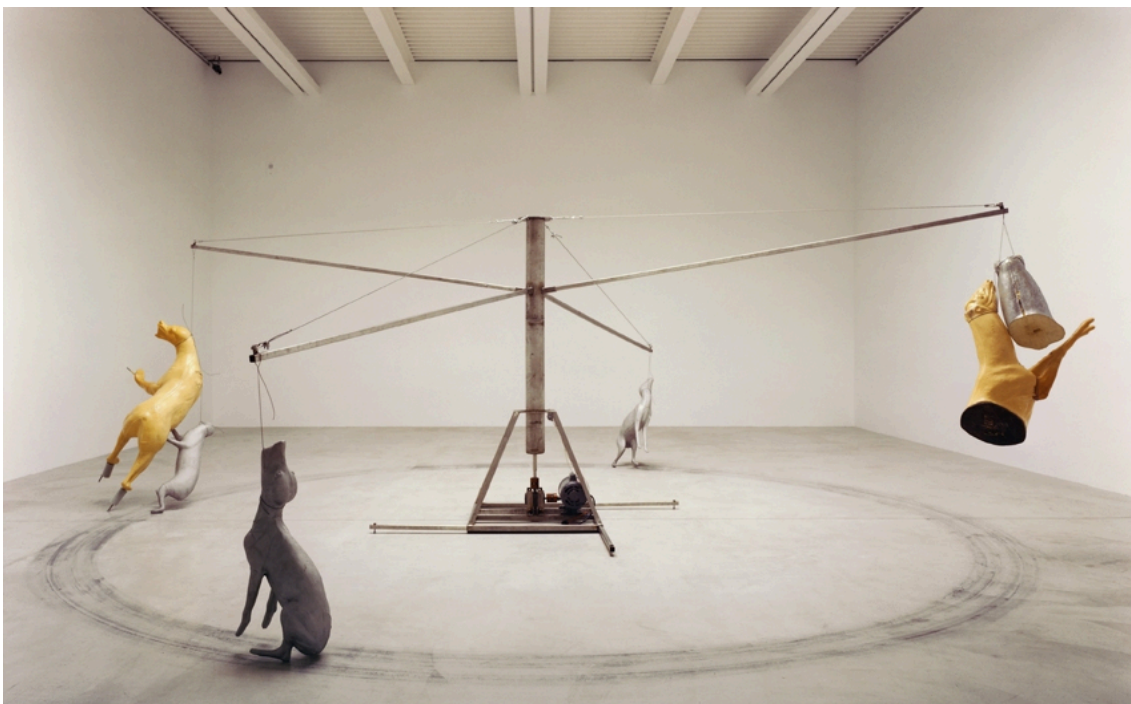
Departing from the traditional vertical plane of historical waterwheels, this installation reimagines the wheel as a horizontal, carousel-like form, designed to invite play, participation and pause. Its circular base rotates through human-powered movement, inviting the public to physically engage with the wheel. This rotational motion becomes both playful and purposeful — a kinetic reminder that energy generation can be communal, embodied, and joyful.

Circular carousel seating encourages gathering, shelter, and rest. It offers protection from both rainfall and sun, especially during increasingly hot, dry summers. As night falls, those who rotate the carousel help generate light, making visible the human effort required to power the space. This becomes an interactive lesson in energy awareness — illuminating the idea that no single source (neither human effort nor rainfall alone) can be relied upon in isolation.

Mirrored panels positioned throughout the installation offer literal and symbolic reflection. They prompt passers-by to consider their relationship to energy, climate, and shared responsibility. When rainfall is absent — during drought or dry spells — the lack of illumination serves as a gentle reminder of scarcity, reinforcing the need to preserve water and diversify our energy sources in a changing climate.

The Living Wheel is at once a sculpture, a seat, a shelter, and a statement — a community-powered beacon that glows in response to the world around it, registering activity and engagement in real-time. By uniting form, function, and fun, it becomes a dynamic symbol of climate adaptability and collective energy.

Carousel Installations



Bruce Nauman's Steel Carousel - *what goes around comes around*



Carsten Höller's Mirror Carousel



Jane's Carousel - Pavilion by Jean Nouvel

At Brooklyn Bridge Park, Nouvel designed a Pavillion to house a restored 1922 merry-go-round by Jane and David Walentas. At night, the pavilion turns into a magic lantern, visible from the surrounding environment: every hour, the horses' shadows dance on the building's facades, marking the hour in the way of a city clock.

Circular Economy Materials

A key ambition is to demonstrate how waste can become beauty — and utility. Materials are deliberately reclaimed, local, and symbolic: The Living Wheel embodies the principles of the circular economy:

Musselcrete:

A low-carbon concrete alternative using discarded mussel shells, highlighting the potential of circular economy practices in public infrastructure and art.

Shellfish such as mussels are critical to aquatic ecosystems, especially in areas like Strangford Lough, where they have historically come under threat. Mussels naturally filter and purify water, playing a vital role in maintaining biodiversity and water quality. Yet, once harvested for human consumption, their shells are often discarded and end up in landfill — a lost opportunity for reuse and regeneration.

As part of my thesis research, I explored ways to divert this organic waste stream into a low-carbon concrete alternative. Incorporating this material into The Living Wheel in the concrete base becomes both a symbolic and practical gesture: it reminds us that nature already offers the ingredients we need to build more responsibly.



Sea-glass aggregate:

Sourced from coastal waste, turning nature-weathered glass into a shimmering, symbolic element of renewal.

Plastic:

Recycled plastic from post-consumer waste, turning synthetic waste into durable, visual elements, such as rainwater pipes, tents from festivals.

These materials are tactile metaphors — turning ocean and land waste into tactile surfaces and further promoting circular-economy and re-use.



Pretty Plastic tiles at the Tongelreep National Swimming Centre

These tiles are made from PVC waste such as window frames, downspouts and rain gutters goes into making the tiles, which are certified for use in construction and available in several 3D shapes and colours, including tonal variations that can be used to create gradients or give subtle depth.

A Conversation, Not a Solution

The Living Wheel is not a nostalgia piece. It's a visionary reinterpretation — utilising the fundamentals of history to confront today's environmental challenges with imagination and agency. By honouring Belfast's hidden waters, embracing circular materials, and diversifying energy generation, the project shows how we can build beauty, sustainability, and meaning — together.

It stands as an invitation: to reflect, to participate, and to believe that change, like the wheel, is always in motion.