

Think/Tank: A Space of Hydrological Performance(s)

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Think/Tank is a space for the hands-on research, education, and overall enjoyment of water in all its states. In the face of global hydrological challenges such as climate change, catastrophic weather events, rising sea levels, and alternating drought and flood conditions, this institution provides an experiential link between local, regional, and global water systems. Like many cities founded along a river, the history and future of Grand Rapids, Michigan can be told entirely through the central role of water in its infrastructure, industry, public health, art, and recreation. Water's necessity and ubiquity render it nearly invisible, and it is often taken for granted in a water-rich environment such as the Great Lakes region. The site, a vacant building formerly housing a museum of natural history, is situated within a number of natural and man-made hydrological systems, including an underground steam network that currently serves the majority of the city.

The proposal centers upon two contrasting experiences of water and weather: one very controlled, and the other in a constant state of flux. The first of these is a series of three vitrines in which H₂O is experienced as solid, liquid, and vapor; steam undergoes a series of phase changes that are rendered visible and inhabitable. In sequence, they present a microcosm of the hydrological cycle that serves as spectacle, teaching tool, and climate control system.

These vitrines sit adjacent the existing Great Hall, which is re-envisioned as an impluvium that harvests rainwater and snow melt from the roof, creating a dynamic and unpredictable space that experiences periods of flood and drought. An operable roof structure collects and filters natural light and water coming into the Great Hall. The operable roof also vents steam and heat from the Great Hall, allowing it to operate in tandem with the vitrines as a climate control device. In periods of heavy rainfall or snow melt, the roof's convex form fills with water, building anticipation of the coming deluge when its ribs are opened.

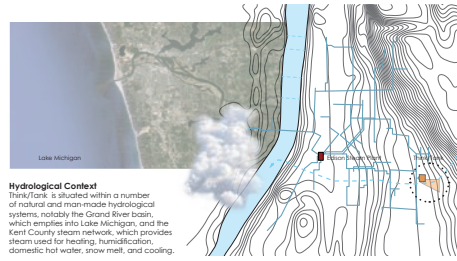
Small changes in floor elevation create a series of micro flood plains in the Great Hall, which collect and store water from the vitrines and the roof structure. The incremental stepping of these flood plains visually amplifies the effects of drought or flooding over time. When the ground plane reaches its capacity, water travels down a small filtering channel into the landscape, where it may slowly percolate back into the ground. Throughout the building and landscape, narratives of the history and future of water are woven into this experience as a series of engraved surfaces: flooring, benches, walls, guardrails, and the faces of vitrines tell the story of Grand Rapids through water.

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Jeff Panitz, Cal Poly San Luis Obispo, with student Matt Catrow

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Hydrological Context
Think/Tank is situated within a number of natural and man-made hydrological systems, notably the Grand River basin, which empties into Lake Michigan, and the Kent County steam network, which provides steam used for heating, humidification, domestic hot water, snow melt, and cooling.



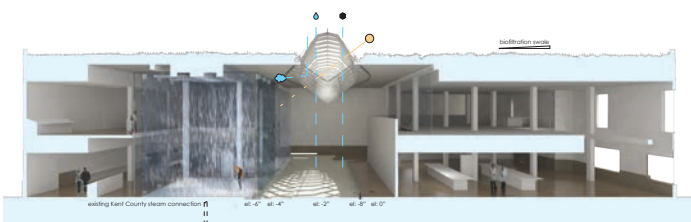
July. Unable to decide between spending the day at the pool or the museum, families do both. An impromptu snowball light breaks out.



September. Children check the weather forecast every day, praying for rain. When the whale finally opens its ribs, pandemonium ensues.

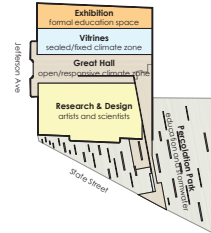


March. An early snow melt slowly floods the Great Hall. Weary from the long winter, commuters drop by for a steam bath and a moment of quiet reflection.



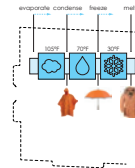
Site and Program

Maintaining the existing spatial logic of 54 Jeff, the Great Hall serves as a public gathering space, flanked by more enclosed wings. The Great Hall is a dynamic space that can be selectively opened to the elements. It is flanked by lightly controlled spaces: exhibition space to the north, and a hydrological research and design institute to the south. The Great Hall extends south into new park space, consisting of a series of benches and water channels oriented to the site topography.



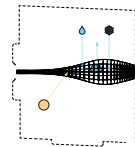
H₂O Vitrines

These 30'x30'x30' cubes act as containers and displays for H₂O in solid, liquid, and gas form. Climate conditions within these vitrines are lightly controlled, in contrast to the Great Hall's weather-based fluctuations. In sequence, they present a microcosm of the hydrological cycle: the Kent County steam supply feeds directly into the first vitrine, where it condenses to create rainfall in the second, then crystallizes into snowfall in the third. Popular demand for each vitrine changes in response to weather conditions. Air locked "pouch rooms" connect the vitrines and provide visitors a place to suit themselves for the conditions ahead.



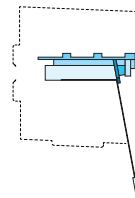
Operable Roof Structure

An operable surface recalls the iconic Inback whale skeleton that hung in the Great Hall for 50 years. The whale collects and filters natural light and water coming into the Great Hall—stormwater runoff is filtered by vegetated bio-swales on the roof, and light is diffused by a ceramic tile pattern inspired by whale baleen. The whale also vents steam and heat from the Great Hall, allowing it to operate in tandem with the vitrines as a climate control device. In periods of heavy rainfall or snowmelt, the ribs may be periodically opened or closed, building anticipation of a precipitation event.



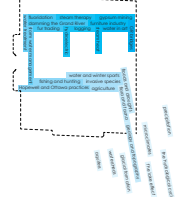
Activated Ground Plane

Small changes in elevation create a series of flood plains in the Great Hall, which collect and store water from the vitrines and the whale. The incremental stepping of these flood plains visually amplifies the effects of drought or flooding over time. When the ground plane reaches its capacity, water travels down a small filtering channel into the landscape, where it may slowly percolate back into the ground.



Curatorial Strategy

Grand Rapids' past, present, and future, as told through water, is distributed throughout the building and landscape as a series of engraved surfaces: flooring, benches, walls, guardrails, and the back sides of vitrines. Content is located based on the role of human intervention: as visitors move from landscape to building, they progressively see how water is harnessed, resisted, abused, and celebrated in industry and culture.



Exhibition space, looking towards climate-controlled vitrines.