"FABRICATED LIGHTNESS"

an ode to the immobility of urban space, and its agonisingly slow capability to adapt to change

CARLETON UNIVERSITY

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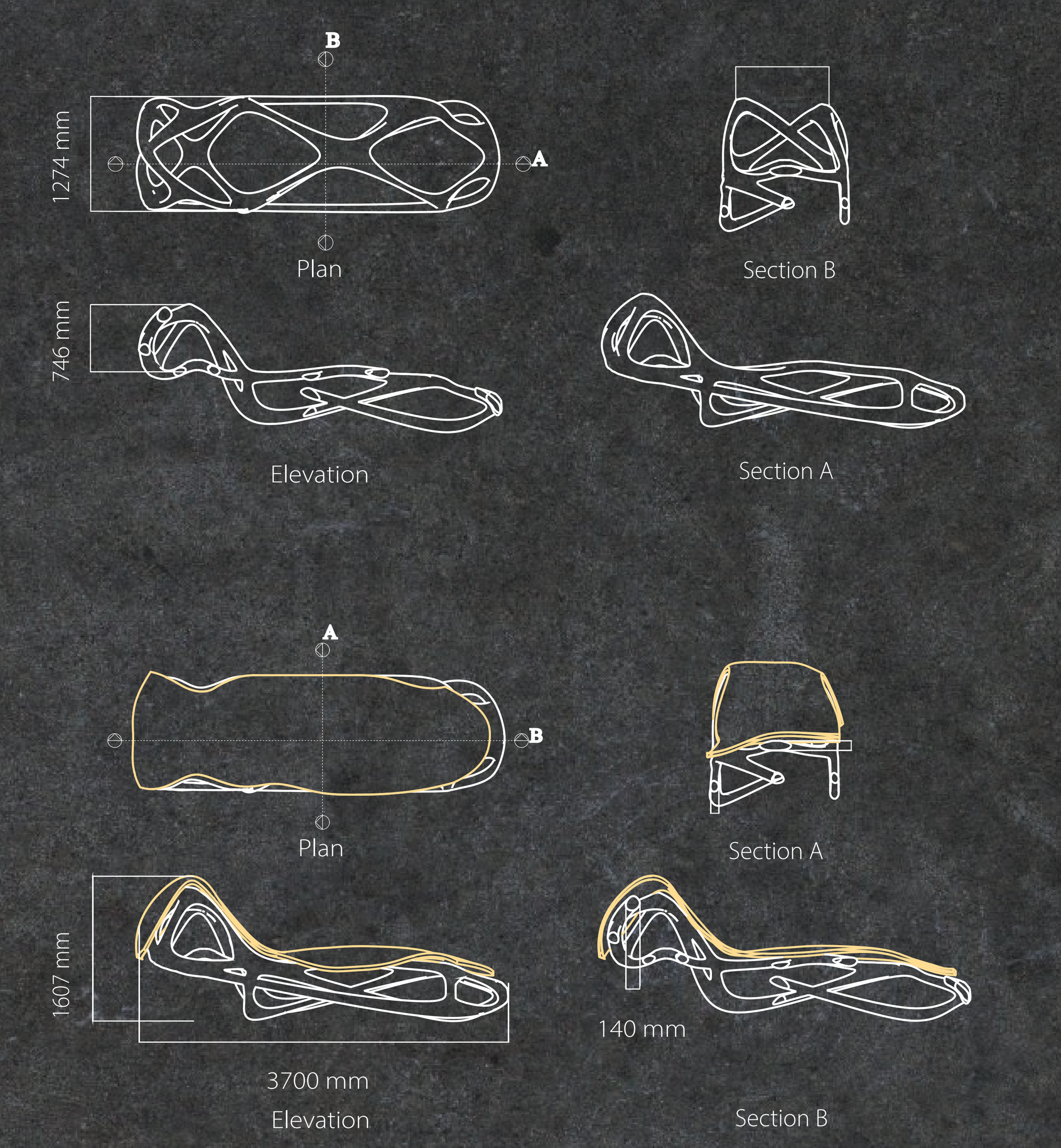
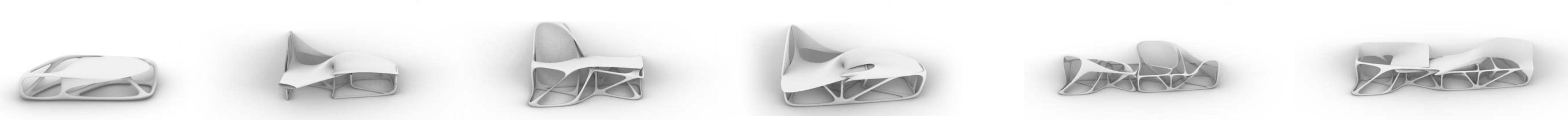


Seating
Skeleton Support

PROJECT STATEMENT

The National Wellness Institute defines wellness as a multidimensional engagement of the human mind, body and spirit, especially focusing on our occupational, physical, social, intellectual, spiritual and emotional health. An immersion in nature directly affects our health and wellbeing. Human brains are wired to find gratification in its gentleness and multi-sensory stimulation, relaxing muscles and lowering stress and tension. This bench-building project, although small-scale, gives us an opportunity to explore wellness through the materiality of lightness - a concept that unites human potential, wellbeing, and an elevated sense of being - all the while challenged by using concrete, a material heavy in nature.

There is something tragically poetic about a project situated under the canopy at the heart of Carleton University, questioning the stiffness of the campus grounds and the surrounding city. Our bench, FABRICATED LIGHTNESS is a testimony to the immobility of urban space, concrete on concrete. Its biophilic nature contrasts the industrialised city and its agonisingly slow capability to adapt to change. Finding inspiration from the curves of the human body, our bench seeks to provide an elevated sense of comfort and relaxation. The bench allows the "sitter" to take the weight off their feet and sink into the groves. It then becomes a conduit that relieves our protagonist of the weight of reality. Concrete becomes dematerialised simply by the regulation of thin, biophilic arms reaching out from the ground, supporting the weight of the bench top as the flesh of the body fills in comfortably into the curves of the cool, smooth concrete.



PROOF OF CONCEPT

An exceptional example of "form follows function", our bench is constructed with a fabric formwork technique, which uses flexible, often recycled fabrics to create a versatile mold that defies the sharp angles of the city, and embraces concrete as a flowing, liquid body. This method minimises the resources and material waste from conventional rigid molds, as the fabric materials are only used where it is needed. Additionally, this method can reduce the overall energy usage and excess weight of material, and in turn lower carbon emissions.

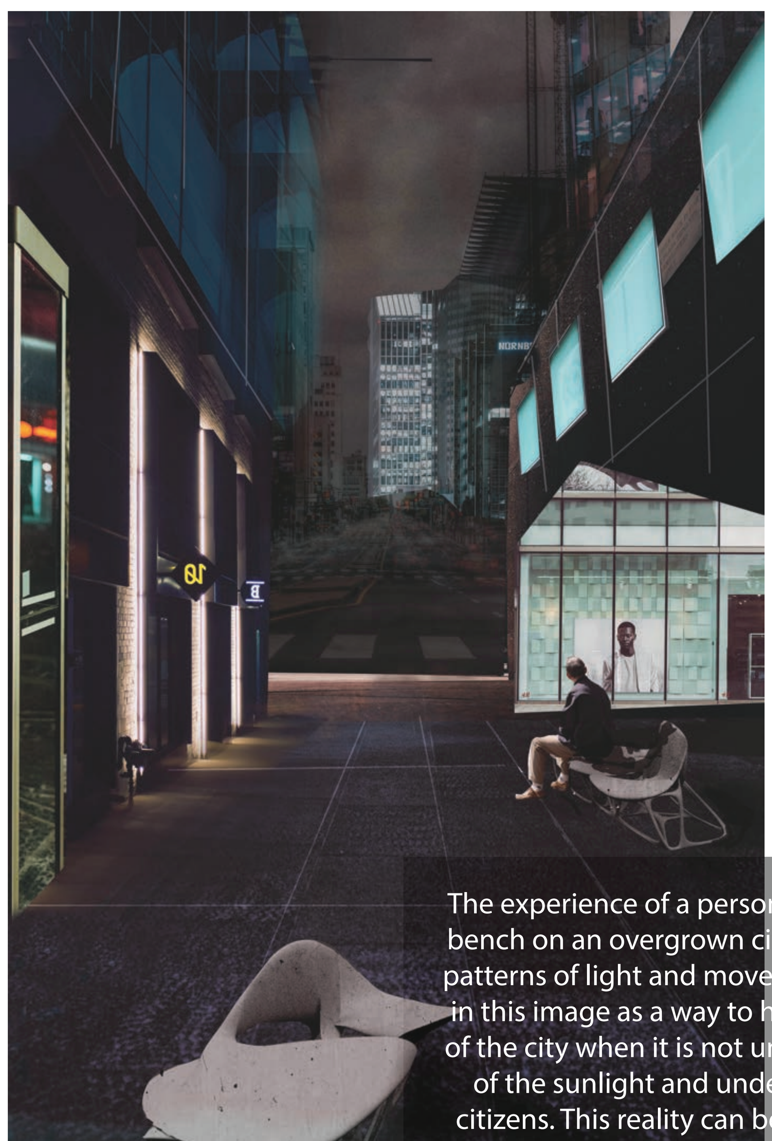
Model 1
This is a small scale model of a fabric formed concrete, hung at the four corners of a piece of burlap to create a "hyperbolic" design. Due to its upside-down position and gravitational pulls, the concrete immediately started to pool in the center. In order to create a successful model, we applied a thin layer of concrete at 10 minute intervals to build-up an even thickness in all areas.

Model 2
This is a small scale experiment of concrete and fabric framework. We created a board with pegs where the model would be wrapped around, to create the intricate legs of the bench. By attaching the base with a simple height variation, the undulating design of the seat would be created.

The formwork material for this model is denim. We found that the material made it hard to pour the concrete in and it did not show the elastic reaction we were hoping for, instead making the model quite thin and flat. The model was not successful because the concrete took a long time to cure, and we deduced that the denim did not allow the concrete to breath and cure appropriately.

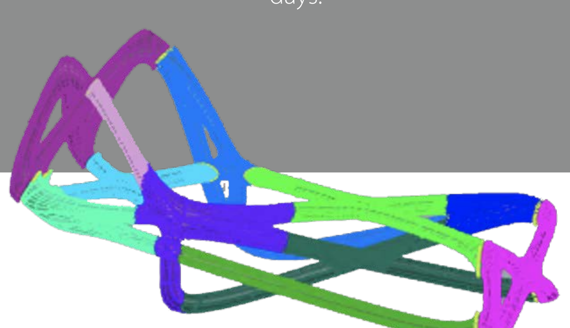
Model 3
This is our third attempt at casting concrete, which is a full scale model of one of the legs. Using white cotton mesh, we stitched the pattern and attached a small handle so that it can be hooked while casting.

We added more water to this concrete mixture so that it would be easier to fill. This model turned out to be more successful than the previous ones. It was cast in an open shed that allowed the material to breathe, and our model was able to cure in a few days.



The experience of a person sitting on a public bench on an overgrown city, everchanging in patterns of light and movement was captured in this image as a way to highlight the reality of the city when it is not under the brightness of the sunlight and under the gaze of the citizens. This reality can be one of loneliness and bewilderment, maybe even danger. This approach intends to expand the usual scope in the perception of the setting to which public spaces and utilities are designed.

*Due to Covid-19, the location of the Wellness Bench (fabrication and installation) will be positioned under a canopy of the Architecture Building, facing the University Centre public gardens and beside the Engineering Building at Carleton University. This area is typically used for student project construction and serves as a meeting point for students from across campus for displays of construction innovation. In the event that Covid-19 protocols do not allow the bench to be built on campus, alternative solutions will be examined."



FABRIC FORMWORK LEGEND

Cut Lines — Measurement — Stitch Lines — * Colors vary based on set