Darwin's Hill

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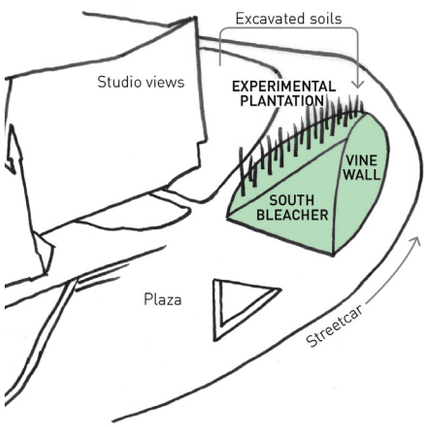
TEXT BY **VICTORIA TAYLOR, OALA**

The topography of cities can be a changing palette, and the latest among urban land experiments in Toronto is a 6.5-metre, three-sided form that has appeared on the downtown campus of the University of Toronto. Located on the east side of the newly relocated John H. Daniels Faculty of Architecture, Landscape, and Design, "Darwin's Hill" is a provocative and important component of one of Toronto's most anticipated building projects. This dramatic form is a poetic intervention that can be occupied by the public; a green barrier to a busy urban context; an experimental garden for the landscape faculty; a site fill depository; and a striking complement to the architectural changes at One Spadina Crescent led by NADAAA. The construction drawings for Darwin's Hill provide a new script for a forgotten piece of land, and an invitation—to students, teachers, and the public—to engage in a critical contemporary landscape discourse: How will we design the urban landscapes of the future?

Guided by technical research, skilled trades and subcontractors, and a supportive client, the design team behind Darwin's Hill, led by Public Work, was motivated to creatively resolve project challenges and to push forward precedent-setting work for one of the top design and architecture faculties in North America. On a site the size of a city block, the opportunity to push new ideas in landscape has not been wasted. "We wanted the berm to be a teaching moment," says Robert Wright, OALA, University of Toronto Associate Professor at Daniels and the client's representative on the design team. "We asked ourselves what experiments can we imagine here, and how can we involve the students?" The design details evolved from there, with each drawing becoming a platform to describe the weaving and layering of the berm's functional/infrastructural/aesthetic/poetic/horticultural/conceptual/educational and public-realm improvement goals.



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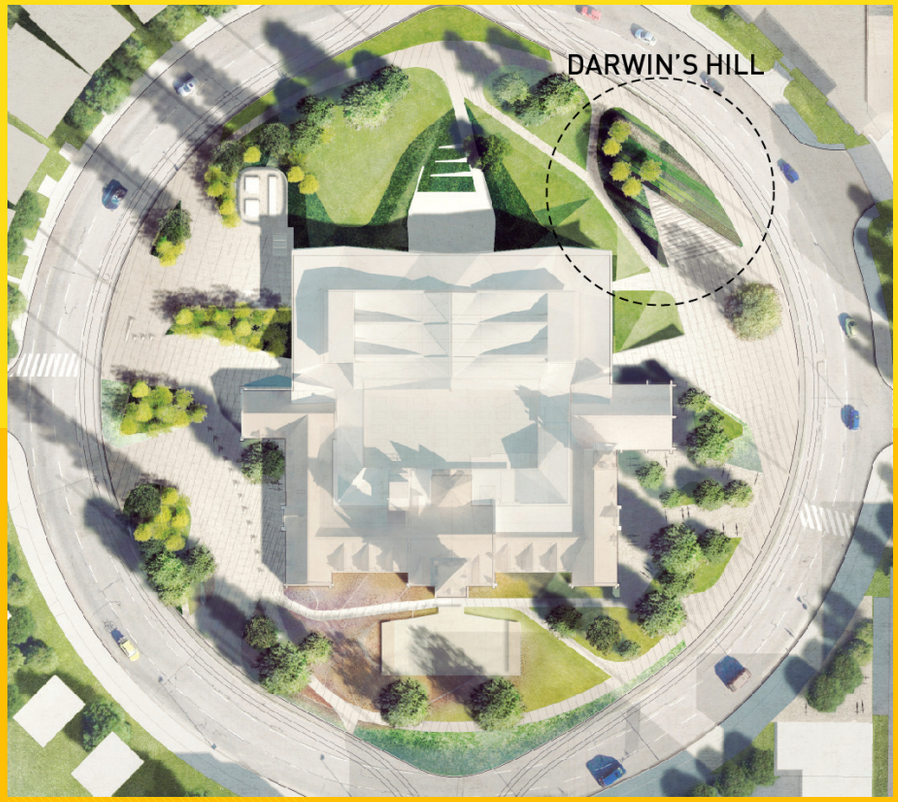
01/ Darwin's Hill under construction at One Spadina Crescent, Toronto, on the east side of the newly relocated and renovated John H. Daniels Faculty of Architecture, Landscape, and Design, University of Toronto

IMAGE/ Courtesy of Public Work

02/ Concept sketch for Darwin's Hill

IMAGE/ Courtesy of Public Work



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Given the tight site staging and a commitment to retaining as much site soil as possible, work on the land moved in sync with the earthwork for the building renovations. Nine hundred cubic metres of soils excavated from the school's new sunken north court were dumped directly into the berm's structural wrapping—a layering of geogrid and folded galvanized steel mesh, holding in the site soils at 400mm increments, guiding and shaping the berm upward until reaching its 6.5m final height. To reach this maximum height within a 15m by 35m footprint, Public Work worked closely with MSE wall system fabricators Terrafix Geosynthetics and Aldershot Landscape Contractors to design and install a soil retention system to secure a dramatic 60-degree east slope. According to Ben Watt-Meyer, OALA, of Public Work, "The hill is meant to be an investigation and

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03/	Site plan for Darwin's Hill
IMAGE/	Courtesy of Public Work
04/	Cross-section rendering of Darwin's Hill
IMAGE/	Courtesy of Public Work
05-06/	Under construction
IMAGES/	Courtesy of Public Work

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showcase of different slopes, soil stabilization techniques, and planting strategies."

Although these types of steep slopes are more common along highway embankments than small urban spaces, the scale is part of the experiment to underline landscape's potential as an activator in three dimensions. As you pass by, the berm's form is unfamiliar and striking in this context but also comforting as it leads you around the site to enclose the school's sunken courtyard, buffering sounds and providing a safety barrier to the constant traffic and streetcars that circulate the site.

The west slope of Darwin's Hill calls attention to landscape's important, and often forgotten, fourth dimension—time. Labelled "a temporary experimental plantation," the 50 percent slope is planted in

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07-13/ Under construction

IMAGES/ Courtesy of Public Work

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14/ The trees on Darwin's Hill are planted in alphabetic order, by botanical name.

IMAGE/ Courtesy of Public Work

15/ Darwin Hill's soil stabilization technique uses geo-fibre-reinforced soil—a mix of synthetic and natural materials—and is meant to mimic the way plant roots hold soil in place.

IMAGE/ Courtesy of Public Work

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ascending rows of 2-metre-high trees as a living laboratory for study and pleasure. Planted in alphabetical order by botanical name, with signage to come, each row showcases one of 18 deciduous, native tree species recommended by the City of Toronto for naturalization—a contribution to the urban canopy and a valuable resource and daily opportunity for students, local designers, and the public to witness seasonal changes and to study each tree's unique morphology and growth rate.

With all of these new trees, the in-slope irrigation system is a critical detail in the construction package. Usually a simple detail benefiting from gravity to achieve deep root growth, the watering system on Darwin's Hill required custom planning. Each pop-up sprinkler head is uniquely calibrated based on the fall of water at its location, with estimated soil-penetration times based on slope, site orientation, and planting palette. The system draws from a large cistern that collects runoff from the building's roof and the majority of the hardscape and softscape areas on site.

In the same way that this berm's namesake, Charles Darwin, pushed beyond the norms of 19th-century thinking, the design team used every cubic metre to push the land's potential in both monumental architectural form and pedagogical opportunity.

BIO/ VICTORIA TAYLOR, OALA, DESIGNS SPACES INFORMED AND INSPIRED BY CONTEXT, ECOLOGY, SOCIAL ENGAGEMENT, AND HORTICULTURAL POSSIBILITIES. IN PRIVATE PRACTICE SINCE 2012, TAYLOR EXPANDED HER PUBLIC PRACTICE IN 2016 AS CO-FOUNDER OF ====\\DERAIL PLATFORM FOR ART + ARCHITECTURE, A CURATORIAL PROJECT TO ANIMATE SPACES ALONG URBAN LINEAR LANDSCAPES (SEE WWW.DERAILART.COM). TAYLOR IS THE FOUNDING CURATOR OF THE GLADSTONE HOTEL'S ANNUAL *GROW OP: THE CULTURE OF LANDSCAPE* EXHIBITION, A SESSIONAL INSTRUCTOR AND CRITIC AT THE JOHN H. DANIELS SCHOOL OF ARCHITECTURE, LANDSCAPE, AND DESIGN AT THE UNIVERSITY OF TORONTO AND AT THE UNIVERSITY OF WATERLOO SCHOOL OF ARCHITECTURE, AND A *GROUND* ADVISORY PANEL MEMBER, TAYLOR IS A FREQUENT CONTRIBUTOR TO *GROUND*.

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Darwin's Hill Design Team

Landscape Architect:
Public Work

Building Architect:
NADAAA

Building Architect of Record:
Adamson Associates

Construction Team

Construction Manager:
Eastern Construction

Landscape Contractor:
Aldershot Landscape Contractors

Reinforced Slope Engineering & Fabrication:
Terrafix Geosynthetics

Size:
15 metres by 35 metres by 6.5 metres in height

Area:
415 square metres

Volume of reused site soils:
900 cubic metres