4887 Saplings

This project – ‘4887 Saplings’ - proposes a dense planting grid of 4887 saplings. Uniformly spaced at 60 centimeters and dispersed across the reconfigured and expanded unpaved area of the Ontario Association of Architects Headquarters site, the diverse mix of saplings are selected from Paul Maycock’s seminal 1962 phytosociology study of deciduous forests in southern Ontario.

Our planting strategy draws inspiration from the afforestation technique pioneered by Japanese botanist Dr. Akira Miyawaki in the early 1970s. By densely planting a variety of native tree in close proximity, the method cultivates a lush, rapidly growing forest stand that mirrors the resilience and biodiversity of the natural forests that once blanketed the Don River ravine site before human intervention.

Through this approach, the forest stand is given the freedom to flourish on its own terms. Saplings vie for light, water, and nutrients, fostering a dynamic ecosystem. In just a few years, the stand will evolve into a self-sustaining landscape, boasting a rich tapestry of canopy trees, sub-canopy trees, shrubs, and ground covers.

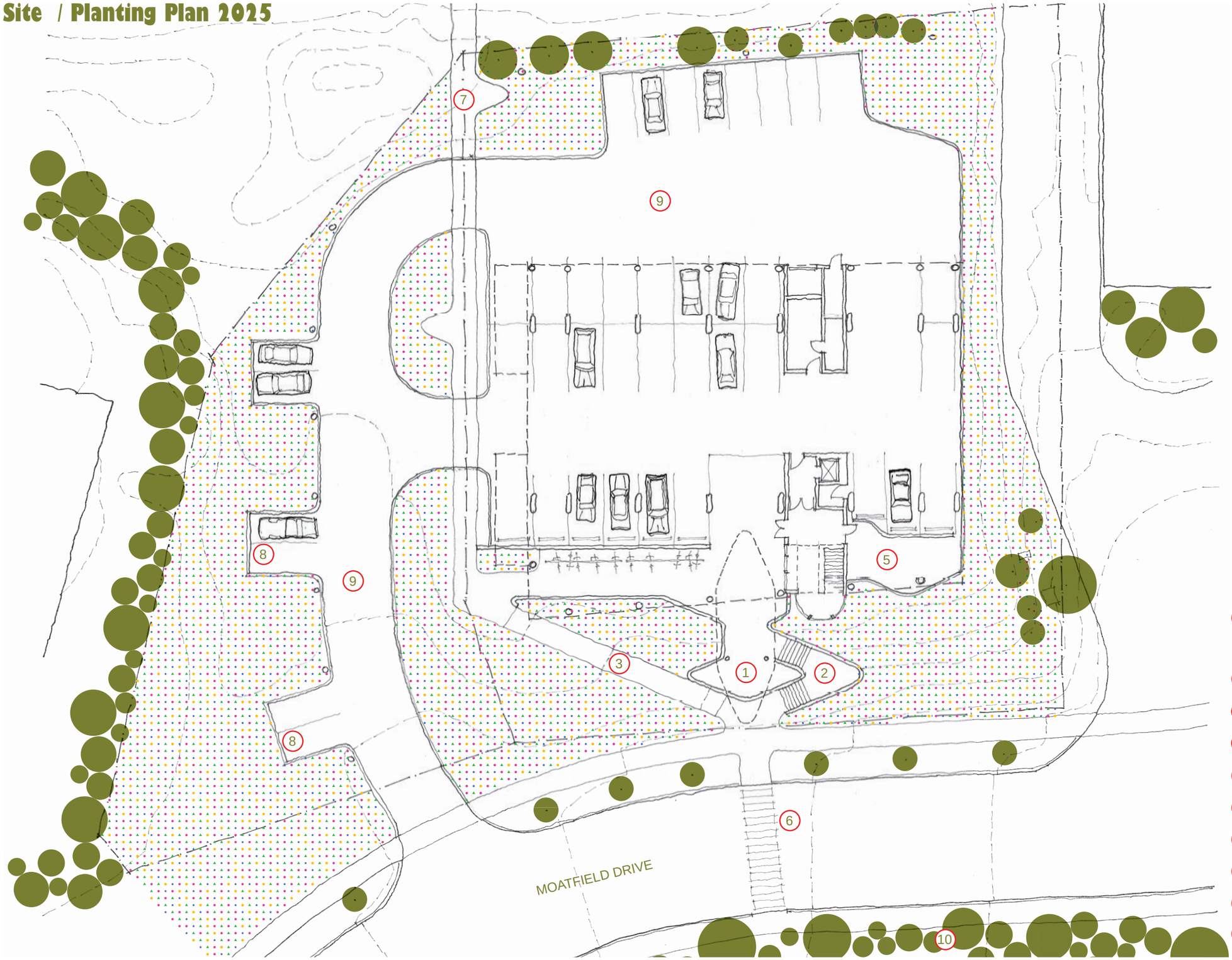
As the 4887 saplings grow and mature into a bio-diverse forest, the public face of the OAA Headquarters will transition from its current focus on cars and its object-like presence to becoming a building seamlessly integrated into the surrounding Don Valley ravine and its vegetation.

Front View 2025

Front View 2032

Front View 2045

Site / Planting Plan 2025



The '4887 Saplings' design reorients the main site access and address away from the car driveway and directly towards Moatfield Drive, featuring a new pedestrian ramp and stair system gracefully negotiating the sloped terrain. While the current site orientation is driven by functional necessity, favoring cars due to limited mass transportation infrastructure, the proposed design embraces an optimistic outlook on the city's future growth and development. It envisions a transition towards a more comprehensive alternative transportation network, evolving over the same time frame as a sapling grows into a mature tree.

Central to the new entrance is a purpose-built architectural cistern which is integral to a new storm water system. Clad with reclaimed JP Price Bricks manufactured at the Don Valley Brick Works, the cistern offers a unique chance to showcase Toronto architecture's historical connection to the masonry trades and the city's vibrant brick-making heritage. The cistern deck provides a covered platform for viewing Moatfield Drive and beyond to the Don Valley.

Legend

4887 Saplings
- 1,466 Sugar Maple Saplings
- 1,466 American Beech Saplings
- 978 Eastern Hemlock Saplings
- 977 White Ash Saplings

1. Don Valley Overlook
   Brick Cistern with Artist's Grate
   Entry Canopy
2. Stair
3. Ramp
4. Bike Parking
5. Forest Porch
6. Proposed Crosswalk
7. Pedestrian Through Site Walkway
8. EV Parking Stall
9. High Albedo, Pervious Paving
10. Don Valley

Growth Succession

2025

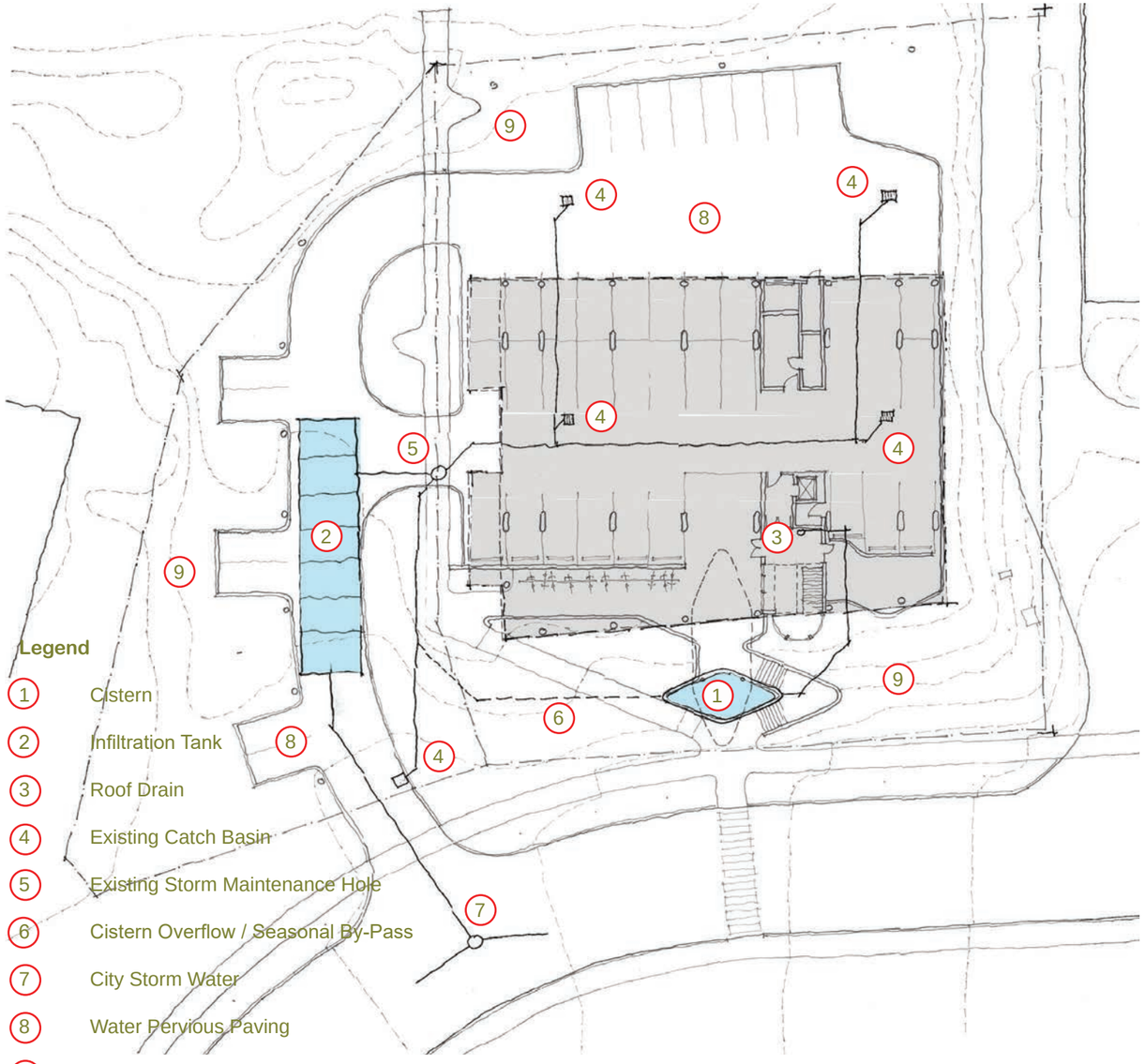
2032

2045

Integrated Design Storm Management

The proposed storm management plan integrates the cistern overlook as a vital design element, connecting it to store roof water. Harvested water will serve as a resource for a subsurface irrigation system for site planting, particularly crucial during the initial growth phase of saplings, aiding the forest's transition to self-sustainability.

The forest itself, comprising a dense canopy of trees covering the site, serves as an effective stormwater management tool. Its abundant vegetation, leaf litter, and soil form a natural sponge, absorbing rainfall, and mitigating surface runoff. To further enhance stormwater management, impervious asphalt paving will be replaced with pervious concrete pavers.



Legend

1. Cistern
2. Infiltration Tank
3. Roof Drain
4. Existing Catch Basin
5. Existing Storm Maintenance Hole
6. Cistern Overflow / Seasonal By-Pass
7. City Storm Water
8. Water Pervious Paving
9. Forest Floor

North West View 2025

North West View 2032

North West View 2045

Plant Selection

The proposed plant selection comprises a diverse array of species which mimics the composition, structure, and dynamics of a Great Lakes Maple Beech Forest ecosystem, common to southern Ontario. Characterized by the dominance of Sugar Maple, this ecosystem features a rich variety of species across the overstory, understory, and ground cover layers.

Canopy

The uppermost layer of a forest formed by the crowns of tall trees, often blocking much of the sunlight from reaching the forest floor. The proposed saplings to create the forest canopy will consist of 4887 saplings of the following species:

30% Sugar Maple (Acer saccharum)

30% American Beech (Fagus grandiflora)

20% Eastern Hemlock (Tsuga canadensis)

20% White Ash (Fraxinus americana)

Understory

The layer beneath the canopy comprises shorter trees, shrubs, and young saplings, receiving filtered sunlight and serving as important habitat for biodiversity. Interspersed among the canopy saplings, and planted at 300mm on center, the proposed seedlings to form the forest understory will be an even mix of:

Striped Maple (Acer pensylvanicum)

Ironwood (Ostrya virginiana)

Eastern Hop-hornbeam (Carpinus Carolinian)

Ground Cover

The lowest layer of vegetation, including ferns, mosses, and low-growing plants, covering the forest floor. This layer prevents soil erosion, provides habitat, and contributes to nutrient cycling. The proposed seed mix for the forest ground cover layer will consist of an even mix of:

Trillium (Trillium spp.)

Jack-in-the-pulpit (Arisaema triphyllum)

Ferns (e.g., Ostrich Fern, Matteuccia struthiopteris)

Canada Mayflower (Maianthemum canadense)

Wild Ginger (Asarum canadense)

Fast Growth Mini-Forest

The Miyawaki method, named after Japanese botanist Akira Miyawaki, is a unique afforestation technique aimed at swiftly establishing dense, native forests. It entails planting various native tree species closely together in a limited space, mirroring the natural structure and biodiversity of forests. This approach fosters rapid growth, ensuring the forest becomes self-sustaining within a relatively short period. By densely planting the 4887 saplings, understory seedings, and ground cover seeds, the method promotes competition among plants for sunlight, water, and nutrients, thus expediting their growth and fostering a robust and diverse ecosystem.

This method creates resilient and biodiverse forests even in compact urban areas like the OAA site. Despite their small size, these mini-forests are invaluable for biodiversity conservation and play a crucial role in mitigating climate change by sequestering carbon dioxide and enhancing air quality. Moreover, they serve as urban green lungs, offering essential ecosystem services such as temperature regulation, water retention, and providing habitats for wildlife.

Public Participation

‘4887 Saplings’ also represents a unique opportunity for the OAA to engage the public. In 2019, the federal government launched the 2 Billion Tree (2BT) initiative to combat climate change and biodiversity loss. The goal of 2BT is the planting of two billion trees across the country by 2030. As part of this initiative, there is an ongoing and open proposal call for organizations, including for-profit and non-profit, interested in tree planting projects.

The ‘4887 Saplings’ project could be developed into a successful 2BT proposal, offering workshops to educate school-age children about the benefits of the Miyawaki method, forests and the importance of biodiversity. Public interest and participation in Miyawaki method workshops are on the rise, supported by organizations like Network of Nature and Green Communities Canada.

Front View 2045