



2014 Exhibition of School Planning and Architecture

Lassonde School of Engineering

York University

Toronto, Ontario, Canada

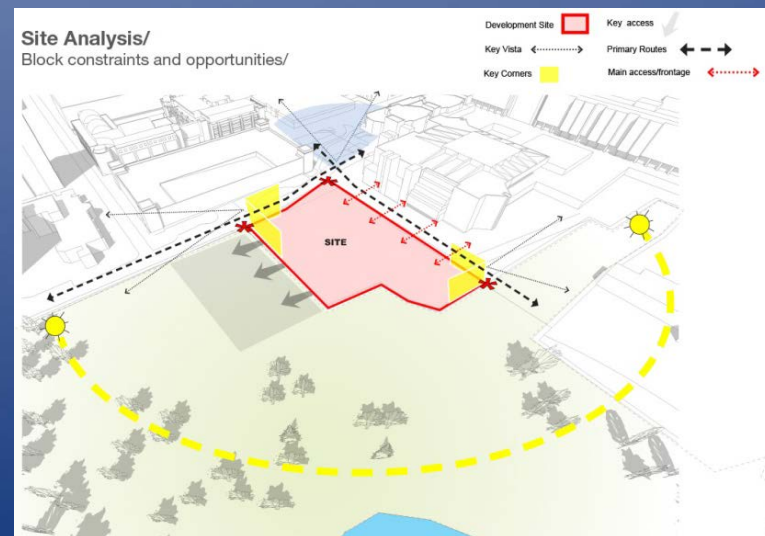
Lassonde School of Engineering





“The natural setting for the building was an inspiration and provided an opportunity with significant public visibility from a distance. We can take advantage of this new building to provide a new face to the campus, the curvilinear facade of the building responds well to the natural landscape of the adjacent pond and arboretum.”

*Richard Francki, Assistant Vice President,
York University, Campus Services & Business Operations.*

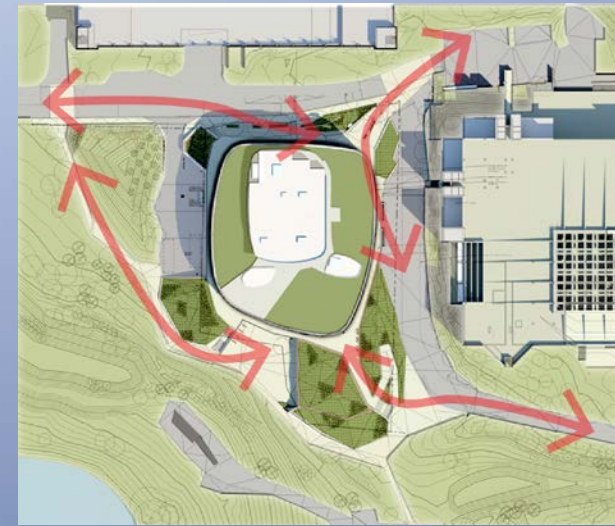


Community Environment:

Establishing a dialogue with the campus is a vital concern for the architecture.

Through support of the student body with spaces that foster efforts to learn

from each other, as well as creating a venue for the University to reach out to the broader context beyond the campus, the new school of engineering defines itself as an instrumentalized teaching environment.





“We want our students to understand the major cultures and religions in the world and speak more than one language.... We want to build on the notion of future engineers working harmoniously. ”

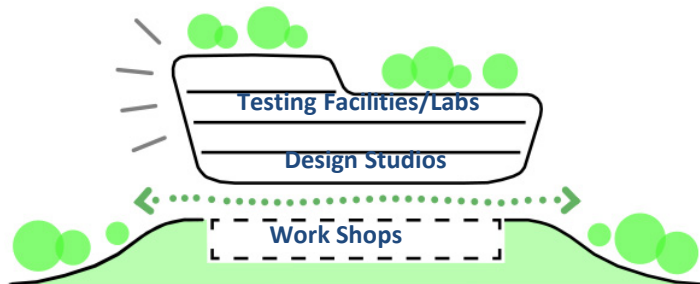
*Janusz A. Kozinski
Founding Dean, York University*



Forms and Spaces that are Flexible

Learning Environment:

Planning a teaching environment to support this ambitious new program required a radical rethink of how students will learn. With links to the Schulich School of Business, Osgoode Hall Law School and other faculty around campus, plus a curriculum that uses new media offering lectures on students' time, a highly flexible learning environment is required.



Building Concept Section

Research Labs within the 'CLOUD' are linked to fabrication labs below, and between these two key areas are a host of support spaces ranging from student services, design studios, lecture spaces, meeting rooms, exhibition spaces, and the main link with the larger campus.



Providing for spontaneous collaboration was a critical consideration throughout the facility – both interior and exterior. The school enjoys a direct relationship to the Arboretum, Stong Pond, Osgoode Woodlot and Saywell Woods on Campus.



Physical Environment

An image of the building as something that is constantly changing expresses a fundamental curiosity shared by students & faculty. The 'CLOUD' provides this visual cue as well as a responding to a unique challenge:

What environment supports this Renaissance Engineer?





“The natural setting for the building was an inspiration and provided an opportunity with significant public visibility from a distance. We can take advantage of this new building to provide a new face to the campus. The curvilinear facade of the building responds well to the natural landscape of the adjacent pond and arboretum.”

*Richard Francki, Assistant Vice President,
York University, Campus Services & Business Operations.*



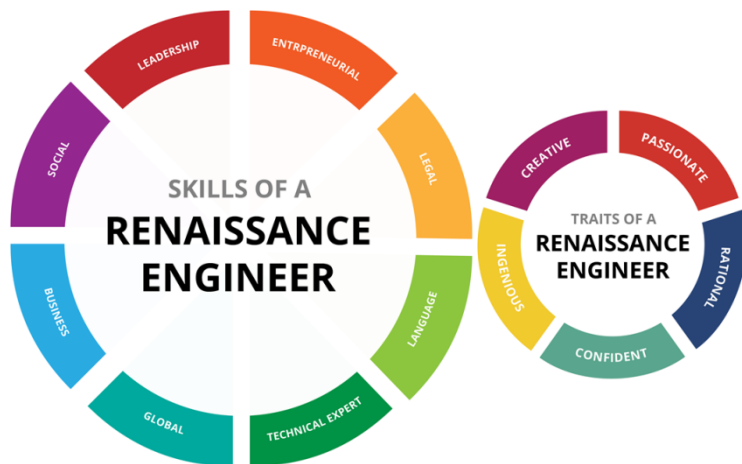
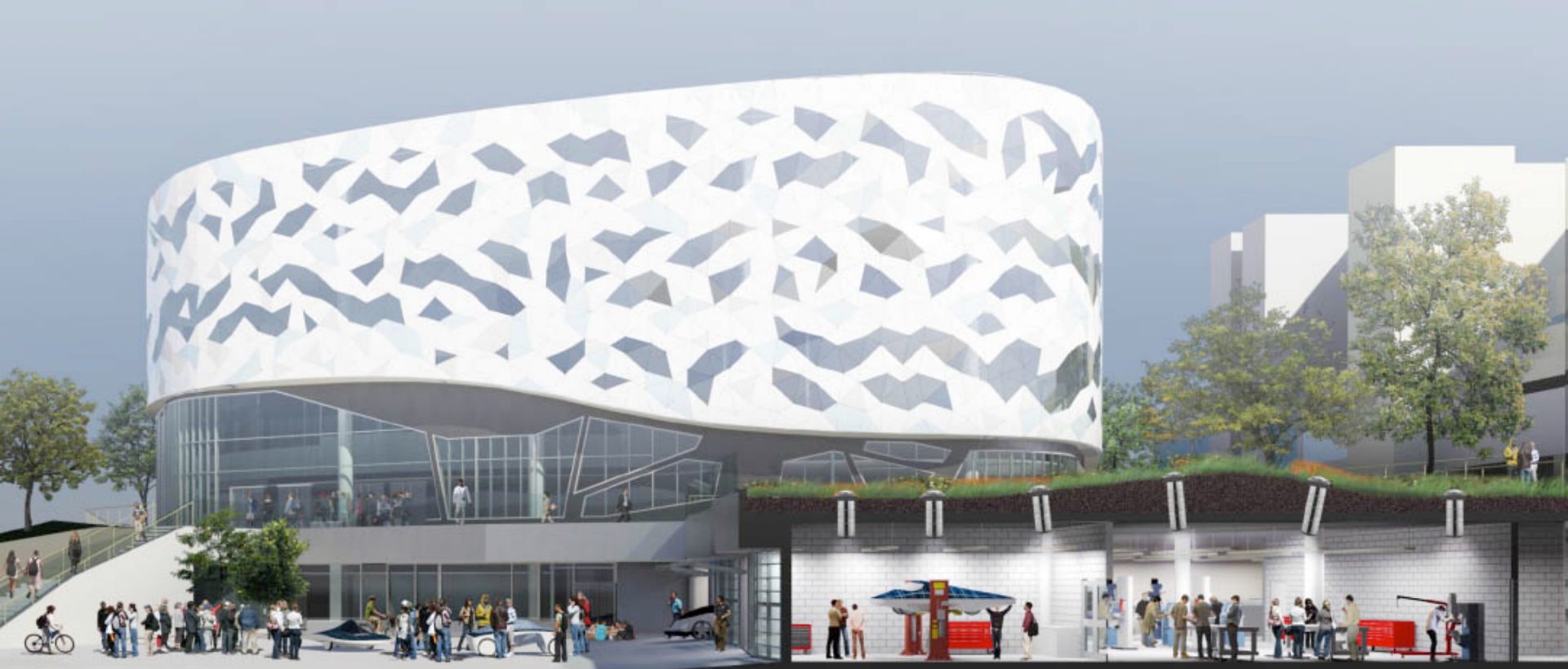


Planning Process:

“The Lassonde School is a community. One that values learning. Our mission is to grow a place where students love to learn and where people love to work.”

“The Lassonde School of Engineering was established this year to educate this new type of engineer — someone with an entrepreneurial spirit, a social conscience and a sense of global citizenship who is a highly-trained professional in their field and across many disciplines. ”

*Janusz A. Kozinski
Founding Dean, York University*



“Renaissance Engineer” is a term that was developed during the course of the project and has served as an evolving guide for this new program in engineering.

Defined as a ‘global citizen with a level of social consciousness and entrepreneurial know-how, a Renaissance Engineer is focused on practice and making things happen.’

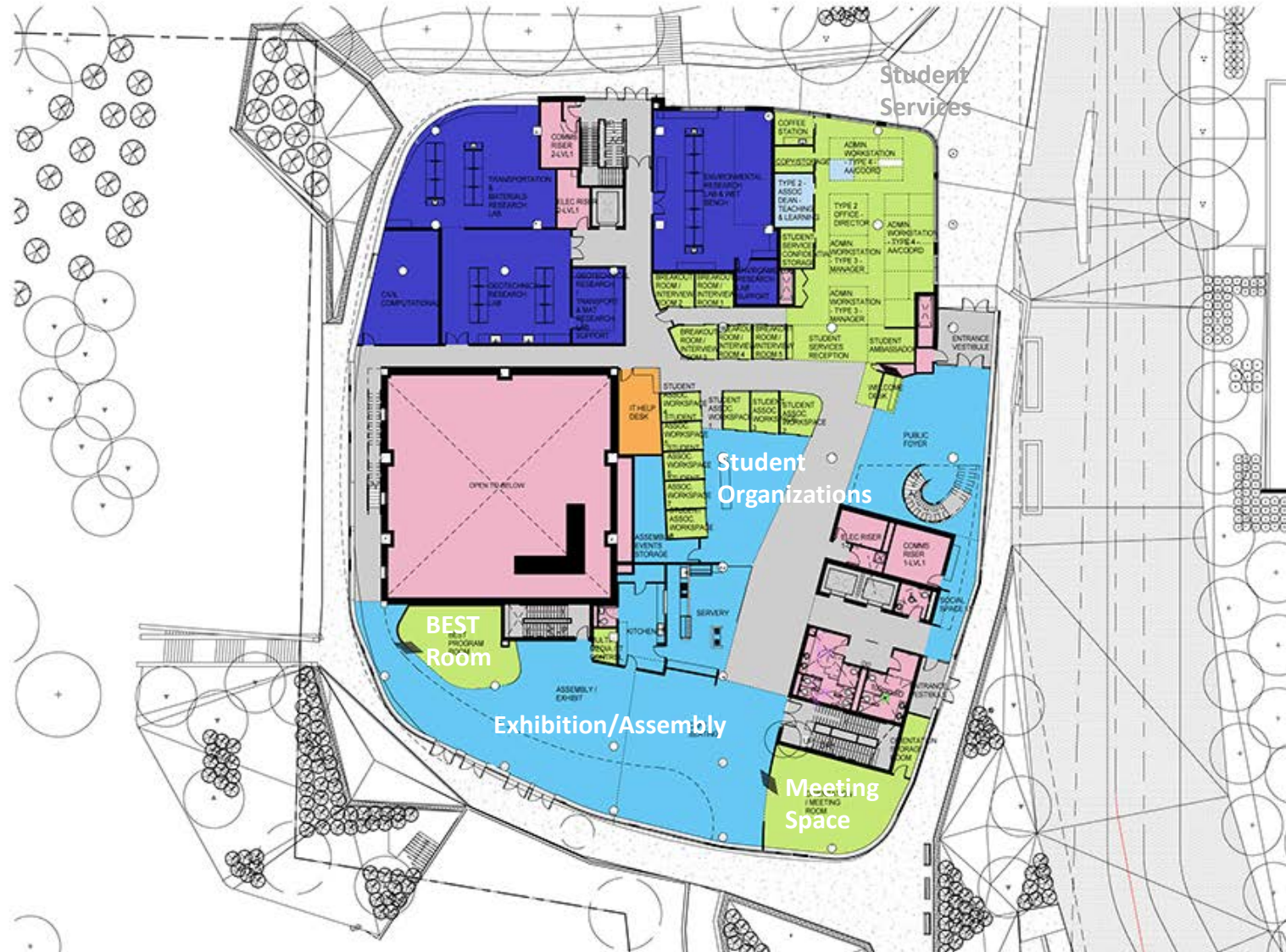
Plans

Level 0 supports a Hi-Bay Testing Lab at the building's core. A large workshop that opens on to an outdoor plaza space affords students with a number of work environments and an opportunity to engage the university

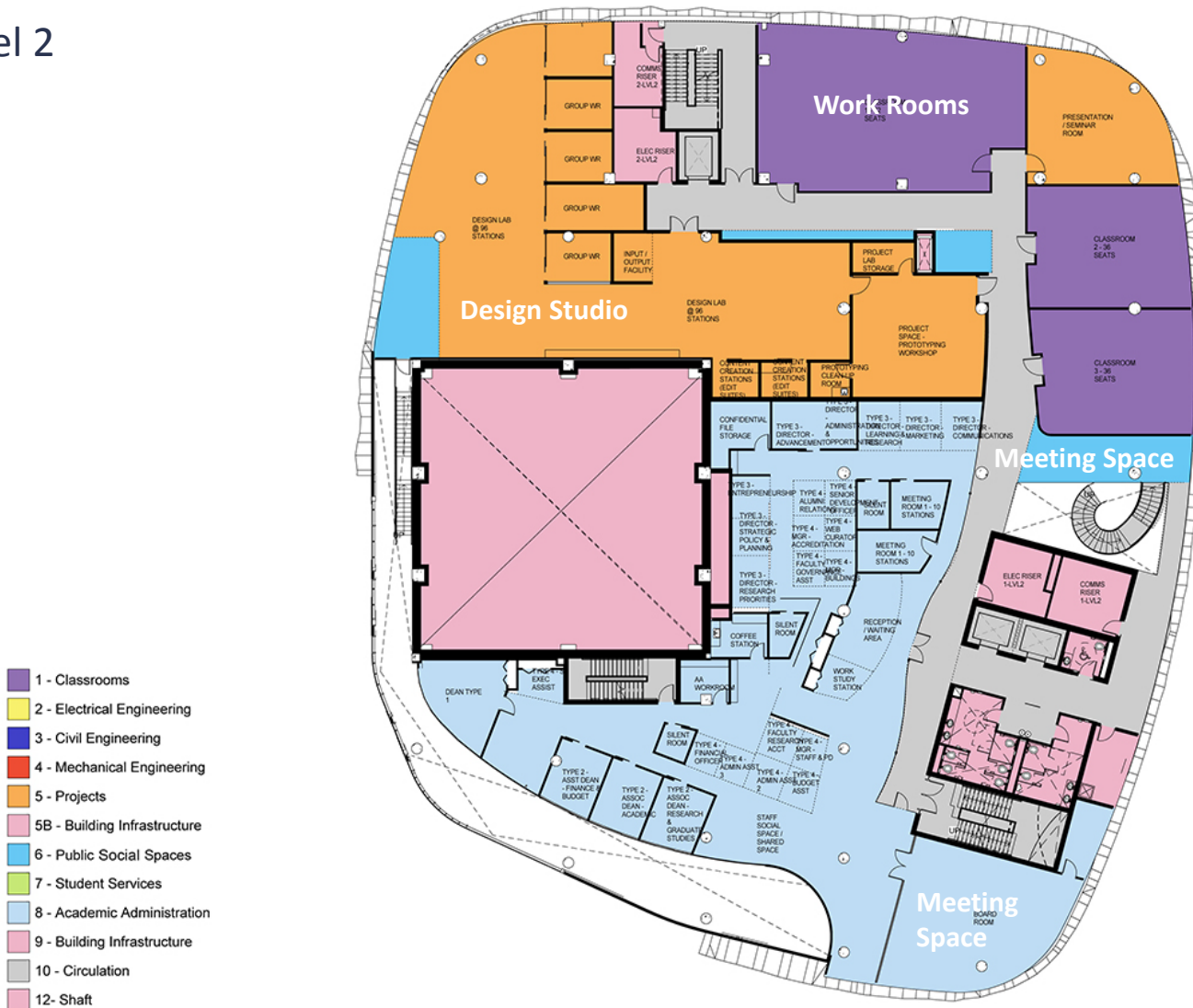
Level 0



Level 1



Level 2



Level 3 Centrally located labs surrounded by open student spaces around the building's perimeter creates a zone – the 'cloud' – that is highly adaptable to the research that occurs here. With break-out spaces immediately accessible, an intensity of activity permeates the open areas, visible through the cloud's façade.

Level 3

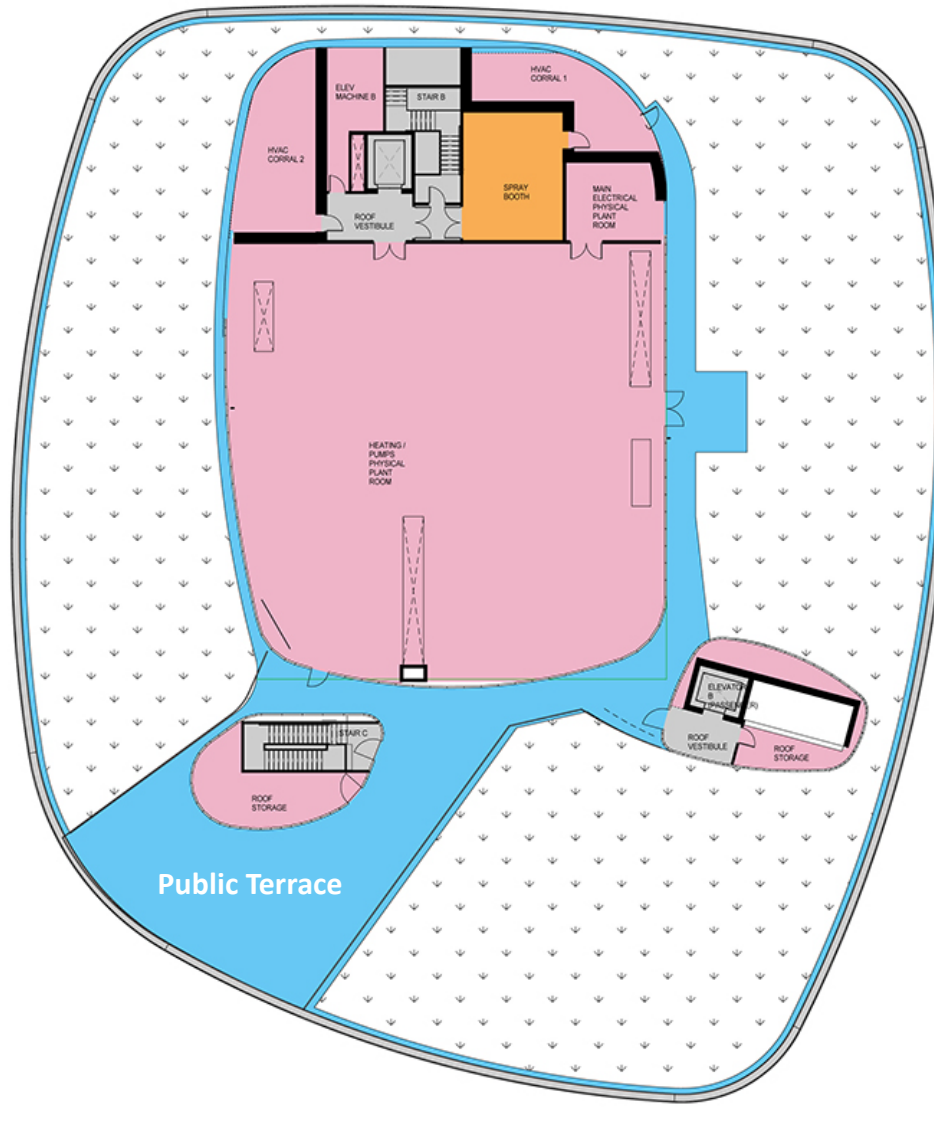


Level 4



Roof Plan Aside from the building's mechanical spaces, an accessible green roof, environmental testing equipment and accommodation for future solar energy research has been established. A large terrace for public social events is located along the south-west corner overlooking Stong Pond.

Roof Plan



Exhibition of School Planning and Architecture

Project Data

Submitting Firm :	ZAS Architects + Interiors Inc.
Project Role	Architecture and Interior Design
Project Contact	Paul Stevens
Title	Sr. Principal
Address	517 Wellington St. W., Suite 404
City, State or Province, Country	Toronto, Ontario, Canada M5V 1G1
Phone	416-979-9834

Joint Partner Firm:	Not Applicable
Project Role	
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

Other Firm:	
Project Role	
Project Contact	
Title	
Address	
City, State or Province, Country	
Phone	

Construction Firm:	Laing O'Rourke / Gillam Group
Project Role	Construction Management Team
Project Contact	Mark Platt
Title	Project Manager
Address	401 Bay Street, Suite 1600
City, State or Province, Country	Toronto, Ontario, Canada M5H 2Y4
Phone	416-646-5167

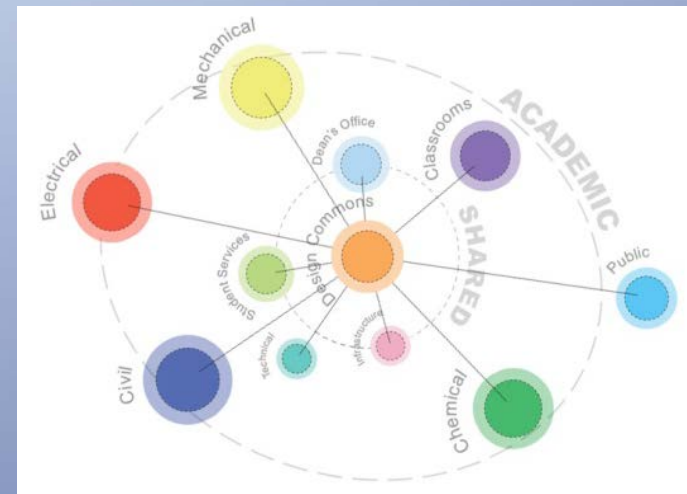
Exhibition of School Planning and Architecture

Project Details

Project Name	Lassonde School of Engineering
City	Toronto
State	Ontario
District Name	York University
Supt/President	Richard Francki, Assistant Vice-President
Occupancy Date	June 30, 2015
Grades Housed	University
Capacity(Students)	300
Site Size (acres)	1.42
Gross Area (sq. ft.)	169,470 sf (Phase 1)
Per Occupant(pupil)	564.9
gross/net please indicate	Gross
Design and Build?	
If yes, Total Cost:	
Includes:	
If no,	
Site Development:	4,250,000
Building Construction:	65,000,000
Fixed Equipment:	5,000,000
Other:	
Total:	\$74,250,000

“The building’s non-traditional design represents the notion that engineers should be polyvalent and collaborate within a cloud to produce tangible results.”

Richard Francki, Assistant Vice President,
Campus Services & Business Operations.

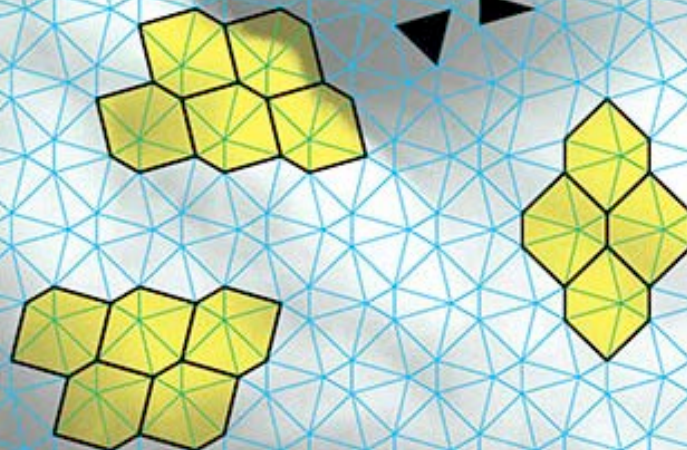


“We want our students to understand the major cultures and religions in the world and speak more than one language.... We want to build on the notion of future engineers working harmoniously.”



The 'cloud' façade for the new Lassonde School of Engineering has been developed using triangulated pattern of a rainscreen Aluminum Composite Panel (ACP) cladding together with Structural Silicone Glazed (SSG) type windows. The geometry of the cloud is curved in plan and vertical in section – there are no compound curves.

Richard Barnes, Murmur #2 (2005)



Façade Cloud Pattern Study



Concept Sketch

Cloud Geometry

There are two main components to the cloud's geometry:

1. The Shape-in-Plan – the façade is designed around 8 curves, one each for N, E, S, W and a radius for four corners. The structural slab-edge is based on these curves and a setting out point on the floor slab will reference those 8 curves' center-point.

2. The Shape-in-Surface – There are three main constraints we have worked with:

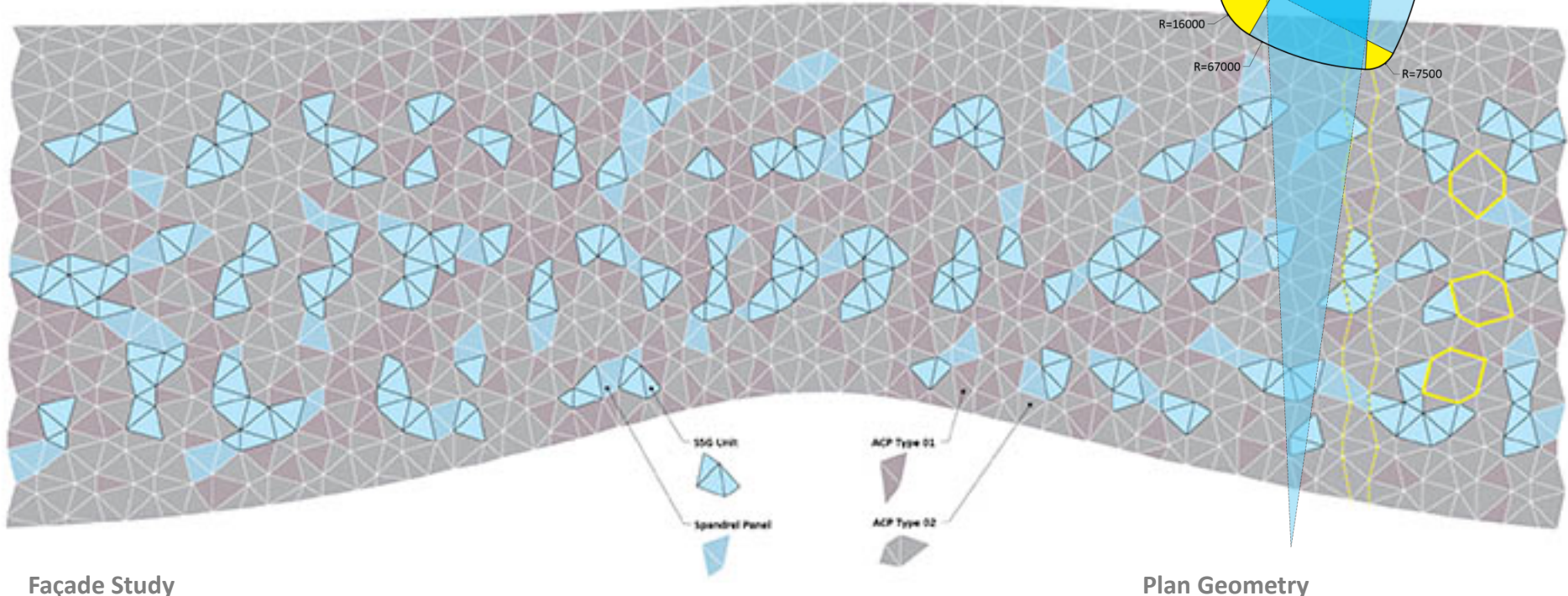
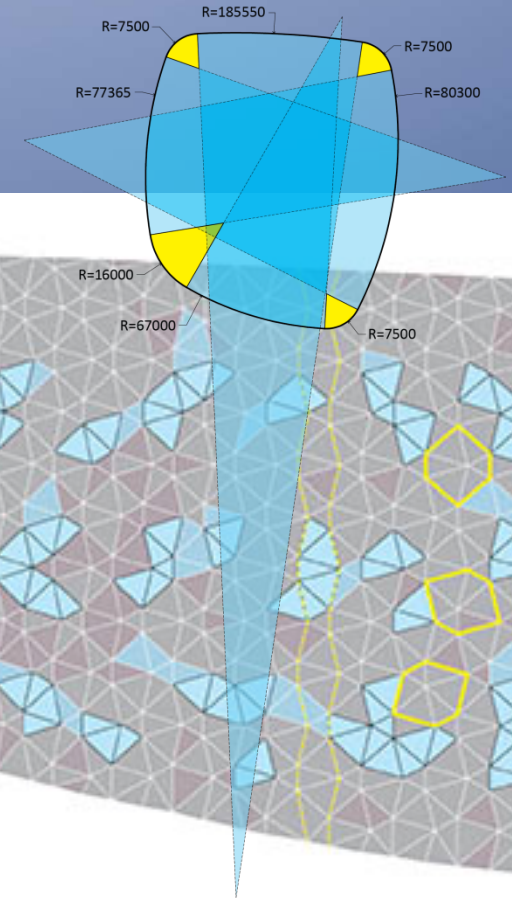
a. The entire façade has been developed using 3 triangles. This applies to 85% of the cloud and

includes both ACP and SSG panels. The remaining 15% are unique panels limited to the parapet and soffit areas (these are truncated versions of the typical triangle as a by-product of the parapet/soffit curves).

Additionally, the size of the triangles is based on industry standard limitations for ACP panel sizes.

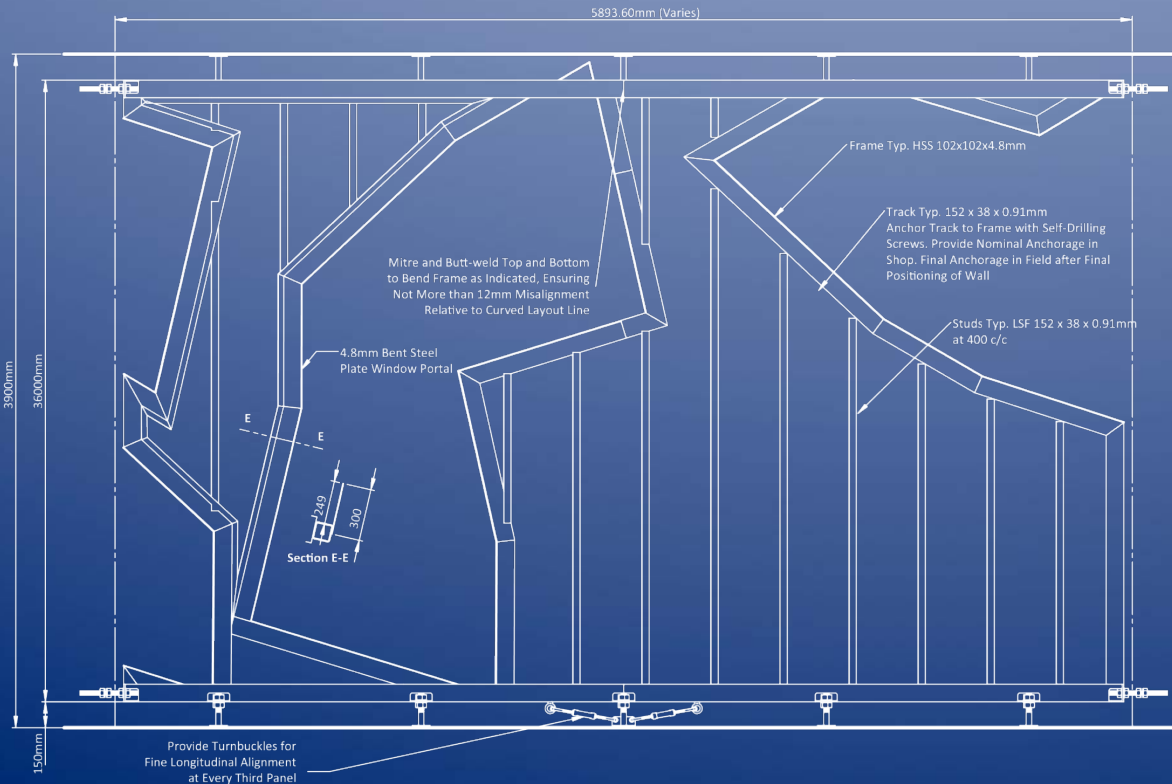
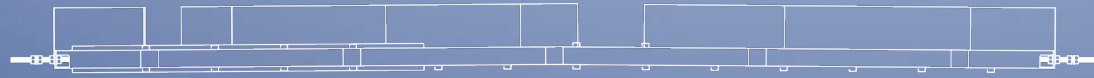
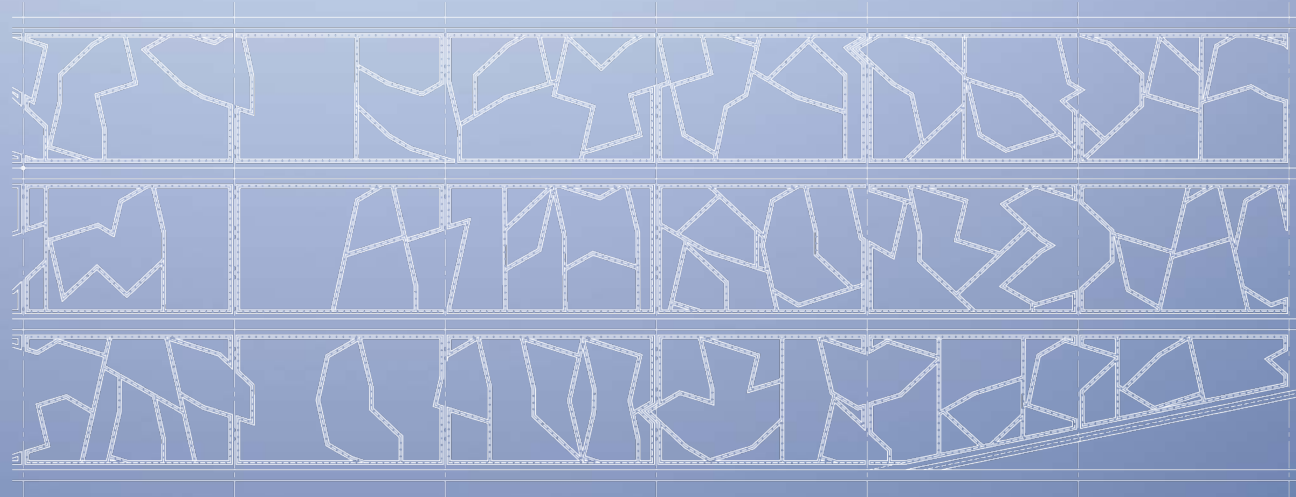
b. An offset from the triangulated grid of 10mm (5mm either side of the line) has been incorporated to allow for a reveal gap between panels. This gap assumes a 10mm minimum; however, this can be modified for any panel system minimum. We have established this gap as the same for either ACP or SSG panels, though this too can be modified if required.

c. Within the 150mm space accommodated for the rainscreen (beyond the insulation layer), a range of 50mm has been set to define the inflection of the intersection of triangles. Each convergence point of triangles has been identified and we are able to provide both an X, Y, Z coordinate as well as an offset ranging from 0 – 50mm for those convergence points. Note that the inflection of any triangle does not change its shape – all inflections are made up in the 10mm minimum gap identified above.



Façade Study

Plan Geometry



Curiosity and a challenge make for a potent starting point with a strong team.

With a spirit of ingenuity seen from concept to realization, mathematicians, architects, designers, engineers and fabricators have found novel technical solutions and an expansive repertoire of potential experiences in the realization of key elements of the building, notably its façade.