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As we complete our first year at our new home in Mississauga, this is an excellent opportunity to consider how physical space impacts the ways we work together and the products of our creative labour. The HMC B building provides dedicated Architecture learning space in a way that draws us together as a learning community, and improves our work together. Elaborate new design studios, state-of-the-art computer labs, a print shop, and two materials libraries have been terrific additions to our school. I’ve been especially pleased with the addition of a production studio, which is often filled with students collaborating on their studies. Those students working together or studying with a tutor in the drop-in area underscore some of the most fundamental principles of our school; dedication to Architectural technology, and a shared community whose members support each other in that dedication.

As you look at the projects displayed on the following pages, I invite you to consider the physical spaces in which they were created and the efforts of those dedicated students. Is this design an inspiration that sprang from a student-faculty meeting in a design studio? Is it the product of a late-night render session in our computer laboratory? Perhaps it was crafted by a team of students working together in our production studio, or uses materials and colours drawn from our new libraries?

Where will everyone practice their craft next? The possibilities for our graduates are seemingly endless, and I hope you will have the chance to explore them together!

Dave Wackerlin, M.Ed, B.A.
Associate Dean
School of Architectural Technology and
ABOVE: A-wing of the Hazel McCallion Campus at Sheridan’s Mississauga campus. Courtesy: Moriyama & Teshima Architects
Cube²
Diana Ghousy

Cube² was inspired by how a Rubik’s cube moves. Twisting one row of a Rubik’s cube completely changes the shape of the plain cube. I took this concept, played with a cube, and managed to reflect this in the design of a house. The unique shape of the building is derived by rotating and overlapping the cube as it changes levels. To connect the building, there are multiple staircases, including a feature exterior staircase and an interior staircase. What contributes to the uniqueness of the building are the lookout locations on every floor. The first floor provides a focused view, while the top floor has a patio that provides a broader, and more dynamic vista. The materials were chosen to blend well texture-wise, and to contrast each other color-wise. By using wood siding and concrete, the structure blends in with the surrounding environment and is a harmonious mix of materials.
LEGEND
1. Living Room
2. Kitchen
3. Dining
4. Building Pad
5. Upper Patio

TOP: Render of building in a forest setting
BOTTOM: Render of building on private residential property setting

TOP: Exploded axonometric diagram of proposed structure
The Precipice
Nicollo Abe

Rome accumulates in its streets thousands of years of history. Its rich culture, its people and its intense and vibrant activity turn it into a significant world capital. The Precipice of Rome establishes a central, inclusive space of faith and religious activity. Located in the heart of Rome, its contemporary design welcomes believers of all walks of life into its unique hall, featuring a linear skylight and accessible entrances and seating. The building aims to extend the threshold of tolerance and acceptance through its inclusive architecture. The North-facing point of The Precipice extends the message of acceptance throughout Italy and into the world. After witnessing multiple religious reconstructions, Rome has become an important hub for developing beliefs. The Precipice aims to streamline those beliefs in an elevated, fundamental, place of worship. This contemporary chapel aims to be a place of encounter, a space for dialogue, all with the hope for peace in a complex world.
The White Owl’s Den
Nicollo Abe

The White Owl’s Den won one of three final prizes in the 2017 Life of an Architect Playhouse Competition, out of twenty-five finalists. The committee selected the winners according to their overall design, appeal, constructability, and rule-adherence. The White Owl appeals to children through its charm and coziness, while its structural form highlights the owl’s natural silhouette. Its inquisitive gaze, wide wingspan, and interior reading loft encourage children to explore their imagination in the physical space of the wise owl’s mind. North Park Centre in Dallas, TX displayed The White Owl’s Den during the month of July for participants to place bids on each playhouse. The funds of the auction benefited the Dallas Court of Appointed Special Advocates (CASA) who legally represent abused and neglected children.
THE WHITE OWL'S DEN

- **EARS:** skylight
- **EYES:** entrance
- **WINGS:** perch
- **UPPER LOFT**
- **FEATHERS:** climbing holds
- **RIBS:** bookshelves/ladder

**Dimensions:**
- Front: 7' - 6"
- Right: 8' - 6"
- Back: 7' - 6"
- Left: 8' - 6"
- Height: 8' - 0"
Sole House
Refaat Hossaini

Sole House is a competition proposal that explores new and innovative living spaces within a micro-house context. The intention of the design is to compliment the atmosphere through materials and colours. Soft materials such as treated wood, with multiple undertones were implemented to strengthen the sense of unification. The surrounding area compliments the design and offers a sustainable challenge for the occupants. The design transforms the rural environment into a living environment. Sole House was completed as part of the Architectural Visualization class, a requirement of the Architectural Technology Program at Sheridan. Students were encouraged to explore the design capabilities of micro homes and to push the envelope in regards to designing small spaces.
ABOVE: Exploded diagram of the Sole House demonstrating the simple, yet modern fenestration.
Origami Micro House
Qi Wang

The Origami Micro House is a proposal created for Future House - Micro House Competition. Origami Micro House is inspired by origami. The concrete floors and walls create unique building forms with continuity, like its namesake folding paper art. The 3-dimensional “S” form creates unique views from different angles. Curtain walls make the special form of the building stand out and provide a modern feeling. The glazing area brings natural light and views to the house, giving an open feeling to the Micro House and making the space feel larger. Origami Micro House is a 2-storey house with a total area of 60 square meters. Shelves and storage spaces under the staircase maximize unused areas. They not only help with saving space within the Micro House, they also add a creative interior design feature to the house. The Origami Micro House has a simple colour scheme: white stucco and curtain wall for the main building facade. Wood siding accents give the house an organic look that ties it back to the surrounding landscape.

ABOVE: Ground Floor Plan

LEGEND
1. Kitchen
2. Bathroom
3. Living/Dining Room
4. Foyer
5. Dock
6. Second Floor Above
ABOVE: Approaching front of structure from the East corner of

BELOW: Approaching back of structure from the West corner of the lot
Micro House | The Stiltbird
Erika Wood, Sonaly Francis

The Stiltbird is a micro house proposal designed as a studio project in the third year of Sheridan’s Architectural Technology program. It is an environmentally-friendly green building located in a rural area and is perfect for nature enthusiasts. The incorporation of cement fibreboard cladding adds to its sustainability, since this product outperforms traditional wood products and requires less maintenance. Our micro house is different from all the others: Although small in size, it is not lacking in detail or interest. The angled wooden framing members add visual appeal and warmth to the overall design. The piers allow the building to be constructed on sites that would challenge traditional building methods, such as on the side of a hill. This allows the builder to take advantage of the surrounding views and topography.
Clarke Hall Renovation & Addition  
Guka Yoga, Ajitha Monohoram

The Clarke Hall Renovation and Addition is a proposal for Studio 6 at Sheridan College in the Architectural Technology program. The intention of this renovation and addition is to create an inviting environment for the community and boost the local tourism industry. The main challenge of this project was to restore the heritage front facade, and maintain barrier-free access from Lakeshore road west. We further exposed the structural cathedral ceiling in the hall. Lastly, we provided sufficient functional space for all additional building program areas such as the work shop, a pottery studio, an art studio and an art gallery.
Dalrymple Lake Cottage
Nataliya Yatsenko, Kayla Robinson

Dalrymple Lake Cottage was a design proposal for Architectural Computer Visualization, a course in year 3 of the Architectural Technology program. The idea was to design a cottage getaway on an escarpment. Dalrymple Lake is a beautiful destination located a few hours north of our campus in Mississauga. Many cottages located along Dalrymple Lake are fittingly country style; however, this proposal strives for a more contemporary approach while still incorporating the surrounding nature. A few of the main features of the cottage are the curtain walls at the back and front of the cottage, and a three-tiered balcony system. Different faces of the cottage protrude at different distances to create a more organic form rather than modern, stiff boxes. These features allow the clients to feel more integrated with nature, while eliminating the feeling of being closed off from the outdoors.
River Wood House
Ajitha Manoharan, Guka Yoga

River Wood House project prepared for the Micro House competition, is a challenge asking us to design a maximum 400 square foot house, while providing decent living within that minimal space, without a specified location. Micro houses are popular because of the rising costs of land and construction. Our River Wood House design started by placing two simple blocks on top of each other. Even though the size of the house was minimal, we did not want compromise on planning the house with minimal thought. We designed the first floor with the combination of living, dining and kitchen, with second floor reserved completely for bedroom and bathroom with view. Throughout the building, its structure is exposed to give a vibrant look and is to mingle with the environment. Most of the rendered pictures were done with nature where the house complements its surroundings. The structure and shape of the house belongs on sloped landscapes, as well as rocky mountains.
RIGHT: River Wood House as seen from the river

LEFT: River Wood House on a snowy day
Rhythm Loft
Kaifei Feng

Rhythm Loft is a studio project for the third year Architectural Technology Program at Sheridan I completed with Qi Wang. This project is located at 1056 Queen Street, Toronto, which is a multi-occupied building of six storeys. It includes an art gallery, an art store, a café, studios, and residential units. The design concept is inspired by the music spectrum which expresses the rhythm of the falling rain. The project also meets mid-rise building standards and contains an abundance of glazing to allow for natural light and open views. The building’s expression is achieved through a revival of traditional building material with modern interpretations. The design utilizes conventional wood texture to create a contrast between the curtain wall and the dark grey metal panel systems.
LEFT: Perspective view approaching from west

ABOVE: Perspective view approaching from Southeast side
Spiral Bird Watching Unit Design

Jerry Guo

The Spiral Bird Watching Shelter is designed for InShelter SB – LB Student Award competition. The proposed design is focused on sustainability performance, a near zero environmental impact, and the preservation of natural species. The nature centre provides breathtaking views of the surrounding landscape. The driving philosophy behind this project is minimalism. We want to achieve better design, using a simple, spiral trapezoid shape and clean, open, light-filled spaces, as well as uncomplicated cladding and wall finishes.

ABOVE: Sitting on top of cliff looking down to ocean

ABOVE: Main front elevation with a spiral slope floor

ABOVE: Sloped ground floor plan with hardwood floor finish

ABOVE: Exploded axonometric Diagram showing structure

LEGEND
1. Glass rooftop
2. Curved wood cladding wall
3. Interior hardwood floor
4. Slanted windows
5. Timber structural support
BELOW: Sunset glows on mountains and the building

ABOVE: Glass rooftop provides natural light and thermal comfort
The Wind
Jad Asma

The Wind was designed for a Micro House Design Competition. The goal of the design was to unify nature through modern architecture and to represent the dynamics of the wind. The objective was achieved by enhancing the transparency between the house and the neighboring space. The simple alteration of the stacked rectangle produces an organic movement through the building. The micro house design had its own share of challenges such as designing a multi-storey building within restricted space of 500 sqft. The Wind is divided into three major components with the kitchen residing on the first floor, a living area on the second and a fully functioning bedroom with a bath on the third. In Conclusion, The micro house successfully represents the dynamics of the wind and the transparency between the neighboring space, the future of housing is in Micro House Design, and “THE WIND” is the future.
Garden Wood House  
Simran Kaur Ahluwalia

Garden Wood House is a proposal for an International Microhouse Design Competition and was completed in the third year as part of the Architecture Technologist Program at Sheridan College. Microhouses are increasing in popularity as housing costs continue to rise and people search to find more affordable houses. The proposal was designed with a 500 square meters restriction.

The main concept looked at exploring sustainable practice through materials and connection to nature that how the house connects to the surroundings. The geometry of the house is very simple and clean lines were used in the design. The shape of the house is very simple cuboidal structure. The four slanted columns build in front of the house are for the Structural support and to give the house a Unique look.

Not everyone aspires to live in a big house, some are entirely opposite who prefer Garden Wood House.
ABOVE: Worms eye view of proposed structure
BELOW: Rendering of overhang near front of structure
The China Home
Lukas Machaj

China is continuously modernizing to remain a global superpower. Their once largely rural society is moving more and more towards urban centres. This home aims to provide a solution for the millions of relocated Chinese farmers. Through the use of locally-produced mudbrick, a familiar shade of the countryside welcomes new and existing inhabitants alike. With space being a luxury lost with a move to the city, we create in our proposed house, functional outdoor spaces that maintain privacy. Brick screen walls allow light to pass into the spaces of the home while providing a visual block from the street. A rooftop garden gives residents a space to grow and harvest goods, something they may be accustomed to with their former way of living. With ambitious sustainable goals set for China’s future, the China Home aims to be the catalyst for future projects of its kind. R-50 walls and floors that act as a solar mass are highlights of the self-sustaining house that urban newcomers can call home.

53% of the exterior wall surface is made of glass. The brick privacy screens enclose 42% of that, equipping the areas of the home with high solar exposure, without compromising security.
Muskoka Cottage
Harrison Dell

Based on the requirements of an international design competition, The Muskoka Cottage was created to fulfill my project submission in the Advanced Visualization course at Sheridan. The main concept behind this design is to accentuate the structural components of this contemporary cottage. This is achieved by exposing the structural beams, trusses and columns throughout, both interior and exterior. The exterior glazing creates an open and bright interior to the building, while allowing the exposed trusses to be viewed from the exterior. The sloped topography creates a unique walkout environment underneath the main deck, as well as a warm living space for the occupants. Both the walkout and the lake view deck, that surround the cottage, provide a picturesque landscape outlook of the property, as well as a perfect patio lounge area, with spectacular views to the lake. Lastly, the natural wood finish of the cottage connects the contemporary design to the forest environment in
ABOVE: Axonometric diagram

RIGHT: Front elevation

LEGEND
1. Topography
2. Walkout basement
3. First floor
4. Trusses
5. Gable roof
TB-HOUSE
Tabinda Begum

TB-House is a micro-house proposal for semester 6, Architectural Computer Visualization at Sheridan College. The concept behind the TB-House is to make the shape of the building become the interior planes. Additionally, the curves on the building form are used as landings on the inside of the house, and so the building’s form has a purpose. The railing and exterior beams create a final layer of structure to both define and encase the home. I wanted the house to look grand, but because it is a micro house the interior was kept minimal. To make the house a simple and elegant, the color palette chosen includes a rusty red and grey, providing the building with an increased context, helping it stand out.

LEGEND
1. First floor
2. Second floor
3. Balcony
4. Glass
5. Wood
The Watching Eyes
Luc Suh

“The Watching Eyes” is a project proposed for an international design competition that requires a bird watching unit that will function as a shelter. The project is located at the parish of Aldreu, municipality of Barcelos, in a mountainous area near the Atlantic Sea. The location is a natural landscape, therefore the project was designed to fit into the environment using elements that look “natural.” The idea behind this design was to give different views in relation to its height, thus having lookouts in every direction at different levels. Furthermore, every lookout has a “decorative eye” to give emphasis on the lookout. The Watching Eyes is to be constructed with a low impact on the environment and the lightweight materials. The core structure of the stairs is steel, wood for the steps, and woods as well for the decorative vertical slats that will shade the structure.
M-Building
Parmraj Khosa

A renovation project for "M-Buildign of Sheridan College" as a submission for Advanced Building Information Modelling Program. Idea behind this submission was to learn how to create irregular shapes in Revit. New addition of M-Building has curvilinear walls wider on top and narrower at the bottom. Even the roof has little slope and curvilinear cut outs on all four sides. Another key feature in this model are the exterior columns, they are wider at bottom and starts to get narrower as you go up. At one point on top there are spheres attached to them and three bars are sticking out from those spheres. Last but not least there is a featured wall in north side of the addition which has 3d letters sticking in the wall and you can see through them.
COMBEE COTTAGE
Cathryn Tran

The COMBEE COTTAGE project is a proposed submission for the Dalrymple Cottage Design Competition. The concept stemmed from the idea of a beehive. Although a hexagonal shape is found in the hive, the octagonal prism is introduced based on the number of evenly spaced sides to achieve a clover-like shape. Because the shape is unique, and can be stackable, each octagon acts as an individual space. The main intention of COMBEE COTTAGE is to create a simple house, yet have some complexity in movement. With many different levels, and unique floor spaces, each floor level creates a sense of adventure. The large windows found in the living room allow for plenty of natural light and a great view to the lake. Additionally, the generous balcony that extends outwards allows panoramic views of the water that can be enjoyed in all seasons.
ABOVE: 3D exploded axonometric diagram

LEGEND
1. Basement
2. Living room
3. Kitchen
4. Main entrance
5. Bedroom

ABOVE: Back elevation, large windows face the lake
DALRYMPLE LAKE
COTTAGE COMPETITION
Nicholas Skubic

The Contemporary Cottage Competition is a project submission for Advanced Computer Visualization. The project looked to create a contemporary cottage design for a developer to use in a development on Dalrymple Lake in Ontario. The contemporary design of the cottage focused on three main strategies: creating a large amount of outdoor patio space on all three levels of the cottage, using a curtain wall system to maximize the amount of light penetration and views to the nearby lake, and to break away from the classical cottage shape while still maintaining a cottage atmosphere, this is achieved through the use of both modern and classical building materials.
Evolução dos pássaros
Deanna Shields

Evolução dos Passaros is a proposal for the Sb-1 Lab international design competition, entered as a requirement of the Advanced Computer Visualization class at Sheridan. The proposal looks to create two bird watching units with a low environmental impact for the purpose of recreational bird watching. The Evolucao dos Passaros design focuses on modularity, uniformity, and sustainable materials. It can be detached into four separate modules for ease of transportation and assembly. The design provides different views through constantly changing interstitial spaces, drawing pedestrians through various levels to a main viewing space located at the zenith of the structure.

Evolução dos pássaros
Ever-rising
Evolução
emotions form
The graceful climb
The final bend
And in the end, endlessness

ABOVE: Axonometric diagram

LEGEND
1. Concrete base
2. Lower inclining module
3. Back module
4. Upper inclining module
5. Upper module
6. Fully assembled structure
Carden Cottage
Parmraj Khosa, Gabriela Betancourt

The Carden Cottage is contemporary cottage design developed for an international design competition as part of the Architectural Computer Visualization course in the 6th semester of the Architectural Technology program at Sheridan College. The main design concept is to juxtapose traditional and modern forms within the framework of a cottage design. The design focuses on the combination of dark wood siding, contrasting with a bright stucco finish to accent its edges. The design also provides large windows that complement the views and accentuate its high ceilings, making the space feel grand. The cottage’s outdoor space on the second floor provides an open area to allow a full immersion into nature, with the company of a good book or family member, with an overhead trellis creating the feeling of a roof while allowing expanded views to the lake and surrounding area.

Plan distribution of the first floor

LEGEND
1. Dining room
2. Breakfast
3. Kitchen
4. Family room
5. Ensuite
6. Walk-in closet
7. Master bedroom

Underside parking for the cottage
HK Micro
Hadee Khamush

HK Micro is a proposed project for the Micro House international architectural design competition. The intention behind the design is to create a contemporary 500 square foot house by using durable and cost-effective materials. The core structural component of HK Micro is made of cast-in-place concrete, cast in a “C” shape. Since the roof and floor are extruded outwards, the concrete form is supported by the exterior brick finish on the side and an angled column at the front. The extruded portion of the roof provides shading from the summer sun and allows the winter sun to fall on the windows. This strategy helps keep the building cool in summer and warm in the winter. The large windows at the front of the house bring in an abundance of natural light, and allow the inhabitants to enjoy a beautiful view of the outside. HK Micro has an open concept layout, that combined with the unlimited views of the outside, makes this small house feel quite spacious.
SIDE/FRONT: Showing the slanted column and the black brick wall.

SIDE/FRONT: Showing the slanted column and the interior of the building from a different angle.
The Elevated Bird-Watch Shelter is prepared for the Architectural Computer Visualization course at Sheridan College. This mobile bird shelter was created for the Open Call: inshelter SB-Lab competition. Teams were to create two mobile bird shelters or bird watching units that will be placed in Scout Eco-Camp, Barcelos, Portugal. Conceptually, this design provides a 360-degree view of the area for bird viewing. As a result, the structure has a spiral staircase in the center leading towards the platform. The circular open platform and free-flowing form create an organic shape within the environment. In addition, to further enhance the bird watching experience, our design is elevated from the ground. For the units to be mobile, lightweight cork and wood material has been utilized to easily maneuver the units. The wood allows the structure to be strong and stable while the cork finish provides an aesthetic looks that is sustainable and durable.
ABOVE: Our exterior finish is cork with a laminated shield to protect it from environmental conditions.

ABOVE: The platform around the shelter allows the visitors to walk around to view and feed birds.

ABOVE: The interior is composed of wood structural components with a cork finish.
The ELF Cottage
Lipton Su

The design proposal for 234 Dalrymple Road is a school project for Architectural Visualization with the intention of creating a cottage design that harmonizes with nature. The cottage is 3 storeys in height and features unique materials that help unify the building with its surroundings. The use of wood siding and a concrete design helps create a structure that camouflages with nature while providing a modern touch. The primary features of the building are its accessible green roof terraces that contain sustainable properties such as thermal masses and a greywater system that can provide heat as well as non-potable water. These roof terraces help create a bond between the indoors and outdoors. Users will be able to access the different terraces from the interior and be able to maneuver around them using the exterior staircases. The cottage also features an open concept design throughout the different stories and helps give the illusion of having a larger living environment.
TOP: Ground floor plan showing room information and location
BOTTOM: Front of the building

LEGEND
1. Foyer
2. Dining room
3. Kitchen
4. Powder room
5. Study
6. Bedroom 1
7. Bedroom 2
8. Living room

TOP: Diagram showing interconnected terrace spaces
BOTTOM: Front of the building
Bird House Proposal
Oksana Yarmolovych
Ederlyn Sanchez, Jessica Owsianka

Green Lines Institute and the Corpo Nacional de Escutas (CNE) are major Scouts Associations in Portugal that set competitions for architectural students from all over the world. The concept behind this competition entry is to come up with unique and interesting designs for a bird-watching house that will be placed in a future Scouts Eco-Camp. My partners and I wanted to form a structure that resembles a picturesque monument. Our main objective was to provide a compelling experience for bird enthusiasts from all over the world. The focus is on three main objectives - organic shape, 360 degree views and the use of raw materials. We wanted to show a different approach and set ourselves apart from other entries in the competition. To achieve those design goals, we created a structure with wave-like pre-curved studs, that are covered with expanded cork cladding and a dome made out of sustainable, treated wood.
The Northern Lights Condos
Jessica Owsianka & Ederlyn Sanchez

The Northern Lights Condo project was created for ARCH31452 Architectural Studio 5, at Sheridan College’s Architectural Technology program. Our design concept drew inspiration from keeping the classical element of the neighbourhood while having a contemporary building inserted into the street fabric in order to update the neighbourhood and keep its form interesting. The form evolved with lateral movement as a focus in order to highlight Modernism and Northern Canadian symbolism. With the choice of materials, an icy, bold, and raw type of look is achieved, that successfully intersects the existing classical building at its base. This references how contemporary architecture is breaking through and taking over the classical style. That is, by transitioning into the existing facades in the Queen Street West neighbourhood in Toronto and by complimenting the artistic culture. The Northern Lights Condo project looks to create a sense of community in and around the building, with a public base that includes an art gallery and dining, followed by upper levels having living units and shared tenant studio spaces. The building culminates with a rooftop terrace. Shared spaces provide tenants with great varieties of views despite their unit location and allow for artists to collaborate and radiate a positive environment.
ABOVE: Third floor plan circulation.

LEGEND
1. Studio
2. One bedroom
3. Two bedroom
4. Makers space mezzanine
5. Balcony
6. Skylights
7. Elevator
8. Exit stair
9. Electrical closet
10. Garbage chute
11. Corridor
Forest Cottage
Hayley Perrin

The driving concept behind this cottage in the woods is to create as strong an indoor-outdoor connection as possible. Every major space in the home has immediate access to the outdoors, and by keeping the covered portion of the porch behind the feature glass hallway, it also allows for unobstructed views from main living areas and minimal disruption to light penetrating into the main spaces. The idea also spills into the exterior of the home. By using natural materials, such as weathering zinc, wood, and stone, the disruption to the landscape is minimized. The simple, clean form allows the home to have some presence while also being respectfully grounded. The primary statement made by the home is with the use of heavy timber structural elements. They are placed in pairs to enhance shadow and animate the facade. This has the added benefit of allowing more pieces to be pinched between, enhancing the interest with structural connections. Some elements feature angled tips to enhance the theme of hard lines.
ABOVE: North side (front of cottage)

ABOVE: South-west corner (rear of cottage)
The Cantilever
Daniel Ferraro

The Cantilever proposal project is a submission to the Micro House - Future House international design competition created as part of the Architectural Computer Visualization, semester 6 Architectural Technology program at Sheridan. This contemporary design focuses on 3 strategies: a cantilevered structure solution, a compact layout, and expansive views. A cantilevered structure was included in this design as a solution to the many sloped surfaces on which the site is located. Moreover, the suspended structure helps take advantage of the incredible views from the comfort of the home. Finally, a compact, but cozy layout is designed to suit the requirements of a micro house.
ABOVE: View towards Micro House from below

LEGEND:
1. Kitchen
2. Washroom
3. Living room
4. Bedroom
5. Patio
LEGEND:
1. Structural Underside
2. Fully Assembled Proposal
3. Entrance through Back of Structure
4. Interior Space
5. Section Cut
6. Roof Overhang
The Gradient House
Florence Gorospe

The Gradient House is a mock proposal to the City of Mississauga prepared as part of Sheridan’s Architectural Technology program. The design of this home won the annual Studio 2 Student Design Competition. The end goal for this submission was to design a semi-detached home with features that enable the house to produce a zero carbon footprint during its lifetime. These features provide the necessary resources for the home to function on its own without affecting the surrounding environment. The parallel clerestory roofs collect solar energy through solar tiles, while their shape enables the house to collect rainwater for its greywater system. Due to the minimal setback on the west side of the lot, a small percentage of window area is allowed according to the Ontario Building Code. A green wall occupies the entire west wall instead, where the homeowner can grow small herbs or flowers, accentuating the aesthetic of the building. This green wall also serves the dual purpose as an insulator for the building.
FACULTY WORK

ADRIAN BICA
DAVID PETERSON
KENNETH SNEILL
SHANNON PIRIE
TAWFIK KETTANAH
VITO PICICCI
MATERIAL EXPLORATIONS, 2013

Wood, Reflected Plexiglass
Confederation Park, Ottawa, Canada
Design Team: Adrian Bica, Dimitri Karopulos

The Deep Reflection is an installation of light and reflection displaying the spirit of the winter season at Ottawa’s Winterlude Illumination 2013 Festival. A series of unique polygonal shapes were designed to interlock into each other creating a crystal-like jewel. This research-creation project explores how design constraints can craft a series of intricate, complex forms, coated with a reflective surface. A light was placed at the centre of the installation allowing light from within to bounce off the reflective surfaces and escape the body of the installation. In so doing, the light source is never directly seen by visitors and although rays protrude through the seams of the geometric forms, the presence of the light source as seen from the outside remains a mystery.

ABOVE: Exploded axonometric assembly diagram
BELOW Photograph looking north at installation
MATERIAL EXPLORATIONS
2014

Polystyrene, Steel
Exposition: Material Promise/ Digital Presence

Draping Geometries is a research investigation into creating unique organic shapes through the use of digital technologies. The bending capabilities of varying sizes of polystyrene panels were manually tested yielding a series of scientific observations that our team converted into parameters. These parameters were then assigned to material within digital space through the use of parametric software. Through a series of simulations testing surface tension and bending capabilities, the present form was created, embodying optimal material tension so as to remain in the form shown. The study concluded by dividing the digitally modeled surface geometries into small components that can be individually created and assembled to become larger, more complex forms.

ABOVE: Exploded axonometric assembly diagram
BELOW: View close-up of polyesterene panels
Faculty: David Peterson

Families within cities need more housing options, particularly families with young children. The “PlanterBOX” project, situated on a ravine lot in Toronto, creates two modest-sized suites within a two-storey detached house. A second floor landscape wraps the principal suite on two sides. This floating landscape is naturally irrigated by rainwater from the white roof. The sloping roof lines, which direct the water, dramatically shape the interior space. The windows to the ravine capture its remarkable beauty and serenity. While the balcony and patio provide outdoor rooms for each family to witness the ravine’s subtle shifts in wind, colour, and light.
Families within cities need more housing options, particularly families with young children. The “PlanterBOX” project, situated on a ravine lot in Toronto, creates two modest-sized suites within a two-storey detached house. A second floor landscape wraps the principal suite on two sides. This floating landscape is naturally irrigated by rainwater from the white roof. The sloping roof lines, which direct the water, dramatically shape the interior space. The windows to the ravine capture its remarkable beauty and serenity. While the balcony and patio provide outdoor rooms for each family to witness the ravine’s subtle shifts in wind, colour, and light.

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A PATH THROUGH THE FOREST...
Kenneth Snell

We occupy spaces between things.
In the forest we follow paths between trees.
At a distance, a forest is an impenetrable mass.
Loggers view this mass as potential income.
To be cut down, shaped and assembled
into useful structures of pleasurable form but-
it is the hollowness, the “what-is-not”, that gives these solid objects
their usefulness, function and purpose.
Excerpt from JUXT-SUPPOSE created by Ken Snell during his travels and research sabbatical.
Finding the elusive idea of HOME in the dining room

Originally published in 2016 by the AIA as part of their Design and Social Impact series

Faculty: Shannon Pirie

In 2007, I completed a cross-Canada research trip to look at social and affordable housing in urban centers. This was part of a larger doctoral thesis project that I was working on at the time – an inquiry into the “idea of home” from an architectural perspective.

Of course, when I think about the notion of home, food, dining, eating, and mealtime are at the heart of so many important domestic rituals. As someone of Italian descent, I can attest to the court that my grandfather held daily at his dining table in the basement, just outside his “working” kitchen. Every time I returned from university, there were pies, homemade spaghetti, pizza, sausages, soup – all at the ready – a gift of love and a celebration of a safe journey home.

As we age, however, our relationship to both home and food can change. On my trip, I toured a number of affordable seniors’ residences that catered to a largely independent demographic of elderly individuals. Most had small, apartment-style units – some with kitchens, others without. Nonetheless, what was common to each was a generous, ground-floor dining room where meals could be shared and community could be fostered.

Recurring themes were large windows for plenty of natural light; high ceilings for airiness; a selection of modest soft-seating options, from rockers and club chairs to chesterfields and straight-back wooden varieties, to ensure everyone’s comfort; square dining tables; and finally a generous entryway to the room to allow residents to move in and out at their own pace. More than one dining room was also equipped with an upright piano; a telltale sign of the necessity to include items that cultivate a sense of home when roots were long put down elsewhere.

On a journey that was looking to define the elusive idea of home through very modest living spaces, the dining rooms were by far the most uplifting and enjoyable of all the places that I visited. This communal room spoke of the importance of food in bringing people together. It was expressed in a simple, straightforward and honest architecture that wasn’t kitschy, grandiose or fussy. It was architecture that accommodated the needs of slower, more demanding bodies and emphasized the important ritual of coming together to share a meal and maybe a story, too.

Shannon Pirie teaches in the Architectural Technology department at Sheridan College and is their faculty’s research coordinator. A graduate of Carleton and McGill Universities, she defended her PhD dissertation on the Idea of Home at l’Université de Montréal in February 2015. Find article @ https://www.aia.org/articles/2731-finding-the-elusive-idea-of-home-in-the-diningroom
LEFT: House and Home. 200 household objects. With permission, © 2012 National Building Museum

FINDING THE IDEA OF HOME
PhD dissertation abstract, February 2015, Universite de Montreal

Faculty: Shannon Pirie

The notion of home is a powerful generator of ideas and imagination in our culture and society. Few can have as significant an impact on the idea of home as an architect. This research thesis explores the concept of home as studied by architects and non-architects alike, in order to further understand its impact on placemaking and the construction of North American domestic environments.

A look at the connotations of space and place, from temporal, behavioural, and social perspectives, further establishes the epistemology of home as an impactful element of contemporary design theory and practice. The hypothetical breaking down of space into its component pieces drives the supposition that architectural devices can be manipulated to shift a physical house into the psychological realm of a home.

Unpacking the maneuverability of the various parts of a building and its surroundings, six themes are applied to three fields of data. The six themes | In-Between, Border, Pathway, Node, Details, and Representation | exemplify key architectural moments, potentially occurring within the domestic project, that alter corporal and mental behaviour. Within the constrained disciplines of social and affordable housing in Canada, a tripartite examination of photographs of existing low-cost homes, critical writing on this typology, and student-generated research-creation projects, elicits an operational notion of home, and reinforces the value of community and boundary.

The intent of this project is to advance knowledge in architecture by exploring the topic of home within teaching, research, and design. This functional approach to thinking about design places the user at the heart of the domestic environment and emphasizes the belief that home gives meaning and purpose, while reinforcing the ethical responsibility of the architect to make this an everyday reality.
ABOVE: Popular Canadian magazines: House & Home and Style at Home.
THE DIGITAL WHITEBOARD
Faculty: Tawfik Kettanah

What is a digital whiteboard?
The digital whiteboard is a whiteboard that captures the activities conducted by the instructor in a classroom. The setting is the regular setting of a traditional classroom with the instructor at the front of the classroom delivering the lecture material. The instructor, instead of using the actual whiteboard to present the material, uses the touch screen for writing and sketching. The instructor's activities on the touch screen are projected to the actual whiteboard.

What do the activities include?
- Text, equations, and sketches
- Video clips
- Instructions for how to use a particular piece of software (future expansion: when high-performance equipment becomes available)
- Audio for the instructor’s narration (future expansion: when high-performance equipment becomes available)
- Audio of classroom discussions

What are the formats of the outcome?
1. Video file which includes:
   - The activities on the whiteboard which is the capture screen; the screen is projected on the physical whiteboard.
   - The audio which records both the instructor teaching and the students’ discussion
2. Adobe Acrobat (PDF) file for all writing work on the whiteboard.
3. Audio for the session which can be used in combination with the PDF file.

Why We are Doing It?
Efficiency at both ends - delivery and reception.
Students’ End:
- Students focus on the interaction with the instructor
- Less time for taking notes during the session
- The student can repeat the documented session as much as needed and at time of choice
Instructor’s End:
- Improve the session as delivery is repeated
- Save on whiteboard, markers, erasers, etc.

How are we doing it?
Use of software and equipment based on the acquired skills:
1. Wide touchscreen
   - Wacom Cintiq, Microsoft Surface Pro, iPad Pro, etc.
2. Software to simulate the whiteboard
   - Autodesk Sketchbook Pro, or similar
   - Audio capturing hardware such as microphone (Future expansion: when high-performance equipment becomes available)
3. Video and audio capturing software
   - Camtasia, etc. (Future expansion: when high-performance equipment becomes available)
\[ F_{x} = 40 \cos 40^\circ = 30.64 \]
\[ F_{y} = 40 \sin 40^\circ = 25.71 \]
\[ F_{2x} = 60 \cos 60^\circ = 30 \]
\[ F_{2y} = 60 \sin 60^\circ = 51.96 \]
\[ F_{3x} = F_{3} \cos 70^\circ = 0.342F_{3} \]
\[ F_{3y} = F_{3} \sin 70^\circ = 0.939F_{3} \]
\[ \Sigma F_{x} = F_{y} = F_{3} \]
\[ + F_{y} + F_{2y} - F_{3y} = F_{3} \]
\[ 25.71 + 51.96 - 0.939F_{3} = 0 \]
\[ F_{3} = \frac{77.67}{0.939} = 82.71 \text{ KN} \]
\[ \Sigma F_{x} = R_{x} = F_{3} \]
\[ + F_{x} = F_{3x} - F_{5x} = R \Rightarrow 30.64 - 30 + (0.342 \times 82.71) = R \]
\[ 0.64 + 28.28 = R \Rightarrow R = 28.92 \]

\[ \sum M_{A} = 7 \]
\[ F_{2x} = 75 \cos 26^\circ = 70.47 \]
\[ F_{2y} = 75 \sin 26^\circ = 25.16 \]
\[ F_{3x} = 100 \cos 30^\circ = 86.6 \]
\[ F_{3y} = 100 \sin 30^\circ = 50 \]
\[ + (F_{1} \times 15) + (F_{2x} \times 13) \]
\[ + (F_{2y} \times 7.5) + (F_{3x} \times 6) \]
\[ - (F_{3y} \times 2.464) = \]
\[ = (45 \times 15) + ( \]
\[ + (70.47 \times 12) + (25.16 \times 7.5) \]
\[ + (86.6 \times 6) - (50 \times 3.464) = \]
\[ = 675 + 916.11 + 192.37 + \]
\[ + 519.6 - 173.2 = 2130 \text{ KN} \]
Faculty: Vito Picicci

A Welcoming Community Gathering Place: Contextual, Historically & Environmentally Sensitive.

While acting as Project Architect as a member of the Chamberlain Architect Services Ltd. (CASL) team, I had the pleasure of working on this LEED Gold Certified building located adjacent to Nottawasaga Bay, northwest of Collingwood. The Town’s Selection Committee noted that Chamberlain’s design respected the Town’s vision of creating a community gathering space, both on the Town Hall site and within the building itself, spoke to the industrial and railway heritage of the site, and paid homage to the architecture of Thornbury. This included the use of Brampton Brick’s Old School metric modular brick, which is similar in colour and size to the masonry on numerous buildings in Thornbury. A green finish coating on the curtain wall framing members, exposed structural steel, indoor brick wall finish in the Gallery area, and clerestory glazing complete the package.
Technical Challenges and Features:

• Located on the site of a former gas/service station, the soils where found to be contaminated requiring remediation. This in turn resulted in the need for deep foundation micro-piles and a structural slab for the partial basement.
• Low-spring segmented brick arches along the covered arcade requiring the use of a concealed lintel system avoiding the use of exposed steel support.
• OBC SB-10 and LEED compliance/conformance: the building’s envelope is comprised of high-performance components including triple-glazed curtain wall panels;
• Indoor lighting: daytime lighting via the clerestory windows in the central Gallery space, curtain wall glazing in the office with operable panels for ventilation, and light wells for basement office spaces all result in maximum natural lighting;
• Exposed steel structure in the offices area: acoustic considerations included the use of floating ceilings above work areas and a sound-masking system;
• Forest Stewardship Council (FSC) certified solid sawn Douglas-fir utilized on the underside of the bridge, the arcade roof, handrails and wood window sills in the Council Chamber and Committee Room;
• All departments have AODA-compliant transaction/reception counters to serve the public.