THE FUTURE OF CITY BUILDING

Research Impact Report

2017-2022

SCHOOL OF ARCHITECTURE, PLANNING + LANDSCAPE

Contents

Leadership Statements

John Brown

MESSAGE FROM THE DEAN OF SAPL

Over the past five years, the School of Architecture, Planning, and Landscape has accomplished a great many things in the context of a world, and a city, that have experienced unprecedented challenges and transformations. While these terms might seem cliché, they form the lifeblood of the school and the research we undertake. Our professions - architecture, planning, and landscape architecture - have a central role to play in society's response to the climate crisis, the spatial inequities that arise from and continue to reinforce systemic racism, and public health resilience to infectious disease.

Toward this end, SAPL vigorously pursues three primary objectives: amplifying our substantive connection to community to effect positive change at a local level and beyond; expanding the breadth and capacity of our strong academic programming to better meet the needs of our professions and the society they serve; and building on our considerable community-based research by facilitating additional community partnerships.

It is within this context that the research undertaken at SAPL in the last five years is best understood. Having established a presence in downtown Calgary with the City Building Design Lab in 2019, SAPL has fortified and expanded its connections with the communities it is committed to serve while inclusively and innovatively engaging industry and the public sector at a variety of scales.

We use design-based thinking to discover potential solutions and establish lasting partnerships committed to the realization of healthy, sustainable, vibrant and equitable cities. This Research Report summarizes the exemplary research led by our remarkably diverse faculty members, students, project partners and collaborators. I hope you are as inspired by this work as I am and look forward to what is to come as we work together to create a better world.

ASSOCIATE DEAN RESEARCH + INNOVATION STATEMENT

Joshua Taron

At SAPL, research means something different. We don't just study problems: we think through them using processes of making and discovery. This means—amongst many other things—using advanced technology, engaging community partners, and subscribing to participatory processes of co-creation to train the next generation while transforming existing practices. Our approach to design-based research defines much of what we do by addressing the future; engaging and transforming industry; and establishing lasting connections that increase the capacity to meet our greatest challenges. At the core of SAPL's research enterprise lie the stakeholders that make our projects possible. No SAPL research project is undertaken without supporting faculty and students, strengthening our network of partners, and designing change while maximizing impact. All this translates into a model of research practices that serves faculty research agendas and their subsequent curricular offerings; includes a full spectrum of researchers, collaborators and community partners (including government and industry); and directly contributes to positive societal change through the built environment.

The contents of this document are organized to reflect the wide range of research activities taking place in SAPL. Several key metrics demonstrate the impact of the City Building Design Lab. Our faculty members actively publish and are recognized for their efforts in the form of awards, and in the past year we have been able to welcome four new SAPL faculty members whose presence enhances the interdisciplinary breadth of our research activities and brings fresh perspectives to the University.

SAPL's research achieves its legibility through its remarkable set of laboratories and research groups. These are the environments where students are hired to contribute to the important work of SAPL's faculty

members, where many of the skills gained in the professional and post-professional degree programs are put to use. Community engagement, innovative digital design practices, big data, sustainability, urban design, structural performance, solar communities, urban policy, and history + theory provide an image of SAPL's research capabilities and expertise, and communicate the importance of these areas as cities search for ways forward in an increasingly complex world.

As part of the launch of the City Building Design Lab in 2019, SAPL laid out four "Grand Challenges" aimed at leveraging the downtown location of the CBDLab along with highly innovative, often unconventional, cross-cutting interdisciplinary approaches to issues facing Calgary. It is through the lens of the Grand Challenges that research projects based in the CBDLab are presented.

But SAPL research extends beyond downtown. This report details an impressive set of projects that address global supply chains, regional food security, landscape reclamation, indoor air quality, design pedagogy, online learning, critical practice, social reconstruction, and urban design and architectural theory.

While the school is anchored around its course-based professional degree programs in architecture, planning, and landscape architecture, its thesis-based post-professional degree programs permit students to be hired onto faculty research projects while undertaking their own research contributions through the form of their dissertations. The combination of the Master of Environmental Design (MEDes), Ph.D., and Doctor of Design (DDes) programs bring an enhanced richness to the intellectual breadth of the school and provide an image of what the next generation of society will be focused on and capable of addressing.

Of course, none of SAPL's research efforts would be possible without its amazing set of research partners that includes industry, government, and communities from across Canada. These relationships and networks enable a critically lasting dialog that helps to shape the future in an impactful way. I would also like to thank the CBDLab advisory committee for their insights and contributions over the past years, as the successes of research undertaken through there would not have happened without their support. We are incredibly grateful for the opportunity to lead and participate in our research projects and enthusiastically look forward to the coming year as we continue to explore and discover new possibilities in these remarkably interesting and challenging times.


CBDX:
CITIES FOR ALL


DIGITAL FABRICATION


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BLAST
ROBOT-
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MA-
SONRY
TECHNORELICS
9
BLOCK
ZURICH
DRONES

SOCIAL MEDIA AND WEBSITE METRICS ABOUT EVENTS AND EXHIBITS TAKING PLACE IN THE LAB.

20,000

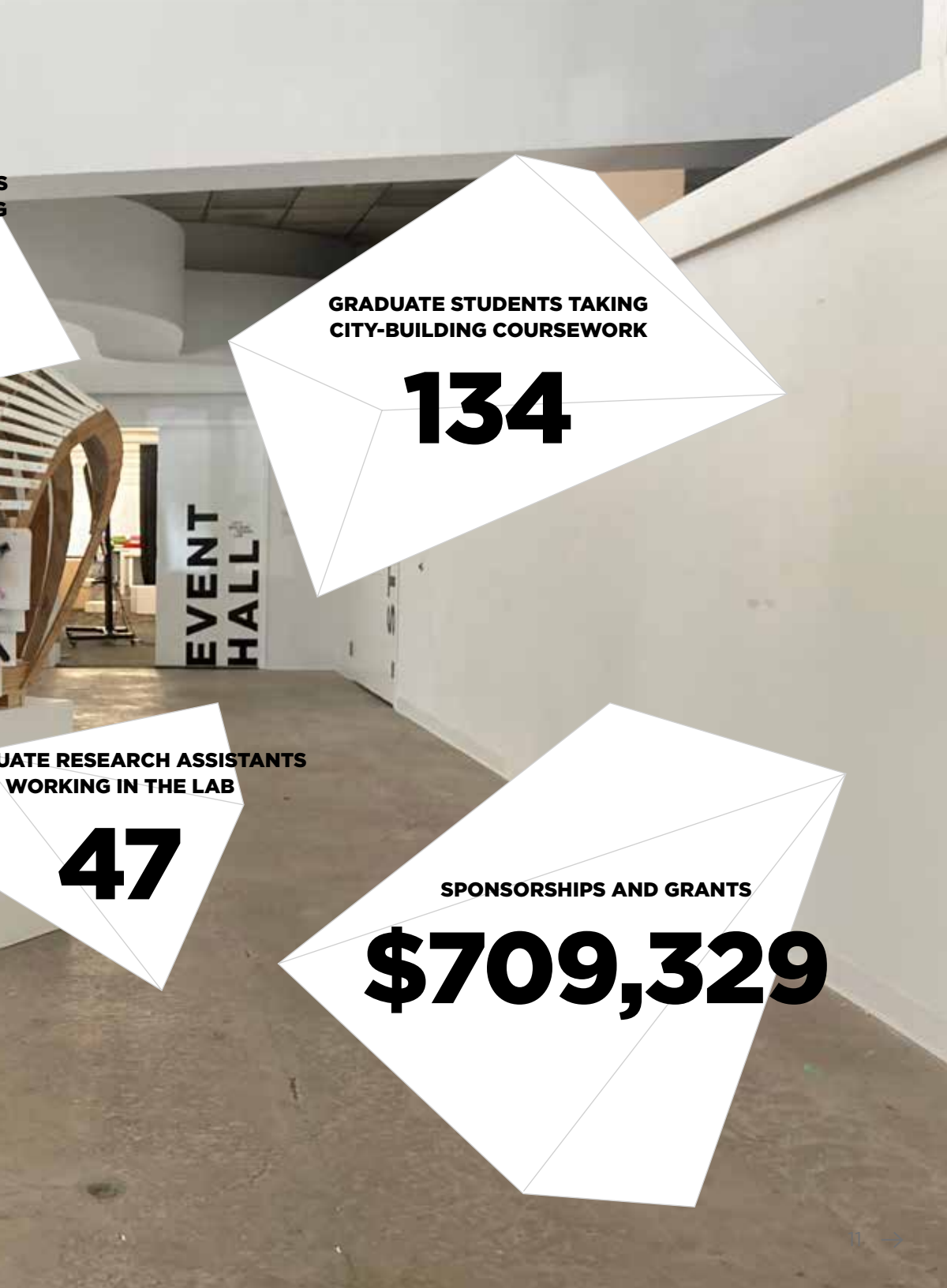
GRAND CHALLENGE RESEARCH PROJECTS

34

AEC COMPANIES ENGAGING IN COLLABORATIVE ACTIVITIES

26

GRADU



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GRADUATE STUDENTS TAKING
CITY-BUILDING COURSEWORK

134

UATE RESEARCH ASSISTANTS
WORKING IN THE LAB

47

SPONSORSHIPS AND GRANTS

$709,329

LE CORBUSIER: CRITICAL CONCEPTS IN ARCHITECTURE. 4 VOLS.
Abingdon: Routledge, 2018. Livesey, G. and A. Moulis, eds.

Publications

CANADIAN MODERN ARCHITECTURE: 1967 TO THE PRESENT.
Princeton Architectural Press, 2019. Lam, E. and Livesey, G., eds.

ECOLOGIES OF THE EARLY GARDEN CITY: ESSAYS ON STRUCTURE, AGENCY, AND GREENSPACE.
Champaign, Illinois: Common Ground Research Networks, 2019. Livesey, G.

TRANSFORMING SOCIAL HOUSES: INTERNATIONAL PERSPECTIVES.
Abingdon/New York: Routledge, 2021. Sasha Tsenkova, ed.

SOLAR BUILDING AND NEIGHBORHOODS: DESIGN CONSIDERATIONS FOR HIGH ENERGY PERFORMANCE.
Springer, 2020. Hachem-Vermette, Caroline

ENERGY EFFICIENT AFFORDABLE HOUSING – DESIGN, POLICY AND PRACTICE FOR THE SOCIAL HOUSING SECTOR OF CANADIAN CITIES.
Heidelberg: Springer Nature Switzerland AG., 2021. Sasha Tsenkova

FOR THE TEMPORARY ACCOMMODATION OF SETTLERS: ARCHITECTURE AND IMMIGRANT RECEPTION IN CANADA 1870-1930.
McGill Queen's University Press 2021, David Monteyne

URBAN ECOLOGY FOR CITIZENS AND PLANNERS.
University of Florida Press 2021. Joseli Macedo

SUSTAINABILITY MATTERS: PROSPECTS FOR A JUST TRANSITION IN CALGARY, CANADA'S PETRO CITY.
University of Calgary Press 2021 Noel Keough

CITIES AND AFFORDABLE HOUSING: PLANNING, DESIGN AND POLICY NEXUS.
New York: Routledge 2021. Sasha Tsenkova, ed.

AGING AND URBAN PLANNING.
London:Routledge, forthcoming 2022. Drilling, M. and Neuhaus, F., eds.

HOUSING CHANGE IN CENTRAL AND EASTERN EUROPE.
London:Routledge, 2017. Tsenkova, S. and Lowe, S., eds.

Awards

IFLA PRESIDENT AWARD
Dr. Beverly Sandalack

RAIC PRESIDENT'S MEDAL FOR MULTIMEDIA (FOR PUBLICATION)
Dr. Graham Livesey

TAYLOR INSTITUTE AWARD FOR TEAM TEACHING
Sandra Abegglen, Hal Eagletail, Dr. Graham Livesey, PhD, Dr. Fabian Neuhaus, PhD

DAVID MONTEYNE:
University of Virginia School of Architecture, Center for Cultural Landscapes 2022 Landscape Studies Initiative Book Award
Abbott Lowell Cummings Award, Vernacular Architecture Forum 2022

ALICIA NAHMAD VAZQUEZ:
Calgary's Top 40 Under 40 2021

SASHA TSENKOVA
Elected Fellow of The Canadian Institute of Planners, 2020
Helen Cam Visiting Fellowship, Girton College, Cambridge University, 2020
Canada Mortgage and Housing Corporation President's Gold Medal for best housing research, 2019
Faculty Sustainability Research Award for Sustainable Cities, University of Calgary, 2019
Great Supervisor Award, Faculty of Graduate Studies, University of Calgary, 2019

New SAPL Faculty Members

DR. JOSELI MACEDO, PH.D. (PROFESSOR)

Joseli's research on affordable housing and land policy has evvolved into a multi-layered exploration of human settlements and their environmental impact. She conducted research in India through a Fulbright-Nehru award, and has served as an international consultant to the World Bank and to the GAIA Consortium. She has worked in the areas of sustainable cities, urban design, and international development planning for 30 years, and authored several publications on city design and urban form, urban ecology, land policy and land tenure, housing policy, urban planning history, and pedagogy.

DR. REBECCA LAYCOCK PEDERSEN, PH.D. (ASSISTANT PROFESSOR)

Rebecca is a transdisciplinary researcher and educator working in the field of sustainability science. Her research focuses on urban agriculture, sustainable food, sustainability education, and participatory/action-oriented methods. Rebecca will be coming from Blekinge Institute of Technology in Karlskrona, Sweden where she has been studying the impacts of a Malmö-based urban agriculture incubator programme.

DR. ZHONGMING SHI, D.SC. (ASSISTANT PROFESSOR)

Zhongming joins the faculty via ETH Zurich's Future Cities Laboratory in Singapore, where he has been the principal investigator of the Building-Integrated Agriculture project and postdoctoral researcher and coordinator of the Cities Knowledge Graph project. He was also part of the Multi-Scale Energy Systems for Low Carbon Cities (MuSES) project at Future Cities Laboratory, which was successfully finished in 2020.

DR. YOUJUNG KIM, PH.D. (ASSISTANT PROFESSOR)

Youjung comes to SAPL from Concordia University, and previously worked as a practising planner for firms with a global reach. His research investigates how we can reduce the impacts of natural disasters and create more resilient built environments – especially for physically and socially vulnerable communities – through GIS technology, planning process, plan policies, and urban design.

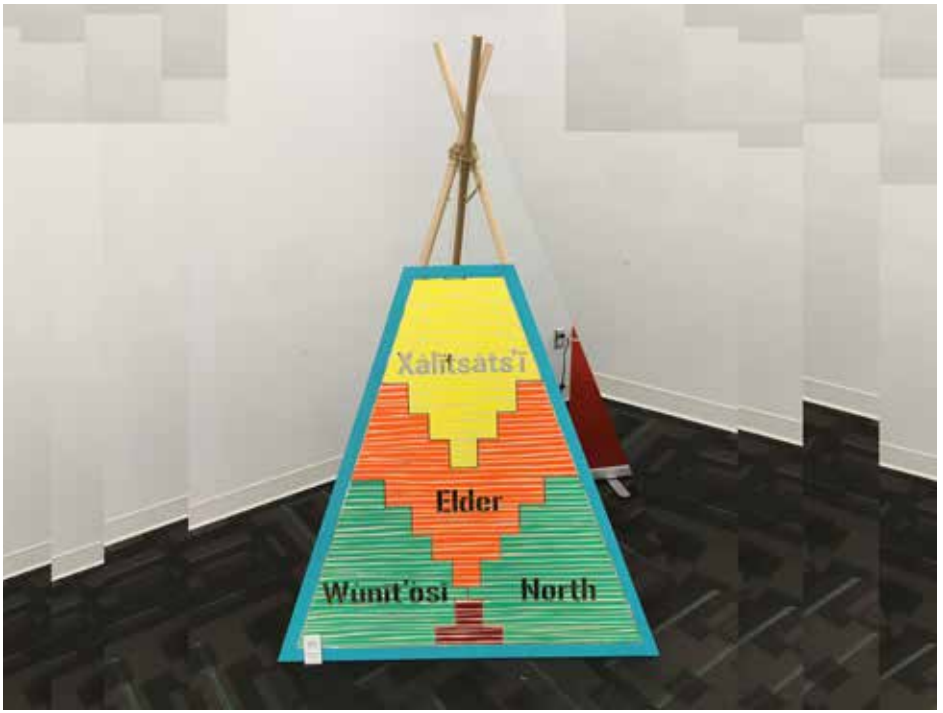
Labs + Research Groups

NEXTCalgary

Fabian Neuhaus, Sandra Abegglen

NEXTCalgary

NEXTCalgary is the platform for innovation in co-created content. We are developing strategies for stakeholder participation and implementation, and leading visions for the city of tomorrow. If it's shared it sticks. This project is curated by Sandra Abegglen and Fabian Neuhaus in collaboration with everybody involved in the different initiatives that make up this project, including 1M Downtown Activation; 3rd Street Activation; and Hybrid CommUNITY.



Laboratory for Integrative Design

Jason Johnson, Alicia Nahmad Vazquez, Joshua Taron, Guy Gardner

The researchers at LID come from different disciplines and operate in areas of overlap that exist between design; engineering and production; and other fields such as computer science, material science, mathematics, and biology.

At LID methods, processes, and techniques are discovered, appropriated, adapted, and altered from elsewhere, and often digitally pursued. Not limited to the professions and disciplines comprising the building industry, LID designers and researchers engage design as a broadly integrative endeavour by fluidly navigating across different disciplinary territories, and deploy algorithmic thinking, biomimicry, computation, digital fabrication, material exploration, and/or performance analyses to discover and create processes, techniques, and products that are qualitatively new.

Center for Civilization

Alberto De Salvatierra

The Center for Civilization at the University of Calgary School of Architecture, Planning and Landscape is a design research lab and international think tank working at the intersection of cities, society, and civilization.

Aspiring to redesign current paradigms and operating procedures of contemporary civilization, the CFC develops and executes sponsored design research projects across multiple scales and disciplines. The CFC also complements the work of its lab by deploying the convening power of its think tank—pursuing longer-term, transdisciplinary projects at an international scale.

Sponsors
Alberta Real Estate Foundation, The Canada Summer Jobs Fund, Evergreen, the Canadian Urban Institute, the City of Calgary, the City of Medicine Hat, the City of Lethbridge, the City of Okotoks, PROXIIMA, Cornell University, Harvard University, Panono, Renewable Envoy, UNLV

Sustainable Calgary

Noel Keough

Projects include
Stepping Towards a Greener Tomorrow
Destination Marlborough
Project: Healthy Places
Co-Design: A 6-step process
Pedestrian Collisions Research

For the past two decades, Sustainable Calgary has been the product of partnerships and relationships. We collaborate with other organizations and convene with community around big questions and ideas. Most of our projects fall into one of our two core programmes – Active Neighbourhoods Canada or Housing Transportation Food Nexus Fund – but we also pursue one-off project opportunities.

Urban Lab

Beverly A. Sandalack, Francisco Alaniz Uribe

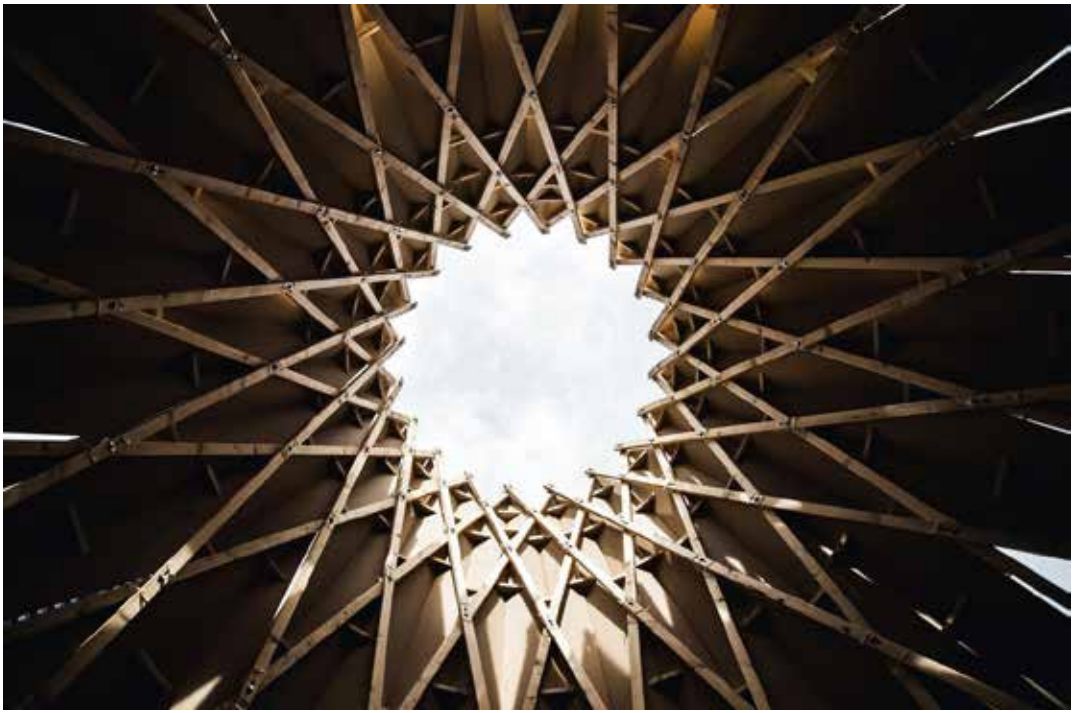
The Urban Lab works with community associations, town and city councils, neighbourhood committees, and other civic groups to address issues of common interest, and conducts research to advance knowledge and practice related to urban design, planning, and development.

We strive to understand the places in which we live, and to develop urban form that is ecologically and economically sustainable, and appropriate in our contemporary cultural context. Underpinned by the search for a regional expression of civic and architectural design, our approach involves understanding the historical, environmental, cultural and political influences and processes, and playing a role in the evolution of the city's urban form and quality.

Structural Design Lab

Mauricio Soto Rubio

Design, fabrication, and installation of lightweight structures: the Structural Design Lab at the School of Architecture, Planning and Landscape is a multidisciplinary group of professionals and academics interested in the design, fabrication, and installation of lightweight structures. Its different areas of research include deployable structures, tensile membrane structures, tensegrity structures, and other form-active structures such as thin domes and arches, branched structures, grid-shell structures, etc. In addition, the unit performs research in the areas of material performance, biomimicry, and renewable energy system.



Sustainable Studies

Craig S. Gerlach, Rebecca Laycock Pedersen

The Sustainability Studies Program is a research group that also administers the Certificate in Sustainability Studies, the Uganda Field School and a local field school, the Simon Farm Project.

Projects:

- The Kluane Lake Research Station (KLRS) near Whitehorse, Yukon, on the traditional lands of the Kluane, Champagne-Ashihik and White River First Nations, has provided support to researchers since 1961. This location affords a remarkable diversity of research opportunities within a small geographical area.
- The Cropbox project evaluates an off-grid, containerized hydroponic food production system, to offer a long-term sustainable approach in remote northern locations and increase access to fresh, culturally appropriate and nutritious food in Canada's northern and remote communities all year round.
- The off-grid solar system at KLRS provides back power to charge the batteries when insufficient solar is available in the winter, resulting in an 80% reduction in diesel fuel consumption at the station.

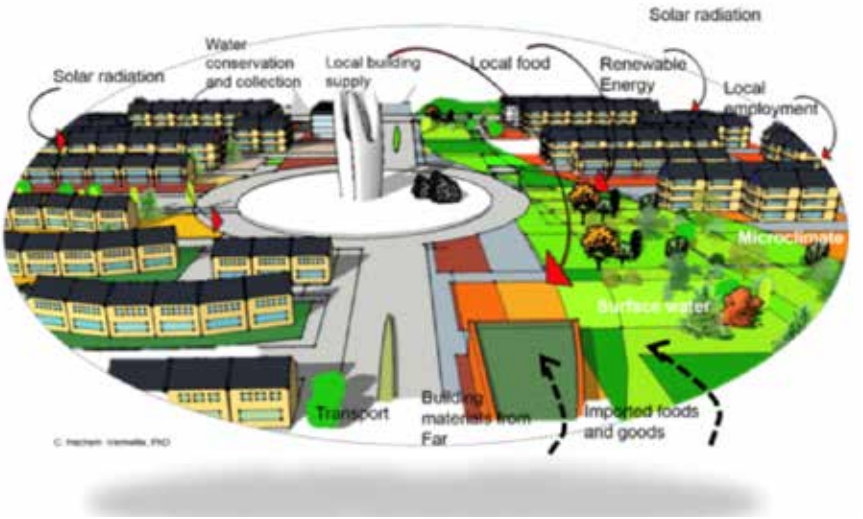
Solar Energy & Community Design Lab

Caroline Hachem-Vermette

The Solar Energy and Community Design Lab (SECD) is a cross-disciplinary research group focusing on the holistic design of energy-efficient, resilient, solar neighbourhoods, to minimize negative environmental impacts and improve quality of life for residents. The lab seeks to enhance the solar capture and utilization in buildings and communities, and improve the energy efficiency of various types of buildings.

Community design principles include issues such as neighbourhood patterns, density, and street layout, and their effects on solar capture and energy performance. Building-level design targets the shape and layout of buildings (commercial, residential, and institutional), and their envelope.

Researchers aim to establish how these factors impact the potential to achieve self-sustained solar communities, and translate this into policy to support development of low carbon solar neighborhoods.



Cities, Policy and Planning Lab

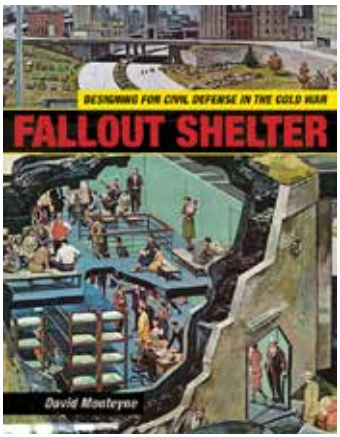
Sasha Tsenkova

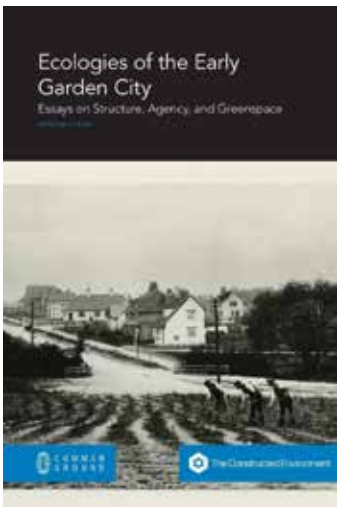
Through research, professional practice, specialized workshops and publications, the lab engages graduate students, faculty, professional planners, social workers, and community organizations in collaborative projects. Funded by research foundations (Social Sciences & Humanities Research Council of Canada, Canada School of Energy & the Environment, CASID); international organizations (United Nations, Council of Europe Development Bank); municipalities (City of Calgary, Municipality of Big Lakes); and industry (Canada Lands, Hopewell Residential developers); the lab focuses on sustainable communities. These communities have a vision that is embraced and actively promoted by all sectors of society, including businesses, disadvantaged groups, environmentalists, civic associations and government agencies, to build on their assets, value healthy ecosystems, use resources efficiently, and retain and enhance a locally-based economy. Unlike traditional community planning approaches, our work emphasizes sustainable strategies through ecosystem protection, social responsibility, broad-based citizen participation and economic self-reliance.

History and Theory of Modern Architecture and Urbanism in Canada

Graham Livesey, David Monteyne

Significant interdisciplinary academic and archival strengths in the history and theory of modern architecture and urbanism in Canada include: the history of modern Canadian architecture, the evolution of modern Canadian urbanism, the architecture of Canadian institutions and corporations, Canadian architecture in the context of cultural theory, the history of the architecture profession in Canada, architectural photography in Canada, the history of modern Canadian religious architecture, and exhibition and archival theory and practice.





City Building Design Lab

Grand Challenges

These research projects at the School of Architecture, Planning and Landscape address four grand challenge themes:

Designing Out Waste, Metropolitan Growth and Change, Cities for All, and Rebooting Downtown.

The themes leverage the lab's central downtown location and unique collaboration of academia, industry, and policy makers. Together we explore city building potential.

DESIGNING OUT WASTE

Exploring the potential of circular city-building to increase Calgary's vibrancy

The first grand challenge aims to integrate the Architecture, Engineering, and Construction (AEC) sector into the coming circular economy. Innovations in construction materials and processes seek to enhance design and construction while minimizing material resource extraction and greenhouse gas emissions; advanced technological solutions put these innovations in the hands of small and non-traditional firms, democratizing the future of construction.

A key component is Life-Cycle Assessment, which explores how outdated building material can be turned into an asset by upcycling old building components for reuse in new structures, saving on material cost and minimizing landfill waste; and envisions sustainable practices for new buildings, which can be designed and constructed with a view to their eventual removal and replacement. A fresh generation of professionals must be trained for this new economic sector.

Barkman Concrete

Alicia Nahmad Vasquez, Kris Fox

This research considers how to create inhabitable, reconfigurable, resource-efficient urban furniture for downtown Calgary. The formwork of the bollards is made using robotic hotwire cutting or milling processes to enable the complex forms in which concrete will be cast. This two-phased project will include a larger multidisciplinary team involving Rahil Khoshnazar (Schulich School of Engineering). Potential for further research team and industry partner expansion is possible. The work with Barkman will coordinate with the Future of Stephen Avenue (FoSA) project, which will help shape and site the experimental precast prototypes.

Digital Workflows for Timber Robotic Fabrication on Green Retrofits

Alicia Nahmad Vazquez

Retrofitting existing building stock is a key field of action for architecture to move towards a sustainable future. This MITACS-funded research focuses on developing digital workflows and communication protocols between design and machine software for onsite / near-site timber fabrication enabled by a Factory in a Box (FIAB). The fabrication machines—robot arms, a range of robot end effectors, milling and other shop tools—inside the FIAB are configured to fabricate the façade panels. The FIAB is based on the idea of allowing maximum reconfigurability and adaptability as opposed to the maximum efficiency sought by a fixed production line.

High-Performance Façade Panels

Alicia Nahmad Vazquez

In partnership with DIALOG Architects and Ferguson Corporation, this research applies innovative digital workflows to develop high-performance façade panels for retrofitting, based on user occupancy requirements and material constraints. The panels are made via digital fabrication based on a Factory-In-A-Box (FIAB). A team of 5 researchers worked on a full-scale prototype of a façade panel during the summer of 2021. They developed, prototyped and tested robotic fabrication workflows, using the robot arms at SAPL. The research focuses on the generative design to fabrication system of the façade panels, with the aim of creating data collection tools that can provide feedback making it amenable for retrofitting.

Integrating Community Engagement and Parametric Design Tools for the Design and Fabrication of Multifunctional Timber Pavilions

Alicia Nahmad Vazquez

This MITACS-funded research focuses on developing community engagement-based digital tools for the design and fabrication of multifunctional timber structures in the context of the new Sundance trail development in Calgary. The research explores the design and fabrication of multifunctional timber structures via participatory mechanisms, building on prior experience in computer-aided geometric design, robotic fabrication and construction and previous community engagement tools developed by an industry partner. These technologies create a digital space where communities negotiate, engage and participate in the design process in anticipation of their physical realization.

Integrated Infrastructure for Sustainable Cities (IISC)

Lina Kattan (Schulich School of Engineering), lead; Getachew Assefa; Joshua Taron; Sustainable Calgary Lab

The IISC project is funded by the Natural Sciences and Engineering Research Council – Collaborative Research and Training Experience (NSERC-CREATE) program. Through applied research, the IISC trains students to consider the impact of disruptive forces and transformative technologies on urban infrastructure systems.

Guided by stakeholder engagement and real-world needs, the program conducts multidisciplinary research and training in integrated infrastructure systems spanning transportation, building, water, and waste and energy systems, especially as they pertain to the introduction of disruptive technologies.

Through a balanced approach between project development and implementation, sustainability can be achieved by efficiently utilizing the available natural resources to meet the economic, environmental, and societal needs of the community.

Life Cycle Assessment

Getachew Assefa

Life Cycle Assessment (LCA) examines questions central to sustainability and the circular economy, by investigating how we can minimize waste in the construction and demolition of buildings. Using the University of Calgary's MacKimmie Library Tower as one case study, the research demonstrated that careful deconstruction of an aging building while retaining the sound inner structure, resulted in significant reduction of material use, landfill, and carbon emissions. Further work has examined the suitability of repurposed shipping containers to create sustainable affordable housing.

Development of LCA principles enables them to be applied in other areas, such as energy generation; the resource sector's quest to become carbon-neutral or even carbon-negative; and the implications of large-scale use of mass timber in building and infrastructure construction.

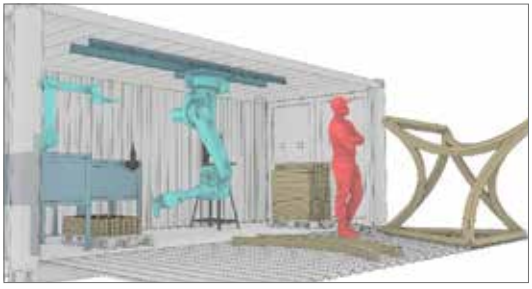
Solium Capital Stock Wall

Jason Johnson, in collaboration with Guy Gardner and the Laboratory for Integrative Design.

Commissioned for a financial services firm in downtown Calgary, the project brief was to create an engaging multidimensional piece to activate the reception area. An iterative process with the client included the development of tools for converting images associated with financial markets, regional landscapes, and symbols of the Canadian West into a large 3-dimensional wall-hanging painting. Six Axis robot arms were used in the process of making this project.

Timber-based DfMA Façade Components for Factory-in-a-Box (FIAB) based Digital Manufacturing (DM) technologies

Alicia Nahmad Vazquez



Design for Manufacturing and Assembly (DfMA) and Digital Manufacturing (DM), particularly as related to timber construction, is expensive, making the technology out of reach for small and medium enterprises (SMEs). This MITACS Accelerate Grant-funded research seeks to democratize this technology by bringing Factory-in-a-Box (FIAB) based DM technologies adapted to meet the needs of the SME sector in construction. The project aims to generate a system to design timber façade components and their fabrication system that can be contained in a box and transported on-site or near-site as an alternative to factory-based production of architectural timber components.

GRAND CHALLENGE 2

METROPOLITAN GROWTH AND CHANGE

Exploring how to meet future needs while reducing the city's environmental footprint

The second grand challenge addresses the difficulties and opportunities of municipal policy innovation to drive long-term urban growth that is sustainable, resilient, equitable and vibrant. It will explore what policy options are best suited to drive the next generation of growth, how these policies can be successfully implemented, and how to better engage the public in the policy-making process.

As Calgary considers how to face economic, social, and environmental challenges, policymakers increasingly rely on data to guide decisions and respond to stakeholder concerns. How much density is right for each neighbourhood? How can a city's built environment approach the future, while honouring and protecting its history? Can a city built on oil and gas become a climate haven? These questions are intricately linked, and solutions might range from the high-tech, such as GPS-based geocoding, to the natural, such as greening urban spaces.

16 Ave NE – City of Calgary Roadside Naturalization Pilot

Mathis Natvik

The Roadside Naturalization Pilot explores unconventional vegetation management methods on public land along roadways to create additional value in terms of natural infrastructure, ecosystem services and enhanced biodiversity. During Fall 2020, Mathis Natvik created specifications for materials and methodology for conversion of 10 hectares of roadside turfgrass to a cover of native grasses and wildflowers. The chosen site was 16th Avenue NE, east of 36th St., in the City of Calgary, where installation of vegetation began during spring 2021. The vegetation responded well during its first season, with a profusion of annual wildflowers that were first to mature. Vegetation monitoring will be conducted for the next 3 summers to assess the suitability of all the species used in the seed mix. Dr. Mindi Summers (Biology) will study how native bee diversity responds as the wildflower community matures over the next 3 years.

A subsequent proposal will convert the results of the pilot into rendered drawings and publications for use by the City of Calgary to promote project expansion. MLA students will create material to communicate the results of both the vegetation and bee research.

621 X House

Jason Johnson

Situated in northeast Calgary, the 621 X House was designed for clients wishing to challenge the “typical” infill housing replacing existing housing stock in their neighborhood. The house incorporates durable and energy efficient building components, solar thermal and PV systems and passive daylighting strategies. Situated on a narrow site, the 4-bedroom house incorporates two work-from-home offices with interior and exterior spaces for social interaction, exercise and relaxation.

City of Calgary – Evaluation of Historical Roadside Naturalization Experiments

Mathis Natvik

During the summer of 2021, Mathis Natvik surveyed the vegetation of 5 naturalization experiments conducted by the City of Calgary in the past 20 years. The goal of this survey was to explore what factors led to high vegetation biodiversity along roadsides. The study found that soil heterogeneity was the strongest predictor for biodiversity along roadsides. A follow-up proposal will design alternative specifications for roadside vegetation, exploring how soil heterogeneity can be designed into new road construction projects, where wildflower biodiversity can be permanently sustained. Part of this proposal includes hiring MLA students to help create the graphics that will support these specifications.

Climate Resilience

Joshua Taron

In partnership with Lemay, this project explores the emergence and viability of climate resilient cities globally, focusing on Canadian and western Canadian cities, with an emphasis on identifying the steps necessary to take full advantage of the opportunities for lower risk/more climate resilient urban environments.

Geocoding Innovation Mapping

Joshua Taron

Sponsored by ACO, this project will develop a smartphone app that legibly translates to the public how innovation manifests within the built environment, including the integration of historical buildings, thereby enabling an augmented-reality view of the role played by design in improving and enhancing urban forms.

High Performance, Low Environmental Impact Building Envelope Design

Caroline Hachem-Vermette

This project is developing innovative building envelope systems for multistory buildings that combine energy efficiency and solar energy collection and utilization, as well as low impact advanced materials that combine reused and conventional materials. The investigated envelope systems can be applied to new or existing buildings. Proposed building envelope systems combine optimized geometries, curtain wall technologies and solar energy collectors (PV and hybrid PV/thermal panels). This research area comprises several projects including the development of façade patterns that combine architectural shape and enhanced potential of generating electricity.

Landscape In Motion

Enrica Dall'Ara, Mary-Ellen Tyler

Funded by a SSHRC Insight Development Grant (2019), Landscape in Motion is an interdisciplinary research project in the fields of landscape design and performance/digital arts, developed by landscape architect Enrica Dall'Ara and site choreographer Melanie Kloetzel.

The project focuses on infrastructures in Ramsay and Inglewood in Calgary. These neighborhoods boast complex interfaces between the city centre, rivers, cultural heritage sites, mobility infrastructures, industrial sites and brownfields; the community offers a provocative landscape for developing an interdisciplinary methodology that fosters innovative approaches to urban revitalization processes. At present, the implementation of city plans in Calgary – such as the imminent construction of a new LRT line (the Green Line) that will radically transform the Ramsay/Inglewood area – highlights the need to consider cultural heritage in light of future development.

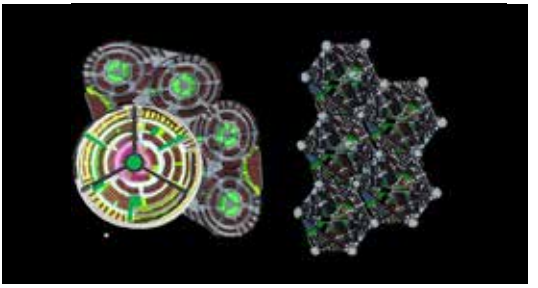
Metabolic Movements

Tawab Hlimi

Metabolic Movements was the first prize winner of Design Talk Institute's 'Movement' competition. It began as a community-engaged design research project funded by the Highland Park Community Association and Alberta Traffic Safety Fund, charged with exploring the feasibility of daylighting the buried Confederation Creek at the former Highland Golf Course site within a post-war suburban watershed. The project evolved into an integrated watershed and active transportation masterplan, projecting new ecological relationships between roads and drainage infrastructures.

Mixed Use Net-Zero Energy, Resilient Neighborhoods

Caroline Hachem-Vermette



This ongoing research program seeks to developing guidelines, and ultimately a tool, for the design of energy resilient, low impact, mixed-use communities. These communities will combine energy efficiency measures, renewable and alternative low-carbon energy systems, storage capabilities, and energy management. Findings from the study will assist with the establishment of policy to support development of high-performance, low carbon emission neighborhoods.

Parking and Performance

Kris Fox, Mathis Natvik

SAPL was invited by the Calgary Parking Authority (CPA) to design and build a creative intervention that reimagines how surface parking lots can be designed to sustainably host alternative programs during off-peak (non-parking) hours. Professors Fox and Natvik explored the performative capacity of a typical neighborhood parking lot, together with three MLA students. The primary design rationales were to emphasize sustainable performance, encourage natural processes, and provide alternative

social programming options to the local community. The team prepared a design for a 22-stall parking lot in NW Calgary's Kensington neighbourhood. The final design was presented to the CPA in spring 2020, and installation is anticipated in the near future after pandemic delays.

Soft City, Soft Haus: Designing for a Post-Pandemic Planet

Alberto de Salvatierra, Dan Hapton

The COVID-19 pandemic has exposed the fragility of existing models of housing, collective life, and infrastructure. People have been disproportionately marginalized by shelter-in-place orders and quarantines which assume they have the resources to weather this moment of extreme instability. The transition from a quarantine to a post-pandemic city will not only be a fight for collective human health and wellbeing, but also the staging ground for our last stand to prevent a forthcoming climate catastrophe.

Soft City, Soft Haus calls for the design and deployment of inflatable architectures within the surplus spaces of carbon-formed cities (like parking lots) that can quickly address emergency programs (like pop-up hospitals) and long-term programs (like greenhouses) as supply chains become localized. Closed environments with positive air-pressure and medical-grade HEPA filters, these soft infrastructures neutralize airborne pathogens and lead towards a new mode of semi-permanent urbanity which moves towards a philosophy of light environmental footprints and cooperative habitation.

Solarpunk Urbanism: Farms, Forms, Flows and Flux

Alberto de Salvatierra

In the face of insurmountable odds, what is the role of the designer, the architect, the urbanist amidst environmental degradation and existential threats? The answer lies in images.

Our power is to imagine, and then design, new possibilities of the relations between human and nature. 'Solarpunk' presents an opportunity to catalyze the words of eco-activists into a global imagination. And within the discipline of architecture and landscape architecture, articulating Solarpunk into urban design paradigms that conceptually and formally enmesh pluralism, environmentalism and hope is a timely endeavor.

SURPASS: Suburban Park Design Strategy, enriching the landscape and public realm in a suburban community

Beverly A. Sandalack, Francisco Alaniz Uribe

In 2020, the Urban Lab, completed an innovative design project with 3 research assistants funded by NAK Design Strategies and Mattamy Homes. The project resulted in a conceptual design proposal for a new Calgary suburban neighbourhood that involved environmental analysis, development of spatial and functional objectives and design of a multi-use community central park integrating wetlands, a skateboard plaza, a community pavilion, open space and multiple paths and gathering areas. The landscape approach built on indigenous vegetation patterns and linked the park with the surrounding context. This project provided the base for other ongoing research inquiries dealing with park and open space planning and design.

The Calgary Project 2.0: urban form / urban life

Beverly A. Sandalack, Francisco Alaniz Uribe

The Calgary Project: urban form / urban life (by Sandalack and Nicolai), was a national award-winning book published in 2006 by the University of Calgary Press, widely consulted and used by urban professionals, academics and students. The goal of The Calgary Project 2.0 is to revise and update the book to capture and reflect the past 14 years of Calgary's development, and to provide a resource that can guide the city into the next decades of the 21st century. The Calgary Project 2.0 will also discuss projections for the city's growth and development to serve as a resource for citizens, developers, realtors, planners and design professionals, academics and policy makers in articulating a vision of the desirable future of the city. Funding is from the Alberta Real Estate Foundation and others. Publication is anticipated in 2023.

CITIES FOR ALL

Reimagining the built environment as an accessible, equitable, and welcoming space for every member of society

The third grand challenge is based on the belief that a great city serves everyone. This means equal and equitable access to city services and public amenities; safe streets and public spaces; and complete neighborhoods that facilitate sustainable and fulfilling lifestyles for residents. Good affordable housing is integral to this: while there is a plan to add 15,000 new units in Calgary over the next ten years, what needs to be done to make sure it is done right? Taking stock of unused or underused space throughout the city's core creates a multitude of possibilities for innovative solutions; using state-of-the-art design and materials to protect and enhance public spaces creates opportunities for community-building and civic engagement.

4th Avenue Flyover

Tawab Hlimi

The Fourth Avenue Flyover was a collaborative project between the Bridgeland-Riverside Community Association, the City of Calgary's Department of Transportation, and the School of Architecture, Planning and Landscape's MLA program. The project was coordinated with the course "Green Infrastructure/Winter City Design" taught by Tawab Hlimi. Its aim was to revitalize the residual and underutilized spaces below a busy downtown overpass, which was identified as a catalyst for transformation by virtue of its function as a pedestrian corridor or "gateway", flowing below the 4th Ave. Flyover and connecting the community of Bridgeland-Riverside with downtown Calgary.

Students were presented with the challenge of reclaiming the underutilized spaces of the 4th Ave. Flyover, through the design and implementation of green stormwater infrastructure. The design process engaged the community through charrettes culminating in the production of conceptual drawings and a tactical intervention on McDougall Rd. NE.

The project received a Certificate of Merit (Honourable Mention), in the category of Community Improvement Projects, at the National Urban Design Awards in 2018.

Architecture of Aging and Innovative Forms of Architectural Practice

John Brown

As part of a critical practice-based research program, Dr. Brown developed a portable prefabricated living unit with a high-performance shell. 'Garden Loft' (gardenloft.ca) has advanced safety and support features that enable those with differing abilities to continue living independently for an extended period. The unit can be temporarily deployed in a backyard or grouped together into small villages on underutilized pieces of land. A digital platform integrated into the home provides additional support to the resident and their families through fractionalized service management, remote activities and social opportunities, smart home controls, and behavioural monitoring that passively identifies potential health issues. The first units are currently in production with deployments in Calgary and Edmonton scheduled for late summer 2022. The team has simultaneously developed an innovative

model of architectural practice that can rapidly scale production and distribution of Garden Loft units across the country and beyond.

Design Thinking to Support Aging-In-Place

Barry Wylant

The intent of this project is to use a diagrammatic approach to identify choke points and road blocks to integrating supportive living developments for seniors. A SSHRC Partnership Engage Grant supported collaborative research between SAPL and the Jack Long Foundation, which promotes the development of affordable housing in Calgary. This project targets a design thinking investigation into the various agency processes involved in funding and supporting the development of affordable supportive living for seniors, integrated into typical residential condominium projects. Illustrating these to stakeholders has the potential to identify avenues for expediting or even templating the funding and approval process for these developments.

A SSHRC Connection Grant-funded interdisciplinary symposium, organized by researchers from Kinesiology, Nursing, Computer Science and Psychology and SAPL examined various research initiatives from Sweden and Canada intended to support aging-in-place.

Chinatown Mobility Report

Francisco Alaniz Uribe, Kwangyul Choi (post-doctoral fellow)

Collaborating with the City of Calgary, the University of Calgary research team examined demographic changes in Chinatown and its surrounding communities over time and evaluated transportation supply and demand in the area as well as some aspects of business activities. In-person and online surveys were conducted to understand transportation/mobility needs from the community and visitors to the community.

This report is intended to inform relevant transportation policies based on the research findings in order to make Chinatown a great place to live, work, play, eat, shop, learn and visit.

Chinatown Sense of Place Survey

Francisco Alaniz Uribe

This research project had two main objectives. First, to focus on identifying key elements of the built environment that contribute to the sense of place and identity of Chinatown. A second objective of this project was to develop an online, immersive and visual engagement process that would facilitate conversations with the public.

A report was issued to the City outlining the findings from this study to help in the future drafting of urban design recommendations for improvement of the public realm and architectural guidelines for future development applications. These will enhance the Chinatown development guidelines and will contribute to more appropriate design proposals from developers.

HealthyHoods: a better life in cities

Beverly A. Sandalack; Patricia Doyle-Baker (Faculty of Kinesiology); Gavin McCormack (Cumming School of Medicine)

While the correlation between a walkable neighbourhood design and better health is well-known, the Urban Lab's HealthyHoods research is diving deeper, to look at how neighbourhoods can affect people's weight and incidence of diseases such as diabetes, as well as their ability to make social connections in their community. How does owning dog improve your health? Where do the kids in your neighbourhood play? Can people walk to school, work, or stores and services? How do curvilinear neighbourhoods affect our physical and mental health compared to traditional grid layouts?

Intelligent Data-Enabled Communities

Thomas P. Keenan

After several decades, the Smart Cities movement has morphed into the more nuanced world of Intelligent Communities. The aim is not to "make communities work better" through automation but to "make better communities" through community engagement and evidence-based shared decision making. Intelligent community designers make conscious choices about whether or not to use a particular technology.

Collaborating with the Intelligent Community Forum (ICF) this project involves developing and analyzing emerging trends in this field and helping ICF select the Intelligent Community of the Year (intelligentcommunity.org). Research output is shared with specialist communities (e.g. the American Bar

Association, through their SciTech Lawyer publication and the CIO Association of Canada) as well as the general public through frequent media outreach.

The notable book *Technocreep: The Surrender of Privacy and the Capitalization of Intimacy* (2014, Greystone) was republished in Spanish as *Tecnosiniestro: El Lado Oscuro de la Red* by Editorial Universitaria de Buenos Aires in 2017.

Mediated Drawings

Alicia Nahmad Vaquez

Mediated drawings explore humanity's relationship with technology and nature. As technology has advanced and tools like robotics and machine learning become more ubiquitous, their role in art-making has become more complicated. Mediated Drawings, funded by a SSHRC Connection Grant, speculated how robots and AI can augment and democratize creative processes. The aim was to encourage people to engage in novel forms of art-making without stress. The public was invited to trigger the machine learning platform by selecting an image and assigning it an emotion. This then generated images drawn by an industrial robot, based on the text prompt. During Stampede week in 2021, a UR10 industrial robot located in the window of the CBDLab drew AI-mediated images inputted by participants. A webapp was developed and deployed (mediateddrawings.ai) to encourage public participation: over 200 participants interacted with the robot through the app, and over 2,000 watched the robot drawing.

Outdoor PLAYbook

Kris Fox

Winner of a 2017 Communication Award from the Canadian Society of Landscape Architects, the Outdoor PLAYbook is a user-friendly web resource that seeks to improve the physical, social and ecological well-being of children through exposing parent groups and school communities to leading research and best practices in the design of outdoor play and learning environments for public elementary school grounds in Canada.

Public Art

Jason Johnson; Guy Gardner; Laboratory for Integrative Design

Public art projects that engage digital fabrication techniques and community-based design processes have been one of the ways the Laboratory for Integrative Design develops and deploys digital tools for making. These two projects located in Edmonton, Alberta were developed to enliven newly built public spaces.

Quality in Canada's Built Environment: Roadmaps to Equity, Social Value and Sustainability

Brian Robert Sinclair, Enrica Dall'Ara, Alicia Nahmad Vazquez

SAPL is part of a 5-year research program, led by Jean-Pierre Chupin, Université de Montréal, which received a $2.5 million SSHRC Partnership Grant to examine the diversity of public environments (urban spaces, buildings and landscapes) impacting Canadians' everyday lives.

The program has 3 aims:

1. Analyzing the current limitations of environmental norms and sustainability models to bring us closer to the United Nations Sustainable Development Goals (SDGs).

2. Co-designing new paths to equity, diversity and inclusion in the built environment.

3. Defining new frameworks for the definition of quality so as to enhance the social value of the built environment through roadmaps to quality.

(From Summary of the Proposal, by Jean-Pierre Chupin, Stage 2 SSHRC PG application, Nov. 2021).

STILL LIFE: A Slice of Life

Lorraine Venturato (Faculty of Nursing), lead; John Brown

This project explores the meaning of "place" and "home" in our experience of aging, and the ways in which we shape—and are shaped by—our environments. What makes a place feel like home? How do objects and artifacts shape our memories and our identity, and tell the story of our lives? The project also examines how physical environments affect aging factors such as exercise, diet, cognitive activities, and social relationships.

The Future of Affordable Housing: Design & Planning Innovation

Sasha Tsenkova

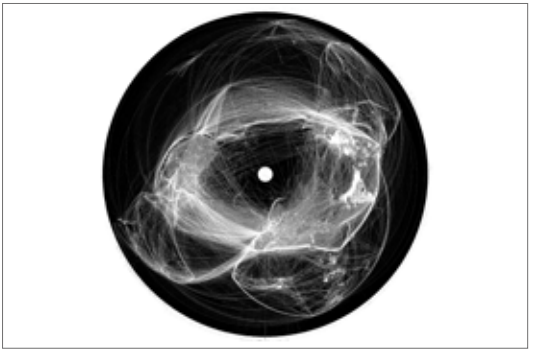
A growing housing affordability problem in Canadian cities has prompted a renewed commitment of the federal government, complemented with provincial and municipal programs, to increase supply. The National Housing Strategy provides municipalities with a significant opportunity to re-align resources, land and partnership strategies with the housing industry and the not-for-profit providers to provide affordable housing in mixed income, mixed tenure projects. Building on the success of Partnerships for Affordable Housing Conference at the University of Calgary in 2018, we focused on the opportunities of mixed income housing as a model to build equitable communities embracing diversity and inclusion (https://sapl.ucalgary.ca/labs/cities/housing-futures).

An emphasis on knowledge mobilisation led to the creation of a public panel, a multi-media exhibition, and an international symposium, funded by two SSHRC Connection Grants, the Cities of Calgary and Edmonton, and many industry partners. Research funding also supported the work of six graduate students for two years.

The project was awarded CMHC's President Gold Medal for Best Housing Research in Canada.

Weak Signals + Wild Cards: Agricultural Flows as Urbanization in the Canadian Prairies

Alberto de Salvatierra



This project examines current agricultural activity in the Canadian prairies and—through a synthesis of projected climate mapping models and GIS data—will investigate how new agricultural production or material "flows" might influence and impact urbanization in the region. This work will support the identification of pathways towards economic continuity and environmental sustainability in the region. It will reimagine a resilient future that works with natural resources and supports the urbanization of cities and landscapes.

REBOOTING DOWNTOWN

Expanding what downtown has to offer to Calgarians and visitors

The fourth grand challenge represents SAPL's response to the specific challenges facing Calgary's downtown core. The 2014 oil price crash and the COVID-19 pandemic caused a tremendous spike in commercial vacancies, and the absence of office workers has exacerbated—or laid bare—the economic and social issues facing downtown, and Calgary as a whole. This challenge aims to address inequities, include both marginalized and established stakeholders, and revive public interest in the city's core as a place to work, gather, and be entertained. Small-scale interventions in planning, landscaping, and design offer a means of testing innovative ideas, and can potentially be scaled up throughout Calgary's downtown as well as replicated in other neighbourhoods and cities.

1M+NXC Downtown Activation

Fabian Neuhaus

This MITACS-funded activation project focused initially on downtown Calgary's Rosling Building to create a food pop-up in collaboration with various vendors and providers. The internship-type work provided an opportunity to analyze the local food landscape and map out the current Calgary food scene. The research team later used this template to implement similar pop-ups in other locations, including Regina and Brampton, and Christmas Markets in Calgary and Edmonton.

9-Block Safety + Sensing Canopy

Mauricio Soto Rubio; Guy Gardner

One of the reasons we created the City Building Design Lab in the heart of Calgary's downtown is to have a living lab for pilot projects like this one. Unveiled in November 2020, this playful, interactive Canopy for the 9 Block Program is our largest project yet.

The project, a partnership with the Urban Alliance and CMLC, demonstrates that a modest investment can go a long way to improve the quality of urban public space. In addition to creating an impressive new face for the Castell Building, the canopy explores the use of sustainable and recycled materials and the interactive lighting system adds a playful element to downtown and challenges our collective understanding of urban space.

The research findings from this project will impact the way designers and municipalities design for a safer and more vibrant city.

Civic Commons Catalyst: Supporting Transformative Revitalization of Underutilized Spatial Assets in Albertan Cities

Alberto De Salvatierra

The Civic Commons Catalyst is an interdisciplinary research and innovation platform embedded with SAPL's City Building Design Lab.

The Catalyst, together with the CBDLab and its partner faculties and growing list of civil society and government partners, is a vehicle for transformational and long-term change for real estate and other city-building industries, organizations and sectors. Aimed at taking underutilized spatial assets in Albertan cities and catalyzing them into positive assets

for community that can revitalize downtowns, the Catalyst is identifying zones of opportunity so that assets can be networked together and help focus strategies for economic development and impact investment.

The Catalyst is currently focused on the 30% vacancy in Calgary's downtown core, while branching out to three additional Alberta communities by deploying the research methods and findings to a rural setting—opening up opportunities and strategies for replicability across the rest of the Province. With a catalog, an ideation methodology, and detailed design proposals and partnerships to advance them, the Catalyst is providing a clear and innovative roadmap to engage in economic development and impact investment in downtown cores—providing lasting impact to municipalities and the real estate industry.

Through its employment of graduate researchers across the disciplines of architecture, landscape architecture, planning, public policy and business, the Catalyst is contributing to the training of future real estate industry professionals—helping promote a pipeline of young talent with developed core competencies that can advance the sector.

Sponsors: Alberta Real Estate Foundation, Evergreen, Future Cities Canada, The Canadian Urban Institute, the Urban Policy Platform at the School of Public Policy, REEF Technologies, the City of Calgary, the City of Medicine Hat, the City of Lethbridge, the City of Okotoks.

FoSA (Future of Stephen Ave.)

Joshua Taron; Alicia Nahmad Vazquez; Kris Fox; Fabian Neuhaus

The City of Calgary is currently re-imagining iconic Stephen Avenue/8th Avenue from City Hall to Mewata Armoury. As a flagship project for Calgary's Downtown Strategy, FoSA provides a foundation for the City to collaborate with stakeholders to consider and implement strategic improvements – whether near-, medium- or longer-term – that will reposition Stephen Avenue and ensure its future as Calgary's downtown "Main Street".

Through the Urban Alliance, the City is engaged in a research partnership with the University of Calgary, which provides the City with access to expertise from a variety of disciplines, and the University with the opportunity to apply their academic research to an exciting and impactful city-building project.

FoSA YYC/LRT

Joshua Taron; Jennifer Eiserman (Faculty of Arts)

Installed at the west end of Stephen Avenue, YYC/LRT is the oldest surviving Calgary LRT car in existence. Artist and UCalgary MFA grad Brian Faubert articulated its surface, window and conductor spaces using a combination of spray paint, torch cutting and welded

steel rod that use his personal street art vocabulary to express themes of community and connection. At night, high intensity lighting inside the car articulates the space around it with an elegant network of shadow play. The interior of the car has been refitted as a studio and space for community-engagement, programmed by Jennifer Eiserman from the Department of Art.

FoSA Solar Thermal Outdoor Furniture Project

Roes Arief Budiman and Trina Listanco (Schulich School of Engineering), leads; Joshua Taron

A green technology innovation series that involves prototyping and developing various solar thermal micro infrastructure solutions that will address heating challenges and “placemaking” in outdoor public/ private spaces year-round along Stephen Avenue and beyond.

FoSA Community Design Clinic

Patrina Duhaney (Faculty of Social Work), lead; Fabian Neuhaus, Joshua Taron

The Calgary Design Clinic, located at the intersection of Stephen Avenue and 1st St. SW, builds on the work of the Anti-Black Racism Task Force Task in the Faculty of Social Work, led by Patrina Duhaney. In this public-facing space we aim to co-create and co-design activities and participatory design approaches to highlight the intersections between race and urban spaces, and unearth the ways in which Black individuals have been excluded from public spaces with an emphasis on Stephen Ave when possible. Informed by the concept of spatial justice, the clinic will help foster equitable access and use of public spaces for Black communities.

FoSA: Traffic Calming Inhabitable Urban Furniture

Kris Fox; Alicia Nahmad Vazquez

Urban site / street furniture and traffic calming bollards have the potential to become design elements that identify and impart character to a place. An interdisciplinary team approach incorporating architecture and landscape architecture creates an ideal testing ground for novel design and material configurations in addition to creating unique designs to help with district identity. Designing with sustainable material saving techniques that result in unique, identifiable, and repeatable elements could offer an urban solution that can get deployed around the City of Calgary while being strongly identified with downtown and Stephen Avenue.

Furbaniture
Joshua Taron

Furbaniture is the result of a SSHRC-enabled collaboration between SAPL and the City of Calgary, who co-hosted the 2017 *Walk21 Conference*. Furbaniture is an example of tactical urbanism, a low-cost way to change the built environment at a street level, intended to change how a street operates, feels, and serves the neighbourhood.

Green Alley Project
Tawab Hlimi, Kris Fox

This project, supported by the Calgary Downtown Association, demonstrated how to transform Calgary's downtown alleyways from forgotten and gritty into places of connectivity, productivity and value. The team explored how goals of green mobility (walking and cycling) and green stormwater infrastructure (natural systems) can co-evolve to bolster the city's resilience and vitality.

A ground plane "carpet" strategy provided cues for congregation and movement, examining whether 2D painting can be an interactive alternative to 3D structures. By incorporating elements on both the wall and the ground plane, visitors and passersby are encouraged to interact with the perspective of the mural and "jump" across the floating blocks. Anamorphic art and murals represent a low-impact visually stimulating attraction by creating viable amenity spaces for the public and downtown businesses using inexpensive and temporary materials.

Richard Parker Institute: 3rd Street Activation
Fabian Neuhaus

In a collaboration between NextCalgary and Onemillionfeet, 3rd Street SW in downtown Calgary was developed around prototypical interventions under the headings of Storefront, Social Lobby, and Food Court. Activation on site included a physically distanced Easter Egg hunt and tactical interventions along the road from flower beds to seating. The activation is documented in the NXC magazine issue #5, A Downtown Block Study: A Comprehensive Look at 3rd Street in the Heart of Downtown Calgary.

Richard Parker Institute: Hybrid CommUNITY

Fabian Neuhaus

In collaboration with downtown Calgary's first pay-what-you-can thrift store, Good Neighbour YYC, NXC and TLN facilitated a four-week pop-up. This included interventions outside - activating the street and sidewalk - and inside with interactive installations that bridged online and offline, such as a drawing robot visualizing virtual messages on site that were later turned into physical postcards, and light-up installations during the long dark winter month in Calgary. The activation is documented in the NXC magazine issue #11: Hybrid Community Pop Up.


BRICAT

Faculty Research Projects

Addressing Cultural Food Security with Cultivation of Traditional Local Foods

Mathis Natvik

In partnership with Centre for Boreal Research, Northern Alberta Institute of Technology (NAIT) (currently seeking funding).

Remote communities in northern Alberta face issues accessing quality local traditional foods. The proposed project will work with communities to address food security through sustainable orchards of locally-sourced traditional food:

- Demonstrate how orchards of local plants can be established and maintained to yield a sustainable supply of traditional foods.
- Develop community capacity to collect seed, propagate, and establish orchards.
- Support knowledge transfer within the community by engaging youth and through workshops and learning sessions.

This work will be conducted with community members to build capacity. Elder knowledge and guidance will be sought about which species are desired and suitable locations for planting.

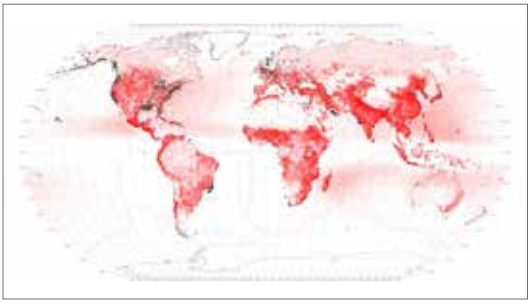
Canadian Cultural Landscapes

David Monteyne

Through an engagement with cultural and political history, this work seeks to specify the different techniques and processes by which space is produced through social relations. Critical architectural history seeks to research the built environment as a creative cultural phenomenon, not limited to singular structures or famous architects. In contrast, understanding the role of the everyday spatial practice of subjects in producing the built environment is one of the most under-studied questions facing architectural and urban design history. Focusing on spaces of immigration, this scholarship incorporates analytic categories such as race and gender, thereby adding relations of identity and power to its examination of the meanings and uses of spaces and places.

Climate and Catastrophe: Mapping Global Landscapes and Gradients of Crisis and Risk

Alberto de Salvatierra



Civilization is at a critical inflection point. Pandemics and wars notwithstanding, climate change impacts are being felt more acutely, more often and more widely than ever before. But, the severity, frequency and scale of climate change impacts are uneven across the globe. Where will drought be most destructive? Which coastal cities will be threatened by flooding and sea-level rise? What regions across the planet will become most unlivable? In a syncretic mapping of global "natural" disasters, this project examines the global landscapes and gradients of risk.

Design Studio Matrix (DSM): Supporting the decision-making process as part of a reflective practice

Fabian Neuhaus (PI); Graham Livesey; Enrica Dall'Ara; Mary-Ellen Tyler; Sandra Abegglen

Funded by a Taylor Institute Scholarship of Teaching and Learning (SoTL) Grant, this project analyzed design studio pedagogy and further developed the Design Studio Matrix (DSM), a teaching and learning tool. The hypothesis was that the DSM would help shift the focus of design education away from the product towards the process and the reflection thereof. The research adopted a mixed- or multi-method approach consisting of focus group discussions, semi-structured interviews, in-class observations and questionnaires. In addition, material created by the students such as diagrams and survey data were analyzed. A total of 100 students have worked with the DSM to date.

Eternal Ephemera: Soft Infrastructures in the Floating City of Uros, Peru

Alberto de Salvatierra

Operating outside traditional understandings for a city and its 'urban fabric,' vernacular constructions like Uros often resist fixed, normative frameworks or spatial conditions in relation to human habitation. Yet, this project, perhaps paradoxically, aims to record and index the shifting nature of the indeterminate boundaries—both physical and abstract—that exist across, arguably, artificial territories. Taking a material as the point of departure (totora reeds), one can explore existing phenomena and relationships in a perennial wet gradient between the aqueous and the buoyant. When 'dry land' is as fluid as the water that sustains it, preserving a simple set of guidelines allows for a critical examination when the only constant is 'grass.'

Evict Radon

Aaron Goodarzi (Cumming School of Medicine), lead; Joshua Taron

Evict Radon is a volunteer-led Canadian non-profit organization dedicated to solving Canada's large and worsening radon-gas exposure problem, a substantial cause of lung cancer even in non-smokers. Evict Radon embraces research strategies across disciplines to gain the information necessary to:

1. Understand what type of property produces a high or low radon environment, and why
2. Identify who in society are the most at risk from radon exposure
3. Make meaningful changes to policy to engineer high radon out of our future buildings.

Led by Dr. Aaron Goodarzi, the Canada Research Chair for Radiation Exposure Disease, Evict Radon is working towards understanding radon exposure and educating Canadians about the harmful effects of radon gas.

Fort McKay First Nation Co-Reclamation Project

Craig Gerlach

This collaborative reclamation project braids scientific and Indigenous knowledges and perspectives during co-creation of intercultural mine closure and reclamation tools and processes, for the repair of traditional homelands, community, and culture which have been degraded by oil sands activities, including:

1. A Code of Conduct to guide effective, intercultural dialogue and action;
2. An Aligned Closure Vision to direct planning and design decisions;
3. A traditional land use gap analysis of oil sands mine closure and reclamation plans;
4. An Intercultural Reclamation and Closure Framework for industry, government, and the Fort McKay First Nation to use when planning for the future.

Land | Landscape | Townscape

Beverly A. Sandalack

Beverly was awarded a one month writer-in-residence fellowship at the Wallace Stegner House in Eastend, Saskatchewan in August 2021, through a refereed selection process, to work on *Land* | *Landscape* | *Townscape*, a combination of text, drawings and paintings dealing with cultural landscapes and land settlement patterns of western Ukraine and the Canadian prairies, with anticipated completion late 2022.

LAND | TERRE Design Research Network

Enrica Dall'Ara; Beverly A. Sandalack; Tawab Hlimi

The SAPL MLA Program is a participant and contributor to this collective (www.landterre.com), which aims to increase awareness and foster research in landscape architecture across Canada. It seeks to "reduce the country's geographic span by tackling research questions that impact us regionally, and nationally [and] create a forum to address common research questions, to reveal the potential for more informed and collaborative research projects in landscape architecture research and education in Canada, and to form the foundation of a national research group."

The LAND | TERRE initiative has been active since 2016, producing a colloquium and national studios, and attracting multiple grants from the Landscape Architecture Canada Foundation (LACF) and SSHRC.

MBAC Collaborative

Marc Boutin

We practice architecture because we believe in its capacity to materially enrich the world.

We work at multiple scales and in a wide variety of physical and conceptual contexts, but always with the objective of developing robust and resilient designs that can adapt to their environments as they evolve.

We commit to designing holistically because we believe the world can only be understood as a whole; consequently, we focus on creating a density of meaning that emerges through the synthesis of art, architecture, urban design, and landscape design.

Our diverse portfolio of work has been recognized with national and international awards, competition wins, exhibitions, and publications. Recent projects include custom residences in Alberta and British Columbia; Poppy Plaza, part of the Memorial Drive Landscape of Memory; the Edmonton Valley Zoo Children's Precinct; the Calgary Public Building Restoration; the Civic District Public Realm Strategy; the John Fry Sports Park Pavilion; and the 1st Street SW Underpass Enhancement.

Social Reconstruction: the Potential Role of Architecture

Catherine Hamel

A continuing investigation into the potential role of architecture as an instrument for social reconstruction. Of specific interest are intrusions that allow themselves to be diluted in their endeavour to reposition considerations in the public realm; in subtle disturbances that carry the potential to instigate change, not by altering existing systems, but the attitudes towards them. Specific themes investigated to date include identity and estrangement in the context of post-war reconstruction and exile; architecture and justice; memory in the scarred body and the voicing of political experiences in public space. These topics are explored through teaching, drawing, and writing, focussing not on the sides people take, but the lines they draw in order to be able to take them.

Teaching and Learning Online Network (TALON)

Fabian Neuhaus, Sandra Abegglen

Through an open and evolving dialogue with faculty and students on emerging technologies and practices, TALON (taloncloud.ca) creates a hub for exchange and leading research into remote and hybrid teaching which has resulted in multiple peer-reviewed articles. With a focus on the design disciplines, the TALON Resources provide an interactive lexicon for remote teaching with instructions on how to find, access and use applications. The TALON Letter highlights top tips on course design and pedagogy with additional insights into the digital classroom. These resources are complemented by the TALON Voices, discussions of personal experiences, spotlighting challenges and potentials of tools and approaches.

Urban Design Theory and Modern Architectural History

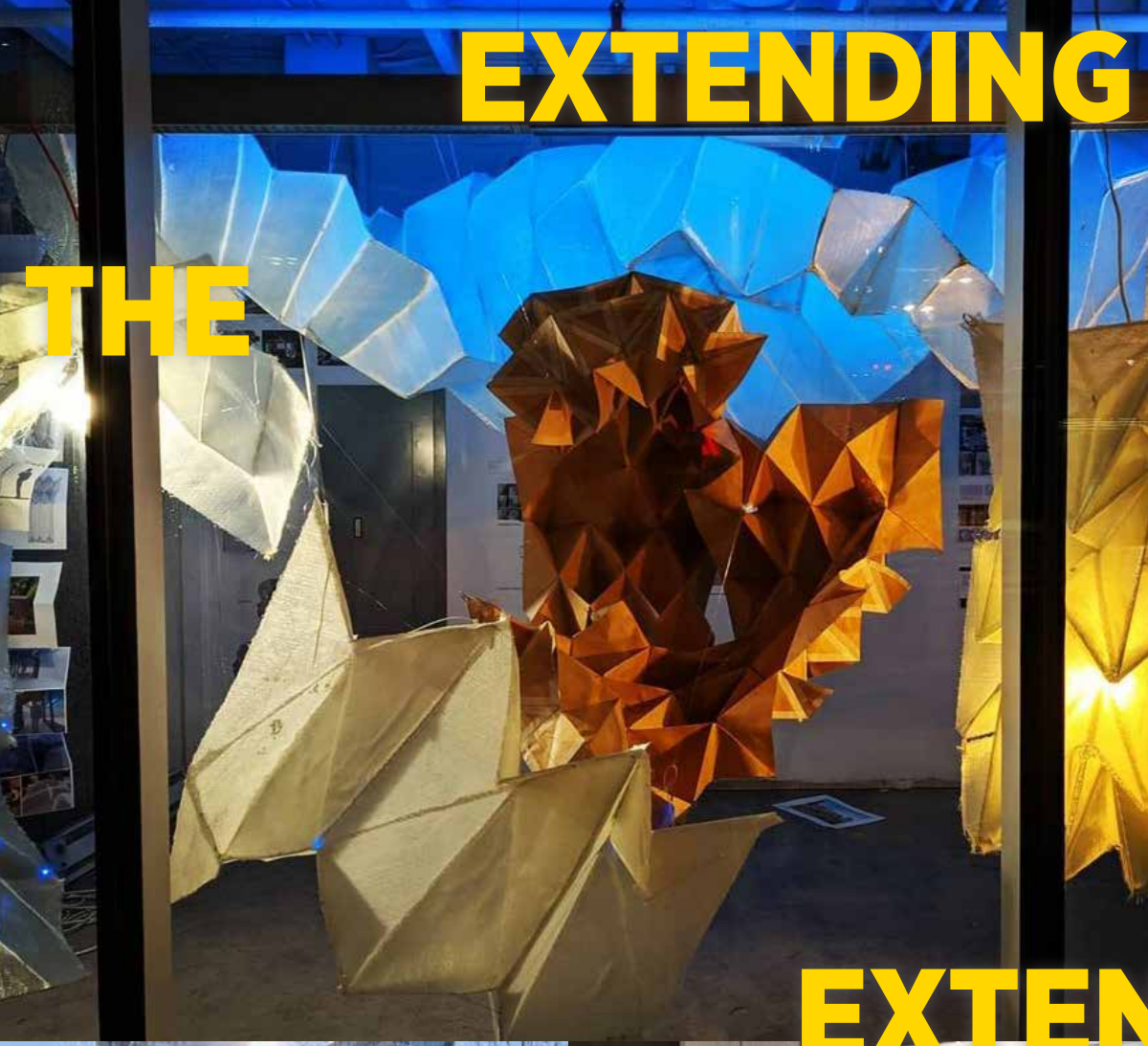
Graham Livesey

Research interpreting the Garden City through theories derived from landscape ecology and gardening resulted in *Ecologies of the Early Garden City: Essays on Structure, Agency, and Greenspace* (Champaign, Illinois: Common Ground, 2019).

That same year a collaborative project funded by a large Canada Council grant saw the publication of *Canadian Modern Architecture, 1967 to the Present* (New York: Princeton Architectural Press, 2019), co-edited with Elsa Lam, which won the 2021 RAIC President's Medal for Multi-media Representations of Architecture.

Ongoing research has produced a map for the Calgary Institute for the Humanities' Calgary Atlas Project titled "Calgary's Architecture in 40 Buildings"; a forthcoming journal article on the work of French writer Georges Perec; and an in-progess manuscript for a book on modern architectural history.

EXTENDING THE CAMPUS



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MEDes

Akbar, Naji (2021)
Surveying the Ecologically Embedded Built Environments of the Preindustrial Era with a Focus on the Classic Maya

Al-Sadoon, Amr (2017)
Passive Cooling Applications in Commercial Buildings in Hot Regions

Amin, Sarjana (2021)
The Transition of Manchester, Calgary into a Sustainable, Low-Carbon, 100% Clean Energy District

Arole, Oluwaseyi Immanuel (2021)
Procedural Passport: A Framework for Circularity In Buildings (support from SSHRC; FP Innovations)

Bailey, John Alexander (2021)
A Reflective Practitioner Approach to Food System Planning in Calgary, Alberta

Beckett, Robert (2018)
Energy Design Performance Modelling for Multi-unit Residential Buildings: A Vancouver Case Study

Burman, Jeanette (2018)
A Phenomenology of Campus Radio Landscapes: Place, Design, and Resiliency in Canada

Castillo, Juan (2021)
A Design Thinking Approach to Limiting Plastics in the Ocean (support from NSERC)

Chen, Yi Fan (2017)
Photocatalytic Air Purification: Investigation of Design Parameters

Cummings, Liam Brody (2020)
An Institutional Ethnography Exploring Developers' Perspectives of the Municipal Development Approvals Process

Diepstraten, Rianne (2017)
The Where and When of Tundra Plants: Distribution and Phenology of Sub-Arctic Vegetation

Do, Karly Tram Anh (current)
Roadside attractions as worthy elements of the vernacular landscape: exploring social functions and perceptions using methods from cultural landscape and material culture (support from Affordable Living project donated funds; City of Calgary/Calgary Parking Authority; Alberta Real Estate Foundation; NAK Design Strategies)

Dubon, Jennifer Marie (2021)
An Examination of Alberta's Wetland Management Program

Edun, Ayoyimika Oluwatobi (2021)
Exploring Post-Consumer Waste Reuse in High Performance Building Envelopes: Energy Efficiency and Environmental Impacts of End-of-Life Materials

Fasakin, Temitope Oluwole (2018)
Informal Settlement in Lagos State: A Framework for Investigating Housing Quality

Fauvelle, Catherine (2017)
Simulation of protected area and forestry cutblock design in the boreal plain ecoregion

Forward, Kristen Michelle (2019)
Contemporary Ornament for Circularity: Exploring Synergies Through Digital Design and Fabrication (support from FP Innovations)

Hamel, Nicolas Alexandre (2020)
Recalibrating Rustic: A Parametric Evolution of the Canadian Rocky Mountain Vernacular (support from Alberta Real Estate Foundation Radon Project; makeCalgary; NSERC CREATE IISC)

Hampshire, Caitlin (2019)
Between - Exploring the Ineffable in Search of the Sacred: Defining and Developing the Architecture of Experience

Hassonjee, Insia (2018)
Hybrid Ethnicity in the Urban Built Environment

Hiebert, Lynette (2017)
A Spatial Approach to Biodiversity Planning in the Calgary Region

Jassal, Ajit Pal Singh (2021)
Towards Net Positive and Nearly Zero Carbon Residential Neighborhoods

Junnila, Leanne (2017)
Freestyle Urbanism: A Collaborative Approach for Healthy Public Space Design

Kermish-Wells, Joseph (2017)
Spatiotemporal Clusters of GPS Locations and Prediction of Grizzly Bear Behaviour

Letizia, Jessica (2018)
GIS as a Decision Support Tool in Regional Food System Policy Implementation

Liu, Yuting (2017)
Sustainable Packaging/Branding Design for Fair Trade Tea Production in China

MacGregor, Anders (2017)
Towards Net-Zero Energy Supermarket: An Investigation of Passive and Active Design Strategies

Mortezaee, Farhad (current)
How can architects in Canada contribute to international sustainable development through knowledge sharing and empowering their international fellow practitioners? (funding from FNDA Architecture)

Nwaeke, Godspower Ikechukwu (current)
Rethinking Sustainable Alternatives to Floodwater Management and Environmental Responsive Living Conditions Toward the Improvement of Environmental, Economic and Social Perspectives in Nigeria

Pattullo, Hayden (2019)
Digital Fabrication for Contemporary Material Specificity (funding from SSHRC;FP Innovations)

Poschmann, Rebecca Anne (current)
Calgary Communities: Understanding the Role of Community Associations in the Planning Process in Calgary

Pourmojib, Dorsa (2020)
From Social Equity to Spatial Equity in Urban Space Case Study: Olympic Plaza

Rajan, Saad (2017)
dwelling · lifestyle · community: reconsidered | reconceived | redesigned

Ranasinghe, Srimal Isaac (2018)
The Engaged Community: Trust-Building within Public Engagement toward Community Development (supported by Affordable Living project donated funds)

Reichelt Guimaraes, Carly (2017)
Schools of Tomorrow: Evaluating Alberta's Standardized Public Schools

Robertson, Natalie S. (2018)
Neighbourhood Resilience to Extreme Weather Events: An Assessment Methodology for Canadian Cities (supported by makeCalgary; Affordable Living project donated funds; NSERC)

Siegle, Jesse Darren (2020)
Form and Performance: Developing Parametric Tools for Early Design Decisions (supported by NSERC CREATE IISC; Calgary Downtown Association)

Skilling, Gordon (2020)
Modular Urbanism: Combining modular and multi-scalar design strategies in creating sustainable landscape architecture design and construction processes (supported by NSERC CREATE IISC; SSHRC; Calgary Downtown Association)

Theoret, Jessica Lynn (2020)
Seasonal movements in caribou ecotypes of Western Canada

Tse, Kim Cheung (2020)
Polymer FDM for High-Performance Facades: Digital Tools for Designing Performative Aesthetics with Polymer FDM (supported by FP Innovation; Age In Place donated funds; makeCalgary; SSHRC; Mixed Reality: Maker Space)

Vodon, Kristine (2019)
A Study in Performance Footwear: The Design of a Wakeskate Shoe

Walker, Matthew Francis (2021)
Digital [Re]Matter: Exploring the Gap Between Designing and Making Through Materially Endorsed Digital Practice (support from DIALOG)

Yong, Vincent Fook Kheong (current)
Public, Private and Non-Profit Partnership for Affordable Rental Housing in Calgary: resolving the shortage of affordable rental housing in Calgary with strategies from regulatory, fiscal, financial & institutional pillars and case studies

PhD

Abu Hayyaneh, Raed (current)
Evaluation of the Nature Knights Program (NKP): enhancing school students' awareness, knowledge, and attitudes towards nature in protected areas in Jordan.

Alinaghi Pour, Sara (2018)
Sustainability, Neighborhoods, and Urban Design: A Holistic Approach to Place-making

Alotaibi, Fahad (2018)
Tall Buildings, High Expectations, Towering Responsibilities: Critically Considering Skyscrapers, Urbanism and Sustainability

Al-Zu'bi, Maha (2017)
Water–Energy–Food–Climate Change Nexus in The Arab Cities: The Case of Amman City, Jordan

Bandara, Viraji Yasendra Jayaweera (2019)
Urban Design in Support of Intercultural Communities (funding from Affordable Living project)

bin Zayyad, Sabeen (2021)
Dubai's Urban Identity – A Critical Analysis On How Socio-Economic Elements Influence and Shape It

Briseno Castrejon, Veronica (2022)
A Critical Environmental Design study of ancestral stingless beekeeping practices, landscapes, and dwellings with Maya people in the Yucatan Peninsula of Mexico (funding from Mixed Reality: Maker Space Project; Vice-Provost Indigenous)

Brownlee, Edme Corina (2020)
More Meanings in The Flow of Life: Sustainability Metaphors

Carruthers Den Hoed, Donald Gordon (2018)
Recreating Parks as Places for Restoration, Reconnection, and Reconciliation

Cavedon, Maria (2020)
Ecological genomics and conservation of caribou in Western North America

Chineme, Tinuke (current)
Community-Based Biowaste Circularity: Achieving Sustainable Waste Management through the Black Soldier Fly Bioconversion Treatment Method and the Self-organization Skills of Indigenous African Female-led Institutions.

Daly, Christine (current)
Collaborative reclamation ("Co-Reclamation") study with Fort McKay First Nation that braids scientific and Indigenous knowledges and perspectives into the co-creation of intercultural mine closure and reclamation tools and processes (funding from Fort McKay First Nation; University of Waterloo)

Daniels-Akunekwe, Chika Chioma (2021)
Marginal Enclosures: An Exploration of the Viability of a Social Housing Siting and Maintenance Framework Based on Stakeholder Experience - The Case of Lagos State, Nigeria (funding from the Richard Parker Professorship)

Dara, Chinyere Ijeoma (2021)
Design Investigation of Container-based Residential Buildings for Improved Energy and Environmental Performance: Integrated Life Cycle Perspective (funding from USRG/NSERC seed grant)

Fatima, Kulsum (current)
Building better (water systems) from LEED to Living - An approach to Net zero water management

Gardner, Guy (2019)
Interface/Ornament: Enabling Engagement Through Digital Design and Fabrication (funding from SSHRC; NSERC; Mixed Reality:Maker Space project)

Graham, Rylan Richard (2019)
Still Dispersed and Decentralized? Evaluating the Influence and Implementation of Smart Growth in Mid-Sized Canadian Cities (funding from makeCalgary)

Hakgudener, Serhan (2018)
EMW shielding considerations in building design (funding from FP Innovations)

Hannouf, Marwa Bassam (2018)
A Triple-Bottom Line Decision-Analysis Framework Using Life Cycle Sustainability Assessment: The Case of Large Greenhouse Gas Emitters in Alberta, Canada

Hidalgo, Ana Karinna (2019)
Streets for Mental Health: An Interdisciplinary Approach to Restorative Urban Design

Imam, Mohamed (2019)
Resource Generative Skyscrapers

Imam, Salah Ibrahim (2022)
Uncertainty, complexity and changing conditions: A cohesive frame to advance agility in the built environment

Khalilbeigi Khameneh, Arman (current)
Using a gaming platform and algorithmic procedural design methods to develop a participatory design framework that allows for interactions, negotiations, and trade-offs between building occupants (funding from DIALOG)

Kerr, Gillian Loring (2018)
Market-Based Approaches for Environmental Governance: Exploring the Implementation Gap in Alberta

Khalili-Araghi, Salman (2017)
Understanding Customers' Behavioral Intention toward Dimensional Customization System

Lagore, Susann Heike (2021)
All Aboard: Teaching our Children on the Autism Spectrum to use Conventional Public Transit

Lowan-Trudeau, Kathleen Miho (current)
Children's and caregivers' experiences with the usage and development of natural playgrounds in Calgary; perspectives, accessibility, and the role of nature (funding from Affordable Living project; Taylor Institute of Teaching and Learning)

Lucena, Andre Amaral (2020)
Learning design with data: towards a pedagogical framework for the use of Building Information Modeling technology as support for design in architecture curricula

Moezzi, Mohammedhossein (current)
Transmutations from drawing to digital modeling in architectural design: the lived experience of architects during the transition from paper to computer screen.

Noori, Kamaran Ali (2018)
Achieving Adaptable Architecture: A Design Framework for Architects: A historic review

Robertson, Natalie Suzan (current)
The relationship between era-of-development and climate change retrofitting for residential neighbourhoods: a qualitative and quantitative approach to uncovering optimized strategies for re-development within different neighbourhoods (funding from Affordable Living project; makeCalgary; NSERC Discovery Grant; SSHRC Knowledge Synthesis Grant)

Rodrigues Felix Dalla Vecchia, Luisa (2021)
The use of Mass Customization to Improve Environments in Social Housing Neighbourhoods in Brazil

Stoyke, Godo Albert (2018)
Life Cycle Optimization of a Zero Carbon Building for CO2e, Energy, and Cost Using Stochastic Controls for an Energy System Integrating a Heat Pump, Solar Air Wall, PV, and a Smart Grid-integrated Thermal Storage (SGTS) Hydronic Battery

Syed, Ali (2021)
Investigation of the Design Parameters and Energy Sharing Strategies for Sustainable Urban Infrastructure (funding from USRG/NSERC seed grant; NSERC Discovery Grant)

Talaei, Ardeshir (current)
Research topic under development

Weldu, Yemane W. (2017)
Accounting for Human Health and Ecosystems Quality in Developing Sustainable Energy Products: The Implications of Wood Biomass-based Electricity Strategies to Climate Change Mitigation (funding from FP Innovations)

Weller, Jonathan Lee (2020)
Conserving Common Ground: Exploring the Place of Cultural Heritage in Protected Area Management (funding from makeCalgary)

Zahed, Mehdi (current)
Improving sustainable architectural design process using Building Information Modelling (BIM) based Life Cycle Assessment (LCA)


VAN(IS)HING(E)
DIVIDED

DDes

Alrez, Mohammed Maher
Rivers as Ecological Cultural Corridors and as Catalysts for Urban Regeneration: An Emergent Practice Integrity

Using the approach of Ecological Landscape Urbanism and its interrelations with the fields of architecture, landscape architecture, urban design, urban planning, and resource management, this study approaches an ecological corridor with the aim of conserving and managing its water and natural resources, connecting it to the city and its nawtural and rural surroundings, revitalizing its identity as a landscape heritage, providing opportunities for sustainable urban development, and providing new economic and touristic dynamics. It will also establish ecological, cultural, and urban design strategies with architectural guidelines for green corridors in different zones.

Bista, Priyanka
Architecture in the Anthropocene: Designing the architecture of empathy for the nonhuman other

The current dialogue on sustainability or sustainable design is fundamentally anthropocentric. The Green Building movement lacks criteria for biodiversity, focusing primarily on energy, water, and materials. This study seeks to develop designs that acknowledge and incorporate nonhuman stakeholders, addressing species concern needs from the initial design phase of the project. Koshi Tappu, Nepal, has a history of human-elephant conflict, often resulting in human fatalities, injuries, and loss of livelihood. As a keystone species, elephants play a positive role in the rainforests of South Asia, but are currently listed as an Endangered species. This study explores how architecture and participatory design workshops, developed over time, could start to turn the tables, and create a positive environment for elephants—and even build an empathetic relationship between humans and elephants.

Brown, James Douglas
Zeidler Architecture
"Shaking a building unearths what is unnecessary" – Alejandro Aravena

The ground where we stand is falling away. The places that we know are not what they seem.

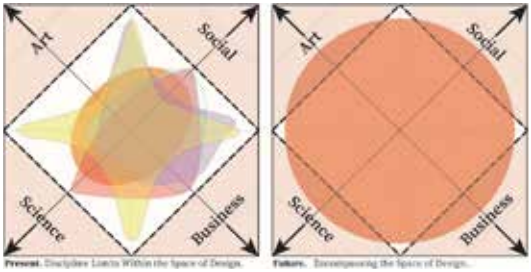
On a recent project we came to the site with our bag of tools, our presuppositions, and after weeks of effort we were told directly, "You do not understand the

ground you are walking on. Stop looking away, you are here."

Will the shaking allow us to re-imagine the ground and to re-imagine the problem? In this moment, defined by uncertainty and change, can a practice allow underground voices and tools to define a problem? How can these voices be maintained through the life of a project and what does this mean for a project from design to built form?

What might a practice look like after this?

Donaldson, Michael William
Design Workshop
Practice Integrity



If the goals of architectural practice (at its best) are to promote a positive and equitable society, we must ensure that these goals are aligned with our methods and mandate. As practitioners we engage in research and synthesis that is clearly and critically directed towards the creation of a richer form of practice, addressing the systemic issues and contextual problems we increasingly face.

Architecture should be self-aware, targeted, rigorous, impactful and positive, and should not perpetuate negative effects. How can we achieve this? Who does it need, how will it communicate and work towards the goals that have been established? This is the future basis for "Practice Integrity." It may or may not be architecture, but the transformative energy should exert some small force against the inertia of deep-rooted problems.

East, Jacqueline Patricia
Perspectives Planning
Reconciling Planning: A Framework for the Colonial Settler Planner

This research will demonstrate how local governments can find inspiration from, and respond to, the Truth and Reconciliation (TRC) Call to Action #43, to adopt and implement the United Nations Declaration on the Rights of Indigenous Peoples, by reflecting on the basis of local land use policies and transforming the approach to creating official community plans.

The methodology will unpack one element – the official community plan - of Canada's Western approach to land use planning, and leave planners with a functional model of reflexive practice to modernize how we manage change on the land, and a chance to become active helpers in reconciliation and discover an evolved role in collective planning.

Goldstein, Teresa S.,
City of Calgary Affordable Housing Division
How to bring back the love?

This research examines the emotional connection with growth and change through multi-community local area planning, to understand, explore and discuss the barriers and links—both emotional and physical—to community, and to ascertain a greater understanding of the connections of this exploration within the context of Calgary, Alberta.

Despite declines in population, school closures, and recreation facility reductions, new growth in established neighbourhoods is contentious, often seen as a threat to community character and stability. How can local area planning use community momentum to garner participation with the process, instead of against?

Isfeld, Erik Ryan
Erik Isfeld Architect
How does housing in the Canadian context need to adapt to confront the challenges of the 21st century?

The challenges facing housing are complex, interacting with socio-cultural values, economic forces, politics and policy, and climate change.

This study seeks a new design-build practice that will be directed "inwards", from the developing to the developed context of established low-density housing in mature neighborhoods. This practice aims to acquire and retrofit existing houses, applying climate-resilient design principles and delivering enhanced energy performance. Supporting this effort, the research will take a critical look at what makes the production housing model successful, in order to identify and test strategies and methods to the proposed retrofit model. A parallel goal is to clarify and refine the value proposition of climate resilient retrofits to existing housing within the range of options available to the homebuyer.

Johns, Barry William
Barry Johns Architecture
Densification Responsive to Place and Demographic Change

This research examines the house-building industry and how its standards are superimposed onto the densification agenda in mature urban neighborhoods, considering scarcity, high cost, mistrust (NIMBY), and local antipathy. Studying these impacts, largely a result of outdated zoning regulations and changing market demographics, shows the need for a new business model to support the development of attainable and affordable housing. Land cost is the biggest barrier, but an innovative new business model can mitigate this.

Parallel objectives are designing flexible, multi-generational infill and "missing middle" typologies as a systems toolkit that fits inside the business model and is scalable for standalone and multi-unit configurations in mature neighborhoods.

Jones, D'Arcy Douglas
D'Arcy Jones Architects
Exploration of Subversive Architecture

This research explores how architecture's design processes and built artifacts can be more subversive, concept-rich, improvisational, and critically connected to culture. Starting with objectively "normal" sites, ten key themes will be applied to three to four speculative buildings, spaces or landscapes. The viability and wider application of the research will be proven by resolving each project at a construction-ready level of technical detail.

The project will digest and test how these themes can create a new kind of architecture, redirect the studio design process and output, and pushing towards the unrecognizable and the uncertain.

Themes under consideration:

Mechanical Architecture; Visceral Architecture; Materiality as Context; Lowbrow Pleasures; Ruthless Pragmatism; Against Hypocrisy; What is Old is New; Super Dense Culture; Undesign; Loopholes.

Themes under consideration: Mechanical Architecture; Visceral Architecture; Materiality as Context; Lowbrow Pleasures; Ruthless Pragmatism; Against Hypocrisy; What is Old is New; Super Dense Culture; Undesign; Loopholes.

Kotyk, Marie Cecile Esclanda

Truth and Reconciliation and Indigenous Homelessness

Based on an understanding of social justice, this study is focused on the complexities of Indigenous homelessness and the history of Indigenous people in Canada. The project applies the principles of Truth and Reconciliation in how we consult and engage Indigenous people experiencing homelessness, and aims to create culturally appropriate professional practice standards and protocols for engagement and consultation that Planners can implement when working with Indigenous people experiencing homelessness. This research is necessary for the development of Indigenous driven, culturally appropriate, and relevant housing and service solutions to Indigenous homelessness. The research is embedded in Indigenous knowledge, Indigenous Planning practices, and principles of Truth and Reconciliation.

Koudys, Ron
Ron Koudys Landscape Architects

The importance of landscapes to the physical and mental health of seniors

This research builds on experience developing landscape designs for hospitals, mental health institutions, hospices, long-term care facilities, seniors' homes, and other settings that address the needs of the elderly. This includes, in the early 1980s, creating what is now regarded as one of the first therapeutic gardens created for the care of patients suffering with Alzheimer's Disease. While our understanding of dementia and other mental illnesses has improved significantly, there are still many questions surrounding the role that landscapes and the natural world play in supporting the physical and mental health of seniors.

The COVID-19 pandemic highlighted the inadequate care our society provides for many seniors, and has reinforced the necessity of parks and passive outdoor recreation for quality of life and physical and mental well-being.

McIlvenna, Steven Charles
ilevel innovation inc.
Developing an Elder-Driven Impact-Innovation Laboratory: how to instigate a virtuous pro[up]grade cycle of impact-innovation for, with, and by our Elders?

This research interrogates context and innovation opportunities surrounding the emerging "Elder condition". Canada's aging population appears to be on a collision course with our socio-cultural views of ageing, and agency for the elderly. Of particular concern is the danger of physical falls, which can cause cascading impacts on an individuals health and well-being. Can these fall cascades be prevented?

The present study uses the emerging "Applied Serendipity" process, combining methodologies; human processes and phenomenon; best practices; and iterative combinatory play to purposefully find creative leaps and connect the seemingly unconnected. How can the vast "mental capital" of the elder sector be tapped and invested with directed purpose to assist with the "Applied Serendipity" process, to find problem-solution sets for complex problems, and provide the elder sector with deserved agency?

McKenna, Liane
Climate Change Mitigation Through Local Action

On Canada's west coast, climate change is making winters warmer and wetter, summers hotter and drier, and driving rising sea levels and more extreme weather events. Governments at all levels have developed Climate Action Plans.

However, local communities and individuals have had limited inclusion in discussions about climate change and are generally unaware of how their actions can contribute to the response.

This study will review the current climate adaptation strategies of the three municipalities on BC's North Shore, and consider how expanding awareness and solutions-based approaches at the local level can improve results. It will assess existing strategies and processes for local action; and the motivators that result in citizens and communities successfully contributing to climate adaptation through local action.

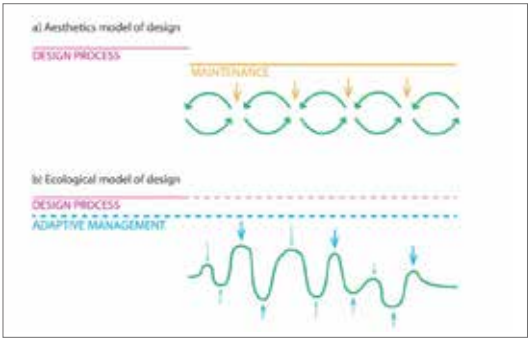
Nwosu, Chika Victoria
Street Entrepreneurs in Nigeria: Problems and Potential

In developing countries, informal sector micro-enterprises in urban areas are major contributors to employment and income for marginalized groups.

This is not a transient phenomenon, but rather one likely to increase in almost all developing countries. The informal sector is an employment refuge and "safety net" for poor households in times of hardship.

In Nigeria, street entrepreneurs are a common sight, especially in urban areas. They provide the population with cheap and convenient access to a range of goods and services, but the sector also poses problems of health and hygiene, and obstruction of pedestrian and vehicular traffic. This project seeks to seize an opportunity to address these problems and harness the great potential of these businesses.

Tsang, Amy
Amy Tsang Landscape Architect
Elevated Integration of Ecology: Human Connections to Nature and the Care of Landscapes



With the goal of foregrounding ecological design in practice, this project is gathering information from external sources (first key informant interviews, a growing community of practice, precedent projects, academic and popular literature, regulatory by-laws and municipal guidelines) and an introspective audit of current practice principles, approaches and methodologies. Emerging areas of focus include:

- Defining a regional identity or ecological aesthetic;
- Connecting research into aesthetic preferences with ecological design and planting approaches;
- Integration of people into more meaningful interactions of urban nature;
- Development of management tools and transferring knowledge about care and stewardship of landscapes as part of the design and professional practice process;
- Scalable approaches applicable at site/neighbourhood/community/regional scales across both public and private lands;
- Ways to articulate and communicate the value-added or economic benefits of ecological design.

Whyte, Robert Vincent
The Flexible City

Cities are facing an ever-increasing surge of new technologies. Though growth and change are not new, the pace and source of these has come to a precipice. As new technologies emerge from the global public square with the promise of addressing local issues in novel ways, cities need to be more responsive and flexible in order to effectively manage them.

These so-called disruptive technologies are becoming commonplace; however, the systems traditionally used to manage and regulate them do not work at the same speed. Public policy, regulation and legislation, the tools normally used to provide for the common interests of

society such as safety and fairness, are not designed to be adapted this rapidly. How do we address this gap and how do we change this framework in the interest of responsiveness and flexibility?

Williamson, Micheal Eric
Stantec
Pathfinding through Practice

This project explores movement through experimentation and understanding around sharing knowledge of design expertise. This knowledge involves the relationships between Landscape Architecture and the health of people, communities and the environment. The experiments being conducted through practice at a large international design firm involve a combination of increased complexities around communication and collaboration, which offers some benefits and provides some worn paths. Walking the map of practice and breaking new routes will expose approaches to knowledge sharing between individual experts at a large firm, creating new and better-connected individuals who can collaborate as a single community of practice.

Thank You

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Francisco Alaniz Uribe
Getachew Assefa
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Alberto de Salvatierra
Kris Fox
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