
BEYOND GREEN – GOING NATURE-AL
BARRY JOHNS
ARCHITECTURE

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Book Design: Wei Yew

# Introduction

I always wanted to be an architect.

That path was perhaps pre-determined for me in Montreal, where I was born and raised. I doodled and sketched in class when I daydreamed and my hobby was building Revell scale models of trains, cars and things. Then I was given a book about Frank Lloyd Wright  in early high school.

I am influenced by his masterworks to this day.

And I sketch and build models still.

Architecture  school became for me, a place where I learned to think – critically, visually and with an early, emerging conviction about the important connection between design and nature.

Given my travels around the world and, having lived for extended periods in every region of Canada, I have learned how nature and climate affects culture and place. As a result, this has deeply influenced my approach to design, and practice.

I have for years defined this approach as a 'search for appropriateness'.

This publication explores that quest.

# Contents

# Foreword

During the early part of my career, I worked with Arthur Erickson in Vancouver, British Columbia.

I spent five years on a team designing and building the public amenity areas of Robson Square, long regarded as a model of Canadian urban design and a thesis about the unassailable importance of landscape in the urban public realm. With consultants from around the world, we learned to build complex structures with simple details – from pool skylights, waterfalls and skating rinks to frameless glass, 'stramps' (the office name for a combined stair and ramp), irrigated 'flying planters' and a small forest on top of a structural slab.

Lessons learned yielded the Pender Jervis project, that would later become known as the Evergreen Building – a speculative, terraced office building on the Vancouver waterfront featuring verdant, outdoor decks on every level, overlooking the water and the north shore mountains. We completed the work from inception to completion in two years and Evergreen is now the first contemporary architecture in Vancouver to receive historic designation.

Arthur would be recognised as Canada's pre-eminent architect for many years. His work has yet to be fully analysed, however he is clearly among the best anywhere to marry site, light and cadence, integrating every natural opportunity presented by a site into a project design. This is a core value for me.

We were young, inexperienced and I remain indebted to Arthur and the talented colleagues and lifelong friends that 'graduated' from that ever optimistic  studio in the 1970's.

# Transformation

I started my own practice in 1981 on the prairie in Edmonton, Alberta, Canada.

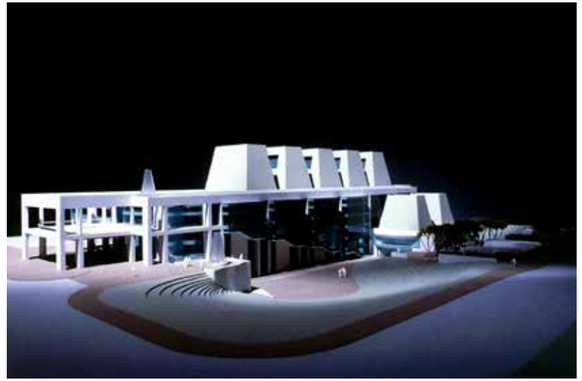
This place proved transformative in our approach to architecture. With hot summers and cold winters, the climate simply could not be ignored. The big sky and bright light at an average altitude of 2800FT above sea level between Edmonton and Calgary meant we could – unlike the milky sea level light in Vancouver – bring light deep into our structures, create natural and dappled shadow patterns everywhere and in effect, treat light as a building material.

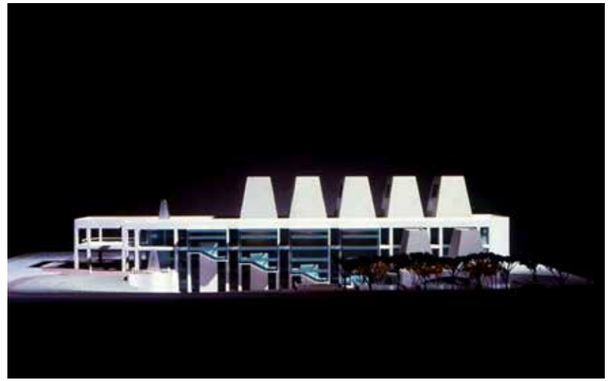
This is for me, the basic architectural lesson of the prairie.

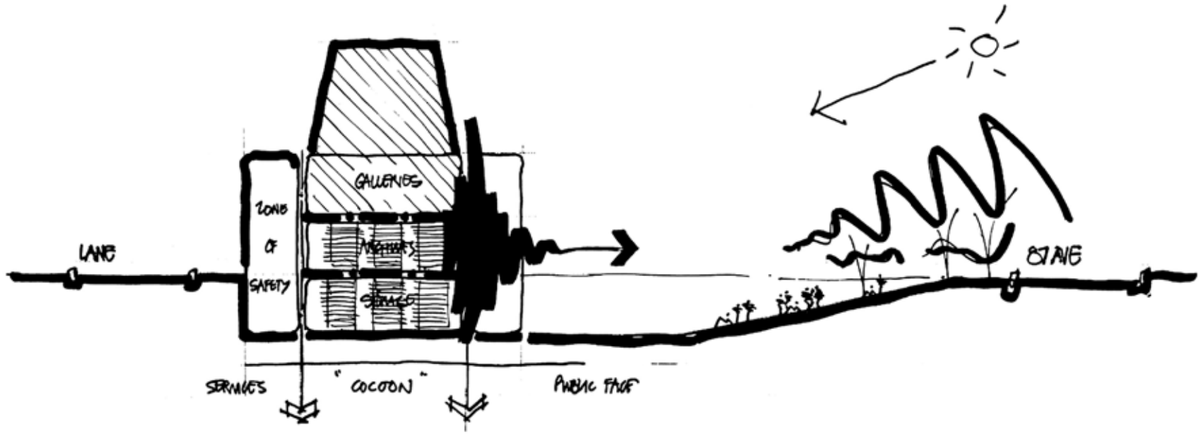
We started sinking or 'grounding' our buildings to protect them, using the natural insulating qualities of the earth – like a coat – against the severe winter cold and prevailing winds. We opened our buildings to the south, orienting plan and section to the nurturing characteristics of the sun – providing both shelter to bathe interiors with warmth, and filter to shield the glare – light that could be controlled.

The Timms Collections Centre, a museum commissioned but not built by the University of Alberta, explores these basic ideas largely in section, using the principle of 'cocooning' – where an outer layer of public space provides shelter against the climate, while an inner layer retains constant temperature and humidity to protect precious organic artifacts – together making a place; a gateway to the campus that embraces the sun in a sunken public park / courtyard.

PARTI SKETCH
SAMSON YOUTH CENTRE
13 MAY 09








PLANNING PRINCIPLE 5 PUBLIC FACE FUNCTIONS TO STREET "GATEWAY" TO CAMPUS.

# The Studio

We have lived and worked in a variety of places.

Our studio was always a big, open space whether in an old historic building or in a coffin warehouse. We were always sketching, building or otherwise making models and changing things; experimenting. Students were with us at all times and we ended up on many occasions hiring them after graduation.

Years later they would become associates, partners or move on to found their own firms or join with others. We built an enduring family culture with many colleagues and friends who remain in life long contact with one another.

The studio learned that in order to stay small, 'hands on' and grow at the same time, it needed to align with others and so we began a process of collaboration, associations and even mergers with other larger firms throughout a thirty five + year history:

Smith Carter
Smith Carter Johns (SCJ Architects)
Hancock + Johns Architects Ltd.
Stantec Architecture Ltd.
Gibbs Gage Architects
BJAL Gibbs Gage Architects
Group 2 Architecture Engineering
Johns Group 2 Architecture Engineering
Perkins + Will

BJAL has since won 100 design awards to date, either on its own, or in collaboration.

Sustainability as the 'discipline' we know as the green agenda is over-rated. I fear it has become a substitute for good design. Good design should be – by definition – inherently green.

While we, alongside our colleagues continue to do LEED buildings, as this is increasingly driven by the marketplace; I have learned that understanding and working in harmony with nature is both the start point for design and simply the right thing to do – and, this can and should create beautiful and sustainable work.

Our First Nations figured this out. They built with natural materials – sticks and skins; made structures portable and transportable, collected rainwater, grew and harvested everything organically from plants to animals and wasted nothing as part of their daily life . They also made art, yielding a rich culture that goes back 10,000 years. We have forgotten about basking in the joy of nature and respecting culture as a design imperative. The modern movement and the late 20th Century produced buildings so similar from Shanghai to Dubai and Toronto to Prince George that ignore the influence of climate and culture in the making of things authentic to their place. We are a universal, consumer culture today.

We quantify sustainability with performance measuring tools such as LEED, that promote the clever use of technology to keep out the weather and we can now fabricate myriad things – including a new fascination with surface embellishment while eschewing the basic and local enduring beauty of nature and space, making architecture with less and less redeeming social and cultural relevance.

Treading lightly on this earth is part of that relevance and we should not be rewarded for doing this as architects – it is our duty. To me, architecture that is self-effacing about sustainability is therefore, a more noble quest for relevance and authenticity.

A16 SATURDAY, SEPTEMBER 5, 2009 WORLD EDMONTON JOURNAL / edmontonjournal.com

# Nature holds key to climate change fix: UN

ALISTER DOYLE
*Reuters*
GENEVA

The world is waking up to huge economic benefits of investing in nature, from forests to coral reefs, after one of the "great oversights" of the 20th century, the head of the UN Environment Program said on Friday.

Achim Steiner told Reuters that governments had long placed too much faith in technology to fix problems such as global warming, water pollution or erosion, instead of looking to natural solutions.

"At the beginning of the 21st century we are being thrown back onto nature because you can't fix all these problems with technology," he said. "The disproportion of investments in technological fixes versus investing in nature's ready-made solutions, tried and tested over millions of years, is one of the great oversights of the 20th century," he said.

A UN-backed study this week, for instance, indicated that tropical forests provide services worth an estimated $6,120 per hectare a year such as food, building materials, water purification or opportunities for tourism.

A new UN climate pact due for agreement in December in Copenhagen is set to encourage measures to safeguard tropical forests that soak up greenhouse gases when they grow.

Steiner said that governments should take an even wider view of the value of forests since storing heat-trapping carbon dioxide was only one aspect of a tree's worth.

He said his advice to governments and investors was: "Don't just look at a forest as a watershed, or a carbon sink, or as helping biodiversity, or a tourism attraction. Put them all together and then make a cost-benefit analysis."

"The cumulative set of benefits you get from talking about a tree ... has to get economically captured," he said.

Among other natural systems, coral reefs provide services as nurseries for fish, protecting coasts from storms, or as scuba-diving holiday destinations. Or insects provide services, for instance, in pollinating crops.

"These services are not new. The problem was that we did not capture their value," Steiner said.

Among examples, he said that Kenya planned to raise its forest cover to 10 per cent from one per cent by planting 7 billion trees to help restore an environment degraded by erosion and dwindling water supplies.

Steiner also said a call by UNEP last year for a "Green New Deal" of investments in clean economic growth to revive struggling economies had helped but that it was too soon to judge if it marked a permanent greener shift.

"This concept struck a chord," he said of the idea, inspired by U.S. president Franklin D. Roosevelt's "New Deal" that helped end the Depression of the 1930s.

"Given that it was born out of a crisis, I think it's had significant impact," he said, saying that economies such as China had given a high proportion of spending to green jobs.

He said it was "too early to predict" if the "Green New Deal" had become a "universal concept that will survive the calming down after the crisis."

"A lot will depend on Copenhagen. The greatest stimulus package could be a deal in Copenhagen," he said of the new UN climate pact.

Steiner was an early guest for a Reuters Global Climate and Alternative Energy Summit on Sept. 8-10.

'THE DISPROPORTION OF INVESTMENTS IN TECHNOLOGICAL FIXES VERSUS INVESTING IN NATURE'S READY-MADE SOLUTIONS, TRIED AND TESTED OVER MILLIONS OF YEARS, IS ONE OF THE GREAT OVERSIGHTS OF THE 20TH CENTURY'

... Achim Steiner

## Sculpture

Sculpture as a manifesto statement

Our Olympic Gold Medal winning entry for the Winter Olympics Ceremonial Arch Competition in Calgary 1988 is a geological metaphor. It uses abstract references to the unique landscape and climate of the Calgary region, from mountains and prairie to the chinook arch.

By inserting a precarious, leaning tower into the composition, the Olympic quest is symbolised – that of the athlete pushing to extreme performance limits against the natural forces of nature.

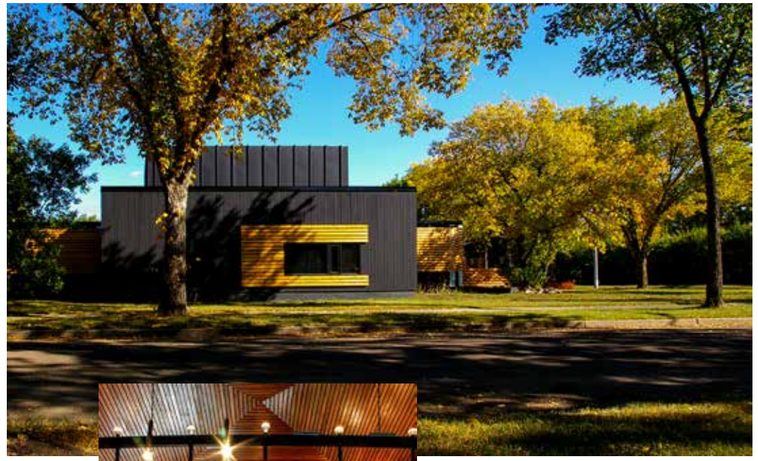
## Building Culture

We lived, worked and renovated for a decade in a 1960's Unitarian Church designed by Don Bittorf who was a peer of Hemingway, Cardinal, Erickson and Ron Thom.

This ethereal setting became a laboratory for experimenting with proportion, sustainable design principles resulting in several LEED buildings, re-discovering a simple material palette, working with water, fire and light – to make places of warmth and intimacy.

We have always enjoyed the opportunities and challenges working with existing contemporary buildings and heritage buildings. In finding their essential characteristics, we can breathe new life into them with respect and honour. This proved a valuable lesson – finding essential characteristics – for the development of our new work as well.

This decade also proved to be one of serious contemplation – about our carbon footprint and climate change. We spent years examining our role and aspirations as architects. The serenity of this wonderful place enabled us to think about doing more than just LEED buildings – with its formulaic points structure and design limitations. Instead we now pursue carbon neutrality and regeneration when possible, championing our quest to make architecture in our little corner of the world, relevant again through more responsive and responsible design.



# Meaning

Architecture must have rational meaning.

For many who have embarked upon this profession – the definition of 'meaning' is wholly indeterminate, often changing – subsumed by style or brand. It takes years – a large part of one's career, to explore, discover and evaluate. It is a difficult journey.

As a small practice on the prairie, these matters remain a struggle or, a work in progress.

In order to define the underlying 'meaning' of our own rather modest body of work, a series of design principles slowly emerged for us over time, predicated on

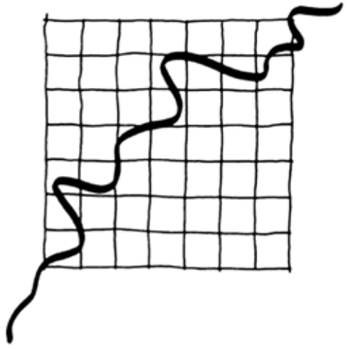
1) the core values that shaped the practice and
2) the deep influence of my partners and staff, colleagues, consultants, contractors, family, friends and of course
3) our clients.

All of whom in one way or another, continue to leave an indelible mark on the work. Any credit therefore is due to that life circumstance, dedication and collaboration.

The projects that follow are presented in the context of these 'meaningful' principles:

1 Uniqueness – about Place
2 A 'Natural' Logic – Harmony with Nature
3 Technology in its Place
4 Design with Climate
5 Authenticity vs Style

# UNIQUENESS – ABOUT PLACE



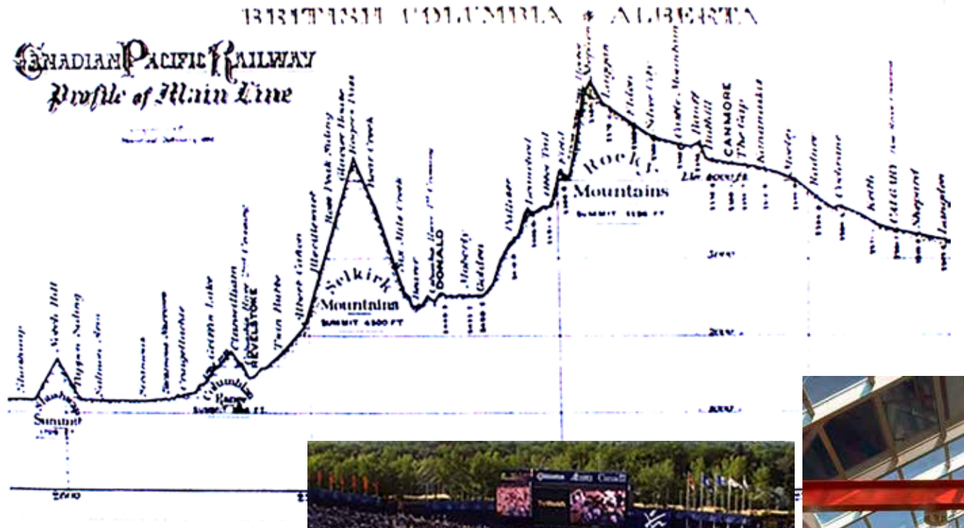
Edmonton, like all cities – is unique on earth.

It is a prairie grid city, partitioned by the surveyor's transit, with a deep, serpentine ravine system running through it, gently carved over millennia by the sea that originally engulfed it and in subsequent centuries by the North Saskatchewan River. It enjoys enormous bright skies, has a metropolitan population of more than one million people and yet, from a vantage point merely a few storeys above the ground, one can still see to the hinterland beyond.

Most of the province of Alberta is actually a foothill – thus its increasing elevation westward brings one closer to the sun and so light becomes both an issue – where sunglasses are needed year round to shield sensitive eyes, and an opportunity – to celebrate its amazing sunsets, crisp horizon line and a wealth of climate phenomena such as sundogs, chinook arches and of course, the northern lights.

Daylight and sunshine can thus be treated as an animated, natural building material. It is this characteristic – the light – that is so powerful in the west, dramatically different from the benign milky grey, humid skies and soft focus horizons in eastern Canada and the coastal regions.

Learning to work with this light is key to understanding this place.  While a large portion of our built work is in the Edmonton area – the idea of creating a unique sense of place in any location – is fundamental to our work.




*The CPR railway line into the deepest regions of the Rockies illustrates the mis-understood notion of Alberta as a flat prairie.*

*The hinterland beyond and light as a building material.*

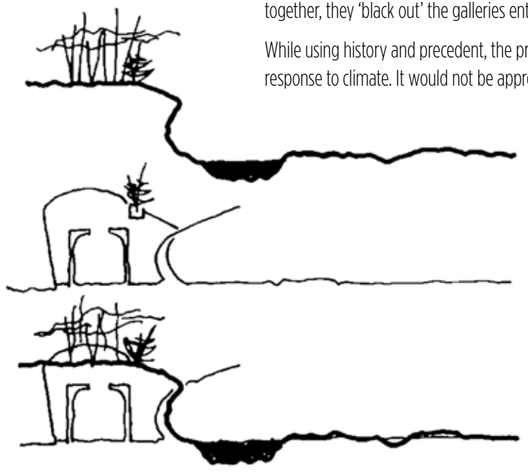
## Two Rivers Art Gallery
## Prince George, British Columbia

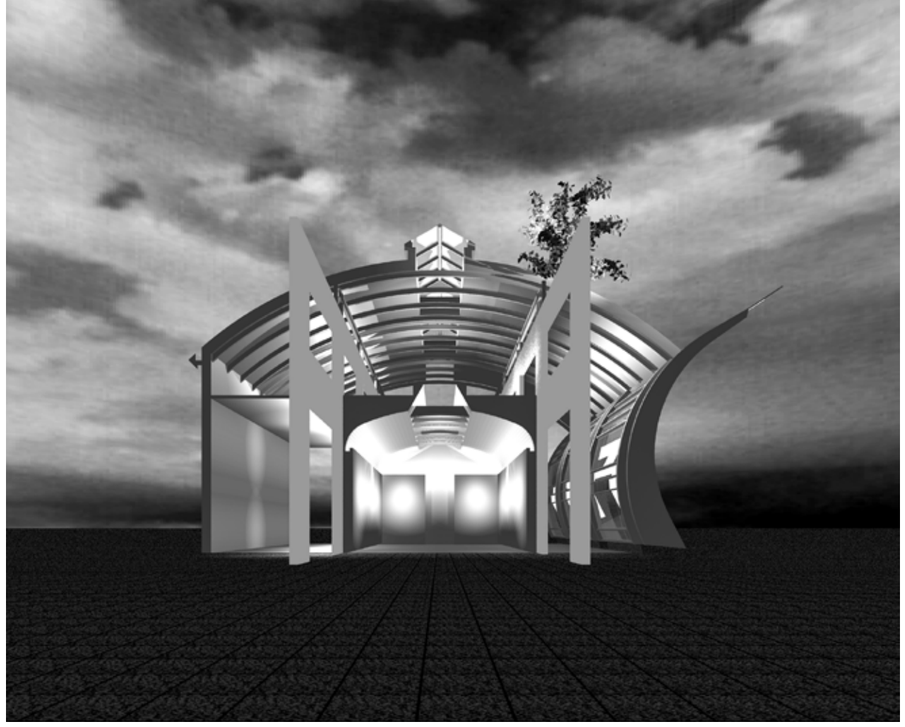
Situated in a downtown civic square at the confluence of two rivers, the building profile is a metaphorical, geological section of the surrounding cutbanks using wood harvested from the surrounding mills, glu-lam fabricated and integrated into the curved outer skin.

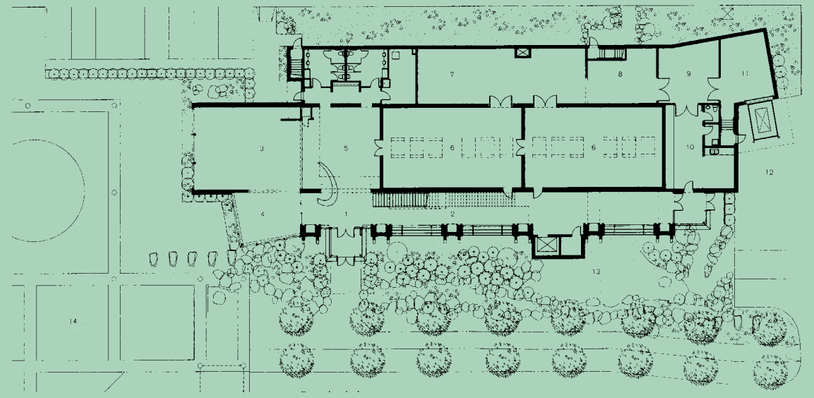
The cold climate gallery, similar to the Timms Collections Centre, uses the principle of 'cocooning' – where a protective outer layer of public space is separately serviced from the delicate inner sanctum where artifacts are displayed.  This enables sunshine in the public spaces while lighting, temperature and humidity can be more precisely controlled in the artifact environment.

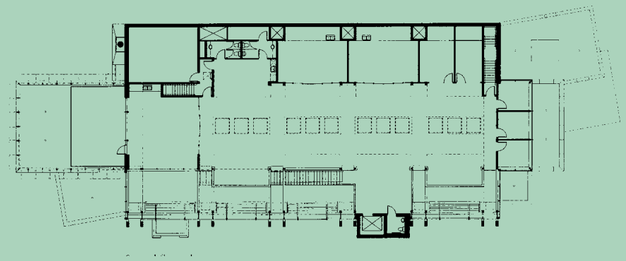
The need for soft and diffused natural light in the galleries of this cold climate building is resolved using the basic design principles  and proportions of the 19th century enfilade european picture galleries. John Soane's Dulwich Picture Gallery (still an inspiration around the world for the display of paintings) used a deep 'attic' space and double skylight / scrim to hide the structure, disperse and filter natural light. The 'attic' in the Two Rivers Gallery is pragmatically occupied and programmed as curatorial work space and labs; using a series of roof sunscreens to control daylight into the workspace, while a system of custom, sliding worktables admit filtered daylight into the galleries below when rolled away, or when brought together, they 'black out' the galleries entirely.

While using history and precedent, the project is nevertheless deeply rooted in its place and in its response to climate. It would not be appropriate to replicate anywhere else.









# Duclos School
# Bonnyville, Alberta

A school – centred in a small town surrounded by farmland, and with a vibrant main street, is a simple metaphor to its place.

Classrooms with upper mezzanine study lofts between them are arranged linearly in plan along an internal 'main' street axis. Other school functions are contained in a farm like collection of buildings: the gymnasium as barn, administration space in a farmhouse and computer studios housed in three large grain bins. A hay barn planned on axis with the gymnasium is used as a picnic  shelter and protected outdoor skating rink in the winter months.

These components are scattered on the site, seemingly at random, but clearly ordered, framing the outdoor amenity spaces. Alongside  planted windrows, a gazebo seating area and line fences, a comprehensive, informal rural landscape is realised.

Reliance on daylight is fundamental to the design. A continuous clerestory along the street obviates the need for electric light during much of the day and the gymnasium uses the traditional barn ventilator form to daylight this large space.



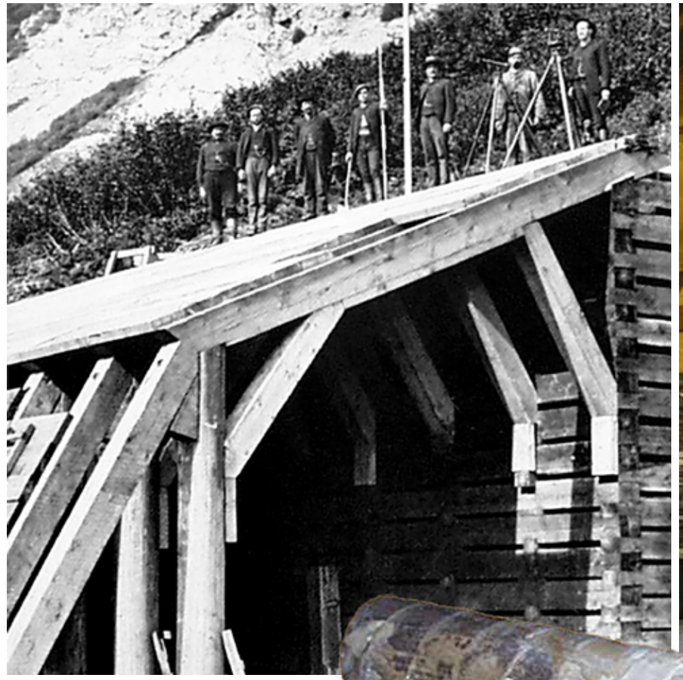


# 2 A ‘NATURAL’ LOGIC – HARMONY WITH NATURE

On the prairie we are blessed with some wondrous natural materials that have either been here for millennia or, can regenerate within a generation. This direct connection with our natural surroundings and consciously building with what we find locally, instead of importing similar products from all around the world – is both environmentally correct and creates beautiful and unique architecture.

Our interaction with nature makes it entirely appropriate for us to turn our backs to the rain, the snow and the wind; to tuck our heads, cross our arms and brace ourselves for self protection and warmth against all of these elements.  We add a layer of insulating or waterproof clothing when necessary to shelter us on the outside, and remove a layer or expose more skin to embrace the sun.

I have always wondered, whatever the climate – why don’t our buildings do the same?

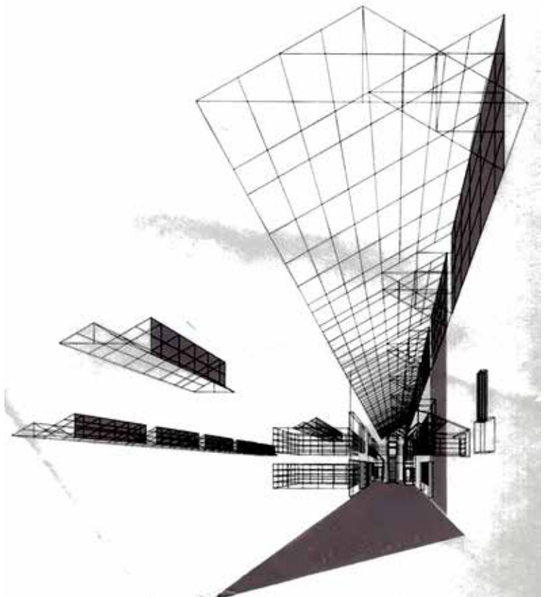


*Railway avalanche shed, fossilized Tyndal stone and Rundle dolomite*

## Advanced Technology Centre
## Edmonton, Alberta

A prairie thesis – predating LEED by 10 years, this high technology incubator is let into the ground and covered by a carpet of prairie grasses. By using the natural insulating characteristics of the earth, the building provides protection from the elements while bathing its interior with natural light and sunshine.

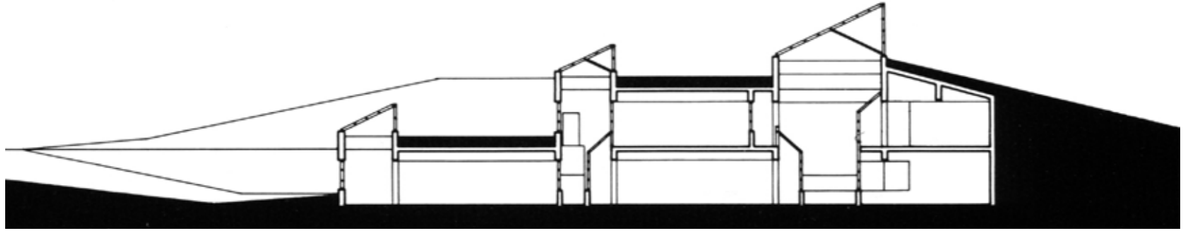
Conceived as a technology centre for new companies with little operating capital, when computer technology of the day required viewing screens to be shielded from direct light sources, the parti evolved to skylight the building circulation spaces from above. These spaces become the common social backbone of the plan. Indirect light thus finds its way into the tenant spaces through glazed, demountable partitions and the lighting of the poured in place concrete coffered ceilings is indirect. All workspaces are glare free, yet the building is teeming with light, shadow and the constant animation of wind blown clouds passing overhead.

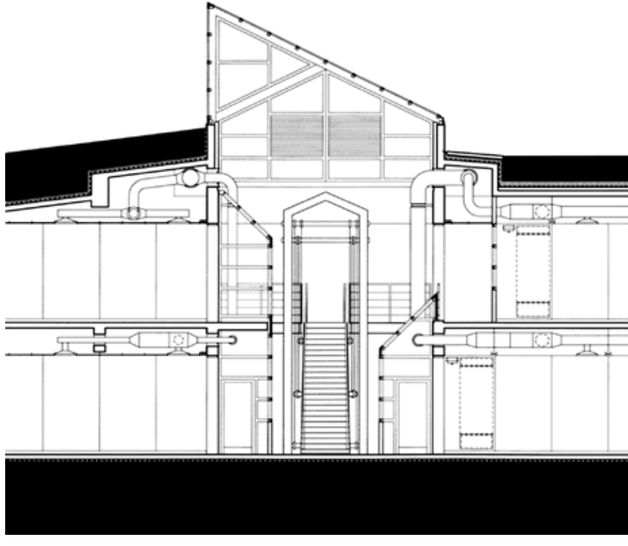


The project is so completely rooted in its place that the 5000sm structure is kept naturally warm in winter and cool in summer needing only a supplementary mechanical system no bigger than that of a large house to mitigate the most severe outdoor temperatures from time to time.


Edmonton Research Park


Edmonton Research Park





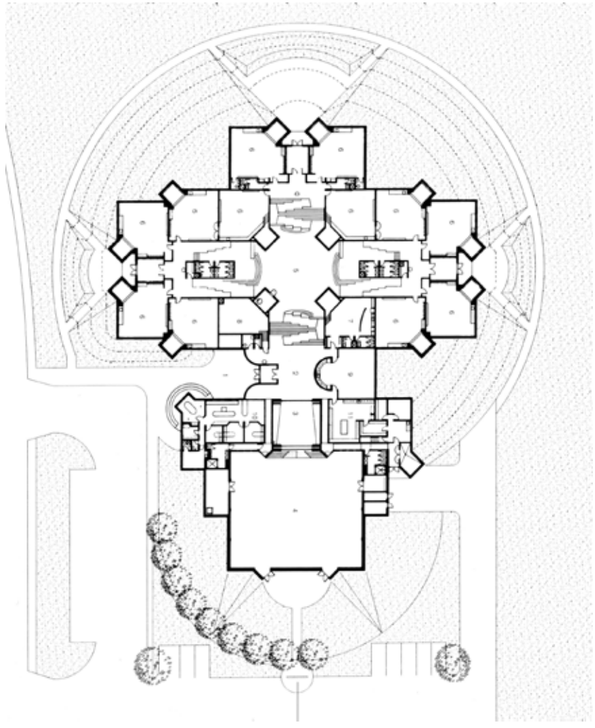
# Kiniski Elementary School and TD Baker Junior High School
# Edmonton, Alberta

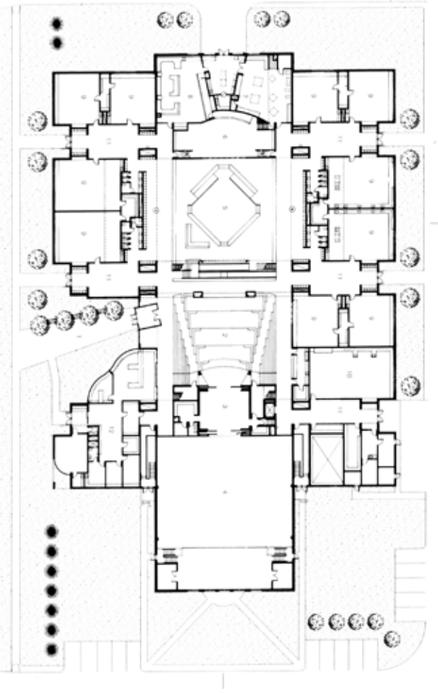
Two schools, one based on the idea of learning in the early one room prairie schoolhouse, inserts a cosy corner into the classroom while the building itself is cosily wrapped by a circular berm to reduce the exposure of the exterior envelope to the elements and reduce the scale of the place to that of little children.

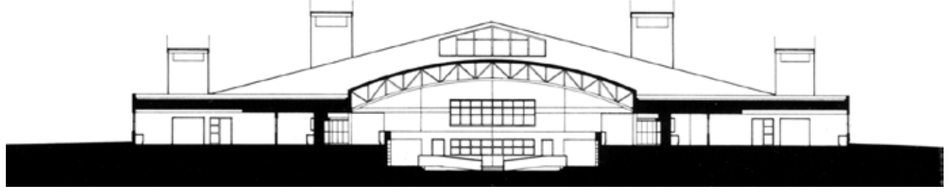
The other school, introduces the idea of the locker as important social property with adolescents, while creating an extensive, open loft at the heart of the plan – a learning resource centre and atrium that is used for a variety of activities as well as a central gathering space.  The articulated multiple entrances echo the turretted historic early schools in the city.

Operable windows induce natural air currents throughout each building using the stack effect, both in the centre of the plan and through the higher volume areas or the turrets.

Both schools – each with a student population of 300, are sufficiently  sheltered and responsive to their natural environment that they do not need to be air conditioned.



















# 3 TECHNOLOGY IN ITS PLACE

Technology has been essential to the making of things for generations. Over the course of a long career however, we have observed that the use of technology is increasingly so sophisticated – beyond computer generated design – that we can now address building information modelling and construction installations by GPS and robotics to the degree that we are subsumed by technological advancement, increasing the disconnect between contemporary architecture and a pluralistic world.

The modern movement's universal design idiom has given way to extraordinary parametric form and surface articulation, all artificial, all contributing today – still – to object buildings and the continued placelessness of cities at the expense of authenticity; distancing the integration of culture in the making of the urban environment and humanistic places.

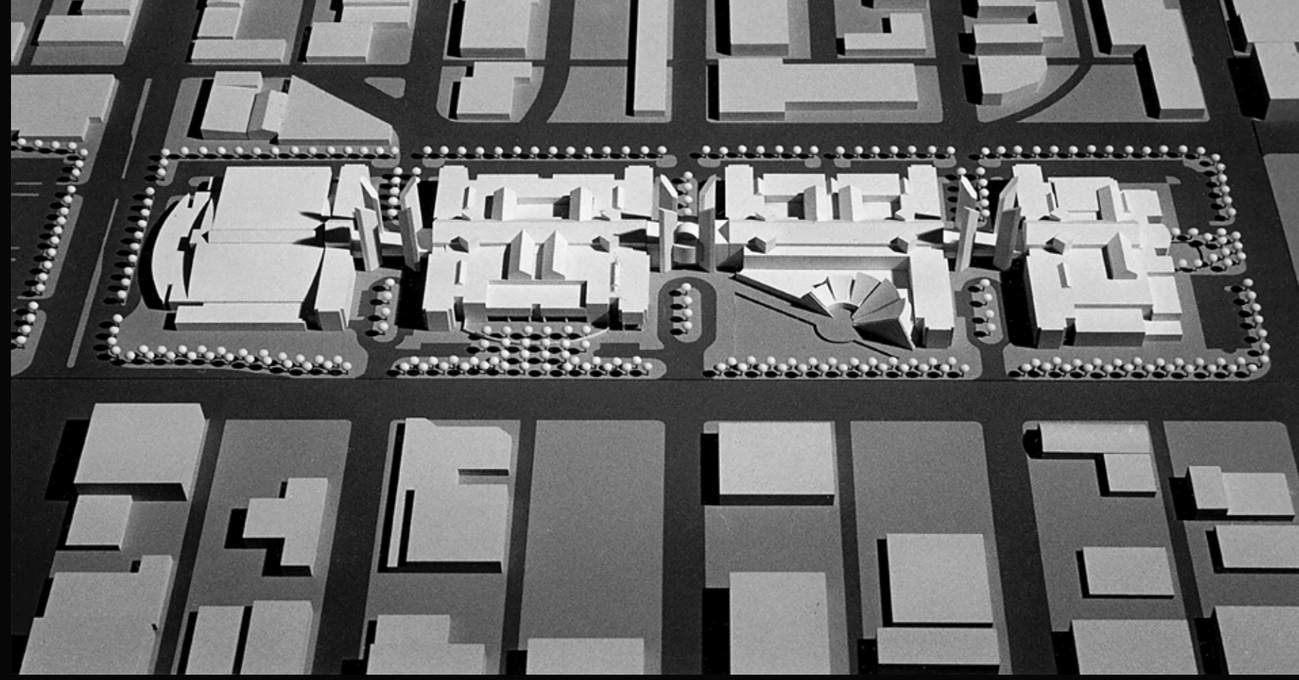
My simple conclusion is driven by a deep desire to connect with the human condition. In order to build for people – technology must be supportive of great architecture, it does not on its own create great architecture.

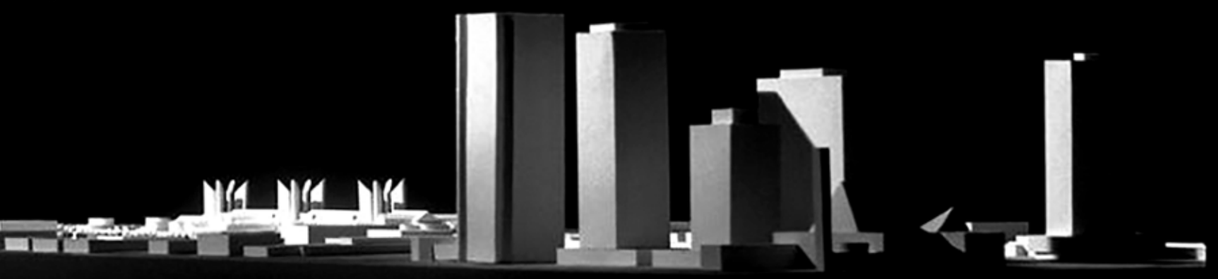
## MacEwan University and La Cité
## Edmonton, Alberta

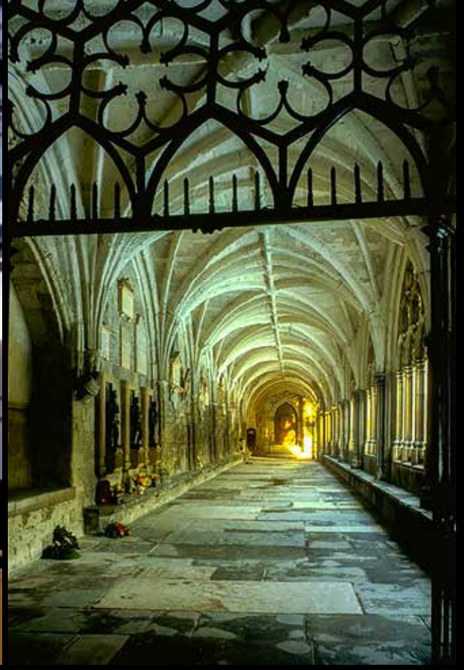
Two projects explore urban scale and the use of simple, informed technology to make places unique and responsive to their users, the urban public realm and the environment.

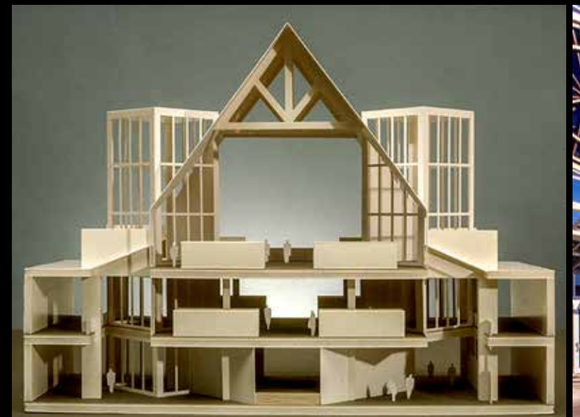
MacEwan is a community college (now university) with the original campus designed for an FTE of 7500 students. The campus is conceived as a linear collection of buildings on a street, but uses repetitive elements and the arch as a universal symbol of education to make a place that is wholly integrated and interconnected; yet separated by program and social order. Large towers that frame meeting places and entry points are located on axis with the street to make the 3 storey campus penetrable and yet visible from every corresponding axial intersection downtown. This creates an unmistakeable identity for the campus. Central air intakes and remote exhausts contained within the towers well above the busy and pollutant vehicle boulevard below, combined with a high performance envelope and an enormous underground thermal storage tank, yield a project that quietly performs as one of the most energy efficient campuses in the country.

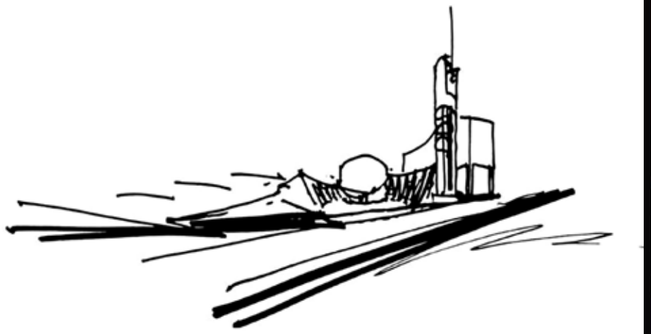
A francophone civic centre is a more introverted parti – partially buried into its sloped site and capturing sunshine in a sunken courtyard flanked by food services and a library. Cultural offices and a daylighted courtyard theatre used by local artists and the French language CBC each recall form, colour and material found in the important historic buildings built by the francophone prairie settlers. The project uses passive heating and an abundance of daylight to maintain creature comfort and make a place that has become the heart of francophone culture in Edmonton.









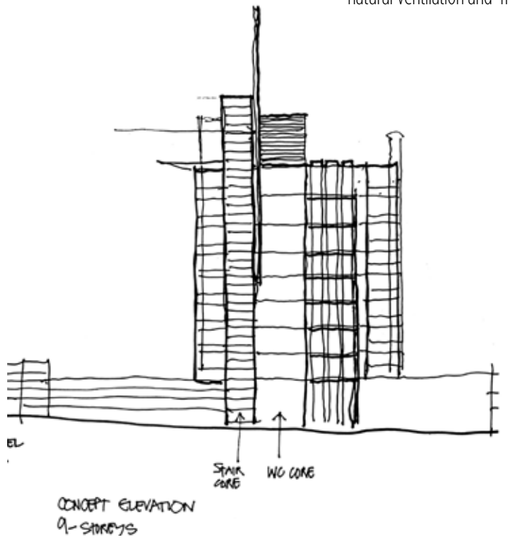


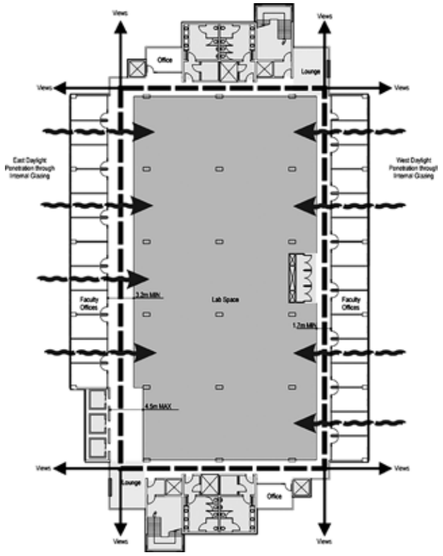
# Information and Communications Technology (ICT) Centre
# University of Calgary, Alberta

Housing the faculties of computer science and electrical engineering, this laboratory building is a raw concrete structure where everything is exposed (and therefore accessible) and there are no precious finishes. The building is a very visible exercise in illustrating how things are made.

The project uses technology in both active and passive ways. The high performance skin incorporates operable windows and solar chimneys. The north - south axis of the building maximises solar exposure on all elevations – the sun actually sees the north façade in the early morning hours of the summer months. The solar chimneys work in combination with the operable windows to induce natural air movement throughout each floor of the plan.

Each floor of the structure is a chilled slab – where the return leg of the central university cooling system is cycled through an embedded closed loop piping grid. At 65 degrees Fahrenheit this naturally cools each slab that passively absorbs heat from people, lighting and equipment. This combination of natural ventilation and 'free' cooling effectively creates a net zero energy cost strategy year round.



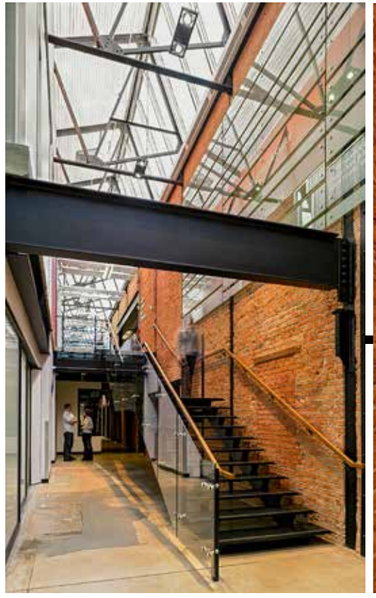

# Triffo Hall – University of Alberta
# Edmonton, Alberta

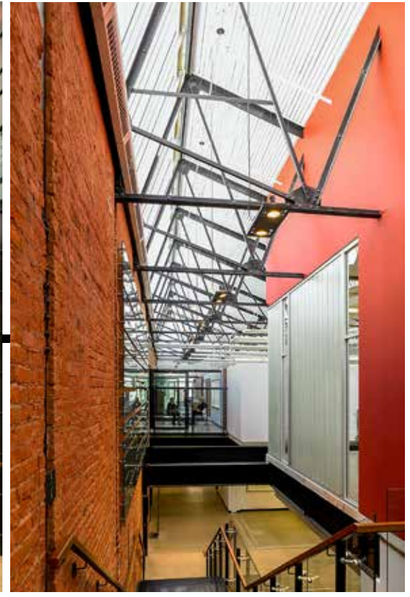
**LEED Gold**

This is a retrofit of one of the oldest buildings on campus into a centre for advanced studies. A simple shoebox featuring an industrial, saw-tooth clerestory and steel roof truss system that is now fully exposed – creates bright and airy daylighted office and media centre areas, organised around a central linear street. A new, through floor opening connects people together and introduces the stack effect for induced air movement and allows views to the sky through the refurbished clerestory.

The project uses passive strategies such as abundant daylighting, operable windows, suspended radiant cooling panels and displacement ventilation to maintain creature comfort in an environment made new again by exposing all of the major, existing building materials.


Killam





# BCTL – Building Communities Through Learning
# Red Deer, Alberta

**LEED Gold**

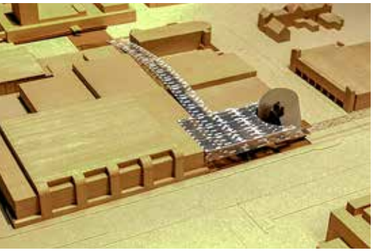
A major expansion of Red Deer College is a flexible open loft, supporting a purposeful interactive mix of trades, technology, manufacturing, business, and visual arts programs. The 'Learning Commons,' a highly visible multi-storey studio space is an infill spine that connects previously disconnected campus buildings and students together. A new entry to the building is defined by an enormous steel frame, intended to display large scale industrial student work while the long, low curved roof of the commons echoes the distant rolling hillsides of the region.

Bathed in daylight throughout – from computer areas to labs, the project exposes all building components, from speaker boxes and cable trays to the main mechanical room that is used as a teaching lab, enabling students in the building trades programs to learn the complexities of building assembly on site.

A variety of simple site, water and design innovations from a man made lagoon to capture, harvest and filter storm water from the big roof for redeployment to internal fixtures; displacement ventilation, operable windows, daylighting and a high performance building envelope comprised of R40 prefinished steel wall panels, positions the project as a sustainability laboratory.


NOVA CHEMICALS
LEARNING
COMMON

## Physical Activity and Wellness Centre (PAW)
## University of Alberta, Edmonton, Alberta

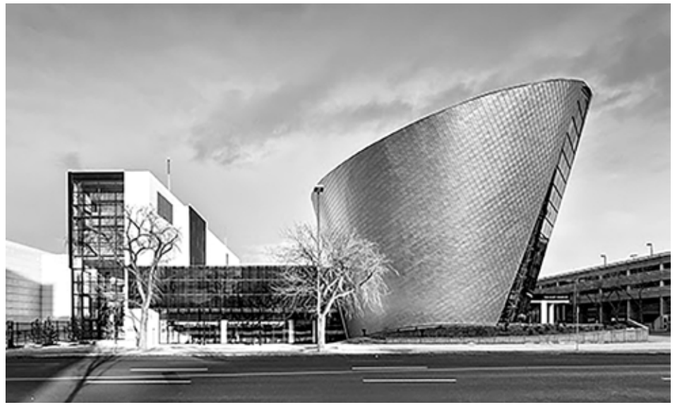


In 1998, the University of Alberta and the Faculty of Physical Education reviewed the condition and functional space issues of its Van Vliet Centre – a complex of several awkwardly connected physical education buildings. Barry Johns (Architecture) Limited was engaged to complete a master plan that explored the need for academic, research and fitness space effectively re-programming the complex into a centre for Physical Activity and Wellness (PAW) completed some 16 years later.

The plan incorporates a new interior, daylighted student concourse created by enclosing an existing exterior windswept plaza between the varsity gymnasium and the east academic wing, providing a major new social centre for the complex. The concourse is the circulation backbone to all program components.

Recognizing the central and high profile location of the site, the new PAW Centre provides a striking presence at the corner of 87th Avenue and 114 Street with its ice like mountain climbing centre. This corner is widely recognized as both a crossroads between the Health Sciences District and a new major north entry to the campus.

The project significantly reduces its former carbon footprint, incorporating myriad sustainable design principles including solar panels (that also act as sunscreens for the fitness centre) that generate power for the fitness equipment and solar roof panels that heat all of the domestic hot water in the facility.




*Views of concourse and fitness centre with climbing centre beyond*

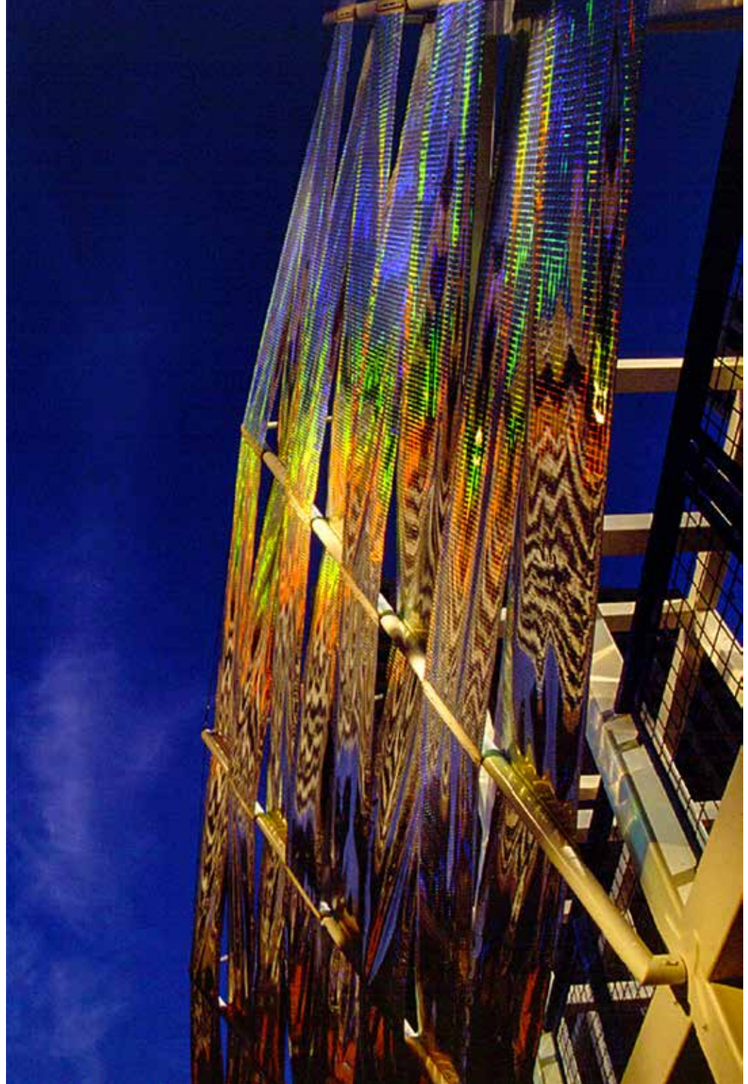
# 4 DESIGN WITH CLIMATE

I have always been curious to find inspiration and expression from the vagaries of climate, in our work. The sun is so brilliant on the prairie due to its elevation above sea level and it enables daylight to penetrate deep into our structures; but climate phenomena also enables us to use the sun, wind, rain and snow in unexpected ways to shape or inform the architecture. That influence also contributes to the idea that the work should be authentic to its place.

An early example of this is a temporary urban park in downtown Edmonton that was built on a vacant lot held for future development and owned by a telecommunications company.

It was transformed into a festival plaza for noon hour outdoor plays, concerts and weekend events during the summer festival season. A giant steel frame becomes a stage set and lighting grid.

Signalling its presence on the main street, a holographic sculpture by Michael Hayden entitled 'Lumetric Sail' captures both sunlight and reflected light from passing automobiles to create a dazzling array of spectral brilliance to enliven the other side of the plaza, at the street.



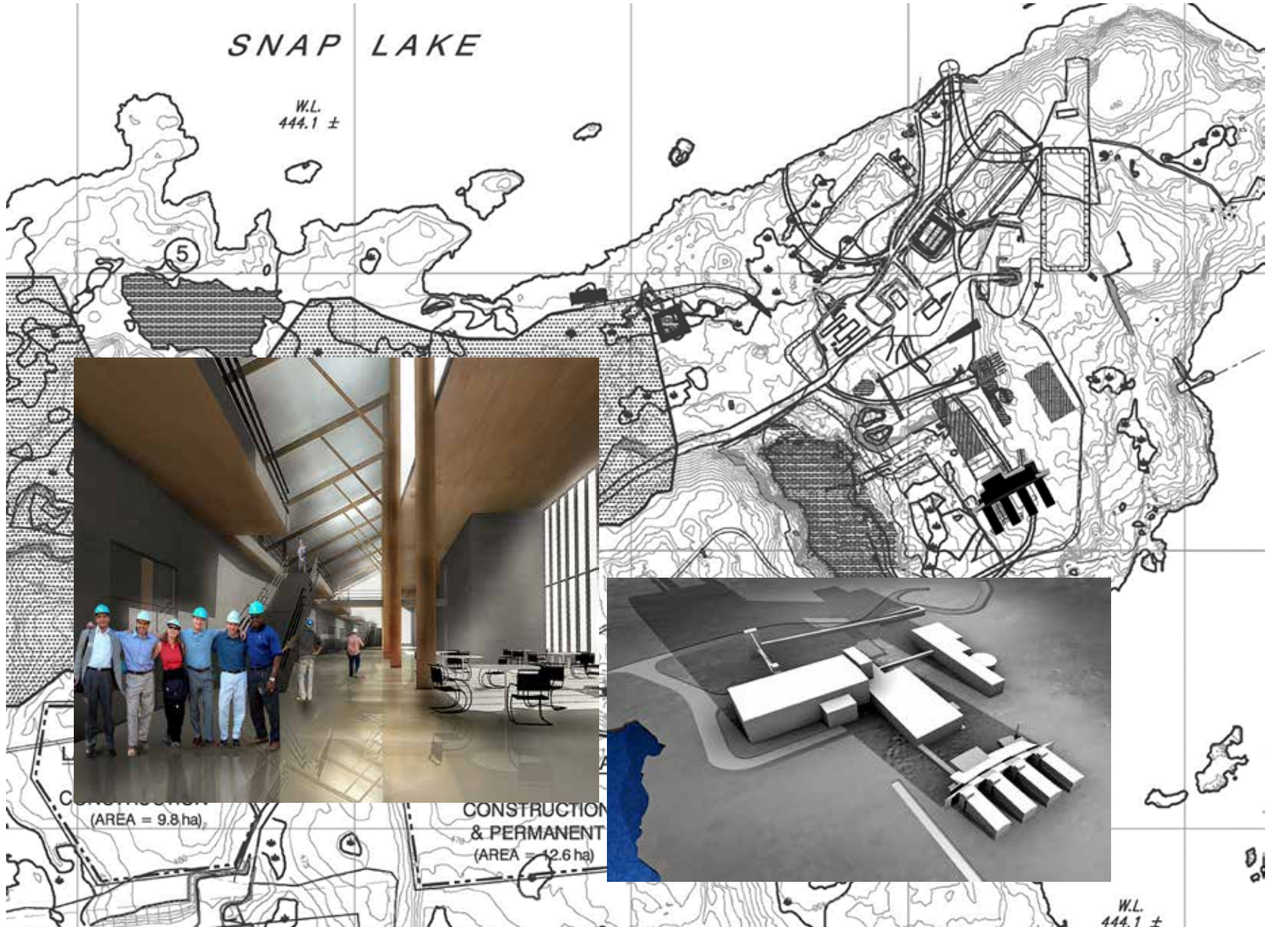
# Snap Lake Accommodations Centre
# Snap Lake, North West Territories

A competition winning accommodations centre provides a living, education and community facility on the site of a diamond mine development in the Canadian sub-arctic. Mining and operations personnel are housed in a three storey structure 220 km northeast of Yellowknife NWT. The site is so remote that the brief required maximum prefabrication already used in the industry as a precondition to meet budget and delivery requirements where ice roads are open for only a few months each year.

The project uses standard, modular housing blocks and stacked shipping containers for washroom, laundry and janitor cores, each super-insulated against the cold, in response to this program requirement. Only the custom built backbone of recreation facilities, lounges and food services (some of which is also prefabricated in transportable components) strays from the brief.

The project turns its back against the prevailing wind that is directed over the bent and angular north face of the complex. A micro – climate, south facing 'neighborhood' is created by a multi-storey linear street that connects the perpendicular housing 'fingers' along its length, with views to the lake. When the sun is above the horizon line it remains low in the sky, yet each housing unit receives some sun exposure – direct and reflected – every day, while the space between the fingers creates a sun trap, admitting light and warmth into the street. The entire building is elevated above the ground to minimize ground disturbance and to enable wind flow over and under the structure, eliminating snow drift in this barren region.

Despite the client's concern about the three tiers of social, economic and environmental sustainability, chronic difficulties with global markets prevented full realisation of the project as designed.



## Telus Plaza Redevelopment
## Edmonton, Alberta

The first mixed use office and underground shopping mall in Edmonton, completed in the 1960's, included two office towers and a featureless, windowless underground public space connected to the subway but otherwise devoid of natural light and public amenities.

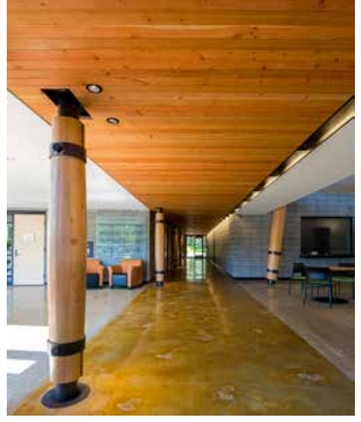
This urban renewal project uses the bright prairie light to breathe new life into the complex by replacing its empty, windswept plaza with a sunken courtyard that opens into the former underground mall creating a food court with daylighted shops around its periphery. The new tenant spaces were fully leased before construction was complete and the current facility has become a new hub in the downtown.

## Innisfail Public Library and Seniors Centre
## Innisfail, Alberta

Situated within an idyllic birch and aspen forest on a hill adjacent to a residential neighborhood and overlooking downtown Innisfail; a former logging road bisecting the site defines the building footprint while the main circulation spine through the building is maintained as a connecting path to the town.

The building's green roof as its defining element, is a series of folded planes and tent-like overhangs, supported by wood columns that slope in seemingly random directions like the trees in the forest. These elements create space that is both intimate and expansive, transparent and oriented to the tree-tops and the intensely bright prairie sky.

The roof folds track the sun – opening upward to the cooler southeast sky and pointing down to shelter the small perimeter clerestories to mitigate west solar gain. Combined with displacement ventilation, operable windows, natural finishes and water reducing fixtures, the building is completely integrated with its surroundings, maximizing daylight and providing ambient comfort through a climate driven parti.

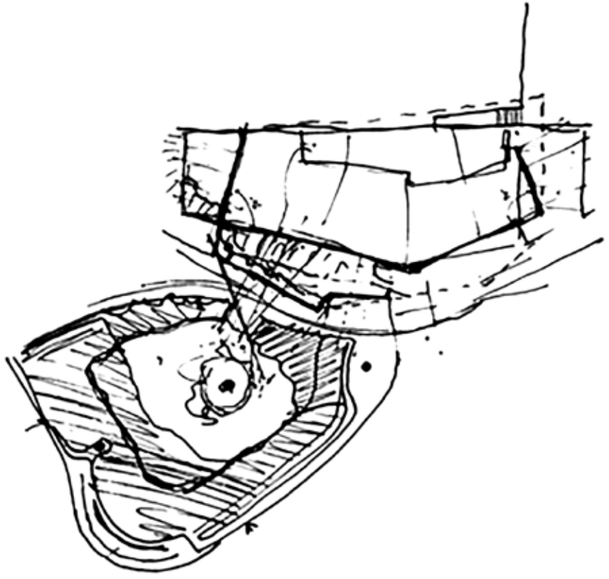



LIBRARY

# Lemur Pavilion – Valley Zoo
# Edmonton, Alberta

Lemurs come from one place on earth – Madagascar – and some species are endangered as a result of mass deforestation on the island. The Edmonton Valley Zoo is home to a small collection of lemurs and the city wanted to build a facility to emulate their tropical habitat and to encourage a sustainable breeding program.

This project is a research experiment using a climate driven strategy to create a critically important micro-climate. The pavilion has an undulating roof that opens to the sun and incorporates an interior living wall of (edible) tropical plants and vines that replace the typical artificial 'décor' found in many zoos around the world. The animals play within the steel and wood frame and the natural rope ('vine') details of the pavilion, while a man – made island with a dredged moat (lemurs are afraid of water and thus do not escape) enable the animals to move freely outside in full view of spectators during the hot summer months. Two separate zoo-mesh enclosures that complete the composition are supplemental outdoor respite zones used as separation or quarantine areas when needed for the animals and their young.



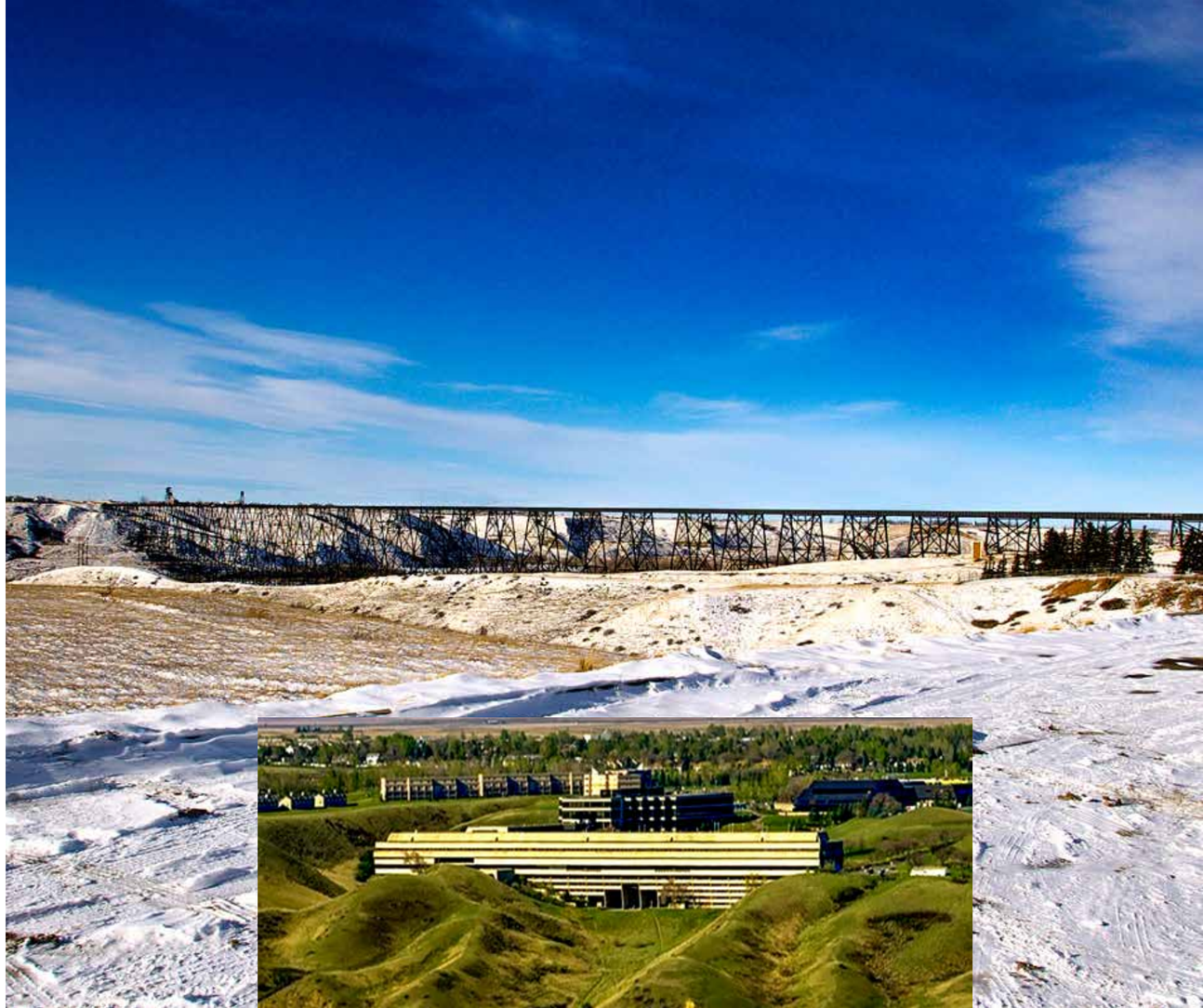
The resulting project approaches that of a natural, tropical climate that requires only supplementary heat for three – four months during the short, colder winter days and nights each year. The facility is frequently subject to international visits and scholarly study by scientists and zoologists who claim the natural characteristics of this admittedly captive environment, have significantly contributed to the success of the breeding program.

# 5 AUTHENTICITY VS STYLE

We have never subscribed to a specific design idiom, although we always work in section and, circulation in the plan is of paramount importance to us. People tend to get lost in a circuitous plan without access to daylight and so we learned to terminate corridors on natural light and always turn a corner on natural light, to make it easier to stay oriented and connected to the outdoors.

Projects that have been previously shown, seek authenticity by virtue of their expression e.g. La Cité, EATC or the Two Rivers Art Gallery and each own a different personality as their sites and program dictate a different architectural response. This is what we try to find in each project.

Arthur Erickson would find inspiration in similar ways. His seminal University of Lethbridge is an enormous 'ocean liner riding the waves' of the unique, coulee topography of southern Alberta. Its monumental horizontality pays homage to the historic horizontal wooden trestle railway bridge that spans the Oldman River nearby while clearly recalling the powerful horizon line of the prairie itself.



# First Choice Savings Centre for Health and Wellness
# University of Lethbridge, Lethbridge, Alberta

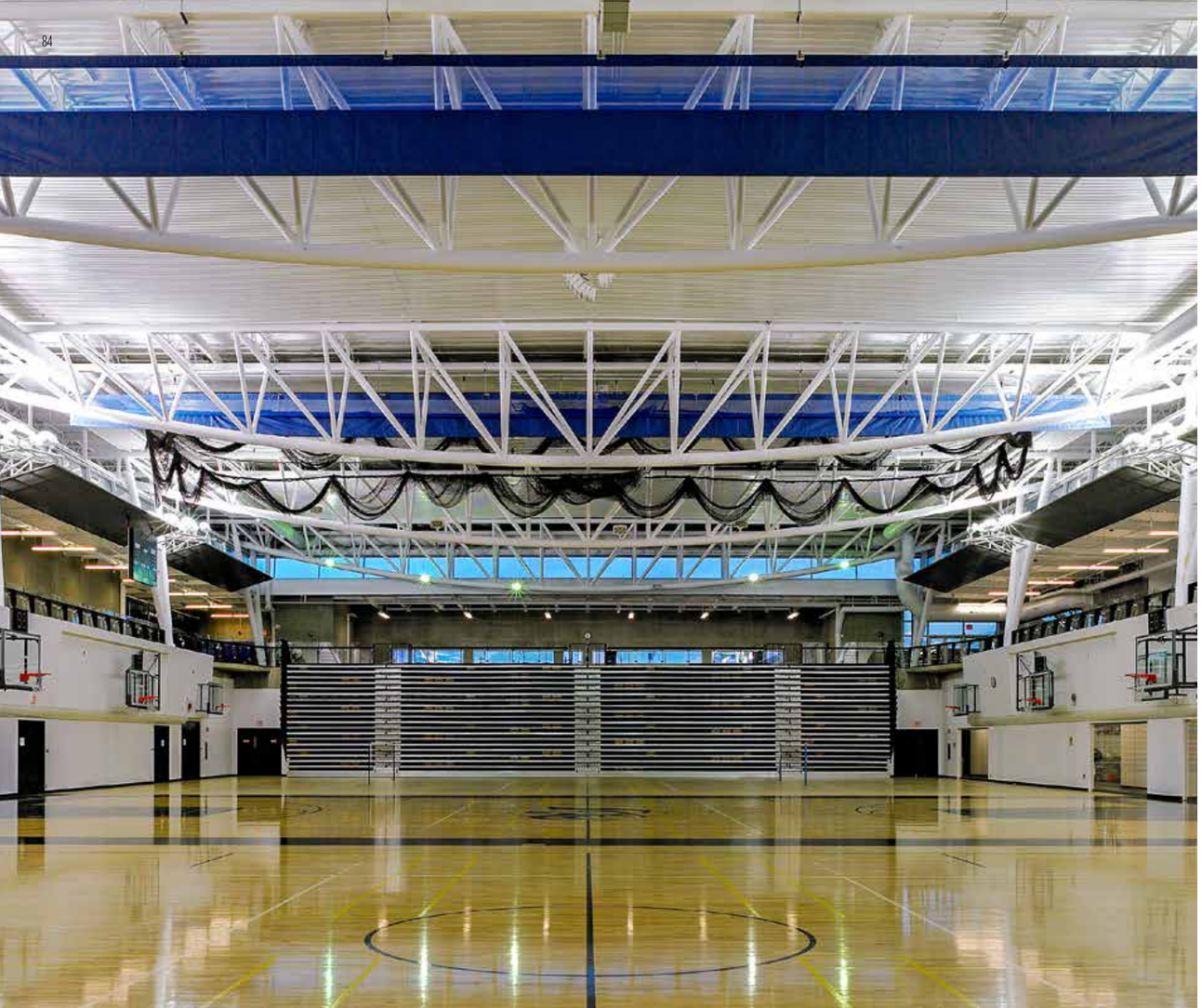
**LEED Silver**

The First Choice Savings Centre for Sport and Wellness is an expansion and redevelopment of the existing Physical Education and Student Union Building on the University of Lethbridge campus.

The 17,250SM facility  consists of a new, below grade, daylighted triple gym and an elevated running track; fitness centre, multi-purpose rooms, climbing wall, kinesiology teaching labs, classrooms and a completely reconstructed and expanded locker facility.

The University of Lethbridge boasts a signature building by Arthur Erickson – the University Hall, completed in 1969, recognized as an important icon in Canadian contemporary regionalism. The architectural significance of Erickson's work dramatically influences the design of the new Centre.

The building is aggressively let into the ground, reducing its scale at the top of the coulee. The thin, flat roof covering the gymnasium floats delicately above its foundations around a vast and continuous clerestory. This design direction is a dramatic departure from typical, large box gymnasia, using the natural insulating characteristics of the earth to minimize exposure of the envelope and a series of light 'shelves' to reflect light indirectly into the main space without glare to the gym floor. The facility is used during regular hours without the need for electric light except for media coverage and competitions.

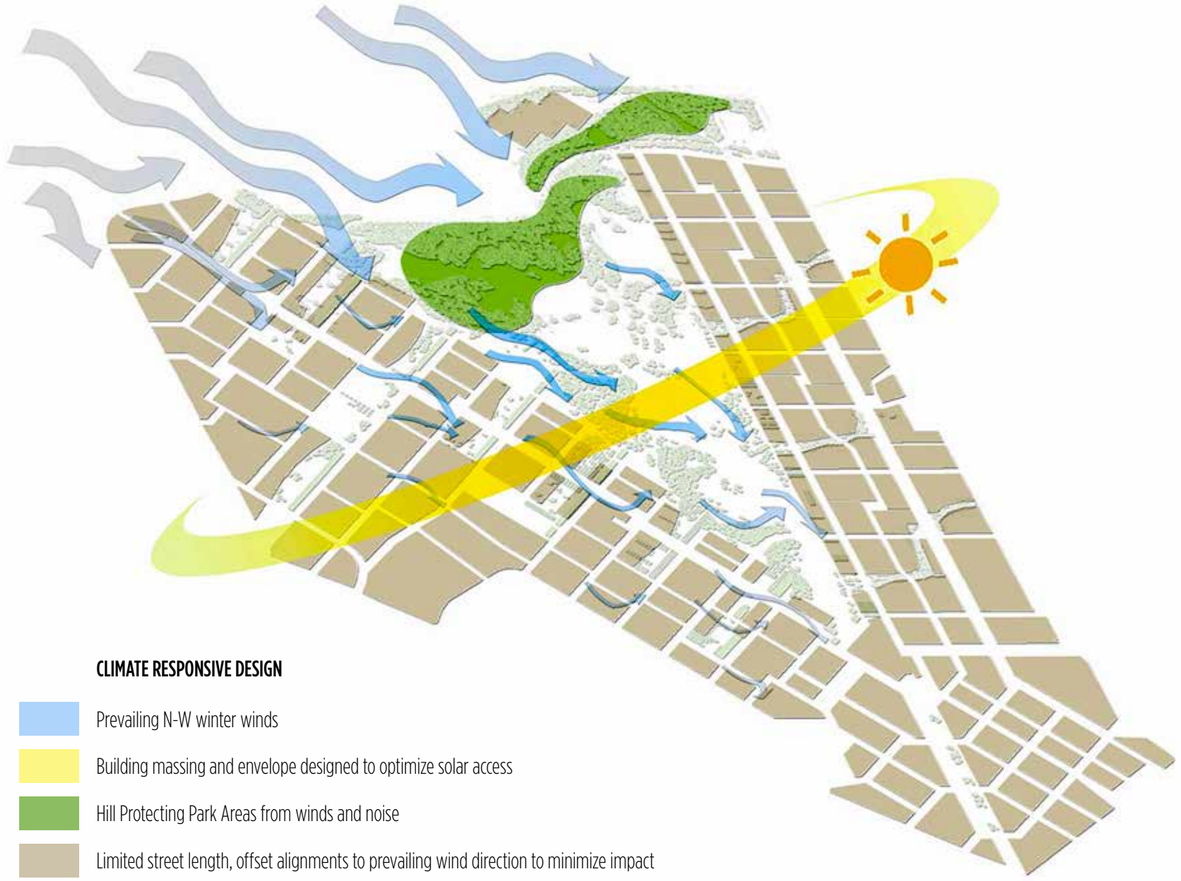


# Blatchford
# Edmonton, Alberta

This project is a design competition winner; by the only Canadian team on an international short list for the Edmonton City Centre Airport Lands Masterplan Redevelopment. The team's concept for a mixed use sustainable community for 30,000 residents to be constructed over 25 years, incorporates deep well geothermal and biomass technologies that could provide up to 20MW of renewable energy, to service the site  plus other institutional buildings around the downtown in a distributed heating pipeline grid, that takes the development beyond carbon neutral into regeneration, with no reliance on fossil fuel sources.

Concepts include 50% open space and a regional park with four working stormwater and recreation lakes and a manmade hill constructed from the lake excavation. This could eventually yield a 20 km river to river green loop around Edmonton. Other developments include neighborhood bioswales, large scale urban agriculture , walkable communities, transit oriented development, and green buildings including a new town centre and expansion of the Northern Alberta Institute of Technology.

Over-arching these strategies, the living memory of Blatchford Field as the first registered air harbour in the Commonwealth is celebrated by preserving and re-purposing 3 existing heritage hangars and the airport control tower. The plan is organized around the existing runways that are either recycled or in places re-purposed and the legacy of Edmonton's air pioneers is distinguished by naming public space, parks, festival plazas, esplanades, streets and neighborhoods after them.

**CLIMATE RESPONSIVE DESIGN**

- Prevailing N-W winter winds
- Building massing and envelope designed to optimize solar access
- Hill Protecting Park Areas from winds and noise
- Limited street length, offset alignments to prevailing wind direction to minimize impact
- Landscape mitigating wind impact

## UTILITY INFRASTRUCTURE BEYOND CARBON NEUTRAL

**On-site Electrical and Heat Energy Generation:**
Biomass Thermal Plant Fueled By
Industry Waste Wood
Clean Wood from Waste Plant
Dried Sewage Sludge From Wastewater Plant
Deep Geothermal, 3.5km/2.2 Miles Deep

**Heat From Thermal Plant:**
Heat Development
Provide District Heating Loop to Downtown

**Scrubbed Sewage Plant Flare Gas/Biogas:**
Provide Cooking Gas for On-Site Cooking
Provide Fuel for Transit Vehicles

**On-site Water Mining from Sewage:**
Reduce Potable Water Use from 55 gal/per day to 36 gal/day

**New Light Rapid Transit Line Through Site**

**= Regenerative Design**

**District Heating Piping to Downtown**

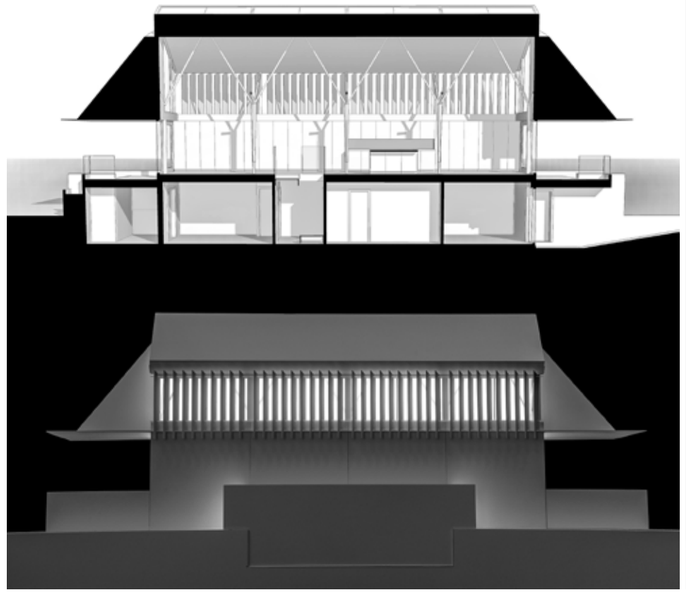

Tomatoes
TASTY!
$3

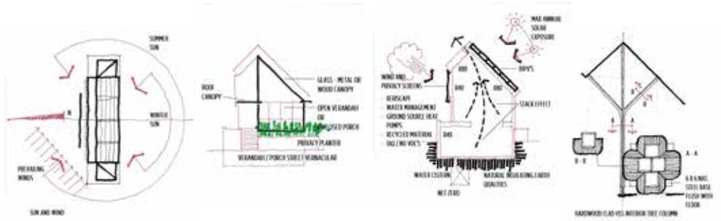
# INFILLHAUS
## Edmonton, Alberta

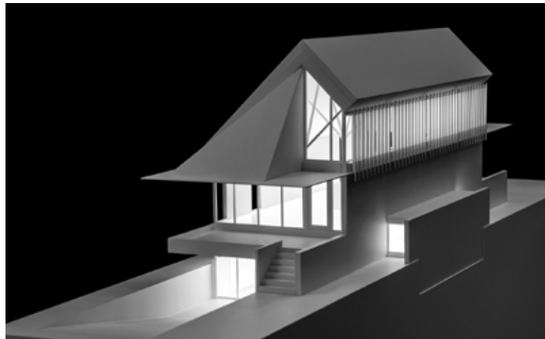
INFILLHAUS is an idea about urban infill and densification of mature neighborhoods.

A relatively new concept in Edmonton, this archetype thus far typically transposes suburban development standards onto skinny urban lots – resulting in projects that are significantly oversized and as a result, are neither sympathetic nor in scale with these more established precincts in the inner City.

This net zero project explores the merits of a smaller building typology, without a basement and featuring a spacious upper, open living loft and outdoor porches (or verandahs) typically found in these mature neighborhoods. Building  integrated photovoltaics, significant water management strategies and a high performance envelope are deployed in the pursuit of compact, flexible living and environmental responsiveness. The result is a respectfully scaled, urban densification scenario, where residents eschew a material oriented lifestyle, including a lesser reliance on the automobile.





## Gibson Block
## Edmonton, Alberta

The restoration of the 1914 flatiron building – one of thirteen remaining such structures in North America involved research and volunteer work by interested stakeholders to create a new women's emergency shelter. As a result of significant archival research that among other things unearthed the original drawings for the building, the architects teamed with a local historian to publish a book documenting the life of the building. The Gibson Block enjoyed a rather notorious reputation from its inception as a rooming house constructed at the end of the early real estate building boom on the prairie during WW1, through successive decades where myriad tenants from a goldsmith shop to Turkish Baths occupied the building.

The project's brick masonry walls were found in excellent condition with the exception of the original, soft black exterior pointing mortar (dyed with coal dust) that was replicated and replaced. Black coloured mortar is beautiful, unique in the city at the time and speaks to the design sensitivity of the craftsmen involved. Computer survey analysis illustrated that the perimeter dimension of brick walls around the building was within an amazing 6mm (1/4") variance to the dimensions calculated from the original drawings. Windows were stick built individually, despite every rough opening being the same size. These were faithfully recreated as was the original curved glass at the narrow corner of the building and the frieze glass tiles above the first floor. The 16" thick masonry walls harbour sufficient thermal inertia as to prevent drafts in winter and retain creature comfort naturally during the summer months.


This project solidified the firm's commitment to work respectfully and in harmony with its surroundings and with the many lessons learned from our forebears.

## Project Credits

| | |
|---|---|
| Robson Square and Pender Jervis / Evergreen | Arthur Erickson Architects |
| Timms Collections Centre | Barry Johns Architects |
| 3 Studios | Barry Johns Architects |
| Olympic Arch Competition | Barry Johns Architects |
| Westmount Unitarian Church Residence / Studio | Barry Johns Architecture Limited (Don Bittorf – original architect 1965) |
| Edmonton Advanced Technology Centre | Barry Johns Architects |
| Kiniski Elementary School and TD Baker Junior High School | Barry Johns Architects |
| Two Rivers Art Gallery | Hancock + Johns Architects with Stantec Architecture (construction documents and construction administration) |
| Duclos School | Barry Johns Architects |
| Grant MacEwan Community College | Barry Johns Architects in Joint Venture with Wood Gardner O'Neill O'Neill Architects and Wensley Webster Fry Rodrigues Architects |
| La Cité | Barry Johns Architects |
| Information Communications Technology Centre | Stantec Architecture Ltd. with Barry Johns Architecture Limited (design principal and project interiors) |
| Triffo Hall | Barry Johns Architecture Limited with Group 2 Architecture Engineering (construction administration partner) |
| Building Communities Through Learning | Group 2 Architecture Engineering with Barry Johns Architecture Limited (design consultant) |
| Physical Activity and Wellness Centre | Barry Johns Architecture Limited with Group2 Architecture Engineering (production and contract administration partner) |
| Telus Plaza | Barry Johns Architects |
| Lemur Pavilion | Barry Johns Architecture Limited with Group2 Architecture Engineering (final stages of construction) |
| Snap Lake Accommodations Centre | Barry Johns Architecture Limited |
| Telus Plaza Redevelopment | Barry Johns Architects |
| Innisfail Library | Group 2 Architecture Engineering with Barry Johns Architecture Limited (design consultant) |
| First Choice Centre for Health and Wellness | Gibbs Gage Architects with Barry Johns Architecture Limited (design consultant) |
| Blatchford Masterplan | Perkins + Will with Group2 Architecture Engineering and Barry Johns Architecture Limited (urban design consultant) |
| Infillhaus | Barry Johns Architecture Limited |
| Gibson Block | Barry Johns Architects |

# BARRY JOHNS

BArch, Architect, AAA, FRAIC, RCA, (Hon) FAIA, RIBA, LEED® AP
www.bjalstudio.ca

Acadia University, Diploma Architecture / Engineering 1968
Technical University of Nova Scotia (TUNS) 1972 – Bachelor of Architecture (now Dalhousie University)
Alberta Association of Architects
Fellow, Royal Architectural Institute of Canada
Chancellor, College of Fellows, Royal Architectural Institute of Canada (2011-2017)
Director of Practice, Alberta Association of Architects
Royal Canadian Academy of Arts
(Honorary) Fellow, American Institute of Architects
Royal Institute of British Architects
LEED® Accredited Professional

Barry Johns has maintained a design studio in Edmonton, Alberta, Canada since 1981 after a 6 year tenure with Arthur Erickson in Vancouver; serving clients and the profession either as an independent practice or as a design consultant to other national or international architectural firms.

A registered Architect since 1974, Barry Johns developed an international reputation as a uniquely innovative design professional. Projects include schools, offices, community facilities, colleges, university and recreational buildings – each with a commitment to excellence and 'treading lightly on the planet' through a portfolio of environmentally driven, sustainable design.

Since its inception, BJAL has received 100 design awards from around the world with its work published and exhibited throughout North America, Britain, Japan and China. Barry Johns has taught and/or lectured across Canada and the United States. He has also served on many design award juries across the country including the Canada Council, the Prix de Rome and the Moriyama RAIC International Prize.

His commitment to education has culminated with a partnership between the Royal Architectural Institute of Canada and Athabasca University. His role in founding the RAIC Centre for Architecture at Athabasca University has earned him the Order of Athabasca University. This renewed RAIC Syllabus and an entirely new general studies curriculum – an on-line distance education dual degree program in Architecture, is predicated on the idea of a work / study alternate path to architectural registration and licensure. Using virtual studios that bring together students from myriad world-wide locations on the same project in real time – a new paradigm for future directions in architectural education has emerged.

In public life, Barry Johns served two terms on Council for the Alberta Association of Architects, the Downtown Business Association in Edmonton, the Edmonton Urban Design Review Panel, the Board of Directors of Operation Friendship and the EFFORT Society in Edmonton. He is a past President of the Canadian Architectural Certification Board (CACB) in Ottawa having served on its Board for 10 years and was a long term Board member / Past President of the Fort Edmonton Historical Foundation. He is a past member of the Board of the Royal Architectural Institute of Canada and served two 3 year terms as Chancellor of the College of Fellows of the RAIC. Barry currently serves as the Director of Practice of the Alberta Association of Architects and is a Trustee of the RAIC Foundation.


TUNS Press published a monograph on his firms early work in July 2000. A new manuscript for the University of Montreal that examines the role of design in Alberta, will be published in 2018.

## Photo Credits

All photographs by James Dow except as follows:

Barry Johns, Page 7 (bottom), 11 (upper right, lower right), 17, 21 (left), 23, 24 (top), 25 (left), 28, 29 (upper two), 30, 31, (right, bottom) 47 (upper right, lower left), 60, 61, 65 (bottom), 72 (upper) , 75 (bottom), 81, 87

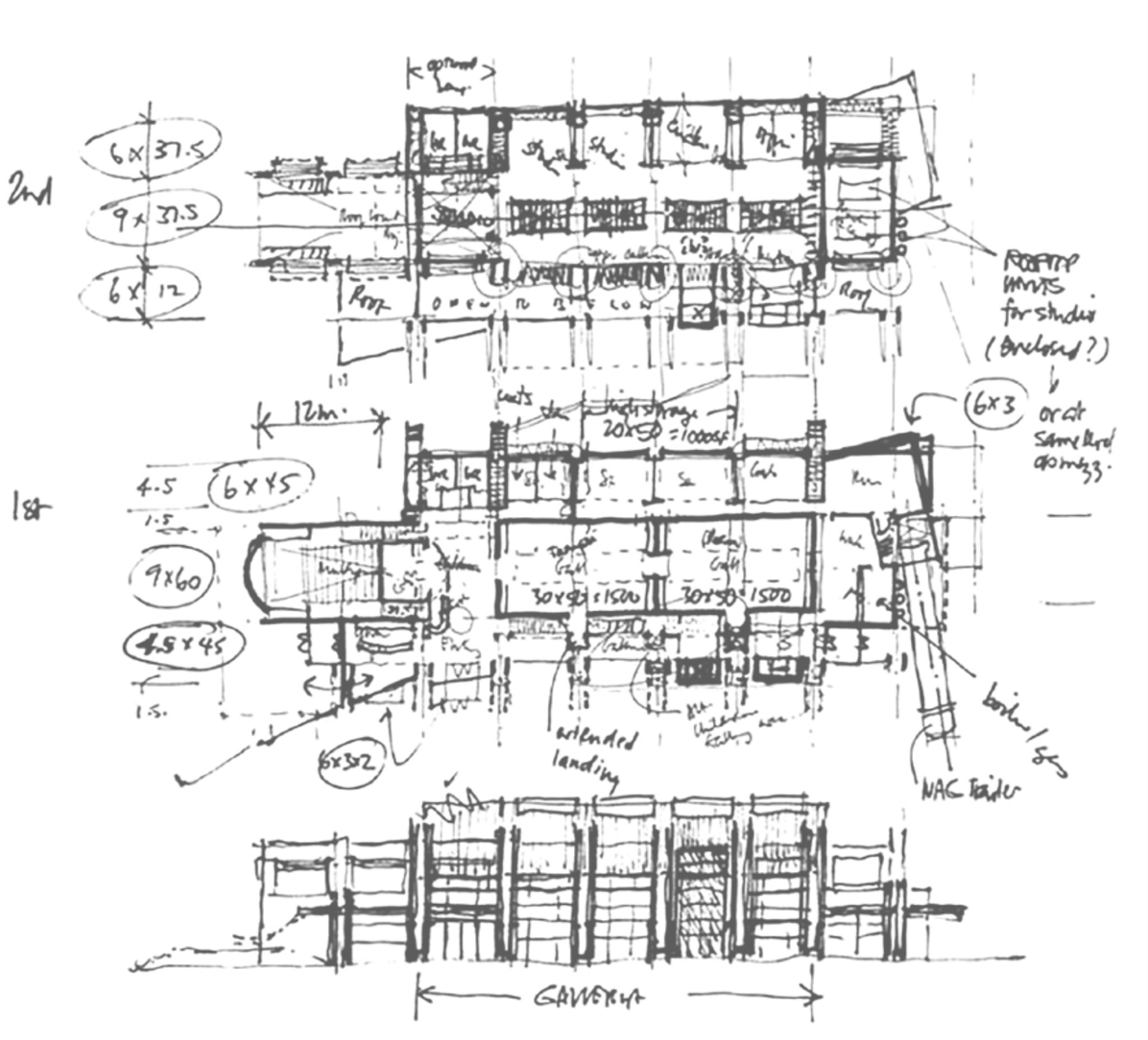
Group2 Architecture Engineering, cover and inside cover, Page 57 (bottom), 58 (right) 59 (top), 62, 63, 73, 74, 75 (upper)

Arthur Erickson Architects, Page 7 (upper)

City of Edmonton Archives, Page 31 (upper left), 33, 96

Robert Lemermeyer, Pages 53, 54, 55, 77, 78, 79, 83, 84, 85

Wei Yew, Page 95



BARRY JOHNS

ARCHITECTURE