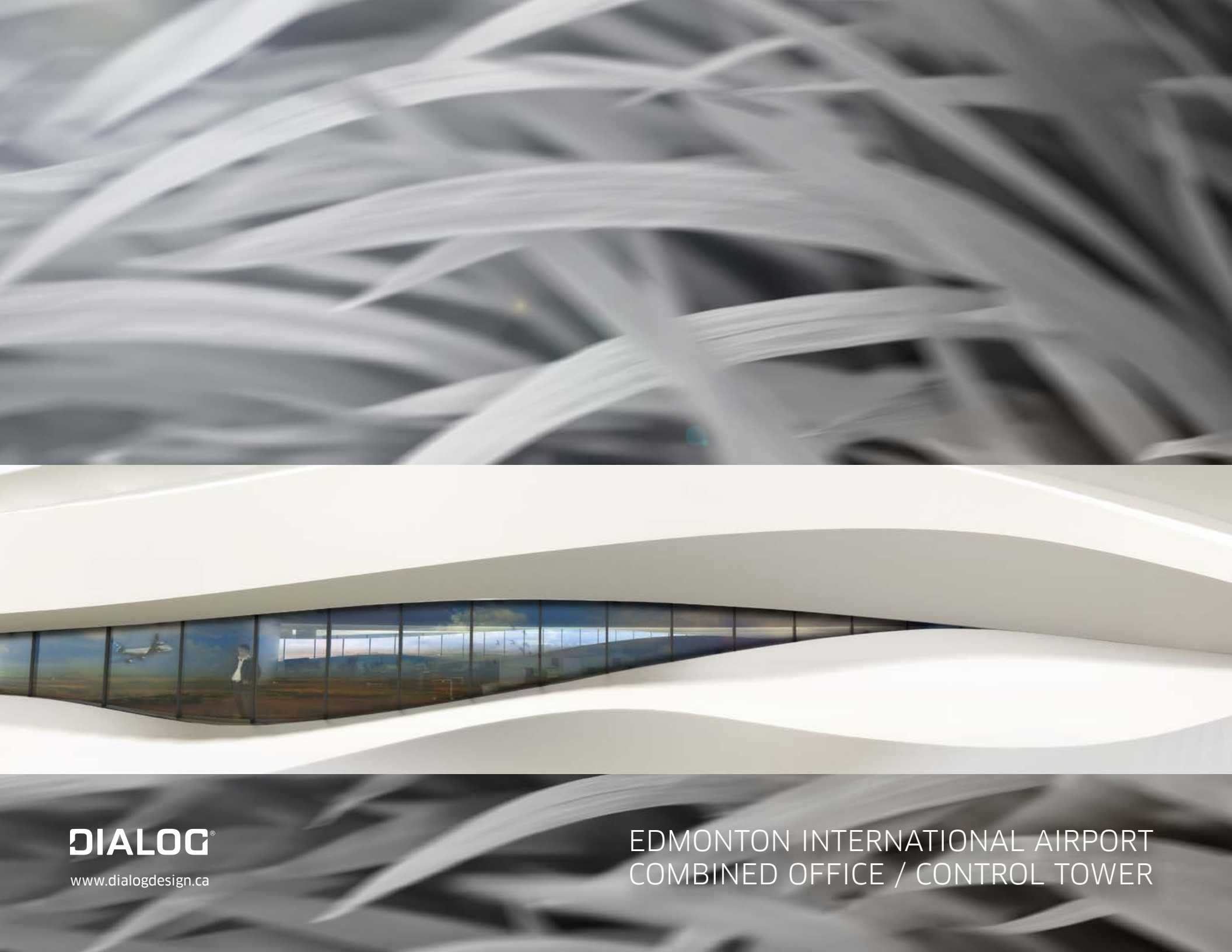

DIALOG®

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EDMONTON INTERNATIONAL AIRPORT
COMBINED OFFICE / CONTROL TOWER

Client
Edmonton Airports

Location
Edmonton International Airport,
Alberta, Canada

Size
8,410 square metres

Completion
November 2013

Architecture Team
DIALOG
Principal-in-Charge: Tom Sutherland
Project Architect: Stephen Boyd

Structural Engineering
DIALOG
Project Engineer: Jim Montgomery

Mechanical Engineering
DIALOG
Project Engineer: Tim McGinn

Electrical Engineering
DIALOG
Project Engineer: Ed Pon

Interior Design
DIALOG
Project Designer: Michelle Sigurdson

Terminal Planner
Suehiro Architecture
Planner: Jim Suehiro

Signage
Entro
Consultants: Veronica Chan,
Vincent Gratton, Wayne McCutcheon

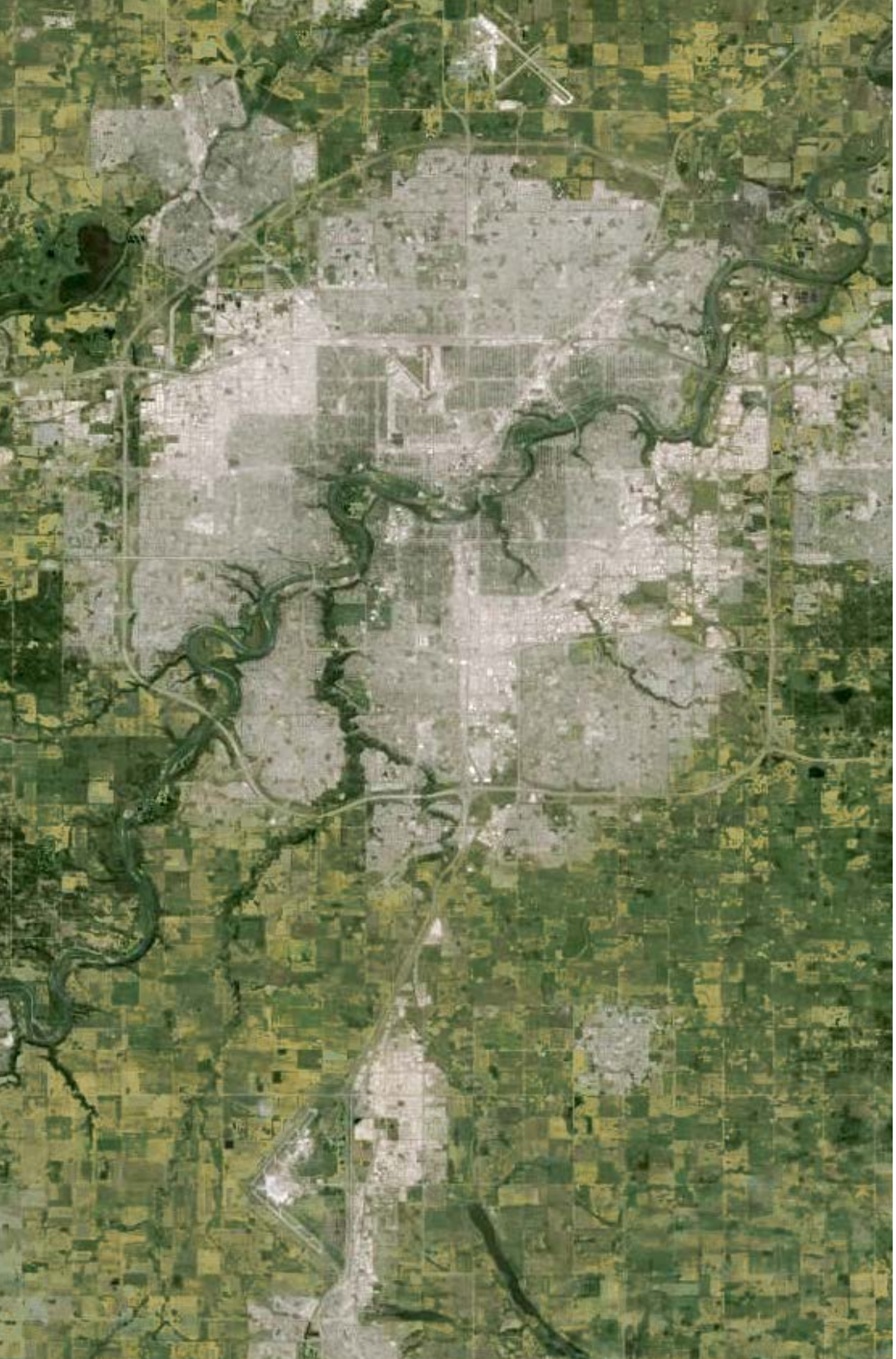
Zinc Cladding
Rheinzink

Zinc Installation
Thermal Systems

General Contractor
MMM Group
Senior Project Manager:
Michelle Barnes
Project Manager: Marcus Boyle

Photography
Tom Arban Photography

For more information click **here**



EDMONTON INTERNATIONAL AIRPORT
COMBINED OFFICE / CONTROL TOWER

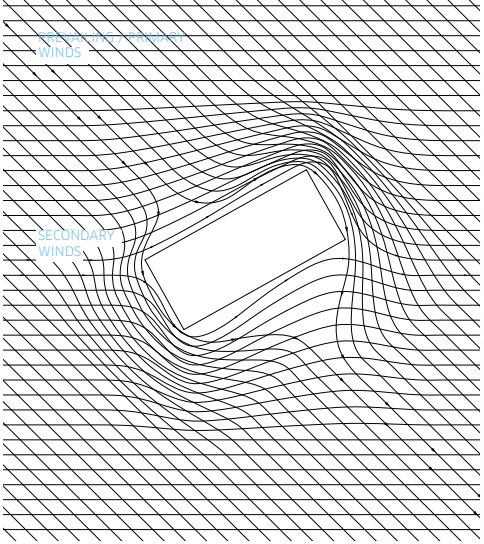
The Combined Office/Control Tower project was an integral part of the Edmonton International Airport's expansion 2012 program, responding to increasing ridership and the pressure it had placed on the existing infrastructure and buildings. As Canada's fastest growing major airport, the expansion ensures that the airport keeps pace with the Alberta Capital Region's economic development.

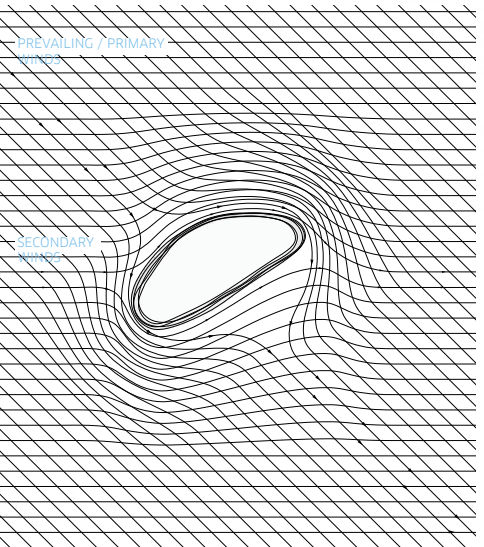
The design vision for the Tower project is to create a memorable first and last impression for Edmonton; one that expresses its sense of place and its peo ple. In addition, the design is intended to respond to the growing operational needs of the International Airport as well as offer enhanced benefits to travelers and airport tenants. There is an emphasis on producing an environment that is easy to navigate for passenger comfort, environmentally responsible, economically viable, and responsive to all aviation, passenger and airport staff requirements. Specifically the design seeks to better connect and engage passengers with views to airside operations, to minimize the impact of increasing ridership on terminal operations, and to provide a healthy indoor environment for travelers and staff through a response that is sustainable.

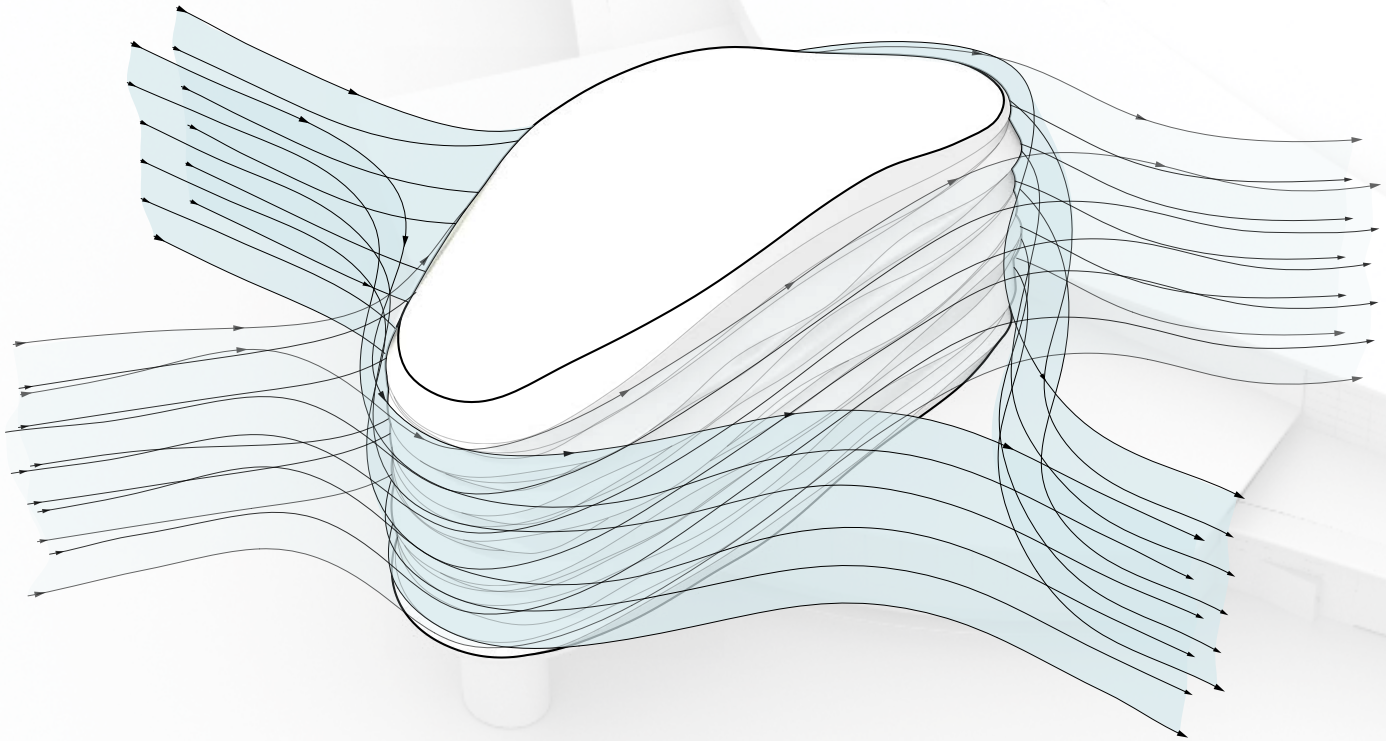
The combined tower houses a new cutting edge NAV Canada air traffic control tower, an expanded retail precinct, and provides new administrative offices. Additional functional objectives include the provision of improved airside ground operations, the creation of a central baggage area, and the development of a key nodal area to improve passenger and baggage flow.

The project is targeting LEED® Silver designation.


“A sculptural image of prairie grasses moved by unimpeded wind”

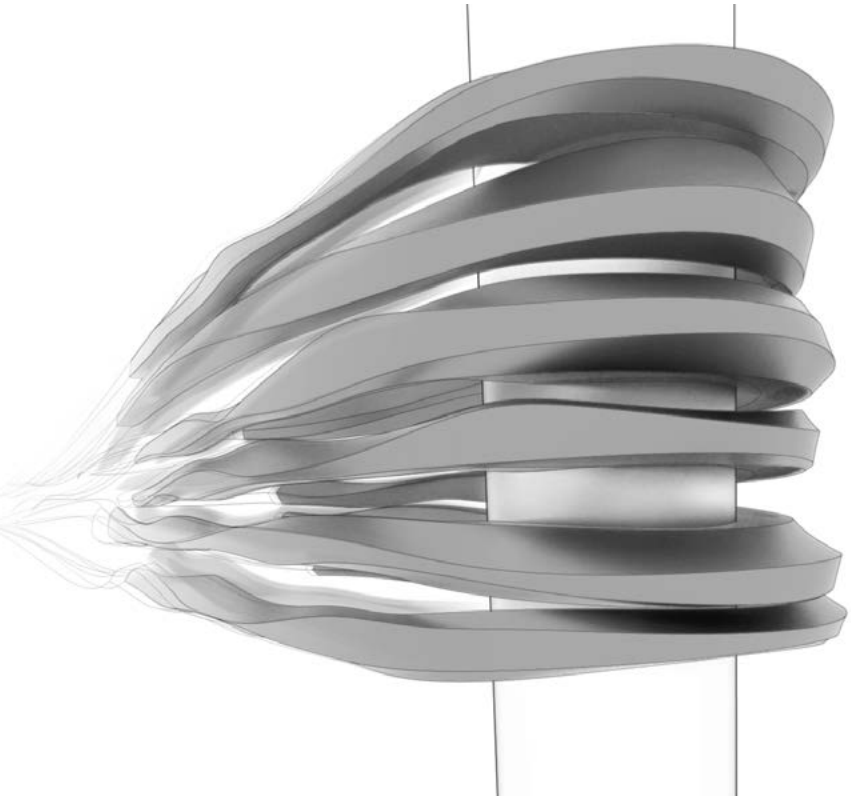




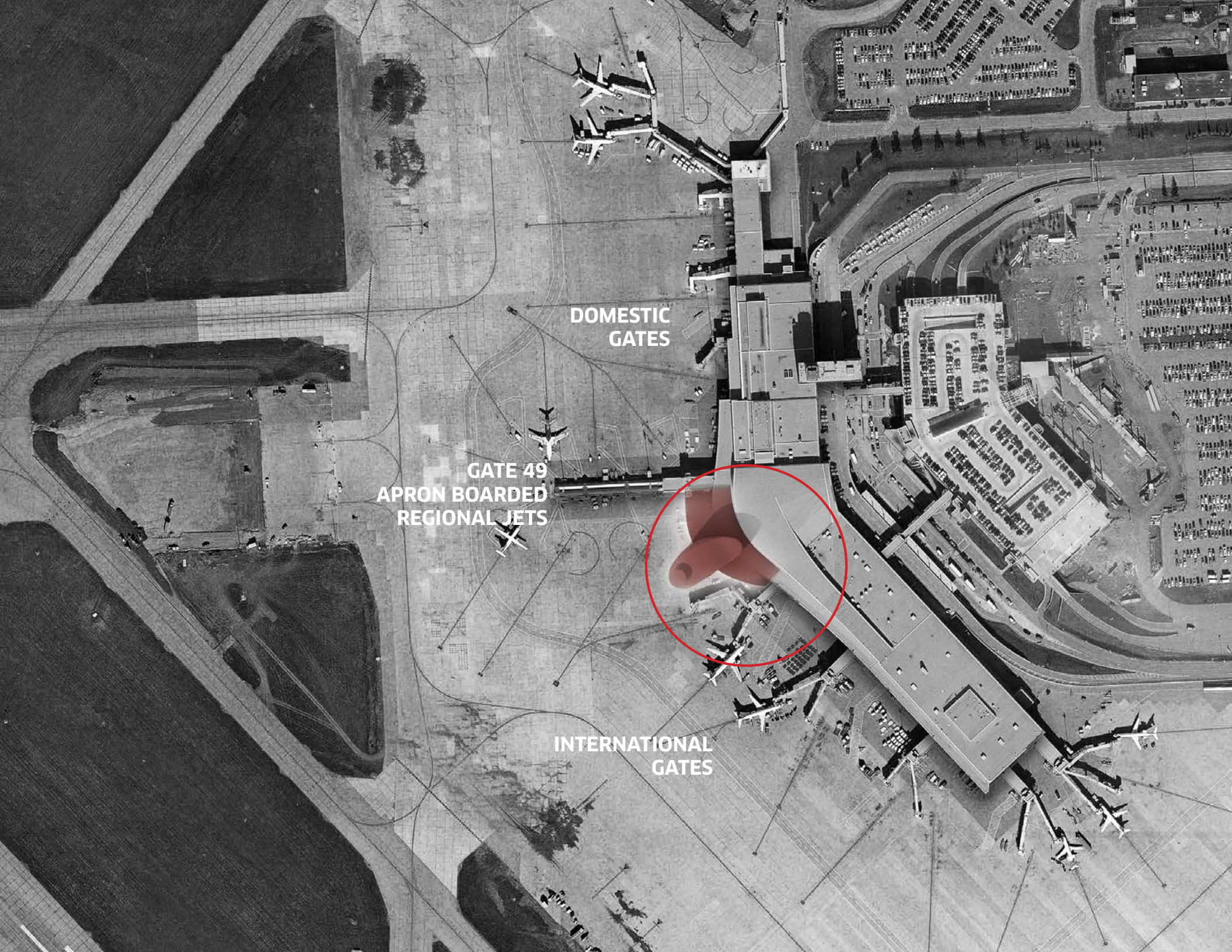


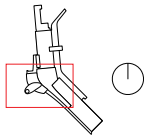
DESIGN CONCEPT

The project looks up to a vast prairie sky and stands tall in an expanse of colourful windswept fields. It is the sculptural image of these prairie grasses impacted by the unimpeded wind blowing in from the west, that provided a kernel of design inspiration. Add to this the natural formations of frozen motion encapsulated in windblown snow drifts or in the erosion of hoodoo's, and the concept for a design symbolic of Edmonton - a prairie city was born.

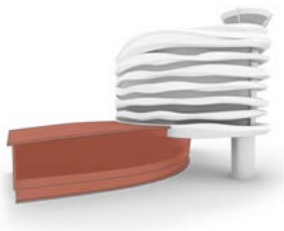


“The natural formations of frozen motion encapsulated in wind blown snow drifts”

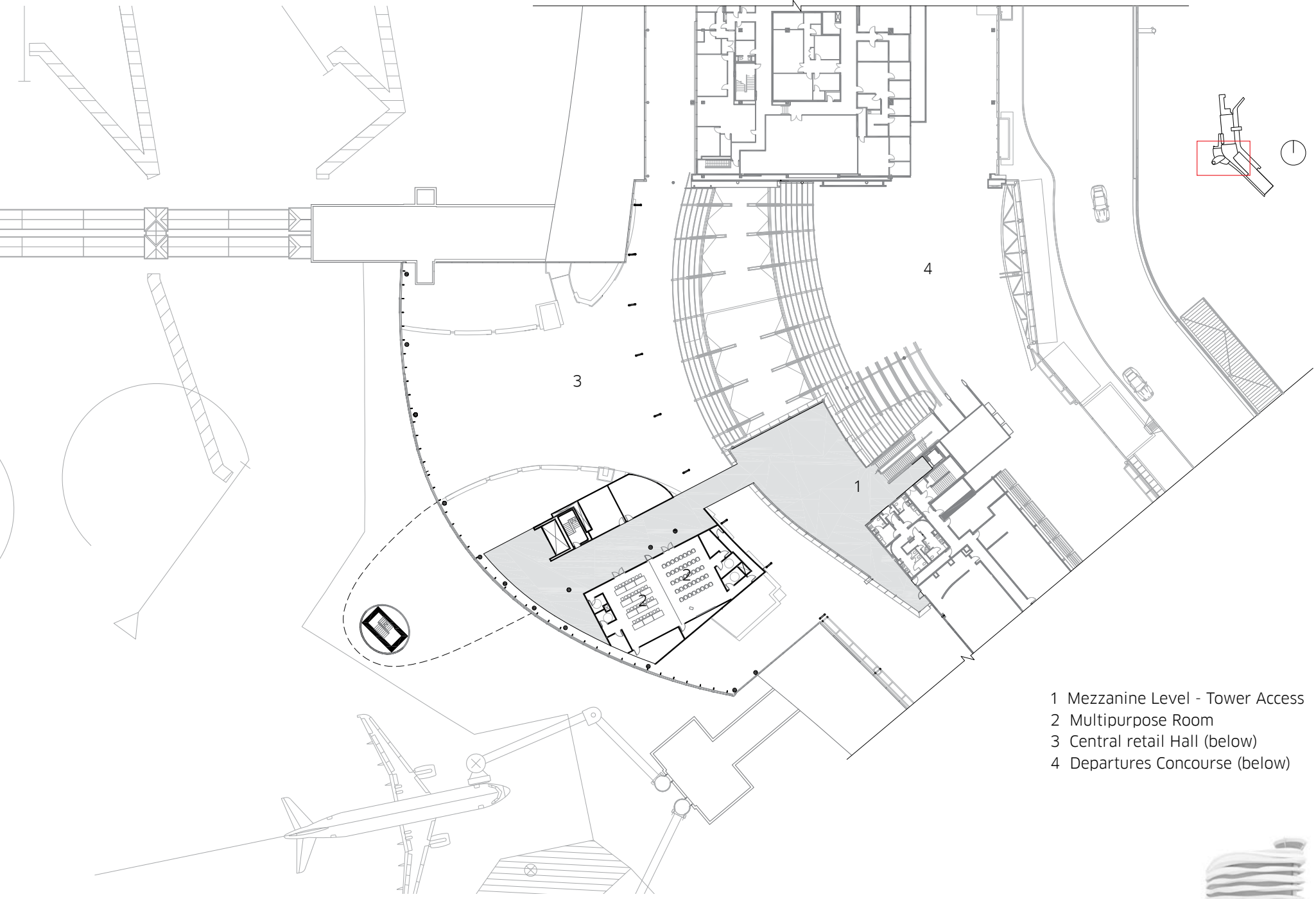

DOMESTIC
GATES
GATE 49
APRON BOARDED
REGIONAL JETS
INTERNATIONAL
GATES



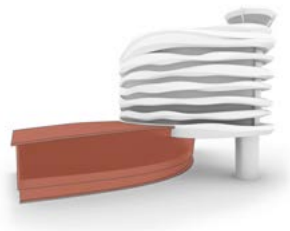
1 Pre-Board Screening
2 Retail
3 Central retail Hall
4 Departures Concourse
5 Hold Gates



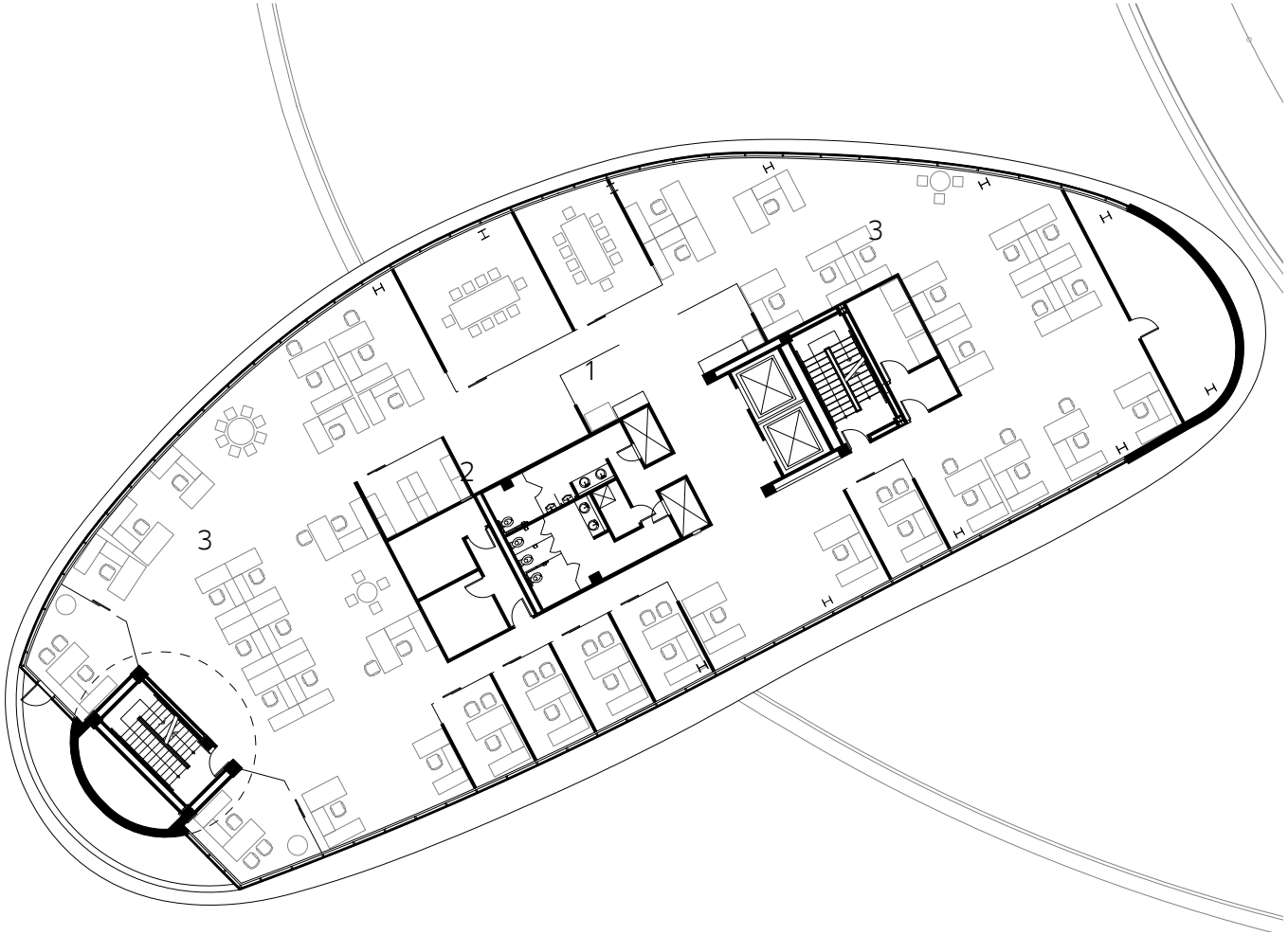
DEPARTURES LEVEL - RETAIL HALL



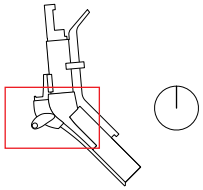
1 Mezzanine Level - Tower Access
2 Multipurpose Room
3 Central retail Hall (below)
4 Departures Concourse (below)

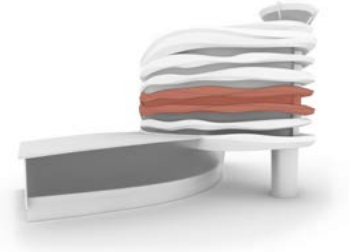


MEZZANINE LEVEL - TOWER ACCESS

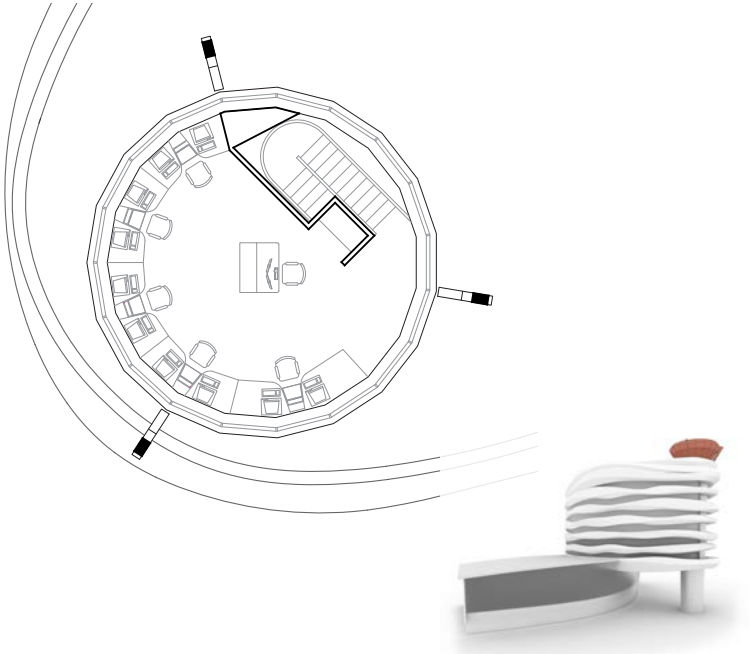


1 Elevator Lobby
2 Washrooms
3 Office Area





TYPICAL TOWER FLOORPLAN

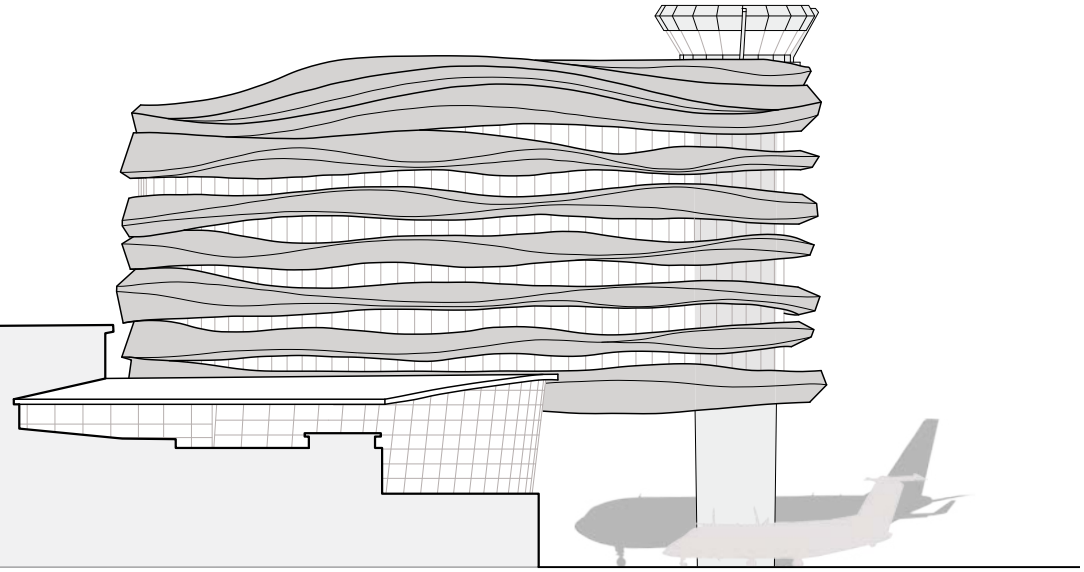


AIR TRAFFIC CONTROL TOWER - LEVEL 11

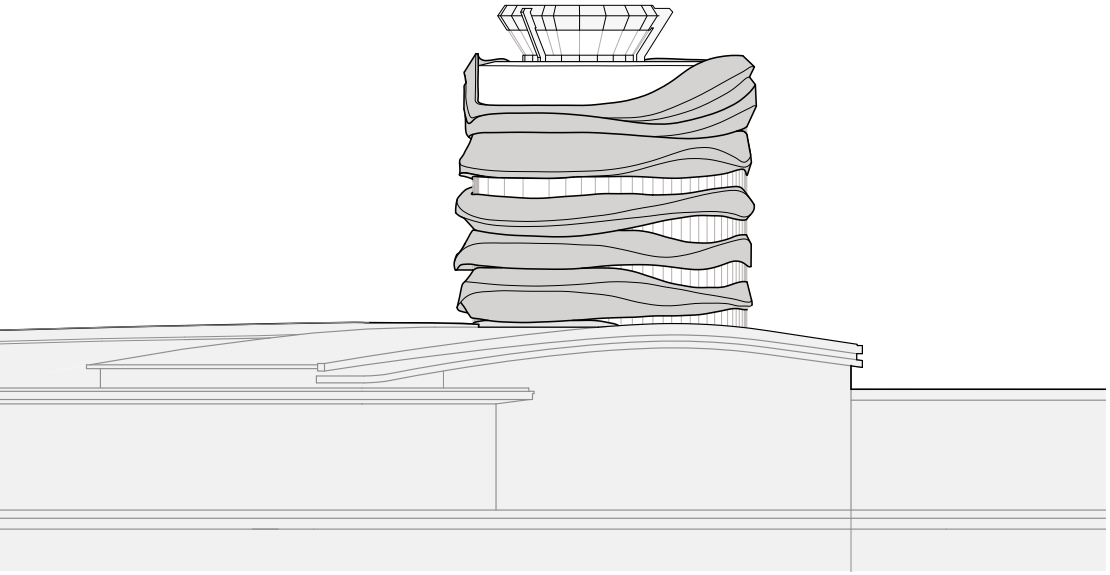
INNOVATION

The sculptural cladding incorporated in the design of the tower is far more than a aesthetic overlay. The profile of the exterior zinc cladding has been designed to provide optimal passive solar shading on the south and west facades while providing maximum light penetration on the north.

The design for this tower is unique in that it incorporates construction strategies for a post disaster building. The building is designed wholely of structural steel, complete with steel plate shear walls. The reason that concrete was not utilized in the design of these shear walls was in recognition that continuous concrete truck access to accommodate large pours would be prohibitive on the airside of an airport.



NORTH ELEVATION



EAST ELEVATION

INTEGRATION OF SUSTAINABLE DESIGN

At the project's outset the mandate was established to both provide a healthy indoor environment for travelers and staff, and to conceive of a sustainable design response that targets a LEED® Silver designation.

To capitalize on this mandate optimal solar orientation was incorporated. This passive sustainable design approach was fundamental in establishing the siting and orientation of the new combined office and control tower. An optimal east/west solar orientation was employed to minimize solar gain from the western exposure thereby providing a comfortable interior work environment.

Perimeter ribbon windows were designed to maximize daylight and views from all interior occupied areas. The ribbons' aperature opens up to the south and north with views out to the distant city and active runways, while the aperature closes down on the east facade immediately adjacent to the existing main terminal building in response to fire separation requirements and compromised daylight access and views.

Other sustainable design features include rainwater harvesting and underfloor air distribution. The project has been designed to collect all roof surface run-off into a cistern located centrally within the main terminal for grey water use and distribution. Mechanically, all air distribution to occupied floor areas is carried through under slab ductwork. This strategy provides for a more comfortable and reliable interior climate for all building occupants.


PASSIVE SOLAR SHADING
SOUTH FACE
SUMMER
WINTER
UNDERSLAB
AIR DISTRIBUTION
MAXIMIZED
NORTHERN LIGHT
NORTH FACE

TECHNICAL CONSIDERATIONS

The combined office and control tower is unique in that it accommodates a fully functioning air traffic control tower cab at the top of the new tower. This programmatic challenge informed the design of the building's cladding, as the cladding carefully responds to all downward viewing angles. These critical views include sightlines to aircraft gates and out to runway thresholds.

The shingled undulating zinc cladding creates a free-flowing sculpted skin. The material is malleable and modular, and it allows for easy installation in situ around the tower's perimeter. In addition, zinc support the project's sustainable mandate and provides an exterior surface that is naturally weathering.

A unique planning, construction, and accessibility challenge was required of the design team on this project The new tower is located airside (secure access) at a fully operational airport. Public access to the building occurs on ground side (insecure access) without going through airport security. The final solution creates a mezzanine level bridge connection that allows visitors and staff to occupy the tower without having to repeatedly go through airport security. Security is maintained horizontally well above the departures level.

00715E0900_N31

EIA (21)A

EIA (49)

EIA (50)

EIA (51)

EIA (53)

EIA (32)A

EIA (33)A

EIA (35)A

EIA (34)A

00715E0900_N52

00715E0900_N38

EIA (32)B

EIA (36)B

EIA (35)B

EIA (31)B

EIA (33)B

EIA (34)B

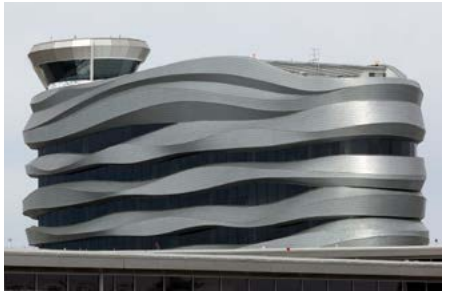
EIA (29)

EIA (30)B

EIA (15)

EIA (30)A

EIA (28)B



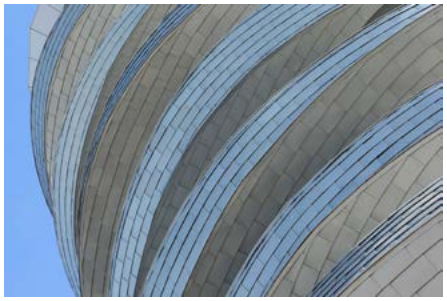
EIA (26)

EIA (01)

EIA (02)

EIA (03)

EIA (06)



EIA (04)

EIA (05)

EIA (20)A

EIA (46)

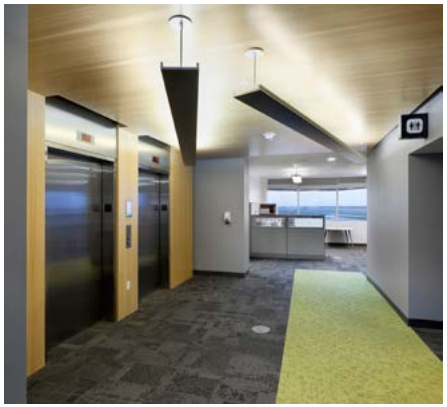
EIA (28)A

EIA (19)A

EIA (23)

EIA (24)A

EIA (55)



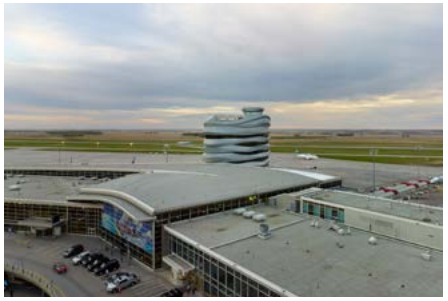
EIA (27)

EIA (25)

EIA (59)

EIA (36)

EIA (10)B



EIA (31)A

EIA (07)

EIA (09)B

EIA (17)B

EIA (13)A

EIA (16)

EIA (45)

EIA (44)

EIA (39)

EIA (41)

EIA (40)

EIA (43)

EIA (17)A

00715E0900_N23

EIA (24)B

EIA (12)

EIA (21)B

EIA (13)B

EIA (10)A

00715E0900_N17

EIA (11)

EIA (19)B

EIA (22)

EIA (20)B

EIA (09)A

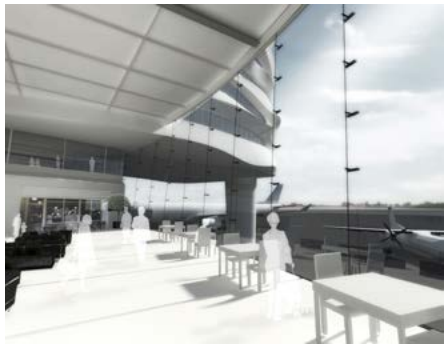
EIA (14)

Airplane Window Rendering

NE Aerial Rendering

Tower NW Perspective Rendering

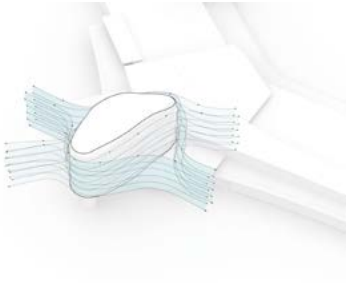
Tower NW Perspective Prelim Rendering



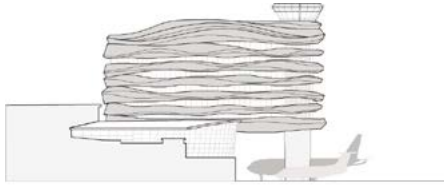
Interior Apron View Rendering

Ribbon Close-Up Rendering

Tower Cross Section



Erosion Wind Study

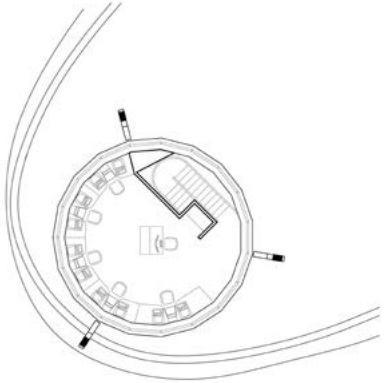


North Elevation

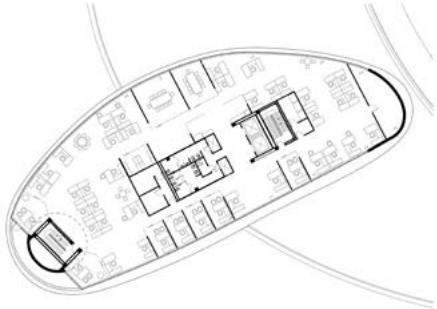
East Elevation

2nd Level Floorplan

3rd Level Mezzanine Floorplan



Cab Floorplan



Tower Floorplan

DIALOG is the language of collaboration. The name conveys the firm's uniquely collaborative approach, founded upon engagement of clients and communities by multidisciplinary teams in an interactive planning and design process that encompasses architecture, engineering, interior design, planning and urban design services. It is an approach that has garnered international recognition for the firm's outstanding contributions to the public realm and the design of cities.

At DIALOG, our philosophy is to deliver outstanding solutions that leave a lasting, positive mark on the community. Our people are unabashedly client-focused and passionate about their work – and our culture embodies talent, energy, creativity, integrity, tenacity, problem-solving ability, teamwork and a sense of fun.

In a world of increasing challenges in the way we live, move and work, DIALOG is a strong voice for innovative thinking and sustainable leadership – a discussion that benefits from the collaboration of people with unique perspectives and skills.

Hands-on leadership is provided by our 41 principals. Augmenting their leadership is an exceptional team of 88 associates who play key roles in the day-to-day operation of our studios and projects. DIALOG attributes its strength to its multidisciplinary team of over 600 people who collaborate between studios.

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For more information, please contact:
Krissy Schmidt, Communications Specialist
kschmidt@dialogdesign.ca