Appendix I : Air Terminal Building Expansion Schematic Design

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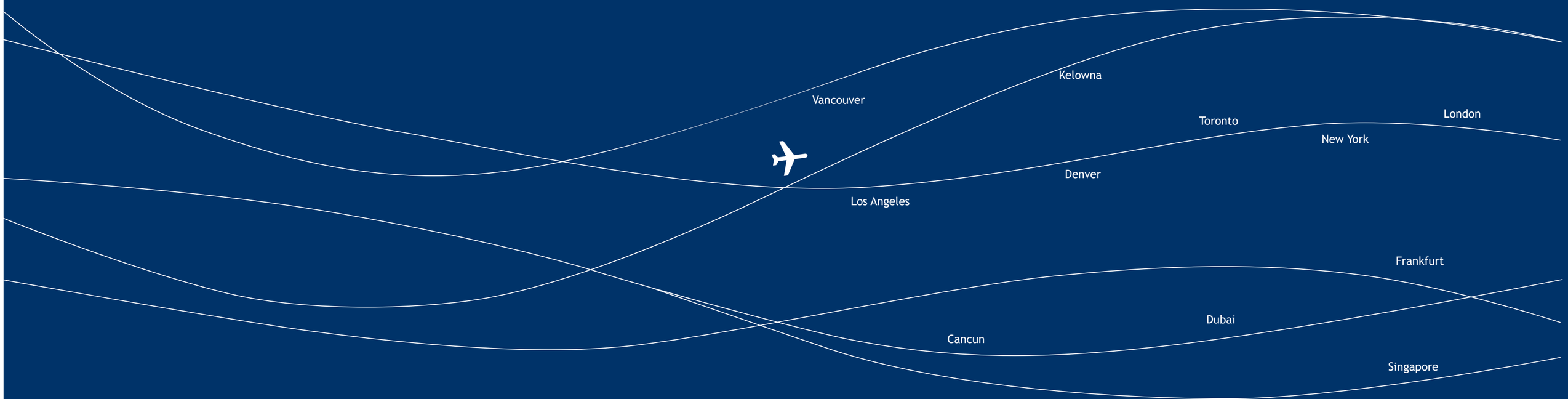
YLW
Kelowna International Airport

Kelowna International Airport

Air Terminal Building Expansion Schematic Design Report

November 2010



Report prepared by:

DIALOG

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1.0 INTRODUCTION

The Schematic Design Report for the Kelowna International Airport Air Terminal Building Expansion Project represents the completion of the initial phase of design. It is the bridge between the Master-plan and the Design Development stages and provides the Kelowna International Airport with the information to build a greater understanding of the relationship of the programme elements, building systems, organization within and relationship to the apron and airfield design, initial architectural design and preliminary cost estimates for the scope proposed.

The scope of this document includes concept design information on all major building systems inclusive of architectural, structural, mechanical, electrical, civil, baggage, building code and sustainability considerations. The information included herein was authored by the larger consultant team as follows:

Programme Manager	|	Leigh Fischer
Airfield Masterplanning	|	Leigh Fischer
Retail	|	Leigh Fischer
Architecture	|	Dialog
Structural Engineering	|	Dialog
Mechanical Engineering	|	Dialog
Electrical Engineering	|	Dialog
Sustainability Consulting	|	Dialog
Terminal Planning	|	Suehiro Architecture
Signage and Wayfinding	|	Entro
Cost Estimating	|	Hanscomb Ltd.

All work was developed in coordination with the Kelowna International Airport Authority, various internal stakeholders, agencies, airlines as well as the Airport Advisory Committee and the Accessibility Advisory Committee.

Schematic Design terminal expansions to meet passenger demand projected for the year 2025. To facilitate and calibrate this work, a Functional Programme Analysis was prepared that reviewed existing facilities against the growth projections and determined the required space needs using IATA LOS C standards. Further, a review of the existing mechanical and electrical systems was completed and an audit report completed for the sequential updating of these systems in conjunction with a defined phased programme of works. A sustainability study prepared several options for an integrated systems approach to meet CO2 reductions targets set by the City of Kelowna. Finally, the schematic design was divided into five phases of work, the first four of which are intended to be delivered by 2016 in concert with demand requirements and within defined financial constraints. The building design is to facilitate the defined aircraft parking layout prepared by Leigh Fischer.

2.0 DESIGN PARAMETERS

2.1 Airport Master Plan Forecast

The Kelowna International Airport Master Plan 2025, February 2007 records the enplaned and deplaned million annual passenger (MAP) for 2009 and forecasts the same for 2015 and 2025 as follows:

Passenger Forecast

2009 1.367 MAP (actual)
2015 1.630 MAP
2025 2.400 MAP

This data forms the basis for all programming and functional requirements for the air terminal building expansion project.

2.2 Functional Programme Analysis

Prior to the design process, the "Design Phase Air Terminal Facilities Programme Analysis*" was developed. Its' purpose was to establish a functional programme for the air terminal building expansion. It used an analysis of existing and future needs and was based on the Master Plan annual passenger growth projections to determine estimated passenger planning activity levels for the peak month, design day, design hour and surges within the design hour using IATA calibrations. Its' findings and requirements were prepared with guidance from the YLW airport authority and the airport development manager.

Further, the analysis used an assessment of aviation demand based on extraction of passenger activity from existing peak month, design day airline flight schedules that identify design hour and peak 20 minute data. A projected flight schedule was developed to generate passenger activity for 2015 and 2025 planning horizons.

Design hour passenger activity was further segregated into three travel sectors for analysis and was recorded as follows:

DEPARTURES PEAK HOUR PASSENGERS BY SECTOR		
2015	Domestic Departures	285 Passengers
2015	International Departures	110 Passengers
2015	Transborder Departures	115 Passengers
2025	Domestic Departures	345 Passengers
2025	International Departures	235 Passengers
2025	Transborder Departures	190 Passengers

ARRIVALS PEAK HOUR PASSENGERS BY SECTOR		
2015	Domestic Arrivals	340 Passengers
2015	International/Transborder Arrivals	325 Passengers
2025	Domestic Arrivals	450 Passengers
2025	International/Transborder Arrivals	405 Passengers

**The full Design Phase Air Terminal Facilities Programme Analysis can be found in the Kelowna ATB Development Concept Design, May 31, 2010. Submitted by Jacobs Engineering*

Using the data a detailed analysis was prepared to determine the Functional Programme areas required to service the passenger flows. The following is a summary of the programme areas:

FUNCTIONAL PROGRAMME FOR 2025 DEMAND	
AREA	***SM***
Check-in Counters	140
Check-in Queuing	321
Outbounding Bag & Offices	1338
Airline Offices	436
Check-in Circulation	117
Public Area	786
Public Area not in program	
Security Station - Queue	117
Security Station - Stations	660
Security Station - Offices	120
CBSA PIL	334
CBSA Secondary	765
International Device & Claim Zone	786
International Claim Hall	601
International Meeter Hall	640
Domestic Device & Claim Zone	871
Baggage Service Office	55
Domestic Meeter Hall	477
Holdroom D+I+TB	905
Holdroom TB only	457
Podium & Gate Control	440
Concessions Food	1056
Concessions Retail	528
Concessions Support	238
Admin/Operational Spaces	1690
Building Systems	2029

- *It should be noted that the services of an Air Terminal Retail Consultant were provided after the development of the Functional Programme. The Retail Programme requirements and variances from the above are described later in this document.*

2.3 Level of Service

Levels of Service designations describe the comfort and quality of the passenger experience. Levels of service define the maximum waiting times within process areas, and the design standards for amount of area allotted per passenger within each service area. The industry standard measure of level of service (as defined by IATA) is LOS C. The Schematic Design of the Kelowna International Airport is based upon achieving a LOS C for all passenger areas within the terminal.

2.4 Area Reconciliation

The design team used the functional programme to develop a concept plan*. The concept plan was reviewed and accepted by the Kelowna International Airport Authority, and forms the basis of the Schematic Design.

**Refer to the Kelowna ATB Development - Concept Design, May 31, 2010*

3.0 SITE MASTER PLAN CONSIDERATIONS

3.1 Site Constraints

The existing air terminal has significant site constraints on all sides.

To the west, the existing groundside roadway, parking areas and site topography present different challenges to the expansion plans. It was a requirement of the project that the existing groundside roadway, access from the western parking lot and pedestrian crossings were to remain. An approximate 3 meter grade difference exists from the south end of the rotunda to the south parking lot. Re-grading of the curbside is not desirable.

To the east, aircraft parking and airfield operations and obstacle limitation surfaces define expansion capabilities. The Jacobs "May 27, 2010 Aircraft Parking Layout, Kelowna International Airport" appended to this report describes the parameters in detail.

The greatest expansion capacity for the terminal building is to the south. This will require the replacement of the parking lot immediately to the south of the existing terminal. Grading from east to west must be studied as there is a considerable slope down from the airfield to the curbside.

To the north, expansion will be defined by planned future Gate 0 operations and current access to the fire hall.

3.2 Future Parkade

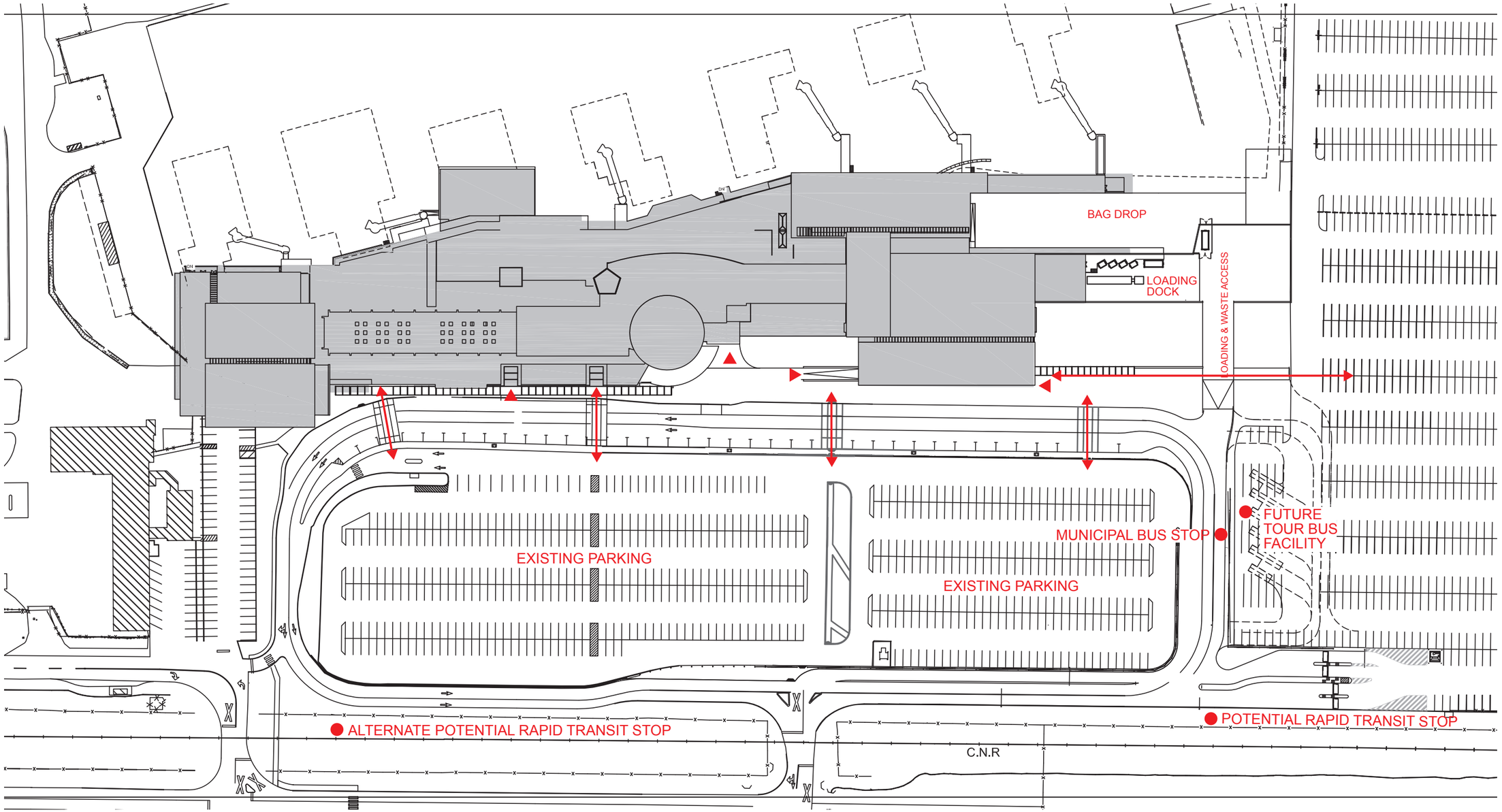
There are long term plans for a parkade to be built on the site of the west parking lot. At this time, there are no specific design plans that indicate pedestrian or vehicle access locations.

3.3 Pedestrian Crossings at Curbside

The four existing pedestrian crossings at the curbside roadway are located to connect directly with the existing entry points to the terminal. This condition will continue as is for the two northerly crossings.

The new Domestic Arrivals facility will provide two entry points. The south entry point will give direct access south to the south parking lot as well as functioning for curbside drop off and pick ups. As the grade is 3 meters lower than the floor elevation of the Domestic Meeter Greeter facility, two escalators, a stair and an elevator are provided just inside of the entry point. As it is anticipated that the majority of passengers using this entry point will be moving between the terminal and the south parking lot, no pedestrian crossing is provided to the west parking lot across the curbside roadway.

The north entry point to the Domestic Arrivals facility is accessed by a 5% grade up from the curbside roadway. Slopes 5% and smaller are not considered ramps. The north end of the entry point to the terminal is slightly to the north of the existing pedestrian crossing from the west parking lot. In order to minimize rework to the existing roadway direction was received to maintain this walkway location. In the future, a direct pedestrian connection from the new parkade may be considered that directly aligns the walkway with the north entry to the Domestic Arrivals facility.


BAG DROP
LOADING DOCK
LOADING & WASTE ACCESS
EXISTING PARKING
EXISTING PARKING
MUNICIPAL BUS STOP
FUTURE TOUR BUS FACILITY
ALTERNATE POTENTIAL RAPID TRANSIT STOP
POTENTIAL RAPID TRANSIT STOP
C.N.R
N

SITE PLAN

3.4 Curbside

The concept plan identifies a new Domestic Arrivals Facility to the south of the project, separate from the International Arrivals Facility to the north. This has an obvious impact on the design of curbside operations with demand for drop off and pick up now in two locations. The following drawing indicates the available pick-up/drop-off positions. The number will increase from the existing as the bus lay by will be removed. Specific allocations for taxi, personal vehicles will be determined in later phases of the design.

3.5 Tour Bus Loading Facility

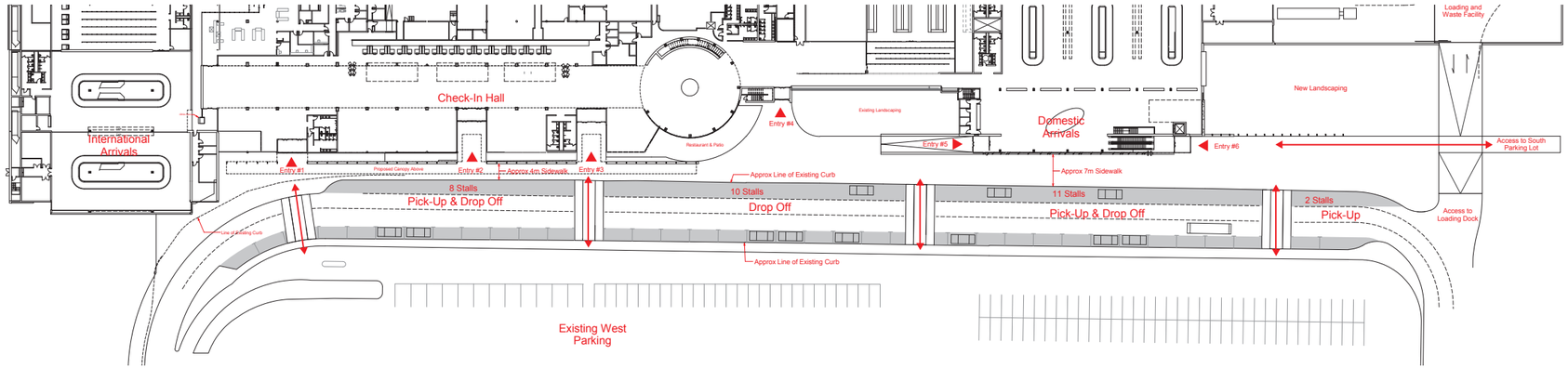
The existing bus lay by on the curbside roadway will be removed at the time of construction of the Domestic Arrivals facility. The opposite site plan indicates a location for tour bus loading directly to the south of the south curbside access road with capacity for six full size coaches. Space has been provided for safe queuing of passengers and for the provision of a roofed shelter. The shelter can also serve city busses stopping at a proposed bus stop just to the north of the Tour Bus area.

3.6 Rapid Transit Connection

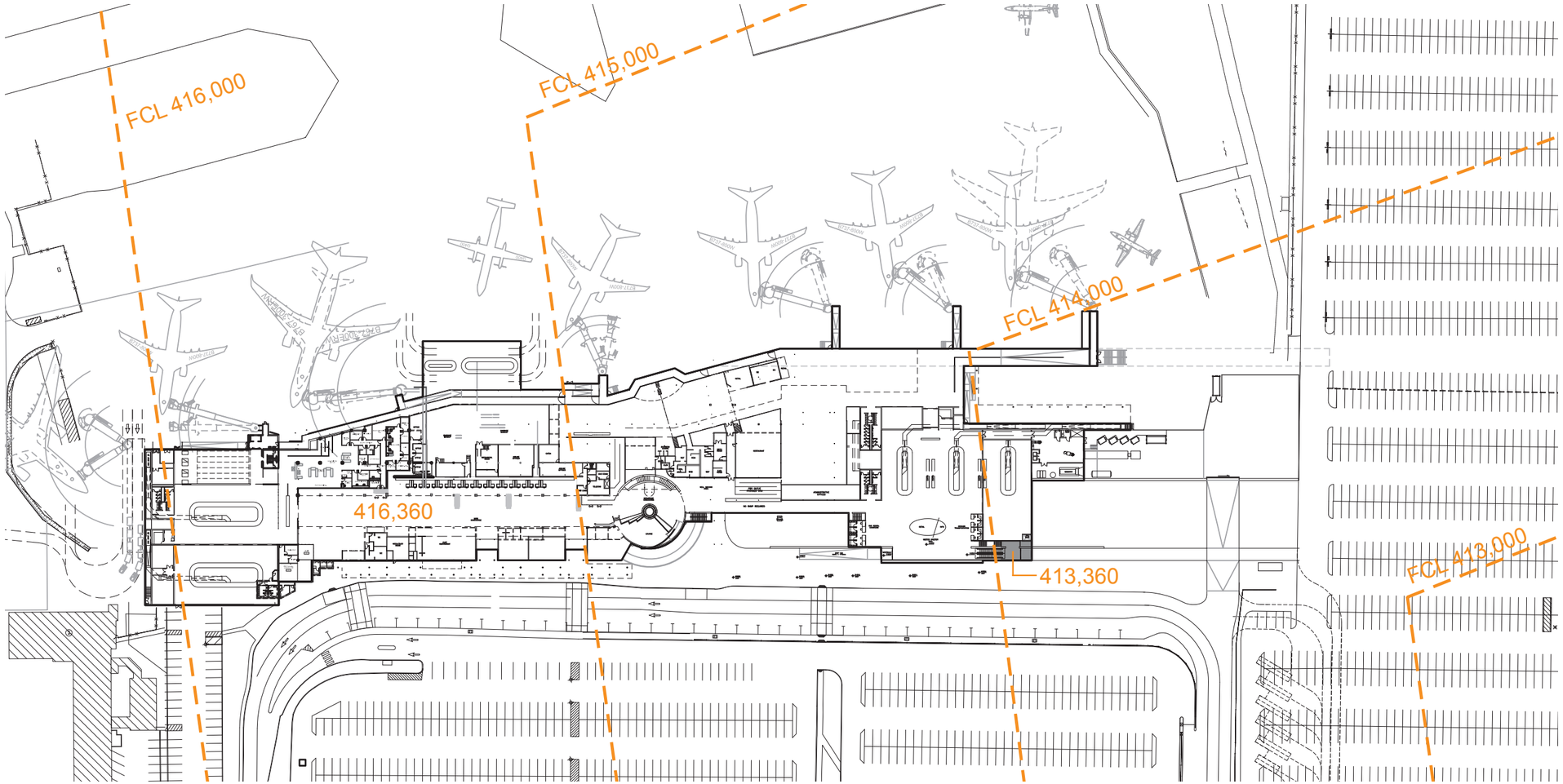
It is recognized that there is a long term potential to connect the air terminal with a rapid transit system. It is understood that the system would utilize the existing rail corridor running along the western edge of the west parking lot. The Schematic Design identifies a potential location for a future rapid transit stop directly to the west of the tour bus loading area. There are advantages to co-locate the bus, rail and pedestrian access to the terminal in the same general location. Future study will be required to understand the implication of the vehicle access to the south parking area in the same area on pedestrian movement, safety, and potential congestion for vehicles accessing the parking lot. It may be desirable to locate the rail stop further to the north away from the parking access to segregate pedestrians from the intersection.

3.7 Traffic Study

The current site and curbside master plan has not been confirmed by a specialized traffic consultant. To ensure appropriate access and movement control throughout the site that anticipates proposed development, further study by a traffic consultant is recommended.



CURBSIDE DRAWING



FLOOD CONSTRUCTION LEVEL DRAWING

3.8 200 Year Flood Plain

The Province of British Columbia has mandated that all municipalities develop provisions within their bylaws to protect buildings built within the 200 year flood plain. The City of Kelowna is in the process of preparing a bylaw to comply. A final copy of the bylaw is not yet available and the boundary drawing with defined Flood Construction Levels (FCL) is in draft form only. The consultant team has determined that the air terminal lands are within the boundary controlled by this bylaw and that the existing main floor level of the terminal is above the 200 year level. However, the existing grade drop toward the south has implications for built elements at the south end of the project area that require grade access or have floor levels below the defined FCL. Further, elements such as conveyor tunnels may require special construction considerations.

4.0 AIRSIDE PLANNING

4.1 Aircraft Parking Layout / Gate Matrix

The Aircraft Parking Layout was developed for the Kelowna International Airport by Jacobs Engineering. The full study entitled "Aircraft Parking Layout, Kelowna International Airport, May 27, 2010 was included in the Concept Design submission, May 31, 2010 for reference. The following is a summary of the study provisions:

The 2016 Schematic Design provides a total of 8 gates plus one future gate(titled gate 0). Gates 1,2,4,5,6, and 7 are equipped with Passenger Boarding Bridges. While all Gates have ground loading capability, Gates 3 and 8 are ground load only positions. The attached matrices (labelled figures 1.2 and 1.3 from the May 27th Aircraft Parking Layout Report) indicate the aircraft gauge that can be accommodated at each position, whether the bridge is new or relocated; and, fixed link lengths needed to connect to the ATB.

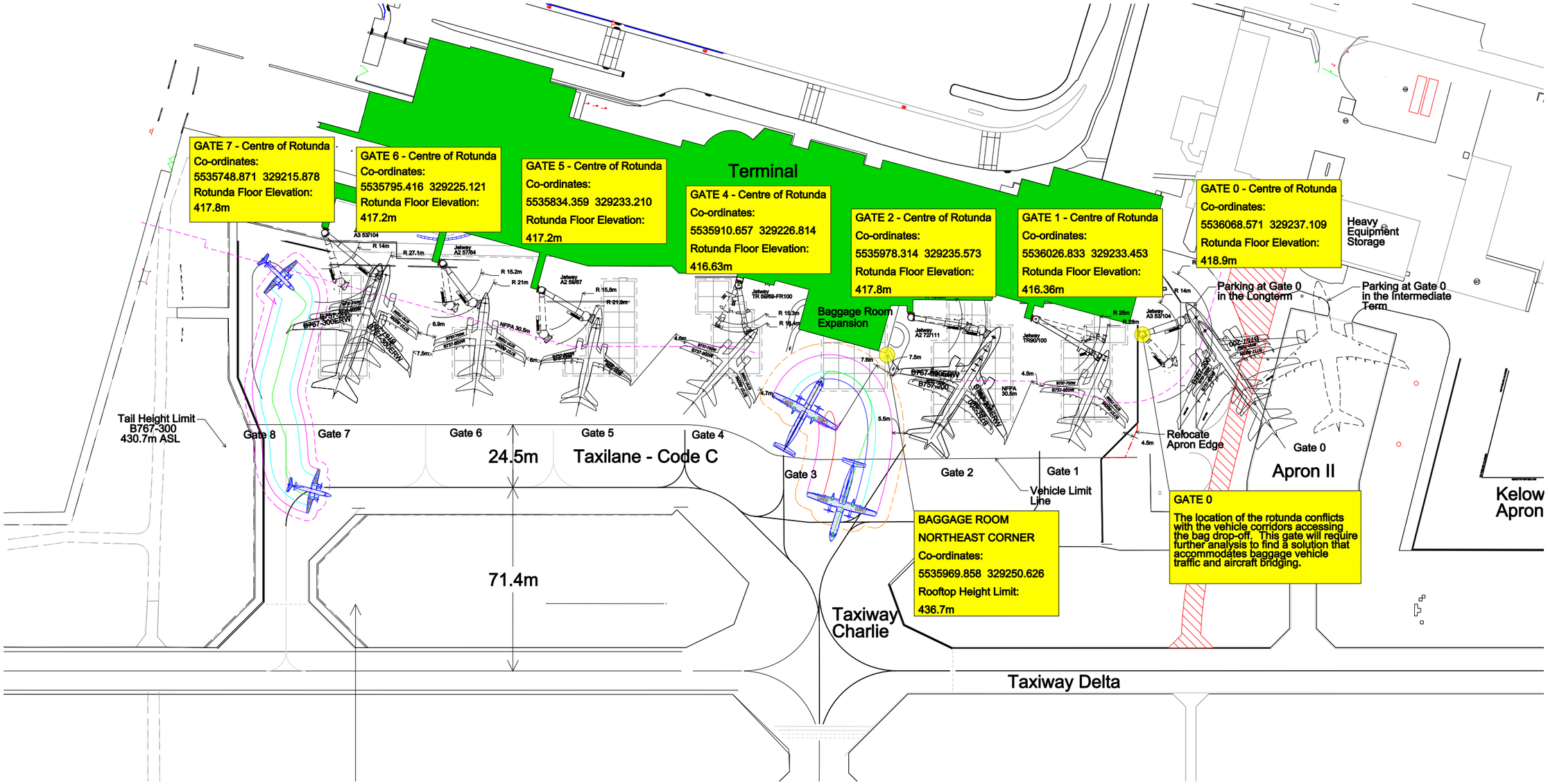
New Passenger Boarding Bridges (PBBs) will be required to service Gates 0 and 7. All other gates will re-use existing bridges.

To achieve the proposed layout, adjustments to bridge placement, rotunda locations and elevations are required. Design Rotunda elevations required to service the planned aircraft at Gate are indicated on the attached plans.

A future gate expansion is anticipated in the long term to the North for Gate 0 and South to accommodate 2025 master plan requirements. A future Gate 0 to the north could accommodate code E aircraft. As indicated on the diagram, a high level loading corridor is anticipated to span the access to baggage loading area.

GATE MATRIX

AIRCRAFT	0	1	2	3	4	5	6	7	8
1	Future			Non Bridged					Non Bridged
A310-300 (Widebody)			x					x	
B767-200 (Widebody)			x					x	
B767-300/300W (Widebody)			x					x	
B757-200/200W			x					x	
A318		x	x			x	x	x	
A319		x	x			x	x	x	
A320		x	x			x	x	x	
B737-600		x	x		x	x	x	x	
B737-700/700W		x	x		x	x	x	x	
B737-800/800W		x	x		x	x	x	x	
EMB190		x	x		x	x	x	x	
CRJ100		x	x		x	x	x	x	
CRJ200		x	x		x	x	x	x	
CRJ705		x	x		x	x	x	x	



AIRCRAFT PARKING LAYOUT

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EXHIBIT I-2: BRIDGE SLOPES (%)

AIRCRAFT	GATE 0	GATE 1	GATE 2	GATE 4	GATE 5	GATE 6	GATE 7
A318	-0.81	-4.92	-3.59	-11.47	-7.54	-7.90	-3.52
A319	-0.85	-4.95	-3.63	-11.52	-7.58	-7.95	-3.56
A320	-0.90	-5.06	-3.73	-11.69	-7.71	-8.08	-3.68
B737-600	+2.61	-2.26	-1.14	-7.55	-4.39	-4.98	-0.19
B737-700/700W	+2.61	-2.26	-1.14	-8.00	-4.39	-4.98	-0.19
B737-800/800W	+2.61	-2.26	-1.16	-8.00	-4.56	-4.98	-0.19
EMB190	+2.56	-2.17	-0.99	-7.78	-4.19	-4.79	-0.22
CRJ 100/200	+6.95	+2.00	+3.07	-2.05	+0.99	+1.02	+3.77
CRJ705	+5.35	+0.64	+1.74	-3.03	-0.73	-0.91	+2.34
B757-200 L1 Door	-4.44	N/A	-5.64	N/A	N/A	N/A	-5.96
B757-200 L2 Door	-3.47	N/A	-5.46	N/A	N/A	N/A	-4.83
A310-300	-7.44	N/A	-7.69	N/A	N/A	N/A	-7.98
B767-200	-6.71	N/A	-7.35	N/A	N/A	N/A	-8.12
B767-300 L1 Door	-6.86	N/A	-7.13	N/A	N/A	N/A	-8.26
A330-200 L1 Door	-7.88	N/A	N/A	N/A	N/A	N/A	N/A
A330-200 L2 Door	-7.43	N/A	N/A	N/A	N/A	N/A	N/A
A330-300 L1 Door	-7.45	N/A	N/A	N/A	N/A	N/A	N/A
A330-300 L2 Door	-6.60	N/A	N/A	N/A	N/A	N/A	N/A

Source: Jacobs Consultancy 2010

FIGURE 1.2

EXHIBIT I-3: PRELIMINARY FIXED LINK LENGTHS

GATE	ROTUNDA FLOOR ELEVATION (METRES ASL)	BRIDGE MODEL	FIXED LINK LENGTH (METRES)	COMMENTS
0	418.9	Jetway A3 53/104 125R (Proposed)	To be determined	Switchback recommended
1	416.36	Jetway TR 90/100 FR100 (Relocated)	4.6	-
2	417.8	Jetway A2 72/111 125R (Relocated)	37.7	Switchback recommended
4	416.63	Jetway TR 59/69- FR100 (Existing)	4.07	Existing location
5	417.2	Jetway A2 59/87 125R (Relocated)	11.0	-
6	417.2	Jetway A2 57/84 125R (Relocated)	11.0	-
7	417.8	Jetway A3 53/104 125R (Proposed)	15.5	-

Source: Jacobs Consultancy 2010

FIGURE 1.3

4.2 Gate Flexibility / Sector Segregation

YLW operates three sectors; Domestic Departures and Arrivals, International Departures and Arrivals and Transborder Departures. YLW does not operate a Pre Clearance Facility, nor is there one planned in the foreseeable future. Transborder outbound passengers are screened with all other Domestic and International outbound passengers and arrive in the US as International Arrivals and process through Customs and Immigration in the US.

Recent events required YLW (and all other Tier 2 Airports in Canada) to construct a temporary Transborder Hold room to segregate passengers immediately post Pre Board Screening, and to maintain that segregation in the airside corridor. Early design studies identified a position for a completely separate Transborder screening facility however this is not currently a requirement. Should it be deemed necessary in the future, that plan as indicated on the approved Concept Plan could be implemented. Requirements for a fully segregated hold room have similarly been relaxed.

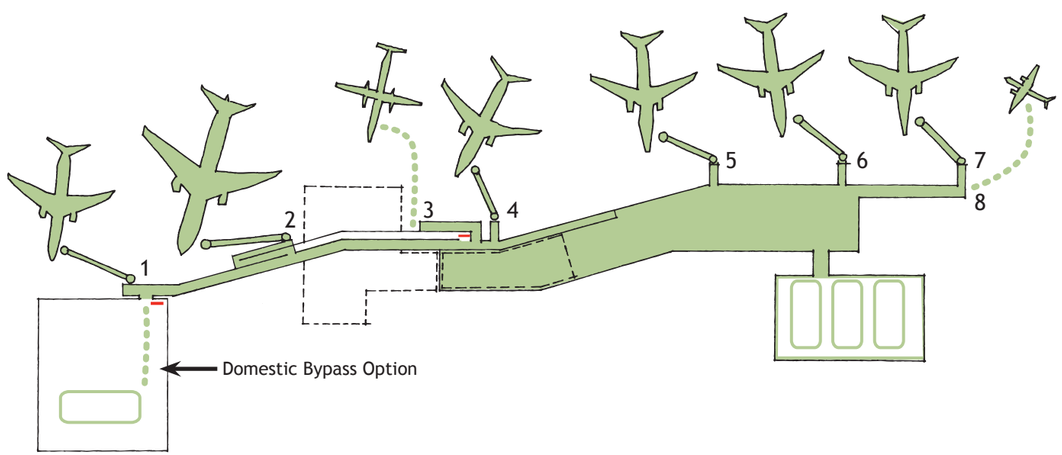
Current regulations for Tier 2 terminals call for a dedicated Full Body Scanner to be available adjacent to the Transborder Boarding Podiums in the hold room. Passengers identified to require this screening procedure will be pulled out of the boarding line prior to boarding the aircraft. A fully segregated hold room is not required. To anticipate the potential of a changing security environment, the Schematic Design includes a moveable partition that could segregate the hold room with 100 seats available for Transborder passengers. Provisions for more washroom facilities that would accompany a fully segregated hold room scenario have not been included at this time and would require further study.

Elsewhere in this document a description is provided of the development of a new Domestic Arrivals Facility to the south of the terminal, with International Arrivals facilities maintained at the north end. It is therefore for proximity reasons that Gates 1, 2, 3 and 4 are available for International Arrivals, with Domestic operations focused at the south. Transborder operations will share gates 1,2,3 and 4 in order to facilitate turns for International Arriving aircraft to depart Transborder.

The following diagrams demonstrate the ability of the facility to accommodate:

- A Maximum of 8 Simultaneous Domestic/International departures and Domestic arrivals Gates
- A maximum of 4 Simultaneous Transborder Departures Gates
- A maximum of 4 Simultaneous International Arrivals Gates

A desire was expressed early in the design process to eliminate the airside corridor to reduce confusion for passengers moving in opposite directions within the corridor. To that end the airside corridor was deleted between Gates 4, 5 and 6 when operating in Domestic modes. Domestic arrivals will transit through the hold room to domestic bag claim. For Gates 1, 2, 3 and 4, the airside corridor remains a requirement due to the location of the boarding podiums relative to the gate position, and in order to maintain segregation between international arriving passengers from Domestic / International / Transborder departures. Segregation is achieved through the use of doors within the corridor that “switch” the corridor between sectors.



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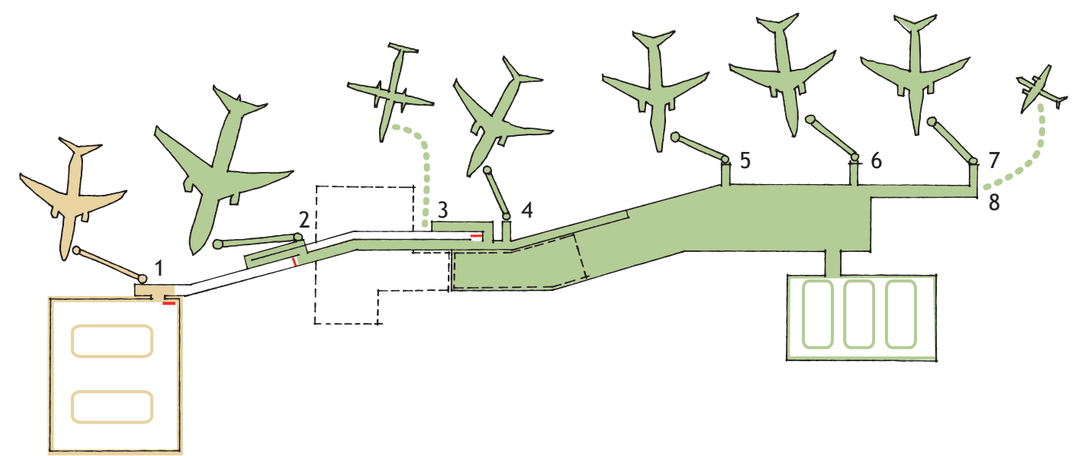

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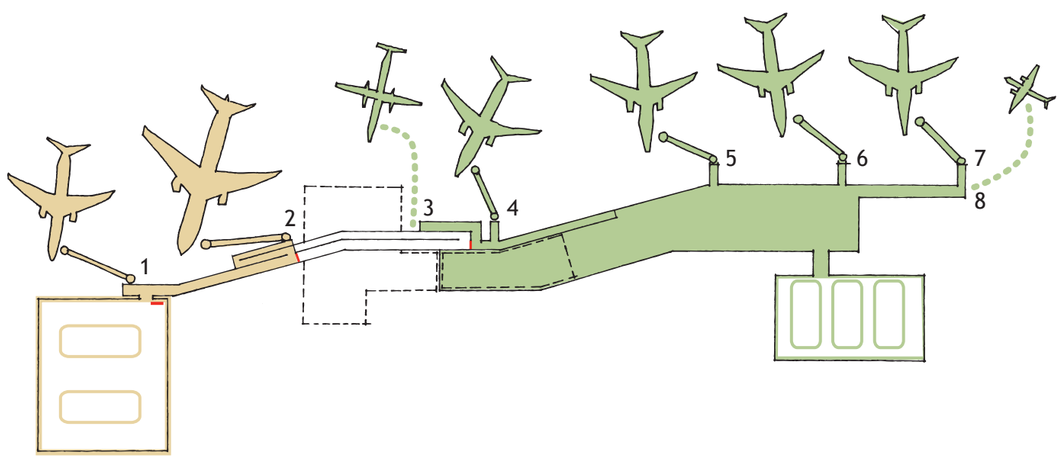

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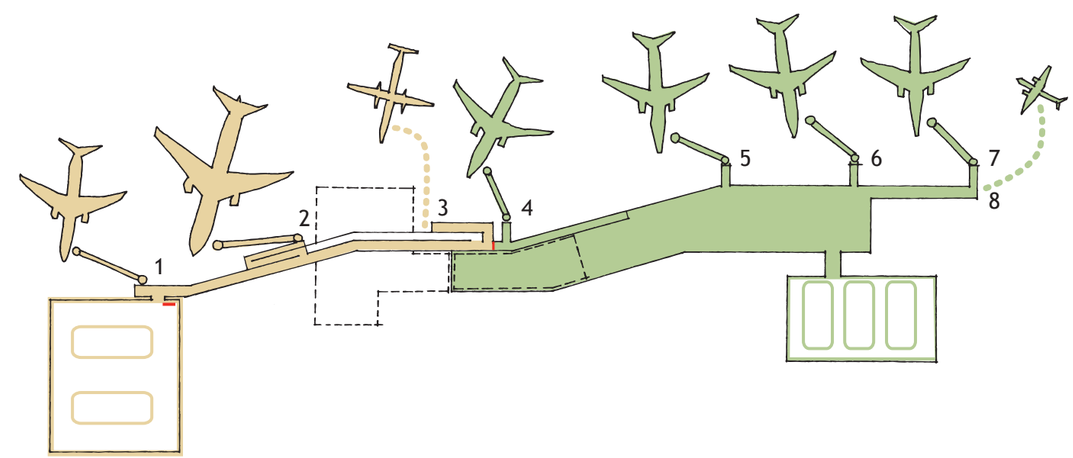


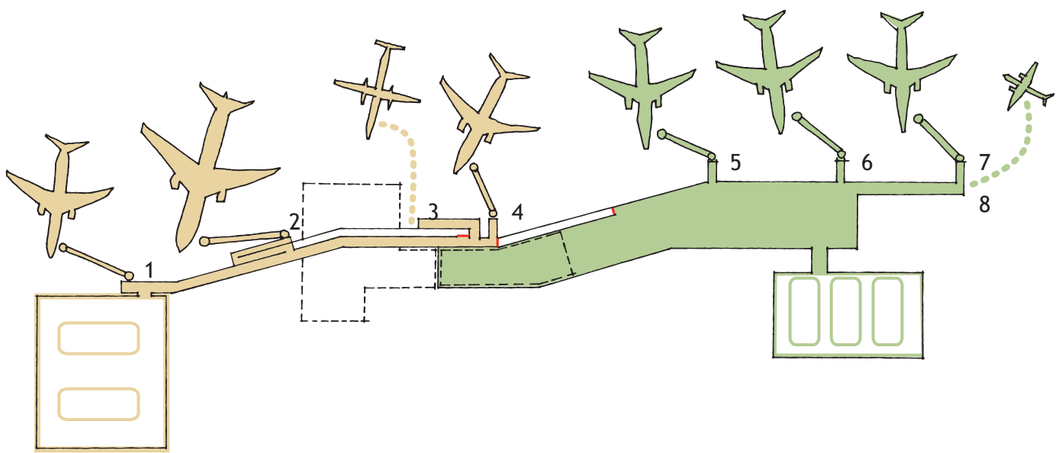
Configuration 4

FLEXIBILITY DIAGRAMS

Domestic Inbound + Domestic / International Outbound

Transborder Outbound

International Inbound



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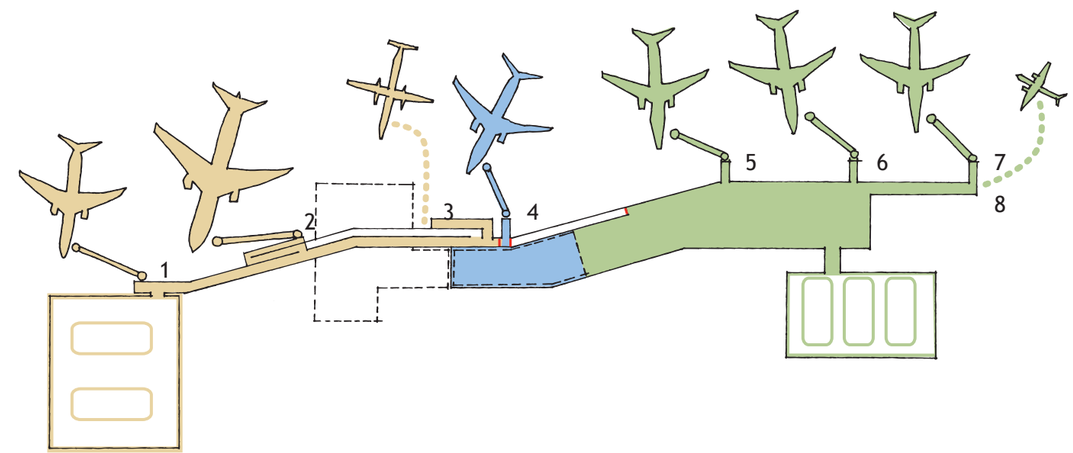

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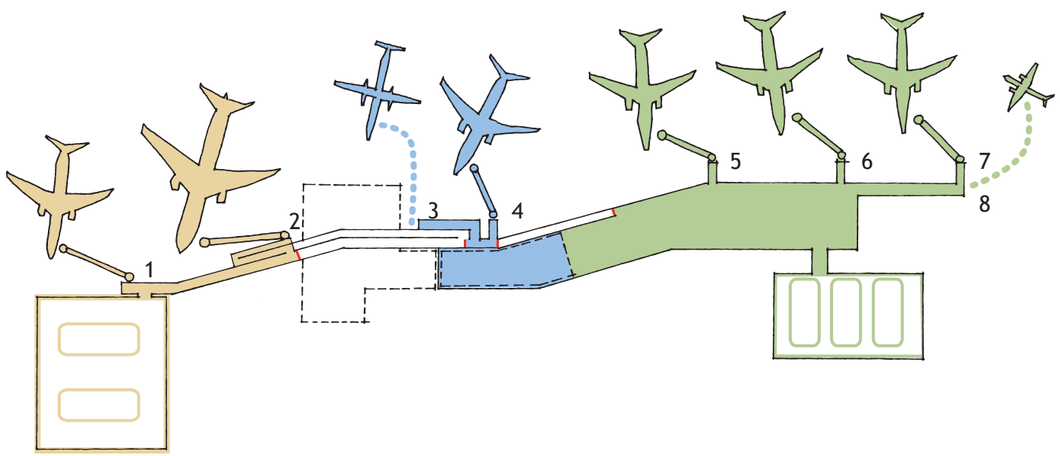

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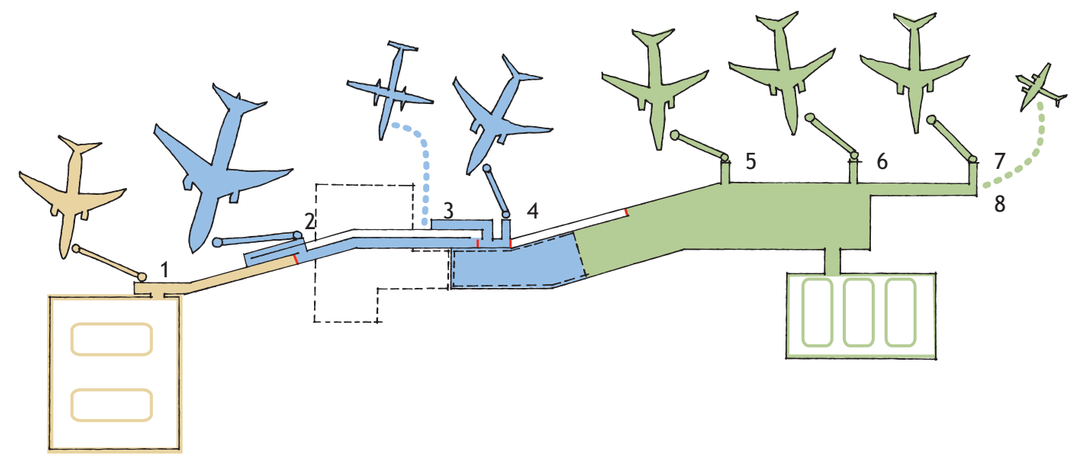
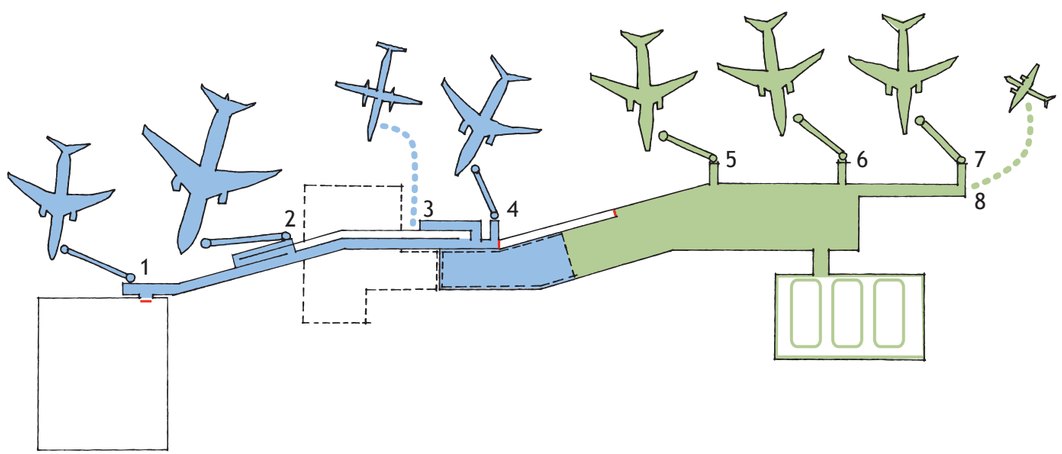


Configuration 8

FLEXIBILITY DIAGRAMS

Domestic Inbound + Domestic / International Outbound
Transborder Outbound
International Inbound



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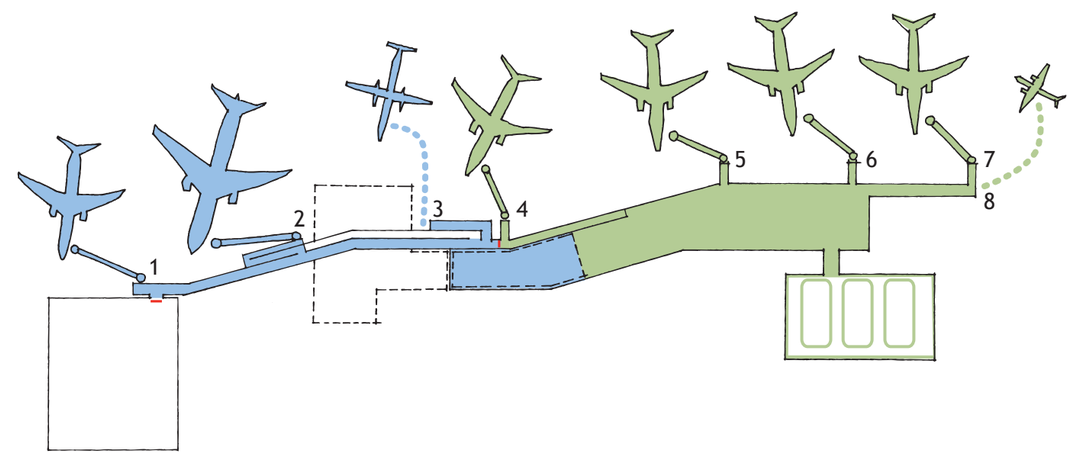

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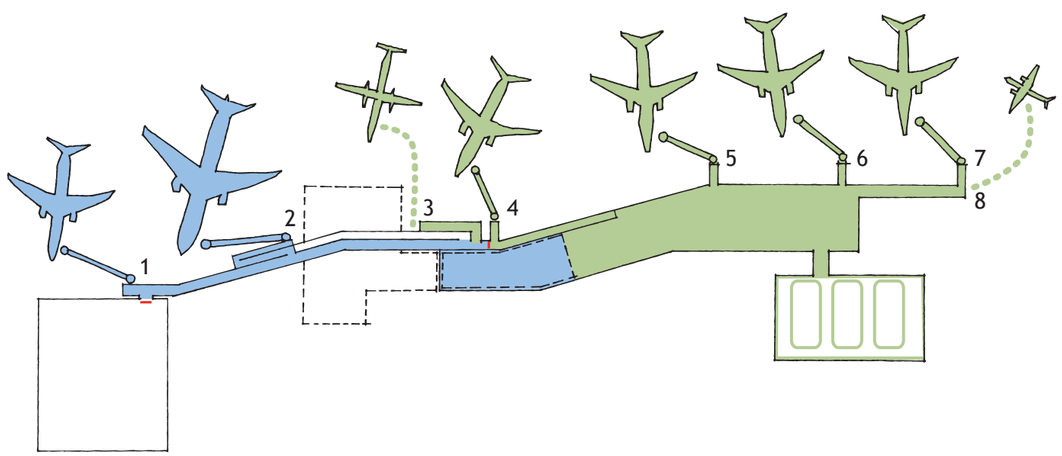
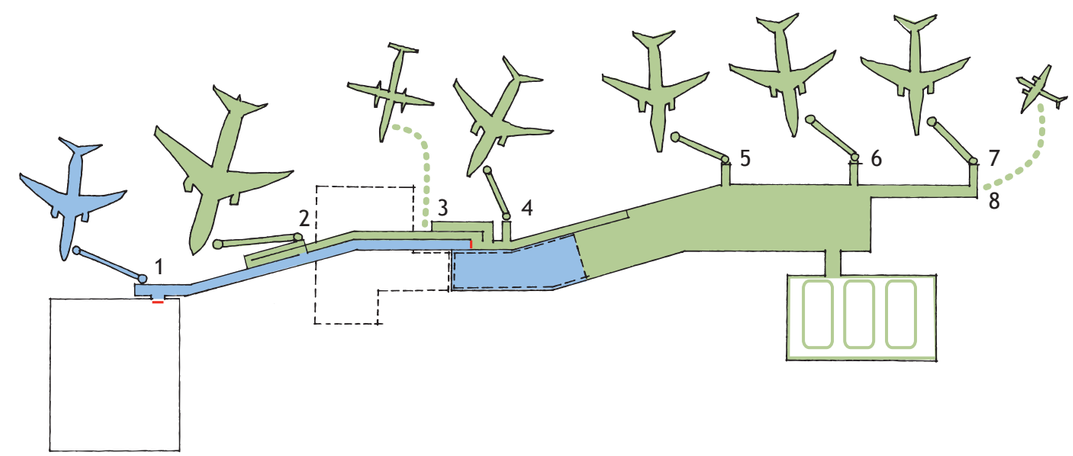


Configuration 11



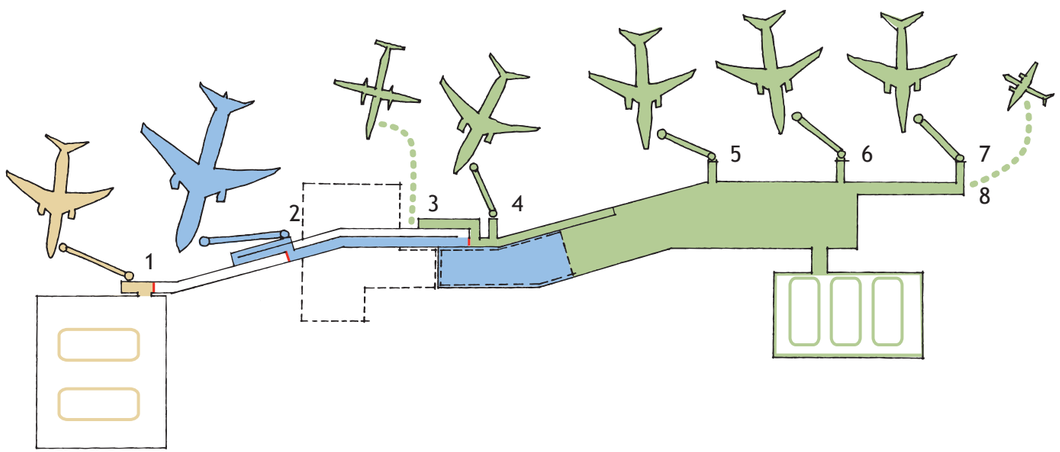
Configuration 12

FLEXIBILITY DIAGRAMS

Domestic Inbound + Domestic / International Outbound

Transborder Outbound

International Inbound



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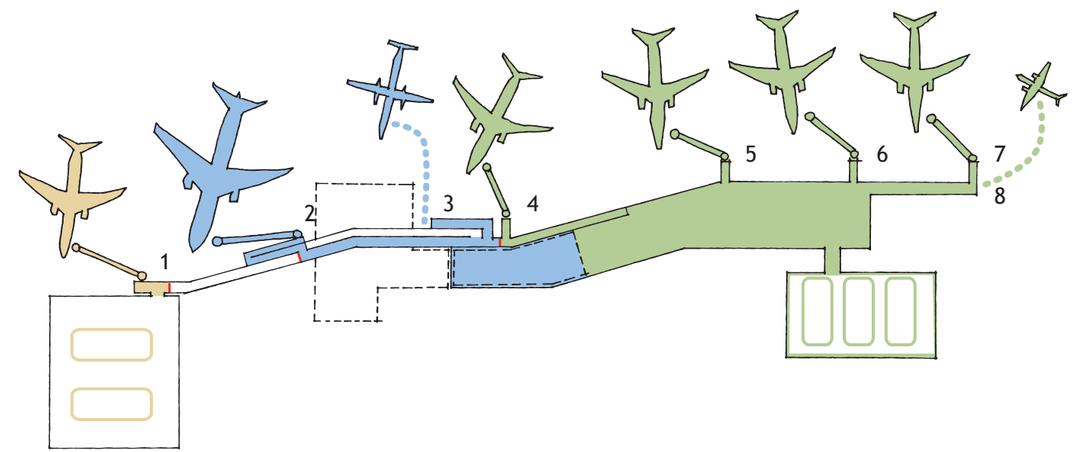
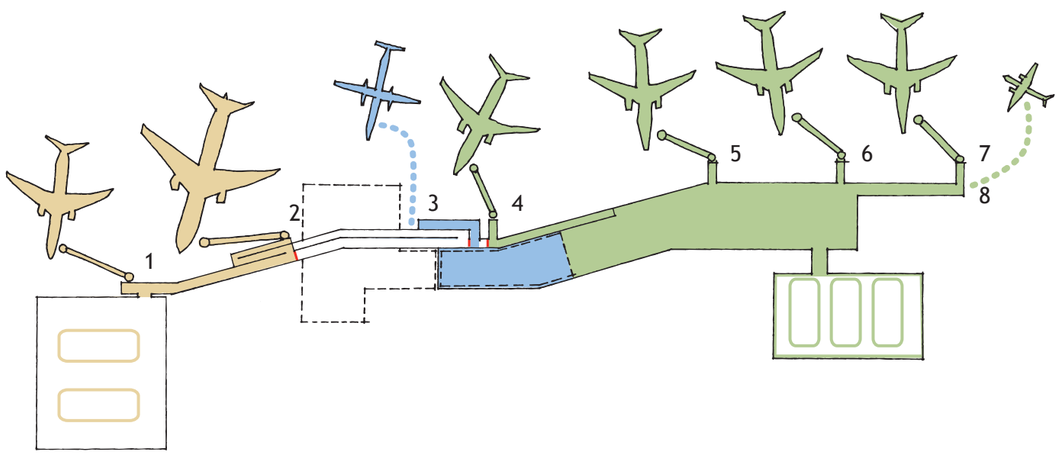


Configuration 13



Configuration 14

FLEXIBILITY DIAGRAMS

Domestic Inbound + Domestic / International Outbound

Transborder Outbound

International Inbound

5.0 ARCHITECTURAL DESIGN PHILOSOPHY

5.1 The Importance of Identity

Air terminals serve a special purpose within their communities. They are commonly described as the modern gateway to the city - as the first and last point of contact with a particular place. It is here that the first impressions and last memories of a place are made. In Kelowna, where tourism is a significant economic driver, establishing a "sense of place" that is specific, identifiable and unique within the airport is of even greater significance.

Kelowna and the Okanagan region have historically been recognized as a unique geographical area within Canada. Scenic, rich in recreational and cultural activities, blessed with a good climate and quality of life, the region has long been a four season tourism destination and is increasingly becoming a full time residence for many. The combination of all of these assets and its unusual geography is what makes the area desirable and unique. Visitors have an expectation that their experience of the area will begin with their first steps in the airport; residents, business leaders and the airport authority have an expectation that their airport present an inviting, positive and memorable image of the Okanagan. Establishing this identity will differentiate Kelowna International Airport, making it part of the positive experience of being in the Okanagan.

The architectural tools that will be used to establish identity are:

- material selection that is based on local geographic materials, textures and colour palettes
- an architectural language representative of central British Columbia
- a built form that is responsive to the local climate
- a retail programme that promotes and highlights regional products and services
- landscaping that uses indigenous plants and landscape forms
- theme works incorporated throughout the project representative of themes specific to the Okanagan Valley
- rotatable theme works programme that is able to emphasize the best of each season

5.2 Themes

In June, 2010, a workshop was held with Airport Advisory Committee, airport authority officials and the design team to identity the key themes to be used to establish a unique Okanagan identity within the air terminal design.

The design team presented a series of precedents from other Canadian air terminals and significant Okanagan building examples to illustrate how architecture and theming work together to establish identity. The participants were then provided with several hundred images and asked to each choose three that spoke to them about their community. The following collage was created using the images chosen by the participants. The group then discussed the significance of the images and developed the following themes to be used to establish a unique Okanagan identity within the terminal expansion.

In no particular order:

- **Quality of Life**
- **Place names**
- **First Nations**
- **Climate - Four Season Lifestyle**
- **Wildlife**
- **Arts and Culture**
- **Geography**
- **History of Travel**
- **Diversity in Agriculture**
- **Regional Landscape**
- **Lake Okanagan**

Workshop Participants

Mayor Sharon Shepherd, City of Kelowna (Chair)

Mayor Marty Bootsma, City of Salmon Arm

Meryle Corbett, Kelowna Chamber of Commerce

Brian Wills, Greater Vernon Chamber of Commerce

Councillor David Knowles, District of West Kelowna

Colin Day, Kelowna City at Large

Len Novakowski, Westbank & District Chamber of Commerce

Mayor Wayne Lippert, City of Vernon

Terry Condon

Councillor Robert Hobson, Regional District of Central Okanagan (City of Kelowna)

Janice Liebe, Project Architect, DIALOG

Jim Slavin, Leigh Fischer

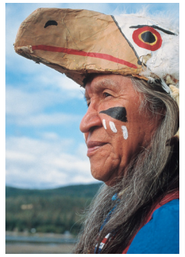
City of Kelowna Staff: Ron Mattiussi, City Manager

Paul Macklem, GM, Corporate Sustainability

Sam Samaddar, Airport Director

Henry Castorf, Airport Development Manager

Arlene McClelland, Recording Secretary



5.3 Architecture and Geography: Building a distinct Sense of Place

During the research for this project the design team reviewed thousands of images and culled it down to one photo that is most representative of the geography of the area. It contains four elements that are essential to a description of Okanagan geography:

Sand

Sand of course for the many beaches, but also for the sand cliffs that are seen along the lake, and in the ground of the dry hills and mountains. The palette of the colours found in the sandy soils establishes a base of beiges, pinks, greys and terracottas. These colours shift in intensity up and down the valley but the general palette is the same.

Wood

The Okanagan forests are distinctive for the Ponderosa pine. Tall, singular and sculptural, they are instantly recognizable.

Lake

Okanagan, Skaha, Kalamalka, Wood, Osoyoos, Vaseaux; the valley is always in view of water - and water of many colours. One can often distinguish a lake in the Okanagan simply by its hue.

Sun

And of course the quality of light. In the summer it is the heat of the sun on the lake, in the winter the bright clarity of sun at the top of Big White. Without it the Okanagan would not be the place that it is.

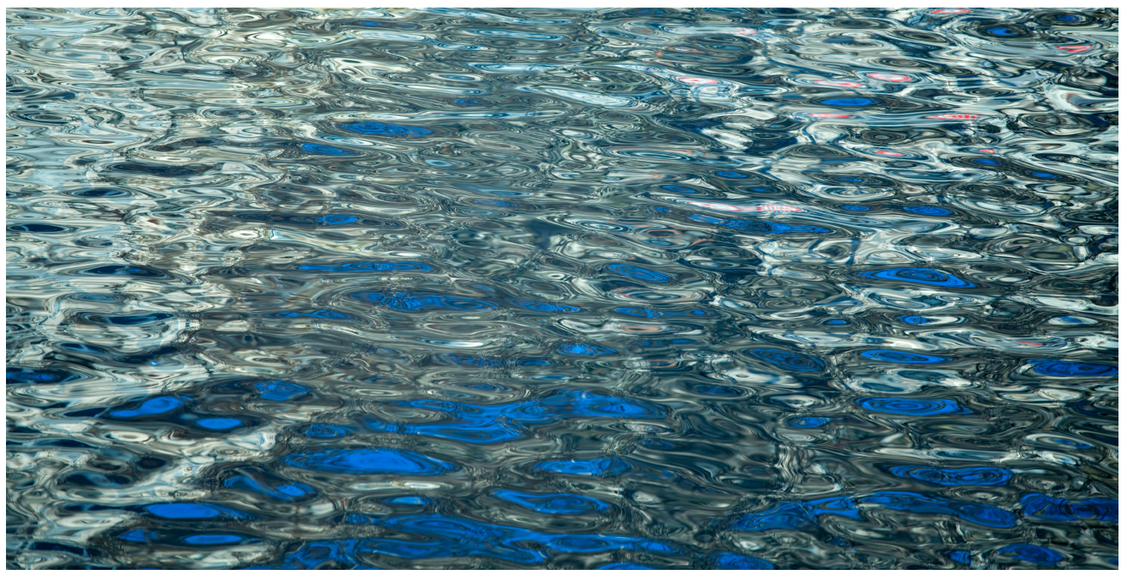
Base Building Design Architecture is the base, or the frame for the rest of the project. It is a stage set, establishing a tone over which many other elements are layered. The establishment of this base is critical to tying the terminal to this particular place on the planet. For these reasons, the architecture will be based on the four distinctive Okanagan geographical elements described above:

Sand will be represented in distinctive feature walls of rammed earth. This type of construction is not actually soil, but pigmented concrete that is hand tamped into concrete forms, giving it a distinctive layered quality. It has the texture of sand and the colour palette will be specifically tuned to be of the colours found in the natural soil in Kelowna. To our knowledge it has never been used in an airport. The largest example of rammed earth construction is in the Okanagan, at the N'kMip Desert Cultural Center.

The iconic quality of the Ponderosa pine will be represented by the structural columns clad with timber. Wood will be used only in a vertical format, in a scale and weight that is similar to the singular pines. The front façade of the domestic arrivals hall will feature a "forest" of columns in an irregular rhythm, casting shadows light and shade into the interior.

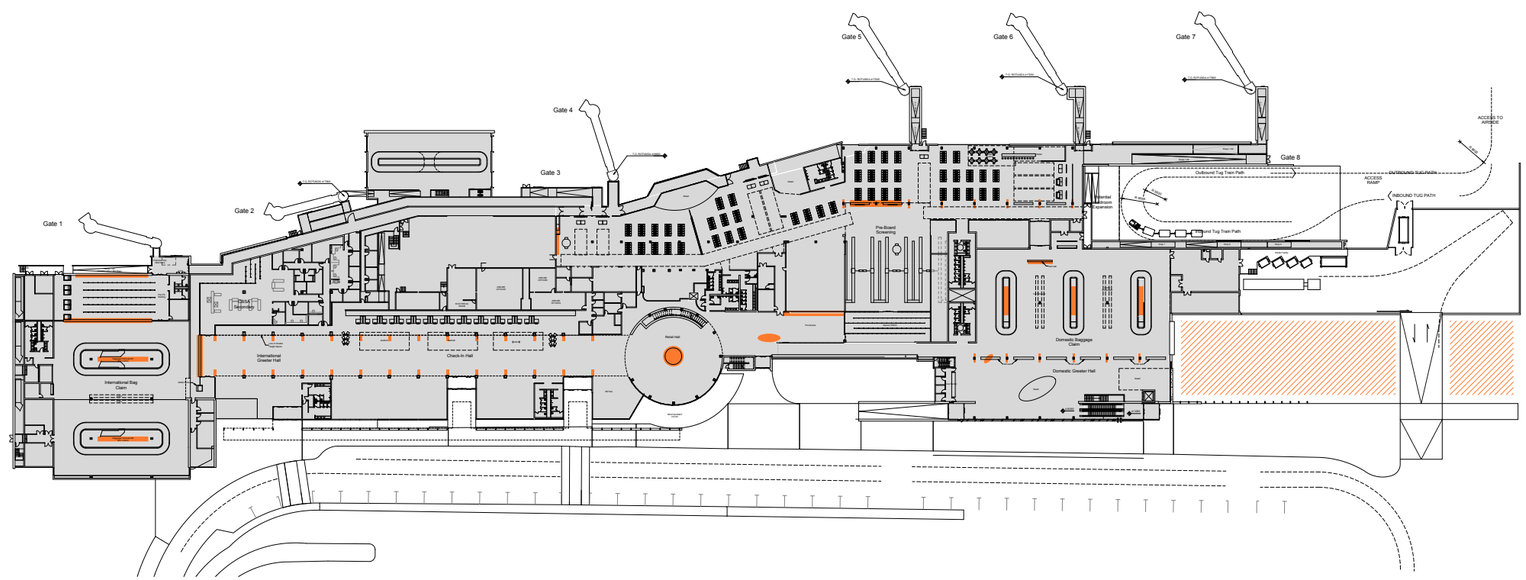
Lake blue, or rather the many hues of Lake blue will form a significant part of the palette. Blue is already in use in the flooring tile and carpet of the terminal, and in the etched glass of the Polaris sculpture in the centre of the Rotunda. Blue will be the focus of the flooring materials, will change and merge from north to south, representing the many lakes in the Okanagan.

Sunlight will be a central theme in the design. The lighting strategy using clerestory windows in the original terminal will be maintained and extended into the new areas. Some clerestory windows may be re-instated in the original where they have been closed over time. Letting in light can also mean letting in heat. Architectural strategies for controlling excessive solar heat are often defining features to warm climate architecture. Deep overhangs, punched windows in solid facades, bolder solid forms are some of the features one finds in desert architecture. These will be found in the design of the terminal as well.



Layered overtop of the architecture are many other elements, some more literal themed devices. The Kelowna International Airport already has some significant pieces that will be maintained in the future expansions, such as the Polaris sculptures and the Gallery Wall at the entry to pre-board screening. The design for the expansion has established key locations within the design for future thematic pieces.

Some of these may be fixed items that are part of the architecture. Others may change overtime, such as a rotating banner display that emphasizes the distinct attributes of the Okanagan seasons. The specifics of the theming programme will be developed in detail with the next phases of design and will be considered as part of each phase and each discipline including retail, signage and wayfinding, architecture and landscape design.



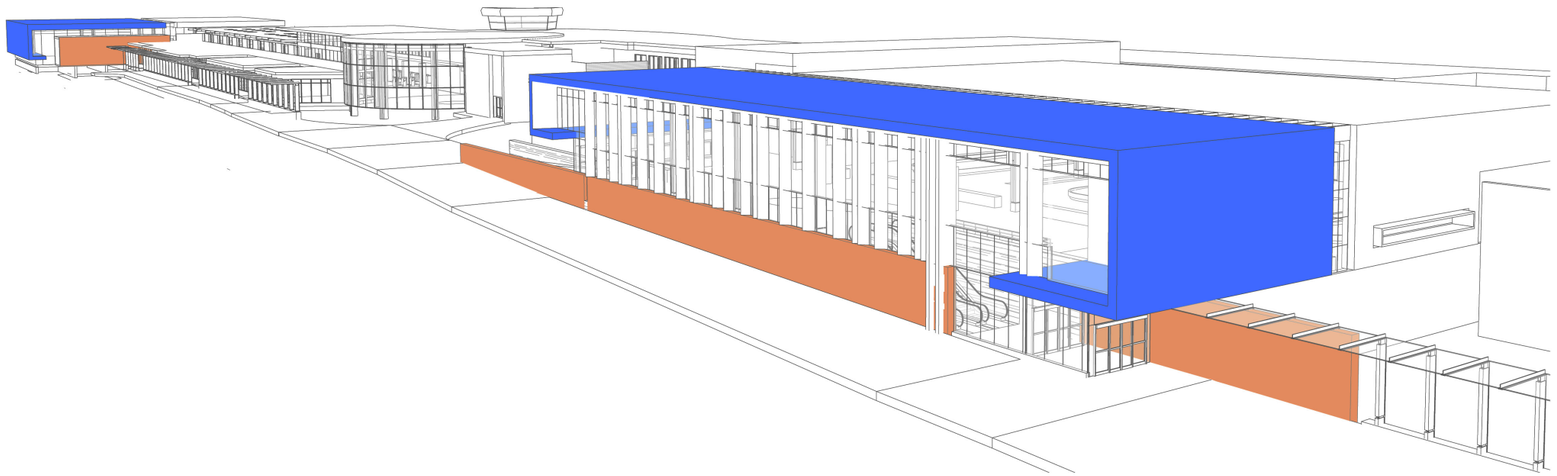
THEMEWORK POTENTIAL LOCATION PLAN

Cohesion The existing terminal building has been built over time and in a number of phases. The first additions were relatively similar to the original building using similar materials and building forms. Later additions are distinctly different in scale, form and material. As a result, the exterior view of the terminal clearly indicates at least five different of phases of work and architectural language.

The expansion project described in this document will approximately double the terminal in size with expansions on all sides of the existing terminal and will retrofit many of the existing areas. It is a goal of this project to establish a sense of cohesion between the various phases of the terminal.

The expansions to the north and south are designed to be of similar form. It is intended that they form “book ends” to the terminal, and are the first step at drawing the terminal architectural language together. As these forms are also similar uses (a domestic arrivals hall at the south end and an international arrivals hall at the north) the form gives an architectural clue to terminal’s internal organization.

The scale of the new arrivals halls is similar to the rotunda and existing south entry ramp enclosure. The scale of these forms is more suitable to the scale of the expanded airport.



The exterior elevation of the original terminal and the first expansion are more challenged due mechanical grilles and other utilitarian items placed directly at curbside. The existing canopy is very light in scale and presents some challenges with two rows of columns on the curbside and snow melt falling to the curb from its curved form.

The Schematic Design proposes that the canopy be replaced by a new design that is heavier in scale more in keeping with the scale of the newer forms, and one that has a single row of columns on the building side of the sidewalk. The canopy will tie the two ends of the terminal together creating a cohesive face across the many phases of expansion.

6.0 SCHEMATIC DESIGN DESCRIPTION OF KEY INTERIOR AREAS

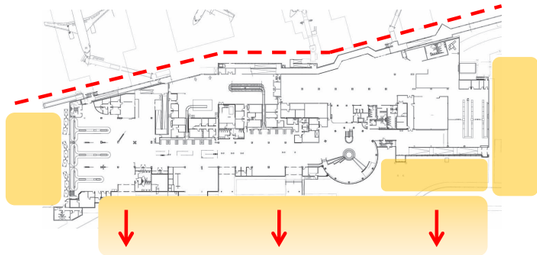
6.1 Design Principles

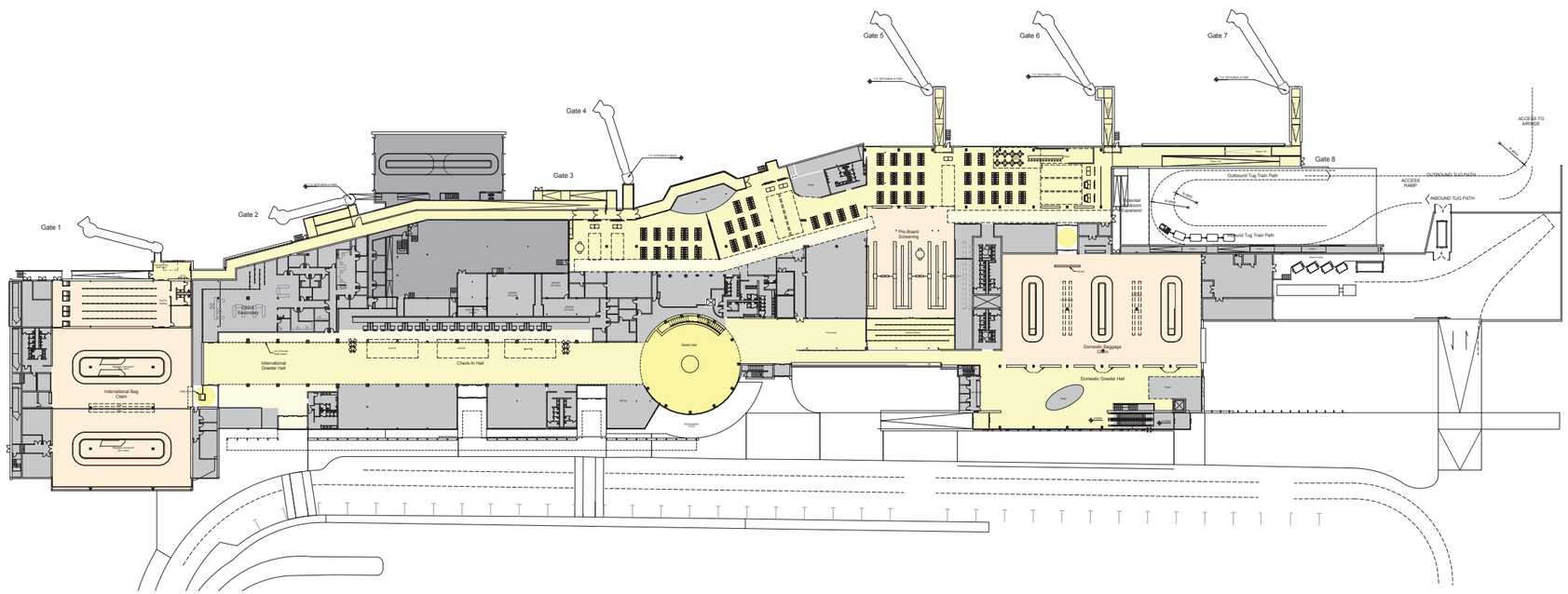
Spatial Clarity

The existing terminal has a clear organizational structure. Currently, the check in hall, the rotunda, the holdrooms all have distinctive volumes and forms. With the considerable change the terminal will undergo with the growth to separated International and Domestic Arrivals facilities, it is important that the original clarity remains and is strengthened. By designing each “process” area with a clear architectural form, passengers will have an intuitive sense of the organization of the terminal.

Preserving Beyond Plan Growth Opportunities

Key to the long term flexibility of the Kelowna International Airport is the preservation of growth areas beyond the current building footprint. The Schematic Design identifies space available for expansion of both the international and domestic claim halls for additional carousels and space to the west for additional pre security retail. These areas have been studied and included in the Phase 5 – Beyond Plan.




Gate 1
Gate 2
Gate 3
Gate 4
Gate 5
Gate 6
Gate 7
Gate 8
T.O. ROTUNDA LEVEL
T.O. ROTUNDA UPPER
T.O. ROTUNDA LOWER
T.O. ROTUNDA ATTIC
T.O. ROTUNDA CANOPY
T.O. ROTUNDA ATTIC
T.O. ROTUNDA ATTIC
T.O. ROTUNDA ATTIC
ACCESS TO AIRSIDE
OUTBOUND TUG PATH
ACCESS RAMP
INBOUND TUG PATH
Outbound Tug Train Path
Inbound Tug Train Path
Potential Washroom Expansion
Pre-board Screening
Retail Hall
Check-In Hall
International Greater Hall
International Bag Claim
Domestic Baggage Claim
Domestic Greater Hall
Food
Retail
Food
Retail
Food
Retail

Flexibility

Air terminals experience significant change over time whether due to growth, changes in processes or regulation. The only certainty is that what is known today is likely to change sometime in the future. The design will takes this into account by planning for the most likely future expansions and ensuring no impediments to that expansion are placed in the current layout. Objects such as structure, mechanical/electrical rooms and vertical circulation elements will be carefully placed to reduce the number of immoveable objects in functional areas. Areas such as check in that are most likely to experience churn are provided with flexible access to power and data to allow for multiple plan changes in the same space.

Intuitive Wayfinding

Travelling can be stressful. Passengers are often in unfamiliar surroundings and most often simply want to know where they must go next. Being able to see the next step reduces anxiety and gives the passenger a sense of how much time is necessary to complete the process. It is a design principle to provide clear lines of sight and to view the design from the pasenger perspective.

Sustainability and Integrated Design

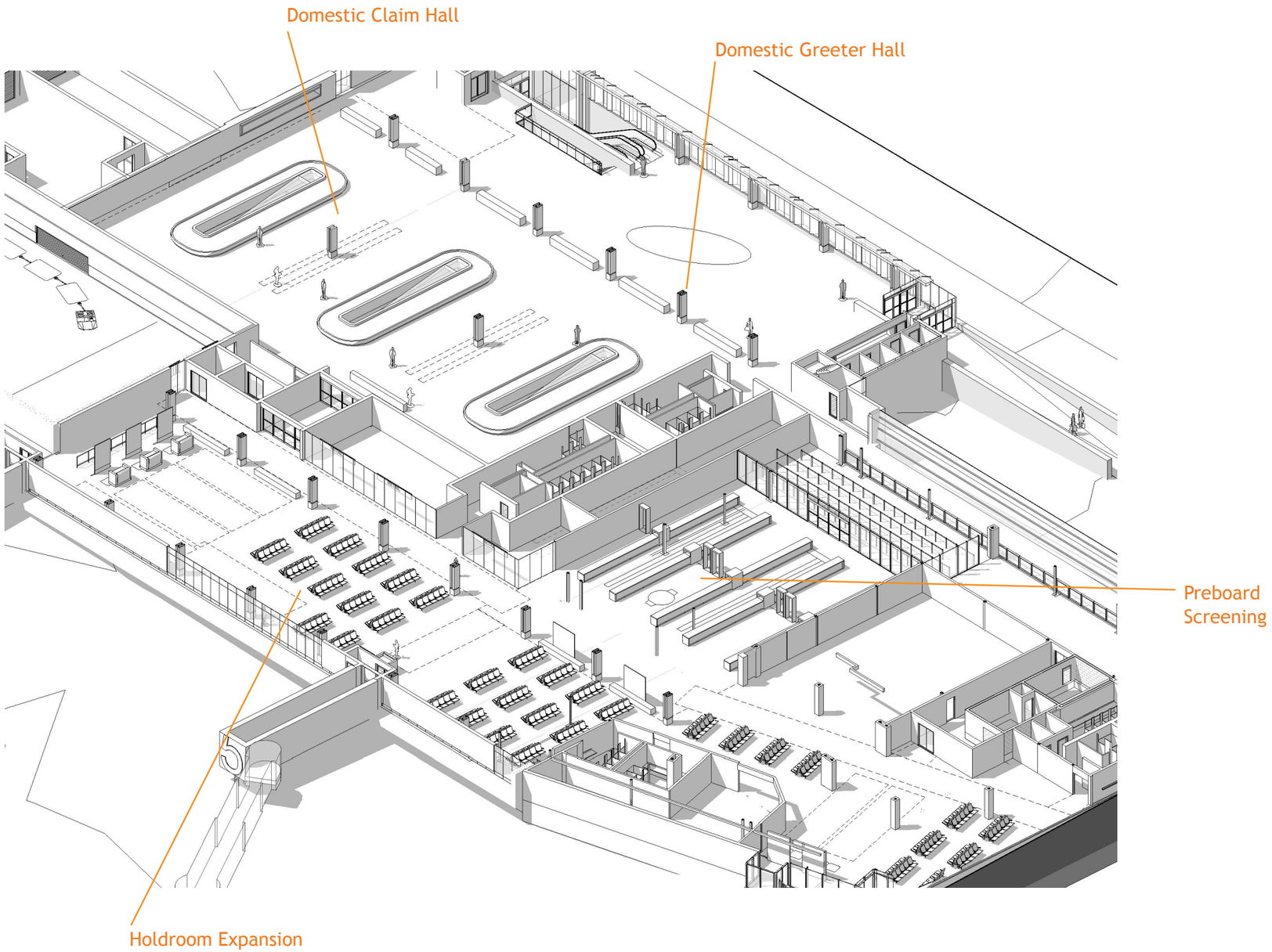
The building design is considered as a fully integrated system. Architectural, Structural, Mechanical and Electrical design decisions are made jointly. The goal is to design a sustainable development with the smallest carbon footprint possible within the budget objectives for the project. An example of this integration is the careful study of the amount of glazing to put into each elevation to ensure that there is enough light to allow for day lighting and access to views balanced with the impact of solar gain on the mechanical systems. This one decision involves input from the architect and, the mechanical and electrical engineers to ensure each system is in balance.

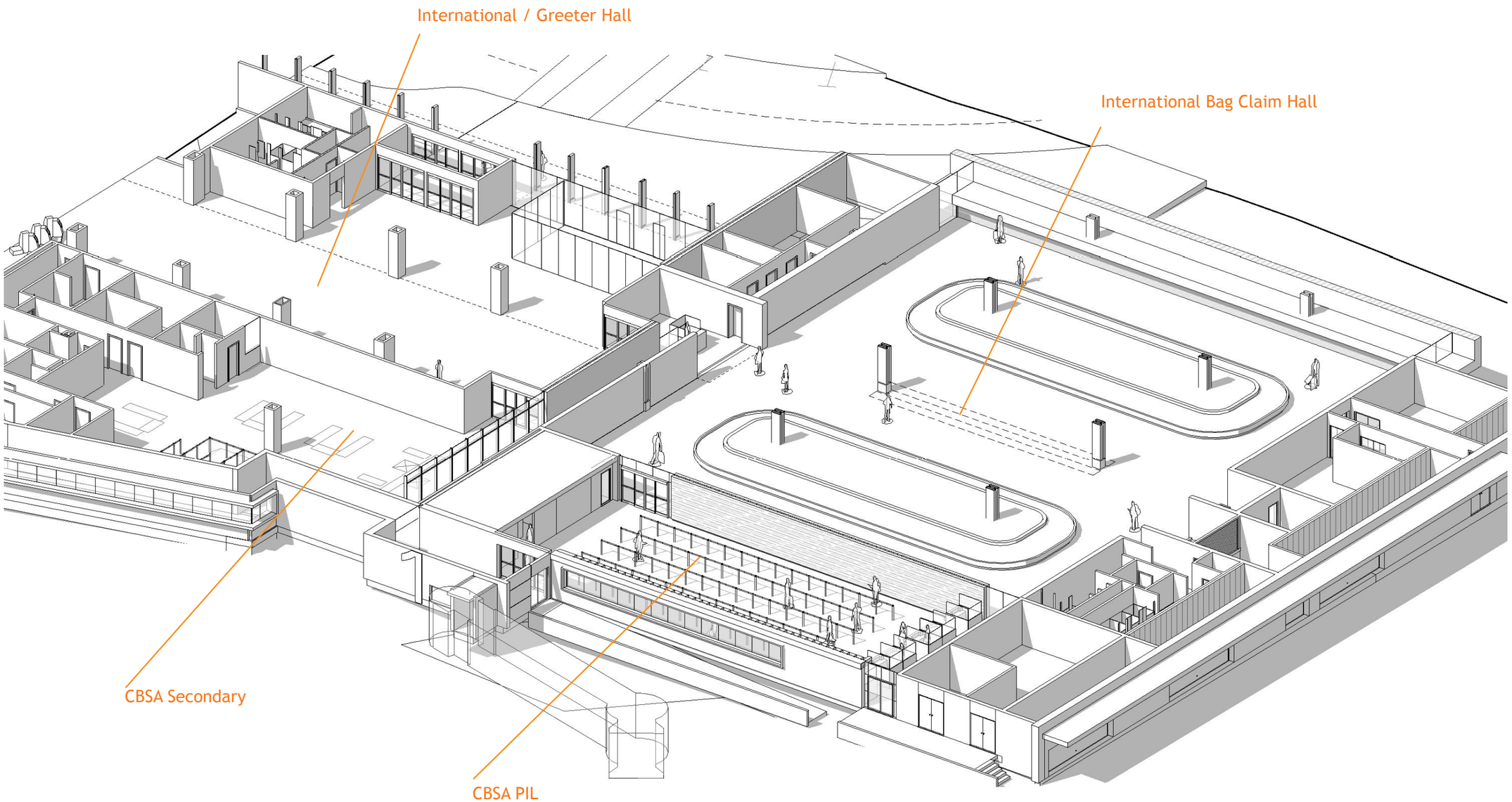
Passenger Flow and Vertical

Circulation Even minor changes in floor levels can be difficult for some passengers to navigate and may add time to the process. All expansions to the air terminal are provided on the same level as the existing main floor of the terminal. Only the new south entry to the domestic arrivals area which is three meters below the main floor will require a vertical transition and is provided with two escalators, an elevator and stairs. The schematic design provides for the levelling of the airside corridor. Further study is ongoing for the expansion options of the outbound baggage make up hall that may prove to be a challenge to the intent to level the airside corridor.

Universal Design

Air Terminals serve everyone in the community. While the most common considerations are for persons with sight, mobility or hearing impairments, the design team takes a universal approach and considers age distinctions, language and cultural challenges as well as person size and cognitive abilities as conditions equally important for consideration in the design. Many of these challenges are not sufficiently addressed by codes. The team will incorporate designs that meet best practices that in many cases exceed code requirements in consultation with the Accessible Advisory Committee.


Domestic Claim Hall
Domestic Greeter Hall
Preboard Screening
Holdroom Expansion


International / Greeter Hall
International Bag Claim Hall
CBSA Secondary
CBSA PIL

6.2 Schematic Design

Domestic Claim and Greeter Hall

The new Domestic Arrivals facilities will significantly change the look, feel and function of the terminal building. Once complete, it will transform the operation of the airport with a new domestic claim hall and greeter hall at the south end of the terminal, freeing up much needed space for an international facilities expansion at the north.

The claim hall is a large volume with high ceilings and a view through the greeter hall to the exterior view of the hills to the west. A large "punched" window to the south overlooks a xeriscaped garden using regional plants and land formations.

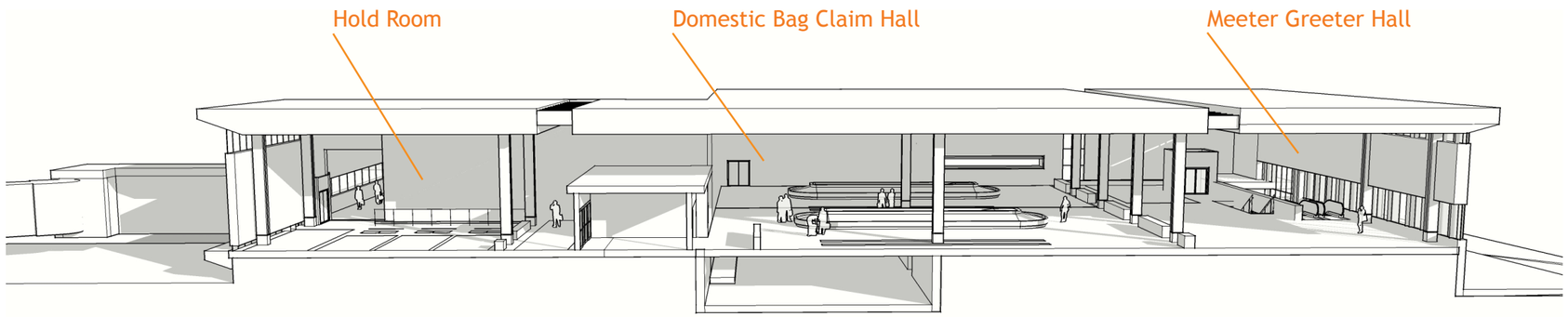
Access for arriving domestic passengers is via the expanded hold room. Walking distances for domestic passengers will be greatly reduced from the existing paths as the primary domestic gates are at the south end of the facility – in proximity to the new domestic claim hall.

The bag claim will provide two sloped plate carousels in its first phase with sufficient space for cart storage and passengers waiting to collect bags. And additional carousel will be added when demand requires. Baggage conveyors will feed the carousels from below leaving the ceiling volume clear.

The greeter hall is directly to the west of the claim hall. Low walls will define the boundary between the two spaces, encouraging greeters to remain outside of claim hall. Rental car counters define the north face and a large retail outlet the south. Space is available for an information counter and additional retail at the centre.

On the exterior, the south location of the domestic facilities will transform the appearance of the airport as it will be the first part of the building one approaches from the curbside roadway. As described in the previous section, this phase will establish an architectural language for the terminal that is specific to the Okanagan region with rammed earth walls in colours of the local environment, large wood columns representing the ponderosa forests and other architectural elements that will compliment and tie to the palette of the existing terminal.

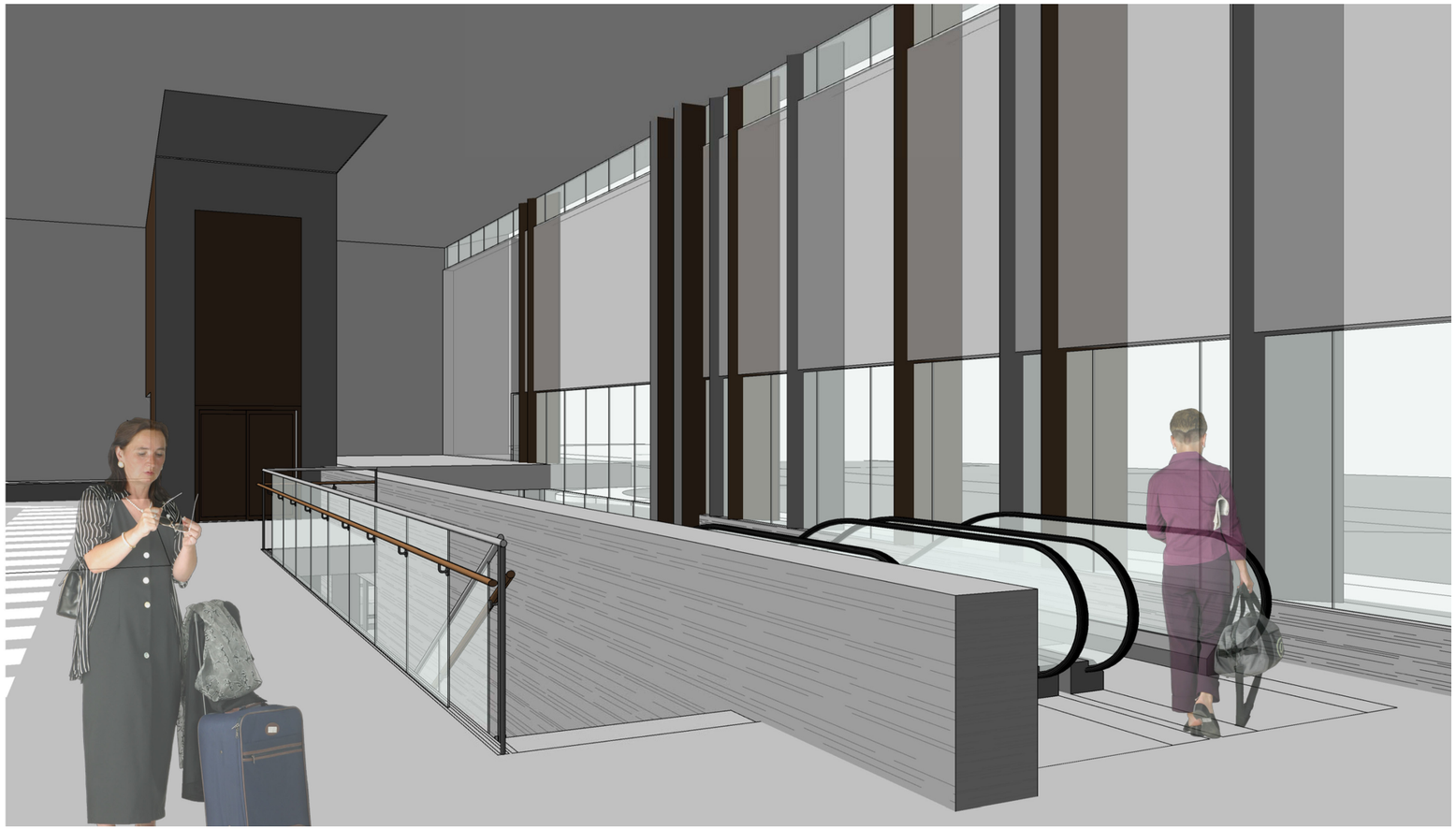
Both spaces are largely day lit with strategically placed and sized windows and clerestory windows that are reflective of the existing terminal.


Hold Room
Domestic Bag Claim Hall
Meeter Greeter Hall

E ⟷ W

Domestic Bag Claim Hall
Mechanical Penthouse

S ⟷ N



Holdroom Expansion

The hold room expansion will be built at the same time as the domestic facilities noted previously. The expansion essentially doubles the size of the existing and includes a greatly expanded retail offering.

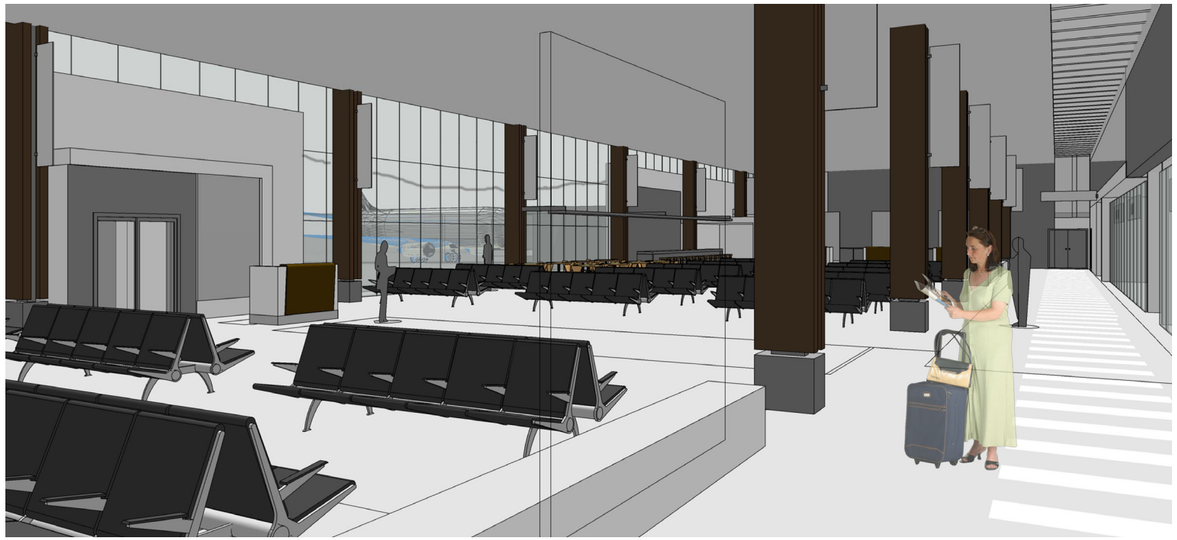
One characteristics of the new hold room that is distinct from the existing is an unimpeded view to the airfield and mountains to the east. The existing hold room view is compromised by the airside corridor and bridges folded against the terminal face. Further, the ceiling height of the new space is much higher creating a volume more comfortable and appropriate for this area.

Glazing on the exterior of the hold room is strategically sized and placed. The largest window is located adjacent to the largest seating area and key food and beverage unit. Opaque surfaces are provided primarily at gate boarding areas. The overall proportion of glazing to solid surface is engineered to provide sufficient daylight and view without overly heating the space. A skylight runs along the ceiling of the concourse providing daylight to the center of the space and high lights the circulation route below.

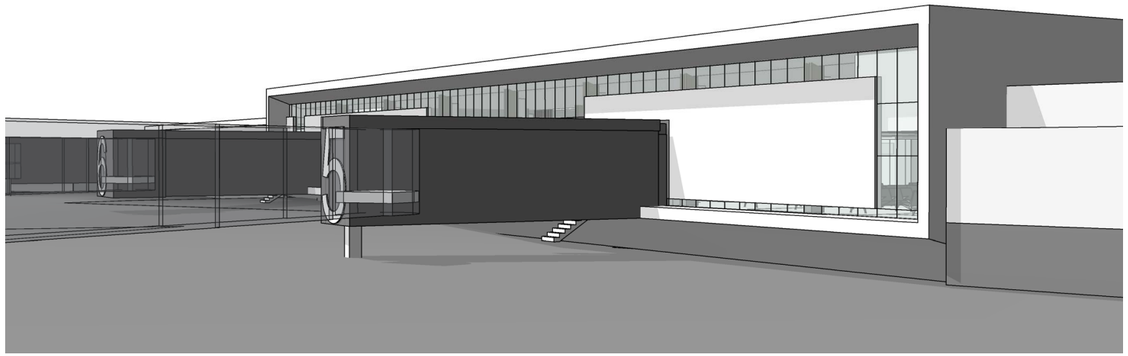
Pre board screening will exit at the centre of the expanded space, with a pausing area defined for passengers to check FIDS monitors, re-stow items removed for screening and determine in which direction they may find their gate.

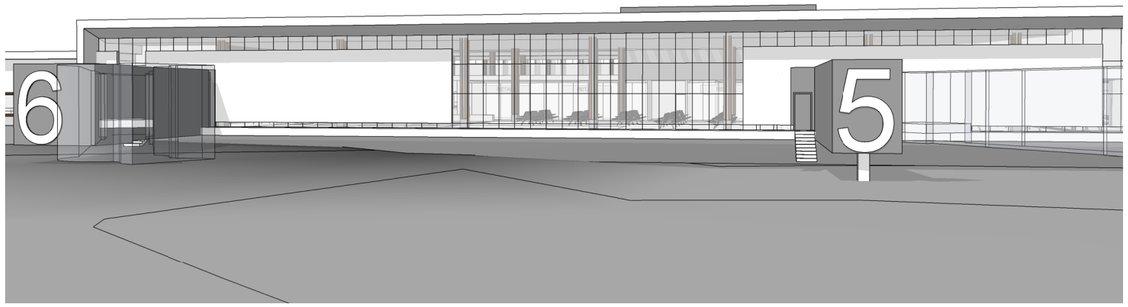
Retail / food and beverage outlets are clearly visible and distributed throughout. A key new food and beverage unit will be located on the glass of the new hold room where passengers can enjoy the view.

Fittings and furniture will be coordinated and upgraded as required for the entire hold room, including the existing at this time.



The volume and architecture of this expansion will be clearly identifiable from the airfield and to arriving passengers. This creates an understanding of the organization of the terminal on this elevation which was previously lacking. Branding opportunities on this elevation will be considered in the next design phase for the Kelowna International Airport. The architectural form of the roof and overhang is intentionally complimentary to the bold forms on the front of the domestic arrivals facility.





7
6
5

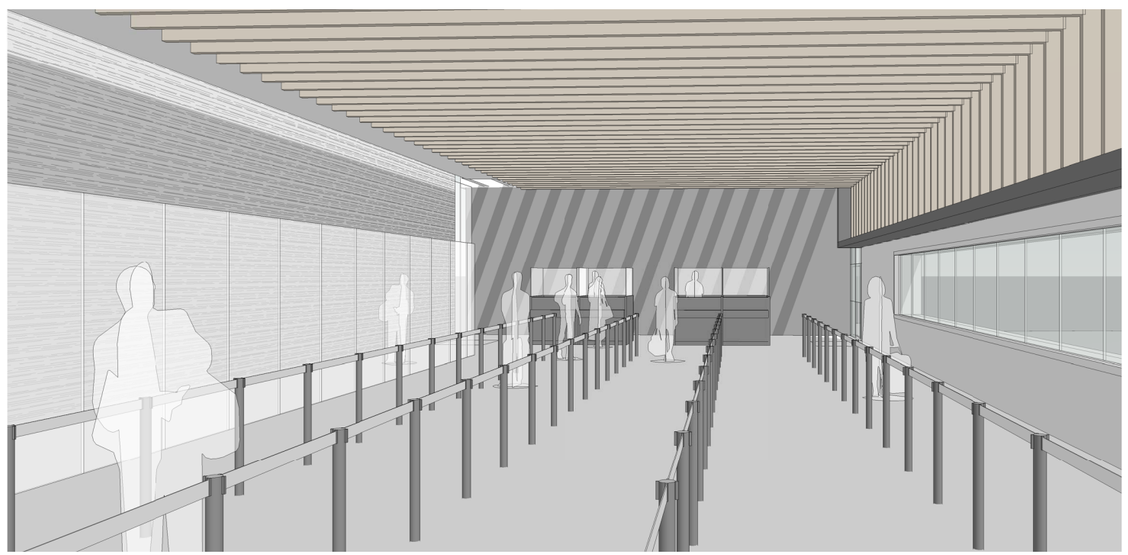
International Arrivals Facilities

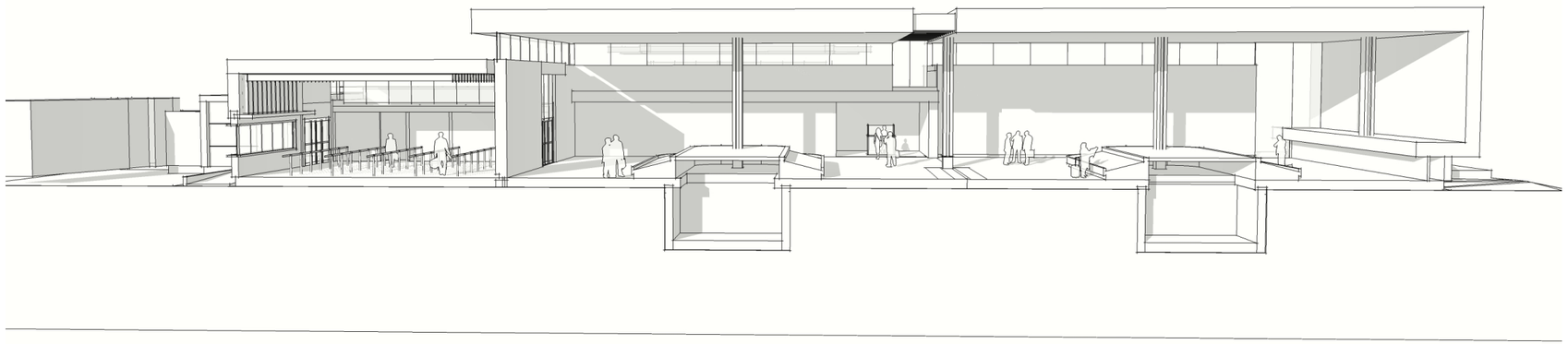
The first phase of expansion delivers a new CBSA PIL facility, changing the flow of arriving passengers to be screened prior to having access to their baggage in compliance with CBSA regulations. This functional area is new to the terminal and will be the first impression of the Okanagan to international visitors. As one of the best views from the terminal is directly to the east of this space, a large window is aligned along the queue. The opposite wall is intended to be a distinctive rammed earth construction reflecting the sandy, dry and rounded mountain geography visible from the windows. This type of construction is unique and rarely used in Canada. It is seen most often in the Okanagan making it a signature piece for the terminal and one that reflects the special geography of the valley.

As the bag claim hall is not constructed until a later date, passengers will flow from the PIL counters back to the existing claim devices. The corridor will be segregated from the queue by a temporary glazed wall. This wall will be removed once the International Claim Hall is constructed, leaving expansion space for two additional PIL counters. Passengers at that time will flow directly from the PIL counters to the Bag Claim hall.

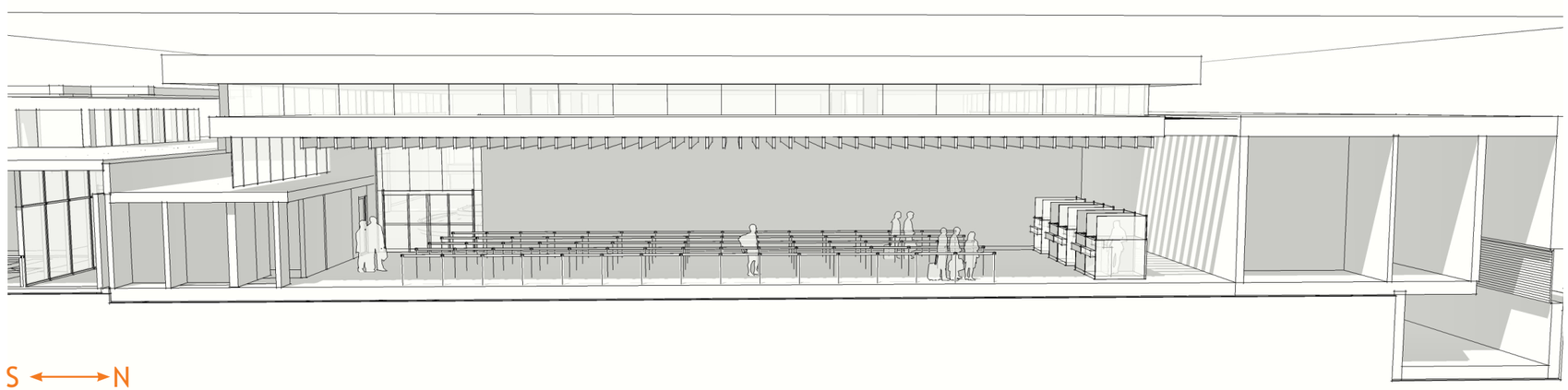
The International Claim hall will initially have one large sloped plate carousel, with baggage delivery from below. A Beyond Phase plan adds one additional carousel.

The rammed earth wall of the CBSA PIL which was an exterior wall in the first phase, becomes an interior wall of the International Claim area, adding its character to this space. Skylights introduce daylight, and in the final expansion, windows to the curbside will allow passengers a glimpse of their destination. At this stage, the architectural form and massing of the complete claim hall creates a “book end” to the terminal, as its form mirrors that of the Domestic Claim area to the south.

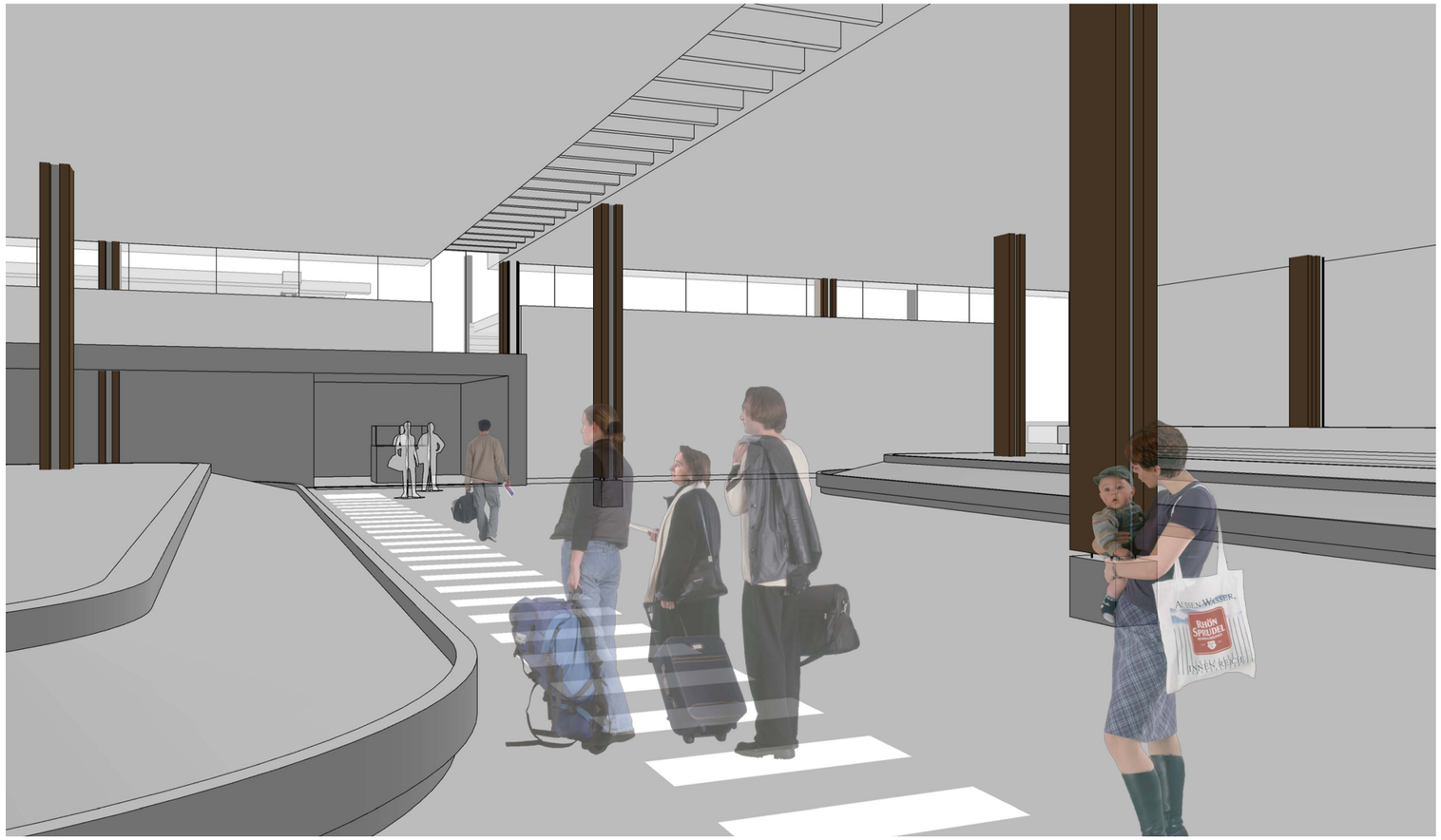




E ⟷ W



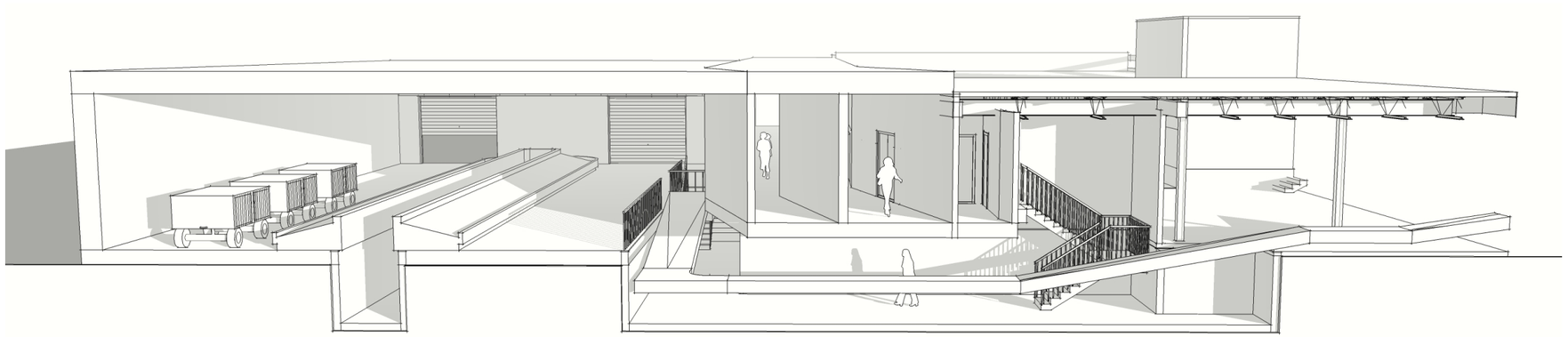
S ⟷ N


AUSSEN WASSER
RHÖN SPRUDEL
INSIDE REACH

Outbound Baggage Make-up Hall

The new outbound baggage make-up hall expansion will provide for a two lane drive through facility for bag make up, leaving the existing hall available for an expanded baggage screening area – significant improvements for a currently congested function. As the only expansion area available is airside, these two spaces will be transected by the airside corridor.

There is a desire to level the airside corridor which currently ramps up and over the access doors to the baggage make up hall. In order to achieve this, conveyors would have to either move up and over the leveled airside corridor, or be tunneled slightly underneath. The Schematic Design illustrates the latter option as the up and over solution would require a much taller addition and has challenges with lengths of conveyor runs required to make the vertical transition. A version to maintain the airside corridor in its current ramped configuration has not been studied, but may prove to provide benefits for the access between the two components of the baggage make up hall and would be less costly to construct. This option will be reviewed at a later date.

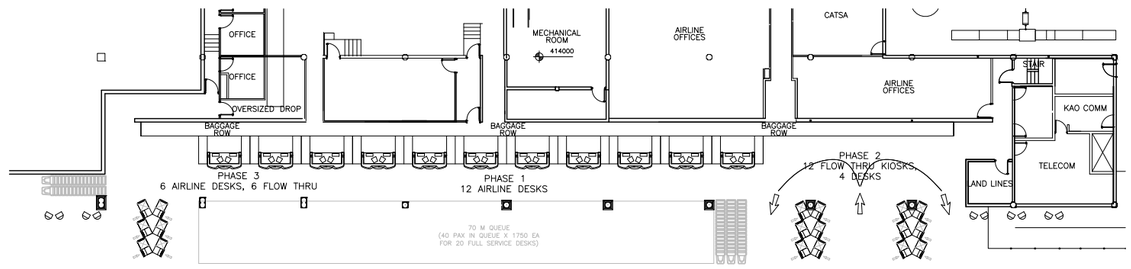


Check-in Hall Expansion

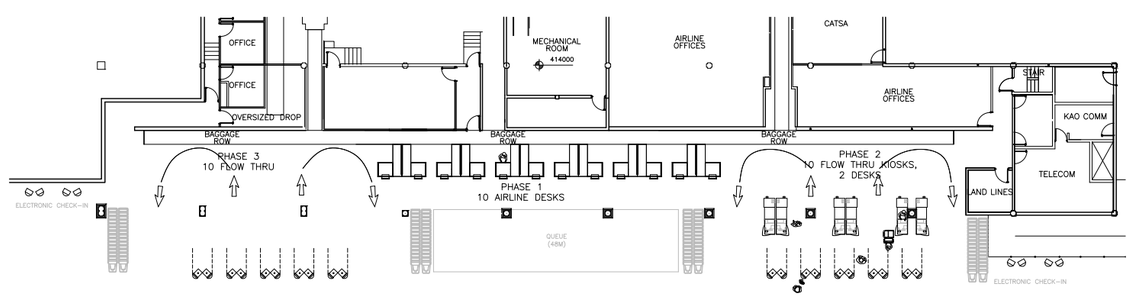
The existing check in hall experiences congestion in large part due to the proximity of the domestic arrivals ramp, the meeter greeter area and the claim carousels. This condition will be greatly improved with the provision of the domestic arrivals facility to the south and the movement of the claim devices into a new international claim hall to the north.

Expansion for more check in counters is not anticipated to be needed until after 2016. The Beyond Plan Phase of this report indicates the removal of the washrooms in the center of the check in counters to provide expansion space for more counters. Work completed in previous phases clears the way for the counters to be aligned with the West Jet counters, increasing queue space within the check in hall.

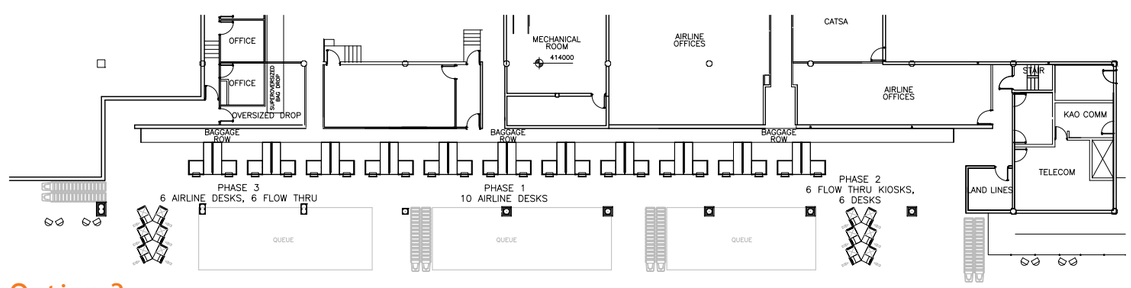
Check in processing is evolving, with arrangements of counters, bag drops, self serve kiosks ever changing. The following diagrammes illustrate options for layout that can be achieved within the expanded space.



Option 1



Option 2



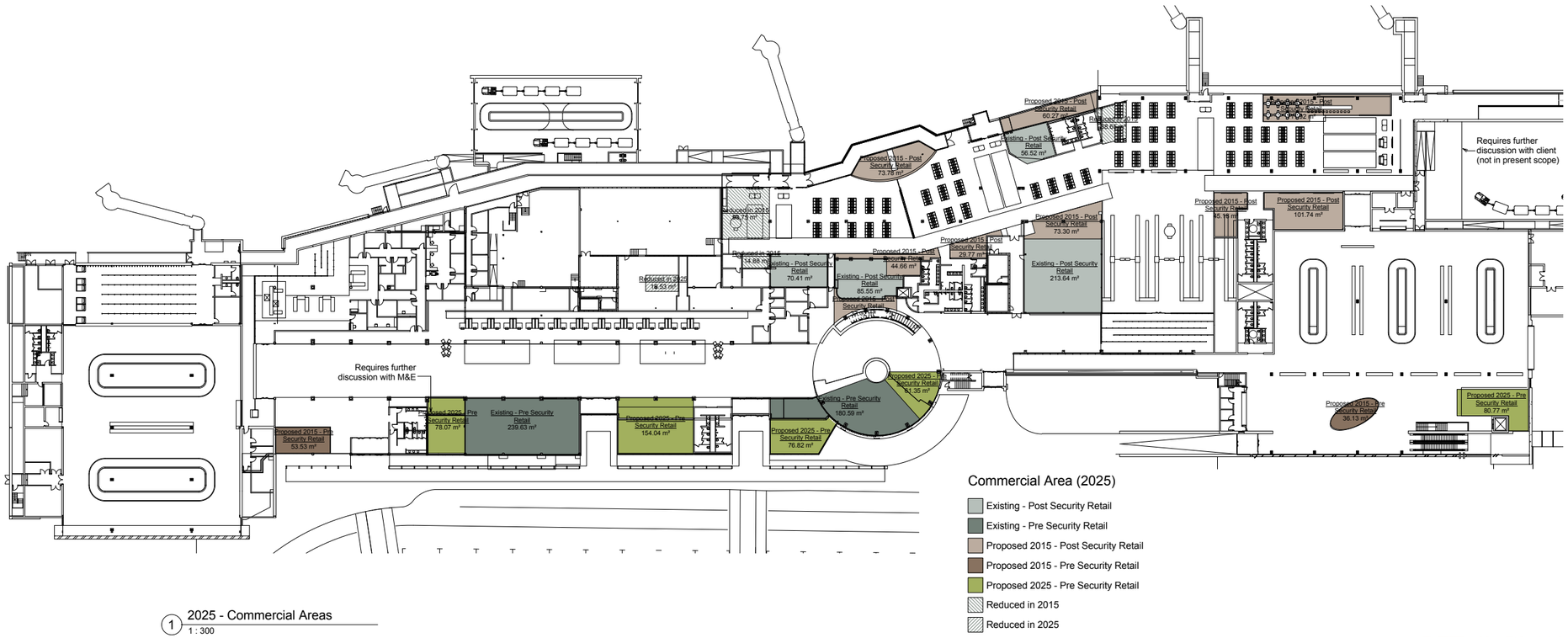
Option 3

Retail

A preliminary review of the existing terminal areas allocated to retail was undertaken by Leigh Fischer. This was followed by a review of the approved Concept Plan with recommendations for the distribution, size and retail type for each area of the terminal. These areas were then incorporated into the Schematic Design. Areas were achieved to the extent possible without expansion of the building footprint. The following plan indicates the retail area locations and their footprint sizes, and the chart compares the targeted retail sizes with the current allocations on the plans.

The key points of the retail review found the following:

- The Rotunda will become a central focus within the pre security terminal plan. It will be strategically located between the International and Domestic facilities and in the path of passenger flow between check in and pre board screening. Preliminary thoughts are that it could become an “Okanagan Market” themed area. Phase 5 design plans include the leveling of the rotunda floor and revisions to the feature stair to open up the space available to retail / food and beverage. Landscape plans are for an outdoor patio accessible from the rotunda to increase seating areas available and to provide the opportunity for an outdoor café environment.
- Retail offerings should focus on Okanagan regional products and services.
- The hold room expansion will allow for key exterior views to the mountains and airfield to the east. This is a desirable area for waiting passengers, and for a key food and beverage unit to be located while preserving and enjoying the views described above.



1 2025 - Commercial Areas
1 : 300

RETAIL PLAN

RETAIL AREAS

LOCATION	PROVIDED 2015	RECOMMENDED 2015	DIFFERENCE	PROVIDED 2025	RECOMMENDED 2025	DIFFERENCE
Pre Security Retail (Total)	691.43 sm	831 sm	-139.57 sm	960.93 sm	1245 sm	-284.07 sm
- Landside Check-In	521 sm	622 sm	-101 sm	790.5 sm	934 sm	-143.5 sm
- International Arrivals	53.53 sm	19 sm	+34.53 sm	53.53 sm	27 sm	+26.53 sm
- Domestic Arrivals	116.9 sm	190 sm	-73.1 sm	116.9 sm	284 sm	-167.1 sm
Post Security Retail (Total)	1003.86 sm	784 sm	+219.86 sm	1003.86 sm	1178 sm	-174.14 sm
- Domestic & International Departures	729.23 sm	697 sm	+32.23 sm	729.23 sm	1,048 sm	-318.77 sm
- Transborder Departures	274.63 sm	87 sm	+187.63 sm	274.63 sm	130 sm	+144.63 sm

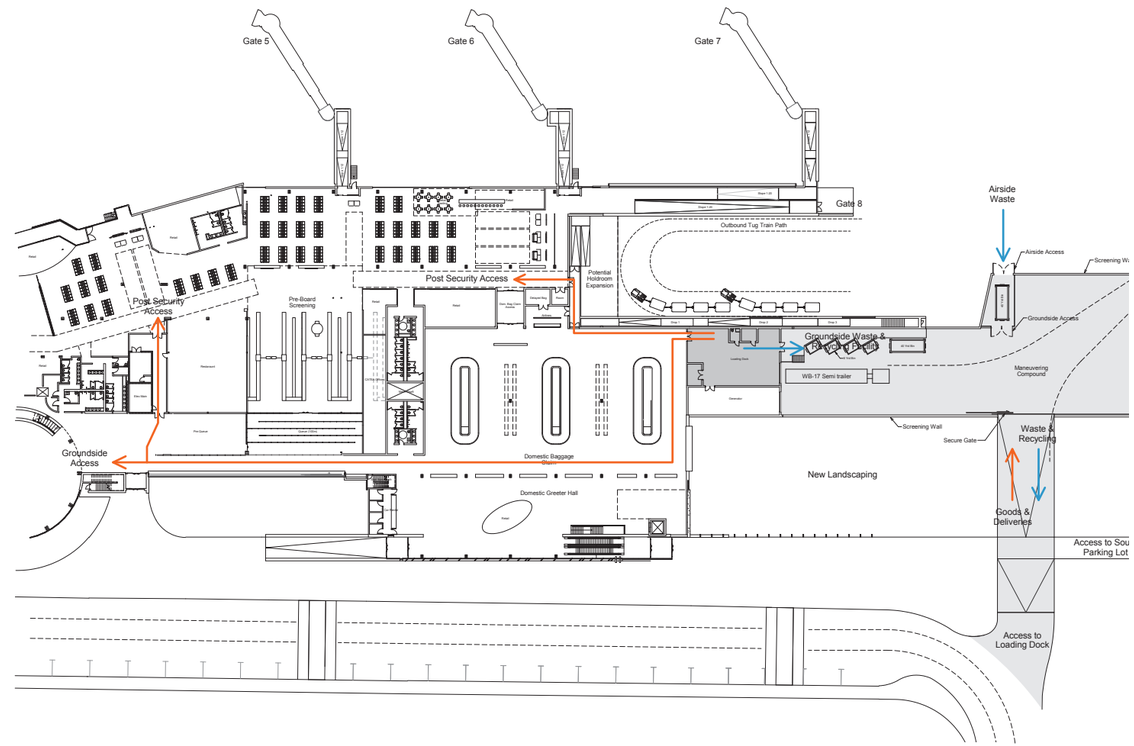
Material Management

The existing terminal does not have a dedicated loading or waste handling facility. Movement of goods and waste is via the curbside and directly through the main passenger entry doors.

The schematic design provides for an interior loading facility with one truck dock and an exterior area for waste bins, all within a new material management area to the south of the terminal expansion. An airside waste bin is strategically located along the airside fence. International waste will continue to use a bin on the north side of the terminal airfield. Truck access is off the curbside access roadway, removing movement of material away from the front entry doors.

Access doors to the loading and waste facility are at the south wall of the domestic claim hall. Movement of goods will be arranged for off peak times.

These facilities are to be provided over time. All exterior facilities and access to the terminal are planned to occur coincident with the Phase 3 expansion of the holdroom, domestic claim and meeter greeter facilities. The interior dock is included in the beyond phase plans.



6.3 Materials and Finishes Matrix

Durability will be considered a guiding design principle. The number of passengers using the facility mandates the performance of all materials be maximized. Material durability, ease of maintenance and long-term management are important to the success of an airport environment. Sustainability, Cost, obsolescence, acoustic and aesthetic characteristics are strong factors and will be carefully considered.

An Interior Finishes Matrix has been developed and is included on the following pages. The intent of this matrix is to systematically categorize numerous finish options and strategically apply them to meet the functional needs of particular spaces. This will allow viable materials to be explored in the design, performance, budgeting and specification phases. The process will involve as need testing on an area-by-area basis … ultimately to arrive at an optimum solution.

In addition to the aforementioned considerations, particularly durability, the following will be explored:

Flooring

- Incorporation of safe, non slip surfaces
- Implementation of appropriate acoustic attenuation for movement of carts and personal baggage
- Consideration of navigation for the physically challenged

Baseboards

- Establishment of optimum and consistent heights to accept day-to-day bumps and reduce marring
- Consideration of the butting of adjacent horizontal and vertical surfaces

Partitions

- Development of wall protection to better accept traffic abuse, reduce marring and control vandalism
- Application of textures, particularly in the context of the Regional vocabulary
- Utilization of softening materials strategically place for sound deadening
- Use of glazing units to maximize light transference, yet respectful of security and safety mandates

Ceilings

- Application of acoustic panels for sound softening and attenuation
- Develop appropriate finishes to reduce obvious visual buildup of dust

Fittings

- Utilization of safe, solid, vandal proof materials (i.e. Washroom accessories and cubicles)
- Consideration of personal hygiene at ‘touch’ zones
- Appropriate use of hooks, ledges, shelves for passenger convenience and care of infants

Colour

- Use of ‘response appropriate’ colours (quiet vs. active, warm vs. cool, directional vs. decorative, cautionary vs. neutral)
- Consideration of navigation for the visually challenged
- Sensitivity to art, graphics and signage colours and appropriate placement to maximize impact
- Use of natural colour in natural materials … not applied or tacit decoration

INTERIOR FINISHES MATRIX – A

LEGEND

SDT	Static Dissipative Tile	DP	Demountable Partitions
SF	Safety Flooring	HPP	High Performance Paint
GL	Glazing	MG	Metal Grate
SPF	Sports Flooring	AWT	Acoustic Wall Treatment
ISP	Integral Safety Strip	PB	Painted Base
MIR	Mirrors	•	Environmentally Preferred
EPX	Epoxy Flooring	FRW	Fire Rated Wood Backing

TYPICAL ROOMS AND AREAS								Base					Wall				Ceiling			
		Porcelain Tile (Calibrated Recti-fied Edge)	Resilient Flooring: Linoleum	Resilient Flooring: Rubber Flooring	Resilient Flooring: Decorative	Carpet: 1.8m with Structured Backing	Specialty Material for Public Areas	Stainless Steel Base	Porcelain Tile/ Stone Base (Calibrated Rectified Edge)	Integral Resilient Base: With adjacent flooring	Applied Resilient Base: Rubber Cove Base	Specialty Material for Public Areas	Paint	Porcelain/ Ceramic Tile	Wall Protection	Specialty Material for Public Areas	Paint	Lay-in Acoustic Ceiling Tile	Exposed Structure	Specialty Material for Public Areas
1.0	**PUBLIC AREAS – FRONT OF HOUSE**																			
1.1	Departures/ Arrivals Concourse	•						•				•	•		•	•	•	•	•	•
1.2	Meeter Greeter Hall	•				•		•	•			•	•		•	•	•	•	•	•
1.3	Concourses within Hold Rooms	•						•				•	•		•	•	•	•	•	•
1.4	Public Washrooms	•						•	•					•				•		
1.5	Elevators (Public)	•						•				•								
1.6	Baggage Claim	•						•					•		•	•		•		•
1.7	Holdrooms	•				•		•					•	•	•	•	•	•		•
2.0	**PUBLIC AREAS – BACK OF HOUSE**																			
2.1	Processing Corridors			•				•					•		•		•	•		
2.2	Fixed Links/ Boarding Zones			•				•					•		•					
3.0	**PUBLIC AREAS - AGENCY**																			
3.1	CBSA Primary	•						•					•		•	GL	•	•		•
3.2	CBSA Secondary	•						•					•		•		•	•		
3.35	CATSA Pre-Board Screening	•						•					•		•	GL	•	•		
4.0	**BASE BUILDING – FIT UP ONLY**																			
4.1	Retail (Fit- up by Retailer)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.2	Food Services (Fit-up by Retailer)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Exterior Finishes

- **Glazing** - Double Glazed High Performance Coatings High Visibility on Clear
- **Rammed Earth Construction** - Pigmented Concrete hand tamped in layers
- **Fibre Cement Panels** - Non-exposed fasteners
- **Roofing** - Single Ply Membrane TPO high albedo

INTERIOR FINISHES MATRIX – B

LEGEND

SDT	Static Dissipative Tile	DP	Demountable Partitions
SF	Safety Flooring	HPP	High Performance Paint
GL	Glazing	MG	Metal Grate
SPF	Sports Flooring	AWT	Acoustic Wall Treatment
ISP	Integral Safety Strip	PB	Painted Base
MIR	Mirrors	•	Environmentally Preferred
EPX	Epoxy Flooring	FRW	Fire Rated Wood Backing

TYPICAL ROOMS AND AREAS	Floor						Base					Wall				Ceiling			
	Concrete: Sealed	Porcelain Tile (calibrated Recti-fied Edge)	Resilient Floor: Rubber Flooring	Carpet: 1.8m with Structured Backing	VCT/ Sheet Flooring	Speciality Materials	Stainless Steel Base	Porcelain Tile (calibrated Recti-fied Edge)	Integral Resilient Base: With adjacent Flooring	Applied Resilient Base: Rubber Cove Base	Speciality Materials	Paint	Porcelain/ Ceramic Tile	Wall Protection	Specialty Material	Paint	Lay-in Acoustic Ceiling Board	Exposed Structure	Specialty Material
5.0 AGENCY OFFICE AREAS																			
5.1 Private Offices				•						●		●				●	•		
5.2 General Offices/Clerical Workstations				•						●		●				●	•		
5.3 File/Supply/Workrooms			●		•					●		●				●	•		
5.4 Coffee Stations/ Lunchrooms			●		•					●		●	•	•		●	•		
5.5 Meeting Rooms/ Conference Rooms				•						●		●			AWT	•	•		
5.6 Staff Lounges			●	•						●		●					•		
5.7 Staff Lockers/ Showers/ Washrooms		•						•				●	•			•			
6.0 SERVICE																			
6.1 Loading Dock/Shipping/ Receiving	•									●		●						•	
6.2 Janitorial Rooms	•									●		●	•	•		•			
6.3 Electrical	•									●		●			FRW	•		•	
6.4 Mechanical	•									●		●				•		•	
6.5 IT Data	•				•	SDT				●		●			FRW	•	•		
6.6 Exit Stairs	•					ISP						●				●		•	
6.7 Service/ Utility Corridors	•										PB	●		•		●	•	•	
7.0 BAGGAGE HANDLING																			
7.1 Baggage Handling	•										PB	●		•		●		•	

7.0 PHASING

The Schematic Design is intended to be built in 5 phases of construction, the first four of which are currently scheduled to be complete by 2016. The fifth phase of development will be built as demand requires. The following drawings indicate the scope for each phase, as well as interim phases that will be required to accommodate continuing operations and sequencing of construction. A brief description of each phase is as follows:

Phase 1 – CBSA PIL / TRANSBORDER HOLDROOM
(Schedule to be determined following CBSA acceptance of concept design)

This first phase provides for an expansion to accommodate CBSA PIL. This is the first step in meeting regulatory requirements and will provide for passengers to be screened prior to accessing their baggage. This phase also includes minor retrofits to the hold room to remove the existing segregated Transborder hold room, install a moveable partition to position transborder passengers at the north end of the hold room, adjustments to the locations of some boarding podiums and one retail location.

Phase 2 – Outbound Bag Make –up Hall and Airside Corridor Retrofit
(tentative delivery 2012)

This phase expands the outbound baggage make up hall to the east of the airside corridor and provides for a drive through facility. Security screening systems for baggage will be located in the existing outbound bag hall. At the same time the airside corridor will be renovated to remove the ramp and provide a level corridor*. This phase will also see the inclusion of a new generator to the south of the terminal.

**See comment under 6.1 Passenger Flow and Vertical Circulation*

Phase 3 – Domestic Arrivals Facilities
(tentative delivery 2013)

This phase will be a major expansion to provide for a new and separate domestic arrivals facility. An expansion to the holdroom, a new domestic baggage claim hall, new domestic meeter greeter hall and the leveling of the existing ramp to the south parking lot as well as a new second floor mechanical room are the major components to this phase. Significant associated site work will be done to the south of the expansion to provide for a domestic bag drop area and a loading and waste pick up zone.

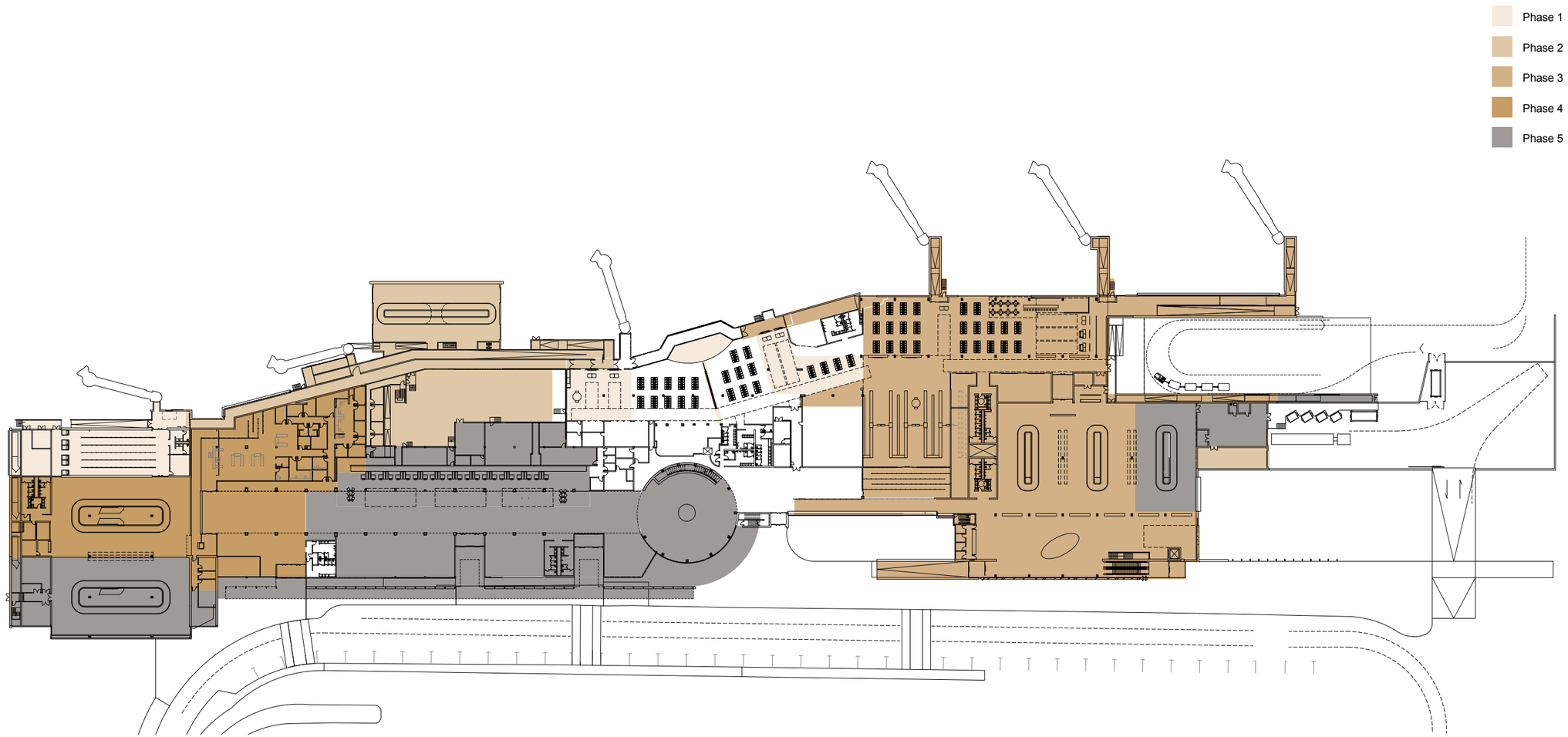
Phase 4 - International Arrivals Facilities
(tentative delivery 2015)

Once the domestic arrivals facility is complete and domestic passengers are no longer using the north bag claim area, it is possible to build a new international baggage claim hall, expanded CBSA secondary and dedicated meeter greeter facility.

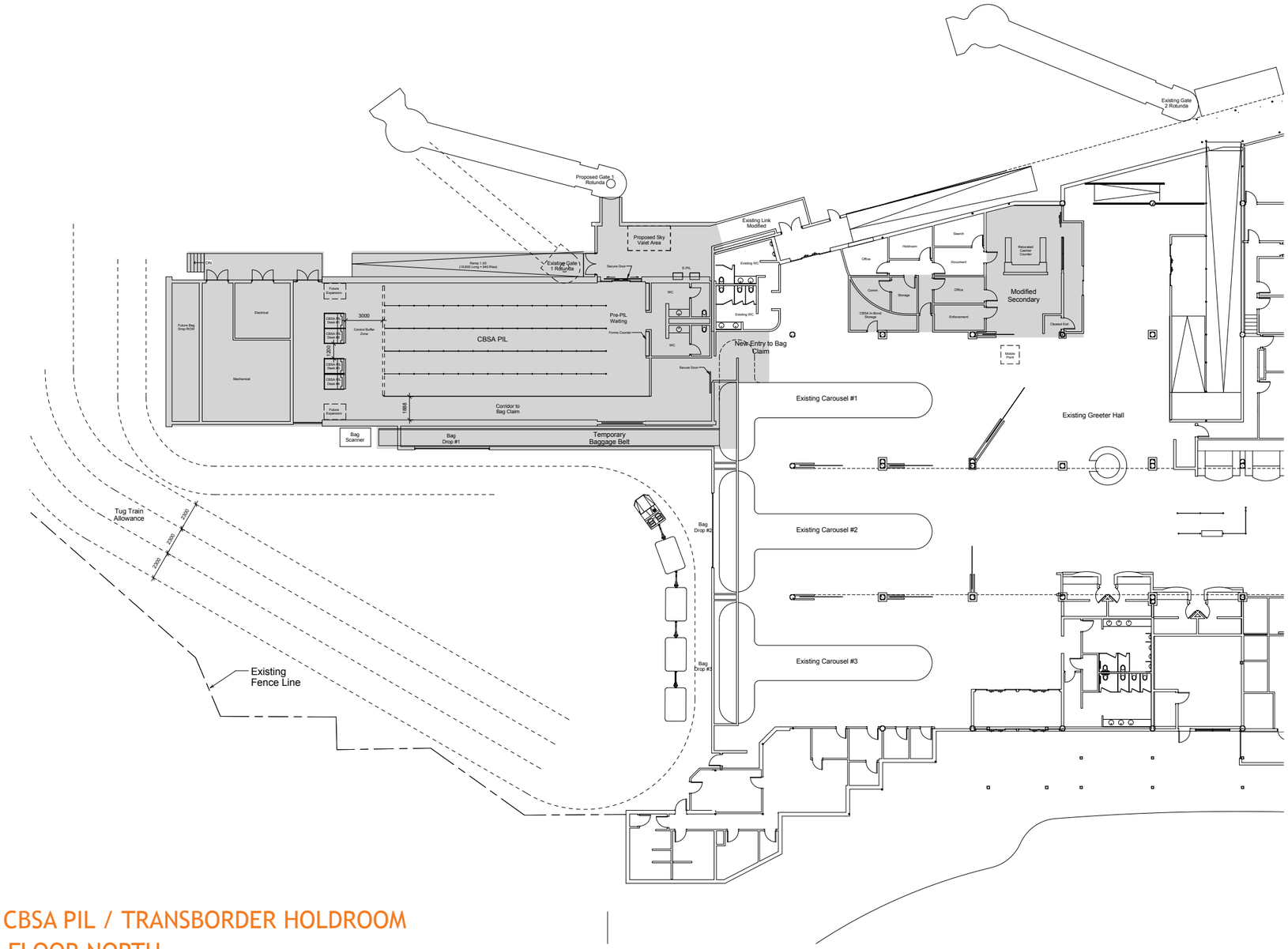
Phase 5 - Check In Hall / International Meeter Greeter Retrofits / Claim Hall Expansions
(delivery to be determined by demand)

Long term plans look to expanding the Check in Hall by moving the existing washrooms and providing more check in counter space. Desks will be moved to align with the existing West Jet counters. Retail will be expanded to the west and into the rotunda with retrofits to level the floor in the rotunda and revising the stair to the observation deck. Both International and Domestic baggage claim halls are expanded to receive one more carousel each.

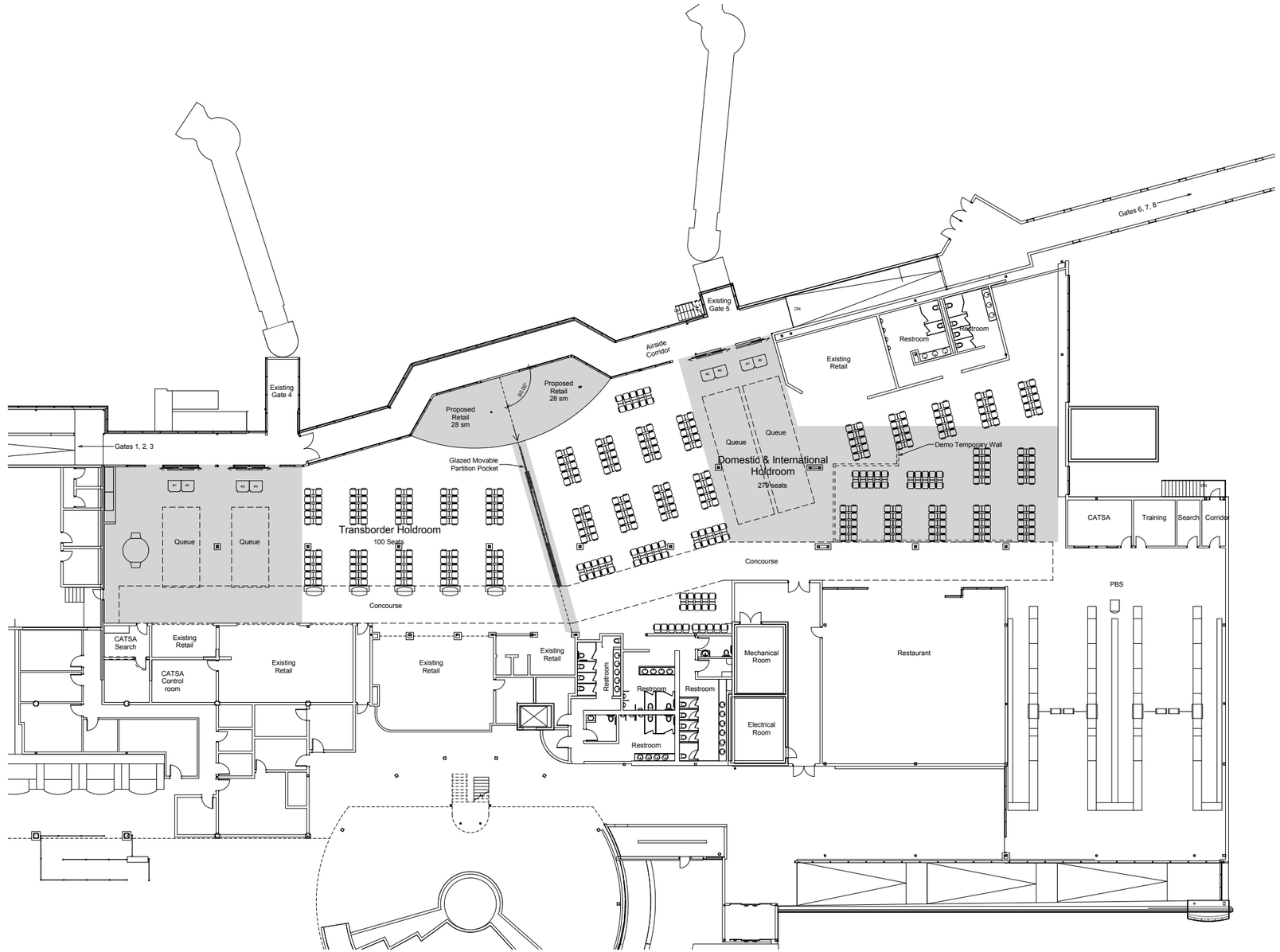
During the Design Development Phase the consultant team and the airport and airline operations teams will review and prepare detailed phasing plans for each of these five planned phases to ensure seamless continuing operations. These plans will take into account seasonal airline travel peaks; access to critical areas and constructor access.



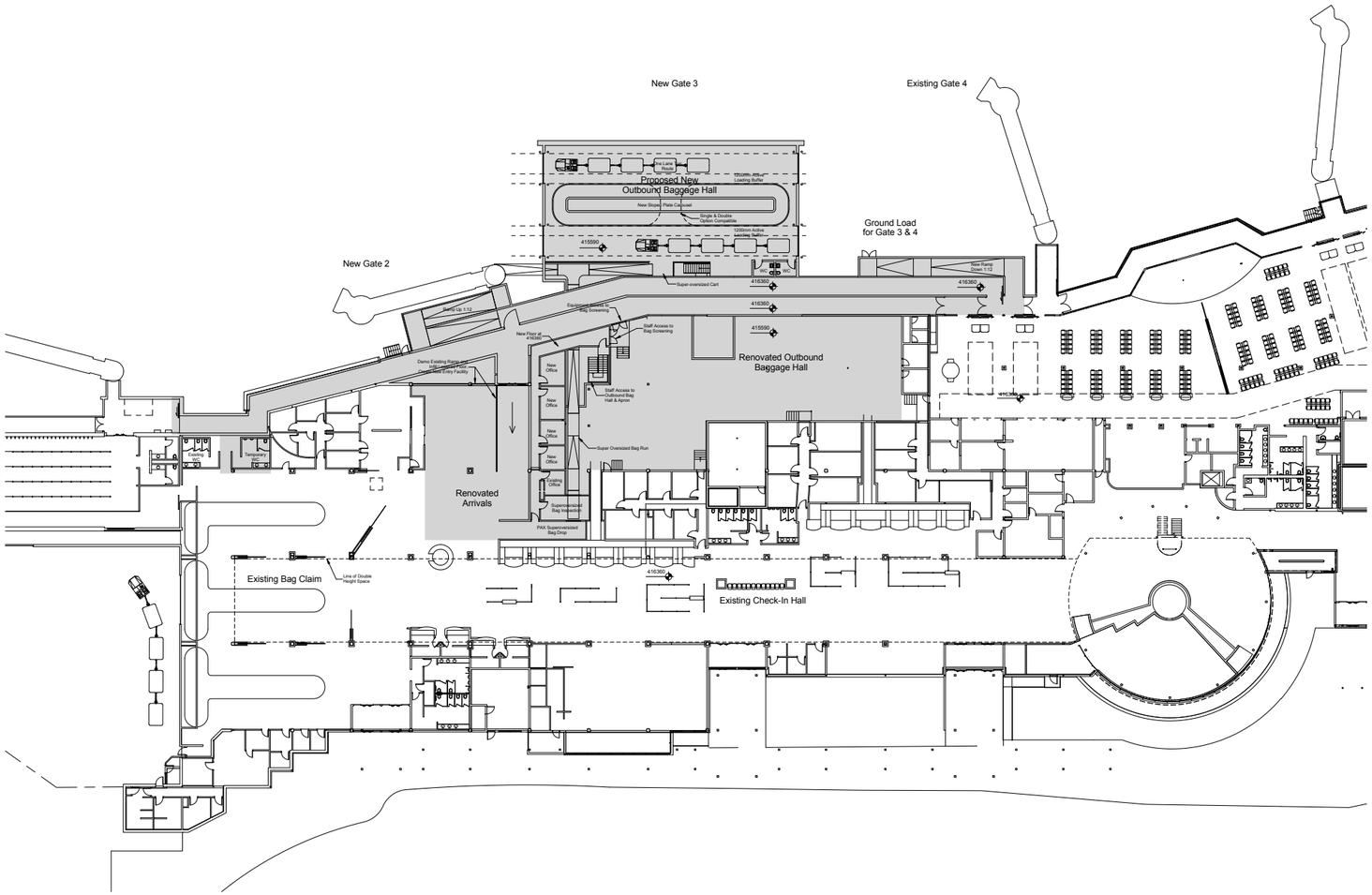
PHASING DIAGRAMME



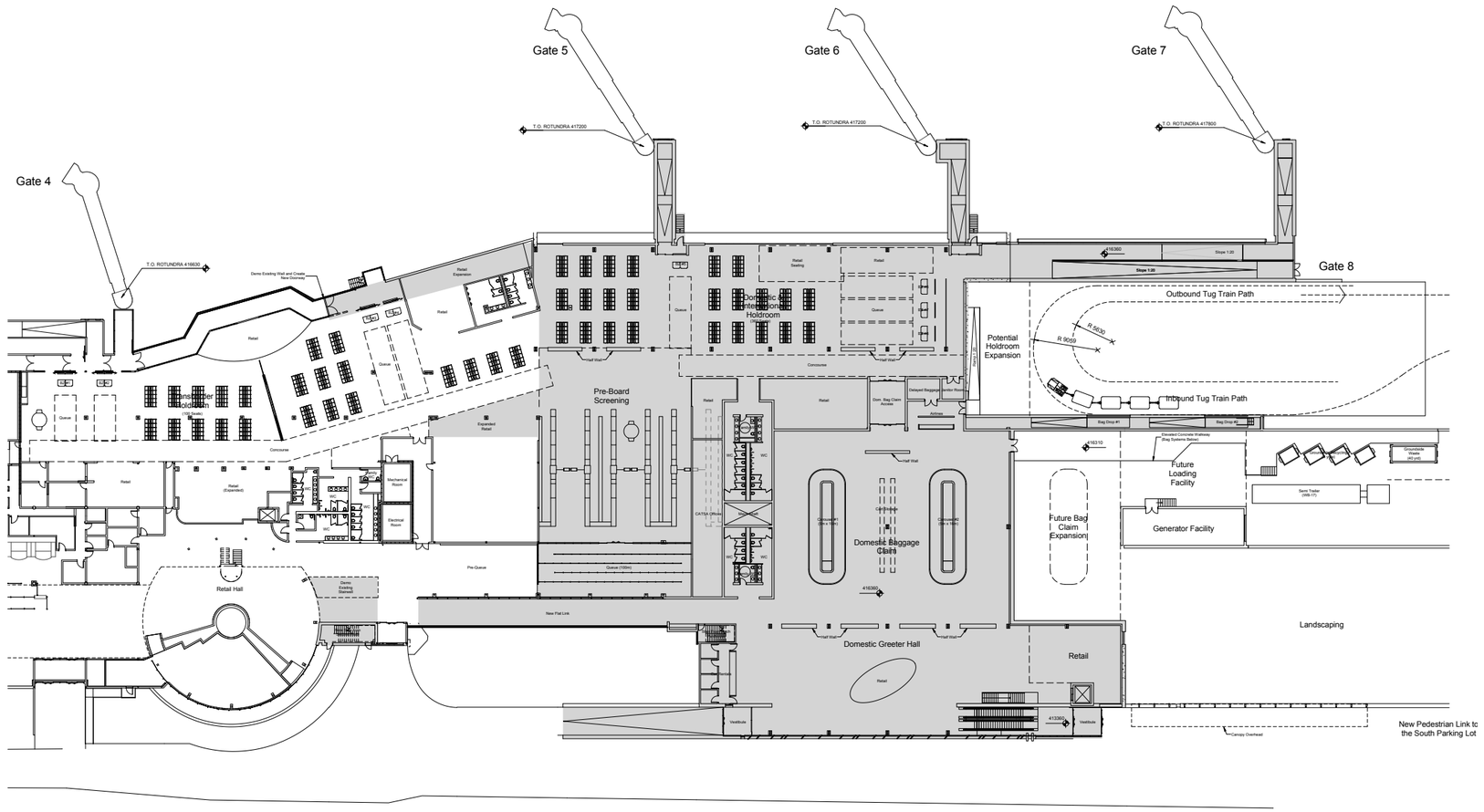
PHASE 1 CBSA PIL / TRANSBORDER HOLDROOM GROUND FLOOR NORTH



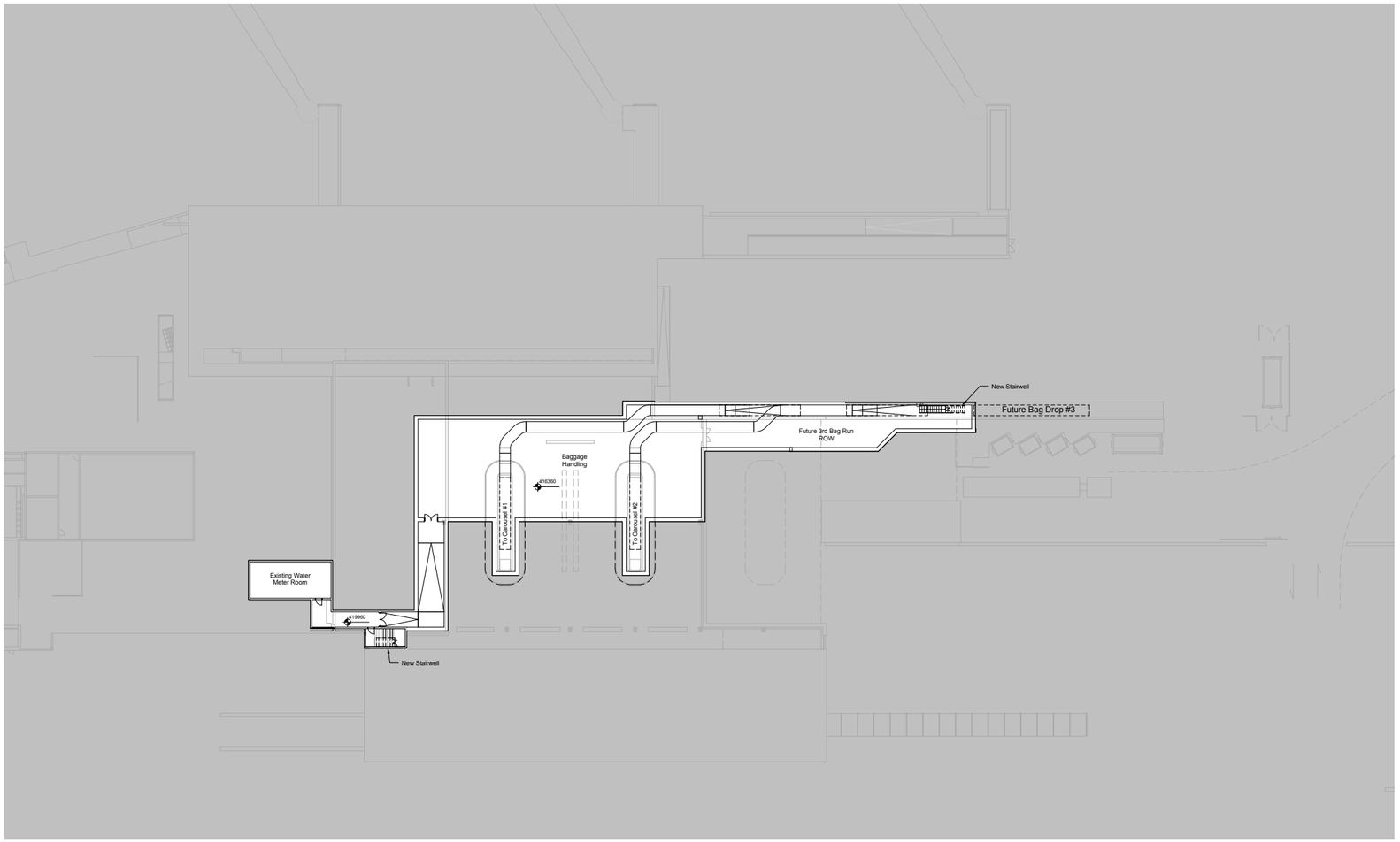
PHASE 1 CBSA PIL / TRANSBORDER HOLDROOM
GROUND FLOOR SOUTH



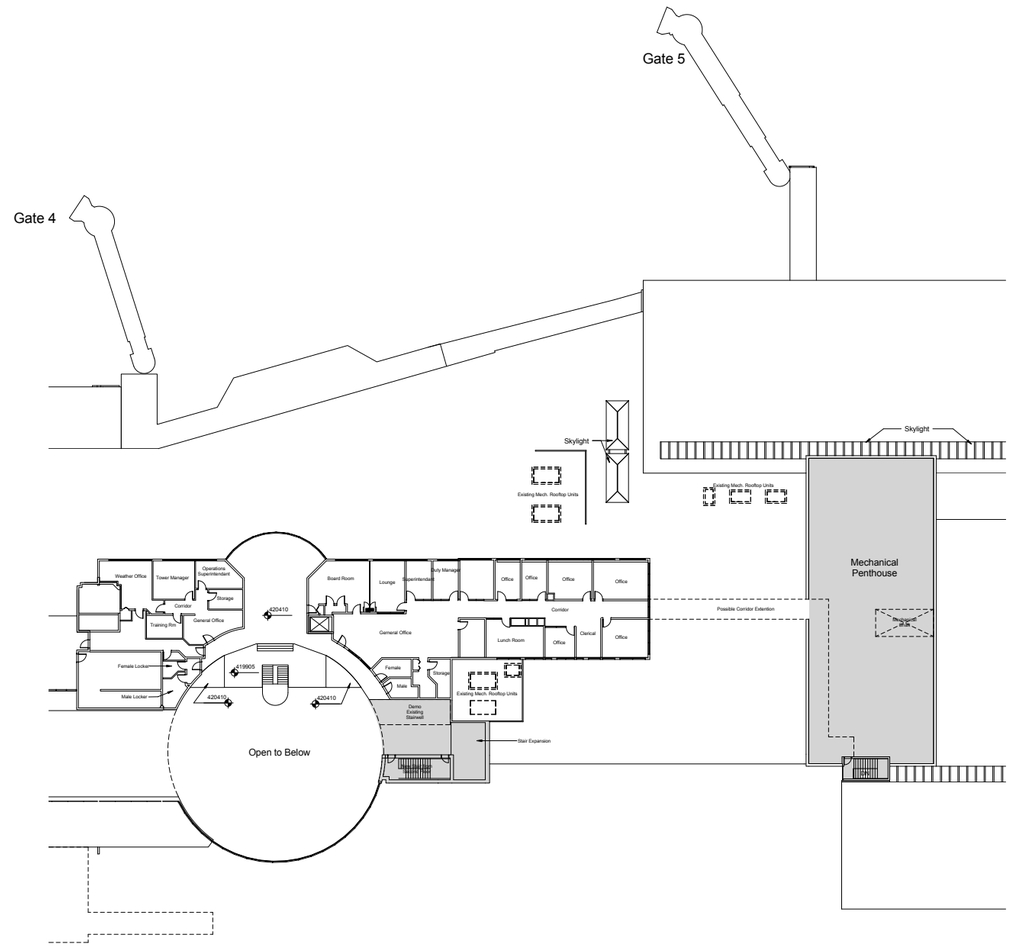
PHASE 2 OUTBOUND BAGGAGE MAKE UP HALL / AIRSIDE CORRIDOR
GROUND FLOOR



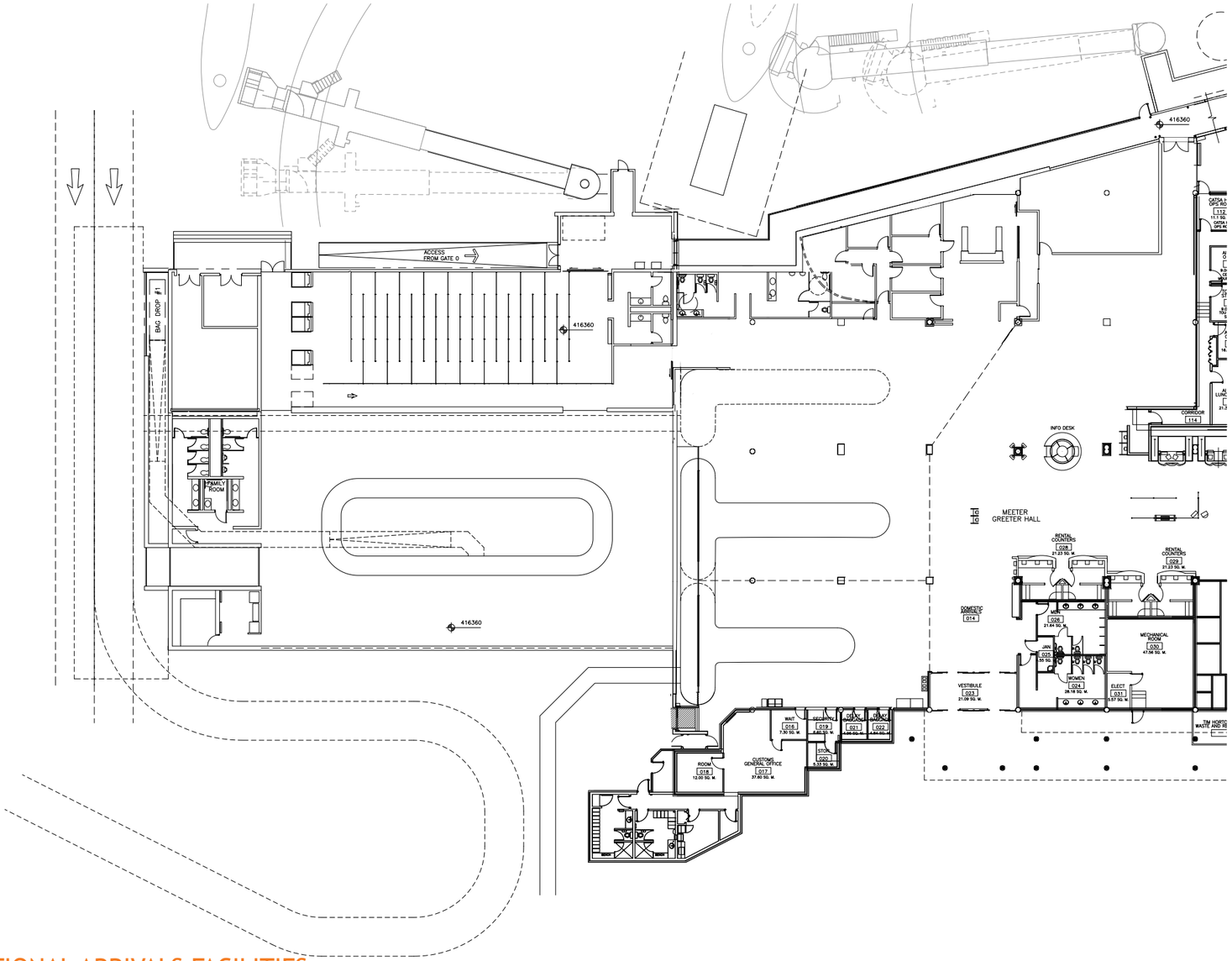
PHASE 3 DOMESTIC ARRIVALS FACILITIES
GROUND FLOOR



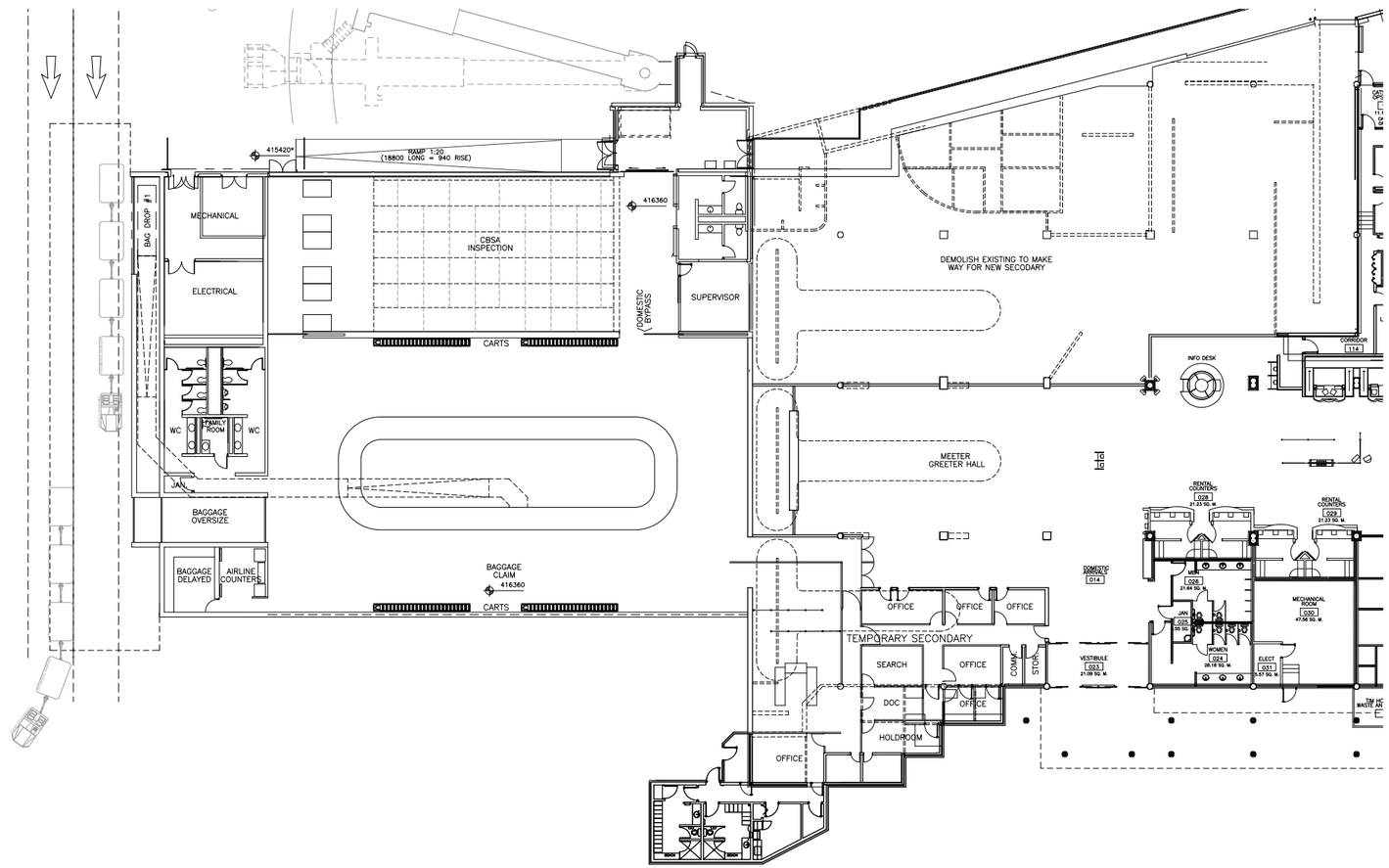
PHASE 3 DOMESTIC ARRIVALS FACILITIES
BASEMENT



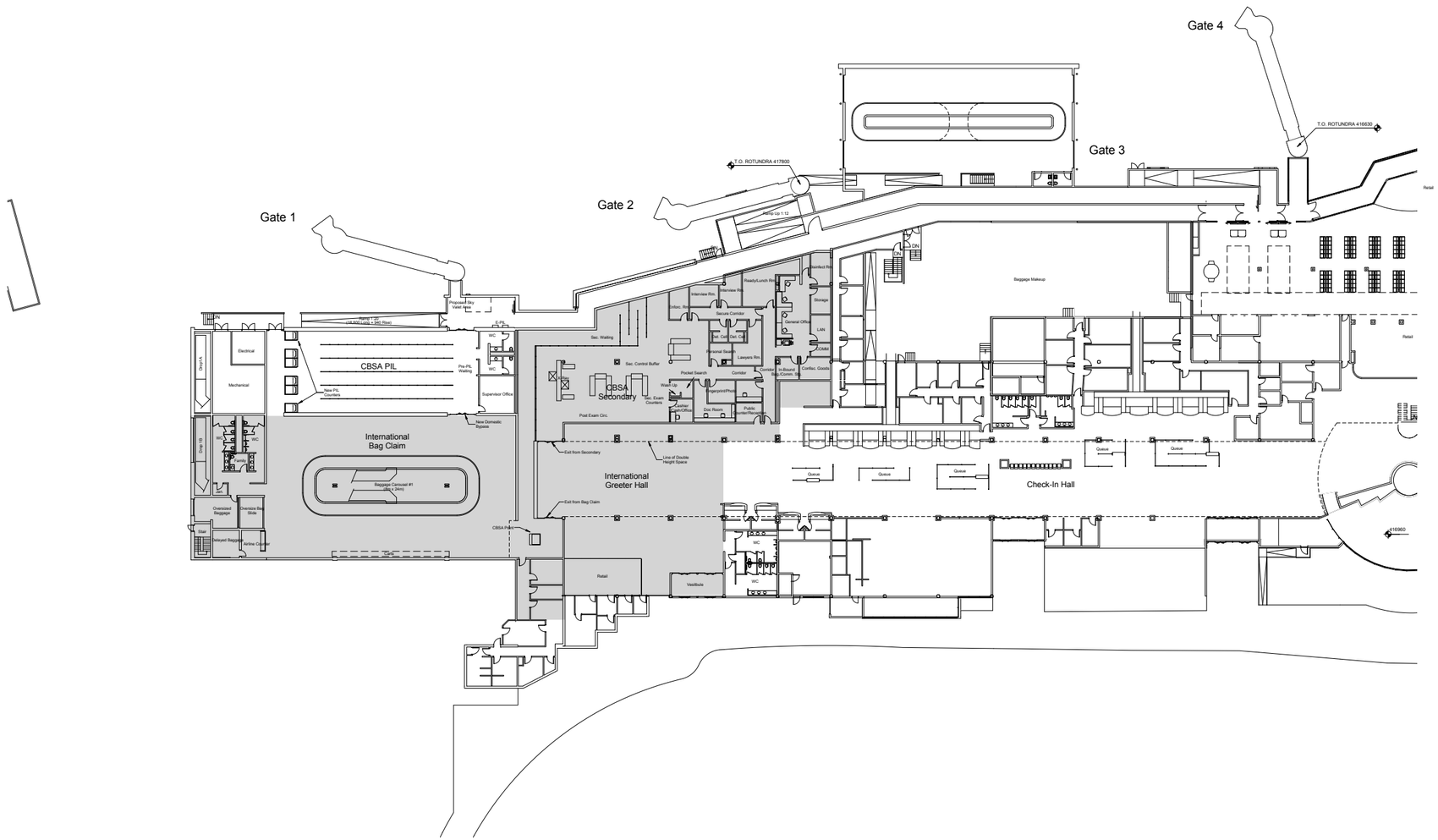
PHASE 3 DOMESTIC ARRIVALS FACILITIES
SECOND FLOOR



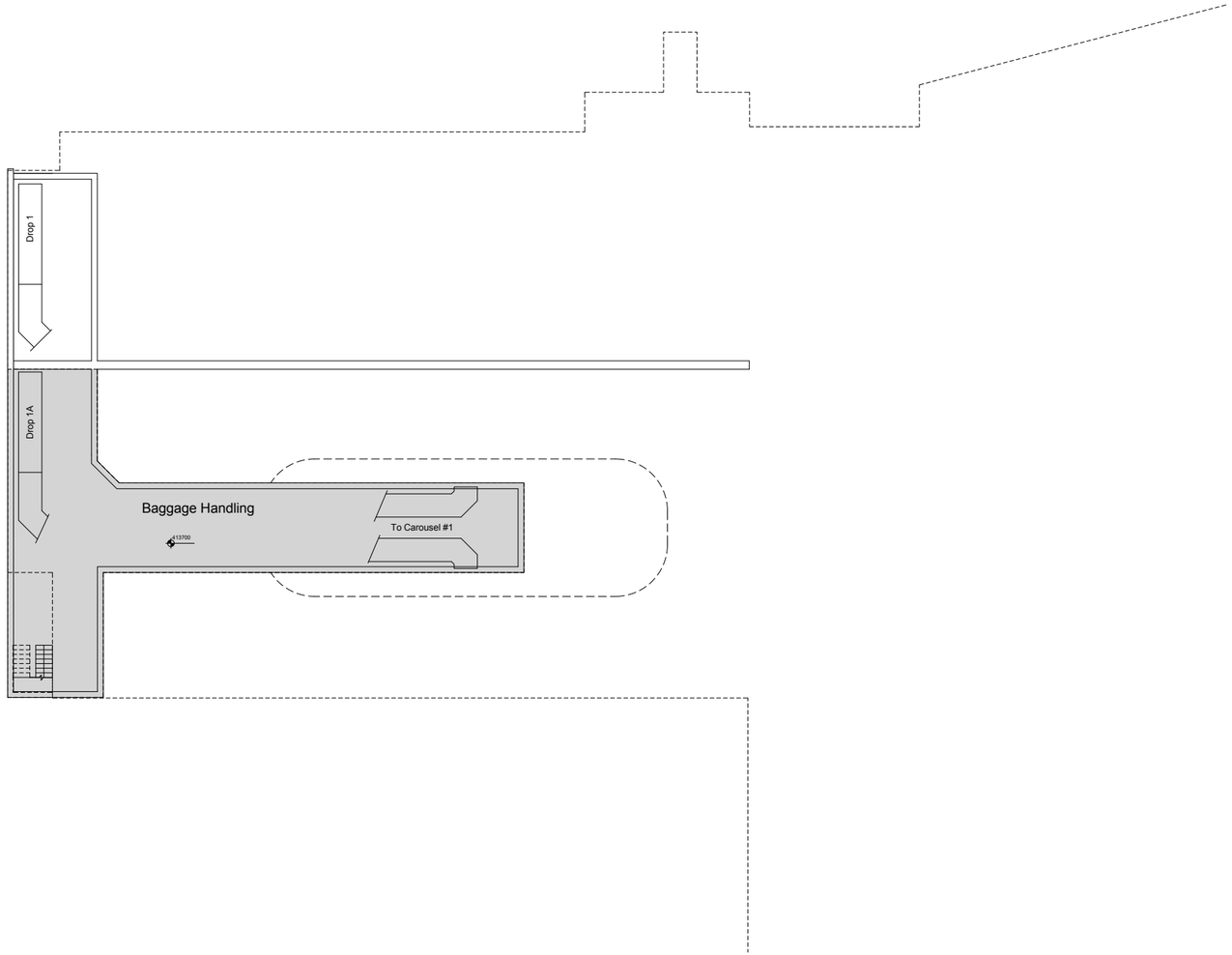
PHASE 4 INTERNATIONAL ARRIVALS FACILITIES
GROUND FLOOR – STEP 1



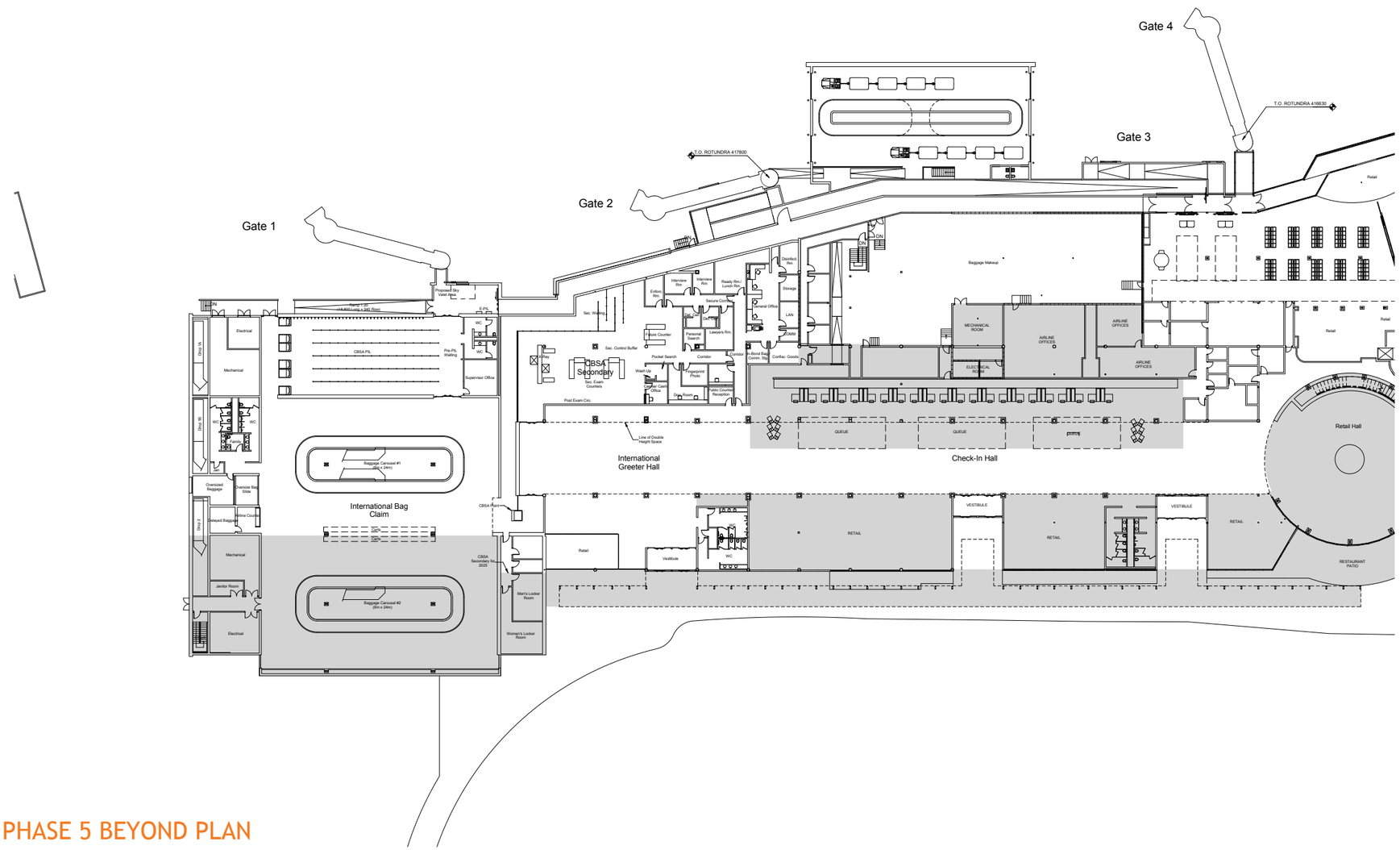
PHASE 4 INTERNATIONAL ARRIVALS FACILITIES
GROUND FLOOR – STEP 2



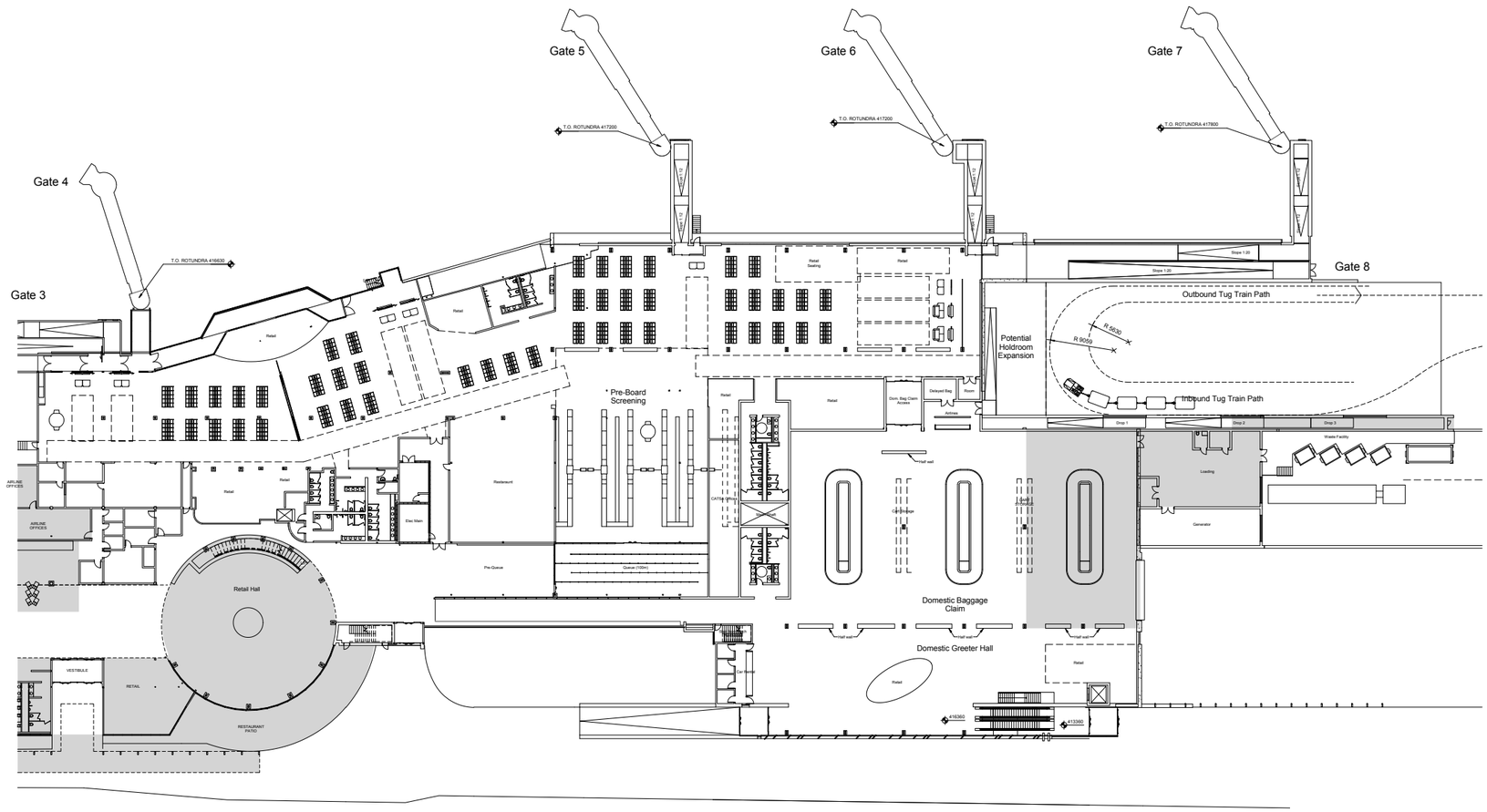
PHASE 4 INTERNATIONAL ARRIVALS FACILITIES GROUND FLOOR – STEP 3



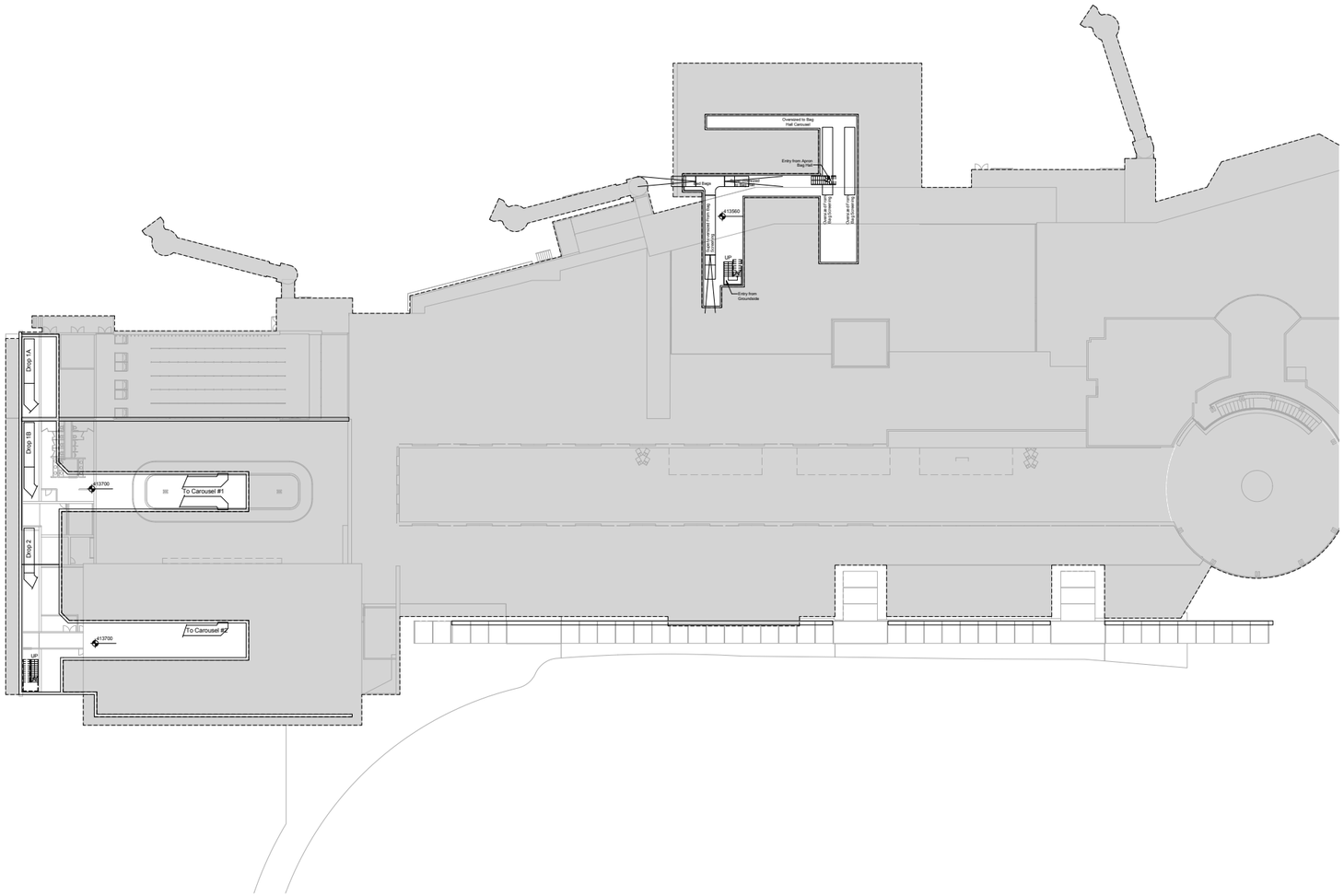
PHASE 4 INTERNATIONAL ARRIVALS FACILITIES
BASEMENT



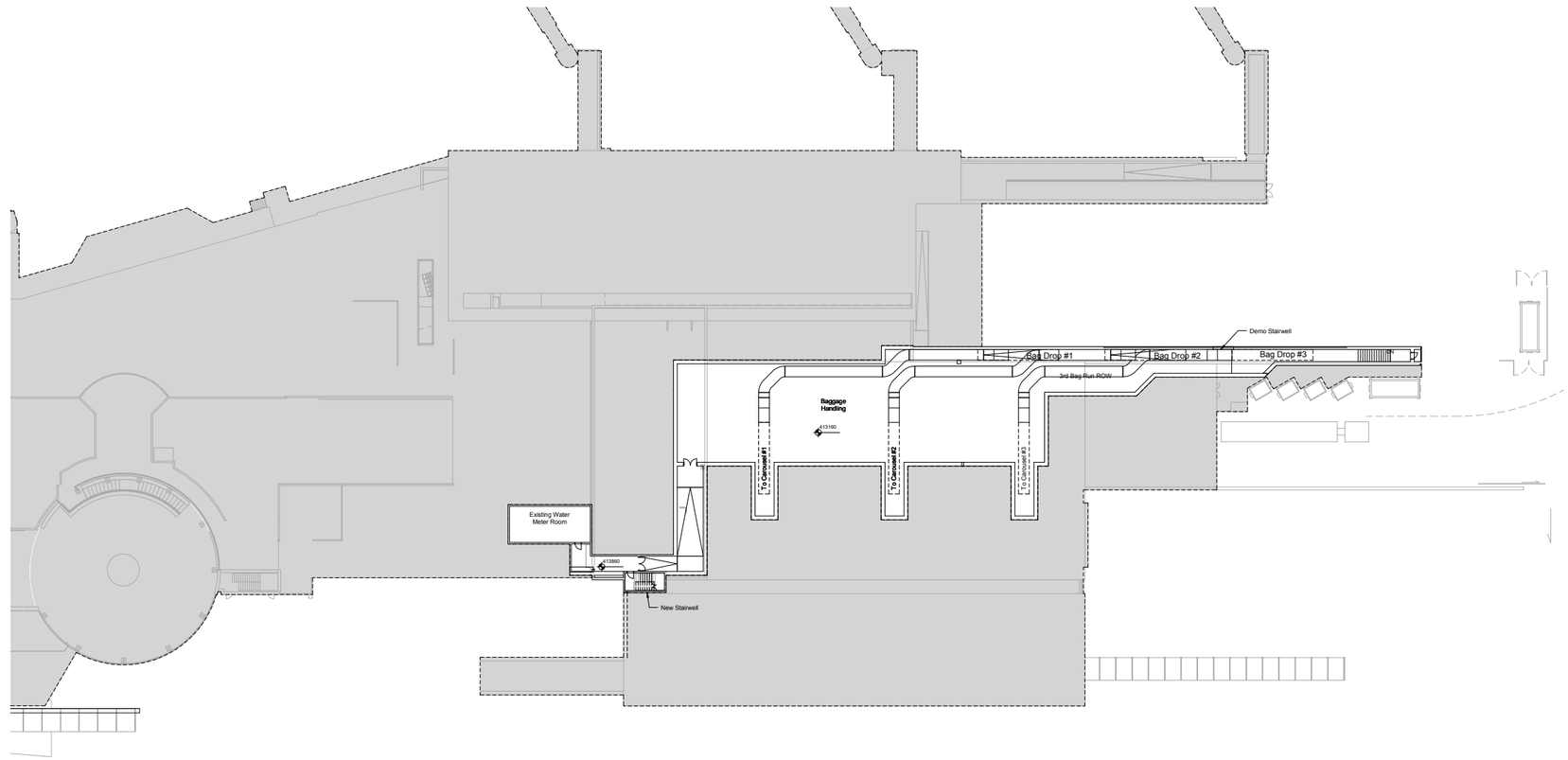
PHASE 5 BEYOND PLAN
GROUND FLOOR NORTH



PHASE 5 BEYOND PLAN
GROUND FLOOR SOUTH



PHASE 5 BEYOND PLAN
BASEMENT NORTH



PHASE 5 BEYOND PLAN
BASEMENT SOUTH