



## Stations

Dialog led the team tasked with developing concept station and tower designs overlaid on Dopplemayr's preliminary technical requirements<sup>18</sup>. The five station locations were identified to provide opportunities for transit-oriented development (TOD), entertainment and dining, and connectivity to existing pedestrian and transit networks. The stations from north to south are referred to as follows: [Downtown Station](#), [Ortona Armoury Station](#), [Power Plant Station](#), [End of Steel Station](#), and [Whyte Ave. Station](#).

Both programmatically and architecturally, the Prairie Sky stations are designed to be focal points in the communities that they are situated within. The design team views these stations as opportunities to create new places within Edmonton that contribute positively to residents and guests alike. They are permeable, accessible and inviting. Their architectural expression is exciting and dynamic, peaking the curiosity of passersby and further advancing infrastructural design excellence in Edmonton.

Architecturally, the station design is guided by an aspiration to achieve a unified, recognizable language across the entire network, while at the same time responding to the unique contexts of each of the stations. To this end, the design concept utilizes a set of design elements that make up the base structure for each of the stations. These elements include:

**Platform:** The gondola platforms are an extension of the urban fabric. Whether at grade or elevated, the platform is designed to be an accessible, plaza-like environment that encourages social interaction and fosters community.

**Structural Framework:** Marking each site is a set of structural frames that gives the station its primary form. Designed with repetition, efficiency and flexibility in mind, this system is consistent across the network.

**Lantern Canopy:** The gondola mechanics are suspended above the platform within a lantern-like canopy. Gesturing out from each end of the station and emanating a soft glow, the canopy acts as a marquee for each station and creates a safe, welcoming environment below, while celebrating the character of a gondola system.

**Program Insertions:** Placed between the structural frames and under the canopy are a series of programmatic insertions that animate the platform. Ranging from experiential activations and community space to food and beverage venues, ticket booths,

washrooms, service bays, and staff space. The combination of insertions allows each station to operate at different scales and in different ways from one another.

**Variable Skin:** Draping the stations is a skin that strives to provide more than protection from the elements is a central design philosophy for the project. The envelope is expressive and dynamic giving each station a unique identity. The shape and materiality of the enclosure is highly variable from one station to another, taking on the colours, the texture and character of the station's context.

Examples of these design elements are presented in Figure 3.



Figure 3 - Examples of Design Themes

Each of the stations was designed with a theme that reflects either the intended use of the station or the surrounding area. The presented station sketches are the result of concept level design and are subject to change as the project progresses.

18. Dimensioned Station Concepts with Preliminary Doppelmayr Technical Drawings (Appendix R).

#### Downtown Station

The Downtown Station is located immediately south of MacDonald Drive in the proximity of TELUS House and ATB Tower on the top of the north bank of the North Saskatchewan River. In the vicinity is the Fairmont Hotel McDonald and also Edmonton's funicular. The theme for this

station is emergence and plays off the natural slope of McDougall Hill. The intent is for the station to be lowered and for the gondola to appear to emerge from the hillside as shown in Figure 4. The station will tie into and activate the existing tunnel that goes under MacDonald Drive into the large commercial space within the podium of the adjacent towers. This tunnel provides direct access from the gondola to the downtown pedway system and the light rail transportation network via a direct connection to Central Station. Connectivity to the bike network and existing pedestrian paths in the area will be provided above ground. The City of Edmonton plans to build a pedestrian bridge over McDougall Hill Road to provide access to the Fairmont Hotel McDonald and the funicular. Prairie Sky is committed to working with the City and the pedestrian bridge design team to ensure cohesion between the two projects.

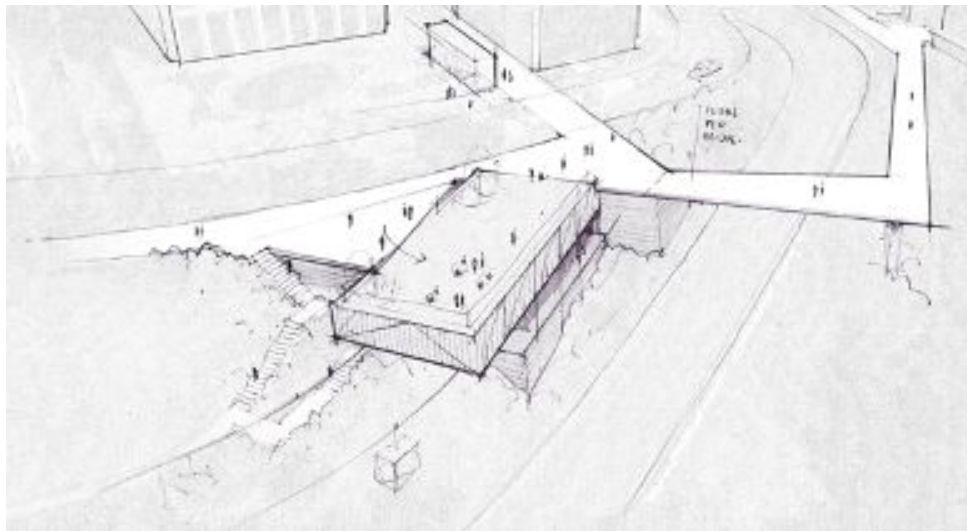


Figure 4 - Concept Sketch of Downtown Station

The roof of the station is envisioned as a publicly accessible plaza that Prairie Sky commercially activates in a temporary but ongoing fashion. The station will act as an extension of MacDonald Drive and dramatically open up the view of the river valley to the southeast. Due to the height of the gondola machinery and the elevation of the existing tunnel, the plaza will be raised approximately 1.5 metres above the elevation of MacDonald Drive. Ramps will be provided to maintain accessibility of the public plaza. The plaza will have benches and soft landscaping to invite pedestrians and passengers to spend time there. Boarding for the gondola will occur on the lower level of the station. This level will also house a café, washrooms, gondola control room, and station electrical room.



The location for this station was chosen to take advantage of the pedestrian connectivity while knowing that the site is complicated geotechnically. Tetra Tech has identified two historical coal mines in the vicinity of McDougall Hill Road; however, their lateral extents are not definitively known at this time. A historical deep-seated landslide was identified on the McDougall Hill slope; however, the area affected by this potential slope failure is south of McDougall Hill Road. Tetra Tech has determined that the Downtown Station is geotechnically feasible. In-depth slope stability analyses and investigations determining the extents of the coal mines will be conducted in Phase Three.

### Ortona Armoury Station

The Ortona Armoury Station is located immediately east of Rosssdale Road and north of 97 Ave., adjacent to the Ortona Armoury Arts Building. The theme for this station is transit – the station is located to act as a catalyst for TOD in the West Rosssdale area and will immediately serve the population that lives on both sides of 97 Ave. The gondola will also serve future residents of the developments planned in the River Crossing Business Plan. The influx of residents and gondola passengers will necessitate enhancements to the pedestrian and cycling networks in the area. Improvements such as connectivity to the multi-use trails and safe pedestrian crossings of arterial roads in the area have been identified as required in the River Crossing Business Plan and are fully supported by Prairie Sky. Additionally, the River Crossing Business Plan calls for improved connectivity in the community of West Rosssdale, which in many respects will be provided by Prairie Sky.

The parcel of land adjacent to the Ortona Armoury Arts Building to the west is owned by the City and has been reserved for sustainable and affordable housing development. Prairie Sky is committed to working with the developer to ensure that both projects are complimentary. A direct transportation link will increase the value and benefit of the housing development.



Figure 5 - Concept Sketch of Ortona Station

The shape and location of the station were chosen to accommodate the deviation in the alignment and to match the shape of the land parcel. Prairie Sky recognizes that planning for the sustainable and affordable housing development is still ongoing and that the location of the station can be slightly shifted within this site to better accommodate both projects. Boarding for the gondola is located on the second level of the station, as shown in Figure 5, along with the control rooms and mechanical and electrical spaces. The lower level is commercially programmed with a café, ticket stations, and other community space.

The Ortona Armoury Arts Building was designated as a Municipal Historic Resource in 2004 and is currently being rehabilitated. The design and construction of Prairie Sky will respect the historic value of the building. This site is not known to be archeologically sensitive. The technical assessment of the Ortona Armoury Station did not identify any special challenges on the site, such as heightened environmental, Indigenous, historical or geotechnical sensitivities.

### Power Plant Station

The Power Plant Station shown is located directly east of the historic Rossdale Power Plant and will cantilever over the existing Switch House Building. The Rossdale Power Plant was designated as a Provincial Historic Resource in 2001 and this area is known to be culturally and archeologically significant. The site was originally called the Rossdale Flats and was used by the Indigenous Peoples for trade, ceremony and as a burial ground. It was also the original site of Fort Edmonton Park. The importance of the history of this area goes back 10,000 years and cannot be overstated.

Extensive commercial programming of the Power Plant Station will draw tourists and recreational users to both the station and community. The requirement to extensively commercially program the Power Plant Station with experiential, educational, as well as various food and beverage options is essential. The area south of the station will be a public plaza with hardscaping and seating. The concept for the site both activates and aligns with the Touch the Water Promenade Plan and the River Crossing Business Plan. This station will enhance accessibility of the area and be a catalyst for further developments.

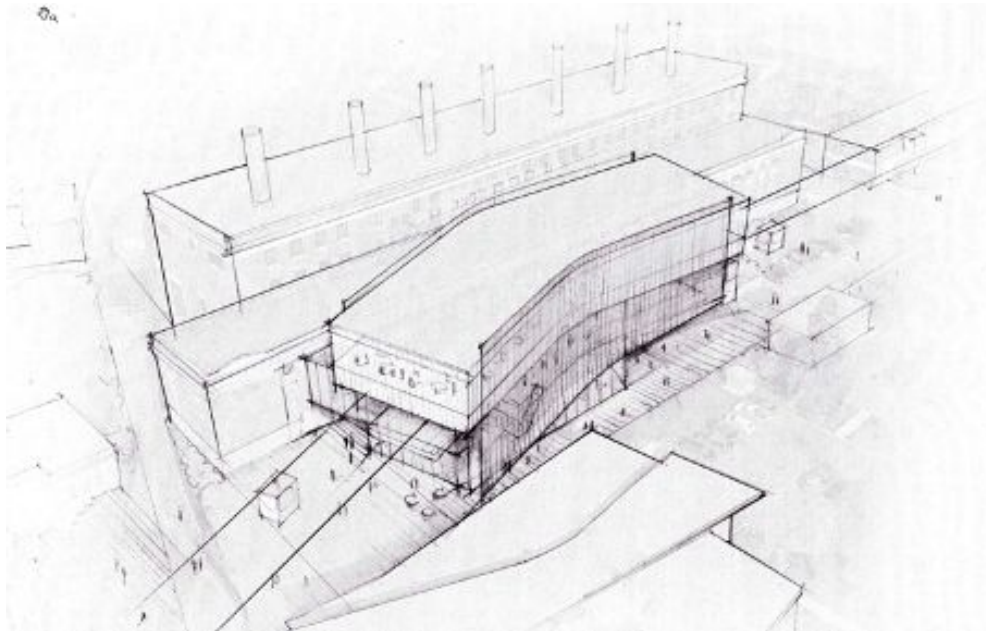


Figure 6 - Concept Sketch of Power Plant Station





The theme for the Power Plant Station is history – the station will reflect and present the history of the Indigenous Peoples in the region as well as the history of the unique Rosedale Power Plant. The station is four stories tall with a maximum height below that of the Boiler Hall to respect the significance of this historic structure, as illustrated in Figure 6.

The entire experience guests will have near and within this station is meant to share the Indigenous story and be a platform for reconciliation. The lower levels will be creatively programmed to both tell the story and provide connectivity and utility to the river valley--families on walks, cyclists, skiers, runners and so on. The third level will be for boarding. Also on the third level will be the gondola's power system, bullwheels, and central electrical and mechanical systems on display. The fourth level will be a fine dining restaurant with extensive views of the river valley. The space will serve a dual purpose and be used for weddings, Christmas parties, corporate events and other private functions. The Power Plant Station will also be the central station for alignment experiences, such as during the Canada Day fireworks.

As was stated previously, many recent developments have occurred in the area and numerous archeological, historical and cultural studies have been completed. The land around the Rosedale Power Plant is known to be highly disturbed with pockets of undisturbed areas containing historic material. Further archeological investigations in the area and a robust monitoring plan during construction will be in place for the Power Plant Station.

The soil in this area is expected to be contaminated based on discussions with Spencer Environmental and the City of Edmonton. Remediation of the contaminated soil will be required prior to any construction activities in the area. Spencer Environmental investigated flood hazards in the vicinity of the station and determined that the floodway and flood fringe do not extend to the Power Plant Station footprint. No geotechnical concerns were noted around this site.

#### End of Steel Park Station

The End of Steel Park Station is located south of Saskatchewan Drive and east of Gateway Boulevard within the park. Directly to the east is the Ritchie Mill - a Municipal Cultural Resource - and a parking lot. The park is a reminder of rail history in Edmonton and features a Canadian Pacific Rail caboose sitting on tracks.

The theme for this station is transit, both past and present. Its location will enhance TOD opportunities in the area and provide a new mode of transit to the many surrounding residential buildings. The historical significance of End of Steel Park and the CN rail will be displayed. The



caboose and tracks will either be maintained in their current location or incorporated into the station.

The End of Steel Park Station will be minimally commercially programmed, with the majority of the space being allocated to cabin boarding, cabin parking and maintenance bays. A concept design of the station is shown in Figure 7. The station will be two levels and boarding will occur at the second level. This ensures there is sufficient clearance over Saskatchewan Drive to the north and avoids the existing aerial power lines. The lower level of the station will be used for overnight cabin parking and maintenance. Maintenance bays will be provided within the cabin parking area at End of Steel Park for trained personnel to complete the required maintenance and repairs of the cabins, as required by the governing code for elevated passenger ropeways, CSA Z98-19.

The boundary for City of Edmonton Bylaw 7188 is directly north of Saskatchewan Drive and therefore does not apply to the End of Steel Park Station. The park is designated as having a moderate value with respect to environmental sensitivity. There are a number of mature trees in the park; Prairie Sky will work to maintain as many trees as possible and relocate those in significant conflict with the station. No geotechnical concerns were noted around this site.



Figure 7 - Concept Sketch of End of Steel Park Station



## Whyte Ave. Station

The Whyte Ave. Station is located at the north-east corner of the intersection of Whyte Avenue and Gateway Boulevard. The theme of this station is to be a showcase for the entire alignment and will function as the gateway for domestic and international tourists while providing a public plaza. The station is located at the end of the busy and vibrant stretch of Whyte Avenue and is expected to bridge the gap to the eastern segment of Whyte Avenue and create new commercial and residential development opportunities. Whyte Avenue is a pedestrian friendly street that boasts excellent connectivity to the bike network and public transit. Near this station parking must be in place for experiential guests and tour buses.

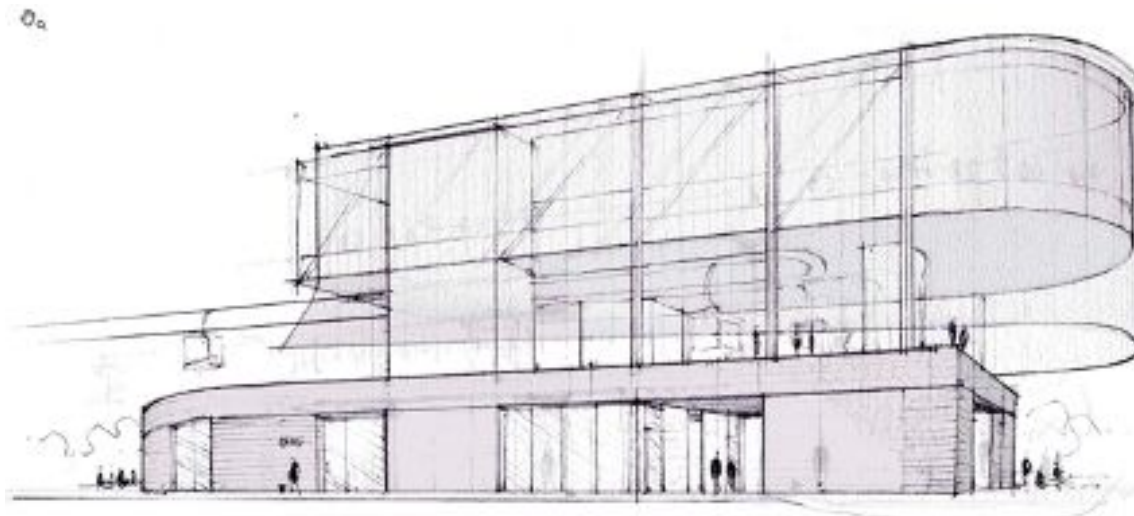


Figure 8 - Concept Sketch of Whyte Ave. Station

The shape of the station is drawn from the gondola system itself and is illustrated in Figure 8. At the end of the line, the gondolas must move around the curve to begin their return journey and this curve is represented in the shape and architecture of the station. The street level will host space to satisfy the expectations of domestic and international tourists. The second level will be dedicated to boarding and necessary controls. The third level will display the upper gondola machinery amidst a restaurant. The second and third levels are proposed to cantilever over the sidewalk of Whyte Avenue to highlight the separation between the gondola system and the commercial space below. Hardscaping and seating will be provided at street level to encourage pedestrians and tourists to enjoy the area and amenities. The interface the station has with the



public realm will feel as though the public realm is extended into the station where necessary 24/7 public amenities are made available.

This area is currently washrooms and a parking lot; however, the planWhyte group has been tasked to create a plan to revitalize this area. Prairie Sky has engaged with the planWhyte team and is committed to ensuring individual project objectives continue to align.

The technical assessment of the Whyte Ave. Station did not identify any special challenges on the site, such as heightened environmental, Indigenous, historical or geotechnical sensitivities.

## Towers

There are 20 towers along the alignment varying in height from 8.1 metres to 32.4 metres. Doppelmayr defined these ropeline profiles as north and south with the Power Plant Station as the central point<sup>19</sup>. Tower locations were chosen to avoid conflicts with known ground obstacles, such as roads, buildings, utilities and trees where possible. The footprint of the towers is small, which minimizes the ecological impact of the project, and tower heights may be raised to clear trees where required.

The ropeline profile was refined by Doppelmayr as project development progressed and is supported by information from technical subconsultants. The tower spacing varies between legs of the alignment. The longest span of 310 metres occurs over the North Saskatchewan River. Towers are identified based on their leg of the alignment and location and these numbers are noted in Figures 1 and 2. The design wind speed values provided by RWDI were used by Doppelmayr to determine preliminary wind loads on the ropeway, towers and foundations. With these loads, preliminary sizes were chosen for the towers and foundations for the purpose of determining land requirements and construction cost estimates.

The towers will be tapered hollow steel tubes with a concrete base similar to the tower shown in Figure 9. The base diameter and thickness of the steel tube will be refined as the design progresses. All towers near roadways will be constructed atop a concrete base to protect the tower in the event of vehicular impact.



Figure 9 - Indicative Tower Design

Towers 1.1 to 1.5 are located east of Gateway Boulevard in an area that is currently a parking lot and End of Steel Park. Tower 1.2 was located to avoid the Province of Alberta's rail right-of-way.

Tower 2.1 is to the south of Saskatchewan Drive to exit the station and allow for sufficient vehicular clearance above the road. Tower 2.2 is located in the heavily forested slope between Saskatchewan Drive and Queen Elizabeth Park Road. The location is technically feasible; however, the slope and busy arterial roads introduce construction access challenges. Doppelmayr is investigating the possibility of shifting the tower to the north side of Queen Elizabeth Park Road to mitigate these risks. Spencer Environmental has noted that this location is extremely environmentally sensitive due to the heavy forest.

The next tower in the alignment, Tower 2.3 is located on the south bank of the North Saskatchewan River and is within a heavily forested, environmentally sensitive area. The proposed location is on relatively flat ground and near an existing access road. Trees will need



to be relocated or removed to facilitate construction of this tower. Additionally, Tetra Tech noted that ancient slope failures have been identified on the south side of the river and that the slope is currently considered stable, with a low factor of safety. As such, foundations for this tower will need to extend to competent bedrock and be designed to resist lateral forces due to possible slope movements. Additionally, this tower is located within Alberta Environment's mapped floodway for the North Saskatchewan River. This will trigger additional permit requirements.

The gondola will then span across the river, initially to a tower on the steep riverbank between the shared use paths and the North Saskatchewan River. This area is similarly known to be highly environmentally sensitive and federal and provincial permits will be required. Additionally, this tower will be located on the edge of the North Saskatchewan River floodway. Based on these challenges, this location does not appear to be feasible. Consequently, Doppelmayr has updated the design of the ropeline profile and determined that this tower can be removed, and the gondola can span across the river to Tower 2.4. Tower 2.5 is located just south of the Power Plant Station and will facilitate the slope into the station.

North of the Power Plant Station, the alignment requires two towers (Towers 3.1 and 3.2) within the EPCOR site, before it passes alongside Re/Max Field with Tower 3.3 in the southwest corner of the field. The location and height of this tower will be coordinated with the City of Edmonton (owner of the site) and the operator to resolve any conflicts with lighting or clearances. Sport lighting may be mounted on the gondola tower for the Re/Max field if required.

Tower 3.4 is required to be a special tower and is conceptually shown in Figure 10. The tower will be inclined to avoid infringing on Rosedale Road, while still maintaining the alignment between stations. The tiebacks are required for the stability of the tower and are designed as feature elements, holding it in place. The straight portion at the top is required to accommodate the cabins with their suspensions. Due to the tiebacks, the required footprint for this tower will be larger than for a typical tower.

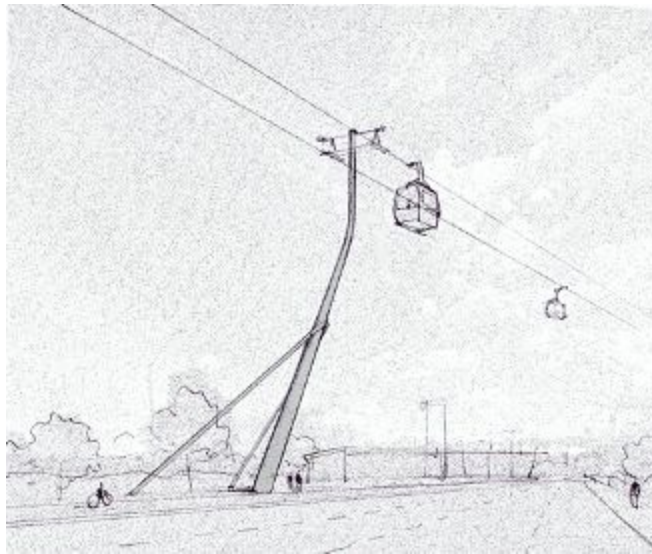


Figure 10 - Inclined Tower 3.4

Tower 3.5 is immediately south of Ortona Armoury Station, whereas Tower 4.1 is immediately north of it. Both towers are required to change the vertical profile of the alignment coming into and going out of the station.

Tower 4.2 is located directly north of the historic Ortona Armoury Arts Building. The tower will be tall enough to ensure that the cabins can pass over the building with the required clearance below. The remaining towers in this leg (Towers 4.3 to 4.5) are located to avoid roads and are in areas of moderate environmental sensitivity and maintained grasses. As they might be on marginally stable slopes, special foundation considerations may be required, similar to Tower 2.4.

19. Doppelmayr Ropeline Profile North (Appendix S.1) and Doppelmayr Ropeline Profile South (Appendix S.2).