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1455 QUEBEC STREET (COMPLETE APPLICATION)  
DE414096 - ZONE BCPED

SH/TC/DA/MW/LH

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**DEVELOPMENT PERMIT STAFF COMMITTEE MEMBERS**

**Present:**

B. Boons (Chair), Development Services  
P. Storer, Engineering Services  
L. Gayman, Real Estate Services  
C. Tapp, Social Planning  
R. Whitlock, Housing Centre  
T. Driessen, Park Board

**Also Present:**

S. Hein, Urban Design Studio  
T. Chen, Development Services  
D. Autiero, Development Services

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**APPLICANT:**

ASTC Science World Society  
Attention: Talent Pun  
1455 Quebec Street  
Vancouver, BC  
V6A 3Z7

**PROPERTY OWNER:**

City Of Vancouver  
453 West 12<sup>th</sup> Avenue  
Vancouver, BC  
V5Y 1V4

**LESSEE**

Her Majesty the Queen in Right of the Province  
of British Columbia Parliament Buildings,  
Victoria, B.C.  
V8V 1X4

**OCCUPANT**

A.S.T.C. Science World Society  
1455 Quebec Street  
Vancouver, B.C.  
V6A 3Z7

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**EXECUTIVE SUMMARY**

- **Proposal:** Construction of a secured, interactive, educational and sustainably themed, outdoor science park for Science World patrons known as the *Outdoor Science Experience* (OSE). The proposal is being considered as a cultural/educational facility under the prevailing zoning. The proposed scope of work includes OSE, new public realm including replacement of the fronting large roundabout (remnant from the Molson's Indy), landscape improvements to the immediately adjacent Creekside Park and upgrades to bike/pedestrian paths. This application's scope represents the second phase of a larger development programme with phase 1 previously approved by the Development Permit Board on June 28, 2010 and currently under construction.

See Appendix A Standard Conditions

Appendix B Standard Notes and Conditions of Development Permit

Appendix C Processing Centre - Building comments

Appendix D Plans and Elevations

Appendix E Applicant's Design Rationale

Appendix F Current Lease Area Plan

Appendix G Short term and Long Term Vision

Appendix H Proposed Development Area Plan (Scope of Work)

Appendix I Urban Design Panel minutes from October 20, 2010

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Appendix J Access Relationships with Science World  
Appendix K Draft Memorandum of Understanding

● **Issues:**

1. Encroachment into Creekside Park and resulting quality as a public asset
2. Qualitative experience of the pedestrian walkway at the secured edge adjacent to the park and loading space; and
3. Management of loading and shared spaces

● **Urban Design Panel: Support**

**DEVELOPMENT PERMIT STAFF COMMITTEE RECOMMENDATION: APPROVE**

THAT the Board APPROVE Development Application No. DE414096 as submitted, the plans and information forming a part thereof, thereby permitting the development of a secured, interactive, educational and sustainably themed, outdoor science experience (OSE) as an extension of the Cultural Educational facility (Science World) which includes a new public realm including replacement of the fronting roundabout, landscape improvements to the immediately adjacent Creekside Park and upgrades to bike/pedestrian paths, subject to Council's approval of the modification of the existing lease and the following conditions:

**1.0 Prior to the issuance of the development permit, revised drawings and information shall be submitted to the satisfaction of the Director of Planning, clearly indicating:**

- 1.1 design development to improve the qualitative experience for pedestrians and park users presented by the OSE's secured edge in consultation with the Director of Planning, General Manager of Engineering and the General Manager of the Board of Parks and Recreation;

**Note to Applicant:** Careful attention to the OSE's public/private programming including opportunities for interactive engagement and animation, the provision of greater permeability into the OSE and out to Creekside Park, and the provision of substantive quality in the execution of all visible aspects of the edge are required to ensure that the general public's pedestrian experience is engaging, safe, and of high quality on a seasonal basis as landscape matures. Confirmation of the relocation and quality of the playground feature is required. Consideration should be given to announcing the OSE on the public side of the edge while meeting technical requirements for movement, pedestrian accessibility and loading. Further attention to the area where the OSE's edge converges with the termination of the Creekside Park promenade is required to ensure that the promenade is properly announced as a larger public realm gesture given emerging opportunities to extend this feature along the east end of False Creek towards Northeast False Creek's potential public open space.

- 1.2 design development to provide a conceptual lighting plan for the area adjacent to the OSE:

**Note to Applicant:** Careful attention to ensure effective CPTED performance, and to mitigate glare for nearby residences, is required. Special attention to larger, more sculptural OSE elements should be considered.

- 1.3 provision of an *Operational Management Plan* for the OSE, related adjacent public realm and shared public spaces to the satisfaction of the Director of Planning, the

General Manager of Engineering Services and the General Manager of the Board of Parks and Recreation;

**Note to Applicant:** The plan should address specific operational strategies and procedures to ensure neighbourly behavior including attention to noise, smell, special events and related special hours of operation, special loading/access and exhibitory set-up circumstances and park adjacency maintenance considerations. The plan should outline on-going consultation strategies to ensure that nearby residents are properly notified of special events.

- 1.4 provision of design development detailing for exhibitory content;

**Note to Applicant:** Given the OSE's prominence as a civic asset, further detailed information to ensure design quality and longevity is required.

- 1.5 design development to the changing outdoor exhibit space, loading, public activity courts, adjacent park space and seawall to the west in consultation with the General Manager of Engineering Services, the Director of Planning and the General Manager of the Board of Parks and Recreation.

**Note to Applicant:** Further refinement/clarity of programming, public/private demarcation, aesthetic/character strategies and functionality is required given the importance, and prominence, of the collective spaces adjacent to Creekside Park and the seawall. During the Phase 1 permitting process, a discussion ensued around locating a large outdoor sculpture (or similar) adjacent to the west exterior wall of the loading area and roughly on axis with the public walkway to the north. The intention is to animate this corner of the building and provide pedestrian interest from the public walkways. Staff are seeking confirmation on the location and size of the installation, and if possible, the nature of the piece under further design development for this condition.

- 1.6 design development to increase the buffer space between the drop-off area and the bikeway by 1.5 m, without reducing pedestrian or cyclist space;

**Note to applicant:** This should be accomplished by moving the eastern edge of the fence inward by 1.5 m for the portion of fence that corresponds with the bus drop-off area and future streetcar platform alignment. The additional width is required to ensure that a future streetcar line can be accommodated and to provide additional green space through the connection in the interim; and

- 1.7 arrangements to be completed to the satisfaction of the Director of Real Estate Services, Managing Director of Cultural Services, Director of Legal Services, General Manager of Parks and Recreation, and the General Manager of Engineering Services for a "Memorandum of Understanding" between the Applicant, the City of Vancouver and the Province for the use of City Lands and the ongoing operations of the Science World facility (see Appendix K).

- 2.0 That the conditions set out in Appendix A be met prior to the issuance of the Development Permit.
- 3.0 That the Notes to Applicant and Conditions of the Development Permit set out in Appendix B be approved by the Board.

### 3.0 • Technical Analysis:

	PERMITTED (MAXIMUM)	REQUIRED	EXISTING	PROPOSED
Site Size				Irregular
Site Area			8 Hectares	8 Hectares
Development Area <sup>1</sup>				Outdoor Science Experience 3 324 m <sup>2</sup> Public Realm 6 870 m <sup>2</sup> Relocated Playground 1 165 m <sup>2</sup> Total 11 359 m <sup>2</sup>
Parking <sup>2</sup>	126  Small car 45 (25% max)	100  Disability 7	181	181  Small car 0 Disability 7
Bicycle Parking		Class A 16 Class B 31	Class A 16 Class B 31	Class A 16 Class B 31
Loading <sup>3</sup>		Class B 6	Class B 3	Class B 3

**1 Note on Development Area:** Area specific to the OSE encompasses 3,324 m<sup>2</sup>, however the area effected by the proposal includes the public realm and relocation of playground areas, which are beyond the OSE. See Appendix H for a further breakdown of the specific areas being developed under this development and the entire scope of work under this application.

**2 Note on Parking:** The proposal does not alter the existing parking. Staff support acceptance of the existing parking supply; however, note that future City projects affecting this proposal may reduce the number of spaces.

**3 Note on Loading:** The original Development Permit for Science World (DE206874) accepted the existing loading supply.



• **Legal Description**

Lot: 302  
Block: False Creek  
District Lot: BCP17012

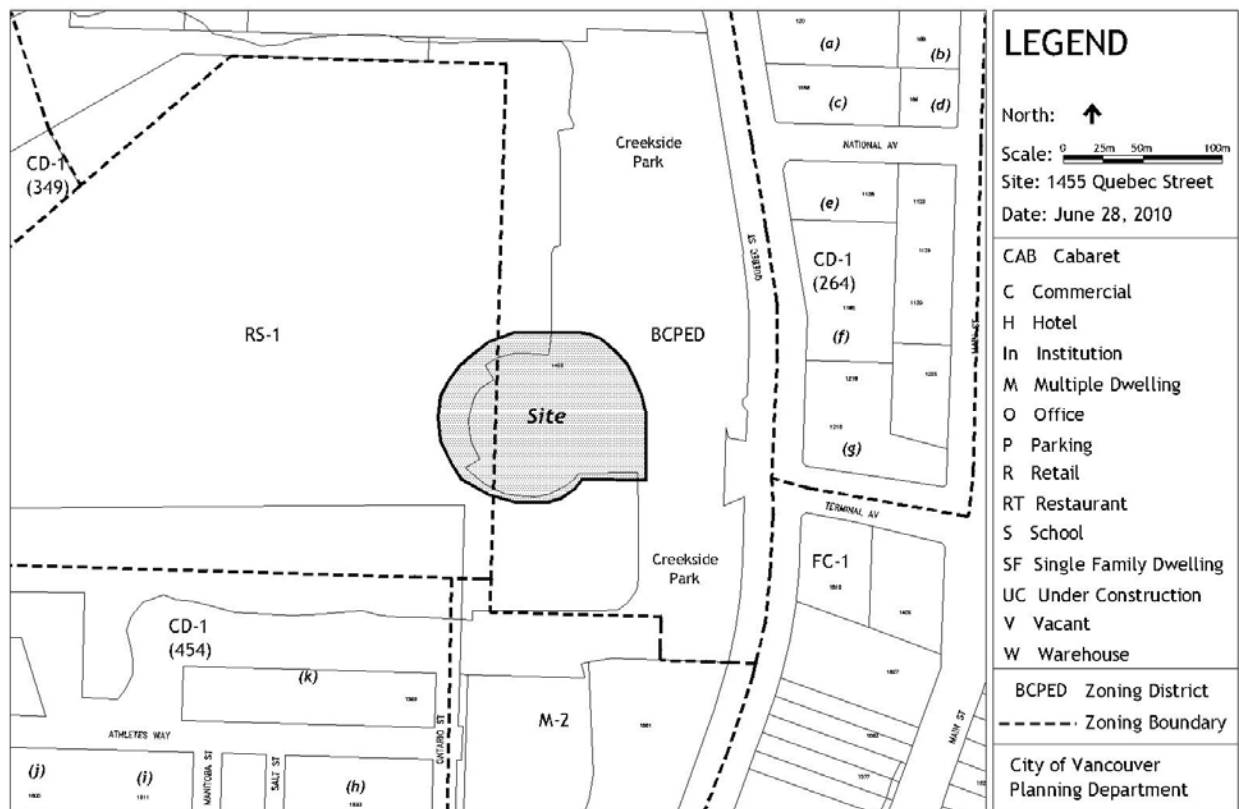
• **History of Application:**

10 07 27 Complete DE submitted  
10 10 20 Urban Design Panel  
10 11 03 Development Permit Staff Committee  
10 11 17 Urban Design Panel

• **Site:** The site is located at the east end of False Creek fronting on the west side of Quebec Street at the foot of Terminal Avenue. Note: Refer to Appendix H for the proposed scope of work.

• **Context:** Significant adjacent development includes:

- (a) 120 Milross Avenue - 24 storey residential, Citygate ("Brighton")
- (b) 188 Milross Avenue - 7 storey residential, Citygate ("Citygate Housing Co-op")
- (c) 1088 Quebec Street - 28 storey residential, Citygate ("The Viceroy")
- (d) 189 National Avenue - 14 storey residential, Citygate ("Sussex")
- (e) 1128 Quebec Street - 27 storey residential, Citygate ("The National")
- (f) 1182 Quebec Street - 30 storey residential, Citygate ("Citygate 1")
- (g) 1218 Quebec Street - 12 storey commercial ("VanCity Credit Saving Union")
- (h) 1633 Ontario Street - 11 storey mixed use (Olympic Village site)
- (i) 1611 Manitoba Street - 9 storey mixed use (Olympic Village site)
- (j) 1600 Columbia Street - 11 storey residential (Olympic Village site)
- (k) Olympic Village - Community Centre



• **Background:** Following the success as the Expo Centre for the World's Fair of 1986, City Council endorsed Science World as the long term tenant in January 1988. The original configuration proposed, and subsequently approved, consisted of four major elements: park design, building design, access configuration and parking arrangement. A subsequent addition of 60,000 square feet was approved and constructed in 1989 which provided additional gallery/exhibit space and a reconfigured entry on the east side.

On May 6, 2010 Council instructed staff to proceed with the required approval processes under city jurisdiction for a 2-phase scope of work. The first phase (DE413866), which represents the majority of work including exterior additions to the building and interior improvements, was approved by the Development Permit Board on June 28, 2010. The second phase known as the *Outdoor Science Experience* is the subject of this report. Given the historic, cultural and iconic role of the facility, its visual prominence on False Creek, and most importantly, the proposed adjusted Creekside Park interface presented under this application, staff are seeking the Development Permit Board's consideration.

Creekside Park has not been made a permanent park under the Vancouver Charter, and is therefore not under the formal jurisdiction of the Park Board, but the park is programmed, administered and maintained by the Park Board.

• **Processing:** The overall proposal for the Science World site has been processed in two separate phases. The first phase of the proposal was for the construction of the additions and re-cladding of the building within the existing lease areas of Science World. Phase I was approved by the Development Permit Board on June 28, 2010. The second phase of the proposal is for the construction of the OSE portion.

As part of the processing of Phase II, Science World staff undertook a public consultation piece which included open houses, telephone polls and internet surveys with the community at large. This consultation was done during the summer, under the direction of City staff, prior to the formal notification to the surrounding community.

Following consideration by the Development Permit Board of this development application, Council will be reviewing a staff report on modifications to the existing lease scheduled for December 14, 2010.

• **Project Intent:** Science World has subsequently outgrown its current facilities noting an acute need for more substantive exhibit space including the recognition of greater potential to engage the public with outdoor programming. Science World has also recognized its greater role in educating the general public about emerging sustainable best practices. This development application proposes to introduce a new exterior interactive, educational area immediately adjacent and northeast of the current facility. The initiative has been made possible through the availability of Federal funding to be matched by the Province and Science World.

• **Applicable By-laws and Guidelines:** The site falls under BC Place/Expo District (BCPED) zoning which prescribes approvable uses, and respective area limits, for the district. The proposal is being considered as a cultural/educational facility under the prevailing zoning. There are no applicable design guidelines to this zoning.

• **Response to Applicable By-laws and Guidelines:** The scope of work described under this development permit application is unique and not specifically anticipated under the applicable by-laws and guidelines. Of primary importance is the issue of park encroachment which totals approximately 36,000 SF, and the resultant quality of such prominent civic assets in Creekside Park and Science World. Staff, who have been informed by the advice of the Urban Design Panel and general public, believe that the OSE proposal is worthy of the proposed encroachment into the park if the recommended design development conditions are properly considered and implemented. More work is

necessary to ensure that the OSE's public "edge", and the pedestrian experience for the park and waterfront, are very well executed and contribute to an improved civic context. Staff note that the existing bermed condition that will be removed in lieu of a more visually interesting, and more blended topography along the edge, will clearly improve the public realm. The loading and shared flex space opportunity presents more of a design challenge with respect to this area's prominence associated with both the park and waterfront seawall context. Staff are confident, that with further design development, and proper budgeting, these two concerns can be properly addressed. Please refer to conditions 1.1, 1.2, 1.4 and 1.5.

Staff appreciate the more dynamic nature of Science World's operations and have recommended specific work on an Operational Management Plan to ensure that nearby residents are not unduly affected. The plan's intent would be to specifically document procedures, with special emphasis on special events and inordinate loading circumstances when noise might be generated during nighttime hours. It would be staff's intent that this be avoided. Please refer to condition 1.3.

And finally, Science World representatives and City staff are mindful of longstanding sensitivities associated with the reduction of park space in the inner city. This issue has been specifically raised in the context of more recent Northeast False Creek discussions. Support for the proposed form of development, and related park encroachment, presented under this development application is based on the more immediate contextual analysis, programmatic considerations and ultimate quality necessary for a civic institution. Staff note that The Outdoor Science Experience is predominately replacing both the hard surface roadway (the former Indy car network) and the existing, problematic fire lane adjacent to the bermed landform that interrupts what could be a more positive and engaging aspect of Creekside Park in its relationship to the Science World facility. While staff believe the proposed improvements, subject to the design development conditions presented herein, will be a demonstrable improvement to the park, staff continue to remain mindful, and monitor, the question of park space reduction in the larger False Creek context. Science World and staff are committed to on-going dialogue towards resolution of necessary open space given further anticipated intensification for this part of the city.

- **Conclusion:** Staff support the initiative subject to the recommended conditions herein. Staff believe that the OSE will be regarded as a valuable civic asset if anticipated design intent, and quality, is properly implemented noting the need for on-going attention to maintenance. It will be important for Science World to continue to monitor programming, and related civic interest, to ensure that fresh ideas and emerging best practices continue to be presented in an educational and engaging way. Science World will need to accept responsibility for ensuring that the OSE's exterior activities, including loading, exhibitory upgrades and special events, remain neighbourly and that proper notification of special events is provided to nearby residents.

## URBAN DESIGN PANEL

The Urban Design Panel reviewed this application on October 20, 2010 and November 17, 2010 and provided the following comments:

### EVALUATION: SUPPORT (5-1)

- **Introduction:** Scot Hein, Development Planner, introduced the proposal for the Switch at Science World. He noted that it was the second review for the outdoor science experience and there were a number of concerns raised particularly about the nature of the edge onto the park. He noted that some of the original materials were also available for the Panel to see as well as new information.

Mr. Hein took questions from the Panel.

- **Applicant's Introductory Comments:** Chris Phillips, Architect, noted that they had put a lot of work into design development and gave a PowerPoint presentation to the Panel. He said that Science World is a very creative and collaborative group and hoped that the presentation would reflect some further thinking on the edge for the proposal. He said he realized that there was a lack of clarity at the last review regarding the concept for the outdoor Science Experience. He noted that a series of six themes have come out of their discussion which includes energy, transportation, water, food and agriculture, waste and housing. Kevin Kearns stated that the focus of the park is on sustainability in the six themes as a way of helping people understand the implications of the choices they make. Mr. Phillips described the overall plan and included a description of the six themes.

The criteria for the public edge is to engage the public and to display curated and evolving content. The public edge includes the Arrival Plaza, Solar Tower of Bauble, Cycle Corner, Water and Food Pockets, Demonstration Deck, Waste Wall, Innovation Space and the C-Wall.

The Arrival Plaza is to be a staging area for groups and will have some weather protection and public seating. The Tower of Bauble will be an iconic solar powered Science World experience. The Cycle Corner will be a public interactive exhibit along the bike and pedestrian pathway. The Water and Food Pockets will have modular and interchangeable graphic panels, a rain gauge, urban garden as well as a Pipe Wall and Cellular Wall. The Demonstration Deck will serve as public invite into the Switch with a view of the exhibits in the Demonstration Area and will overlook the wetlands. The Waste Wall will be constructed with re-used and recycled materials with modular and interchangeable graphic panels including a chalkboard and seating nook. The Innovation Space will be a unique Vancouver outdoor programmed space for sponsored programs, special events in addition to the current Outreach and free admission opportunities. The C-Wall will include a display illustrating impact of CO<sub>2</sub> and climate change on sea levels and will be made of recycled concrete.

The applicant team took questions from the Panel.

- **Panel's Consensus on Key Aspects Needing Improvement:**
  - Consider some a stronger element to pull all the themes together.
  - Design development to the dawdle walk to enrich the connective elements.
- **Related Commentary:** The Panel supported the proposal and thought the applicant had come a long way in creating some excitement in the edge.

The Panel thought there was a balance of permeability and screening and liked that the pedestrian route had been separated from the bike route which had helped the edge experience although they encouraged the applicant to look for places where they still interact and improve them. The Panel thought the entry sequence hadn't changed very much and they hoped that the Tower of Bauble with the covered area would be a large enough element to announce the front door of Science World.

There were some concerns regarding the workability of the future bus unloading and loading area when a street car is added. One Panel member suggested there might be insufficient bike parking especially if a bike share program was added.

The Panel noted that the transition from the parking lot to the demonstration overlook was stronger with a bit more emphasize on the arrival area. They also thought the flex area had been improved but was still a little vague. They Panel wanted to see more excitement in that area.

Several Panel members acknowledged the applicant for the six themes and how they will engage the public and they particularly liked the bike counter. One Panel member was concerned about the space being used in wet weather and suggested a tent style cover could be added. Most of the Panel was concerned with the dawdle path and thought it needed to be treated the same as the rest of the path. One Panel member suggested extending the space and having an area for people to sit.

- **Applicant's Response:** Mr. Phillips noted that they were still working with the City regarding the parameters for the dawdle path. He also noted that there will be a number of exhibits inside the Waste Wall including a large black board and a series of shelves. They would like to have a bigger expression but there is also a concern regarding costs. Mr. Kearns noted that they have put a lot of effort into the exhibits going on inside Science World and they want them to be seen from the outside as well. Mr. Pun said they were really excited about the potential of a bike hire on the site and the bike counter. He added that they are working with the City to make sure it happens.

## ENGINEERING SERVICES

The recommendations of Engineering Services are contained in the prior-to conditions noted in Appendix A attached to this report.

## CULTURAL AFFAIRS

Science World is an important Vancouver cultural institution dedicated to the exploration of arts, science and technology that contributes to City's vitality and diversity of cultural activities for citizens and visitors alike. The organization is one of four major exhibiting cultural institutions that receives an operating grant through the City's department of Cultural Services. The City of Vancouver also provides land for the Science World operations via a ground lease to the Province of BC who permits the non profit to occupy the land and building. Serving over half a million visitors a year, the addition of a Outdoor Science Experience (OSE) is supported and welcomed.

## REAL ESTATE SERVICES

Real Estate Services supports Science World's development application noting that it would occupy City-owned land currently being used as parkland. Real Estate Services will be seeking a modification to the existing lease to include the OSE portion of the proposal into the lease agreement with the Province. As an interim step, prior to lease modification, Science World will be required to enter into a Licence Agreement with the City to occupy and construct improvements on the land (See condition A.1.7).

## PARK BOARD

Science World is located in Creekside Park, a park formally under the jurisdiction of City Council, not the Park Board. The Park Board has been briefed and have attended a Council Workshop on the proposal. It is understood that the basic issue of converting public park land to ticketed outdoor science exhibition area will be considered by City Council separate from this development permit application.

Science World and CoV staff have cooperated for many years on a planning process seeking to define parameters for a number of expected future initiatives, including the installation of an outdoor science exhibit, accommodation of a future streetcar corridor and other changes to Quebec Street, the continuation of the SEFC waterfront, disentanglement of pedestrian and cyclist movement, a more engaging interface of museum and park, a more vibrant waterfront, and the eventual replacement of

the extensive Expo decks. In general, this proposal is consistent with those parameters, notwithstanding a number of detailed technical issues seeking resolution.

The proposal will interfere with existing pathways, requiring a substantial re-working of an area of the park outside the OSE. Science World is obligated to do this work. To ensure adherence to Park Board direction and standards, staff propose that appropriate legal arrangements are made for the design, construction and acceptance of that area (See condition A.1.1). A number of medium-sized, healthy and desirable trees is affected by these changes. Staff are asking for a tree transplantation plan that relocates these trees at Science World's expense into locations to be identified by Park Board staff, including those trees that can be relocated on site (See condition A.1.2). A preliminary review of the permit drawings has identified the need for additional information, including a drainage and grading plan, an irrigation plan, and a re-location plan for the playground that will be displaced. (See condition A.1.3.)

## **ENVIRONMENTAL PROTECTION BRANCH**

This development application involves the disturbance of soils for the creation of the Outdoor Science Experience. Approval from the Ministry of the Environment is required prior to issuance of a development permit (See Condition A.3.1).

## **PROCESSING CENTRE - BUILDING**

This Development Application submission has not been fully reviewed for compliance with the Building By-law. The applicant is responsible for ensuring that the design of the building meets the Building By-law requirements. The options available to assure Building By-law compliance at an early stage of development should be considered by the applicant in consultation with Processing Centre-Building staff.

To ensure that the project does not conflict in any substantial manner with the Building By-law, the designer should know and take into account, at the Development Application stage, the Building By-law requirements which may affect the building design and internal layout. These would generally include: spatial separation, fire separation, exiting, access for physically disabled persons, type of construction materials used, fire fighting access and energy utilization requirements.

Further comments regarding Building By-law requirements are contained in Appendix C attached to this report.

## **NOTIFICATION**

On September 24, 2010, 1,073 notification postcards were sent to neighbouring property owners advising them of the application, and offering additional information on the City's website.

A site sign was installed on September 24, 2010.

Notification Response:

To date, there have been four responses (4) to the notification postcard, comments include:

- Concern over the loss of park lands;
- Play ground areas to be relocated;
- Outdoor theatre will generate noise from both speakers systems and general public attending events;
- The OSE will be attractive to many young families;
- Current play areas are needing updating;

- Addition of picnic tables and interactive puzzles on the exterior walls would be an improvement to the Park;

Staff Response:

The design conditions presented in the report address the issues of the relocation and updating of playground areas (condition 1.1) and noise generation (condition 1.3). Staff believe that the public realm improvements presented under this application, and further work described under staff commentary and the second review by the Urban Design Panel embodied in conditions 1.1, 1.2, 1.4 and 1.5, will ensure a substantive improvement to the civic assets of Science World and Creekside Park noting that the bermed, non-usable visual barrier at the south end of the park, as it interfaces with the existing loading and fire lane access, is the focus of encroachment.

**DEVELOPMENT PERMIT STAFF COMMITTEE COMMENTS:**

The Staff Committee has considered the approval sought by this application and concluded that with respect to the Zoning and Development By-law and the Official Development Plan it requires decisions by both the Development Permit Board and the Director of Planning.

The Staff Committee Supports this expansion of the Science World operations, subject to the conditions noted in the report.

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B. Boons  
Chair, Development Permit Staff Committee

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S. Hein  
Senior Urban Designer

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T. Chen  
Project Coordinator

Project Facilitator: D. Autiero



## DEVELOPMENT PERMIT STAFF COMMITTEE RECOMMENDATIONS

The following is a list of conditions that must also be met prior to issuance of the Development Permit.

### A.1 Standard Conditions

#### Park Board Conditions

- A.1.1 Arrangements to the satisfaction of the General Manager Park Board and the Director of Legal Services securing the design, construction and acceptance of those areas of Creekside Park requiring modification due to the insertion of the Outdoor Science Exhibit (OSE);
- A.1.2 a tree transplantation plan by a certified arborist providing excavation, transport and re-planting details for every tree that has to be removed to accommodate the OSE and related Creekside Park modification;
- A.1.3 design development to the Creekside Park area outside the OSE;

**Note to applicant:** In responding to this condition the applicant must provide the following:

- a drainage and grading plan;
- an irrigation plan;
- the relocate existing playground to grassy area adjacent to loading area;
- path lighting consistent with seawall standards;
- substitute tree species: tilia with red sunset maple, populus with paperbark maple;
- electrical kiosk needs to be sized for future growth;
- planting details for trees adjacent to pavement to include soil cells and root barriers;
- a construction management plan including construction access, staging areas, and restoration plan;
- a greater visual clearance for trucks crossing bike and ped paths;
- locate the bike tree.

#### Landscape Conditions

- A.1.4 provision of plants suitable for a children's play area;

**Note to applicant:** All plants proposed for the enclosed Outdoor Science Experience Area should be checked against the AMA Handbook of Poisonous and Injurious Plants. Plants with thorns should be avoided.

- A.1.5 provision of a variety of surface paving treatments in the Outdoor Science Experience Area in order to delineate different activity areas and to add visual interest to the expanse of hard surfaces;

**Note to applicant:** Any areas of loose materials such as pea gravel or bark mulch should be contained with curbs or planters. Details of the surface treatments should be provided on the Grading and Layout Plan.

- A.1.6 provision of the following additional information on the plans:

- identify the location of sports court on the Page DP L03.
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- a notation on the Site Plan (DP L02) and the Landscape Plan (DP L03) identifying the structure directly adjacent to the loading area and illustrated on the sketch for the Flex Space (DP L14),
- additional top and bottom of wall elevations on the Grading Plan for the retaining wall adjacent to the sports court and the pool adjacent to the main entrance.
- planting details for the proposed green wall fence on the Planting Plan.

## Real Estate Services Conditions

- A.1.7 arrangements shall be made, to the satisfaction of the Director of Real Estate Services and Director of Legal Services, for a License Agreement to occupy and construct improvements on City-owned land;

## A.2 Engineering Conditions

- A.2.1 provision of a Loading Management Plan to the satisfaction of the General Manager of Engineering Services detailing frequency, routing, timing, size of delivery vehicles, and a commitment that the 2 class B and one class C loading spaces will meet the loading requirements for the site;

- A.2.2 provision of a Transportation Demand Management Plan to the satisfaction of the General Manager of Engineering Services;

**Note to applicant:** This should investigate immediate measures to encourage sustainable modes of transportation for staff and guests as well as long-term strategies that could be implemented in the future should on-site parking be reduced.

- A.2.3 clarify grading along pedestrian and bike paths;

**Note to Applicant:** Ensure smooth transitions at all connections with existing paths. These should include existing and future grades and include the soft landscaping areas to ensure feasibility. A longitudinal section is required to illustrate the proposed grade changes along the pedestrian path

- A.2.4 design development of the central drive aisle;

**Note to applicant:** this should include the following:

- clarify if traffic through the central aisle will be one-way or two. Note that if two-way traffic is required, more width may be necessary, particularly at the curved section at the end of the south parking lot.
  - show vehicle swaths to demonstrate how traffic flow will work.
  - provide a raised crosswalk through the connector driveway, aligned with the Terminal Ave crosswalk.
  - Provide locking removable bollards at the access points into the Class C loading area and the fire access east of the bicycle pathway to restrict unauthorized vehicles from driving onto the plaza area and make access easier to manage.
  - modify spacing of bollards at the fire and loading access to limit unauthorized vehicles from entering the bicycle path and pedestrian area. Recommended spacing between bollards is 2.0m.
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A.2.5 design development of pedestrian and bicycle pathways;

**Note to applicant:** this should include the following:

- widen the bike path at the connection point with the existing bike path. This can be achieved by providing a large radius curve of approx. 80m.
- enhance treatment of entrance walkways where they cross the bike path to improve separation between pedestrians and bikes. This may include signage, paving, or grade changes between the two pathways.
- the south lawn design should be revised to improve pedestrian connections and to minimize use of proposed bike path by pedestrians.
- resolve conflict between Fire vehicles and bollards on pedestrian pathway;
- provide direct connection from the existing curved pedestrian walk and the proposed 9.5 metre wide path. Plans show a planting strip and a gravel section, which are not acceptable. The path's eastern edge should generally follow the alignment of the bike path;
- the pedestrian path should be constructed in concrete to match existing path and not gravel as proposed.
- provide an extended section 3 that includes the 9.5 metre wide OSE pedestrian path to the west to illustrate the grade.
- provide a concrete retaining wall and railing to replace the proposed gravel slope between the cycle and pedestrian paths as illustrated in section 2.
- north of Science World provide a 1.5 metre wide landscaped buffer between the cycle and pedestrian paths in addition to the fence, or a retaining wall and railing as appropriate, particularly where the new paths meet the existing path.

A.2.6 revise plans showing scope of work to clearly show all proposed work including modification of drive aisle, path reconstruction, playground relocation, and landscaping changes.

A.2.7 design development of fencing;

**Note to applicant:** this should include the following:

- The fence proposed to separate the drop off area from the cycle path should be located on the east side of the planted 3.0 metre wide buffer next to the 4.0 metre wide sidewalk.
- In addition to the proposed fence please provide 3.0 width of landscape buffer to separate the sidewalk at the parking lot from the cycle path south of the main entry walk. The buffer should align with that to the north of the main entry walk.
- A fence should be installed in the 1.5 metre landscaped buffer between the cycle and pedestrian paths. In addition the edge treatment of the landscaped buffer will meet the same design standard as used in SEFC.
- A detail and elevation of the fence proposed to separate the cycle and pedestrian paths is required.
- A detail and elevation of the fence requested to separate the pedestrian paths just north of the main entry is required.

A.2.8 design development of landscaping;

**Note to applicant:** this should include the following:

---

- Delete the proposed planting in the section of the 1.5 metre planted buffer strip which separates the existing 3.5 metre wide pedestrian walkway to the north with the 9.5 OSE walk to allow pedestrians to access the OSE walk from the path.
- Revise the plant schedule. All proposed deciduous trees will be a minimum 7.0 cm caliper, with the exception of multi stemmed trees. All trees that are proposed to be relocated on site will include the caliper size and the proposed root ball size.
- The proposed lawn area beneath the Aspen trees separating the pedestrian paths should be revisited. It is unlikely that the lawn will be successful.
- All disturbed and/or damaged lawn areas should be repaired with sod rather than seeded.
- provide a material schedule and related symbols located on the plan;

A.2.9 design development of lighting along seawall paths;

**Note to Applicant:** Provide a photometric design for approval by the General Manager of Engineering Services. Lighting along the pedestrian and cycle paths should meet the same design standard and style as used in SEFC.

A.2.10 provide protection and load limit signage for weak areas of deck;

**Note to Applicant:** This should include removable, locking bollards northeast of loading bay and load limit signs both northeast of the loading bay and near the front entrance of Science World.

A.2.11 confirmation that the proposed works are either not on top of/over any decking structure or if over any decking structure that the deck is designed to handle all aspects of the loads proposed over it;

A.2.12 confirmation that the fire truck/loading/garbage access from Quebec Street are equivalent to existing and that no changes are proposed;

A.2.13 provision of a construction management plan dealing with temporary relocation of pedestrian and bike paths to the satisfaction of the General Manager of Engineering Services;

A.2.14 confirmation of the following:

- That the General Manager has agreed to the Temporary closure of the "walkways" (as defined by the Lease);
- all work on City Street, including within the "notched" production of Terminal Ave. must be to the satisfaction of the General Manager of Engineering Services;
- Proposed works (if any) within the BC Transit Statutory Right of Way (N35195 - as shown on Plan 17649) have been authorized by BC Transit.
- No structures, embankments or fill are proposed within the Statutory Right of Way (BE270093 - as shown on Plan LMP1968) for public utilities (sewer outfall).

### A.3 Licenses & Inspections (Environmental Protection Branch) Conditions:

A.3.1 confirmation that this application has satisfied all Provincial and Federal agency requirements.

**Note to Applicant:** The Vancouver Charter does not allow the issuance of Development or Building permits where soil disturbance is being proposed in this location, without Ministry of the Environment approval.

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**B.1 Standard Notes to Applicant**

- B.1.1 The applicant is advised to note the comments of the Processing Centre-Building, Vancouver Coastal Health Authority and Fire and Rescue Services Departments contained in the Staff Committee Report dated November 3, 2010. Further, confirmation that these comments have been acknowledged and understood, is required to be submitted in writing as part of the "prior-to" response.
- B.1.2 It should be noted that if conditions 1.0 and 2.0 have not been complied with on or before **May 30, 2011**, this Development Application shall be deemed to be refused, unless the date for compliance is first extended by the Director of Planning.
- B.1.3 This approval is subject to any change in the Official Development Plan and the Zoning and Development Bylaw or other regulations affecting the development that occurs before the permit is issuable. No permit that contravenes the bylaw or regulations can be issued.
- B.1.4 Revised drawings will not be accepted unless they fulfill all conditions noted above. Further, written explanation describing point-by-point how conditions have been met, must accompany revised drawings. An appointment should be made with the Project Facilitator when the revised drawings are ready for submission.
- B.1.5 A new development application will be required for any significant changes other than those required by the above-noted conditions.

**B.2 Conditions of Development Permit:**

- B.2.1 All approved off-street vehicle parking, loading and unloading spaces, and bicycle parking spaces shall be provided in accordance with the relevant requirements of the Parking By-law prior to the issuance of any required occupancy permit or any use or occupancy of the proposed development not requiring an occupancy permit and thereafter permanently maintained in good condition.
  - B.2.2 All landscaping and treatment of the open portions of the site shall be completed in accordance with the approved drawings prior to the issuance of any required occupancy permit or any use or occupancy of the proposed development not requiring an occupancy permit and thereafter permanently maintained in good condition.
  - B.2.3 Any phasing of the development, other than that specifically approved, that results in an interruption of continuous construction to completion of the development, will require application to amend the development to determine the interim treatment of the incomplete portions of the site to ensure that the phased development functions are as set out in the approved plans, all to the satisfaction of the Director of Planning.
-

### Processing Centre - Building comments

The following comments are based on the preliminary drawings prepared by Cannon Design dated July 27, 2010 for the proposed development permit. This is a preliminary review in order to identify issues which do not comply with the Vancouver Building Bylaw #9419 as amended (VBBL), and includes a review of Subsection 3.2.5. "Provisions for Fire Fighting".

1. The Outdoor Science Park is a "contained open space" on top of a structure that is supported by piles.
2. Structural engineered drawings will be required for all structures, including the deck that is supported by piles.
3. Geotechnical Report will be required. This site is in an area identified as being subject to potential liquefaction. The Geotechnical Report should address this, and contain specific recommendations pertaining to the foundation design.
4. This site is located in a designated flood plain. The design of the buildings must conform to Sentences 2.2.8.1.(1) and 1A.6.1.9.(1) of Division C of the Vancouver Building By-law (VBBL), and Appendix Clause A-1.4.1.2.(1) of Division A for "designated flood plain" of the VBBL.
5. Flood-plain restrictive covenant required, if one is not already in place.
6. Architect sealed drawings will be required.
7. \* Exits from the main building discharging through the Park shall have unobstructed egress paths to the street.
8. Access for persons with disabilities to be provided to each type of facility, such as main entrances, viewing positions, .
9. Means of egress from the Park shall conform to Article 3.3.1.3. of the VBBL.
10. At least 2 exits are required from the Park with doors swinging in the direction of exit travel.

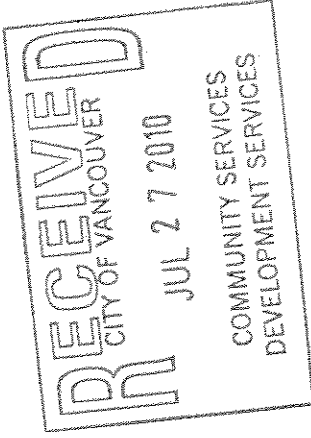
\*Items marked with an asterisk have been identified as serious non-conforming Building By-law issues.

Written confirmation that the applicant has read and has understood the implications of the above noted comments is required and shall be submitted as part of the "prior to" response. If a "prior to" letter is not being sent, the above comments should be sent directly to the applicant.

The applicant may wish to retain the services of a qualified Building Code consultant in case of difficulty in comprehending the comments and their potential impact on the proposal. Failure to address these issues may jeopardize the ability to obtain a Building Permit or delay the issuance of a Building Permit for the proposal.

---

DE 414096



# SCIENCE WORLD

BRITISH COLUMBIA

1455 Quebec Street, Vancouver BC, V6A 3Z7

**SCIENCE WORLD - SWITCH  
THE OUTDOOR SCIENCE EXPERIENCE**

**ISSUED FOR DEVELOPMENT PERMIT  
JULY 27, 2010**



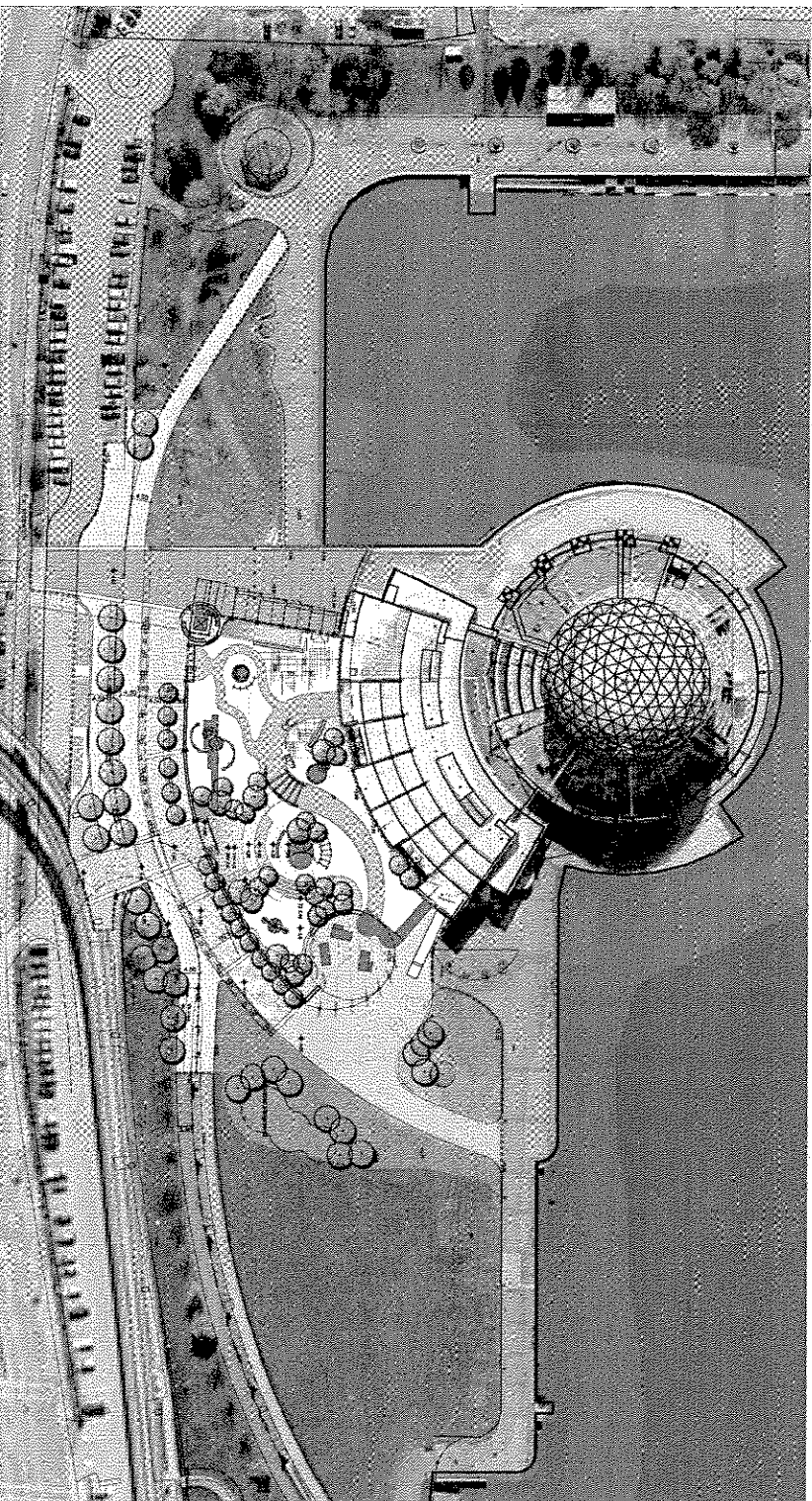
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2327 Yew St.  
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Tel: 604.736.5168

**CANNONDESIGN®**  
Cannon Design Architecture Inc.

1500 West Georgia St., Suite 710  
Vancouver, British Columbia V6G 2Z6  
T: 604.688.5710 F: 604.688.5702

Sheet #	Development Request Drawing List	Scale
DP-L00	COVER SHEET	N.T.S.
DP-L01	PROJECT STATISTICS	N.T.S.
DP-L02	SITE PLAN	1:400
DP-L03	LANDSCAPE SITE PLAN	1:200
DP-L04	SHADOW ANALYSIS	N.T.S.
DP-L05	PROPOSED LANDSCAPE AREA PLAN	1:200
DP-L06	PROPOSED LANDSCAPE AREA PLAN	1:200
DP-L07	LANDSCAPE EROSION CONTROL PLAN	1:200
DP-L08	LANDSCAPE LAYOUT AND GRADING PLAN	1:200
DP-L09	LANDSCAPE LIGHTING PLAN	1:200
DP-L10	LANDSCAPE ELEVATIONS	1:100
DP-L11	LANDSCAPE SECTIONS	1:75
DP-L12	LANDSCAPE SECTIONS	1:75
DP-L13	PERSPECTIVES	N.T.S.



1. Total Site Area:  
This total area land is broken down into 3 components:  
1. Outdoor Square Experience Area: 2231 m<sup>2</sup>  
2. Public Plaza: 6877 m<sup>2</sup>  
3. Recreational Playground: 1185 m<sup>2</sup>  
Total: 10293 m<sup>2</sup>
2. Total Floor Space:  
Not Applicable.
3. Site Coverage:  
Not Applicable.
4. Building Height:  
Not Applicable.
5. Year:  
Not Applicable.
6. Floor Space Ratio:  
Not Applicable.

#### 7. Parking, Loading, and Storage Parking:

City of Vancouver Parking By-law Section 4 Article 4.5.1:  
The required parking count for vehicles is as follows:

Level 1:	5,273 cars
Level 2:	5,273 cars
Level 3:	5,273 cars
Level 4:	5,273 cars
Level 5:	5,273 cars
Level 6:	5,273 cars
Level 7:	5,273 cars
Level 8:	5,273 cars
Level 9:	5,273 cars
Level 10:	5,273 cars
Level 11:	5,273 cars
Level 12:	5,273 cars
Level 13:	5,273 cars
Level 14:	5,273 cars
Level 15:	5,273 cars
Level 16:	5,273 cars
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Level 99:	5,273 cars
Level 100:	5,273 cars

14,527 m<sup>2</sup> minimum + 145 m<sup>2</sup> of GP/AV/AV/AV + 107 vehicles minimum  
14,527 m<sup>2</sup> minimum + 115 m<sup>2</sup> of GP/AV/AV + 127 vehicles minimum  
North parking lot: 119 standard stalls + 4 handicap stalls + 122 extra  
South parking lot: 57 standard stalls + 3 handicap stalls + 59 extra  
Total number of vehicle spaces provided: 181  
City of Vancouver Parking By-law Section 4 Article 5.2.2:  
The requirement for City Street Loading per m<sup>2</sup> is as follows:

Class A: No requirement

Class B: 1 space per 2,800m<sup>2</sup> Gross Floor Area

Class C: No requirement

Class D: No requirement

Class E: No requirement

Class F: No requirement

Class G: No requirement

Class H: No requirement

Class I: No requirement

Class J: No requirement

Class K: No requirement

Class L: No requirement

Class M: No requirement

Class N: No requirement

Class O: No requirement

Class P: No requirement

Class Q: No requirement

Class R: No requirement

Class S: No requirement

Class T: No requirement

Class U: No requirement

Class V: No requirement

Class W: No requirement

Class X: No requirement

Class Y: No requirement

Class Z: No requirement

Class AA: No requirement

Class AB: No requirement

Class AC: No requirement

Class AD: No requirement

Class AE: No requirement

Class AF: No requirement

Class AG: No requirement

Class AH: No requirement

Class AI: No requirement

Class AJ: No requirement

15. Statement of Proposed Vehicle and Pedestrian  
Recreation requested on number of loading spaces. Six Class B loading spaces  
are required and three are being proposed.

Additional class B loading spaces for CBE: 13

Class B loading spaces provided: 13

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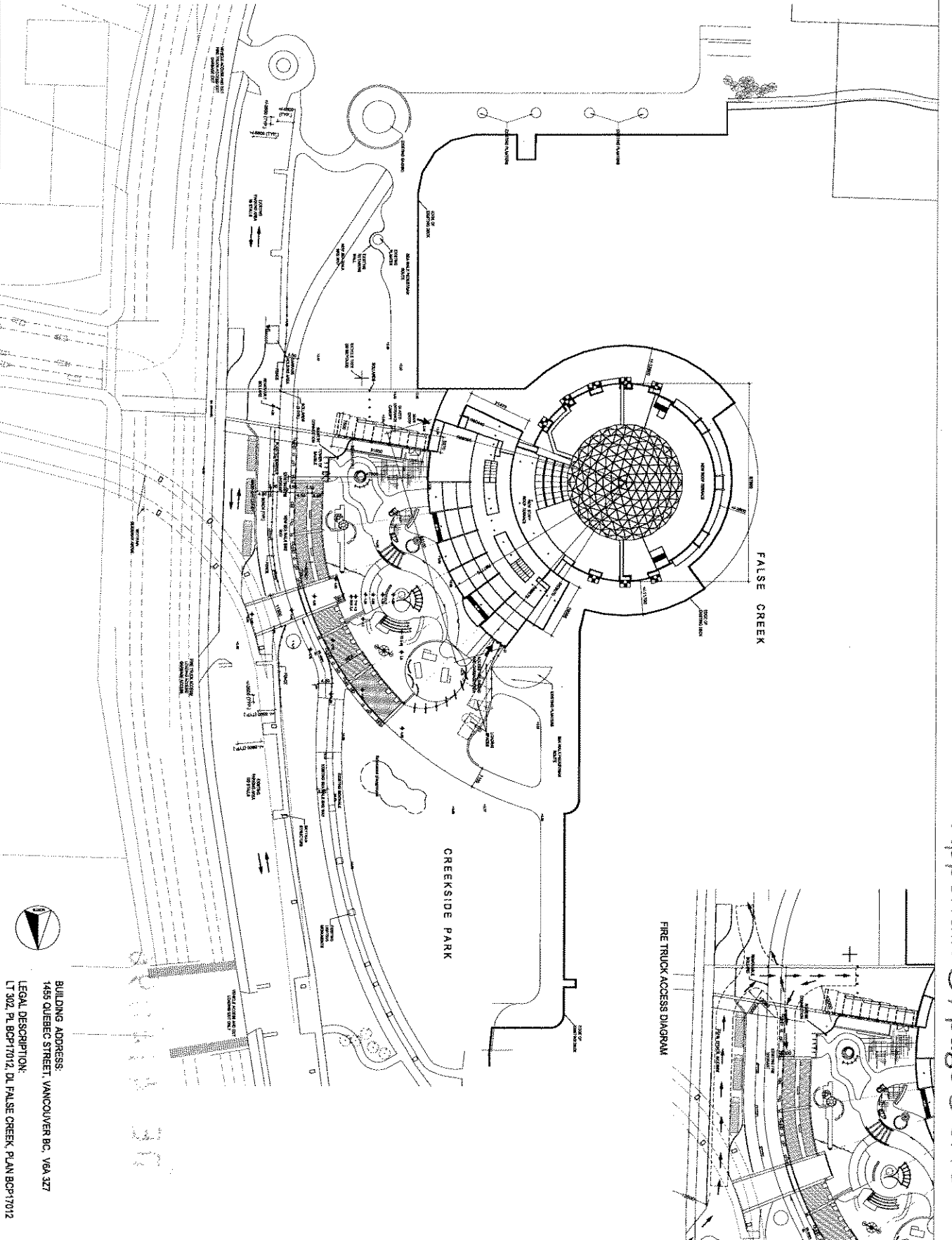
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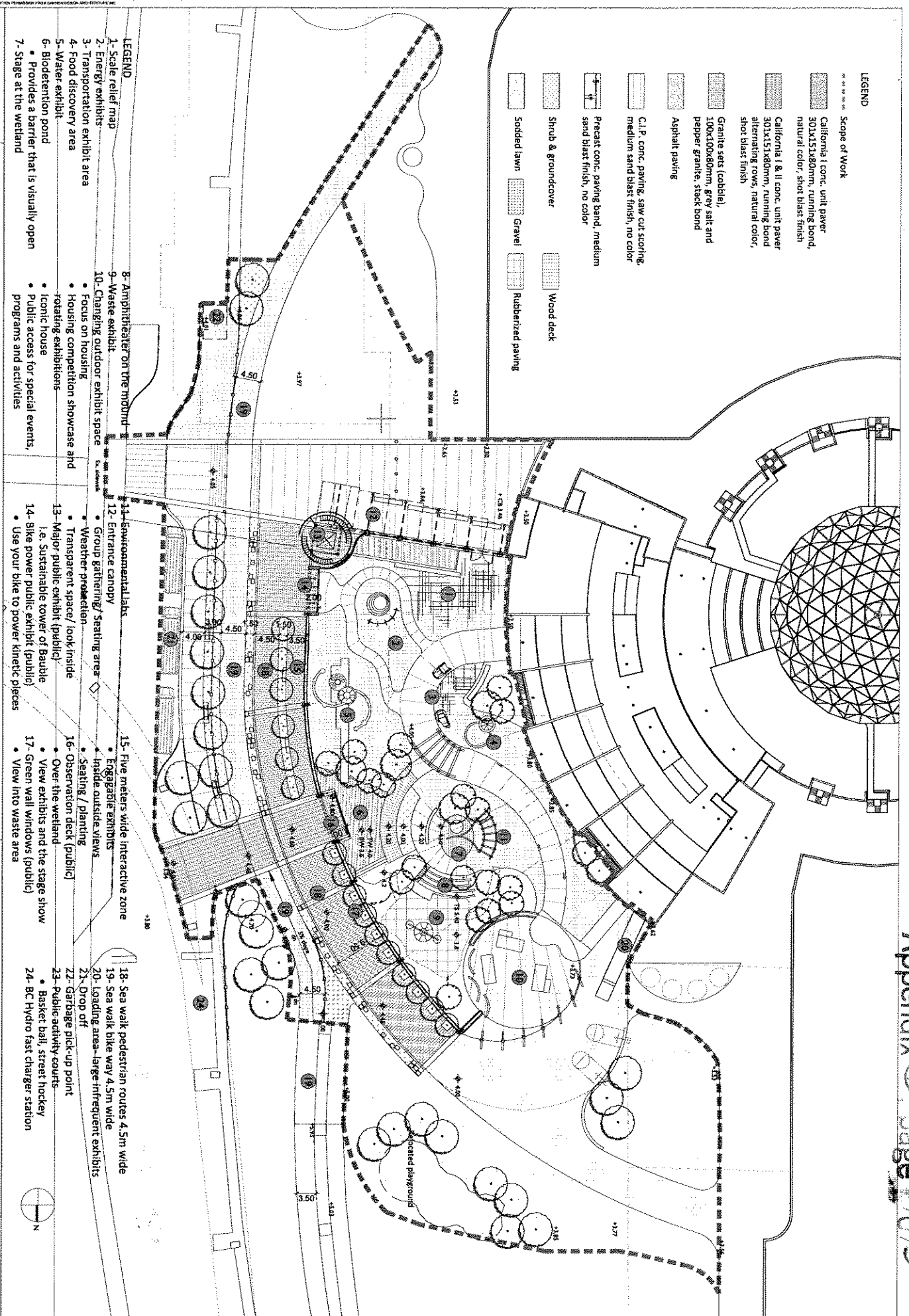
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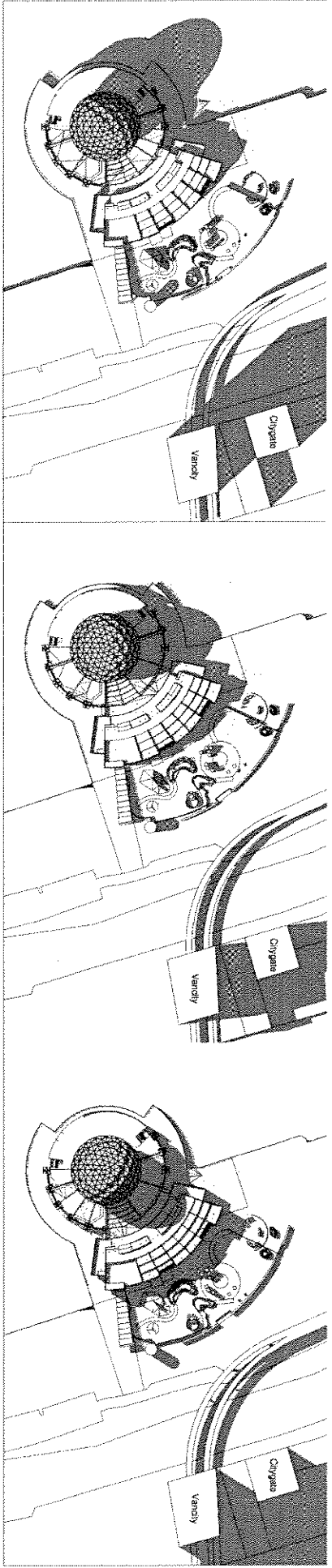




- LEGEND**
- Scope of Work**
- California I conc. unit paver  
303x151x60mm, running bond, natural color, shot blast finish
  - California I & II conc. unit paver  
303x151x60mm, running bond alternating rows, natural color, shot blast finish
  - Granite sets (cobble)  
100x100x60mm, grey salt and pepper granite, stack bond
  - Asphalt paving
  - C.I.P. conc. paving, saw cut scoring, medium sand blast finish, no color
  - Precast conc. paving band, medium sand blast finish, no color
  - Shrub & groundcover
  - Wood deck
  - Sodded lawn
  - Gravel
  - Rubberized paving



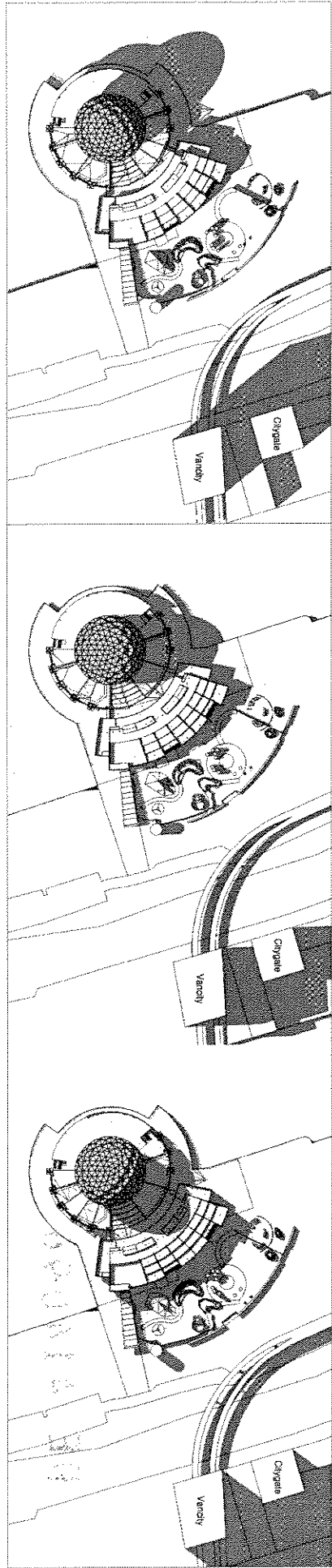
- LEGEND**
- Scale relief map
  - Energy exhibits
  - Transportation exhibit area
  - Food discovery area
  - Water exhibit
  - Biodegradation pond
  - Provides a barrier that is visually open
  - Stage at the wetland
  - Amphitheater on the mound
  - Waste exhibit
  - Changing outdoor exhibit space
  - Focus on housing
  - Housing competition showcase and rotating exhibitions
  - Iconic house
  - Public access for special events, programs and activities
  - Environmental labs
  - Entrance canopy
  - Group gathering/ Seating area
  - Weather protection
  - Transparent space/ look inside
  - Major public exhibit (public) i.e. Sustainable tower of Bauble
  - Bike power public exhibit (public)
  - Use your bike to power kinetic pieces
  - Five meters wide interactive zone
  - Engagable exhibits
  - Inside outside views
  - Seating / planting
  - Observation deck (public)
  - Over the wetland
  - View exhibits and the stage show
  - Green wall windows (public)
  - View into waste area
  - Sea walk pedestrian routes 4.5m wide
  - Sea walk bike way 4.5m wide
  - Loading area- large infrequent exhibits
  - Drop off
  - Garbage pick-up point
  - Public activity courts
  - Basket ball, street hockey
  - BC Hydro fast charger station



MARCH 21  
10:00 AM

MARCH 21  
12:00 NOON

MARCH 21  
2:00 PM



SEPTEMBER 21  
10:00 AM

SEPTEMBER 21  
12:00 NOON

SEPTEMBER 21  
2:00 PM



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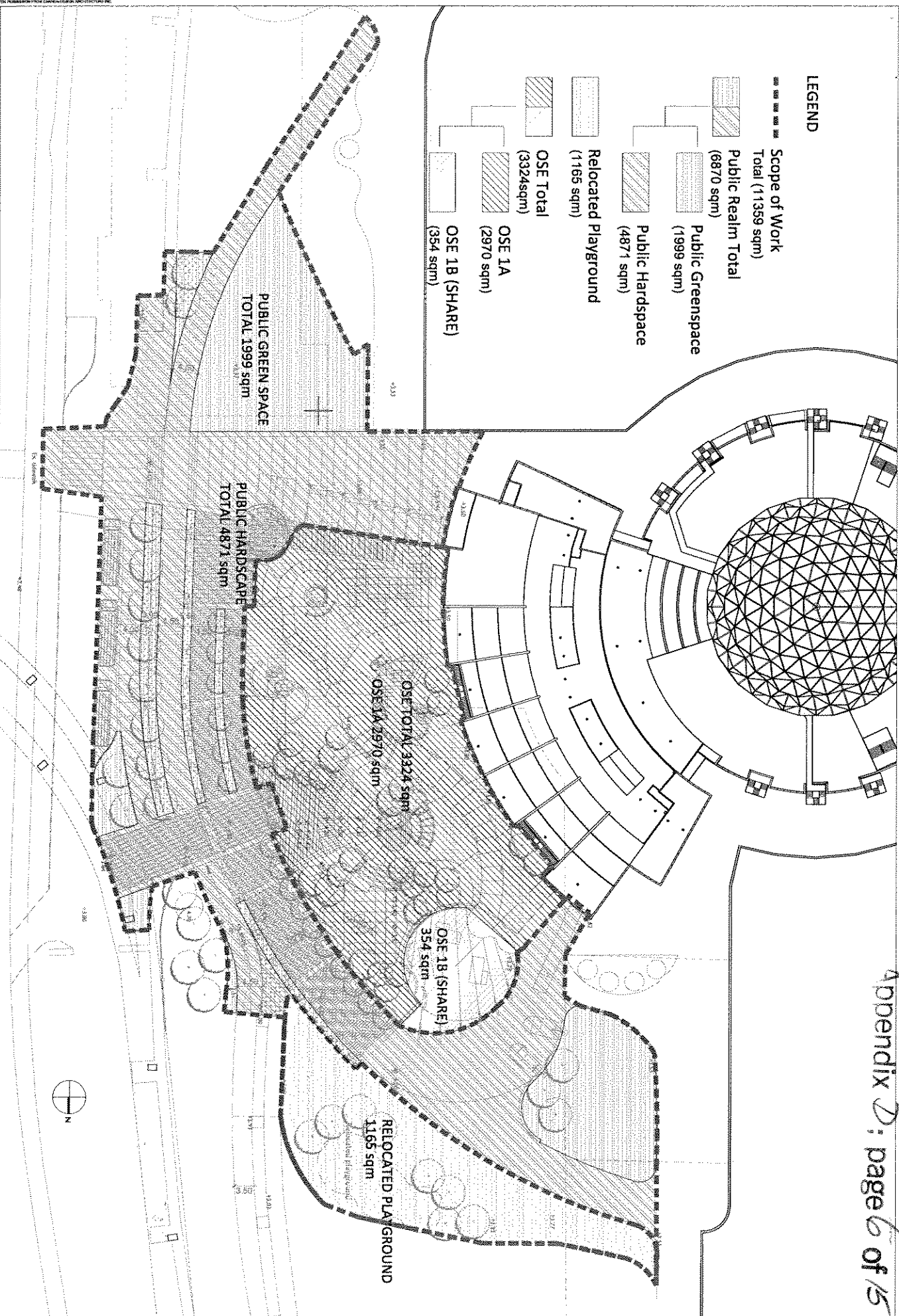
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1000 Burrard Street, Vancouver, BC V6C 2B7

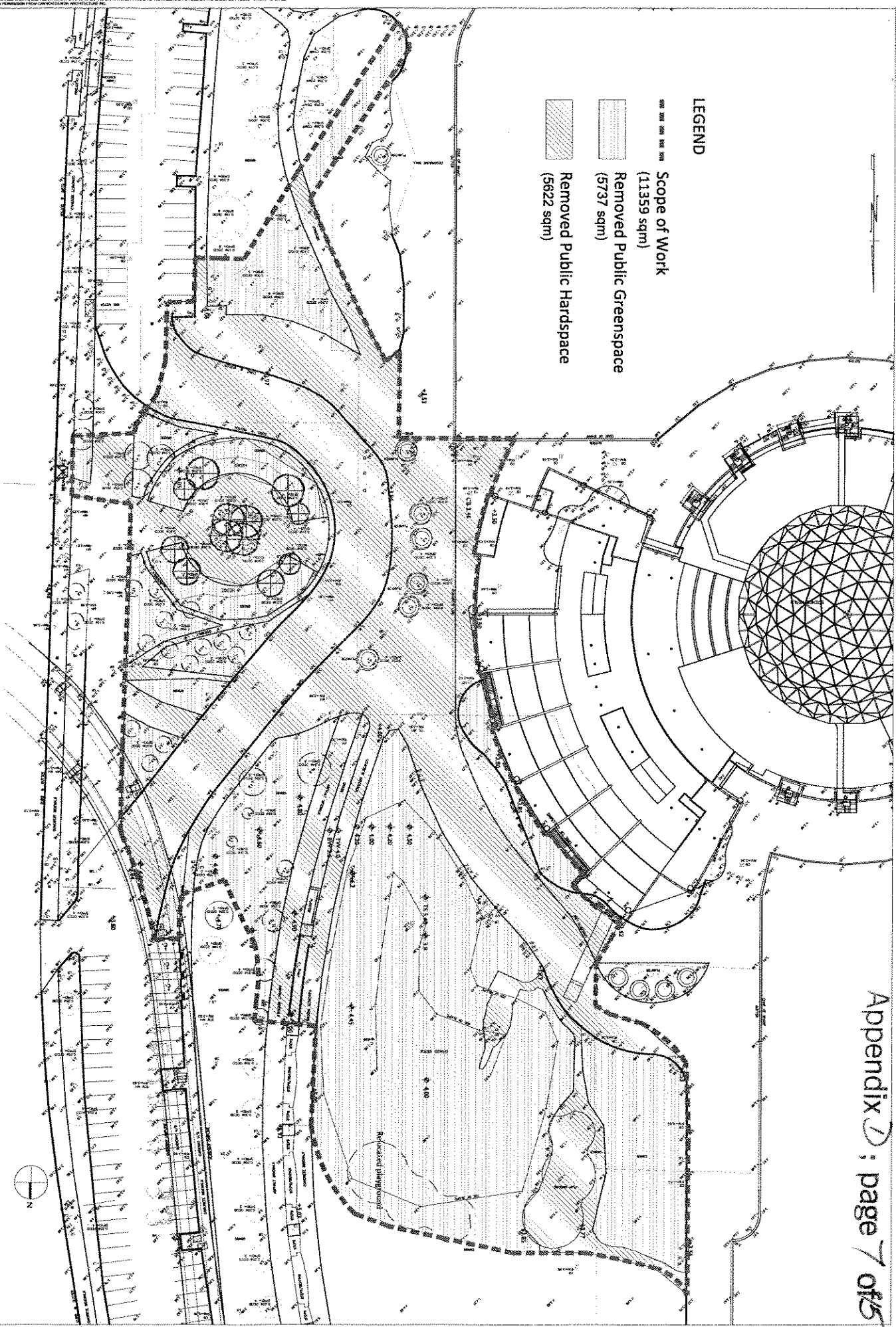
Science World - SWITCH: The Outdoor Science Experience  
JULY 27, 2010  
**SHADOW ANALYSIS**

**PHILLIPS FAREVAAG-SMALLENBERG**  
FOUNDER & PARTNER  
2007 Burrard St., Vancouver, British Columbia, V6C 2B7  
778.684.1210 / 604.684.1210

**CANNON DESIGN**  
ARCHITECTS  
1000 Burrard Street, Vancouver, BC V6C 2B7  
604.684.1210 / 604.684.1210

**DP-L04**





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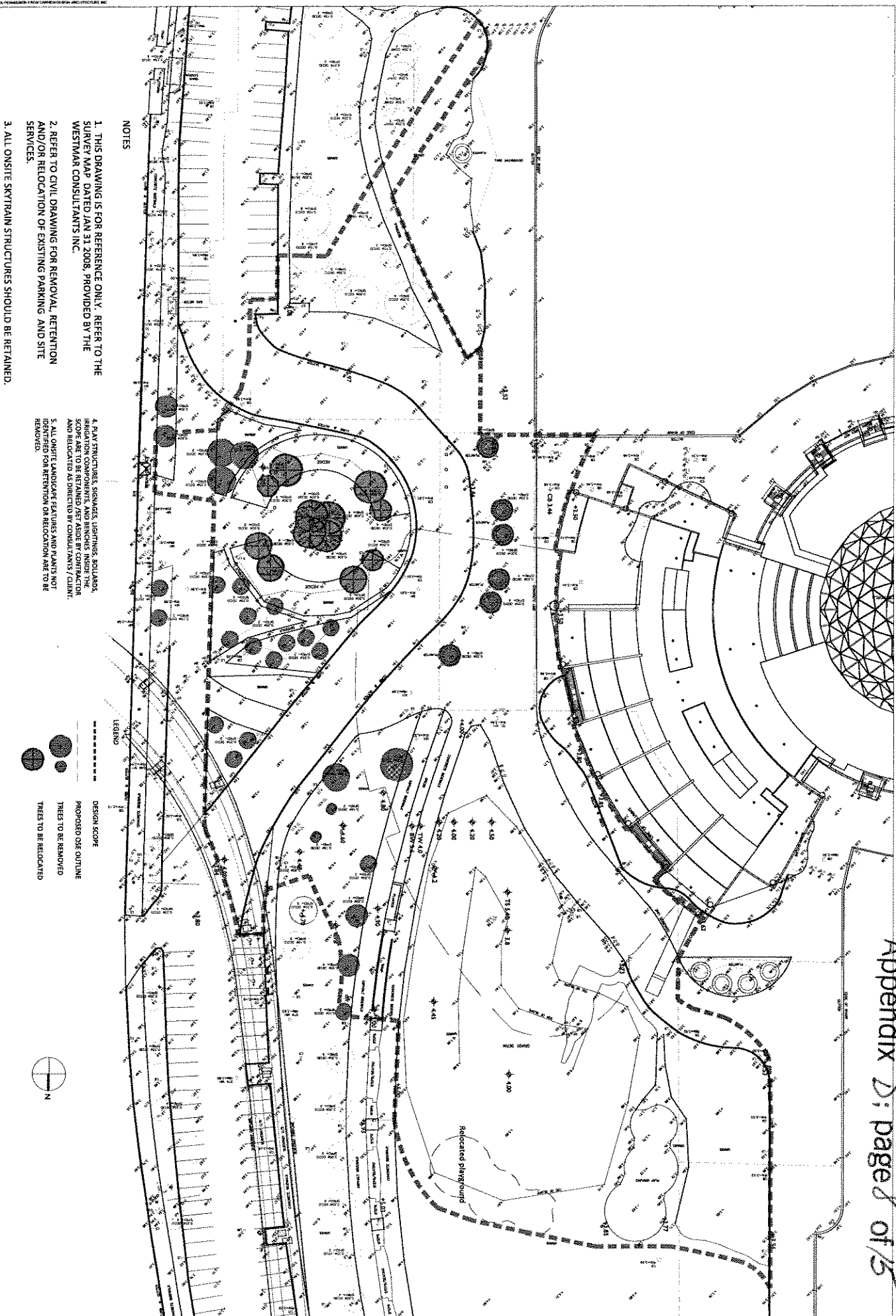
**SCIENCE WORLD**  
BRITISH COLUMBIA  
1000 UNIVERSITY STREET, VANCOUVER, BC V6C 1B8

**Science World - SWITCH: The Outdoor Science Experience**  
**REMOVED LANDSCAPE AREA PLAN**  
JULY 27, 2010  
SCALE 1:200

**PHILLIPS-FAREVAAG-SMALLEBERG**  
PLANNING, DESIGN, LANDSCAPE ARCHITECTURE  
2227 West 4th Avenue, Suite 100, Vancouver, BC V6K 3H1  
TEL: 604-681-7777 FAX: 604-681-7778

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3600 West Georgia St., Suite 110, Vancouver, BC V6L 1G6  
TEL: 604-681-7777 FAX: 604-681-7778

**DP-L06**





Science World - SWITCH: The Outdoor Science Experience

JULY 27, 2010

**LANDSCAPE LAYOUT & GRADING PLAN**

0' 1' 2' 3' 4' 5'

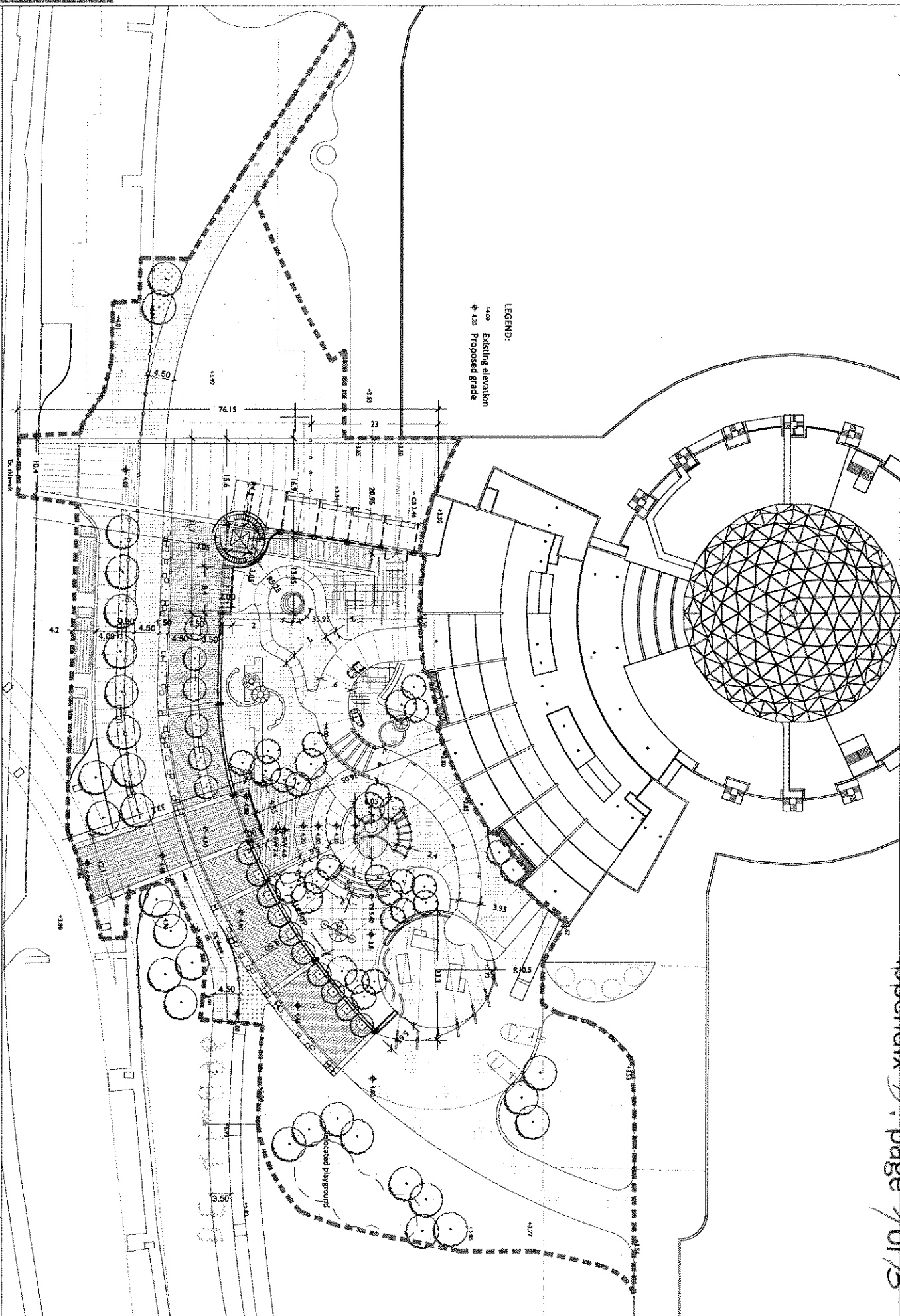
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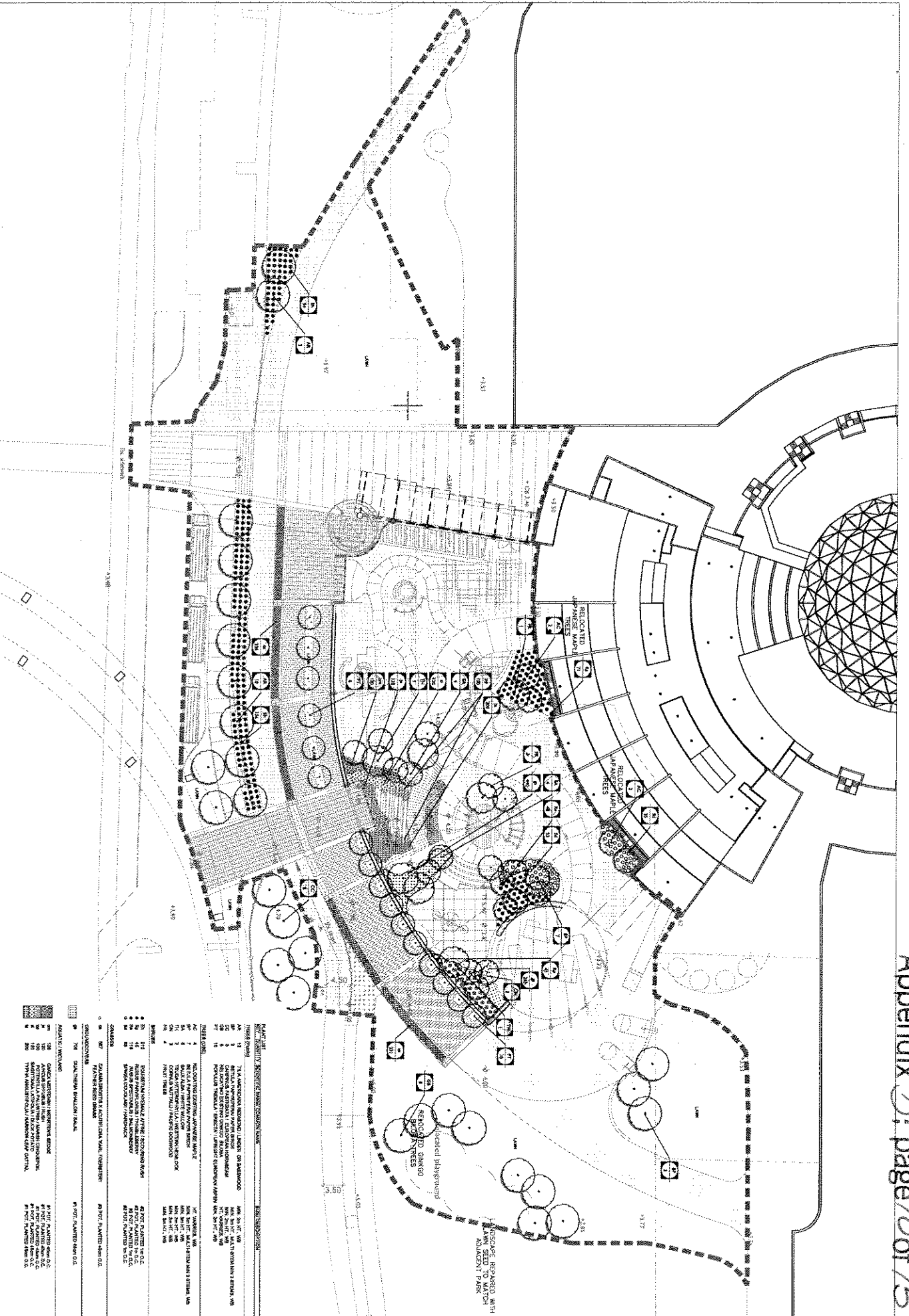
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**PHILLIPS-FAREVAAG-SMALLENBERG**  
PLANNING • URBAN DESIGN • LANDSCAPE ARCHITECTURE

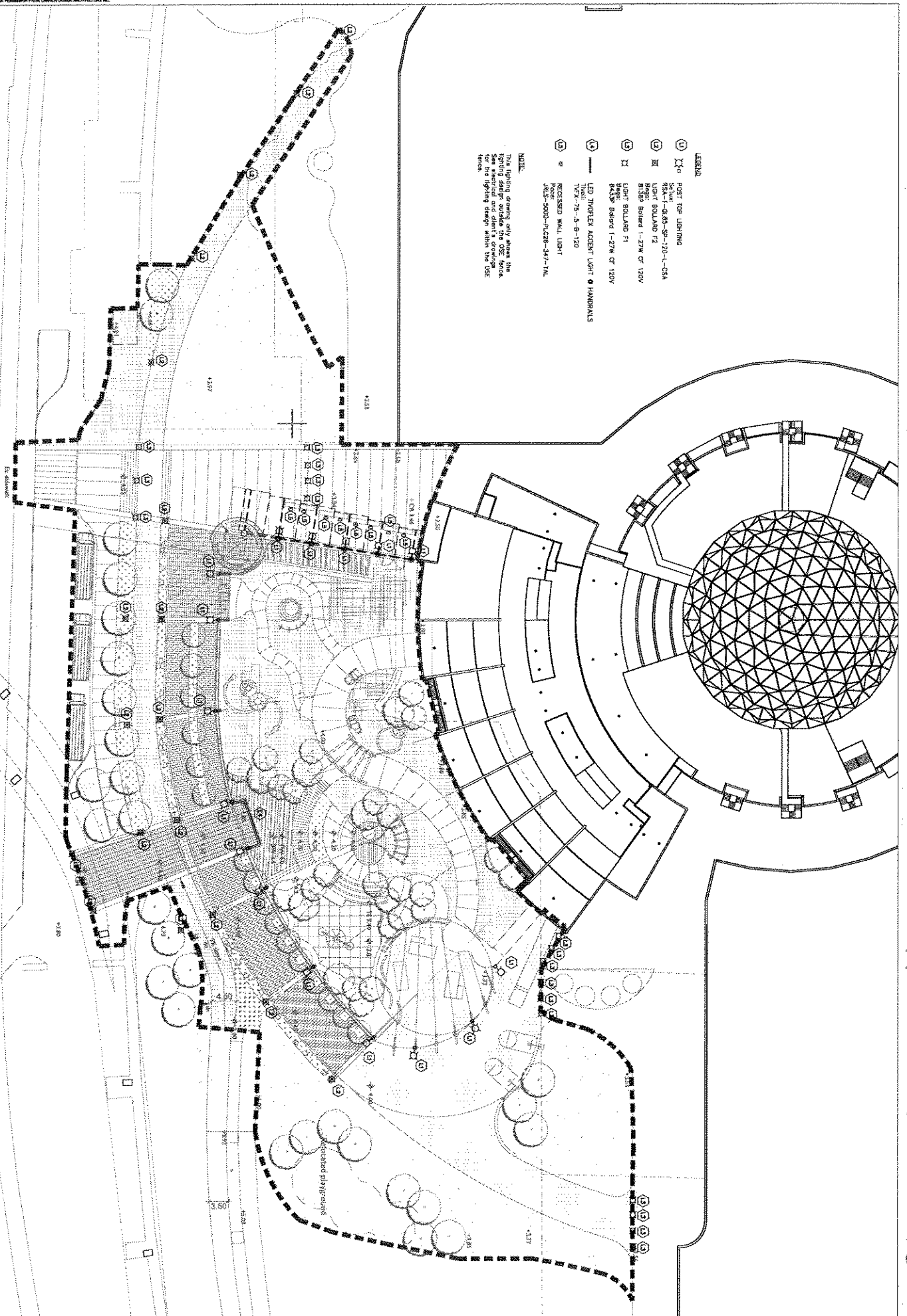
**CANNONDESIGN.**  
Cannon Design Architects Inc.

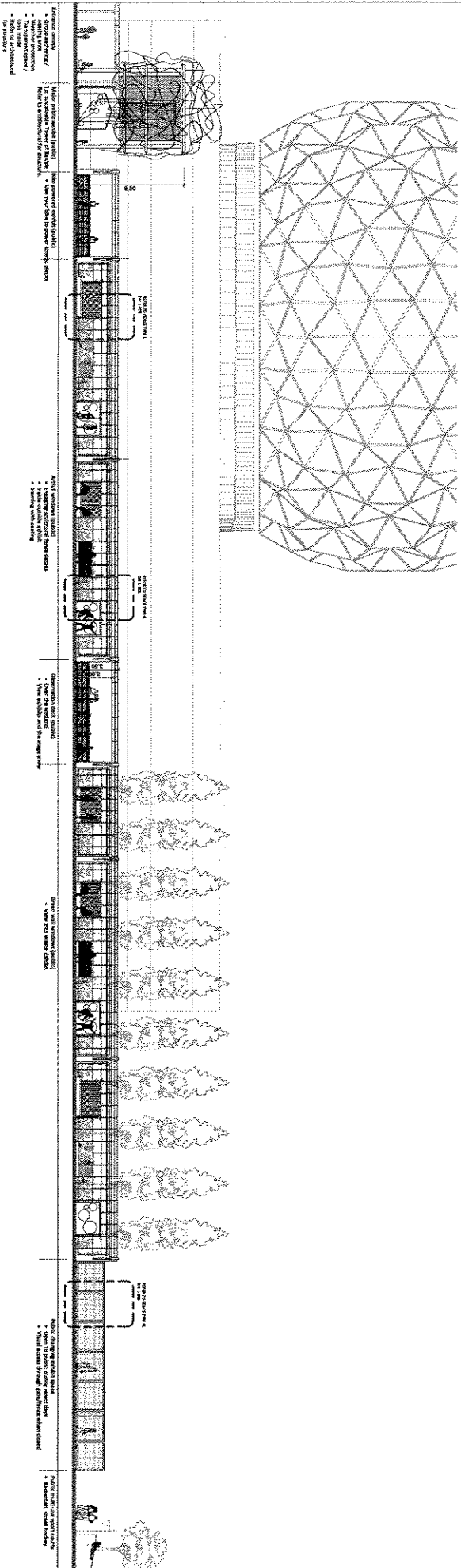
**DP-L08**



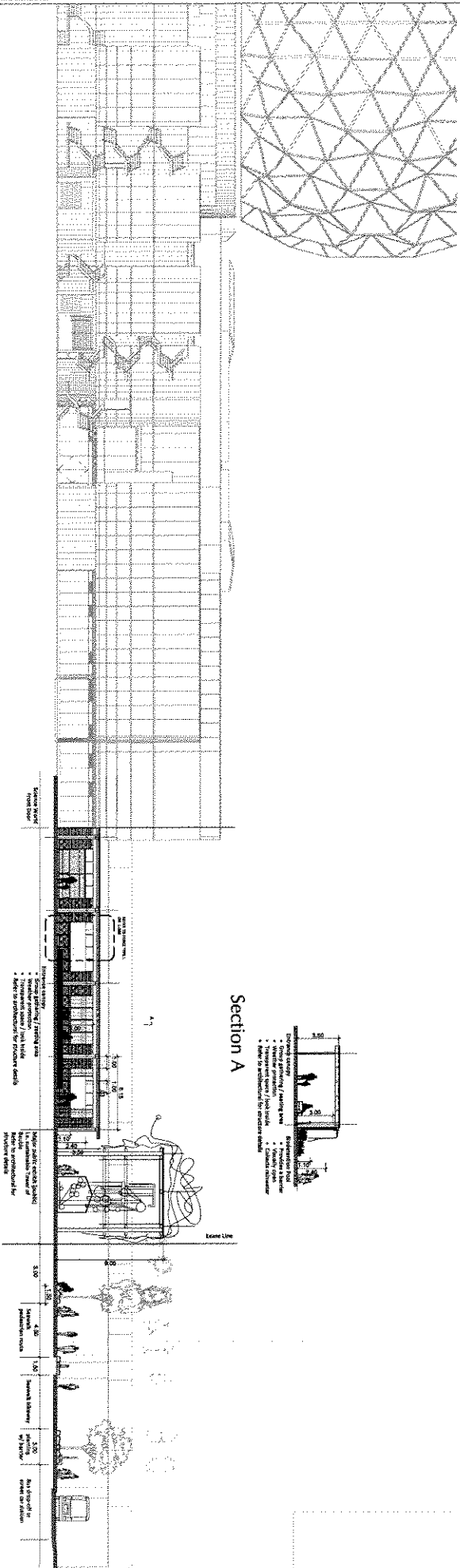






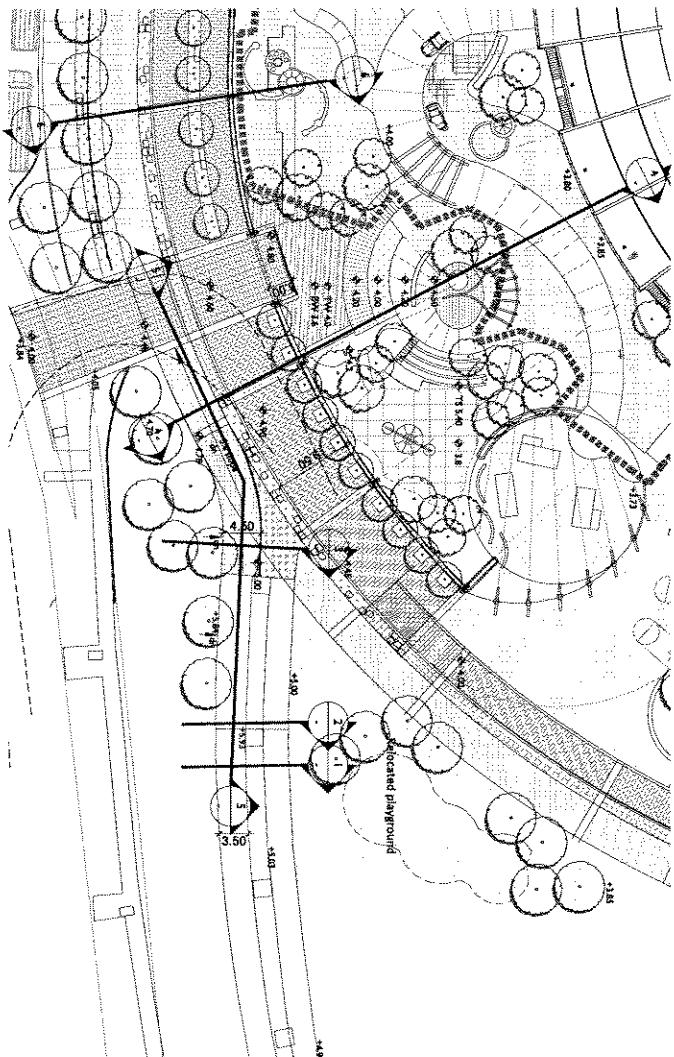


Quebec Street Boundary Elevation

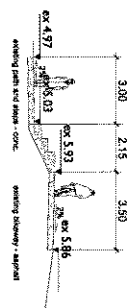


Section A

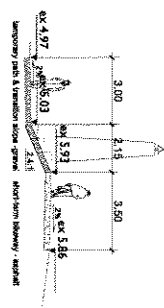
Entry Elevation



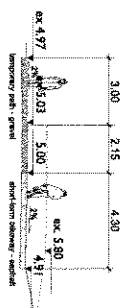
Proposed Bikeway  
connected to Ex.  
Bikeway  
Key Plan 1:200



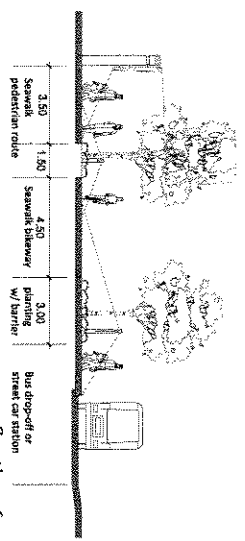
Section 1



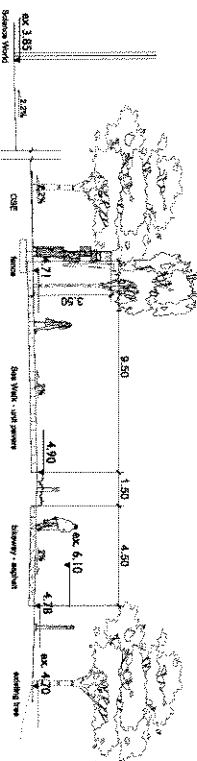
Section 2



Section 3



Section 6

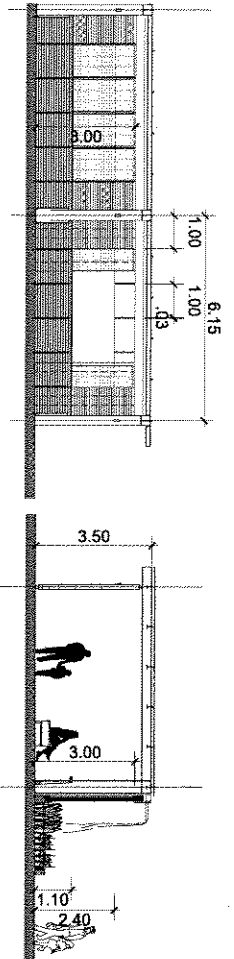


Section 4

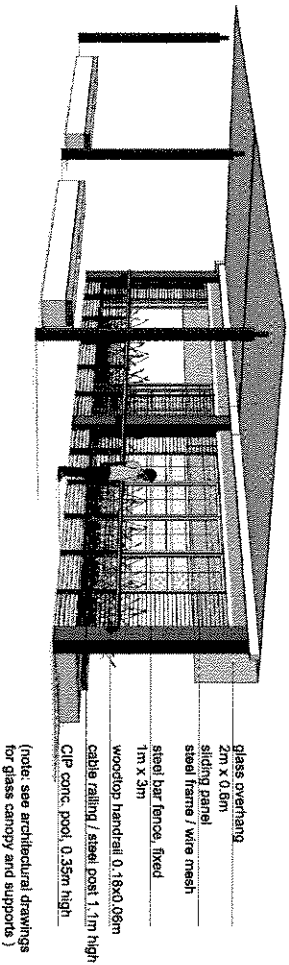


Section 5

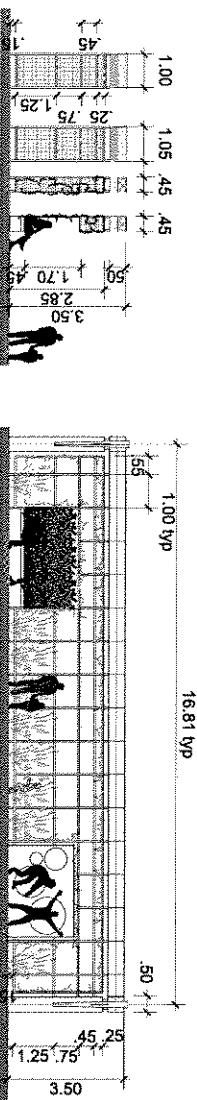
Type I (3.0m Sliding Panel)



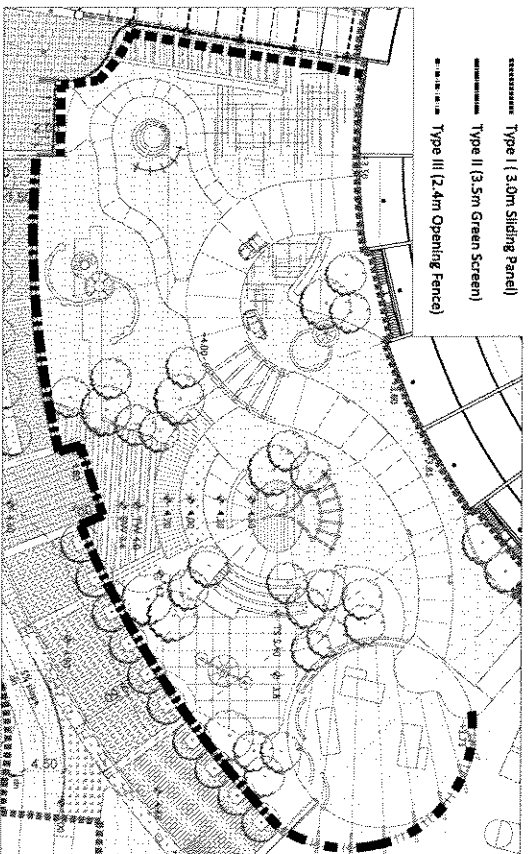
LEGEND  
Type I (3.0m Sliding Panel)  
Type II (3.5m Green Screen)  
Type III (2.4m Opening Fence)



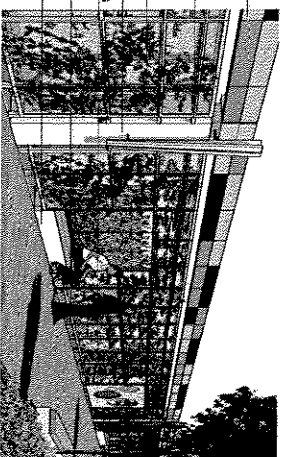
Type II (3.5m Green Screen)



Type III (2.4m Opening Fence)

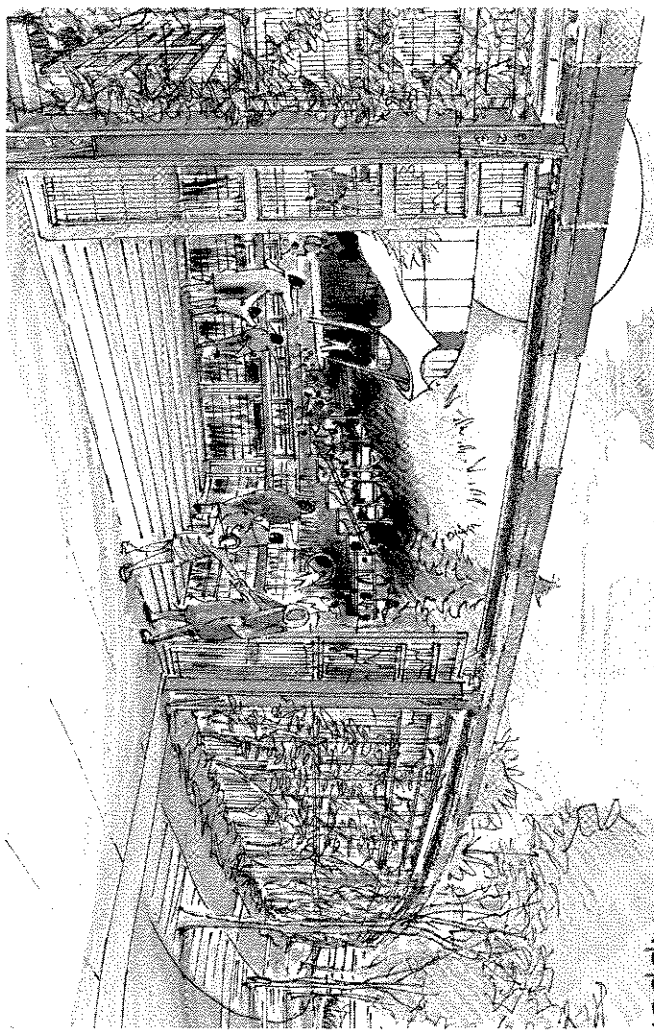


- colored panel  
0.25x1m typ
  - steel frame / wire mesh
  - planting
  - CIP conc. column 0.45x0.5x3.5m
  - steel panel 2.15x3m / polycarbonate circles
  - carved steel panel 1x1.7m
  - woodtop ctp conc. bench  
0.45x0.45x3m
- (note: see architectural drawings for colored panels)

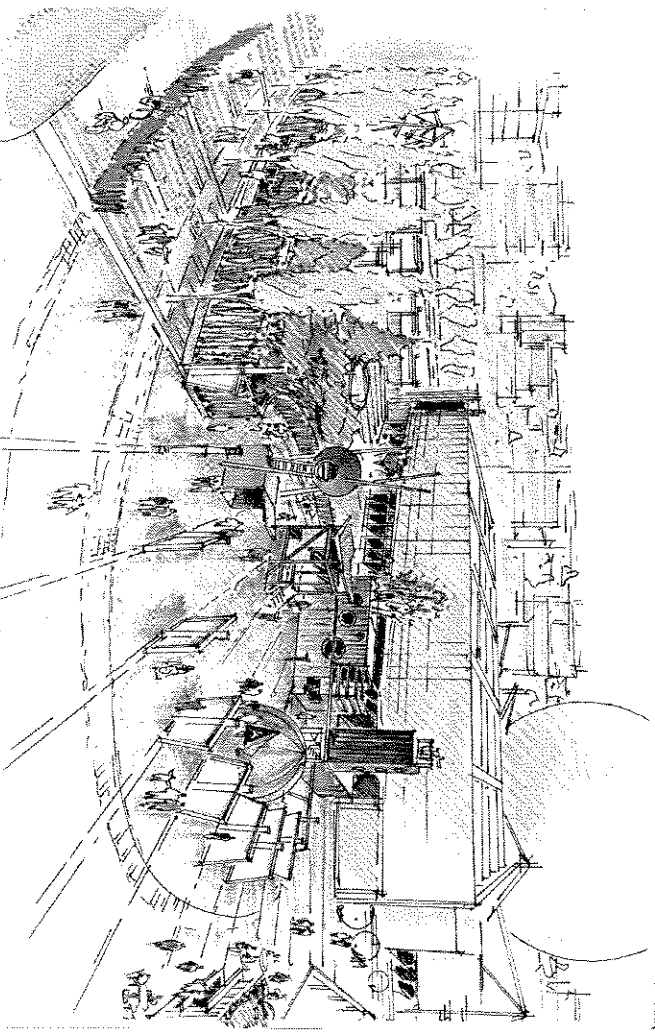


- steel column  
Ø0.3m, 2.835m high
- rotatable fence, steel frame,  
wire mesh 4.3x2.25m





The Public Overlook and the Fence



The Flex Space

000010 30

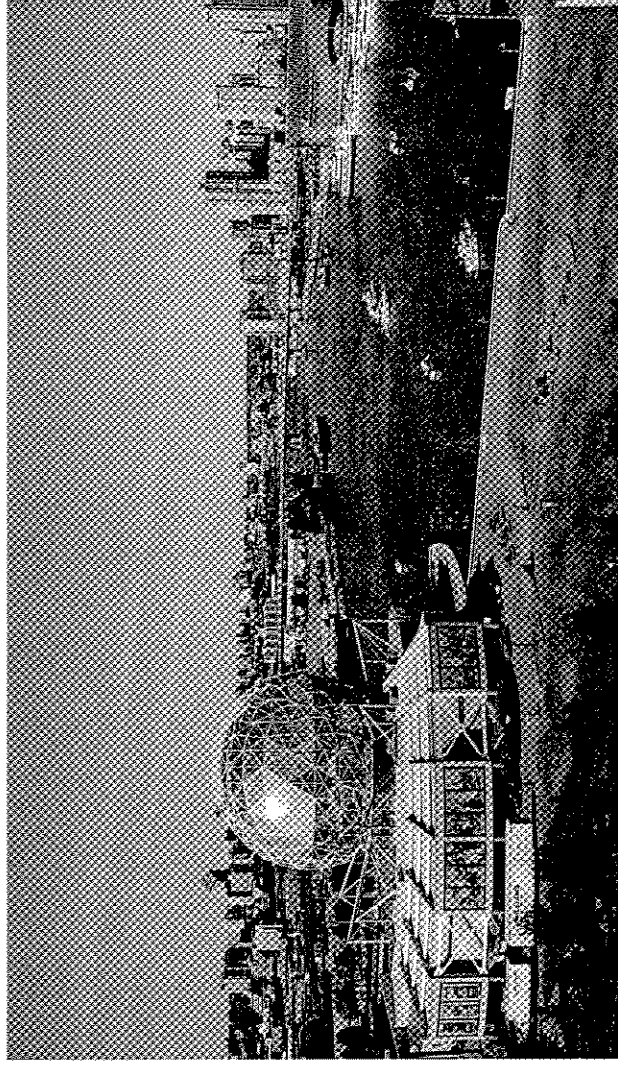
A COPYRIGHTED DRAWING. THIS DRAWING IS AN INSTRUMENT OF SERVICE AND IS THE PROPERTY OF GARDEN DESIGN ARCHITECTURAL INC. THIS DRAWING MAY NOT BE REPRODUCED WITHOUT THE WRITTEN PERMISSION OF GARDEN DESIGN ARCHITECTURAL INC. ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. ANY INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE. ANY INFORMATION CONTAINED HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN OTHERWISE.

# Science World - SWITCH The Outdoor Science Experience

Background Information in Support of the Development Permit Application

July 27, 2010

SCIENCE  
WORLD  
BRITISH COLUMBIA  
CANNON DESIGN  
PHILLIPS FARVAKG SMALLENBERG  
LANDSCAPE ARCHITECTS





# Introduction to Science World

## ABOUT SCIENCE WORLD

Science World engages British Columbians in science and inspires future science and technology leadership throughout the province. In addition to traditional topics of science, Science World works hard to promote personal and collective environmental responsibility among visitors, K-12 students, educators, staff and volunteers.

Through interactive exhibits and programs that make science fun, Science World inspires young minds to explore the world around them and develop a long-term interest in science. At our False Creek Facility, Science World welcomed over 558,000 visitors in 2008-2009 and connected with an additional 188,000 students in their own communities across the province through our Community Engagement programs. We have welcomed nearly ten million visitors since opening in 1989. Our vision of providing science-based educational opportunities across BC has always been a key part of our mandate.

## PROJECT MANDATE

### Facility Renovation

Since opening in our current facility, over twenty years ago, Science World has welcomed 11 million visitors through its doors. Even as the institution has succeeded, the building has not fared well. The facility conditions have deteriorated to a state that now requires significant repair and renovation.

Over the past twenty years, Science World's activities have evolved and grown to meet the changing need of the community. For the facility to continue meeting the community's needs, as well as the institution's, Science World must undertake significant upgrades to its iconic facility.

The focused intention of this project is to achieve a series of capital improvements that take into consideration three main overriding project objectives: the functional, aspirational, and sustainable.

### Functional Needs

- Provide a revised facility program that better meets the current operational needs and allows for future growth and change
- Repair or replace failing building infrastructure
- Improve entry and admissions sequence and repair park and urban interface
- Expand the public space available to accommodate growing attendance.

### Aspirational Goals

- As we repair failing building systems, provide a new, innovative and inviting public face that outwardly expresses the mission and personality of the institution
- Develop the Outdoor Science Experience and directly engage in the topics of sustainability while expanding the Science World experience for visitors and the general public.

### Sustainable Design

- Through this renovation reduce the energy requirements for the building and diminish our carbon footprint
- Take advantage of opportunities to produce energy and work toward becoming a net zero consumer of energy
- Provide a showcase of sustainable design and technology as well as a living laboratory for new and existing sustainable products.

### Outdoor Science Experience

Science World British Columbia is a non-profit organization which engages British Columbians in science and inspires future science and technology leadership throughout our province. As part of this mission, Science World has long envisioned an outdoor component which will considerably expand its offering to the community.

As part of the Facility Renewal project, Science World will develop a sustainability-themed outdoor science park, exploring the choices we make related to Food, Waste, Energy, Housing, Water and Transportation. SWITCH: The Ken Spencer Science Park will host engaging, interactive outdoor exhibits that help the community better understand our impact on the natural world.



## SWITCH The Outdoor Science Experience

SCIENCE  
WORLD  
REALIZING THE VISION  
CANNON DESIGN

## Project History

### Building Audit

In order to understand the true condition of the facility and to determine the order of magnitude of problems, Science World has undertaken several studies of its physical plant. A major building audit was completed in 2004, which identified some of the following key issues requiring immediate attention:

- Below and above-water foundation deficiencies
- Aging and obsolete building life/safety systems
- Building envelope failures of both wall and roof systems
- Mechanical/electrical systems overhaul
- Seismic deficiencies
- Building inefficiency.

### Facility Constraints and Issues

As our community attendance and initiatives continue to expand, additional space is required. The facility renovation will include a small expansion but the design will consider future growth beyond this project.

While the current facility condition increased space and operational requirements are the main impetus for this project, there are other issues triggering this endeavour which include the following:

- Food service at the building is hidden and generally inaccessible from the street. Also, there is inadequate seating space for both the White Spot patrons and school groups.
- The arrival sequence to the building is confusing and unwelcoming; the entry is often congested due to its layout.
- Science World has decided to focus on sustainability in all that it does, and the building renovation should move the facility toward becoming a net zero consumer of energy.
- At the same time as the facility renovation, Science World will be leading the development of the Outdoor Science Experience (OSE), a series of outdoor science exhibits surrounding Science World's current site. The OSE will include a component, SWITCH: The Ken Spencer Science Park, that will be accessible to the public with admission to our facility.

### Outdoor Science Experience

After working on the project since 2003, Phillips Farevaag Smallerberg (PFS) was commissioned by Science World to respond to the City of Vancouver's plans for the park surrounding our facility designed by PWS Partnership on the City's behalf. The mandate of PFS was to include all elements necessary to make a successful outdoor science park as well as resolve existing and resulting park problems. The designs needed to include sufficient space for required transportation corridors, parking and bus traffic as well as consider the future removal of the City of Vancouver's Expo decks. This work was completed and discussed with the City.

### Master Planning

Science World received funding from Western Economic Diversification to expand on the work completed for the building audit and the OSE. Science World hired Holton Bakker Boniface Haden as well as AldrichPears and Associates to map out the long term needs of the institution with the goal of outlining an immediate project. The master planning team involved City staff and community members in envisioning Science World's future.

### Funding from the Provincial and Federal Governments

Since these recent efforts, Science World has received funding to move forward with realizing the OSE and the facility renovation. At the same time, Science World intends to secure use rights for any lands needed for future site development.



## SWITCH The Outdoor Science Experience

SCIENCE  
WORLD  
PALLA CENTRE  
CANNON  
CANNON



## ABOUT SCIENCE WORLD

Science World engages British Columbians in science and inspires future science and technology leadership throughout the province.

Through interactive exhibits and programs that make science fun, Science World inspires young minds to explore the world around them and develop a long-term interest in science. Science World welcomed over 558,000 visitors to our facility on False Creek last year and connected with an additional 188,000 students in their own communities across the province through our community engagement programs. Over 10 million people have visited the Science World facility on False Creek since it opened in 1989.

## How Science World Gives Back to the Community

Science World is active in bringing science into the Metro Vancouver community and across BC. We work hard so that we can offer our programs for free. Here's a sample of what we've been up to:

### Super Science Club:

This innovative after-school program provides science activities to grade 1-7 students attending inner-city designated schools.

#### Quick Facts:

- Pioneered at Florence Nightingale Elementary in the Fall of 2001, the program has now expanded to 11 schools in the Vancouver area.
- Last year over 700 students enrolled in Super Science Club.
- Over 800 Super Science Club family participants attended our "Family Science Night" to celebrate the end of the Super Science Club term in 2010.

### Community Science Celebration:

Science World coordinates family science events hosted at community centres outside of the Lower Mainland. These events include demonstrations, displays and activities tailored specifically to the community. The program focuses on the positive impact that science, technology and innovation has on the region's economy, and fosters relationships with community organizations.

#### Quick Facts:

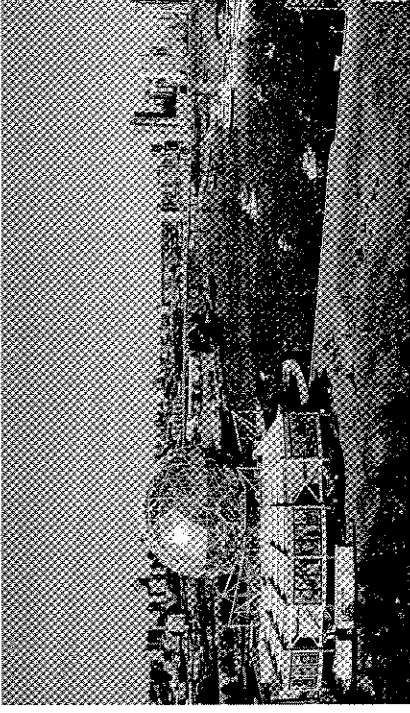
- We've hosted 31 Community Science Celebrations in 11 communities across the province.
- Communities include towns as rural and remote as Haida Gwaii, Ladysmith, Invermere, and more!

### On the Road:

We take science out into shopping and community centres with live, interactive demonstrations.

#### Quick Facts:

- We've travelled to over 200 communities in BC and to more than 80 schools with fewer than 50 students
- We've visited a grand total of 163,660 students and over 9,000 teachers outside of the Lower Mainland.



### BC Green Games:

This annual environmental action contest is designed to motivate action, enable sharing, and reward and celebrate the green efforts of schools in BC.

#### Quick Facts:

- Last year Science World accepted 94 project submissions from 32 school districts across BC.



## What is SWITCH: The Outdoor Science Experience?

Science World is proposing to expand its activities with the creation of an outdoor "gallery" known as SWITCH: The Outdoor Science Experience. SWITCH will revitalize Creekside Park and provide interactive science exhibits that engage visitors in topics of environmental sustainability.

SWITCH: The Outdoor Science Experience is composed of two general areas: one within the boundaries of Science World and for paid guests only, and the remainder for free to the public. The public will also have access to view the science park and its activities from outside its borders.

### Outdoor Exhibits

The purpose of creating SWITCH: The Outdoor Science Experience is to allow Science World to teach science in a way that can only be done outdoors. An outdoor space will allow us the room to create and use large and tall exhibits, tactile activities, and climbing structures.

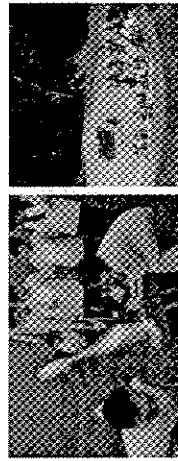
By being outdoors, our guests can also engage in messy hands-on learning on topics such as water, botany, agriculture and geology.



### Activities

Science World will also offer visitors a variety of hands-on outdoor science activities, facilitated primarily through an outdoor environment lab and stage.

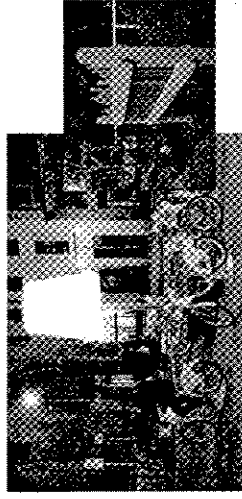
Activities may include urban agriculture and gardening workshops, soil and water testing, make-and-take activities, and large science demonstrations that will appeal to adults and children alike.



### Public Amenities

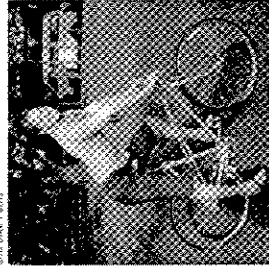
The creation of SWITCH: The Outdoor Science Experience will positively impact the Creekside Park by providing several public amenities. As part of the project, Science World will:

1. Create an informal public plaza that will include a canopy to provide weather protection for the public and Science World visitors.
2. Provide and maintain free interactive science exhibits around our facility and along the edge of the Science Park.
3. Provide views into our outdoor stage and flexible exhibition space.
4. Clarify and improve the pedestrian and bike traffic around our facility, including widening of paths.
5. Relocate the Tower of Flaubert, our iconic rolling ball sculpture, to the eastern edge of the new plaza and closer to Quebec Street.
6. Better integrate with City and Park Boards' long-term vision for the site, including a future street car stop and reclamation of temporary decking.

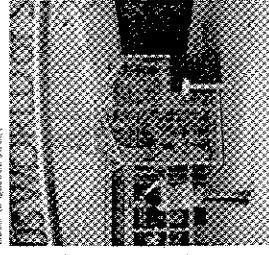


Free Public Exhibits

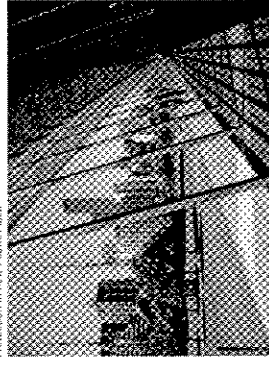
Impresso Bicycles and Bike Paths



Relocate Tower of Flaubert closer to Quebec Street



Canopy to Provide Weather Protection in new Public Plaza



### Programming

There is an area within SWITCH designed for rotating exhibitions, art shows, events, and science projects. While Science World will host and facilitate a number of unique science demonstrations and interactive activities, the space has been designed to be easily opened to the public for special events.

This unique space will be easily reconfigurable and will give Vancouver a one-of-a-kind outdoor venue for events such as showcases, workshops, and collaborative projects.



Rotating Exhibits as part of the Flexible Space

# SWITCH The Outdoor Science Experience

SCIENCE  
WORLD  
EXHIBITION  
CANNON

## Integration into the False Creek Waterfront Context

Science World has been planning for the creation of an outdoor science park since 2002. In 2006/07, the City of Vancouver agreed to undertake a process with senior staff to discuss making this dream a reality.

Through a series of workshops, staff of the Planning, Office of Cultural Affairs, Parks and Engineering Departments met with Science World staff and consultants to review the concept and its integration into City projects, policies and aspirations.

### Guiding Principles

The result of this process was the *Guiding Principles for an Outdoor Science Park Proposal at Science World* issued in April 2007. These principles provided guidance to Science World on the areas of:

- Decking
- Pedestrian and bikeway paths
- Transportation and parking
- Drop-off, loading and queuing
- Interface with park and waterfront
- Built form and architectural treatment
- Community 'fit'

These principles provided the direction needed to plan the Outdoor Science Experience to address key issues on the site:

- Reducing conflict between site users including pedestrians, cyclists, vehicles and Science World visitors
- Improving the aesthetic interface between Science World, park space and the seaside walkways/bikeways
- Generating a more positive experience of the public realm in this area for all users
- Enhancing connectivity between access routes, the Science World site and surrounding areas

### Expo Decking Review

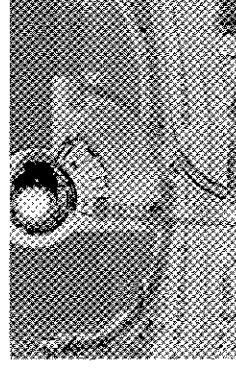
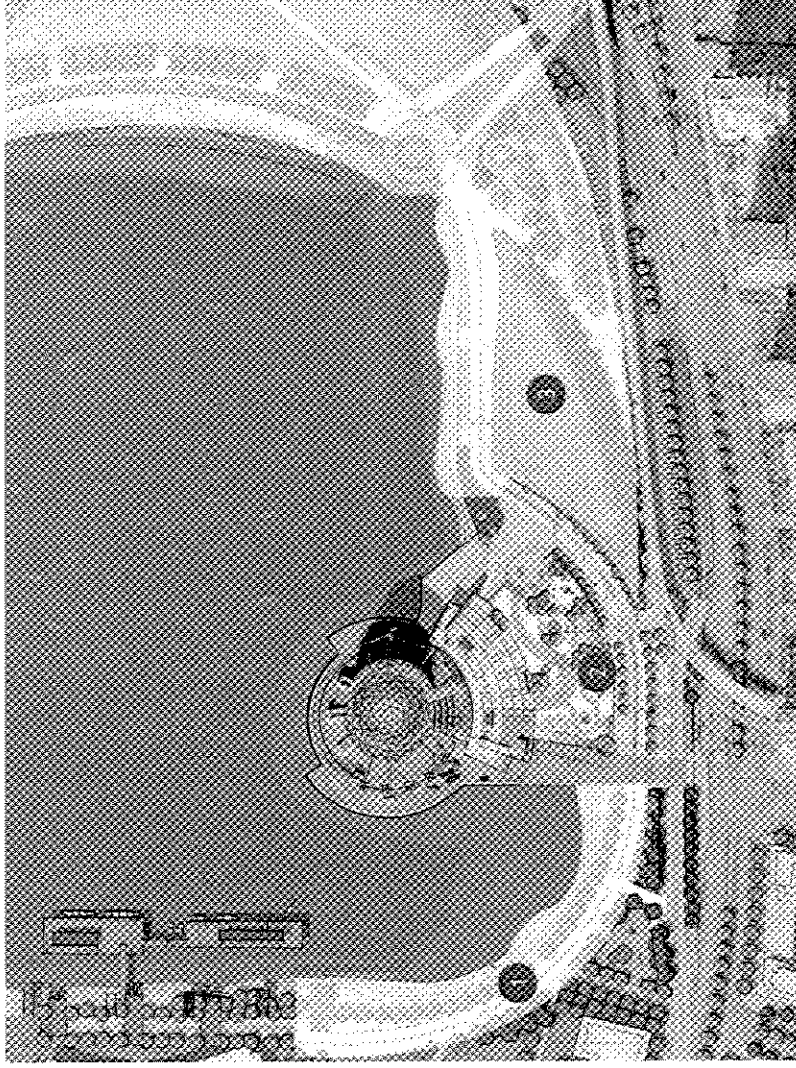
In 2008, the City of Vancouver initiated a review of the deteriorating Expo decking at the east end of False Creek. Westmar Engineering, marine structures experts, and PWL Partnership, were engaged to prepare options for consideration.

The project advanced the design for the future for the park and decking, which will be removed rather than replaced in the longer term.

### Integration into the False Creek Waterfront Longer Term Concept Plan

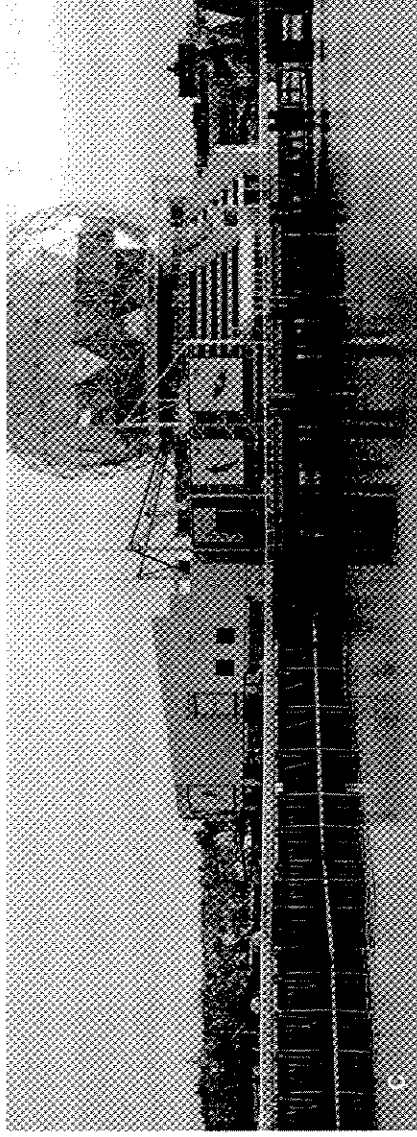
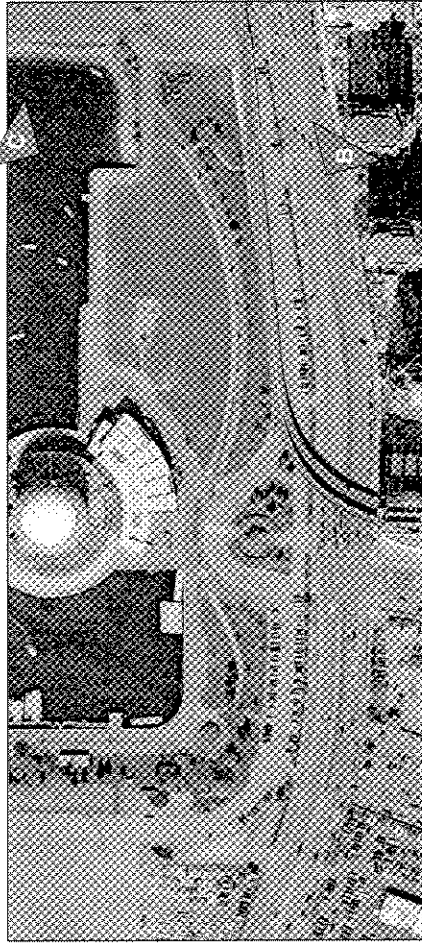
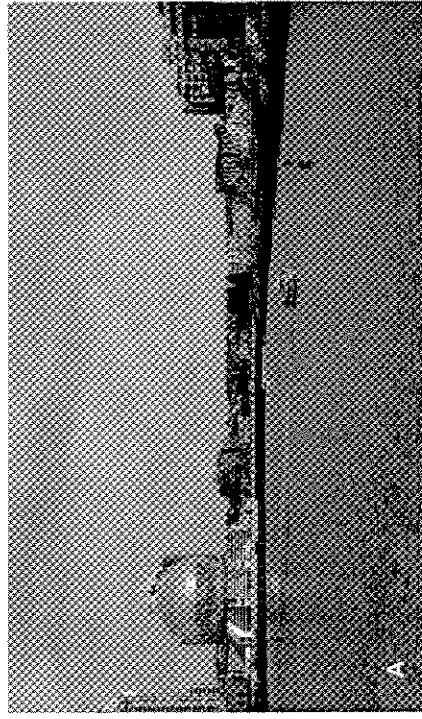
In order to ensure that any work undertaken around Science World will be easily integrated into the urban design of the end of False Creek, a longer term concept has been developed that illustrates:

- The continuation of the seawalk from the already built section in Southeast False Creek; this extension is planned for completion when the Expo deck is removed south of Science World
- The removal of the Expo deck to the south and north of Science World and its replacement with fill and a foreshore treatment that enhances public access to the water
- The removal of the south parking lot to make room for the planned Downtown Streetcar and a station at Science World serving tracks in both directions
- The eventual relocation of the seawalk to the north in a new alignment near the waterfront.



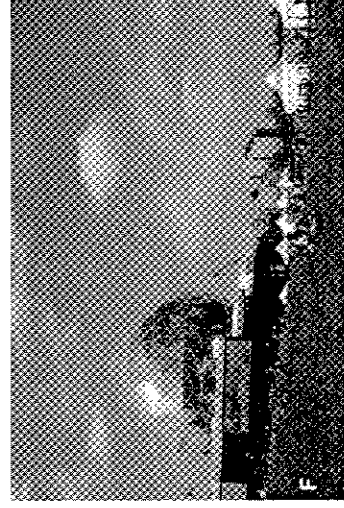
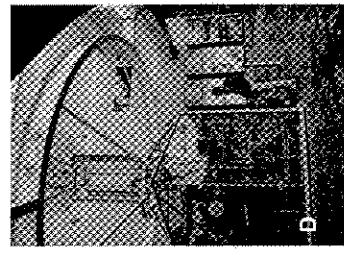
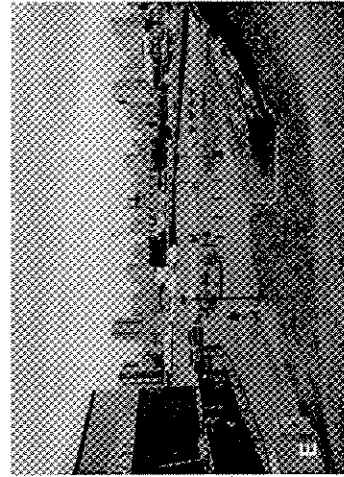
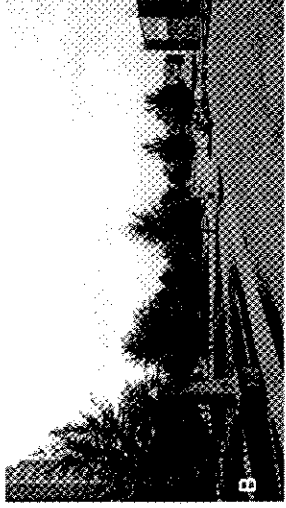
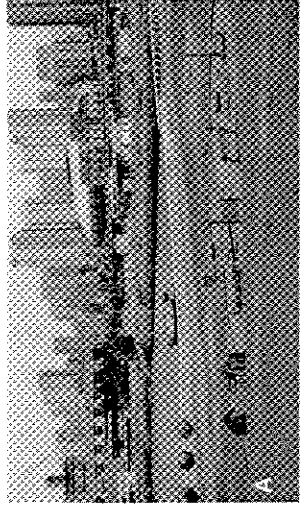
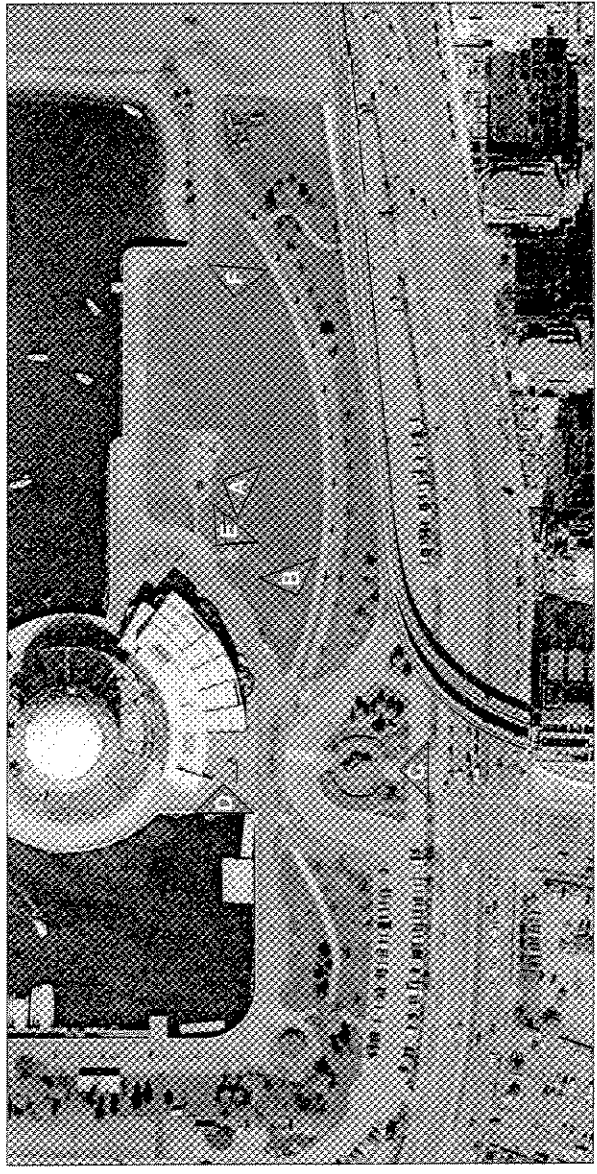
- The continuation of the seawalk once Expo deck is removed south of Science World
- Proposed Outdoor Science Experience - SWITCH
- Future Creekside Park development

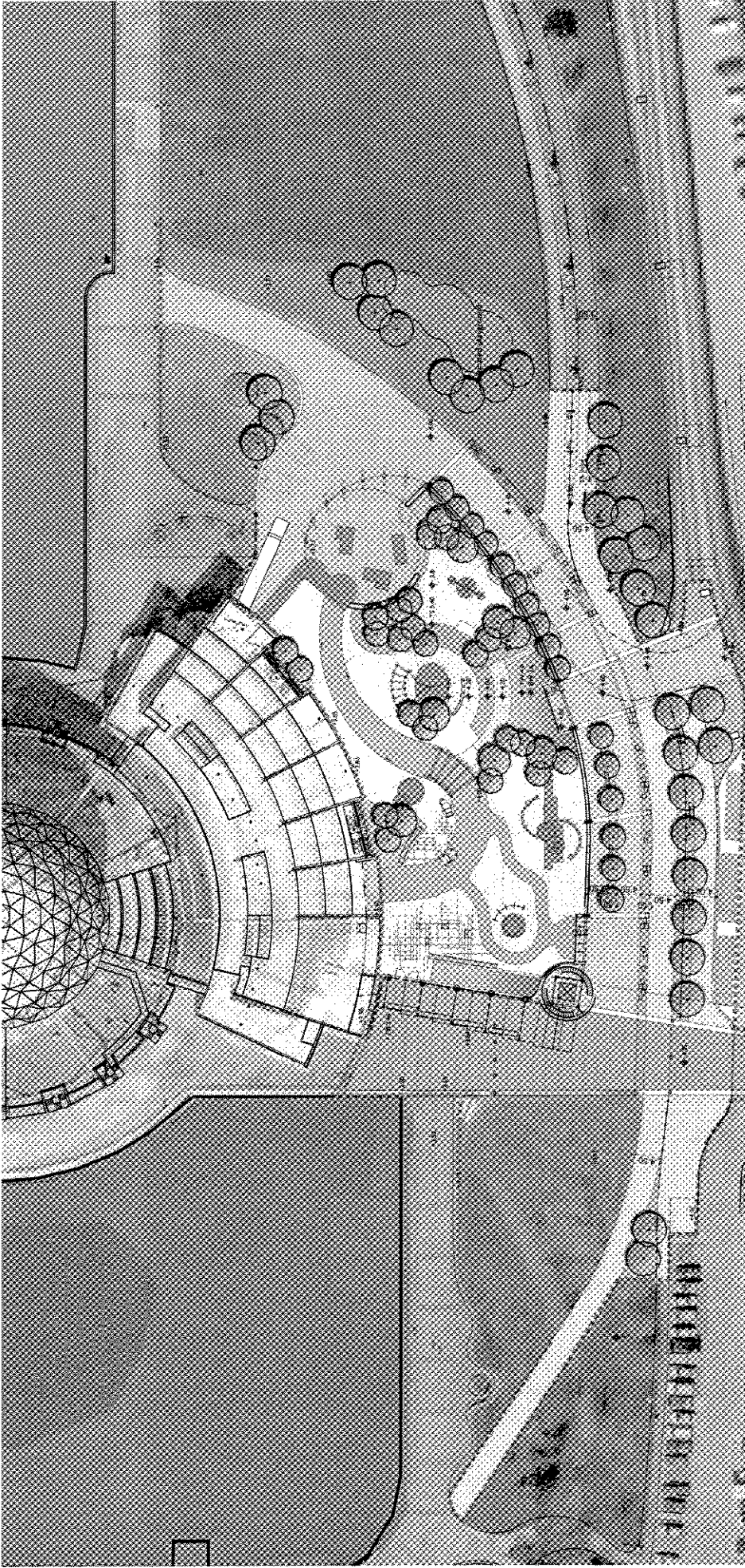
Context Photos





Site Photos





#### LEGEND

- 1- Scale relief map
- 2- Energy exhibits
- 3- Transportation exhibit area
- 4- Food discovery area
- 5- Water exhibit
  - Provides a barrier that is visually open
- 7- Stage at the wetland
- 8- Amphitheater on the mound
- 9- Waste exhibit
- 10- Changing outdoor exhibit space
  - Focus on housing
  - Housing competition showcase and rotating exhibitions
  - Iconic house
  - Public access for special events, programs and activities
- 11- Environmental labs
- 12- Entrance canopy
  - Group gathering/ seating area
  - Weather protection
  - Transparent space/ look inside
- 13- Major public exhibit (public)
  - Sustainable tower of Babel
  - Bike power public exhibit
  - Use your bike to power kinetic pieces
- 15- Five metres wide interactive zone
  - Engageable exhibits
  - Inside outside views
  - Seating / planting
- 16- Observation deck (public)
  - Over the wetland
  - View exhibits and the stage show
  - Green wall windows (public)
  - View into waste area
- 18- Sea walk pedestrian routes 4.5m wide
- 19- Sea walk bike way 4.5m wide
- 20- Loading area - large infrequent exhibits
- 21- Drop off
- 22- Garbage pick-up point
- 23- Public activity courts
  - Basket ball, street hockey
- 24- BC Hydro Fast Charger Station








Traffic Flow

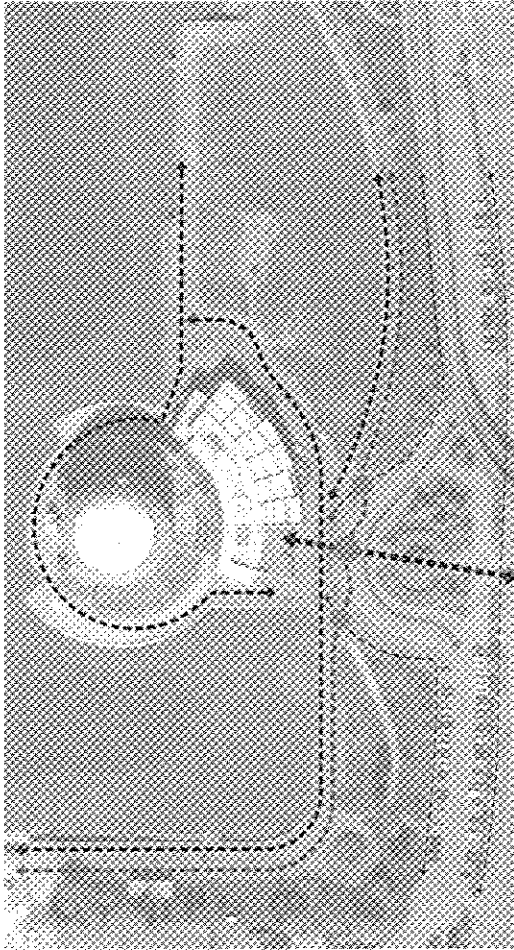
Currently, bike and pedestrian pathways cross awkwardly with school bus unloading areas, visitor vehicles, and paths for large delivery vehicles.

In creating SWITCH: The Outdoor Science Experience, Science World seeks to improve the flow of traffic around our facility. This includes widening the bike and pedestrian pathways, clarifying the division between bike and pedestrian pathways and providing a drop-off area. By adding plantings, and lining the paths with trees, this will create a green corridor that will sweep them from the north to south side of Creekside Park.

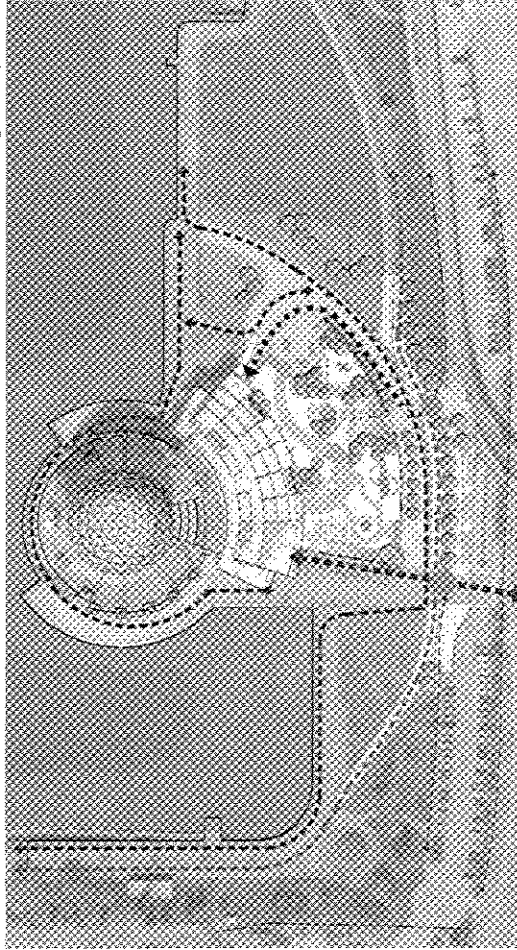
In improving these pathways, Science World also seeks to consolidate and simplify vehicle traffic patterns around the building. The loading bay will be relocated to the northeast side of the building and will be for scheduled, infrequent deliveries such as large exhibit loading. The daily deliveries will utilize the drop-off area provided east of facility arrival plaza.

LEGEND

-  Pedestrians
-  Cyclists
-  Drop off and Daily Deliveries
-  Pedestrians/Cyclists crossover
-  Infrequent Scheduled Deliveries



Existing traffic patterns



Proposed traffic patterns

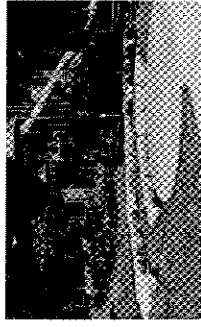
## SWITCH Exhibit Content

SWITCH will provide engaging exhibits on six topics that together address aspects of sustainability: transportation, energy, water, food, water and housing.

Green labs provide opportunities for hands-on experiments.



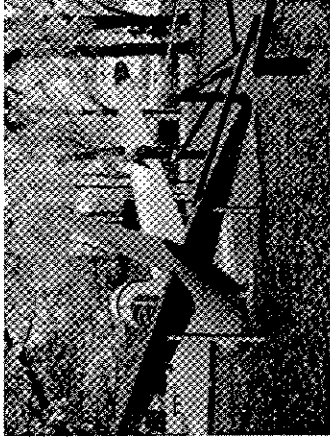
Centro Stage will bring groups together in tiered seating to watch science demonstrations.



### Outdoor Science Experience OSE 2 Exhibit Content

- |   |   |   |                       |
|---|---|---|-----------------------|
| ① <b>Transportation</b><br>Where, why and how are we going today, and how can we transport ourselves sustainably? | ③ <b>Water</b><br>Where our water comes from, and what we use water for.                    | ⑤ <b>Waste</b><br>How and why we produce waste, and the potential of waste.                           | ⑦ <b>Green Lab</b>    |
| ② <b>Energy</b><br>Sustainable methods for generating energy, and reducing our reliance on and demand for energy. | ④ <b>Food</b><br>Where the city gets its food from, and how we decide what food to consume. | ⑥ <b>Housing</b><br>The how, why and what of 'green' housing, and what drives the demand for housing. | ⑧ <b>Center Stage</b> |





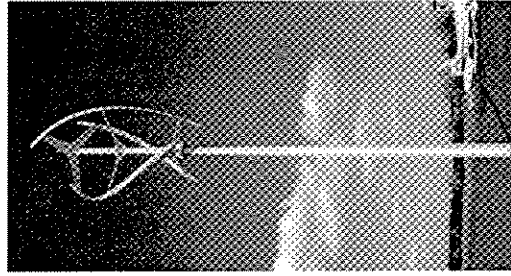
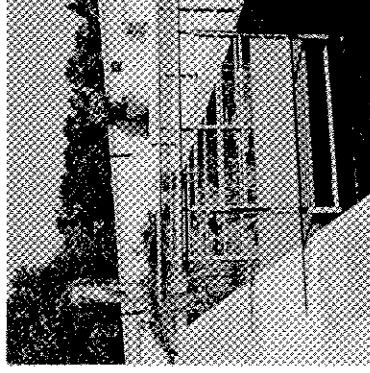
## Transportation

The choices we make in regards to transportation have a direct impact on our lifestyle and are key to living more sustainably.

A series of climate, sustainable vehicles will demonstrate the variety of transportation methods available, and serve as a platform for discussing how the transportation methods we choose have a direct impact on the resources we use, the waste we produce, and the urban infrastructure we require.

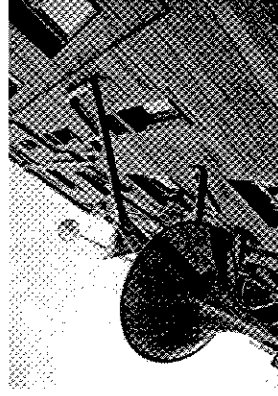
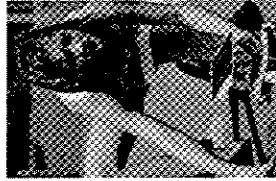
## Water

The story of where water comes from and how we use it will be told primarily through a large-scale water interactive that allows visitors to manipulate the flow of water. Additional activities, such as water and soil testing, will be developed for both our own constructed wetlands and the wetland area in Southeast Falls Creek.

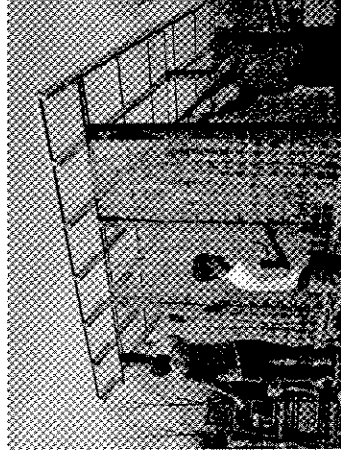
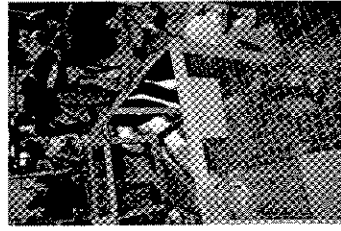
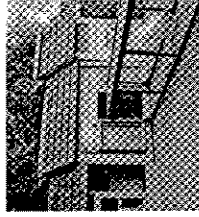
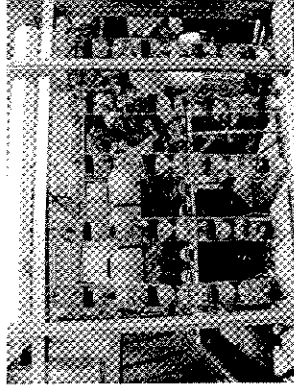
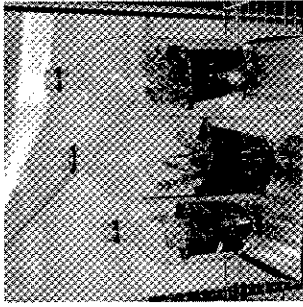


## Energy

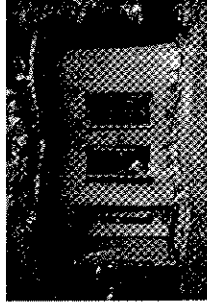
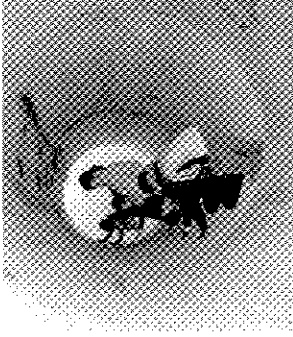
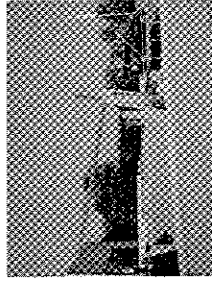
The energy area will demonstrate alternative methods of producing energy while discussing how we can reduce our carbon footprint. The area will include a large-scale model of a wind turbine, a large-scale model of a solar panel, and a large-scale model of a hydroelectric dam, as well as a platform for discussing the importance of energy in our lives.



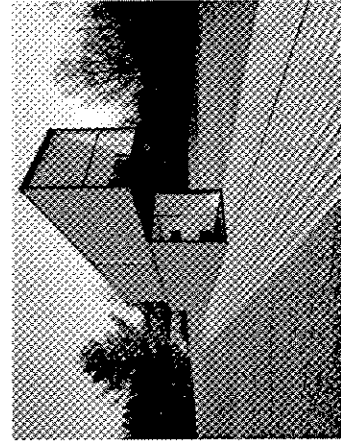
**Food**  
One of our goals is to create a platform for exploring urban agriculture and gardening - which would facilitate programming and activities that would give visitors a better understanding of where our food comes from, and what they can do to reduce their own carbon footprint. We're looking into the feasibility of a garden truck that can be interchanged with other such as food trucks, green houses.



**Waste**  
How we manage and reduce the waste we produce is an issue in all sustainability topics. Our focus will be primarily on the understanding, measurement of waste fed into as well as potential alternative uses for waste.



**Housing**  
The science of housing is constantly evolving and through the development of construction techniques, materials and design, sustainability is improving. The housing area, in conjunction with the flexible exhibit space, will showcase innovations in sustainable housing and will include a construction exhibit that will allow visitors to build their own structures.



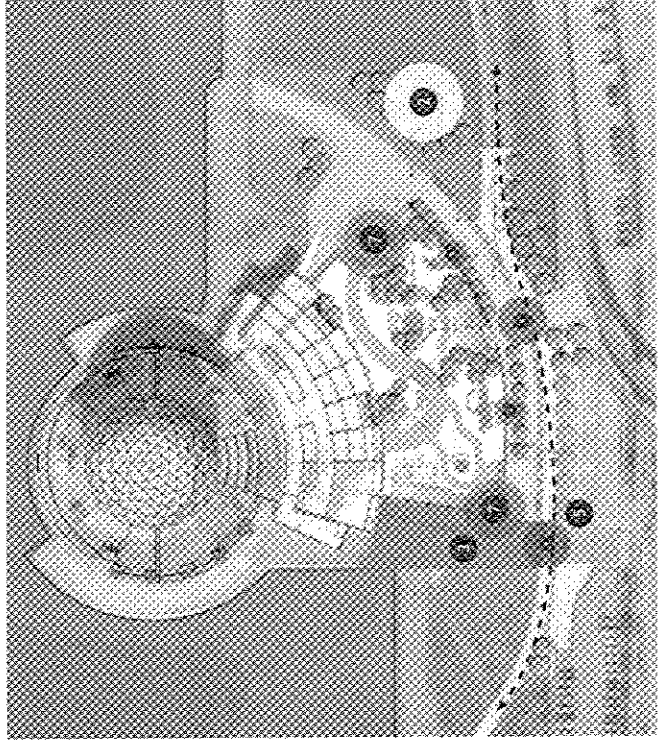
## Current to Future Site Comparison

The space around the building was taken into careful consideration in the development of this proposal. In doing so, we sought to make the best possible use of the space available, by turning unused paved areas into usable space where visitors to Science World can be engaged in science, and by creating a flexible space that the public can also enjoy.

Current Site Plan



Proposed Site Plan March 2011



### Cyclist and Pedestrian Pathways

The pedestrian and bike paths conflict with the driveway in front of the building. The proposal will relocate the drop-off area, and create wider, separate bike and pedestrian pathways, reducing the traffic in front of our building and making it safer for the public and visitors.

### Playground

The playground and slide is currently located just to the east of the building. The proposal will require modification to the berm, and the relocation of the playground and slide.

### Canopce to Plaza

The chicane, originally built for the Molson Indy, is currently unused. The proposal would turn this space into a public plaza/seating area, which includes a canopy for weather protection.

### Public Green Space

Currently, in the proposed location of SWITCH, there is a large area of green space. The Science World proposal will remove approximately 1100 square meters of public green space, and require the relocation and transplanting of trees. Additional public green space will be added to the south and north of SWITCH, as well as trees along the pedestrian and bike paths.

### Drop off and Service

Currently the vehicle drop-off area, servicing and vehicle crossings. The proposal would move the drop-off location away from the building, separating and limiting conflict between vehicle and other pedestrian traffic. Deliveries and regular servicing would be away from the entrance. Infrequent deliveries, such as exhibit installations, would require use of the new pedestrian path.

### Fire Lane

### Public Exhibits

There is currently one free Science World exhibit known as the Tower of Babel. The proposal will add at least three free exhibits outside of SWITCH for the public, as well as provide views of the outdoor stage and flexible exhibition space. The flex space will be available to the public for special events and programs.



## Overview of the Science World Renewal Project

**SWITCH:** The Outdoor Science Experience is designed to offer a varied series of engaging experiences along its interface with the public realm. The public will be given many opportunities to interact with and enjoy the activities of SWITCH: the Outdoor Science Experience.

In addition to exhibits in the public realm around SWITCH: the Outdoor Science Experience, the edge itself is structured to present sustainability to passers by. The next pages describe some of these experiences:

1. The Science World Arrival Plaza with Canopy
2. The Tower of Bauble
3. The Public Interactive Exhibits
4. The Public Overlook
5. The Public Windows into Outdoor Science Park and Interactive Panels
6. The Public-accessible Flex Space
7. Public Environment Trail





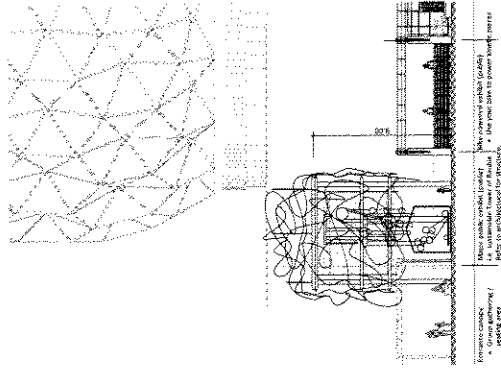
## The Arrival Plaza

A weather protected route under a glass canopy is proposed between Quebec Street and the new front door to Science World.

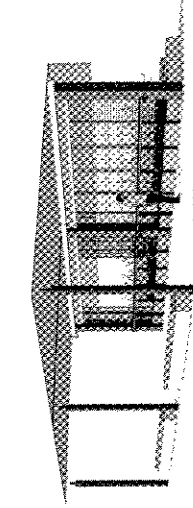
The entry sequence is intended to have a regular cadence of columns holding up a glass rain canopy. Views into SWITCH: the Outdoor Science Experience will be available along its length and lots of seating will be incorporated into benches and seating walls to allow people to stop and enjoy the activity and to wait for others to join them. School and tour groups will be mustered under the canopy before going into Science World with their group.

The existing Tower of Bauble provides an engaging experience at the entrance to Science World that many people stop to watch as they make their way around the seawalk. The plan is to renew this exhibit and give it a new home in a prominent place at the beginning of the new entry sequence leading to the front door. The public will be invited to walk around the two-story high installation at the south corner of the Outdoor Science Experience.

Just north of the Tower of Bauble will be the Energy Station where people will be able to gather and look into the paid visitor area SWITCH: the Outdoor Science Experience that deals with energy sustainability. A bike-themed exhibit will be offered free to the public, where they will have the opportunity to use bike-power to activate an exhibit or learn more about the efficiency of bikes in general.

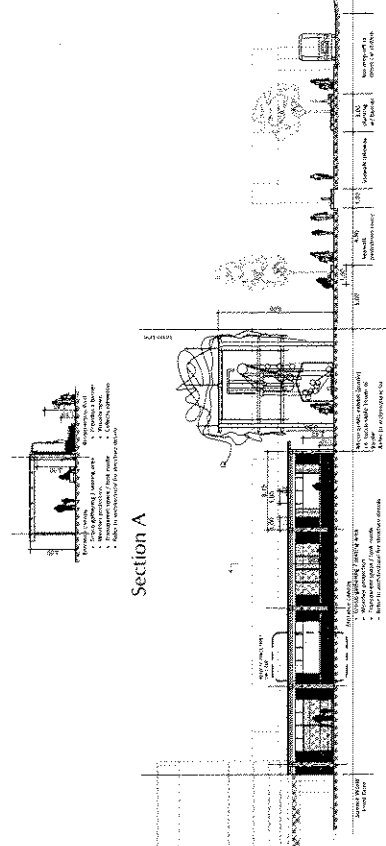


The Tower of Bauble - East Elevation



Fence Detail at The Arrival Plaza

Key Plan



Section A

The Arrival Plaza - South Elevation

The Arrival Plaza

The Tower of Bauble

## The Public Windows Into

### SWITCH: The Outdoor Science Experience

Midway along the east edge of the Outdoor Science Experience features a large landscaped mound. This mound has several roles:

- It introduces an area of green landscape to visually link to green spaces to the north and south of Science World
- It provides a sloping site for tiered seating to be used as an informal amphitheatre for science demonstrations
- It provides an 'underground' space of pipes and tunnels that children will explore as they learn about how sustainable choices about housing, water and waste affect the underground infrastructure of the city.

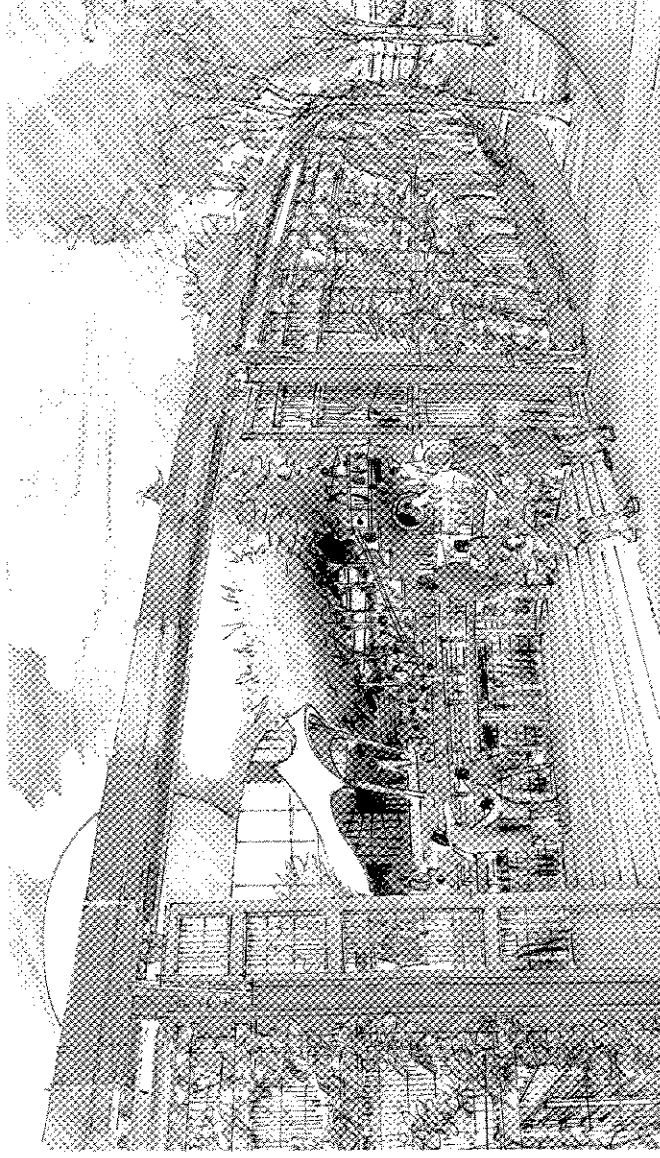
From the Interactive Zone in the public realm, people will be able to peek into the 'underground' world and watch the activity inside the tunnels.

## The Public Overlook

Along the east edge of SWITCH, people are invited to step inside on an observation deck over the constructed wetland. This deck is cantilevered over the wetland and offers a more than 180 degree view of the goings-on in SWITCH including the science show at the amphitheatre.

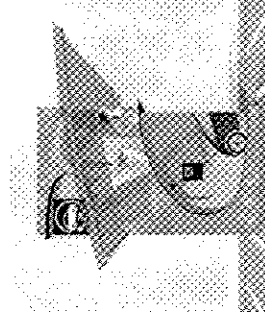
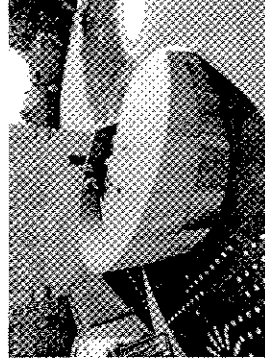
The observation deck is envisioned as having a waist-high railing with security provided by the drop in elevation to the bottom of the wetland pool.

The wetland will capture rainwater and overspill from the water demonstration tables. It will offer hands-on experiments with a freshwater wetland while the saltwater marsh in SEEC is intended to provide a complementary source for False Creek water samples.

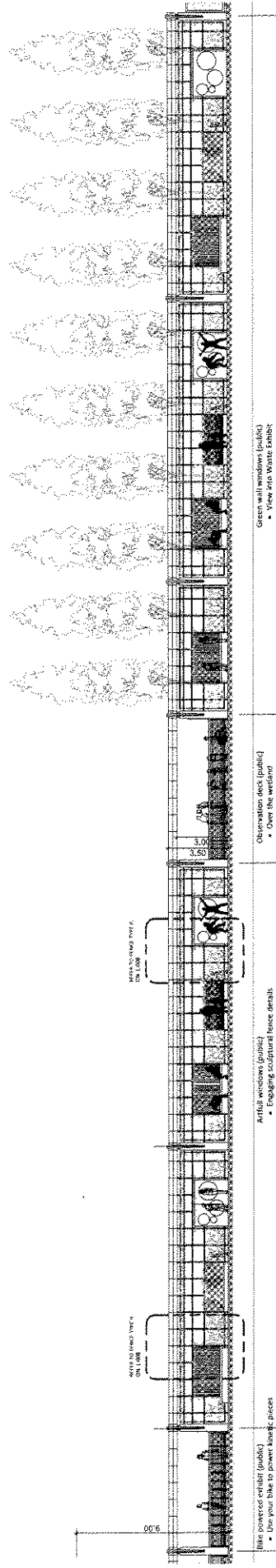


Key Plan

The Public Overlook and the Public Windows into SWITCH: the Outdoor Science Experience



# SWITCH The Outdoor Science Experience



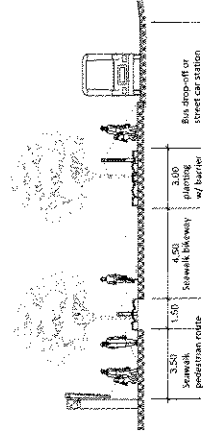
The Public Interactive Exhibits

The Public Overlook

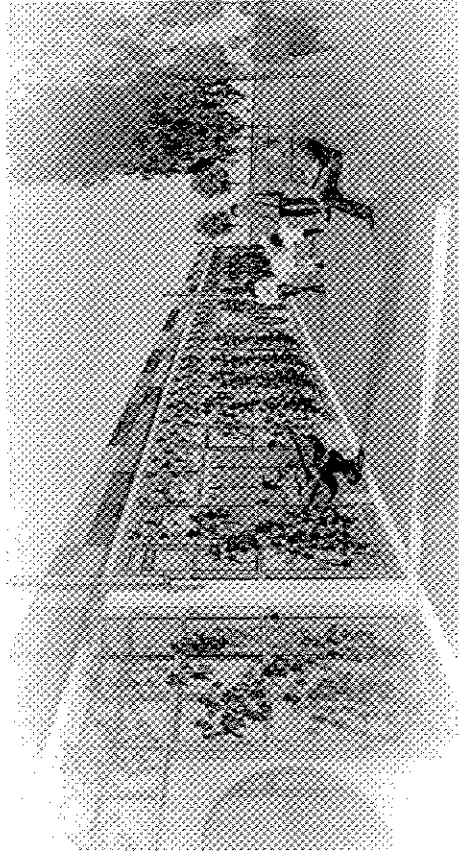
The Public Windows Into SWITCH



Water Edge Detail at the Public Overlook



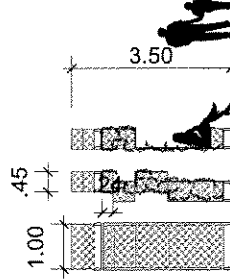
Typical Section Through Seawalk



Fence at The Public Windows



Fence Detail at The Public Windows



Fence Detail at the Public Windows

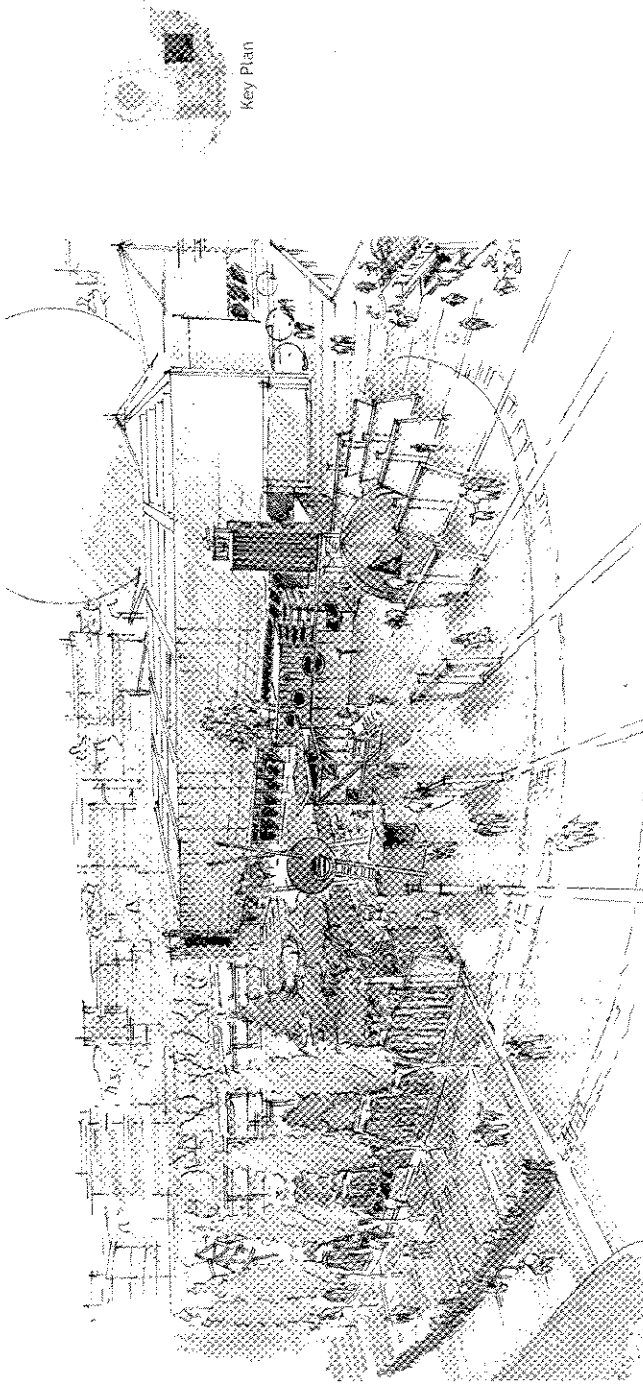
## Flex Space

The north end of SWITCH: The Outdoor Science Experience is designed to alternate between being a part of the OSE and an extension of the public realm. Pivoting gates can be configured as a temporary, yet visually permeable, fence or a series of portals inviting the public into the flex space.

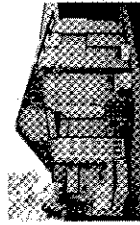
Science World wants to offer some experiences that change on a weekly to monthly schedule in order to keep the interest of regular visitors and the public passers-by. The flex area will be a place to host short-term exhibits and to hold creative design competitions where their results can be displayed for the public to enjoy and learn from.

Examples of the types of temporary exhibits that could be set up in the flex space include:

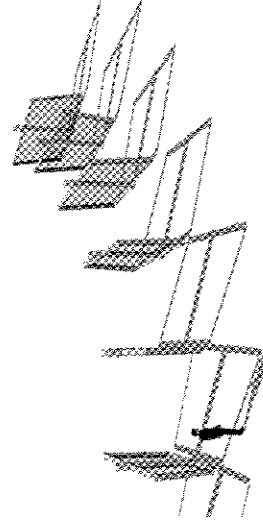
- Bringing in sand and building sand castles
- Gridding the surface with painted lines and allowing participants to make a picture in 'their' square with chalks and water-based paints
- Supplying wood lath or other lumber scraps and seeing what teams can make with them in a set time frame
- Providing over-sized construction toys for visitors to build the house of the future
- Displaying the latest in energy efficient concept cars
- Showing housing built into old shipping containers
- Holding robot races



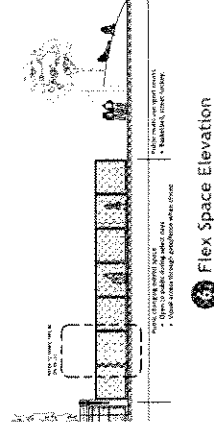
Flex Space



Examples of Temporary Exhibits



Fence Detail at Flex Space



Fence Detail



Land Use

In creating SWITCH: The Outdoor Science Experience, Science World is seeking to acquire 2420 square meters of land currently classified as portions Greetside Park. Currently, this area is largely paved or consists of landscaped areas relatively unused by the public.

SWITCH: The Outdoor Science Experience would be located immediately east of Science World and take up an area of 1327 square meters. In total, the project would require landscaping of 5399 square meters around the Science World building.

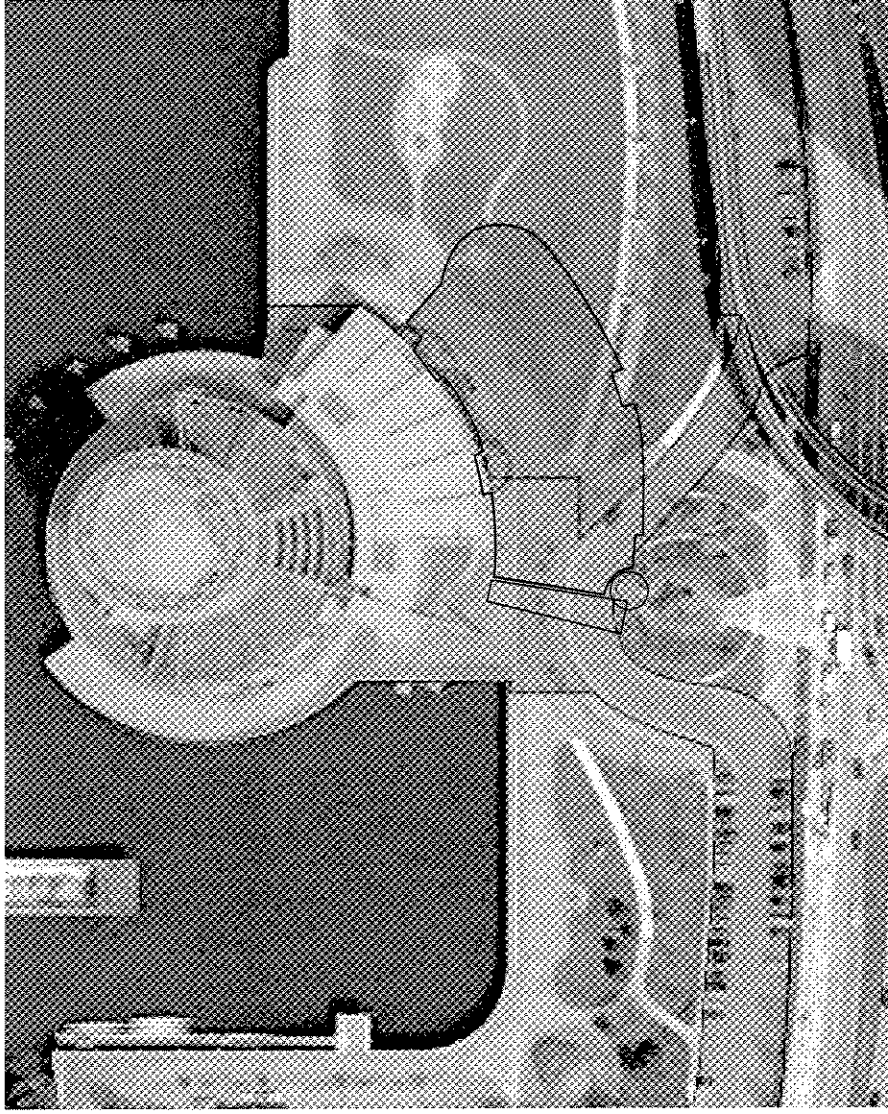
The children's playground to the north of the Science World building will be moved to allow room for these changes. We are currently seeking community feedback as to the future location of this playground.

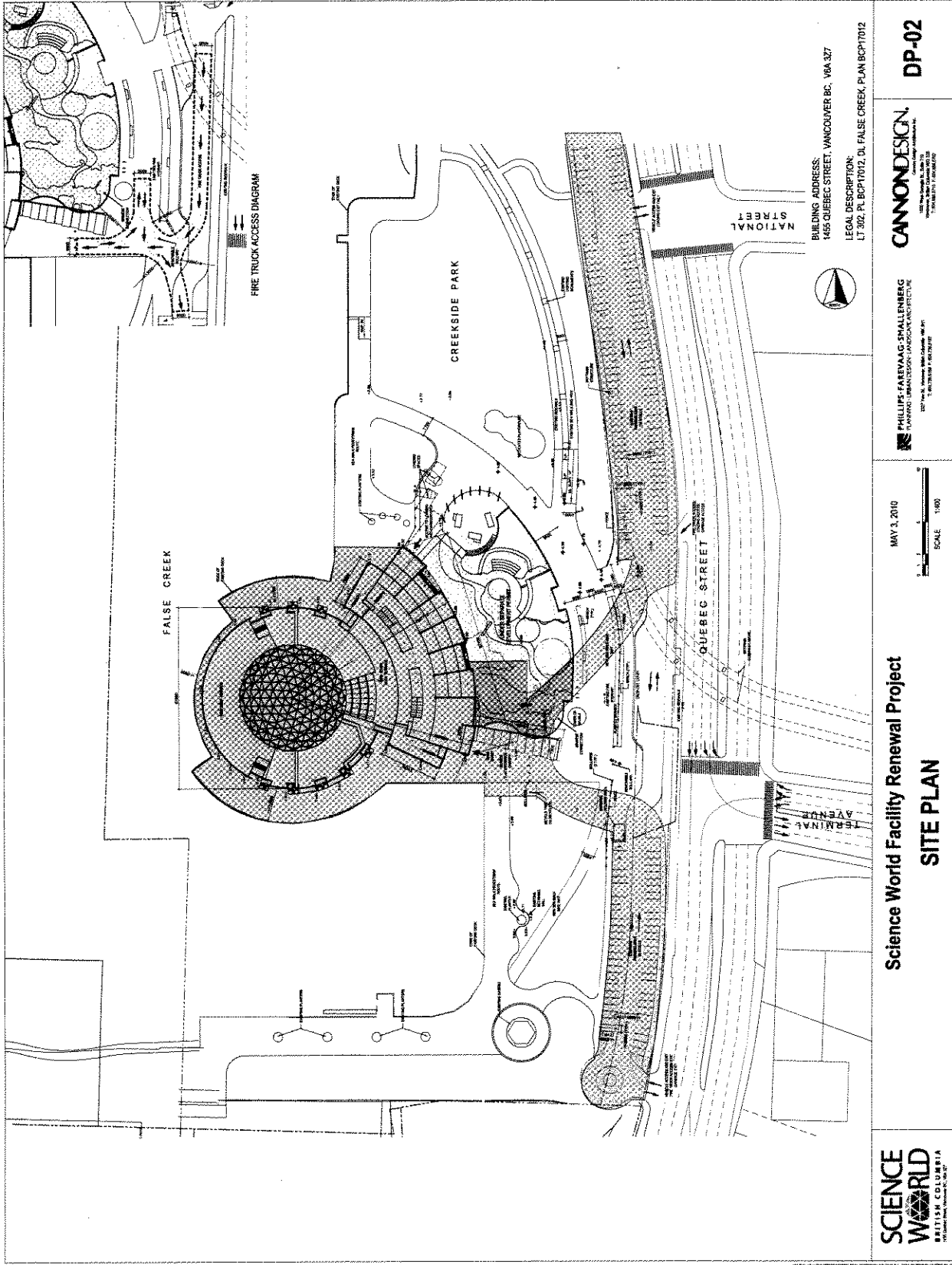


Current SW Lease Area



Land Outside of SW Lease Area that Science World is Seeking to Acquire





# Short Term and Long Term Planning

This open house display focuses on the proposed facility improvements to Science World's building that are part of the Development Permit application, and which has been submitted to the City of Vancouver. Science World will be hosting a public open house later in the summer that will look at plans for the exterior changes around the building that are not part of the current DP approval process.

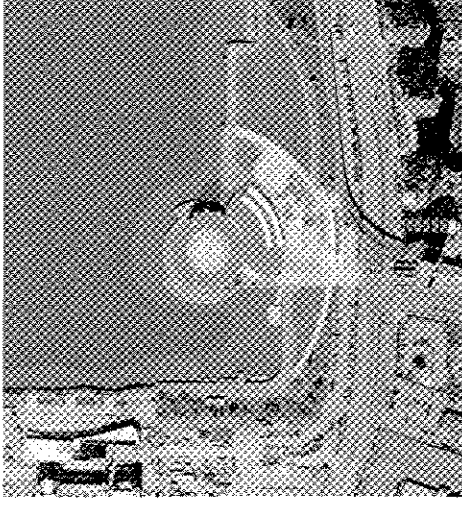
This display will expand on thinking about both short-term (2010 to 2011) and longer-term initiatives.

## Short-Term Concept

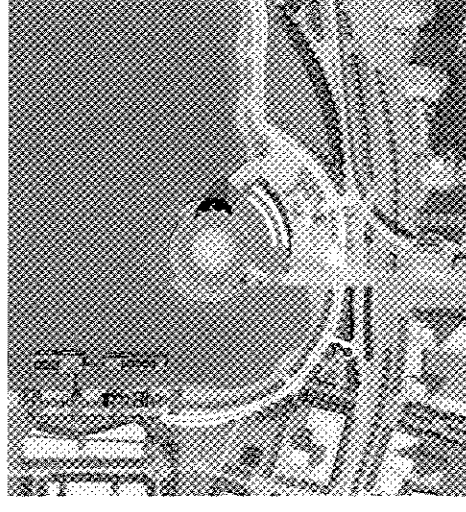
- Expo decking remains in place with a new temporary cycling path
- Seawalk established in front of Science World to Southeast False Creek standards
- New entry plaza to Science World with glass canopy for weather protection
- Public exhibits and views into the Outdoor Science Experience all along the Seawalk
- Tower of Bauble (rolling ball sculpture) moved closer to Quebec Street at the east end of the new canopy

## Long-Term Concept

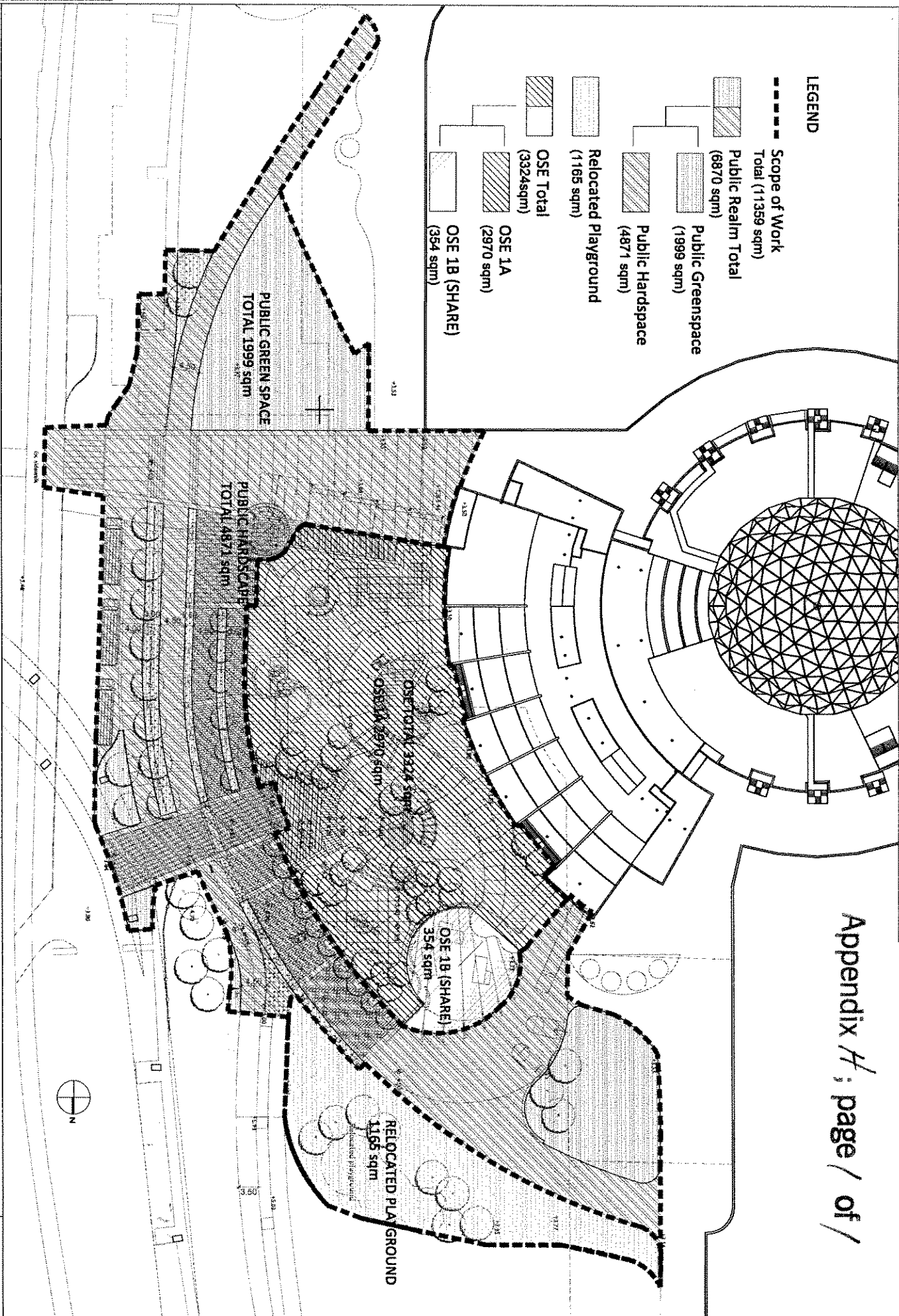
- Expo decking removed and replaced with Seawalk to Southeast False Creek standards
- False Creek foreshore reconfigured after decking is removed
- Downtown Streetcar has a stop at Science World
- Creekside Park is developed, including a relocated and improved children's playground in a new location



Short-Term



Long-Term



**1455 Quebec Street (Science World)**

DE: 414096  
Construction of enclosed outdoor science park for Science World visitors. Landscaping of surrounding creek side park, including renovation of bike/ pedestrian paths, replacement of chicane with canopy, relocation of children's playground and tower of bauble, and addition of free science exhibits to public space.

Use:

Zoning: BC-PED

Application Status: Complete

Review: First

Architect: Cannon Architectural Design

Delegation: Matthew Thomson, Phillips Farevaag Smallerberg  
Marta Farevaag, Phillips Farevaag Smallerberg

Staff: Scot Hein

**EVALUATION: NON-SUPPORT (1-5)**

**Introduction:** Scot Hein, Urban Planner, introduced the proposal for the outdoor science experience at Science World. It is the second phase of a two phase project; the first being interior alterations and some expansion to the building proper. He noted that the first phase wasn't brought to the Urban Design Panel but instead went to the Heritage Commission. Given there are some open space considerations with Creekside and some larger questions regarding North East False Creek and an open space opportunity at the end of the creek basin, it was decided that the Panel should review the proposal before it goes before the Development Permit Board. Mr. Hein noted that the proposal is for the exterior component which is a multi zoned educational and interactive experience.

Advice from the Panel on this application is sought on the following:

- Edge condition being proposed and its degree of publicness, permeability noticing there is some initial landscaping being proposed and how that plays out in a seasonal way.
- Programming regarding the loading interface and the shared zone in terms of how that might work and how it is gated from the paying patronage that will come in through the building.
- Publicness and programming as well as the performance of the space.

Mr. Hein took questions from the Panel.

**Applicant's Introductory Comments:** Marta Farevaag, Landscape Architect, further described the proposal noting that Science World has been perusing an outdoor science experience as an idea since 2002. In 2007 Science World was able to get the City's attention for a process that would align with the City's requirements for what the outdoor science experience would be and the City put together a committee with a series of workshops. The committee represented planning, urban design, cultural affairs, parks and engineering. Through that process a series of guiding principles were developed.

The future of the outdoor science experience is anticipating what the end of False Creek will look like in the long term. The City did a detailed study of the decking around the Expo site and found that some of it is not in good condition and after an assessment it was determined

how it could be replaced. The intention of the study was to develop a capital plan on replacing the deck however that was found to be not possible at this time. As a result the City is committed to removing as much as possible of the decking and continuing the process that had been started on South East False Creek of bringing more of the original foreshore back and having a more sustainable edge. Ms. Farevaag noted that the decking goes as far back as the first row of parking in the parking lot. They are looking at a long term plan that would bring the sea walk around past Science World and then back to the waterfront.

Ms. Farevaag noted there are a couple of interim pieces including using the future street car stop in front of Science World as a drop off for tour and school buses. Also, a bike route that will bring a cyclist route on the outside with the same material that was used in South East False Creek. There will be a strip that will separate cyclists from pedestrians and then a unobstructed pedestrian route.

The entrance to Science World is moving closer to Quebec Street and the children's play area will be relocated slightly to the north.

Matthew Thomson, Landscape Architect, described the public realm and the experience of the park. He noted that the current way finding is not working well and so they are focusing on extending a covered canopy and utilizing an existing exhibit by bringing it closer to Quebec Street. They are also proposing making public interactive opportunities such as bringing the bike power interactive exhibit onto the entry area. The main principle is sharing the activities and making them as visible as possible to the public. Mr. Thomson described the flex space that will be used for temporary exhibits that will be fenced with gates can be opened or closed. The Outdoor Science Experience edge is structured to present sustainability to pedestrians. They are proposing the perimeter to be as permeable as possible recognizing that on the southern end it is influenced by the park and is little more urban while the remainder of the edge will be more trellis-like and very green using less fencing.

The applicant team took questions from the Panel.

#### **Panel's Consensus on Key Aspects Needing Improvement:**

- Clarify and enhance the entry sequence particularly from the north and south parking lot;
- Maintain the diagonal top of bank route of the pathways for bicycles across the park in the long term;
- Review and enhance consideration of future public transit and associated links to Science World;
- Design development to clarify and enhance the experiential quality, view and openness of the exterior fence;
- Enhance artistic engagement strategy;
- Consider additional rain coverage.

**Related Commentary:** The Panel did not support the proposal noting that although they thought Science World was an important institution there were concerns regarding the Outdoor Science Experience.

The Panel liked the idea for the outdoor science experience and changing the entry sequence noting that the progression to the front door is confusing. They thought that the alignment to the front door made sense but felt the design was a bit weak. One Panel member suggested having more weather protection so that the area could be used all year long. In terms of animation, the Panel wanted to see stronger wayfinding elements that would lead people to



the front door of Science World from the parking lot. One Panel member thought there needed to be clarity as to where the front door was located.

The Panel felt there needed to be a clear overlook into the paid space so that people could see the action taking place on the other side of the fence. They also thought more free things could spill out into the waiting line up area. One Panel member noted that the concept of having as much activity as possible at the entry was important. A couple of Panel members thought there should be more artistic elements included in the proposal.

The Panel thought the links from the parking area seemed a bit over scale and not clear as to the location of the front door. They thought the desire lines needed to be clearer with more rain canopies around the exhibits.

Most of the Panel liked the flex area but felt it could be a bit disappointing if nothing was going on in the space and the gates were closed. A couple of Panel members were concerned that it would only be used on weekends and felt the area needed to be more permeable. Another Panel member was concerned that the area would appear a little cage like. The Panel also felt the area should be more exciting coming along the pathway from the north.

The Panel had some concerns regarding the pedestrian and cyclist's intersections. They felt they should be clearer and suggested keeping the diagonal pedestrian route across Creekside Park. The Panel did not have any concerns with the relocation of the play area or loss of a little of the park space.

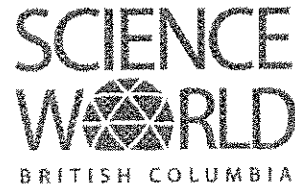
Regarding the landscape, a couple of Panel members wanted to see the landscaping organized with various pieces that would create quiet places in the landscape. The screen wall is an interesting idea and knits all the pieces together, but several Panel members thought it could be stronger and more remarkable. One Panel member suggested the screen wall be more playful and could have some interactive pieces. Another Panel member thought it would be great to have a special play garden that wasn't as transparent as everything else along the water front.

The Panel noted that how the edges were treated was an important element and they felt the presentation was weak in terms of what that edge was as they didn't think it was well resolved. They thought it was a fundamental piece and felt hedge like. One Panel member noted that the metal fence seemed uninviting and rather cumbersome and suggested it could be an interactive element instead.

**Applicant's Response:** Ms. Farevaag thanked the Panel for their comments noting that the access is wide as it also accommodates trucks to the loading area. There is a lot of asphalt currently on the north side but it is only temporary.

November 10, 2010

Paula Huber, MCIP  
Project Planner  
Central Area Planning  
City of Vancouver



Sent by E-mail: [paula.huber@vancouver.ca](mailto:paula.huber@vancouver.ca)

Dear Paula:

In response to the questions that arose from Science World's presentation of our SWITCH project to the Northeast False Creek Working Group, below is a summary of how Science World intends to extend access to underserved communities.

Science World is a Vancouver-based non-profit organization with a provincial mandate, dedicated to engaging the public on the topics of science with a goal of contributing to the improvement of the quality of life for everyone in the province. To meet our ambitions, Science World has been expanding our audience by increasing our exhibits and programs outside of our building and throughout the province.

We receive no on-going support for our activities from any level of Government. We are principally self-funded with the majority of our funding coming from site generated revenue – ticket sales, parking, gift shop, food service. Despite this limitation, we have been successful – our attendance at our facility and to our programs in Vancouver and throughout the province has been regularly increasing over the past ten years.

Though we have been regularly expanding our activities, we have been careful to ensure that for each expansion of our activities that we have revenues to cover any additional costs. This has limited the speed of expansion but ensured that any growth has been sustainable.

Our mandate extends to all residents of British Columbia, including those who can't pay for access to our facility. To include people who can't pay or who have other barriers to access, we need to cover the costs. Costs for such programs are underwritten by many different partners. For example, for the past five years, the Provincial Government has underwritten free access to our facility to any K-7 school group in British Columbia. This funding has also covered Science World's costs to bring free programs to schools outside the lower mainland, who can't travel to our facility.

We are dedicated to continuing to extend access to the broadest spectrum of audience possible. We have a wide range of programs supported by a diverse set of donors and sponsors. In addition to our schools program, below is a partial list of the programs for underserved audiences in Vancouver and the region:

.../2



- **Super Science Club (SSC)** after-school programming for inner-city schools. First launched in 2001, the club is now active in 11 Vancouver School District schools. Membership in SSC include free family night events at our facility and 1 year family memberships for all student participants <http://www.scienceworld.ca/afterschoolscience>
- **Big Science for Little Hands (BSLH)** early childhood educator and parent resources and professional development workshop sessions with a focus on Strong Start Centres, Childcare Resource and Referral networks and ECE professionals <http://www.scienceworld.ca/preschool>
- **Kidsafe.** Over the past 4 years we have been enhancing summer programming opportunities for Kidsafe participants including obtaining funding to provide free entry to TELUS World of Science and regularly sharing best practices, equipment, materials and tested science curriculum with their staff.
- **Non-profit Memberships** – we have a special membership options for non-profit organizations – to provide access to their constituents. Many local organizations take advantage of this opportunity, including neighbourhood houses, community centres and child care centres.
- **The Neighbourhood Nights – Embrace Science Project** is new initiative currently under development. The concept is to provide free family science night events at TELUS World of science for our neighbouring community families. Science World is actively seeing funding to make this project a reality.

With the development of SWITCH, we hope to continue to offer access to programs listed above but expect to expand access even further. The design of SWITCH ensures that not only visitors to the facility will have access to the engaging experiences of this outdoor science experience, but the general public will also benefit.

Even as we developed the designs for the enclosed portion of the project, we have given equal attention to the user experience for all Creekside park users. We will be improving the safety and function of the bicycle and pedestrian paths around SWITCH and at the same time providing Creekside park users access to engaging experiences that explore topics of sustainability. Some of the experiences will be shared with Science World's visitor and others will be uniquely available to Creekside park users - but all will be engaging.

We will be enclosing the project in an engaging, interactive and dynamic edge – that will provide changing experiences and provide free access to Science World experiences for all Creekside park visitors. At the southeast corner of SWITCH will be our iconic Tower of Bauble that will be refurbished and enclosed in a striking pavilion. Adjacent to this, also free to the public, will be a bicycle interactive that celebrates human powered transportation. Moving north along the outside of the project will be a series of openings, one with unobstructed views of our science demonstration stage. At the north end of SWITCH we will have an area that will regularly be open free to the public. This area was designed to support some of Science World's regular program activities as well as those of our partner organizations, such as the Dragon Boat Festival. The space will host both Science World events and partner events that will be open free to the public.

Page 3

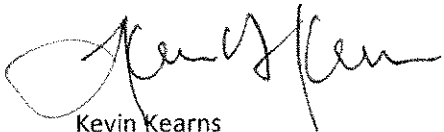
November 16, 2010 – Paula Huber

In addition to the items listed above, the barrier itself will be an experience and will become part of an environment trail. With changing artwork, educational graphics, artefacts and specimens, the edge will encourage visitors to explore the changes that we've wrought to the surrounding environments – explaining the history and showing its impacts (i.e.: filling in of the tidal flats, re-routing streams and watercourses, change of marine habitats along False Creek).

In addition to SWITCH and the immediately adjacent areas, Science World will be developing exhibits to enhance other parts of the public realm around our facility. Science World has already developed several elements that will become part of the public realm and freely accessible to park users. For example, in collaboration with BC Hydro, we developed a visually striking fast charging station for electric vehicles. When the station is moved to the Science World parking lot, interactive elements will be installed to enhance the experience and help people understand the potential and limitations of electric vehicles. In addition we will be installing a giant Garbzilla, created by a local sculptor, where park visitors will learn about and the amount and types of waste we create – and discover what we can do about reducing our waste.

Through the continuation and expansion of our existing programs as well as the development of SWITCH, Science World intends to increase and expand our positive impact on the community. As we continue to develop and grow, we will continue to expand our audience and be as inclusive as possible. Only through inclusion, can we meet our goal to help Vancouver and the Province become the most sustainable communities in the world.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kevin Kearns', with a stylized, flowing script.

Kevin Kearns

Vice President, Facility Development & Future Planning

## MEMORANDUM OF UNDERSTANDING

This Agreement (the "Agreement") is made effective the 15<sup>th</sup> day of December, 2010 among A.S.T.C. Science World Society ("Science World") and Her Majesty the Queen in Right of the Province of British Columbia ("Province") and the City of Vancouver ("City").

### Background:

- A. The Province and the City entered into a Lease (the "Lease"), made the 21<sup>st</sup> day of April, 1989, for certain lands and premises owned by the City, (the "Leased Premises"), as more particularly described in the Lease, for a term of fifty (50) years;
- B. Science World occupies and is in possession of the Leased Premises as the subtenant of the Province;
- C. Science World made a development permit application (DP Application Number DE413866) to the City to upgrade the interior and exterior of the existing facility and make certain new improvements to the Leased Premises which was approved by the City in its regulatory capacity;
- D. Science World has made a further and separate development permit application (DP Application Number DE414096) to the City to expand the Leased Premises for the purpose of constructing and operating an Outdoor Science Experience (the "OSE"). The City has not yet provided its approval in its regulatory capacity; and
- E. The Province is aware of and supports the development permit applications, referred in paragraph C & D above (the "Development Permits"), made by its subtenant, Science World.

### Agreements:

In order for the City to further its consideration of DP Application Number DE414096, the parties hereby agree as follows:

(a) that the Lease will be modified (the "Modified Lease") as follows:

(i) to adjust the area comprising the Leased Premises to include:

- 1. the OSE area,
- 2. the access areas,
- 3. the encroachment area,
- 4. the parking lots,

collectively known as the "Adjusted Area", and generally as illustrated on the sketch plan attached hereto as Schedule "A";

- (ii) to provide that the City may, upon providing the Province with not less than six (6) months prior written notice, modify the Adjusted Area to exclude any or all of, in whole or in part,
  - the north parking lot,
  - the south parking lot, and/or
  - the access areas,
  - the encroachment area,however in no event will the City exclude the access or encroachment areas to the extent access is removed unless alternative access is provided, and to address the automobile parking requirement such that it will not be in conflict with the intent of this section, or the bylaw requirements of the City related to the provision of parking required for the use of the Leased Premises;
- (iii) to incorporate the provisions of the required Loading Management Plan, as identified by the City as a Development Permit DE414096 requirement;
- (iv) to provide that the City reserves unto itself the right to adjust the width of any and all paths, bikeways, and/or walkways within the Adjusted Area for the benefit of providing enhanced Public access;
- (v) to provide that the City reserves unto itself the right to make whatever connections and/or modifications to the decking it desires for the benefit of providing enhanced Public access;
- (vi) to incorporate the provisions of any Floodplain Covenant as identified by the City as a requirement for issuance of building permit related to Development Permit DE414096. If the registration of a separate Section 219 Covenant is required the Province and Science World will provide whatever concurrence may be required to effect proper registration and assume the responsibilities of the Floodplain Covenant through the lease;
- (vii) to include certain new provisions to reflect the requirements related to the issuance of the Development Permits and to address various items, including but not limited to:
  - 1. the legal description of the Lands;
  - 2. the ALRT statutory right-of-way;
  - 3. the Sewer Outfall statutory right-of-way;
  - 4. the Utility statutory right-of-way;
  - 5. the Walkways;
- (viii) to maintain the access areas, including ensuring the structural capacity of any decking required for vehicles or loading, to the satisfaction of the City;

- (ix) to incorporate an encroachment area to address the use of road for access purposes, including the provision of specialty surface treatments as may required by the City;
- (x) to incorporate a license area, which license area may be granted to an party that is not a party to this agreement, to accommodate an electric vehicle charging station and associated infrastructure.
- (b) Prior to the issuance of Development Permit DE414096, Science World, as Licensee, will enter into a Licence Agreement, drawn by the City (the "Licence"), with the City, as Licensor, for the purpose of permitting Science World's occupation and use of the OSE area during the construction period. The Licence will expire on the earlier of:
  - (i) execution of the Modified Lease; and
  - (ii) twelve (12) months from the effective date of the Licence.
- (c) The City will survey the Adjusted Area, following completion of the OSE by Science World, for inclusion in the Modified Lease as the "Leased Premises";
- (d) The parties will execute the Modified Lease, drawn by the City and as contemplated herein, as soon as reasonably possible but in any case no later than twelve (12) months from the effective date of the Licence;
- (e) Upon execution of the Modified Lease, the Province, as Sub-landlord, and Science World, as Sub-tenant, will enter into a Sublease agreement in respect of the Leased Premises.

The parties to this Agreement hereby agree to the foregoing terms and conditions.

**Her Majesty the Queen in Right of the Province of British Columbia**

\_\_\_\_\_  
Authorized Signatory

\_\_\_\_\_  
Date

**A.S.T.C. Science World Society**

\_\_\_\_\_  
Authorized Signatory

\_\_\_\_\_  
Date

**City of Vancouver**

\_\_\_\_\_  
Authorized Signatory

\_\_\_\_\_  
Date

