



RETURN BIDS TO:

RETOURNER LES SOUMISSIONS À:

Bid Receiving - PWGSC / Réception des soumissions -
TPSGC

11 Laurier St. / 11 rue Laurier

Place du Portage, Phase III

Core 0B2 / Noyau 0B2

Gatineau, Québec K1A 0S5

Bid Fax: (819) 997-9776

SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

THIS DOCUMENT CONTAINS A SECURITY
REQUIREMENT

Vendor/Firm Name and Address

Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution

Consultant Services Division/Division des services
d'experts-conseils
L'Esplanade Laurier
4th floor, East Tower
140 O'Connor Street
Ottawa
Ontario
K1A 0S5

Title - Sujet 1500 Bronson Rehabilitation Project	
Solicitation No. - N° de l'invitation EJ078-193032/A	Amendment No. - N° modif. 004
Client Reference No. - N° de référence du client 20193032	Date 2019-10-08
GETS Reference No. - N° de référence de SEAG PW-\$\$FE-174-77705	
File No. - N° de dossier fe174.EJ078-193032	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-10-23	Time Zone Fuseau horaire Eastern Daylight Saving Time EDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Bismonte, Tatiana	Buyer Id - Id de l'acheteur fe174
Telephone No. - N° de téléphone (819) 664-3528 ()	FAX No. - N° de FAX () -
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: PWGSC 1500 Bronson Ave. Ottawa, Ontario Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

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20193032

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004
File No. - N° du dossier
fe174,EJ078-193032/A

Buyer ID - Id de l'acheteur
fe174
CCC No./N° CCC - FMS No./N° VME

**A) ADMINISTRATIVE AMENDMENT TO THE REQUEST FOR PROPOSAL
DOCUMENT (RFP)**

The following changes in the Request for Proposal document are effective immediately. This amendment will form part of the contract documents.

Amendment 004 is being issued for the following:

DELETE: Amendment # 003, date added, 2019-10-08.

REPLACE: with Amendment 003, contained herein.

End of Amendment 004

A) QUESTIONS AND ANSWERS

B) AMENDMENT TO THE REQUEST FOR PROPOSAL DOCUMENT

A) QUESTIONS AND ANSWERS

The following is in response to inquiries received in relation to this solicitation. This amendment will form part of the contract documents.

Number	Question(s)	Answer(s)
2	<p>In the RFP, section 2.7.2, Cost Consultant (CC) and Schedule Consultant (SC) both read that both roles will operate as an extension of PWGSC's Project Management Team.</p> <p>What procurement method will be employed to procure both of these roles?</p>	<p>All of the roles in Section 2.7.2 – PWGSC Consultants will be procured by PWGSC through various methods of supply. PWGSC will initiate separate contracts as and when appropriate.</p>

B) AMENDMENT TO THE REQUEST FOR PROPOSAL DOCUMENT

The following changes in the Request for Proposal document are effective immediately. This amendment will form part of the contract documents.

1) Request for Proposal Document

PROJECT BRIEF

.1 DELETE:

Section 2.7.2 – PWGSC Consultants, in its entirety

.2 REPLACE with:

Section 2.7.2 – PWGSC Consultants, (amendment 003 - attached herein, where changes have been made to align the numbering in both the English and French versions).

The following Consultants will be retained by PWGSC and will report directly to the DR. They will provide additional information, as required, as well as provide third party advice and reviews.

2.7.2.1 Environmental Consultant (EC)

The Environmental Consultant will be responsible for all abatement work and will provide related consultant services. The Consultant and the EC will work closely to establish the Abatement and Demolition Program, for design requirements that have not already been previously addressed. It is expected that the scope of the abatement and demolition package will be required only for work that is directly related to the Consultants final design of the Project.

The Consultant should coordinate with the EC to ensure a seamless delivery of the abatement and demolition scope of work. The EC will provide all field review services during tender and construction for their field of expertise.

2.7.2.2 Geotechnical Services Consultant (GSC)

The Geotechnical Services Consultant (GSC) will provide geotechnical investigations and analysis for the Consultant to incorporate into the design, construction documents, and the Model.

The Consultant should coordinate with PWGSC's GSC, to review the geotechnical reports, to identify areas where additional geotechnical information may be necessary for design purposes, and to work in collaboration with the GSC during construction phase inspections and site monitoring activities.

The Consultant is to include a geotechnical engineer on their team as an advisor only.

2.7.2.3 Cost Consultant (CC)

PWGSC will engage a Cost Consultant to provide Project support. They will operate as an extension of PWGSC's Project Management Team and will provide an independent assessment of the Consultant's cost, risk management and quality assurance services, as well as the GC's construction cost.

2.7.2.4 Schedule Consultant (SC)

PWGSC will engage a Scheduling Consultant to provide Project support. They will operate as an extension of PWGSC's Project Management Team and will provide an independent assessment of the Consultant's scheduling, risk management and quality assurance services, as well as the GC's schedule.

2.7.2.5 Security Consultant (SC)

PWGSC will engage a Security Consultant, if required to provide security-related services. They will provide security support services related to the functional requirements and quality assurance services.

2) **Request for Proposal Document**

PROJECT BRIEF

- .1 **DELETE:**
PD 2.5.1, Key Project Activities, in its entirety.
- .2 **REPLACE with:**
PD 2.5.1, Key Project Activities (amendment 003, attached herein,
where changes have been made to update the project schedule).

Activity durations are preliminary and the Consultant is responsible for verifying and confirming the feasibility of the Prime Consultant Timeline, below, as part of their scheduling mandate.

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fe174
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Line ID	Activity	% Complete	Dur	Start	Finish
0	1500 Bronson - Rehabilitation Project	24%	2543d	Wed 7/29/15	Thu 12/11/25
121	PROJECT DELIVERY STAGE	6%	1727d	Mon 11/26/18	Thu 12/11/25
122	DESIGN PHASE	10%	894d	Mon 11/26/18	Thu 7/21/22
155	PHASE 1 - BASE BLDG DESIGN WORK	0%	530d	Mon 4/6/20	Fri 6/3/22
156	DESIGN (PHASE 1 - BASE BLDG)	0%	60d	Mon 4/6/20	Fri 7/3/20
157	PRE-DESIGN STAGE	0%	60d	Mon 4/6/20	Fri 7/3/20
162	CONCEPT (SCHEMATIC) DESIGN	0%	130d	Mon 7/6/20	Fri 1/15/21
177	DESIGN DEVELOPMENT	0%	100d	Fri 1/15/21	Thu 6/10/21
192	CONSTRUCTION DOCS (BASE BLDG & FIT-UP)	0%	290d	Tue 3/30/21	Fri 6/3/22
193	CONSTRUCTION DOCS - 66% SUBMISSION	0%	290d	Tue 3/30/21	Fri 6/3/22
204	CONSTRUCTION DOCS - 99% SUBMISSION	0%	95d	Mon 11/29/21	Thu 4/21/22
212	CONSTRUCTION DOCS - 100% TENDER-READY SUBMISSION	0%	30d	Fri 4/22/22	Fri 6/3/22
216	PHASE 2 - CLIENT FIT-UP DESIGN WORK	0%	210d	Tue 8/4/20	Thu 6/10/21
226	SPECIFIC SERVICE AGREEMENT (SSA) - CLIENT/PSPC	0%	40d	Wed 10/14/20	Thu 12/10/20
234	DESIGN (PHASE 2 - CLIENT FIT-UP)	0%	120d	Fri 12/11/20	Thu 6/10/21
235	CONCEPT (SCHEMATIC) DESIGN	0%	60d	Fri 12/11/20	Mon 3/15/21
243	DESIGN DEVELOPMENT	0%	60d	Tue 3/16/21	Thu 6/10/21
251	EXPENDITURE AUTHORITY 2 (EA2)	0%	232d	Wed 8/11/21	Thu 7/21/22
281	IMPLEMENTATION PHASE	0%	932d	Mon 3/15/21	Mon 1/6/25
282	TENDER CALL, BID EVALUATION & CONSTRUCTION CONTRACT AWARD	0%	251d	Fri 11/5/21	Tue 11/15/22
283	COMPILE TENDER-READY DOCS (AS PER RPCD)	0%	140d	Fri 11/5/21	Fri 6/3/22
297	TENDER & AWARD	0%	44d	Fri 8/26/22	Mon 10/31/22
306	FURNITURE PROCUREMENT	0%	592d	Mon 3/15/21	Mon 8/14/23
332	CONSTRUCTION ADMINISTRATION	0%	521d	Tue 11/15/22	Mon 1/6/25
333	CONSTRUCTION	0%	0d	Tue 11/15/22	Tue 11/15/22
334	BASE BUILDING CONSTRUCTION	0%	235d	Wed 11/16/22	Tue 10/31/23
335	FIT-UP CONSTRUCTION	0%	261d	Thu 2/9/23	Mon 3/4/24
336	ISSUE CERTIFICATE OF SUBSTANTIAL COMPLETION	0%	0d	Mon 3/4/24	Mon 3/4/24
337	BCC INSTALLS (PSPC, SSC, CLIENT) / DEFICIENCIES CORRECTIONS / OFF	0%	205d	Tue 3/5/24	Mon 1/6/25
338	ISSUANCE OF OCCUPANCY PERMIT - SPACE AVAILABLE FOR CLIENT MO	0%	0d	Mon 1/6/25	Mon 1/6/25
339	DELIVERY CLOSE-OUT PHASE	0%	12mons	Thu 12/19/24	Thu 12/11/25

The Consultant should work closely with the Departmental Representative (DR) to maintain or reduce the durations set out in this schedule. Warranty services should be considered over and above these estimated completion dates.

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3) Request for Proposal Document

PROJECT BRIEF

ANNEX D: MODEL ELEMENT TABLE

.1 ADD THE FOLLOWING:

ANNEX D: MODEL ELEMENT TABLE (*amendment 003, attached herein*)



Annex D - Model Element Table Instruction Sheet

Last revised: 2019-09

By: PSPC

General Instructions

The Model Element Table (MET) is to be filled during the planning stage by the project manager and the appropriate COE experts in conjunction with the Request for Proposals (RFP) and the BIM Project Execution Plan (PxP). Once attached to a Project Brief in an open RFP, it is the responsibility of the Proponent to respond with additional Model Element Author assignments, and other Consultant Team information. Once a contract has been awarded, the Prime Consultant is responsible to completing and maintaining this document throughout the project lifecycle. In addition, it is the responsibility of the Prime Consultant to negotiate with the Departmental Representative (DR) for MET finalization and issue. The CM or Contractor will contribute relevant sections as required.

All parties within the Project Team must follow this document. It is split into sections for specifying the required Level of Development (LOD) at the element level for various project phases/milestones, contract roles, and model element authorship, use, and security classification. The MET acts as a reference for all parties throughout project delivery.

Sheets 1-3 and 5-6 are required to be verified by the Prime Consultant and approved by the DR. Each sheet contains a value legend at the top of the page with the appropriate values, specific to that sheet, which can be used to fill in the cells.

Sheets 1-3

For sheets 1-3 there are five categories to fill out in the cells which are as follows:

Requirements (REQ) – The requirements column of the first three pages is filled in to tell the consultant what elements are and are not required when modelling at different stages during the project. The symbols used for this category and their meaning are shown in Table 1 below.

Table 1: Requirements Legend

Requirements Legend (REQ)	
Symbol	Requirement

●	Mandatory
○	Mandatory Req'd if exists
✕	Not Required by PSPC
✓	Optional Requirement
◆	See Comments
N.A.	Not Applicable

Level of Development (LOD) – Used to describe the required detailing of the element within the model. The values are shown in the table below and a more detailed description of the LOD's and their authorized uses is available in sheet 4. Authorized Uses. Certain LOD's are required for certain model uses (i.e. 350 for prefabrication), which must be kept in mind when developing the MET.

Table 2. BIM Levels of Development

BIM - Level of Development (LOD)	
LOA	Description
0	Not Modeled. Elements to be shown as 2D symbols.
100	Conceptual areas and volumes, purely geometric
200	An approximate modelled representation, information associated
300	An informed and modelled representation, information associated
350	A detailed/specific modelled representation, information associated
400	An accurate modelled representation, information associated
500	An accurate modelled representation, CAFM and Heritage information associated

Model Element Author (MEA) – Model element authors are used to specify to the consultant the discipline of the person(s) required to model the element to the specified LOD. The values for the MEA category are the discipline codes shown below in Table 3.

Table 3: Model Element Authors

BIM - Model Element Authors		
Discipline Code	Author	Author Code
ARCH	General/Prime Architect	A-A
	Landscape Architect	A-L
	Interior Designer	A-ID
ENG	Electrical	
	Municipal Engineering	
	Structural/Seismic	
	Mechanical	
	Electrical	
	Others:	
SPEC	Heritage Conservation	
	Sustainability	
	Others:	

Level of Accuracy (LOA) – LOA specifications within the MET are used to set the tolerances on the 3-dimensional position of the element. The values range from 1-6 (table 4) with 1 being the most specific.

Table 4. Level of Accuracy (LOA) Specifications

BIM - Level of Accuracy (LOA)	
LOA	Description
1	Representational accuracy to within ± 10 mm in the X,Y, and Z coordinates
2	Representational accuracy to within ± 25 mm in the X,Y, and Z coordinates
3	Representational accuracy to within ± 50 mm in the X,Y, and Z coordinates
4	Representational accuracy to within ± 250 mm in the X,Y, and Z coordinates
5	Representational accuracy to within ± 500 mm in the X,Y, and Z coordinates
6	Information taken from un-verified existing drawings or documents (e.g. as-builts), with no tolerance specified.

Precision by Elements - Used to specify Located or Surveyed Elements (LS), or Subsurface or Hidden Elements (SH) are required in modelling. The values are shown in the table below.

Table 5: Precision by Elements

Precision by elements (LS/SH)	
Element	Description
LS	Located or Surveyed Elements
SH	Subsurface or Hidden Elements

Sheet 5

On the Model Element Authors page, the MEA column is to be filled in with the author code of the author responsible for modelling the corresponding element. In the notes column add any additional information deemed important or necessary.

Sheet 6

The Model Element Security page is to be used to detail the security level (LEVEL) and Model Approach (MA). These levels are specified for every elements, again down to Unifomat level 4. Space is also provided for notes. Additionally, there is space for MEA (Model Element Author) assignments to each element. Here the code of the MEA is used and space is provided for their notes. The appropriate values are listed in the table below.

BIM Security Protocols

The goal of the following protocol is to maintain any cloud-based Model in an "UNCLASSIFIED" state. Please refer to the list items below for various classifications of model or drawing elements and their respective levels of sensitivity. Notes are assigned to each element in order to provide further guidance on risk mitigation strategies, or instructions for secure information handling.

Security Level (LEVEL)		Model Approach (MA)	
U	Unclassified	1	Model Element; include information
C	Confidential	2	Model Element; do not include sensitive information
S	Secret	3	Model Element as proxy; do not include information
TS	Top Secret	4	Do not model; do not include information
PA	Protected A		
PB	Protected B		
PC	Protected C		



Annex D - Model Element Table

Level of Development, Level of Accuracy and Precision of Elements

*All LOD/LOA requirements specified reflect on new or original modelling content within the scope of the project this Table is used with. In cases where an element has not been listed, the average category requirements shall be used until such time as a change to this Table has been approved by the Departmental Representative. *

Measurement Modelling

Sheet 1

Last revised: 2019-09

By: PSPC

Value Legend	
BIM - Level of Development (LOD)	
LOD	Description
0	Not Modeled. Elements to be shown as 2D symbols.
100	Conceptual areas and volumes, purely geometric
200	An approximate modelled representation, information associated
300	An informed and modelled representation, information associated
350	A detailed/specific modelled representation, information associated
400	An accurate modelled representation, information associated
500	An accurate modelled representation, CAFM and Heritage information associated

BIM - Level of Accuracy (LOA)	
LOA	Description
1	Representational accuracy to within ± 10 mm in the X,Y, and Z coordinates
2	Representational accuracy to within ± 25 mm in the X,Y, and Z coordinates
3	Representational accuracy to within ± 50 mm in the X,Y, and Z coordinates
4	Representational accuracy to within ± 250 mm in the X,Y, and Z coordinates
5	Representational accuracy to within ± 500 mm in the X,Y, and Z coordinates
6	Information taken from un-verified existing drawings or documents (e.g. as-builts), with no tolerance specified.

Requirements Legend (REQ)	
Symbol	Requirement
●	Mandatory
○	Mandatory Req'd if exists
✕	Not Required by PSPC
✓	Optional Requirement
◆	See Comments
N.A.	Not Applicable

Precision by elements (LS/SH)	
Element	Description
LS	Located or Surveyed Elements
SH	Subsurface or Hidden Elements

PROJECT SETUP								
Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Measurement Modelling				
		Building Grids		REQ	LOD	MEA	LS/SH	LOA
				●	0			
			Planning Grid	●	0			4
		Floor Levels		●	200			4
		Site Plan/Grading/Topography		●	200			4
	Other Elements:	upon in collaboration with the DR.						
A - SUBSTRUCTURE								
Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Measurement Modelling				
				REQ	LOD	MEA	LS/SH	LOA
	Foundations							
		Standard Foundations		●	200			4
			Wall Foundations	●	200			4
			Column Foundations & Pile Caps	●	200			4
			Perimeter Drainage & Insulation	●	200			4
		Special Foundations		●	200			4
			Pile Foundations	●	200			4
			Grade Beams	●	200			4
			Caissons	●	200			4
			Underpinning	●	200			4
			Dewatering	●	200			4
			Raft Foundations	●	200			4
			Pressure Injected Grouting	●	200			4
			Other Special Conditions	●	200			4
		Slab on Grade		●	200			5

Symbol	Requirement				
●	Mandatory				
○	Mandatory Req'd if exists				
Standard Slab on Grade	●	200			5
Structural Slab on Grade	●	200			5
Inclined Slab on Grade	●	200			5
Trenches, Pits & Bases	●	200			5
Under-Slab Drainage & Insulation	●	200			4
Basement Construction					
Basement Excavation					
Excavation for Basements					
Structure Back Fill & Compaction					
Shoring					
Basement Walls	●	200			4
Basement Wall Construction	●	200			4
Moisture Protection	●				
Basement Wall Insulation	●				
Interior Skin	●				
Other Elements: All Elements not listed, but agreed upon in collaboration with the DR	●	300			4

B - SHELL

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Measurement Modelling				
				REQ	LOD	MEA	LS/SH	LOA
	Super Structure							
		Floor Construction		●	200			5
			Construction	●	200			5
			Upper Floors Construction	●	200			5
			Balcony Floors Construction	●	200			5
			Ramps	●	200			5
			Exterior Stairs and Fire Escapes	●	200			5
			Floor Raceway Systems	●	200			5
			Other Floor Construction	●	200			5
		Roof Construction		●	200			5
			Flat Roof Construction	●	200			5
			Pitched Roof Construction					
			Canopies	●	200			5
			Other Roof Systems	●	300			4
	Exterior enclosure							
		Exterior Walls		●	200			4
		Exterior Windows		●	200			4
			Windows	●	200			4
			Curtain Walls	●	200			4
			Storefronts	●	200			4
		Exterior Doors		●	200			4
			Glazed Doors & Entrances	●	200			4
			Solid Exterior Doors	●	200			4
			Revolving Doors	●	200			4
			Overhead Doors	●	200			4
			Other Doors & Entrances	●	200			4
	Roofing							
		Roof Coverings		●	200			4
			Roof finishes	●	200			4
			Membranes	●	200			4
			Roof Insulation & Fill	●	200			4
			Flashings & Trim	●	200			4
			Roof Eaves & Soffits	●	200			4
			Gutters and Downspouts	●	200			4
		Roof Openings		●	200			4
			Glazed Roof Openings					
			Roof Hatches					
			Gravity Roof Ventilators	●	200			4
	Other Elements: All Elements not listed, but agreed upon in collaboration with the DR.			●	200			4

C - INTERIORS

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Measurement Modelling				
				REQ	LOD	MEA	LS/SH	LOA
	Interior Construction							
		Partitions		●	200			5
			Fixed Partitions	●	200			4
			Demountable Partitions	●	200			5
			Retractable Partitions	●	200			5
			Site Built Toilet Partitions	●	200			5
			Site Built Compartments Cubicles	●	200			5
			Interior Balustrades & Screens	●	200			5
			Interior Windows & Storefronts	●	200			4
		Interior Doors		●	200			4
			Interior Doors	●	200			4
			Interior Door Frames	●	200			4
			Interior Door Hardware	●	200			4
			Interior Door Wall Opening Elements	●	200			4
			Interior Door Sidelights & Transoms	●	200			4

Symbol		Requirement				
●		Mandatory				
○		Mandatory Req'd if exists				
Interior Hatches & Access Doors		●	200			4
Door Painting & Decoration		●	200			5
Fittings						
Fabricated Toilet Partitions						
Fabricated Compartments & Cubicles						
Storage Shelving & Lockers						
Ornamental Metals & Handrails						
Identifying Devices						
Closet Specialties						
General Fittings & Misc. Metals						
Stairs						
Stair Construction		●	200			5
Regular Stairs		●	200			5
Curved Stairs		●	200			5
Spiral Stairs		●	200			5
Stair Handrails & Balustrades		●	200			5
Stair Finishes		●	200			5
Stair, Tread, Landing Finishes		●	200			5
Stair Soffit Finishes		●	200			5
Stair Handrail & Balustrade Finishes		●	200			5
Interior Finishes						
Wall Finishes		●	200			4
Wall Finishes to Inside Exterior Walls		●	200			4
Wall Finishes to Interior Walls		●	200			4
Column Finishes		●	200			4
Floor Finishes		●	200			5
Floor Toppings		●	200			5
Traffic Membranes		●	200			5
Hardeners & Sealers		●	200			5
Flooring		●	200			5
Carpeting		●	200			5
Bases, Curbs & Trim		●	200			5
Access Pedestal Flooring		●	200			5
Ceiling Finishes		●	200			5
Ceiling Finishes		●	200			5
Suspended Ceilings		●	200			5
Other Ceilings		●	200			5
Other Elements:		●	300			4
collaboration with the UR.						

D - SERVICES

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Measurement Modelling				
				REQ	LOD	MEA	LS/SH	LOA
Conveying								
Elevators & Lifts				●	200			5
Passenger Elevators				●	200			5
Freight Elevators				●	200			5
Lifts				●	200			5
Escalators & Moving Walks				●	200			5
Escalators				●	200			5
Moving Walks				●	200			5
Other Conveying Systems				●	200			5
Dumbwaiters								
Pneumatic Tube Systems								
Hoists & Cranes								
Conveyors								
Chutes								
Turntables								
Systems								
Transportation Systems								
Plumbing								
Plumbing Fixtures				●	200			4
Water closets				●	200			4
Urinals				●	200			4
Lavatories				●	200			4
Sinks				●	200			4
Bathtubs				●	200			4
Wash Fountains				●	200			4
Showers				●	200			4
Drinking Fountains & Coolers				●	200			4
Bidets & Other Plumbing Fixtures				●	200			4
Domestic Water Distribution				●				4
Cold Water Service				●				4
Hot Water Service				●				4
Domestic Water Supply Equipment				●				4
Sanitary Waste				●				4
Waste Piping				●				4
Vent Piping				●				4
Floor Drains				●				4
Sanitary Waste Equipment				●				4
Pipe insulation				●				4

Symbol		Requirement				
	●	Mandatory				
	○	Mandatory Req'd if exists				
Rain Water Drainage		●				4
	Pipe & Fittings	●				4
	Roof Drains	●				4
	Rainwater Drainage Equipment	●				4
	Pipe Insulation	●				4
Other Plumbing Systems		●				4
	Gas Distribution	●				4
	Acid Waste System					
	Interceptors	●				4
	Pool Piping and Equipment					
	Decorative Fountain Piping Devices					
	Other Piping Systems	●				4
HVAC						
Energy Supply						
	Oil Supply System					
	Gas Supply System	●				4
	Coal Supply System					
	Steam Supply System	●				4
	Hot Water Supply System	●				4
	Solar Energy System					
	Wind Energy System					
Heat Generating Systems		●				5
	Boilers	●				5
	Boiler Room Piping & Specialties	●				5
	Auxiliary Equipment	●				5
	Insulation	●				5
Cooling Generating Systems		●				5
	Chilled Water Systems	●				5
	Direct Expansion Systems	●				5
Distribution Systems		●				5
	Air Distribution Systems	●				5
	Exhaust Ventilation Systems	●				5
	Steam Distribution Systems	●				5
	Hot Water Distribution	●				5
	Chilled Water Distribution	●				5
	Change-over Distribution System	●				5
	Glycol Distribution Systems	●				5
Terminal & Package Units		●				5
	Terminal Self-Contained Units	●				5
	Package Units	●				5
Controls & Instrumentation		●				5
	Heating Generating Systems	●				5
	Cooling Generating Systems	●				5
	Heating/Cooling Air Handling Units	●				5
	Exhaust & Ventilating Systems	●				5
	Hoods and Exhaust Systems	●				5
	Terminal Devices	●				5
	Energy Monitoring & Control	●				5
	Building Automation Systems	●				5
	Other Controls & Instrumentation	●				5
Systems Testing & Balancing						
	Piping System Testing & Balancing					
	Air Systems Testing & Balancing					
	HVAC Commissioning					
Other HVAC Systems & Equipment		●				4
	Special Cooling Systems & Devices	●				4
	Special Humidity Control	●				4
	Dust & Fume Collectors	●				4
	Air Curtains	●				4
	Air Purifiers	●				4
	Paint Spray Booth Ventilation	●				4
	General Construction Items (HVAC)	●				4
Fire Protection						
Sprinklers		●				4
	Sprinkler Water Supply	●				4
	Sprinkler Pumping Equipment	●				4
	Dry Sprinkler System	●				4
Standpipes		●	200			4
	Standpipe Water Supply	●	200			4
	Pumping Equipment	●	200			4
	Standpipe Equipment	●	200			4
	Fire Hose Equipment	●	200			4
Fire Protection Specialties		●	200			4
	Fire Extinguishers	●	200			4
	Fire Extinguisher Cabinets	●	200			4
Other Fire Protection Systems		●	200			4
	Carbon Dioxide Systems	●	200			4
	Foam Generating Equipment	●	200			4
	Clean Agent Systems	●	200			4

				Symbol	Requirement					
				●	Mandatory					
				○	Mandatory Req'd if exists					
Electrical				Dry Chemical System	●	200				4
				Hood & Duct Fire Protection	●	200				4
	Electrical Service & Distribution			●	200					4
				High Tension Service & Dist.	●	200				4
				Low Tension Service & Dist.	●	200				4
	Lighting & Branch Wiring			●	200					4
				Branch Wiring Devices	●	200				4
				Lighting Equipment	●	200				4
	Communications & Security			●	200					4
				Public Address & Music Systems	●	200				4
				Intercommunication & Paging System	●	200				4
				Telephone Systems	●	200				4
				Call Systems	●	200				4
				Television Systems	●	200				4
				Clock and Program Systems	●	200				4
				Fire Alarm Systems	●	200				4
				Security and Detection Systems	●	200				4
				Local Area Networks	●	200				4
	Other Electrical Systems			●	200					4
				Grounding Systems	●	200				4
				Emergency Light & Power Systems	●	200				4
				Floor Raceway Systems	●	200				4
				Other Special Systems & Devices	●	200				4
				General Construction Items (Elect.)	●	200				4
E - EQUIPMENT & FURNISHINGS										
Level 1	Level 2	Level 3	Level 4	Measurement Modelling						
Major Group Elements	Group Elements	Individual Elements	Sub Elements	REQ	LOD	MEA	LS/SH	LOA		
Equipment	Commercial Equipment									
				Security & Vault Equipment	●	200				5
				Teller & Service Equipment						
				Registration Equipment						
				Checkroom Equipment						
				Mercantile Equipment						
				Laundry & Dry Cleaning Equipment						
				Vending Equipment						
				Office Equipment						
	Institutional Equipment									
				Ecclesiastical Equipment						
				Library Equipment						
				Theater & Stage Equipment						
				Instrumental Equipment						
				Audio-visual Equipment						
				Detention Equipment						
				Laboratory Equipment						
				Medical Equipment						
				Other Institutional Equipment						
	Vehicular Equipment									
				Vehicular Service Equipment						
				Parking Control Equipment	●	200				5
				Loading Dock Equipment	●	200				5
				Other Vehicular Equipment						
	Other Equipment			●	200					5
				Maintenance Equipment	●	200				5
				Solid Waste Handling Equipment	●	200				5
				Food Service Equipment	●	200				5
				Residential Equipment						
				Unit Kitchens	●	200				5
				Window Washing Equipment						
				Other Equipment						
Furnishings	Fixed Furnishings			●	200					4
				Fixed Artwork	●	200				4
				Fixed Casework	●	200				4
				Blinds & Other Window Treatment	●	200				4
				Fixed Floor Grilles and Mats	●	200				4
				Fixed Multiple Seating	●	200				4
				Fixed Interior Landscaping	●	200				4
	Movable Furnishings									
				Movable Artwork						

Symbol	Requirement				
●	Mandatory				
○	Mandatory Req'd if exists				
Furniture & Accessories					
Movable Rugs & Mats					
Movable Interior Landscaping					
Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.	●	300		4

F - SPECIAL CONSTRUCTION & DEMOLITION

Level 1	Level 2	Level 3	Level 4	Measurement Modelling				
Major Group Elements	Group Elements	Individual Elements	Sub Elements	REQ	LOD	MEA	LS/SH	LOA
	Special Construction							
		Special Structures						
			Air Supported Structures					
			Pre-engineered Structures					
			Other Special Structures					
		Integrated Construction		●	200			4
			Integrated Assemblies	●	200			4
			Special Purpose Rooms	●	200			4
			Other Integrated Construction	●	200			4
		Special Construction Systems		●	200			4
			Sound, Vibration & Seismic Const.	●	200			4
			Radiation Protection	●	200			4
			Special Security Systems	●	200			4
			Vaults	●	200			4
			Other Speical Construction Systems	●	200			4
		Special Facilities						
			Aquatic Facilities					
			Ice Rinks					
			Site Constructed Incinerators					
			Kennels & Animal Shelters					
			Liquid & Gas Storage Tanks	●	200			4
			Other Special Facilities					
		Special Controls & Instrumentation		●	200			4
			Recording Instrumentation	●	200			4
			Building Automation System	●	200			4
			Other Special Controls & Instrumentation	●	200			4
	Selective Building Demolition							
		Building Elements Demolition		●	200			5
			Building Interior Demolition	●	200			5
			Building Exterior Demolition	●	200			5
		Hazardous Components Abatement		●	200			4
			Removal of Hazardous Components	●	200			4
			Encapsulation of Hazardous Components	●	200			4

G - BUILDING SITEWORK

Level 1	Level 2	Level 3	Level 4	Measurement Modelling				
Major Group Elements	Group Elements	Individual Elements	Sub Elements	REQ	LOD	MEA	LS/SH	LOA
	Site Preparation							
		Site Clearing		●	200			5
			Clearing & Grubbing	●	200			4
			Tree Removal & Thinning	●	200			4
		Site Demolition & Relocations		●	200			5
			Building Demolition	●	200			5
			Demolition of Site Components	●	200			5
			Relocation of Building & Utilities	●	200			5
			Utilities Relocation	●	200			5
		Site Earthwork		●	200			5
			Site Grading Excavation	●	200			5
			Borrow Fill	●	200			5
			Soil Stabilization & Treatment	●	200			5
			Site Dewatering	●	200			5
			Site Shoring	●	200			5
			Embankments	●	200			5
			Erosion Control	●	200			5
		Hazardous Waste Remediation		●	200			5
			Removal of Contaminated Soil	●	200			5
			Soil Restoration & Treatment	●	200			5
	Site Improvements							

Symbol		Requirement			
	●	Mandatory			
	○	Mandatory Req'd if exists			
Roadways	●	200			5
Bases and Sub-Bases	●	200			5
Paving & Surfacing	●	200			5
Curbs Gutters & Drains	●	200			5
Guardrails and Barriers	●	200			5
Painted Lines	●	200			5
Markings & Signage	●	200			5
Vehicular Bridges	●	200			5
Parking Lots	●	200			5
Bases and Sub-Bases	●	200			5
Paving & Surfacing	●	200			5
Curbs, Rails & Barriers	●	200			5
Parking Booths & Equipment	●	200			5
Markings & Signage	●	200			5
Pedestrian Paving	●	200			5
Paving & Surfacing	●	200			5
Edging	●	200			5
Exterior Steps	●	200			5
Pedestrian Bridges					
Site Development	●	200			5
Fences & Gates	●	200			5
Retaining Walls	●	200			5
Terrace & Perimeter Walls	●	200			5
Signage	●	200			5
Site Furnishings	●	200			5
Fountains, Pools, & Watercourses					
Playing Fields					
Flagpoles	●	200			5
Miscellaneous Structures	●	200			5
Landscaping	●	200			5
Fine Grading & Soil Preparation	●	200			5
Erosion Control Measures	●	200			5
Top Soil and Planting Beds	●	200			5
Seeding and Sodding	●	200			5
Planting	●	200			5
Planters	●	200			5
Irrigation Systems	●	300			4
Other Landscape Features	●	200			5
Site Mechanical Utilities					
Water Supply	●	200			4
Potable Water Distribution & Storage	●	200			4
Non Potable Water Distribution & Storage	●	200			4
Well Systems	●	200			4
Fire Protection Distribution & Storage	●	200			4
Pumping Stations	●	200			4
Package Water Treatment Plants	●	200			4
Sanitary Sewer	●	200			4
Piping	●	200			4
Manholes & Cleanouts	●	200			4
Septic Disposal Systems	●	200			4
Lift Stations	●	200			4
Packaged Water Waste Treatment Plants	●	200			4
Septic Tanks	●	200			4
Drain Fields	●	200			4
Storm Sewer	●	200			4
Piping	●	200			4
Manholes	●	200			4
Headwalls & Catch Basins	●	200			4
Lift Stations	●	200			4
Retention Ponds					
Ditches & Culverts	●	200			4
Heating Distribution	●	200			4
Steam Supply	●	200			4
Condensate Return	●	200			4
Hot Water Supply System	●	200			4
Pumping Stations	●	200			4
Cooling Distribution		200			
Chilled Water Piping	●	200			4
Wells for Cooling/Heating	●	200			4
Pumping Stations	●	200			4

Symbol		Requirement				
●		Mandatory				
○		Mandatory Req'd if exists				
Cooling Towers on Site						
Fuel Distribution		●	200			4
	Fuel Piping	●	200			4
	Fuel Equipment	●	200			4
	Fuel Storage Tanks	●	200			4
	Fuel Dispensing Stations	●	200			4
Other Site Mechanical Utilities		●	200			4
Site Electrical Utilities	Industrial Waste Systems	●	200			4
	POL (Petroleum Oil & Lubricants) Distribution Systems	●	200			4
Electrical Distribution		●	200			4
Site Lighting	Substations	●	200			4
	Overhead Power Distribution	●	200			4
	Underground Power Distribution	●	200			4
		●	200			4
Site Communications & Security	Fixtures & Transformers	●	200			4
	Poles	●	200			4
	Wiring Conduits & Ductbanks	●				4
	Site Lighting Controls	●	200			4
Other Site Electrical Utilities		●	200			4
	Site Communications Systems	●	200			4
	Site Security & Alarm Systems	●	200			4
Other Site Construction		●	200			4
	Cathodic Protection					
	Site Emergency Power Generation					
Service & Pedestrian Tunnels		●	200			5
Other Site Systems & Equipment	Service Tunnels	●	200			5
	Trench Boxes	●	200			5
	Pedestrian Tunnels	●	200			5
Snow Melting Systems						

Annex D - Model Element Table

Level of Development, Level of Accuracy and Precision of Elements

All LOD/LOA requirements specified reflect on new or original modelling content within the scope of the project this Table is used with. In cases where an element has not been listed, the average category requirements shall be used until such time as a change to this Table has been approved by the Departmental Representative.

Design Authoring

Sheet 2

Last revised: 2019-09

By: PSPC

SIM - Level of Development (LOD)	
LOD	Description
0	Not Modeled. Elements to be shown as 2D symbols.
100	Conceptual areas and volumes, purely geometric
200	An approximate modelled representation, information associated
300	An informed and modelled representation, information associated
350	A detailed/specific modelled representation, information associated
400	An accurate modelled representation, information associated
500	An accurate modelled representation, CAFM and Heritage information associated

Requirements Legend (REQ)	
Symbol	Requirement
●	Mandatory
○	Mandatory Req'd if exists
✖	Not Required by PSPC
✓	Optional Requirement
◆	See Comments
N.A.	Not Applicable

SIM - Level of Accuracy (LOA)	
LOA	Description
1	Representational accuracy to within ± 10 mm in the X,Y, and Z coordinates
2	Representational accuracy to within ± 25 mm in the X,Y, and Z coordinates
3	Representational accuracy to within ± 50 mm in the X,Y, and Z coordinates
4	Representational accuracy to within ± 250 mm in the X,Y, and Z coordinates
5	Representational accuracy to within ± 500 mm in the X,Y, and Z coordinates
6	Information taken from un-verified existing drawings or documents (e.g. as-builts), with no tolerance specified.

Precision by elements (LS/SH)	
Element	Description
LS	Located or Surveyed Elements
SH	Subsurface or Hidden Elements

A - SUBSTRUCTURE				LS/S		LS/SH		LS/S		LS/S													
Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Pre-Design				Schematic Design				Design Development				Construction Docs				Contract Admin.			
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA
Foundations	Standard Foundations	Wall Foundations	Foundation	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Column Foundations & Pile Caps	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Perimeter Drainage & Insulation	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
				●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
	Special Foundations	Pile Foundations	Pile Foundations	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Grade Beams	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Caissons	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Underpinning	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Doweling	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Raft Foundations	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Pressure Injected Grouting	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Other Special Conditions	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
				●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Standard Slab on Grade	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
	Slab on Grade	Structural Slab on Grade	Inclined Slab on Grade	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Trenches, Pits & Basins	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Under-Slab Drainage & Insulation	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
				●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
Basement Construction	Basement Excavation	Excavation for Basements	Excavation for Basements	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Structure Back Fill & Compaction	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
	Basement Walls	Basement Wall Construction	Basement Wall Construction	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Moisture Protection	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
	Basement Wall Insulation	Interior Skin	Basement Wall Insulation	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Interior Skin	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
	Other Elements	All Elements not listed, but agreed upon in collaboration with the DR.		●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
				●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
B - SHELL				LS/S		LS/SH		LS/S		LS/S													
Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Pre-Design				Schematic Design				Design Development				Construction Docs				Contract Admin.			
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA
Super Structure	Floor Construction	Construction	Construction	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Upper Floors Construction	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Basement Floors Construction	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Ramps	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Exterior Stairs and Fire Escapes	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Floor Raceway Systems	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Other Floor Construction	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
	Roof Construction	Flat Roof Construction	Flat Roof Construction	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Pitched Roof Construction	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Canopies	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Other Roof Systems	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
Exterior enclosure	Exterior Walls	Exterior Windows	Exterior Walls	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Exterior Windows	●	350		4	●	350		4	●	350		3	●	400		3	●	400		2
	Exterior Doors	Glazed Doors & Entrances	Windows	●	350		4	●	350		4	●	350		3	●	400		3	●	400		2
			Curtain Walls	●	350		4	●	350		4	●	350		3	●	400		3	●	400		2
			Storefronts	●	350		4	●	350		4	●	350		3	●	400		3	●	400		2
			Other Exterior Doors	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
	Roofing	Roof Coverings	Glazed Roof Openings	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Overhead Doors	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Other Doors & Entrances	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
				●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
Other Elements	Partitions	Fixed Partitions	Partitions	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Demountable Partitions	●	300		4	●	350		3	●	350		3	●	400		3	●	400		2
			Retractable Partitions	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Site Built Toilet Partitions	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
	Interior Doors	Interior Door Frames	Interior Door Frames	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Interior Door Hardware	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Interior Door Wall Opening Elements	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
			Interior Door Sidelights & Transoms	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
	Fittings	Fabricated Toilet Partitions	Interior Balustrades & Screens	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
			Interior Windows & Storefronts	●	350		4	●	350		3	●	350		3	●	400		3	●	400		2
			Other Elements	●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
				●	300		4	●	350		4	●	350		3	●	400		3	●	400		2
C - INTERIORS				LS/S		LS/SH		LS/S		LS/S													
Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements																					

				Identifying Devices	●	300	4	●	350	3	●	400	3	●	400	2				
				Closet Specialties	●	300	4	●	350	3	●	400	3	●	400	2				
				General Fittings & Misc. Metals	●	300	4	●	350	3	●	400	3	●	400	2				
Stairs	Stair Construction				●	200	5	●	300	4	●	350	3	●	400	2				
		Regular Stairs			●	200	5	●	300	4	●	350	3	●	400	2				
		Curved Stairs			●	200	5	●	300	4	●	350	3	●	400	2				
		Spiral Stairs			●	200	5	●	300	4	●	350	3	●	400	2				
	Stair Finishes	Stair Handrail & Balustrades			●	200	5	●	300	4	●	350	3	●	400	2				
		Stair Tread, Landing Finishes			●	200	5	●	300	4	●	350	3	●	400	2				
		Stair Soffit Finishes			●	200	5	●	300	4	●	350	3	●	400	2				
		Stair Handrail & Balustrade Finishes			●	200	5	●	300	4	●	350	3	●	400	2				
	Wall Finishes				●	300	4	●	300	4	●	350	3	●	400	2				
		Wall Finishes to Inside Exterior Walls			●	300	4	●	300	4	●	350	3	●	400	2				
		Wall Finishes to Interior Walls			●	300	4	●	300	4	●	350	3	●	400	2				
		Column Finishes			●	300	4	●	300	4	●	350	3	●	400	2				
Interior Finishes	Floor Finishes				●	200	5	●	300	4	●	350	3	●	400	2				
		Floor Toppings			●	200	5	●	300	4	●	350	3	●	400	2				
		Traffic Membranes			●	200	5	●	300	4	●	350	3	●	400	2				
		Hardeners & Sealers			●	200	5	●	300	4	●	350	3	●	400	2				
	Ceiling Finishes	Flooring			●	200	5	●	300	4	●	350	3	●	400	2				
		Carpeting			●	200	5	●	300	4	●	350	3	●	400	2				
		Bases, Curbs & Trim			●	200	5	●	300	4	●	350	3	●	400	2				
		Access Pedestal Flooring			●	200	5	●	300	4	●	350	3	●	400	2				
		Ceiling Finishes			●	200	5	●	300	4	●	350	3	●	400	2				
		Suspended Ceilings			●	200	5	●	300	4	●	350	3	●	400	2				
		Other Ceilings			●	200	5	●	300	4	●	350	3	●	400	2				
	Other Elements				●	300	4	●	350	4	●	400	3	●	400	2				
All Elements not listed, but agreed upon in collaboration with the DR.					●	300	4	●	350	4	●	400	3	●	400	2				
D - SERVICES																				
Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements																	
				Pre-Design				Schematic Design				Project Phases/Milestones				Construction Docs				
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	
Conveying	Elevators & Lifts				●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Passenger Elevators			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Freight Elevators			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Lifts			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
	Escalators & Moving Walks				●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Escalators			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Moving Walks			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
	Other Conveying Systems				●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Dumbwaiters			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Pneumatic Tube Systems			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Hoists & Cranes			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Conveyors			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Chutes			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Turntables			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Systems			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
		Transportation Systems			●	200	5	●	300	4	●	350	3	●	400	3	●	400	2	
Plumbing	Plumbing Fixtures				●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Water closets			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Urinals			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Lavatories			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
	Sinks				●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Bathubs			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Wash Fountains			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Showers			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
	Domestic Water Distribution	Drinking Fountains & Coolers			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Sinks & Other Plumbing Fixtures			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
Sanitary Waste	Cold Water Service				●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Hot Water Service			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Domestic Water Supply Equipment			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Waste Piping			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
	Rain Water Drainage	Vent Piping			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Floor Drains			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Sanitary Waste Equipment			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Pipe Insulation			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
	Other Plumbing Systems	Pipe & Fittings			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Roof Drains			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
HVAC	Energy Supply				●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Oil Supply System			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Gas Supply System			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Coal Supply System			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
	Heat Generating Systems	Steam Supply System			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Hot Water Supply System			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Solar Energy System			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
		Wind Energy System			●	300	4	●	350	4	●	350	3	●	400	3	●	400	2	
	Cooling Generating Systems	Boilers			●	300	5	●	350	4	●	350	3	●	400	3	●	400	2	
		Solar Room Piping & Specialties			●	300	5	●	350	4	●	350	3	●	400	3	●	400	2	
Distribution Systems	Exhaust Ventilation Systems	Auxiliary Equipment			●	300	5	●	350	4	●	350	3	●	400	3	●	400	2	
		Insulation			●	300	5	●	350	4	●	350	3	●	400	3	●	400	2	
		Chilled Water Systems			●	300	5	●	35											

E - EQUIPMENT & FURNISHINGS	LS/S	LS/SH	LS/S	LS/S	
					Project Overview/Introduction

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Phase 1 - Design																			
				Pre-Design				Schematic Design				Design Development				Construction Docs				Contract Admin.			
				REQ	LOO	MEA	LOA	REQ	LOO	MEA	LOA	REQ	LOO	MEA	LOA	REQ	LOO	MEA	LOA	REQ	LOO	MEA	LOA
Equipment																							
	Commercial Equipment							●	300		4	●	350		3	●	400		3	●	400		2
		Security & Vault Equipment		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
		Teller & Service Equipment						●	300		4	●	350		3	●	400		3	●	400		2
		Registration Equipment						●	300		4	●	350		3	●	400		3	●	400		2
		Checkroom Equipment						●	300		4	●	350		3	●	400		3	●	400		2
		Mercantile Equipment						●	300		4	●	350		3	●	400		3	●	400		2
		Laundry & Dry Cleaning Equipment						●	300		4	●	350		3	●	400		3	●	400		2
		Vending Equipment						●	300		4	●	350		3	●	400		3	●	400		2
		Office Equipment						●	300		4	●	350		3	●	400		3	●	400		2
	Institutional Equipment							●	300		4	●	350		3	●	400		2	●	400		2
		ecclesiastical equipment						●	300		4	●	300		3	●	400		2	●	400		2
		Library Equipment						●	300		4	●	300		3	●	400		2	●	400		2
		Theater & Stage Equipment						●	300		4	●	300		3	●	400		2	●	400		2
		Instrumental Equipment						●	300		4	●	300		3	●	400		2	●	400		2
		Audio-visual Equipment						●	300		4	●	300		3	●	400		2	●	400		2
		Detection Equipment						●	300		4	●	300		3	●	400		2	●	400		2
		Laboratory Equipment						●	300		4	●	300		3	●	300		2	●	400		2
		voice equipment						●	300		4	●	300		3	●	400		2	●	400		2
		User Institutional equipment						●	300		4	●	350		3	●	400		2	●	400		2
	Vehicular Equipment							●	300		4	●	350		3	●	400		2	●	400		2
		Vehicular Service Equipment						●	300		4	●	350		3	●	400		2	●	400		2
		Parking Control Equipment		●	200		5	●	300		4	●	300		3	●	400		2	●	400		2
		Loading Dock Equipment		●	200		5	●	300		4	●	300		3	●	400		2	●	400		2
		Other Vehicular Equipment						●	300		4	●	300		3	●	400		2	●	400		2
	Other Equipment			●	200		5													●	400		2
		Maintenance Equipment		●	200		5	●	300		4	●	300		3	●	400		3	●	400		2
		Solid Waste Handling Equipment		●	200		5	●	300		4	●	300		3	●	400		3	●	400		2
		Food Service Equipment		●	200		5	●	300		4	●	300		3	●	400		3	●	400		2
		Residential Equipment						●	300		4	●	300		3	●	400		3	●	400		2
		Unit Kitchens		●	200		5	●	300		4	●	300		3	●	400		3	●	400		2
		Window Washing Equipment						●	300		4	●	300		3	●	400		3	●	400		2
		Other Equipment						●	300		4	●	300		3	●	400		3	●	400		2
Furnishings																							
	Fixed Furnishings			●	200		4	●	400		3	●	350		3	●	400		2	●	400		2
		Fixed Artwork		●	200		4	●	400		3	●	350		3	●	400		2	●	400		2
		Fixed Casework		●	200		4	●	350		4	●	350		3	●	400		2	●	400		2
		Blinds & Other Window Treatment		●	200		4	●	350		4	●	350		3	●	400		2	●	400		2
		Fixed Floor Grilles and Mats		●	200		4	●	350		4	●	300		3	●	400		3	●	400		2
		Fixed Multiple Seating		●	200		4	●	350		4	●	350		3	●	400		2	●	400		2
		Fixed Interior Landscaping		●	200		4	●	350		4	●	300		3	●	400		3	●	400		2
	Movable Furnishings							●	300		4	●	350		3	●	400		3	●	400		2
		Movable Artwork						●	300		4	●	350		3	●	400		3	●	400		2
		Furniture & Accessories						●	300		4	●	350		3	●	400		2	●	400		2
		Movable Rugs & Mats						●	300		4	●	350		3	●	400		2	●	400		2
		Movable Interior Landscaping						●	300		4	●	350		3	●	400		2	●	400		2
Other Elements		All Elements not listed, but agreed upon in collaboration with the DR.		●	300		4	●	350		4	●	350		3	●	400		2	●	400		2

F - SPECIAL CONSTRUCTION & DEMOLITION

[illegible]

Encapsulation of Hazardous Components				●	200	4	●	300	4	●	350	3	●	400	3	●	400	2														
G - BUILDING SITEMWORK				LS/S				LS/SH				LS/S				LS/S																
Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Pre-Design				Schematic Design				Design Development				Construction Docs				Contract Admin.												
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA									
	Site Preparation																															
		Site Clearing		●	200		5	●	300		4	●	300		3	●	400		3	●	400		3	●	400		3	●	400		3	
			Clearing & Grubbing	●	200		4	●	300		4	●	300		3	●	400		3	●	400		3	●	400		3	●	400		3	
			Tree Removal & Thinning	●	200		4	●	300		4	●	300		3	●	400		3	●	400		3	●	400		3	●	400		3	
	Site Demolition & Relocations			●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Building Demolition		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Demolition of Site Components		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Relocation of Building & Utilities		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Utilities Relocation		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
	Site Earthwork			●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Site Grading Excavation		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Borrow Fill		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Soil Stabilization & Treatment		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Site Dewatering		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Site Shoring		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Embankments		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Erosion Control		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
	Hazardous Waste Remediation			●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Removal of Contaminated Soil		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Soil Restoration & Treatment		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
	Site Improvements																															
	Roadways			●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Bases and Sub-Bases		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Paving & Surfacing		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Curbs Gutters & Drains		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Guardrails and Barriers		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Painted Lines		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Markings & Signage		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Vehicular Bridges		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
	Parking Lots			●	200		5	●	350		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Bases and Sub-Bases		●	200		5	●	350		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Paving & Surfacing		●	200		5	●	350		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Curbs, Rails & Barriers		●	200		5	●	350		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Parking Booths & Equipment		●	200		5	●	350		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Markings & Signage		●	200		5	●	350		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
	Pedestrian Paving			●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Paving & Surfacing		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Edging		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Exterior Steps		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Pedestrian Bridges																														
	Site Development			●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Fences & Gates		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Retaining Walls		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Terrace & Perimeter Walls		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Signage		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Site Furnishings		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Fountains, Pools, & Watercourses							●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2
		Playing Fields							●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2
		Flagpoles		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
	Landscaping			●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Miscellaneous Structures							●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2
		Fine Grading & Soil Preparation		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	
		Erosion Control Measures		●	200		5	●	300		4	●	350		3	●	400		3	●	400		2	●	400		2	●	400		2	

Service & Pedestrian Tunnels	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
Service Tunnels	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
Trench Boxes	●	200		5	●	300		4	●	350		3	●	400		3	●	400		2
Pedestrian Tunnels	●	200		5	●	300		4	●	300		3	●	400		3	●	400		2
Other Site Systems & Equipment					●	200		5	●	300		3	●	400		3	●	400		2
Snow Melting Systems					●	200		5	●	300		3	●	400		3	●	400		2

Annex D - Model Element Table

Level of Development, Level of Accuracy and Precision of Elements

All LOD/LOA requirements specified reflect on new or original modelling content within the scope of the project this Table is used with. In cases where an element has not been listed, the average category requirements shall be used until such time as a change to this Table has been approved by the Departmental Representative.

Construction Modelling Sheet 3

Last revised: 2019-08

By: PSPC

Value Legend		Requirements Legend (REQ)	
BIM - Level of Development (LOD)		Symbol	Requirement
LOD	Description	●	Mandatory
0	Not Modeled. Elements to be shown as 2D symbols.	○	Mandatory Req'd if exists
100	Conceptual areas and volumes, purely geometric	✖	Not Required by PSPC
200	An approximate modelled representation, information associated	✓	Optional Requirement
300	An informed and modelled representation, information associated	◆	See Comments
350	A detailed/specific modelled representation, information associated		
		N.A.	Not Applicable
400	An accurate modelled representation, information associated		
500	An accurate modelled representation, CAFM and Heritage information associated		

BIM - Level of Accuracy (LOA)		Precision by elements (LS/SH)	
LOA	Description	Element	Description
1	Representational accuracy to within ± 10 mm in the X,Y, and Z coordinates	LS	Located or Surveyed Elements
2	Representational accuracy to within ± 25 mm in the X,Y, and Z coordinates	SH	Subsurface or Hidden Elements
3	Representational accuracy to within ± 50 mm in the X,Y, and Z coordinates		
4	Representational accuracy to within ± 250 mm in the X,Y, and Z coordinates		
5	Representational accuracy to within ± 500 mm in the X,Y, and Z coordinates		
6	Information taken from un-verified existing drawings or documents (e.g. as-builts), with no tolerance specified.		

A - SUBSTRUCTURE				LS/SH		LS/SH				LS/SH				LS/SH						
Level 1	Level 2	Level 3	Level 4	Coordination Modelling				As-Built				Phase Modelling				Record Modelling				
Major Group Elements	Group Elements	Individual Elements	Sub Elements	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	
Foundations	Standard Foundations	Wall Foundations	Column Foundations & Pile Caps	●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
		Special Foundations	Pile Foundations	●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
	Slab on Grade	Standard Slab on Grade	●																	
			●																	
			●																	
			●																	
	Basement Construction	Basement Excavation	Excavation for Basements	●																
				●																
				●																
				●																
		basement walls	Basement Wall Construction	●																
				●																
				●																
				●																
				●	200			●	300		4	●	400		3	●	500		3	
				●	200			●	300		4	●	400		3	●	500		3	
●				200			●	300		4	●	400		3	●	500		3		
Other Elements:		All Elements not listed, but agreed upon in collaboration with the DR.	●																	
			●																	
			●																	

B - SHELL				LS/SH		LS/SH				LS/SH				LS/SH					
Level 1	Level 2	Level 3	Level 4	Coordination Modelling				As-Built				Phase Modelling				Record Modelling			
Major Group Elements	Group Elements	Individual Elements	Sub Elements	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA
Super Structure	Floor Construction	Construction	Upper Floors Construction	●	200		5	●	300		4	●	400		3	●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
		Roof Construction	Flat Roof Construction	●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
	Exterior enclosure	Exterior Walls	Windows	●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
	Exterior Doors	Glazed Doors & Entrances	Solid Exterior Doors	●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
	Roofing	Roof Coverings	Roof finishes	●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
				●				●				●				●	500		3
●							●				●				●	500		3	
●							●				●				●	500		3	
Roof Openings		Glazed Roof Openings	●	200		5	●	300		4	●	400		3	●	500		3	
			●	200		5	●	300		4	●	400		3	●	500		3	
			●	200		5	●	300		4	●	400		3	●	500		3	
			●	200		5	●	300		4	●	400		3	●	500		3	

[illegible]

E - SUBSTRUCTURE				LS/SH				LS/SH				LS/SH				LS/SH			
				Project Phases/Milestones															
HVAC	Other Plumbing Systems																		
			Gas Distribution																
			Acid Waste System																
			Interceptors																
			Pool Piping and Equipment																
			Decorative Fountain Piping Devices																
			Other Piping Systems																
	Energy Supply																		
			Oil Supply System																
			Gas Supply System																
			Coal Supply System																
			Steam Supply System																
			Hot Water Supply System																
			Solar Energy System																
			Wind Energy System																
	Heat Generating Systems																		
			Boilers																
			Boiler Room Piping & Specialties																
			Auxiliary Equipment																
			Insulation																
	Cooling Generating Systems																		
			Chilled Water Systems																
			Direct Expansion Systems																
	Distribution Systems																		
			Air Distribution Systems																
			Exhaust Ventilation Systems																
			Steam Distribution Systems																
			Hot Water Distribution																
			Chilled Water Distribution																
			Change-over Distribution System																
			Glycol Distribution Systems																
	Terminal & Package Units																		
			Terminal Self-Contained Units																
			Package Units																
	Controls & Instrumentation																		
			Heating Generating Systems																
			Cooling Generating Systems																
			Heating/Cooling Air Handling Units																
			Exhaust & Ventilating Systems																
			Hoods and Exhaust Systems																
			Terminal Devices																
			Energy Monitoring & Control																
			Building Automation Systems																
			Other Controls & Instrumentation																
	Systems Testing & Balancing																		
			Piping System Testing & Balancing																
			Air Systems Testing & Balancing																
			HVAC Commissioning																
			Other Systems Testing and Balancing																
	Other HVAC Systems & Equipment																		
		Special Cooling Systems & Devices																	
		Special Humidity Control																	
		Dust & Fume Collectors																	
		Air Curtains																	
		Air Purifiers																	
		Paint Spray Booth Ventilation																	
		General Construction Items (HVAC)																	
Fire Protection																			
Sprinklers																			
		Sprinkler Water Supply																	
		Sprinkler Pumping Equipment																	
		Dry Sprinkler System																	
Standpipes																			
		Standpipe Water Supply																	
		Pumping Equipment																	
		Standpipe Equipment																	
		Fire Hose Equipment																	
Fire Protection Specialties																			
		Fire Extinguishers																	
		Fire Extinguisher Cabinets																	
Other Fire Protection Systems																			
		Carbon Dioxide Systems																	
		Foam Generating Equipment																	
		Clean Agent Systems																	
		Dry Chemical System																	
		Hood & Duct Fire Protection																	
Electrical																			
Electrical Service & Distribution			●	200	5	●	300	4	●	400	3	●	500	3					
		High Tension Service & Dist.	●	200	5	●	300	4	●	400	3	●	500	3					
		Low Tension Service & Dist.																	
Lighting & Branch Wiring																			
		Branch Wiring Devices																	
		Lighting Equipment																	
Communications & Security																			
		Public Address & Music Systems																	
		Intercommunication & Paging System																	
		Telephone Systems																	
		Call Systems																	
		Television Systems																	
		Clock and Program Systems																	
		Fire Alarm Systems	●	200	5	●	300	4	●	400	3	●	500	3					
		Security and Detection Systems	●	200	5	●	300	4	●	400	3	●	500	3					
		Local Area Networks				●	300	4	●	400	3	●	500	3					
Other Electrical Systems						●	300	4	●	400	3	●	500	3					
		Grounding Systems				●	300	4	●	400	3	●	500	3					
		Emergency Light & Power Systems				●	300	4	●	400	3	●	500	3					
		Floor Raceway Systems	●	0		●	0		●	0		●	0						
		Other Special Systems & Devices	●	200	5	●	300	4	●	400	3	●	500	3					
		General Construction Items (Elect.)	●	200	5	●	300	4	●	400	3	●	500	3					
E - EQUIPMENT & FINISHINGS				LS/SH				LS/SH				LS/SH				LS/SH			
				Project Phases/Milestones															
				Coordination Modelling				As-Built				Phase Modelling				Record Modelling			
				REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA	REQ	LOD	MEA	LOA
Equipment																			
Commercial Equipment																			
		Security & Vault Equipment					●	200		4	●	300		3	●	400		2	
		Teller & Service Equipment					●	200		4	●	300		3	●	400		2	
		Registration Equipment					●	200		4	●	300		3	●	400		2	
		Checkroom Equipment					●	300		4	●	400		3	●	500		2	
							●	300		4	●	400		3	●	500		2	

A - SUBSTRUCTURE			LS/SH			LS/SH			LS/SH			LS/SH		
			Project Phases/Milestones											
Site Mechanical Utilities	Roadways													
		Bases and Sub-Bases												
		Paving & Surfacing												
		Curbs Gutters & Drains												
		Guardrails and Barriers												
		Painted Lines												
		Markings & Signage												
		Vehicular Bridges												
		Parking Lots												
			Bases and Sub-Bases											
			Paving & Surfacing											
			Curbs, Rails & Barriers											
			Parking Booths & Equipment											
			Markings & Signage											
		Pedestrian Paving												
			Paving & Surfacing											
			Edging											
			Exterior Steps											
			Pedestrian Bridges											
		Site Development												
			Fences & Gates											
			Retaining Walls											
			Terrace & Perimeter Walls											
			Signage											
			Site Furnishings											
			Fountains, Pools, & Watercourses											
			Playing Fields											
			Flagpoles											
			Miscellaneous Structures											
		Landscaping												
			Fine Grading & Soil Preparation											
			Erosion Control Measures											
			Top Soil and Planting Beds											
			Seeding and Sodding											
			Planting											
			Planters											
			Irrigation Systems											
			Other Landscape Features											
		Water Supply												
			Potable Water Distribution & Storage											
		Non Potable Water Distribution & Storage												
		Well Systems												
		Fire Protection Distribution & Storage												
		Pumping Stations												
		Package Water Treatment Plants												
	Sanitary Sewer													
		Piping												
		Manholes & Cleanouts												
		Septic Disposal Systems												
		Lift Stations												
		Packaged Water Waste TreatmentPlants												
		Septic Tanks												
		Drain Fields												
	Storm Sewer													
		Piping												
		Manholes												
		Headwalls & Catch Basins												
		Lift Stations												
		Retention Ponds												
		Ditches & Culverts												
	Heating Distribution													
		Steam Supply												
		Condensate Return												
		Hot Water Supply System												
		Pumping Stations												
	Cooling Distribution													
		Chilled Water Piping												
		Wells for Cooling/Heating												
		Pumping Stations												
		Cooling Towers on Site												
	Fuel Distribution													
		Fuel Piping												
		Fuel Equipment												
		Fuel Storage Tanks												
		Fuel Dispensing Stations												
	Other Site Mechanical Utilities													
		Industrial Waste Systems												
		POL (Petroleum Oil & Lubricants) Distribution Systems												
	Site Electrical Utilities													
	Electrical Distribution													
		Substations												
		Overhead Power Distribution												
		Underground Power Distribution												
	Site Lighting													
		Fixtures & Transformers												
		Poles												
		Wiring Conduits & Ductbanks												
		Site Lighting Controls												
	Site Communications & Security													
		Site Communications Systems												
		Site Security & Alarm Systems												
	Other Site Electrical Utilities													
		Cathodic Protection												
		Site Emergency Power Generation												
	Other Site Construction													
	Service & Pedestrian Tunnels													
		Service Tunnels												
		Trench Boxes												
		Pedestrian Tunnels	●	200	4	●	200	3	●	300	3	●	400	3
	Other Site Systems & Equipment		●	200	4	●	200	3	●	300	3	●	400	3
		Snow Melting Systems				●	200	3	●	300	3	●	400	3

Annex D - Model Element Table

Authorized Model Uses Sheet 4

Last revised: 2019-08
By: PSPC

BIM - Level of Development (LOD)		Authorized Uses				
LOD	Description	Analysis	Cost Estimating	Project Scheduling	Coordination	Other Authorized Uses
0	Not Modeled. Elements to be shown as 2D symbols.	N/A	N/A	N/A	N/A	
100	Modeled elements are at a conceptual point of development. Information can be conveyed with massing forms, written narratives, and 2D symbols.	Simple analysis based on volume and orientation	Cost estimation by floor area, volume or similar approaches	Project phasing and overall duration	N/A	
200	Modeled elements have approximate relationships to quantities, size, location, and orientation. Some information may still be conveyed with written narratives.	More advanced analysis than LOD 100 based on approximate relationships and sizes	Cost estimation by volume, and quantity of elements and systems	Scheduling of installation of major elements	Coordination with other model elements at a basic level. Early clash detection possible	
300	Modeled elements are explained in terms of specific systems, quantities, size, shape, location, and orientation.	Advanced analysis able to be performed with precise size, shape, location and orientation of elements	Cost estimates available based upon specific data	Scheduling for construction or installation of detailed elements	Coordination with other elements based upon specific size, shape, location, and orientation. Detailed clash detection	Energy analysis, structural analysis, water consumption analysis, psychometric analysis, hygrothermal analysis, hydraulic analysis
350	Model Elements are geometrically represented in the model as a specific/detailed system, object or assembly in terms of size, shape, location, quantity, and orientation. Additional information may be attached to the Model Element.	LOD 300 analysis available with systems and connections	Cost estimates are based upon specific elements and connections	Scheduling of installations described as systems rather than elements	Coordination with other elements and systems including connections	Prefabrication
400	Continuation of LOD 350 with enough information added to facilitate fabrication, assembly, and installation.	Analysis of procured elements	Costs are based upon actual procured elements	Scheduling of installation all elements with installation information	Coordination of fabrication, installation, and early operations issues	
500	Modeled elements are representative of as installed conditions and can be utilized for ongoing facilities management.	Analysis of installed systems	Operations and Maintenance cost estimation and replacement scheduling	Maintenance scheduling	N/A	

Annex D - Model Element Table

Model Element Authorship

Sheet 5

Last revised: 2019-09
By: PSPC

BIM - Model Element Authors		
Discipline Code	Author	Author Code
ARCH	General/Prime Architect	AA
	Landscape Architect	A-L
	Interior Designer	A-ID
ENG	Electrical	
	Municipal Engineering	
	Structural/Seismic	
	Mechanical	
SPEC	Electrical	
	Others:	
	Heritage Conservation	
SPEC	Sustainability	
	Others:	

PROJECT SETUP

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Model Element Author Assignments	
				MEA	Notes
		Building Grids			
			Planning Grid		
		Floor Levels			
		Site Plan/Grading/Topography			
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			

A - SUBSTRUCTURE

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Model Element Author Assignments	
				MEA	Notes
	Foundations				
		Standard Foundations			
			Wall Foundations		
			Column Foundations & Pile Caps		
			Perimeter Drainage & Insulation		
		Special Foundations			
			Pile Foundations		
			Grade Beams		
			Caissons		
			Underpinning		
			Dewatering		
			Raft Foundations		
			Pressure Injected Grouting		
			Other Special Conditions		
		Slab on Grade			
		Standard Slab on Grade			
		Structural Slab on Grade			
		Inclined Slab on Grade			
		Trenches, Pits & Bases			
		Under Slab Drainage & Insulation			
	Basement				
		Basement Excavation			
			Excavation for Basements		
			Structure Back Fill & Compaction		
			Shoring		
		Basement Walls			
			Basement Wall Construction		
			Moisture Protection		
			Basement Wall Insulation		
			Interior Skin		
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			

B - SHELL

Level 1 Major Group Elements	Level 2 Group Elements	Level 3 Individual Elements	Level 4 Sub Elements	Model Element Author Assignments	
				MEA	Notes
	Super Structure				
		Floor Construction			
			Construction		
			Upper Floors Construction		
			Balcony Floors Construction		
			Ramps		
			Exterior Stairs and Fire Escapes		
			Floor Raceway Systems		
			Other Floor Construction		
		Roof Construction			
			Flat Roof Construction		
			Pitched Roof Construction		
			Canopies		
			Other Roof Systems		
	Exterior enclosure				
		Exterior Walls			
		Exterior Windows			
			Windows		
			Curtain Walls		
			Storefronts		
		Exterior Doors			
			Glazed Doors & Entrances		
			Solid Exterior Doors		
			Revolving Doors		
			Overhead Doors		

		Other Doors & Entrances			
Roofing	Roof Coverings				
	Roof finishes				
	Membranes				
	Roof Insulation & Fill				
	Flashings & Trim				
	Roof Eaves & Soffits				
	Gutters and Downspouts				
	Roof Openings				
	Glazed Roof Openings				
	Roof Hatches				
	Gravity Roof Ventilators				
	Other Elements:		All Elements not listed, but agreed upon in collaboration with the DR.		
C - Interiors					
Level 1	Level 2	Level 3	Level 4	Model Element Author Assignments	
Major Group Elements	Group Elements	Individual Elements	Sub Elements	MEA	Notes
Interior Construction					
	Partitions				
		Fixed Partitions			
		Demountable Partitions			
		Retractable Partitions			
		Site Built Toilet Partitions			
		Site Built Compartments Cubicles			
		Interior Balustrades & Screens			
		Interior Windows & Storefronts			
	Interior Doors				
		Interior Doors			
		Interior Door Frames			
		Interior Door Hardware			
		Interior Door Wall Opening Elements			
		Interior Door Sidelights & Transoms			
		Interior Hatches & Access Doors			
		Door Painting & Decoration			
	Fittings				
		Fabricated Toilet Partitions			
		Fabricated Compartments & Cubicles			
		Storage Shelving & Lockers			
		Ornamental Metals & Handrails			
		Identifying Devices			
		Closet Specialties			
		General Fittings & Misc. Metals			
Stairs					
	Stair Construction				
		Regular Stairs			
		Curved Stairs			
		Spiral Stairs			
		Stair Handrails & Balustrades			
	Stair Finishes				
		Stair, Tread, Landing Finishes			
		Stair Soffit Finishes			
		Stair Handrail & Balustrade Finishes			
Interior Finishes					
	Wall Finishes				
		Wall Finishes to Inside Exterior Walls			
		Wall Finishes to Interior Walls			
		Column Finishes			
	Floor Finishes				
		Floor Toppings			
		Traffic Membranes			
		Hardeners & Sealers			
		Flooring			
		Carpeting			
		Bases, Curbs & Trim			
		Access Pedestal Flooring			
	Ceiling Finishes				
		Ceiling Finishes			
		Suspended Ceilings			
		Other Ceilings			
Other Elements:		All Elements not listed, but agreed upon in collaboration with the DR.			
D - SERVICES					
Level 1	Level 2	Level 3	Level 4	Model Element Author Assignments	
Major Group Elements	Group Elements	Individual Elements	Sub Elements	MEA	Notes
Conveying					
	Elevators & Lifts				
		Passenger Elevators			
		Freight Elevators			
		Lifts			
	Escalators & Moving Walks				
		Escalators			
		Moving Walks			
	Other Conveying Systems				
		Dumbwaiters			
		Pneumatic Tube Systems			
		Hoists & Cranes			
		Conveyors			
		Chutes			
		Turntables			
		Systems			
		Transportation Systems			
Plumbing					

HVAC	Plumbing Fixtures		
	Water closets		
	Urinals		
	Lavatories		
	Sinks		
	Bathubs		
	Wash Fountains		
	Showers		
	Drinking Fountains & Coolers		
	Bidets & Other Plumbing Fixtures		
	Domestic Water Distribution		
	Cold Water Service		
	Hot Water Service		
	Domestic Water Supply Equipment		
	Sanitary Waste		
	Waste Piping		
	Vent Piping		
	Floor Drains		
	Sanitary Waste Equipment		
	Pipe Insulation		
	Rain Water Drainage		
	Pipe & Fittings		
	Roof Drains		
	Rainwater Drainage Equipment		
	Pipe Insulation		
	Other Plumbing Systems		
	Gas Distribution		
	Acid Waste System		
	Interceptors		
	Pool Piping and Equipment		
	Decorative Fountain Piping Devices		
	Other Piping Systems		
	Energy Supply		
	Oil Supply System		
	Gas Supply System		
	Coal Supply System		
	Steam Supply System		
	Hot Water Supply System		
	Solar Energy System		
	Wind Energy System		
	Heat Generating Systems		
	Boilers		
	Boiler Room Piping & Specialties		
	Auxiliary Equipment		
	Insulation		
	Cooling Generating Systems		
	Chilled Water Systems		
	Direct Expansion Systems		
	Distribution Systems		
	Air Distribution Systems		
	Exhaust Ventilation Systems		
	Steam Distribution Systems		
	Hot Water Distribution		
	Chilled Water Distribution		
	Change-over Distribution System		
	Glycol Distribution Systems		
	Terminal & Package Units		
	Terminal Self-Contained Units		
	Package Units		
	Controls & Instrumentation		
	Heating Generating Systems		
	Cooling Generating Systems		
	Heating/Cooling Air Handling Units		
	Exhaust & Ventilating Systems		
	Hoods and Exhaust Systems		
	Terminal Devices		
	Energy Monitoring & Control		
	Building Automation Systems		
	Other Controls & Instrumentation		
	Systems Testing & Balancing		
	Piping System Testing & Balancing		
	Air Systems Testing & Balancing		
	HVAC Commissioning		
	Other Systems Testing and Balancing		
	Other HVAC Systems & Equipment		
	Special Cooling Systems & Devices		
	Special Humidity Control		
	Dust & Fume Collectors		
	Air Curtains		
	Air Purifiers		
	Paint Spray Booth Ventilation		
	General Construction Items (HVAC)		
Fire Protection	Sprinklers		
	Sprinkler Water Supply		
	Sprinkler Pumping Equipment		
	Dry Sprinkler System		
	Standpipes		
	Standpipe Water Supply		
	Pumping Equipment		
	Standpipe Equipment		
	Fire Hose Equipment		
	Fire Protection Specialties		
	Fire Extinguishers		
	Fire Extinguisher Cabinets		
	Other Fire Protection Systems		
	Carbon Dioxide Systems		
	Foam Generating Equipment		

		Clean Agent Systems		
		Dry Chemical System		
		Hood & Duct Fire Protection		
Electrical				
	Electrical Service & Distribution			
		High Tension Service & Dist.		
		Low Tension Service & Dist.		
	Lighting & Branch Wiring			
		Branch Wiring Devices		
		Lighting Equipment		
	Communications & Security			
		Public Address & Music Systems		
		Intercommunication & Paging System		
		Telephone Systems		
		Call Systems		
		Television Systems		
		Clock and Program Systems		
		Fire Alarm Systems		
		Security and Detection Systems		
		Local Area Networks		
	Other Electrical Systems			
		Grounding Systems		
		Emergency Light & Power Systems		
		Floor Raceway Systems		
		Other Special Systems & Devices		
		General Construction Items (Elect.)		

E - EQUIPMENT & FURNISHINGS					
Level 1	Level 2	Level 3	Level 4	Model Element Author Assignments	
Major Group Elements	Group Elements	Individual Elements	Sub Elements	MEA	Notes

	Equipment				
		Commercial Equipment			
			Security & Vault Equipment		
			Teller & Service Equipment		
			Registration Equipment		
			Checkroom Equipment		
			Mercantile Equipment		
			Laundry & Dry Cleaning Equipment		
			Vending Equipment		
			Office Equipment		
		Institutional Equipment			
			Ecclesiastical Equipment		
			Library Equipment		
			Theater & Stage Equipment		
			Instrumental Equipment		
			Audio-visual Equipment		
			Detention Equipment		
			Laboratory Equipment		
			Medical Equipment		
			Other Institutional Equipment		
		Vehicular Equipment			
			Vehicular Service Equipment		
			Parking Control Equipment		
			Loading Dock Equipment		
			Other Vehicular Equipment		
		Other Equipment			
			Maintenance Equipment		
			Solid Waste Handling Equipment		
			Food Service Equipment		
			Residential Equipment		
			Unit Kitchens		
			Window Washing Equipment		
			Other Equipment		
	Furnishings	Furnishings			
		Fixed Furnishings			
			Fixed Artwork		
			Fixed Casework		
			Blinds & Other Window Treatment		
			Fixed Floor Grilles and Mats		
			Fixed Multiple Seating		
			Fixed Interior Landscaping		
		Movable Furnishings			
			Movable Artwork		
			Furniture & Accessories		
			Movable Rugs & Mats		
			Movable Interior Landscaping		
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			

F - SPECIAL CONSTRUCTION & DEMOLITION					
Level 1	Level 2	Level 3	Level 4	Model Element Author Assignments	
Major Group Elements	Group Elements	Individual Elements	Sub Elements	MEA	Notes

	Special Construction				
		Special Structures			
			Air Supported Structures		
			Pre-engineered Structures		

				Other Special Structures		
Integrated Construction						
				Integrated Assemblies		
				Special Purpose Rooms		
				Other Integrated Construction		
Special Construction Systems						
				Sound, Vibration & Seismic Const.		
				Radiation Protection		
				Special Security Systems		
				Vaults		
				Other Special Construction Systems		
Special Facilities						
				Aquatic Facilities		
				Ice Rinks		
				Site Constructed Incinerators		
				Kennels & Animal Shelters		
				Liquid & Gas Storage Tanks		
				Other Special Facilities		
Special Controls & Instrumentation						
				Recording Instrumentation		
				Building Automation System		
				Other Special Controls & Instrumentation		
Selective Building Demolition						
Building Elements Demolition						
				Building Interior Demolition		
				Building Exterior Demolition		
Hazardous Components Abatement						
				Removal of Hazardous Components		
				Encapsulation of Hazardous Components		
G - SITEWORK						
Level 1	Level 2	Level 3	Level 4	Model Element Author Assignments		
Major Group Elements	Group Elements	Individual Elements	Sub Elements	MEA	Notes	
Site Preparation						
Site Clearing						
				Clearing & Grubbing		
				Tree Removal & Thinning		
Site Demolition & Relocations						
				Building Demolition		
				Demolition of Site Components		
				Relocation of Building & Utilities		
				Utilities Relocation		
Site Earthwork						
				Site Grading Excavation		
				Borrow Fill		
				Soil Stabilization & Treatment		
				Site Dewatering		
				Site Shoring		
				Embankments		
				Erosion Control		
Hazardous Waste Remediation						
				Removal of Contaminated Soil		
				Soil Restoration & Treatment		
Site Improvements						
Roadways						
				Bases and Sub-Bases		
				Paving & Surfacing		
				Curbs Gutters & Drains		
				Guardrails and Barriers		
				Painted Lines		
				Markings & Signage		
				Vehicular Bridges		
Parking Lots						
				Bases and Sub-Bases		
				Paving & Surfacing		
				Curbs, Rails & Barriers		
				Parking Booths & Equipment		
				Markings & Signage		
Pedestrian Paving						
				Paving & Surfacing		
				Edging		
				Exterior Steps		
				Pedestrian Bridges		
Site Development						
				Fences & Gates		
				Retaining Walls		
				Terrace & Perimeter Walls		
				Signage		
				Site Furnishings		
				Fountains, Pools, & Watercourses		
				Playing Fields		
				Flagpoles		
				Miscellaneous Structures		
Landscaping						
				Fine Grading & Soil Preparation		
				Erosion Control Measures		
				Top Soil and Planting Beds		
				Seeding and Sodding		
				Planting		
				Planters		
				Irrigation Systems		
				Other Landscape Features		
Site Mechanical Utilities						
Water Supply						
				Potable Water Distribution & Storage		
				Non Potable Water Distribution & Storage		

	Well Systems		
	Fire Protection Distribution & Storage		
	Pumping Stations		
	Package Water Treatment Plants		
	Sanitary Sewer		
	Piping		
	Manholes & Cleanouts		
	Septic Disposal Systems		
	Lift Stations		
	Package Water Waste Treatment Plants		
	Septic Tanks		
	Drain Fields		
	Storm Sewer		
	Piping		
	Manholes		
	Headwalls & Catch Basins		
	Lift Stations		
	Retention Ponds		
	Ditches & Culverts		
	Heating Distribution		
	Steam Supply		
	Condensate Return		
	Hot Water Supply System		
	Pumping Stations		
	Cooling Distribution		
	Chilled Water Piping		
	Wells for Cooling/Heating		
	Pumping Stations		
	Cooling Towers on Site		
	Fuel Distribution		
	Fuel Piping		
	Fuel Equipment		
	Fuel Storage Tanks		
	Fuel Dispensing Stations		
	Other Site Mechanical Utilities		
	Industrial Waste Systems		
	POL (Petroleum Oil & Lubricants) Distribution Systems		
Site Electrical Utilities			
	Electrical Distribution		
	Substations		
	Overhead Power Distribution		
	Underground Power Distribution		
	Site Lighting		
	Fixtures & Transformers		
	Poles		
	Wiring Conduits & Ductbanks		
	Site Lighting Controls		
	Site Communications & Security		
	Site Communications Systems		
	Site Security & Alarm Systems		
	Other Site Electrical Utilities		
	Cathodic Protection		
	Site Emergency Power Generation		
Other Site Construction			
	Service & Pedestrian Tunnels		
	Service Tunnels		
	Trench Boxes		
	Pedestrian Tunnels		
	Other Site Systems & Equipment		
	Snow Melting Systems		



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Annex D - Model Element Table

Model Element Security Protocol

Sheet 6

Last revised: 2019-09
By: PSPC

BIM - Model Element Authors		BIM Security Protocols			
ARCH	General/Prime Architect	ARCH	The goal of the following protocol is to maintain any cloud-based Model in an "UNCLASSIFIED" state. Please refer to the list items below for various classifications of model or drawing elements and their respective levels of sensitivity. Notes are assigned to each element in order to provide further guidance on risk mitigation strategies, or instructions for secure information handling.		
	Landscape Architect				
	Interior Designer				
ENG	Electrical		Security Level (LEVEL)		Model Approach (MA)
	Municipal Engineering		U	Unclassified	1 Model Element; include information
	Structural/Seismic	SE	C	Confidential	2 Model Element; do not include sensitive information
	Mechanical	MEP	S	Secret	3 Model Element as proxy; do not include information
	Electrical		TS	Top Secret	4 Do not model; do not include information
	Others:		PA	Protected A	
			PS	Protected B	
SPEC	Heritage Conservation		PC	Protected C	
	Sustainability				
	Others:				

Level 1	Level 2	Level 3	Level 4	MEA Assignments		Security Assignments		
Major Group Elements	Group Elements	Individual Elements	Sub Elements	MEA	Notes	LEVEL	MA	Notes
PROJECT SETUP								
		Building Grids	Planning Grid			U	1	
		Floor Levels				U	1	
		Site Plan/Grading/Topography				U	1	
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.						
A - SUBSTRUCTURE								
	Foundations					U/PB/S	2	
		Standard Foundations				U/PB/S	2	
			Wall Foundations			U/PB/S	2	
			Column Foundations & Pile Caps			U/PB/S	2	
			Perimeter Drainage & Insulation			U/PB/S	2	
		Special Foundations				U/PB/S	2	
			Pile Foundations			U/PB/S	2	
			Grade Beams			U/PB/S	2	
			Caissons			U/PB/S	2	
			Underpinning			U/PB/S	2	
			Dewatering			U/PB/S	2	
			Raft Foundations			U/PB/S	2	
			Pressure Injected Grouting			U/PB/S	2	
			Other Special Conditions			U/PB/S	2	
		Slab on Grade				U/PB/S	2	
			Standard Slab on Grade			U/PB/S	2	
			Structural Slab on Grade			U/PB/S	2	
			Inclined Slab on Grade			U/PB/S	2	
			Trenches, Pits & Bases			U/PB/S	2	
			Under-Slab Drainage & Insulation			U/PB/S	2	
	Basement Construction					U/PB/S	2	
		Basement Excavation				U/PB/S	2	
			Excavation for Basements			U/PB/S	2	
			Structure Back Fill & Compaction			U/PB/S	2	
			Shoring			U/PB/S	2	
		Basement Walls				U/PB/S	2	
			Basement Wall Construction			U/PB/S	2	
			Moisture Protection			U/PB/S	2	
			Basement Wall Insulation			U/PB/S	2	
			Interior Skin			U/PB/S	2	
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.						
B - SHELL								
	Super Structure					U/PB/S	2	
		Floor Construction				U/PB/S	2	
			Construction			U/PB/S	2	
			Upper Floors Construction			U/PB/S	2	
			Balcony Floors Construction			U/PB/S	2	
			Ramps			U/PB/S	2	
			Exterior Stairs and Fire Escapes			U/PB/S	2	
			Floor Raceway Systems			U/PB/S	2	
			Other Floor Construction			U/PB/S	2	
		Roof Construction				U/PB/S	2	
			Flat Roof Construction			U/PB/S	2	
			Pitched Roof Construction			U/PB/S	2	
			Canopies			U/PB/S	2	
			Other Roof Systems			U/PB/S	2	
	Exterior enclosure					U/PB/S	2	
		Exterior Walls				U/PB/S	2	
		Exterior Windows				U/PB/S	2	
			Windows			U/PB/S	2	
			Curtain Walls			U/PB/S	2	
			Storefronts			U/PB/S	2	
		Exterior Doors				U/PB/S	2	
			Glazed Doors & Entrances			U/PB/S	2	
			Solid Exterior Doors			U/PB/S	2	
			Revolving Doors			U/PB/S	2	
			Overhead Doors			U/PB/S	2	
			Other Doors & Entrances			U/PB/S	2	
	Roofing					U	1	
		Roof Coverings				U	1	
			Roof finishes			U	1	
			Membranes			U	1	
			Roof Insulation & Fill			U	1	
			Flashings & Trim			U	1	
			Roof Eaves & Soffits			U	1	
			Gutters and Downspouts			U	1	
		Roof Openings				U	1	
			Glazed Roof Openings			U	1	
			Roof Hatches			U	1	
			Gravity Roof Ventilators			U	1	
	Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.						
C - INTERIORS								
	Interior Construction							

	Boilers			U	1
	Boiler Room Piping & Specialties			U	1
	Auxiliary Equipment			U	1
	Insulation			U	1
	Cooling Generating Systems			U	1
	Chilled Water Systems			U	1
	Direct Expansion Systems			U	1
	Distribution Systems			U	1
	Air Distribution Systems			U	1
	Exhaust Ventilation Systems			U	1
	Steam Distribution Systems			U	1
	Hot Water Distribution			U	1
	Chilled Water Distribution			U	1
	Change-over Distribution System			U	1
	Glycol Distribution Systems			U	1
	Terminal & Package Units			U	1
	Terminal Self-Contained Units			U	1
	Package Units			U	1
	Controls & Instrumentation			U	1
	Heating Generating Systems			U	1
	Cooling Generating Systems			U	1
	Heating/Cooling Air Handling Units			U	1
	Exhaust & Ventilating Systems			U	1
	Hoods and Exhaust Systems			U	1
	Terminal Devices			U	1
	Energy Monitoring & Control			U	1
	Building Automation Systems			U	1
	Other Controls & Instrumentation			U	1
	Systems Testing & Balancing			U	1
	Piping System Testing & Balancing			U	1
	Air Systems Testing & Balancing			U	1
	HVAC Commissioning			U	1
	Other Systems Testing and Balancing			U	1
	Other HVAC Systems & Equipment			U	1
	Special Cooling Systems & Devices			U	1
	Special Humidity Control			U	1
	Dust & Fume Collectors			U	1
	Air Curtains			U	1
	Air Purifiers			U	1
	Paint Spray Booth Ventilation			U	1
	General Construction Items (HVAC)			U	1
Fire Protection				U	1
	Sprinklers			U	1
	Sprinkler Water Supply			U	1
	Sprinkler Pumping Equipment			U	1
	Dry Sprinkler System			U	1
	Standpipes			U	1
	Standpipe Water Supply			U	1
	Pumping Equipment			U	1
	Standpipe Equipment			U	1
	Fire Hose Equipment			U	1
	Fire Protection Specialties			U/PB/S	3
	Fire Extinguishers			U	1
	Fire Extinguisher Cabinets			U	1
	Other Fire Protection Systems			U/PB/S	3
	Carbon Dioxide Systems			U/PB/S	3
	Foam Generating Equipment			U/PB/S	3
	Clean Agent Systems			U/PB/S	3
	Dry Chemical System			U/PB/S	3
	Hood & Duct Fire Protection			U/PB/S	3
Electrical				U/PB/S	3
	Electrical Service & Distribution			U/PB/S	3
	High Tension Service & Dist.			U/PB/S	3
	Low Tension Service & Dist.			U/PB/S	3
	Lighting & Branch Wiring			U/PB/S	3
	Branch Wiring Devices			U/PB/S	3
	Lighting Equipment			U/PB/S	3
	Communications & Security			U/PB/S	3
	Public Address & Music Systems			U/PB/S	3
	Intercommunication & Paging System			U/PB/S	3
	Telephone Systems			U/PB/S	3
	Call Systems			U/PB/S	3
	Television Systems			U/PB/S	3
	Clock and Program Systems			U/PB/S	3
	Fire Alarm Systems			U/PB/S	3
	Security and Detection Systems			PB/S	4
	Local Area Networks			U/PB/S	3
	Other Electrical Systems			U/PB/S	3
	Grounding Systems			U/PB/S	3
	Emergency Light & Power Systems			U/PB/S	3
	Floor Raceway Systems			U/PB/S	3
	Other Special Systems & Devices			U/PB/S	3
	General Construction Items (Elect)			U/PB/S	3
Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.				
E - EQUIPMENT & FURNISHINGS					
Equipment				U	1
	Commercial Equipment			U	1
	Security & Vault Equipment			PB/S	4
	Teller & Service Equipment			U	1
	Registration Equipment			U	1
	Checkroom Equipment			U	1
	Mercantile Equipment			U	1
	Laundry & Dry Cleaning Equipment			U	1
	Vending Equipment			U	1
	Office Equipment			U	1
	Institutional Equipment			U	1
	Ecclesiastical Equipment			U	1
	Library Equipment			U	1
	Theater & Stage Equipment			U	1
	Instrumental Equipment			U	1
	Audio-visual Equipment			U	1
	Detention Equipment			U	1
	Laboratory Equipment			U	1
	Medical Equipment			U	1
	Other Institutional Equipment			U	1
	Vehicular Equipment			U	1
	Vehicular Service Equipment			U	1
	Parking Control Equipment			U	1
	Loading Dock Equipment			U	1
	Other Vehicular Equipment			U	1
	Other Equipment			U	1
	Maintenance Equipment			U	1
	Solid Waste Handling Equipment			U	1

		Food Service Equipment			U	1	
		Residential Equipment			U	1	
		Unit Kitchens			U	1	
		Window Washing Equipment			U	1	
		Other Equipment			U	1	
Furnishings	Furnishings				U	1	
	Fixed Furnishings				U	1	
		Fixed Artwork			U	1	
		Fixed Casework			U	1	
		Blinds & Other Window Treatment			U	1	
		Fixed Floor Grilles and Mats			U	1	
		Fixed Multiple Seating			U	1	
		Fixed Interior Landscaping			U	1	
	Movable Furnishings				U	1	
		Movable Artwork			U	1	
		Furniture & Accessories			U	1	
		Movable Rugs & Mats			U	1	
		Movable Interior Landscaping			U	1	
Other Elements	All Elements not listed, but agreed upon in collaboration with the DR.						
F- SPECIAL CONSTRUCTION & DEMOLITION							
Special Construction					U	3	
	Special Structures				U	3	
		Air Supported Structures			U	3	
		Pre-engineered Structures			U	3	
		Other Special Structures			U	3	
	Integrated Construction				U	3	
		Integrated Assemblies			U	3	
		Special Purpose Rooms			U	3	
		Other Integrated Construction			U	3	
	Special Construction Systems				U	3	
		Sound, Vibration & Seismic Const.			U	3	
		Radiation Protection			U	3	
		Special Security Systems			PB/S	4	
		Vaults			U	3	
		Other Special Construction Systems			U	3	
	Special Facilities				U	3	
		Aquatic Facilities			U	3	
		Ice Rinks			U	3	
		Site Constructed Incinerators			U	3	
		Kennels & Animal Shelters			U	3	
		Liquid & Gas Storage Tanks			U	3	
		Other Special Facilities			U	3	
	Special Controls & Instrumentation				U	3	
		Recording Instrumentation			U	3	
		Building Automation System			U	3	
		Other Special Controls & Instrumentation			U	3	
Selective Building Demolition					U	3	
	Building Elements Demolition				U	3	
		Building Interior Demolition			U	3	
		Building Exterior Demolition			U	3	
	Hazardous Components Abatement				U	3	
		Removal of Hazardous Components			U	3	
		Components			U	3	
Other Elements	All Elements not listed, but agreed upon in collaboration with the DR.				U	3	
G- BUILDING SITEWORK							
Site Preparation					U	1	
	Site Clearing				U	1	
		Clearing & Grubbing			U	1	
		Tree Removal & Thinning			U	1	
	Site Demolition & Relocations				U	1	
		Building Demolition			U	1	
		Demolition of Site Components			U	1	
		Relocation of Building & Utilities			U	1	
		Utilities Relocation			U	1	
	Site Earthwork				U	1	
		Site Grading Excavation			U	1	
		Borrow Fill			U	1	
		Soil Stabilization & Treatment			U	1	
		Site Dewatering			U	1	
		Site Shoring			U	1	
		Embankments			U	1	
		Erosion Control			U	1	
	Hazardous Waste Remediation				U	1	
		Removal of Contaminated Soil			U	1	
		Soil Restoration & Treatment			U	1	
Site Improvements					U	1	
	Roadways				U	1	
		Bases and Sub-Bases			U	1	
		Paving & Surfacing			U	1	
		Curbs Gutters & Drains			U	1	
		Guardrails and Barriers			U	1	
		Painted Lines			U	1	
		Markings & Signage			U	1	
		Vehicular Bridges			U	1	
	Parking Lots				U	1	
		Bases and Sub-Bases			U	1	
		Paving & Surfacing			U	1	
		Curbs, Rafts & Barriers			U	1	
		Parking Booths & Equipment			U	1	
		Markings & Signage			U	1	
	Pedestrian Paving				U	1	
		Paving & Surfacing			U	1	
		Edging			U	1	
		Exterior Steps			U	1	
		Pedestrian Bridges			U	1	
	Site Development				U	1	
		Fences & Gates			U	1	
		Retaining Walls			U	1	
		Terrace & Perimeter Walls			U	1	
		Signage			U	1	
		Site Furnishings			U	1	
		Fountains, Pools, & Watercourses			U	1	
		Playing Fields			U	1	
		Flagpoles			U	1	
		Miscellaneous Structures			U	1	
	Landscaping				U	1	
		Fine Grading & Soil Preparation			U	1	
		Erosion Control Measures			U	1	
		Top Soil and Planting Beds			U	1	
		Seeding and Sodding			U	1	
		Planting			U	1	
		Planters			U	1	

Site Mechanical Utilities	Irrigation Systems	U	1	
	Other Landscape Features	U	1	
		U	1	
	Water Supply	U	1	
	Potable Water Distribution & Storage	U	1	
	& Storage	U	1	
	Well Systems	U	1	
	Storage	U	1	
	Pumping Stations	U	1	
	Package Water Treatment Plants	U	1	
	Sanitary Sewer	U	1	
	Piping	U	1	
	Manholes & Cleanouts	U	1	
	Septic Disposal Systems	U	1	
	Lift Stations	U	1	
	Package Water Waste Treatment Plants	U	1	
	Septic Tanks	U	1	
	Drain Fields	U	1	
	Storm Sewer	U	1	
	Piping	U	1	
	Manholes	U	1	
	Headwalls & Catch Basins	U	1	
	Lift Stations	U	1	
	Retention Ponds	U	1	
	Ditches & Culverts	U	1	
	Heating Distribution	U	1	
	Steam Supply	U	1	
	Condensate Return	U	1	
	Hot Water Supply System	U	1	
	Pumping Stations	U	1	
	Cooling Distribution	U	1	
	Chilled Water Piping	U	1	
	Wells for Cooling/Heating	U	1	
	Pumping Stations	U	1	
	Cooling Towers on Site	U	1	
	Fuel Distribution	U	1	
	Fuel Piping	U	1	
	Fuel Equipment	U	1	
	Fuel Storage Tanks	U	1	
	Fuel Dispensing Stations	U	1	
	Other Site Mechanical Utilities	U	1	
	Industrial Waste Systems	U	1	
	Lubricants Distribution Systems	U	1	
Site Electrical Utilities		U	1	
	Electrical Distribution	U	1	
	Substations	U	1	
	Overhead Power Distribution	U	1	
	Underground Power Distribution	U	1	
	Site Lighting	U	1	
	Fixtures & Transformers	U	1	
	Poles	U	1	
	Wiring Conduits & Ductbanks	U	1	
	Site Lighting Controls	U	1	
	Site Communications & Security	PB/S	4	
	Site Communications Systems	PB/S	4	
	Site Security & Alarm Systems	PB/S	4	
	Other Site Electrical Utilities	U	1	
	Cathodic Protection	U	1	
	Site Emergency Power Generation	U	1	
Other Site Construction		U	1	
	Service & Pedestrian Tunnels	U	1	
	Service Tunnels	U	1	
	Trench Boxes	U	1	
	Pedestrian Tunnels	U	1	
	Other Site Systems & Equipment	U	1	
	Snow Melting Systems	U	1	
Other Elements:	All Elements not listed, but agreed upon in collaboration with the DR.			

Solicitation No. - N° de l'invitation
EJ078-193032/A
Client Ref. No. - N° de réf. du client
20193032

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File No. - N° du dossier
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End of Amendment 003