



A1. Contract Advisor

Ms. Meagan Leclair
Procurement Specialist
Department of Foreign Affairs, Trade and Development

Email: (below)
realproperty-contracts@international.gc.ca
Telephone: +1 343 598 9721

Architect and Engineering Services (A&E Services)

Request for Proposals (RFP)

for

Performance of the work as described in Appendix "A" – Statement of Work of the draft contract.

A2. Title HVAC and Electrical Upgrade at the Embassy of Canada to South Africa, in Pretoria		
A3. Solicitation Number 24-263048	A4. Project Number F-PRET-100	A5. Date April 19, 2024
A6. RFP Documents <ol style="list-style-type: none"> Request for Proposals (RFP) title page Submission Requirements (Part 1) Evaluation and Basis of Selection (Part 2) Tender Form (Part 3) General Instructions (Part 4) Draft Contract <p>In the event of discrepancies, inconsistencies or ambiguities of the wording of these documents, the document that appears first on the above list shall prevail.</p>		
A7. Proposal Delivery In order for the proposal to be valid, it must be received no later than 14:00 Eastern Daylight Time on May 20, 2024 , referred to herein as the "Closing Date". Electronic proposals must be sent only to the following email address: realproperty-contracts@international.gc.ca		
A8. Tender Form The completed Tender Form (Part 3) must be in a separate attachment named "Tender Form". The information required in section 5.0 must appear on the Tender Form (Part 3) only. Failure to comply may result in the proposal being declared non-compliant and rejected from further consideration.		
A9. Site Visit It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the site visit to be held at the High Commission of Canada in South Africa, Lot 671, 1103 Arcadia Street, Hatfield, Pretoria, 0083, South Africa on May 8, 2024 . The site visit will begin at 9:30 am (local time in Pretoria, South Africa) . Bidders are requested to communicate with the Contract Advisor no later than three (3) business days prior to the site visit to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders may be requested to sign an attendance sheet. Bidders who do not attend or do not send a representative will not be given an alternative appointment, but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.		
A10. Enquiries All enquiries or issues concerning this RFP must be submitted in writing to the Contract Advisor no later than three (3) business days prior to the Closing Date and Time in order to allow sufficient time to provide a response.		
A11. Language Proposals shall be submitted in English or French.		
A12. Bidders' Conference A Bidders' conference will be held virtually on May 2, 2024 . The conference will begin at 02:30pm (local time in Pretoria, South Africa) . The scope of the requirement outlined in the bid solicitation will be reviewed during the conference and questions will be answered. It is recommended that Bidders who intend to submit a proposal attend or send a representative. Bidders are requested to communicate with the Contract Advisor before the conference to confirm attendance. Bidders should provide, in writing, to the Contract Advisor, the name(s) of the person(s) who will be attending and a list of issues they wish to table no later than three (3) business days prior to the conference. Any clarifications or changes to the bid solicitation resulting from the Bidders' conference will be included as an amendment to the bid solicitation. Bidders who do not attend will not be precluded from submitting a proposal.		
A13. Bid Security Not applicable.		
A14. Contract Documents The draft contract which the selected Bidder will be expected to execute is included with this RFP. Bidders are advised to review it in detail and identify any problematic clauses to the Contract Advisor in accordance with A10 - Enquiries. His Majesty reserves the right not to make any amendment(s) to the Contract Documents.		



Part 1 – Submission Requirements

SR1 Submission of Proposal

- 1.1 Proposals must be received by the Department of Foreign Affairs, Trade and Development (DFATD) at the email address identified and by the date and time specified on page 1 of the solicitation.
- 1.2 Bidders should ensure that their name and the solicitation number are clearly referenced in the email subject line. It is the responsibility of the Bidder to confirm that their submission has been received on time and to the correct email address.
- 1.3 More than one (1) e-mail can be sent if necessary. If the same file is sent twice, the latest file received will be used for evaluation purposes and the previous one(s) will not be opened.
- 1.4 His Majesty requests that Bidders provide their electronic proposals in Portable Document Format (.pdf) software application files or Microsoft office version 2003 or greater files.
- 1.5 Bidders should follow the specifications format instructions described below, during the preparation of their proposal:
 - Minimum type face of 10 points.
 - All material be formatted to print on 8.5" x 11" or A4 paper.
 - For clarity and comparative evaluation, the Bidder should respond using the same subject headings and numbering structure as in this RFP document.
- 1.6 Proposals may be modified or resubmitted only before the solicitation Closing Date and Time, and must be done in writing. The latest proposal received will supersede any previously received proposals.
- 1.7 His Majesty will take no responsibility if a proposal is not received on time because the e-mail was refused by a server for the following reasons:
 - The size of attachments exceeds 10 MB.
 - The e-mail was rejected or put in quarantine because it contains executable code (including macros).
 - The e-mail was rejected or put in quarantine because it contains files that are not accepted by DFATD server, such as, but not limited to, .rar, encrypted .zip, encrypted .pdf, .exe., etc.
- 1.8 Links to an online storage service (such as Google Drive™, Dropbox™, etc.) or to another website, a File Transfer Protocol (FTP) service access, or any other mean of transferring files, will not be accepted. All documents submitted must be attached to the e-mail.
- 1.9 It is strongly recommended that Bidders confirm with the Contract Advisor that their complete proposal was received. For this same reason, it is recommended that in cases where more than one (1) e-mail containing documents comprising the proposal is submitted, the emails be numbered and the total number of emails sent in response to the solicitation also be identified.
- 1.10 His Majesty requires that each proposal, at Closing Date and Time or upon request from the Contract Advisor, be signed by the Bidder or by an authorized representative of the Bidder. If any required signature(s) are not submitted as requested, the Contract Advisor may inform the Bidder of a time frame within which to provide the signature(s). Failure to comply with the request of the Contract Advisor and to provide the signature(s) within the time frame provided may render the proposal non-responsive.
- 1.11 It is the Bidder's responsibility to:
 - obtain clarification of the requirements contained in the RFP, if necessary, before submitting a proposal;
 - prepare its proposal in accordance with the instructions contained in the RFP;
 - submit by Closing Date and Time a complete proposal;
 - send its proposal only to the email address specified on page 1 of the bid solicitation;
 - ensure that the Bidder's name, and the solicitation number are in the subject line of the email containing the proposal; and
 - provide a comprehensible and sufficiently detailed proposal, including all requested pricing details, that will permit a complete evaluation in accordance with the criteria set out in the RFP.
- 1.12 Unless specified otherwise in the RFP, His Majesty will evaluate only the documentation provided with a Bidder's



proposal. His Majesty will not evaluate information such as references to Web site addresses where additional information can be found, or technical manuals or brochures not submitted with the proposal.

1.13 A proposal cannot be assigned or transferred in whole or in part.



Part 2 – Evaluation and Basis of Selection

1.0 Technical Proposal

- 1.1 The evaluation will be based solely on the content of the responses and any correctly submitted amendment. No assumptions should be made that His Majesty has any previous knowledge of the Bidders' qualifications other than that supplied pursuant to this RFP.
- 1.2 The Bidder's technical response **must not** exceed 60 single-sided pages of 8½ "x 11" paper, minimum type face 10 pts., including organizational charts and schedule. Material exceeding the 45-page maximum will **NOT** be considered.

2.0 Phased Bid Compliance Process (PBCP)

2.1 General

- a. His Majesty is conducting the PBCP described below for this requirement.
- b. Notwithstanding any review by His Majesty at Phase I or II of the PBCP, Bidders are and will remain solely responsible for the accuracy, consistency and completeness of their Bids and His Majesty does not undertake, by reason of this review, any obligations or responsibility for identifying any or all errors or omissions in Bids or in responses by a Bidder to any communication from His Majesty.
- The Bidder acknowledges that the reviews in Phase I and II of this PBCP are preliminary and do not preclude a finding in Phase III that the bid is non-responsive, even for mandatory requirements which were subject to review in Phase I or II and notwithstanding that the bid had been found responsive in such earlier phase. His Majesty may deem a bid to be non-responsive to a mandatory requirement at any phase.
- The Bidder also acknowledges that its response to a notice or a Compliance Assessment Report (CAR) (each defined below) in Phase I or II may not be successful in rendering its bid responsive to the mandatory requirements that are the subject of the notice or CAR, and may render its bid non-responsive to other mandatory requirements.
- c. His Majesty may, in its discretion, request and accept at any time from a Bidder and consider as part of the Bid, any information to correct errors or deficiencies in the Bid that are clerical or administrative, such as, without limitation, failure to sign the Bid or any part or to checkmark a box in a form, or other failure of format or form or failure to acknowledge; failure to provide a procurement business number or contact information such as names, addresses and telephone numbers; inadvertent errors in numbers or calculations that do not change the amount the Bidder has specified as the price or of any component thereof that is subject to evaluation. This shall not limit His Majesty's right to request or accept any information after the bid solicitation closing in circumstances where the bid solicitation expressly provides for this right. The Bidder will have the time period specified in writing by His Majesty to provide the necessary documentation. Failure to meet this deadline will result in the Bid being declared non-responsive.
- d. The PBCP does not limit His Majesty's right to request or accept any information during the solicitation period or after bid solicitation closing in circumstances where the bid solicitation expressly provides for this right, or in the circumstances described in subsection c.
- e. His Majesty will send any Notice or CAR by any method His Majesty chooses, in its absolute discretion. The Bidder must submit its response by the method stipulated in the Notice or CAR. Responses are deemed to be received by His Majesty at the date and time they are delivered to His Majesty by the method and at the address specified in the Notice or CAR. An email response permitted by the Notice or CAR is deemed received by His Majesty on the date and time it is received in His Majesty's email inbox at His Majesty's email address specified in the Notice or CAR. A Notice or CAR sent by His Majesty to the Bidder at any address provided by the Bidder in or pursuant to the Bid is deemed received by the Bidder on the date it is sent by His Majesty. His Majesty is not responsible for late receipt by His Majesty of a response, however caused.



2.2 Phase I: Financial Bid

- a. After the closing date and time of this bid solicitation, His Majesty will examine the Bid to determine whether it includes a Financial Bid and whether any Financial Bid includes all information required by the solicitation. His Majesty's review in Phase I will be limited to identifying whether any information that is required under the bid solicitation to be included in the Financial Bid is missing from the Financial Bid. This review will not assess whether the Financial Bid meets any standard or is responsive to all solicitation requirements.
- b. His Majesty's review in Phase I will be performed by officials of the Department of Foreign Affairs, Trade and Development Canada.
- c. If His Majesty determines, in its absolute discretion that there is no Financial Bid or that the Financial Bid is missing all of the information required by the bid solicitation to be included in the Financial Bid, then the Bid will be considered non-responsive and will be given no further consideration.
- d. For Bids other than those described in c., His Majesty will send a written notice to the Bidder ("Notice") identifying where the Financial Bid is missing information. A Bidder, whose Financial Bid has been found responsive to the requirements that are reviewed at Phase I, will not receive a Notice. Such Bidders shall not be entitled to submit any additional information in respect of their Financial Bid.
- e. The Bidders who have been sent a Notice shall have the time period specified in the Notice (the "Remedy Period") to remedy the matters identified in the Notice by providing to His Majesty, in writing, additional information or clarification in response to the Notice. Responses received after the end of the Remedy Period will not be considered by His Majesty, except in circumstances and on terms expressly provided for in the Notice.
- f. In its response to the Notice, the Bidder will be entitled to remedy only that part of its Financial Bid which is identified in the Notice. For instance, where the Notice states that a required line item has been left blank, only the missing information may be added to the Financial Bid, except that, in those instances where the addition of such information will necessarily result in a change to other calculations previously submitted in its Financial Bid, (for example, the calculation to determine a total price), such necessary adjustments shall be identified by the Bidder and only these adjustments shall be made. All submitted information must comply with the requirements of this solicitation.
- g. Any other changes to the Financial Bid submitted by the Bidder will be considered to be new information and will be disregarded. There will be no change permitted to any other Section of the Bidder's Bid. Information submitted in accordance with the requirements of this solicitation in response to the Notice will replace, in full, **only** that part of the original Financial Bid as is permitted above, and will be used for the remainder of the bid evaluation process.
- h. His Majesty will determine whether the Financial Bid is responsive to the requirements reviewed at Phase I, considering such additional information or clarification as may have been provided by the Bidder in accordance with this Section. If the Financial Bid is not found responsive for the requirements reviewed at Phase I to the satisfaction of His Majesty, then the Bid shall be considered non-responsive and will receive no further consideration.
- i. Only Bids found responsive to the requirements reviewed in Phase I to the satisfaction of His Majesty, will receive a Phase II review.

2.3 Phase II: Technical Bid

- a. His Majesty's review at Phase II will be limited to a review of the Technical Bid to identify any instances where the Bidder has failed to meet any Eligible Mandatory Criterion. This review will not assess whether the Technical Bid meets any standard or is responsive to all solicitation requirements. Eligible Mandatory Criteria are all mandatory technical criteria that are identified in this solicitation as being subject to the PBCP. Mandatory technical criteria that are not identified in the solicitation as being subject to the PBCP, will not be evaluated until Phase III.
- b. His Majesty will send a written notice to the Bidder (Compliance Assessment Report or "CAR") identifying any Eligible Mandatory Criteria that the Bid has failed to meet. A Bidder whose Bid has been found responsive to the requirements that are reviewed at Phase II will receive a CAR that states that its Bid has been found responsive to the requirements reviewed at Phase II. Such Bidder shall not be



entitled to submit any response to the CAR.

- c. A Bidder shall have the period specified in the CAR (the “Remedy Period”) to remedy the failure to meet any Eligible Mandatory Criterion identified in the CAR by providing to His Majesty in writing additional or different information or clarification in response to the CAR. Responses received after the end of the Remedy Period will not be considered by His Majesty, except in circumstances and on terms expressly provided for in the CAR.
- d. The Bidder’s response must address only the Eligible Mandatory Criteria listed in the CAR as not having been achieved, and must include only such information as is necessary to achieve such compliance. Any additional information provided by the Bidder which is not necessary to achieve such compliance will not be considered by His Majesty, except that, in those instances where such a response to the Eligible Mandatory Criteria specified in the CAR will necessarily result in a consequential change to other parts of the Bid, the Bidder shall identify such additional changes, provided that its response must not include any change to the Financial Bid.
- e. The Bidder’s response to the CAR should identify in each case the Eligible Mandatory Criterion in the CAR to which it is responding, including identifying in the corresponding section of the original Bid, the wording of the proposed change to that section, and the wording and location in the Bid of any other consequential changes that necessarily result from such change. In respect of any such consequential change, the Bidder must include a rationale explaining why such consequential change is a necessary result of the change proposed to meet the Eligible Mandatory Criterion. It is not up to His Majesty to revise the Bidder’s Bid, and failure of the Bidder to do so in accordance with this subparagraph is at the Bidder’s own risk. All submitted information must comply with the requirements of this solicitation.
- f. Any changes to the Bid submitted by the Bidder other than as permitted in this solicitation, will be considered to be new information and will be disregarded. Information submitted in accordance with the requirements of this solicitation in response to the CAR will replace, in full, **only** that part of the original Bid as is permitted in this Section.
- g. Additional or different information submitted during Phase II permitted by this Section will be considered as included in the Bid, but will be considered by His Majesty in the evaluation of the Bid at Phase II only for the purpose of determining whether the Bid meets the Eligible Mandatory Criteria. It will not be used at any Phase of the evaluation to increase any score that the original Bid would achieve without the benefit of such additional or different information. For instance, an Eligible Mandatory Criterion that requires a mandatory minimum number of points to achieve compliance will be assessed at Phase II to determine whether such mandatory minimum score would be achieved with such additional or different information submitted by the Bidder in response to the CAR. If so, the Bid will be considered responsive in respect of such Eligible Mandatory Criterion, and the additional or different information submitted by the Bidder shall bind the Bidder as part of its Bid, but the Bidder’s original score, which was less than the mandatory minimum for such Eligible Mandatory Criterion, will not change, and it will be that original score that is used to calculate any score for the Bid.
- h. His Majesty will determine whether the Bid is responsive for the requirements reviewed at Phase II, considering such additional or different information or clarification as may have been provided by the Bidder in accordance with this Section. If the Bid is not found responsive for the requirements reviewed at Phase II to the satisfaction of His Majesty, then the Bid shall be considered non-responsive and will receive no further consideration.
- i. Only Bids found responsive to the requirements reviewed in Phase II to the satisfaction of His Majesty, will receive a Phase III evaluation.

2.4 Phase III: Final Evaluation of the Bid

- a. In Phase III, His Majesty will complete the evaluation of all Bids found responsive to the requirements reviewed at Phase II. Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- b. A Bid is non-responsive and will receive no further consideration if it does not meet all mandatory evaluation criteria of the solicitation.



2.5 Technical Evaluation

- a. The Phased Bid Compliance Process will apply to all mandatory technical criteria.

3.0 Mandatory Requirements

Minimum Bidder Experience			
Criteria	Mandatory Requirement	Compliance	Cross-Reference in Proposal (ex: attachment 1, pg.6)
M1	The Bidder responsible for the provision of architectural and engineering services must be capable of providing professional services to the full extent that may be required by the local laws in South Africa.	The Bidder is required to submit a valid copy of their architectural and engineering license(s) and confirm their comprehension of Canadian and South African codes by providing a written statement in their bid.	
M2	The Bidder must have the capacity to fulfill the required works on site in Pretoria, South Africa. Onsite works may be completed through the Bidders' firm, partnerships with local firms wither through a Joint Venture or sub-Contractor arrangement.	The Bidder must initial in the adjacent column confirming they understand onsite works will be taking place in Pretoria, South Africa.	
M3	The Bidder must have a minimum of five (5) years of experience as a Project Architect. The experience provided must have been gained in the past ten (10) years to RFP closing date. The Project Architect's responsibilities must have included the successful design and implementation of projects while coordinating multi-disciplinary team of Sub-Consultants and directly engaged team members from start to finish.	The Bidder must: <ul style="list-style-type: none"> demonstrate the Project Architect was responsible for the coordination of teams of Sub-Consultants and directly engaged team members; and provide a Curriculum Vitae (CV) of the proposed Project Architect must be provided. 	

4.0 Point-Rated Criteria (Total of 50 points)

Points for the Technical Proposal account for 60 percent (60%) of the total score and are allocated to the criteria listed in section 4.1 to 4.2 inclusively.

4.1 Deliverable Schedule (ie: Gantt Chart) (20 points):

Intent: Identify the key milestones in the attached Project Brief and the Bidder's proposed timeline for the project.

Description:

Adequate response consists of a deliverable schedule which chronologically identifies key milestones found in the Project Brief.

Compliance:

The deliverable schedule should include the following criterion:

- An anticipated start and end date of design;
- A logical sequence of key milestones based on the Project Brief;
- A strategy for how requirements in the attached Project Brief will be addressed;
- All associated tasks related to each identified milestone; and
- Reflects anticipated disruptions to the project schedule (ex: statutory holidays, etc.)

For a proposal to receive higher marks, it must clearly identify the length of time each task is anticipated to take from start to completion.



Scoring Chart:

0 points	5 points	10 points	15 points	20 points
The deliverable schedule does not address any aspects of the criterion and the information presented indicates a strong likelihood of failure to meet the requirements outlined in the attached Project Brief.	The deliverable schedule is lacking in specific details and coherence. The approach is rarely logical and often disorganized. There are several major deficiencies with the project schedule. The Bidder may meet the minimum capability to meet minor elements but does not demonstrate the minimum capability to meet all of the major elements of the requirement.	The deliverable schedule provides an acceptable and adequate explanation of how it will meet the Project Brief. The approach is structured and coherent; although most of the major necessary details are provided, there are several minor deficiencies with the project schedule. The Bidder demonstrates the minimum acceptable capability to meet the Project Brief.	The deliverable schedule addresses the majority of the criterion identified in the compliance section. The project schedule is structured and coherent, and most of the necessary details are provided; only minor deficiencies exist. The Bidder demonstrates the capability to adequately meet all elements of the Project Brief. Bidder's response contains only minor identifiable deficiencies.	The deliverable schedule fully addresses all criterion identified in the compliance section. Bidder's response is well-detailed and a specific explanation of how the Project Brief will be met exists. Bidder's response contains no identifiable deficiencies

4.2 Past Project Experience (30 total points)

Intent: Indicate how the examples are comparable to the Project Brief (size, scope, complexity, and other pertinent information).

Description:

The Bidder must submit examples of three (3)* Recently Completed projects in which the Bidder functioned in the role of design architect acting as the Prime Consultant for the entire period of the project. The examples must have been of similar size and scope to the Project Brief provided for this project.

At minimum, each project must demonstrate, experience in the design of embassy buildings or buildings of similar functions, typology, and complexity, such as successfully completed embassies, offices, courthouses, prestigious public buildings, bank headquarters, museums, airports, hospitals or institutional projects of a similar function and scale to the GAC requirements.

Note: The following are not considered of a similar function: residential, hotel, multi-use commercial and retail typology projects including interior renovation projects with engineering emphasis and limited architectural design and planning requirements.

Should Respondents submit more than three (3) projects, only the first three (3) projects listed in sequence will be evaluated.

*Recently Completed is defined as a project that has been constructed to the extent of Substantial Completion or building handover within the last ten (10) years from the RFP closing date.

Compliance:

The Bidder must provide the following information:

- a) Title of project(s);
- b) Client name and contact information;
- c) Project location (city, country);
- d) Brief description of project scope;
- e) Narrative describing how the project is similar in nature to the Work described in the Project Brief;
- f) Final construction cost in Canadian dollars (\$);
- g) Start and completion date (month, year);
- h) Description of services provided by the Bidder; and
- i) Confirmation that the Bidder was Prime Consultant on the project.



Scoring Chart:

Each of the three (3) provided projects is to be scored independently using the chart below.

0 points	4 points	6 points	8 points	10 points
The project provided does not address any aspects of the criterion.	The provided project is lacking in specific details and coherence. The approach is rarely logical and often disorganized. There are several major deficiencies.	The provided project provides an acceptable and adequate explanation of how it will meet the Project Brief.	The provided project addresses the majority of the criterion identified in the compliance section. The provided project is structured and coherent, and most of the necessary details are provided; only minor deficiencies exist.	The provided project fully addresses all criterion identified in the compliance section. Bidder's response is well-detailed.

5.0 Tender Form

5.1 All the information required in section 5.0 must appear on Part 3 – Tender Form ONLY and must be included in a separate attachment named “Tender Form”. Failure to comply may result in the proposal being declared non-compliant and rejected from further consideration.

5.2 Firm Price

- 5.2.1 Bidders shall quote an all-inclusive firm price (excluding the cost of The Minister’s services and equipment\ furniture) on the form attached as Part 3 – Tender Form. The firm price must include, but not necessarily be limited to, all costs resulting from the performance of the Work as described in this RFP, all costs resulting from the performance of any additional Work described in the Bidder’s Proposal (unless clearly described as an option), all travel, living costs and all overhead costs including disbursements;
- 5.2.2 Bidders shall estimate the value of the taxes (including VAT as per 5.3) expected to be payable by His Majesty as a result of entering into a contract with the Bidder;
- 5.2.3 All payments shall be made according to the terms of payment set out in the attached draft contract;
- 5.2.4 Exchange rate fluctuation protection is not offered; and
- 5.2.5 Tender Forms not meeting the above requirements will not be given any further consideration.

5.2 Taxes & Duties

- 5.3.1 Bidders are to provide full details concerning the applicability, amount and administration of the payment of all taxes (including VAT as described below) and duties (including import duties) payable in respect of the Work, as well as any possible exemption from all or part of same.
- 5.3.2 His Majesty will pay the VAT specified in the Tender Form provided:
 - 5.3.2.1 that amount is applicable to the Work provided by the Contractor to His Majesty under the Contract. His Majesty will not be responsible for the payment of any VAT payable by the Bidder to any third party (including Subcontractors);
 - 5.3.2.2 His Majesty is unable to procure an exemption from VAT in respect of the Work;
 - 5.3.2.3 the Bidder agrees to render every reasonable assistance to His Majesty in obtaining reimbursement of all VAT paid in respect of the Work from the appropriate Government Agency;
 - 5.3.2.4 the VAT is shown separately on all of the Bidder’s invoices and progress claims; and
 - 5.3.2.5 the Bidder agrees to remit to the appropriate Government Agency any amounts of VAT legally required to be remitted by the Bidder pursuant to applicable tax laws.

5.3 Price Breakdown

His Majesty reserves the right to request a breakdown of the components of the Tender Form should it believe that the price is unreasonable. Failure to provide an adequate breakdown, describing the rationale and assumptions used to determine the cost of each component of the Work, may lead to disqualification.

6.0 Basis of Selection



- 6.1 To be declared responsive, a bid must:
 - a) comply with all the requirements of the bid solicitation; and
 - b) meet all mandatory criteria; and
 - c) obtain the required minimum of 40 points overall for the technical evaluation criteria which are subject to point rating.
- 6.2 Bids not meeting a) or b) or c) will be declared non-responsive.
- 6.3 The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 40% (insert the percentage for technical merit) for the technical merit and 60% (insert the percentage for price) for the price.
- 6.4 To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 60%.
- 6.5 To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 40%.
- 6.6 For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
- 6.7 Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)

		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	115/135 x 60 = 51.11	89/135 x 60 = 39.56	92/135 x 60 = 40.89
	Pricing Score	45/55 x 40 = 32.73	45/50 x 40 = 36.00	45/45 x 40 = 40.00
Combined Rating		83.84	75.56	80.89
Overall Rating		1st	3rd	2nd

7.0 Ineligibility and Suspension Policy

- 7.1 The *Ineligibility and Suspension Policy* (the “Policy”) in effect on the date the bid solicitation is issued, and all related Directives in effect on that date, are incorporated by reference into, and form a binding part of the bid solicitation. The Bidder must comply with the Policy and Directives, which can be found at [Ineligibility and Suspension Policy \(https://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html\)](https://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html).
- 7.2 Under the Policy, charges and convictions of certain offences against a Supplier, its affiliates or first tier sub-consultants, and other circumstances, will or may result in a determination by Public Works and Government Services Canada (PWGSC) that the Supplier is ineligible to enter, or is suspended from entering into a contract with Canada. The list of ineligible and suspended Suppliers is contained in PWGSC’s Integrity Database. The Policy describes how enquiries can be made regarding the ineligibility or suspension of Suppliers.
- 7.3 In addition to all other information required in the bid solicitation, the Bidder must provide the following:
 - a. by the time stated in the Policy, all information required by the Policy described under the heading “Information to be Provided when Bidding, Contracting or Entering into a Real Property Agreement”; and
 - b. with its bid, a complete list of all foreign criminal charges and convictions pertaining to itself, its affiliates and its proposed first tier sub-consultants that, to the best of its knowledge and belief, may be similar to one of the listed offences in the Policy. The list of foreign criminal charges and convictions must be



submitted using an Integrity Declaration Form, which can be found at [Declaration form for procurement \(https://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html\)](https://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html).

- 7.4** Subject to subsection 7.5, by submitting a bid in response to this bid solicitation, the Bidder certifies that:
- a. it has read and understands the [Ineligibility and Suspension Policy \(https://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html\)](https://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html);
 - b. it understands that certain domestic and foreign criminal charges and convictions, and other circumstances, as described in the Policy, will or may result in a determination of ineligibility or suspension under the Policy;
 - c. it is aware that Canada may request additional information, certifications, and validations from the Bidder or a third party for purposes of making a determination of ineligibility or suspension;
 - d. it has provided with its bid a complete list of all foreign criminal charges and convictions pertaining to itself, its affiliates and its proposed first tier sub-consultants that, to the best of its knowledge and belief, may be similar to one of the listed offences in the Policy;
 - e. none of the domestic criminal offences, and other circumstances, described in the Policy that will or may result in a determination of ineligibility or suspension, apply to it, its affiliates and its proposed first tier sub-consultants; and
 - f. it is not aware of a determination of ineligibility or suspension issued by PWGSC that applies to it.
- 7.5** Where a Bidder is unable to provide any of the certifications required by subsection 7.4, it must submit with its bid a completed Integrity Declaration Form, which can be found at [Declaration form for procurement \(https://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html\)](https://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html).
- 7.6** Canada will declare non-responsive any bid in respect of which the information requested is incomplete or inaccurate, or in respect of which the information contained in a certification or declaration is found by Canada to be false or misleading in any respect. If Canada establishes after award of the Contract that the Bidder provided a false or misleading certification or declaration, Canada may terminate the Contract for default. Pursuant to the Policy, Canada may also determine the Bidder to be ineligible for award of a contract for providing a false or misleading certification or declaration.



Part 3 – Tender Form

Name of Firm: _____

Address: _____

Contact Person: _____

Phone number: _____

Email: _____

TF1 Firm Price

Firm Price (exclusive of applicable taxes): _____
(In accordance with 5.2)

Firm Price Optional Services (exclusive of applicable taxes): _____
(In accordance with 5.2)

Applicable taxes: _____
(In accordance with 5.3)

Total Price (Firm Price + Applicable Taxes): _____

All amounts are in Canadian dollars (CAD).



TF2 Acceptance and Entry into Contract

I/We undertake, within fourteen (14) calendar days of receipt of notification of acceptance of my/our bid, to sign a contract contained in the RFP incorporating all the relative elements of this project, for the performance of the Work provided I/We are notified, by His Majesty, of the acceptance of my/our bid within ninety (90) days of the tender closing date.

TF3 Integrity Declaration

I/We herewith enclose integrity certification in accordance with article 7.3 b) or 7.5 and/or list of owners or board of directors.

TF4 Insurance

Within fourteen (14) calendar days after receipt of written notification of acceptance of my/our bid, I/We will furnish insurance certificate in accordance with item 10 respectively of the draft A&E Contract.

SIGNED, ATTESTED TO AND DELIVERED on the _____ day of _____ on behalf of:

Print the legal name of the Bidder

Signature of authorized signatory

Signature of authorized signatory

Print name(s) & titles of authorized signatory

Print name(s) & titles of authorized signatory

Signature of Witness



Part 4 – General Instructions

GI1 Responsiveness

- 1.1 For a proposal to be considered valid, it must comply with all the requirements of this RFP identified as mandatory. Mandatory criteria are also expressed by using imperative verbs such as "shall", "must" and "will".

GI2 Enquiries - Solicitation Stage

- 2.1 All enquiries or issues concerning this RFP must be submitted in writing to the Contract Advisor as early as possible within the solicitation period. Enquiries and issues must be received within the timeframe described in article A10 to allow sufficient time to provide a response. Enquiries received after that time will not be answered prior to the Closing Date.
- 2.2 To ensure consistency and quality of information provided to Bidders, the Contract Advisor will give notice, in the same manner as this RFP, of any additional information in response to significant enquiries received without revealing the sources of the enquiries.
- 2.3 All enquiries and other communications with government officials throughout the solicitation period shall be directed ONLY to the Contract Advisor named herein. Non-compliance with this condition during the solicitation period may (for that reason alone) result in the disqualification of your proposal.

GI3 Bidder's Suggested Improvements During Solicitation Period

- 3.1 Should any Bidder consider that the specifications or Statement of Work contained in this RFP can be improved technically or technologically, the Bidder is invited to make suggestions, in writing, to the Contract Advisor named herein. The Bidder must clearly outline the suggested improvements as well as the reason for the suggestion. Suggestions which do not restrict the level of competition nor favour a particular Bidder will be given consideration provided they are received by the Contract Advisor within the timeframe described in A10 to allow sufficient time to provide a response. His Majesty reserves the right to accept or reject any or all suggestions.

GI4 Proposal Preparation Cost

- 4.1 The costs, including travel incurred by the Bidder in the preparation of its proposal and/or the negotiation (if applicable) of any resulting contract will be the sole responsibility of the Bidder and will not be reimbursed by His Majesty.

GI5 Proposal Delivery

- 5.1 Proposals and/or amendments thereto, will only be accepted by the Minister if they are received at the address indicated in A7, on or before the Closing Date and Time specified in A7.
- 5.2 Responsibility for proposal delivery: The Bidder has sole responsibility for the timely receipt of a proposal by His Majesty and cannot transfer this responsibility to the Government of Canada. His Majesty will not assume responsibility for proposals that are directed to an email address other than the one stipulated in A7.

GI6 Validity of Proposal

- 6.1 Any proposal must remain open for acceptance for a period of not less than ninety (90) calendar days after the Closing Date.

GI7 Rights of Canada

- 7.1 His Majesty reserves the right:
- 7.1.1 during the evaluation, to submit questions to or conduct interviews with Bidders, at Bidders' cost, upon forty eight (48) hours written notice, to seek clarification or to verify any or all information provided by the Bidder with respect to this RFP;
 - 7.1.2 to reject all proposals received in response to this RFP if it/they fail to meet the objectives of the requirement within the boundaries imposed by His Majesty's different stakeholders;
 - 7.1.3 to accept any proposal in whole or in part without prior negotiation;
 - 7.1.4 to cancel and/or re-issue this RFP at any time;
 - 7.1.5 to award one or more contracts, if applicable;
 - 7.1.6 to retain all proposals submitted in response to this RFP;
 - 7.1.7 not to accept any deviations from the stated terms and conditions;
 - 7.1.8 to incorporate all, or any portion of the Statement of Work, Request for Proposals and the successful proposal in any resulting contract; and



7.1.9 not to contract at all.

GI8 Incapacity to Contract with Government

8.1 Canada may reject a proposal where the Bidder, including the Bidder's officers, agents and employees, has been convicted of an offence under the following provisions of the *Criminal Code*:

8.1.1 Section 121, Frauds upon the Government;

8.1.2 Section 124, Selling or Purchasing Office; or

8.1.3 Section 418, Selling Defective Stores to His Majesty.

(Subsection 750 (3) of the *Criminal Code* prohibits anyone who has been so convicted from holding public office, contracting with the government or benefiting from a government contract.)

8.2 Where Canada intends to reject a proposal pursuant to a provision of paragraph 8.1, the Contract Advisor will so inform the Bidder and provide the Bidder ten (10) calendar days within which to make representations, prior to making a final decision on the proposal rejection.

GI9 Incurring of Cost

9.1 No costs incurred before receipt of a signed Contract or specified written authorization from the Contract Advisor can be charged to any resulting Contract. In addition, the Contractor is not to perform Work in excess of or outside the scope of any resulting Contract based on verbal or written requests or instructions from any government personnel other than the Contract Advisor. The Bidder's attention is drawn to the fact that the Contract Advisor is the only authority which can commit His Majesty to the expenditure of the funds for this requirement.

GI10 Property of His Majesty

10.1 All correspondence, documents and information provided to the Minister by any Bidder in connection with this RFP will become the property of His Majesty and may be released pursuant to the *Canadian Federal Access to Information Act* and the *Privacy Act*.

GI11 Rights of Unsuccessful Bidders

11.1 Bidders are reminded that all materials submitted by them in either paper or electronic form, including architectural and engineering design drawings, specifications, photographs, etc. shall, upon opening of the proposal by Canadian officials become the property of the Canadian government. In consequence, they will not be returned to the unsuccessful Bidders of this tender competition. The keeping of such information by Canada is necessary to ensure that, in the event of a future internal audit of the tender process, or in the event of a challenge by one of the unsuccessful Bidders to this tender process, all the documents submitted by competing Bidders are available and not tampered with. Nevertheless, complete copyright in those materials will of course remain with the copyright owners of the materials submitted; Canada assures Bidders that it will at no time use those materials for any commercial purposes without the written consent of the authors.

GI12 Price Support

12.1 In the event that the Bidder's bid is the sole responsive proposal received, the Bidder must provide, on the Minister's request, one or more of the following price support if applicable:

12.1.1 a current published price list indicating the percentage discount available to the Minister;

12.1.2 copies of paid invoices for like services performed for other customers or for like items (same quantity and quality) sold to other customers;

12.1.3 a price breakdown showing the cost of direct labour, direct materials, purchased items, engineering and plant overheads, general and administrative overhead, transportation, etc., profit;

12.1.4 price or rate certification; and

12.1.5 any other supporting documentation as requested by the Minister.

GI13 Bidders Not to Promote Their Interest in This Project

13.1 Bidders must not make any public comment, respond to questions in a public forum or carry out any activities to publicly promote or advertise their interest in this project, except for their response to His Majesty pursuant to this RFP.

GI14 Acceptance of Bids

14.1 Bidders must meet and adhere to the architectural and design standards contained in the bid documentation.



14.2 Bidders must submit a list of sub-contractors on TF2 they propose to use on the Works. The successful Bidder shall not be allowed any subsequent substitution of the submitted list of sub-contractors, unless authorized, in advance in writing by His Majesty.

GI15 Signatures

15.1 The following requirements are to be adhered to when signing the Tender Form:

15.1.1 Corporation

The signatures of the authorized signatories shall be affixed and their names and titles typed or printed.

15.1.2 Partnership

The signatures of the partners shall be affixed and their names typed or printed. If not all of the partners sign or if the signatory is not a partner then a certified true copy of the agreement signed by all partners authorizing such person or persons to execute the document on their behalf shall accompany the bid.

15.1.3 Sole Proprietorship

The signature of the sole proprietor shall be affixed and the name typed or printed. In the event that the signatory is not the sole proprietor then a certified true copy of the agreement signed by the sole proprietor authorizing such person or persons to execute the document shall accompany the bid.

15.1.4 Joint Venture

The signatures of the authorized signatories of each member of the joint venture shall be affixed and their names and titles typed or printed. Each of the participating signatories shall sign the document in the manner applicable to their particular business arrangement which is more particularly described in 15.1.1 to 15.1.3 above.

GI16 Return of Documents

16.1 Unsuccessful Bidders must, if requested by the Contract Advisor, return all bid documents (e.g. Working Drawings, Specifications and Bills of Quantities) intact and in good condition within fourteen (14) calendar days of notification. Any copies of the Working Drawings, Specifications and Bill of Quantities are to be returned along with the original bid documents.

GI17 Interpretation

17.1 In this RFP, “His Majesty”, “the Minister” or “Canada” means His Majesty the King in right of Canada, as represented by the Minister of Foreign Affairs.

GI18 Approval of Alternative Material

- 18.1** The proposal must be based on using materials specified by trade or manufacturer’s names where specified in the tender documentation.
- 18.2** Alternatives to materials and equipment specified by trade or manufacturer’s names will be considered during the bid period if full descriptive data on proposed alternatives is submitted in writing to the Contract Advisor as specified in A10. Enquiries.
- 18.3** The Contract Advisor must approve any alternative material in writing. Approved alternatives will be incorporated in the specification by issuance of addenda to the tender documents.

GI19 Bid Security

Not applicable.



Purchasing Office – Bureau des Achats

Department of Foreign Affairs, Trade and Development

125 Sussex Drive
Ottawa Ontario
K1A 0G2
Canada

You are requested to sell to His Majesty the King, in right of Canada, in accordance with the terms and conditions set out herein, referred to herein and attached hereto, the goods and/or services listed herein and on any attached sheets at the price(s) set out therefor.

DRAFT CONTRACT

Architectural and Engineering Services Contract

Name and address of Consultant

(Information to be provided at contract award)

Title HVAC and Electrical Upgrade at the Embassy of Canada to South Africa, in Pretoria	
Contract No.	Project No. F-PRET-100
Destination of Goods and/or Services: See herein	
Invoices to be sent to: See herein	
Departmental Representative: See herein	
Telephone No.: See herein	
Email Address: See herein	
Total Estimated Cost (Applicable taxes incl.)	Currency CAD
Signed for the Minister _____ Signature _____ Date (yyyy-mm-dd)/(aaaa-mm-jj) _____ Name/Nom	
Signed for the Consultant _____ Signature _____ Date (yyyy-mm-dd)/(aaaa-mm-jj) _____ Name/Nom	



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1. Definitions

In the Contract, unless the context otherwise requires:

"Applicable Tax" means any tax applicable in the jurisdiction of the Work;

"Bid" is an offer to provide services or supply goods as a result of a solicitation, it also means "Proposal", and the terms can be used interchangeably in this document;

"Bidder" means the person or entity (or, in the case of a joint venture, the persons or entities) submitting a proposal to perform a contract for goods, services or both. It does not include the parent, subsidiaries or other affiliates of the Bidder, or its sub Consultants;

"Canada", "Crown, "His Majesty", the "Minister" or the "Government" means His Majesty the King in right of Canada as represented by the Minister of Foreign Affairs and any other person duly authorized to act on behalf of that minister;

"Departmental Representative" means the person designated to act as Canada's agent and representative for the purposes of this Contract;

"Contract" means the Articles of Agreement, these general conditions, any supplemental general conditions, annexes and any other document specified or referred to as forming part of the Contract, all as amended by agreement of the Parties from time to time;

"Consultant" means the person, entity or entities named in the Contract to supply goods, services or both to Canada;

"Contract Price" means the amount stated in the Contract to be payable to the Consultant for the Work, exclusive of Applicable Taxes;

"Days" means continuous calendar days, including weekends and statutory holidays;

"Government Property" means anything supplied to the Consultant by or on behalf of Canada for the purposes of performing the Contract and anything acquired by the Consultant in any manner in connection with the Work, the cost of which is paid by Canada under the Contract;

"Party" means Canada, the Consultant, or any other signatory to the Contract and "Parties" means all of them;

"Signature" means either signed on paper, whether the original or an electronic copy of the signed paper is sent to the Consultant; and

"Work" means all the activities, services, goods, equipment, matters and things required to be done, delivered or performed by the Consultant under the Contract.

2. Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex "A"

2.1 Optional Services

The Contractor grants to Canada the irrevocable option to acquire the services described at Annex A – Project Brief, Sections 1.9.1 and 10.14.1 of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contract Advisor and will be evidenced, for administrative purposes only, through a contract amendment.

The Contract Advisor may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor.

3. Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the Standard Acquisition Clauses and Conditions Manual (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.



3.1 General Conditions

2035 (2022-12-01), *General Conditions - Higher Complexity - Services*, apply to and form part of the Contract.

2035 41 (2016-04-04) *Integrity provisions—contract*

R1225D (2015-04-01), *General Condition (GC) 4 - Intellectual Property*, apply to and form part of the Contract.

4. Security Requirements

4.1 The Consultant and/or all other personnel involved in the Work must be properly supervised on the premises of the Mission, Official Residence or Staff quarter. No access to the restricted zones of the Mission will be permitted.

5. Term of Contract

5.1 Period of the Contract

The period of the Contract is from date of Contract award to *(To be provided at contract award)* inclusive.

6. Authorities and Communication

6.1 Departmental Representative

The Departmental Representative for this Contract is:

(Information to be provided at contract award)

Name:

Title:

Department of Foreign Affairs, Trade and Development

Address: 125 Sussex Drive Ottawa Ontario K1A 0G2

Telephone:

E-mail address:

The Departmental Representative is responsible for the management of the Contract, and any changes to the Contract must be authorized in writing by the Departmental Representative. The Consultant must not perform Work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than Departmental Representative.

6.2 Communication and Notices

Any notice under the Contract must be in writing and may be delivered by hand, courier, mail, or e-mail. It must be sent to the Party for whom it is intended at the address stated in the Contract. Any notice will only be effective on the day it is received at that address. Any notice to Canada must be delivered to Departmental Representative.

6.3 Management of the Contract

Subject to the other provisions of this Article, Departmental Representative is responsible for the management of the Contract. Unless otherwise specified, no notice, instruction, authorization, refusal or other communication provided by Canada is valid under this Contract unless it is provided to the Consultant by Departmental Representative. Likewise, no notice, instruction, authorization, refusal or other communication to Canada made by the Consultant or on its behalf is valid unless it is made to Departmental Representative. The Consultant must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anyone other than Departmental Representative.

6.3.1 Consultant's Representative

The Consultant's Representative is:



(Information to be provided at contract award)

Name:
Title:
Company:
Address:
Telephone:
E-mail address:

The Consultant reserves the right to replace the above-designated Consultant's Representative by sending a notice in writing to Departmental Representative to that effect.

6.3.2 Amendment

To be effective, any amendment to the Contract must be done in writing and signed by Departmental Representative and the Consultant's Representative.

6.3.3 Assignment

The Consultant must not assign the Contract without first obtaining Canada's written consent. Any assignment made without that consent is void and will have no effect. The assignment will be effective upon execution of an assignment agreement signed by the Parties and the assignee. Assignment of the Contract does not relieve the Consultant from any obligation under the Contract and it does not impose any liability upon Canada.

7. Payment Terms

7.1 Basis of Payment

Canada will pay the Consultant in accordance to the Basis of Payment included as Annex B. Payment under this Contract, except advance payments, will be conditional on the performance, completion and delivery of the Work, or any part of the Work to the satisfaction of Canada.

7.2 Basis of Payment - Firm Price - Services

Professional Fees

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price of \$ *(Information to be provided at contract award)*. Customs duties are excluded, and Applicable Taxes are extra.

Travel and Living Expenses

The Contractor will be reimbursed for the authorized travel and living expenses reasonably and properly incurred in the performance of the Work, at cost, without any allowance for overhead or profit, in accordance with the meal and private vehicle allowances specified in Appendices B, C and D of the [National Joint Council Travel Directive](#), and with the other provisions of the directive referring to "travellers", rather than those referring to "employees". Canada will not pay the Contractor any incidental expense allowance for authorized travel.

All travel must have the prior authorization of the Departmental Representative. All payments are subject to government audit.

Estimated Cost: \$ *(Information to be provided at contract award)*

Option to Extend the Contract

During the extended period of the Contract, the Contractor will be paid the firm price of \$ *(Information to be provided at contract award)* to perform all the Work in relation to the contract extension.

7.3 Method of Payment – Monthly Payments

Canada will pay the Consultant on a monthly basis for work performed during the month covered by the invoice in accordance with the payment provisions of the Contract if:



- (a) an accurate and complete invoice and any other documents required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- (b) all such documents have been verified by Canada;
- (c) the Work performed has been accepted by Canada.

7.4 Audit

Any amount paid or claimed under the Contract is subject to government audit both before and after payment is made. The Consultant must keep proper accounts and records of the cost of performing the Work and keep all documents relating to such cost for 6 years after it receives the final payment under the Contract.

7.5 Invoicing Instructions

The Consultant must ensure that each invoice it provides to Canada

- (a) is submitted in the Consultant's name;
- (b) is submitted each month do so for each delivery or shipment;
- (c) only applies to the Contract;
- (d) shows the date, the name and address of the Departmental Representative, the description of the Work and the Contract number;
- (e) details the claimed fees and disbursements, if applicable, in accordance with the Basis of Payment, exclusive of Applicable Taxes;
- (f) sets out Applicable Taxes, such as the Consultant's output VAT, as a separate item along with corresponding registration numbers from the tax authorities;
- (g) identifies all items that are zero-rated, exempt from Applicable Taxes or to which it does not apply.

7.5.1 By submitting an invoice, the Consultant certifies in each case that the invoice is consistent with the Work delivered and is in accordance with the Contract.

7.6 Discrepancies

If the contents of the invoice and its substantiating documentation are not in accordance with the Contract or the Work is not in acceptable condition, Canada will notify the Consultant within 15 Days of the invoice receipt. The 30-Day payment period begins upon receipt of the revised invoice or the replacement or corrected Work. Failure by Canada to notify the Consultant within 15 Days will only result in the date specified in subsection 16 of 2035 (2022-12-01 *General Conditions - Higher Complexity - Services*, to apply for the sole purpose of calculating interest on overdue accounts.

7.7 Termination Payments

If a termination for convenience notice is given pursuant to section 30 of 2035 (2022-12-01) *General Conditions - Higher Complexity - Services*, the Consultant will be entitled, in accordance with the Basis of Payment (Annex B), to be paid only the amounts that have been reasonably and properly incurred to perform the Contract to the extent that the Consultant has not already been paid or reimbursed by Canada. Under no circumstance will Canada be liable to the Consultant for early termination of this Contract.

7.8 Remittance to Appropriate Tax Authority

The Consultant agrees to remit to the appropriate government tax authority any amount of applicable tax legally required to be remitted by the Consultant, pursuant to applicable tax laws.

8. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the Province of Ontario, Canada.

9. Entire Agreement

The Contract constitutes the entire and only agreement between the Parties and supersedes all previous negotiations, communications and other agreements, whether written or oral, unless they are



incorporated by reference in the Contract. There are no terms, covenants, representations, statements or conditions binding on the Parties other than those contained in the Contract.

10. Number and Gender

In these Articles of Agreement, the singular includes the plural and vice versa, and words importing the masculine gender include the feminine gender and the neuter, and vice versa.

10.1 Powers of Canada / State Immunity

All rights, remedies, powers and discretions granted or acquired by Canada under the Contract or by law are cumulative, not exclusive. Notwithstanding anything in this Contract, Canada does not waive any right or immunity that it has or may have by virtue of international or domestic law.

10.2 Time of the Essence

Time is of the essence. The Consultant must provide in a timely manner all components of the Work.

10.2.1 Excusable Delay

10.2.1.1 A delay in the performance by the Consultant of any obligation under the Contract that is caused by an event that:

- is beyond the reasonable control of the Consultant;
- could not reasonably have been foreseen;
- could not reasonably have been prevented by means reasonably available to the Consultant;
- occurred without the fault or neglect of the Consultant;

will be considered an "Excusable Delay" if the Consultant advises Departmental Representative of the occurrence of the delay or of the likelihood of the delay as soon as the Consultant becomes aware of it. The Consultant must also advise Departmental Representative, within fifteen (15) working days, of all the circumstances relating to the delay and provide to Departmental Representative for approval a clear work around plan explaining in detail the steps that the Consultant proposes to take in order to minimize the impact of the event causing the delay.

10.2.1.2 Any delivery date or other date that is directly affected by an Excusable Delay will be postponed for a reasonable time that will not exceed the duration of the Excusable Delay.

10.2.1.3 However, if an Excusable Delay has continued for 30 Days or more, Departmental Representative may, by giving notice in writing to the Consultant, terminate the Contract. In such a case, the Parties agree that neither will make any claim against the other for damages, costs, expected profits or any other loss arising out of the termination or the event that contributed to the Excusable Delay. The Consultant agrees to repay immediately to Canada the portion of any advance payment that is unliquidated at the date of the termination.

10.2.1.4 Unless Canada has caused the delay by failing to meet an obligation under the Contract, Canada will not be responsible for any costs incurred by the Consultant or any of its subConsultants or agents as a result of an Excusable Delay.

10.3 Severability

If any provision of the Contract is declared by a court of competent jurisdiction to be invalid, illegal or unenforceable, that provision will be removed from the Contract without affecting any other provision of the Contract.

10.4 Successors and Assigns

The Contract is to the benefit of and binds the successors and permitted assignees of Canada and of the Consultant.

10.5 Survival

All the Parties' obligations of confidentiality and representations set out in the Contract as well as the provisions, which by the nature of the rights or obligations might reasonably be expected to survive, will



survive the expiry or termination of the Contract.

10.6 Performance of the Work

10.6.1 Independent Consultant

The Consultant is an independent Consultant engaged by Canada to perform the Work. Nothing in the Contract is intended to create a partnership, a joint venture or an agency between Canada and the other Party or Parties. The Consultant must not represent itself as an agent or representative of Canada to anyone. Neither the Consultant nor any of its personnel is engaged as an employee or agent of Canada. The Consultant is responsible for all deductions and remittances required by law in relation to its employees.

10.6.2 Conduct

The Consultant must:

- (a) perform the Work diligently and efficiently;
- (b) perform the Work with honesty and integrity;
- (c) except for Government Property, supply everything necessary to perform the Work;
- (d) select and employ a sufficient number of qualified persons;
- (e) perform the Work in accordance with standards of quality acceptable to Canada and in full conformity with the specifications and all the requirements of the Contract; and,
- (f) provide effective and efficient supervision to ensure that the quality of workmanship meets the requirements of the Contract.

10.6.3 Assigned Individuals

If specific individuals are identified in Annex A to perform the Work:

- (a) the Consultant must provide the services of those individuals unless the Consultant is unable to do so for reasons beyond its control;
- (b) the Consultant must obtain Canada's written approval, through Departmental Representative, before replacing, removing or adding an individual to the approved team, and, more specifically, before any services are rendered by such individual; and
- (c) the Consultant must not, in any event, allow performance of the Work by unauthorized replacement individuals.

10.6.4 Resources

Canada reserves the right to conduct periodic background checks on personnel employed or subcontracted by the Consultant.

Canada reserves the right, in its sole discretion, to decide that personnel employed or subcontracted by the Consultant are unsuitable. In such circumstances, the Consultant shall ensure that personnel are removed from property and replaced with personnel suitable to Canada.

10.6.5 Replacements

Canada may order that a replacement individual stops performing the Work. In this case, the Consultant must immediately comply with the order and secure a further replacement in accordance with section *Assigned Individuals*. The fact that Canada does not order that a replacement stop performing the Work does not relieve the Consultant from its responsibility to meet the requirements of the Contract.

10.6.6 Compliance with Local Law

In the performance of Services under this Contract, the Consultant will comply with all applicable provisions of the laws in force in Ontario.

10.6.7 Inspection and Acceptance

All the Work is subject to inspection and acceptance by Canada. Inspection and acceptance of the Work by Canada do not relieve the Consultant of its responsibility for defects or other failures to meet the requirements of the Contract. Canada will have the right to reject any work that is not in accordance with



the requirements of the Contract and require its correction or replacement at the Consultant's expense.

10.6.8 Green Procurement

10.6.8.1 The Consultant should make every effort to ensure that all documents prepared or delivered under this contract are printed double-sided on Ecologo certified recycled paper or on paper with equivalent post-consumer recycled content, to the extent it is procurable.

10.6.8.2 The Consultant should make every effort to use environmentally preferred goods, services and processes, as required, to reduce any environmental impacts resulting from the performance of the Work. Environmentally preferable goods and services are those that have a lesser or reduced impact on the environment over the life cycle of the good or service, when compared with competing goods or services serving the same purpose. Environmental performance considerations include, among other things: the reduction of greenhouse gas emissions and air contaminants; improved energy and water efficiency; reduced waste and support reuse and recycling; the use of renewable resources; reduced hazardous waste; and reduced toxic and hazardous substances.

10.7 Health and Safety

The Consultant must comply with all requirements of applicable Canadian (federal, provincial, municipal), foreign and local environmental, health and safety laws and regulations. The Consultant must follow the prevention and infection control measures of the workplace or put in place by the Canadian mission (i.e. practise physical distancing, practise proper hand washing, avoid touching face with unwashed hands, etc.) and follow the proper protocols to complete the required work such as utilizing the appropriate equipment and personal protective equipment (PPE) as necessary. The Consultant is responsible for all costs associated with the compliance to protective measures and any other costs related to the general health and safety of its employees and agents.

10.8 Suspension and Infraction

10.8.1 Suspension of the Work

Canada may at any time, by written notice, order the Consultant to suspend or stop the Work or part of the Work under the Contract. The Consultant must immediately comply with any such order in a way that minimizes the cost of doing so.

10.8.2 Infraction

Canada may terminate this Contract or reduce or suspend any payments under it if the Consultant fails to honour the provisions in the section titled *Governance and Ethics*.

11. Insurance Terms

The Consultant shall obtain and maintain an appropriate level of professional liability insurance coverage (including but not limited to coverage for design errors and omissions) for the Services required under this Contract and shall furnish satisfactory evidence of such insurance and renewals to the Departmental Representative within fourteen (14) days of execution of this Contract.

The policy shall be issued with a deductible amount of not more than \$2,500.

Unless otherwise directed in writing by the Departmental Representative, the policy required shall attach from the date of contract award and shall be maintained until the one (1) year following the issuance of the Final Certificate of Completion.

The costs associated with any insurance coverage required under this Contract shall be part of the quoted price.

12. Governance and Ethics

12.1.1 Conflict of Interest and Values and Ethics Codes for the Public Service

The Consultant acknowledges that individuals who are subject to the provisions of the Conflict of Interest Act (S.C. 2006, c. 9, s. 2), the Conflict of Interest Code for Members of the House of Commons, the



Values and Ethics Code for the Public Service, Code of Conduct for Canadian Representatives Abroad or all other codes of values and ethics applicable within specific organizations cannot derive any direct benefit resulting from the Contract. The Consultant will notify Canada in writing of any situation, of which the Consultant is or becomes aware, in which one of the Consultant's agents, employees or Consultants derives, or is in a position to derive, an unauthorized benefit.

12.1.2 Incapacity to Contract with the Government

The Consultant certifies that no one convicted under any of the provisions under subsection (a) or (b) are to receive any benefit under the Contract. In addition, the Consultant certifies that except for those offences where a criminal pardon or a record suspension has been obtained or capacities restored by the Governor in Council, neither the Consultant nor any of the Consultant's affiliates has ever been convicted of an offence under any of the following provisions:

- (a) paragraph 80(1)(d) (False entry, certificate or return), subsection 80(2) (Fraud against His Majesty) or section 154.01 (Fraud against His Majesty) of the Canadian Financial Administration Act (R.S.C. 1985, c. F-11); or
- (b) section 121 (Frauds on the government and Consultant subscribing to election fund), section 124 (Selling or Purchasing Office), section 380 (Fraud) for fraud committed against His Majesty or section 418 (Selling defective stores to His Majesty) of the Criminal Code of Canada (R.S.C. 1985, c. C-46); or
- (c) section 462.31 (Laundering proceeds of crime) or sections 467.11 to 467.13 (Participation in activities of criminal organization) of the Criminal Code of Canada (R.S.C. 1985, c. C-46); or
- (d) section 45 (Conspiracies, agreements or arrangements between competitors), 46 (Foreign directives) 47 (Bid-rigging), 49 (Agreements or arrangements of federal financial institutions), 52 (False or misleading representation), 53 (Deceptive notice of winning a prize) under the Canadian Competition Act (R.S.C. 1985, c. C-34); or
- (e) section 239 (False or deceptive statements) of the Canadian Income Tax Act (R.S.C., 1985, c. 1 (5th Supp.)); or
- (f) section 327 (False or deceptive statements) of the Canadian Excise Tax Act, (R.S.C., 1985, c. E-15); or
- (g) section 3 (Bribing a foreign public official) of the Canadian Corruption of Foreign Public Officials Act (S.C. 1998, c. 34); or
- (h) section 5 (Trafficking in substance), section 6 (Importing and exporting), or section 7 (Production of substance) of the Canadian Controlled Drugs and Substance Act (S.C. 1996, c. 19); or
- (i) any provision under the local law having a similar effect to the above-listed provisions.

12.1.3 Anti-Terrorism

Consistent with numerous United Nations Security Council resolutions, including S/RES/1267 (1999) concerning Al Qaida and the Taliban, and associated individuals and entities, both Canada and the Consultant are firmly committed to the international fight against terrorism, and in particular, against the financing of terrorism. The Consultant acknowledges that neither it, nor any of its employees, Directors, or agents is an entity listed, in relation to terrorists groups and those who support them, under subsection 83.05 of the Criminal Code of Canada, and as identified thereto in a "List of Entities" which may be found at < <http://laws-lois.justice.gc.ca/eng/regulations/SOR-2002-284/index.html> > and that it is not nor will it knowingly work with any party and entity appearing on the New Consolidated List established and maintained by the UN Security Council's 1267 Committee. Furthermore, the Consultant acknowledges that it will not knowingly directly or indirectly collect, provide or make available funds or property intending that they be used, or knowing that they will be used, to carry out or facilitate terrorist activities, or knowing that the funds or property will be used or will benefit a terrorist entity as identified in the List of Entities.

13. Priority of Documents

The Parties agree to be bound by the following documents:

- a) Articles of Agreement;
- b) Supplementary Conditions;



- c) General Conditions 2035 (2022-12-01);
- d) Project Brief (Annex A);
- e) Existing Documents List Table (Appendix A to Annex A);
- f) Security Requirements Check List (Annex C);
- g) Consultant's bid dated (*information to be provided at contract award*).

In the event of discrepancies, inconsistencies or ambiguities of the wording of these documents, the document that appears first on the above list shall prevail.

14. Dispute Resolution

14.1 Discussion and Negotiation

If a dispute arises out of, or in connection with this Contract, the parties shall meet to pursue resolution through negotiation or other appropriate dispute resolution process before resorting to litigation.

14.2 Procurement Ombudsman

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the Canadian Department of Public Works and Government Services Act (S.C. 1996, c. 16) will, on request and consent of the parties to bear the cost of such process, participate in an alternative dispute resolution process to resolve any dispute between the parties respecting the interpretation or application of a term and condition of this contract. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by email at boa.opo@boa.opo.gc.ca.



ANNEX A – PROJECT BRIEF

PART 1 - PROJECT CONDITIONS

1. GENERAL INFORMATION

1.1. Project Summary

The Department of Foreign Affairs, Trade and Development (DFATD), operationally known as Global Affairs Canada (GAC), has prepared the following Project Brief which describes the requirements for the design services for the upgrade of the building services for the Embassy of Canada to South Africa, in Pretoria. The program is to replace heating cooling and ventilation systems, to upgrade and replace the electrical, communication, and security infrastructures. The project will be completed in an occupied building and will be phased to maintain the regular operation at the mission. Close coordination with the project team will be essential to meet these requirements.

1.2. Objective

1.2.1. Ventilation heating and air conditioning

The objective is to renew all the services to improve the indoor air quality. The existing installation does not have ventilation air (outdoor air) distributed evenly throughout the space. The cooling and heating are done with heat pump that is not properly zoned and the controls are not adequate to have a consistent comfort level for all occupants. The installation of all the condenser units on the exterior wall is not acceptable and a better solution must be provided. All extraction requirements will have to be reviewed and the garage extraction discharge modified.

1.2.2. Electrical

Replace the electrical infrastructure from the distribution panels to the end devices. Correct any unsafe conditions associated to the existing systems throughout the chancery. The new installation must meet applicable codes and standards, and the electrical section of this project brief.

1.2.3. Communication and security

The design will prepare the drawings for the necessary cable tray and conduits for the communication and security systems. All infrastructure components (cable tray, conduit, pull boxes, back boxes (outlet assembly), etc.) are to be installed by the contractor. The installation of ICT and security cabling, along with equipment (security endpoints, equipment racks, networking, etc.) is completed by GAC. The following is required for each proposed phase;

- Scheduling must take into consideration GACs decommissioning requirements of the work area prior to any construction. GAC must remove all existing communication and security cabling, and endpoints, from within the work area, except for any cabling and security devices required to maintain security monitoring.
- Drawings must clearly identify each phase of the project.
- Supplementary and/or temporary infrastructure should be identified, if needed, to maintain system operations during renovation of any areas.
- Any changes to the ICT and security systems, and technical rooms, must be clearly identified.
- Scheduling must take into consideration GACs commissioning of the work area once construction is complete.

1.3. The purposes of the Project Brief are:

- To provide sufficient information to allow the Consultant to fully prepare complete contract documents including design development, construction documents, cost and Bills of Quantities;
- To serve as a quality assurance document for the GAC Departmental Representative throughout the design and construction phases.

The Project Brief describes the minimum acceptable quality standards expected for the fit up and any special construction of security and communication systems.



1.4. National Security

1.4.1 This project involves National Security issues. The Consultant is obliged to:

- Keep all project documentation secure;
- Ensure that project staff do not communicate project related information to any third parties, unless required for completion of the work;
- Return all materials and documentation at the end of the project;
- All media enquiries are to be directed to the GAC Department Representative.

1.5. Codes, Regulations, By-Laws

1.5.1 At minimum, the design and construction will conform to all current and applicable laws, codes, regulations and ordinances of local authorities and the most recent edition of Canadian Codes and standards including, but not limited to:

- Canada Labour Code, Occupational Safety & Health Regulations;
- National Building Code of Canada 2015 (NBC);
- National Fire Code of Canada 2015 (NFC)
- Seismic Risk Reduction of Operational and Functional Components, CSA S832;
- Accessible Design for the Built Environment CAN/CSA-B651;
- National Fire Protection Association Standards (NFPA);
- Any applicable local requirements.

1.5.2 Any other relevant, codes, regulations by-laws and standards as stipulated in the Project Brief.

1.5.3 Contact with authorities will be coordinated with the GAC Departmental Representative.

1.5.4 South African construction safety regulations will be applied on site.

If there is conflict that requires compromise, GAC's subject matter expert will assist to reach an acceptable solution.

1.6 Sustainability

1.6.1. Requirements and expectations

Global Affairs Canada (GAC) is committed to the principles of sustainable development in all of its operations. As such, the department has developed a Sustainable Buildings Program which applies to all new Mission facilities including leased spaces.

The overall objectives are to reduce the environmental impact including greenhouse gases, from the operations of the department's buildings. Ultimately this can be achieved by reducing energy and water consumption, using "green" products, reducing the amount of construction waste amongst other sustainable design objectives and strategies.

The principles of sustainability are to be incorporated in all the phases of project delivery, especially in the initial stages when most of the key decisions are taken. GAC endorses the use of industry recognized whole building environmental performance assessment tools to guide the design development of its projects however, due to the varying conditions any one tool cannot be consistently applied for GAC projects.

The sustainable or green design of the systems infrastructure is an important aspect for GAC and the building occupants. It is also a requirement that the green design solutions be clearly communicated to occupants and operators to ensure that these solutions, many of which rely on each other, are used and maintained for their intended purposes and to achieve optimal performance of energy efficiency and reduced environmental impacts.

The minimum requirements are to meet all local building codes and regulations related to Sustainability and where viable, to surpass such standards. This should include a full 12 months of actual occupation of the building. Any adjustments must be part of the project commissioning process with a complete analysis on how to maintain the performance levels by operational staff of the overall facility.



1.6.2 Identification of sustainability objectives

For this specific project, we are not looking to meet and certification such as LEED, or else. Nevertheless, we are expecting to have high energy efficiency systems that will reduced the greenhouse gas and the energy consumption. The objective would be to be 20% less energy consumption than the base line of the ASHRAE 90.1 Energy Standard for Building Except for Low-Rise Residential Building.

1.6.3 Sustainability reporting

The Consultant will be responsible to demonstrate the comparison between the ASHRAE Standard baseline and their design to confirm the 20% or more energy saving.

1.7 Supplied Equipment and Allowances

1.7.2 The following items will be supplied by GAC:

- Security and Information Technology Systems, Voice, data, and security cables, IT and security equipment.

1.8 GAC Project Management

- A designated GAC Departmental Representative will manage the project on behalf of GAC. The Departmental Representative is the official point of contact between the Consultant and the Mission.

1.8.1 The Departmental Representative is:

Mr. Rock Clement
Project Manager
AWPA, Capital Project Delivery Division
Global Affairs Canada
125 Sussex Drive, Ottawa, Ontario K1A 0G2, Canada

1.8.2 Travel

- It is anticipated that the Architectural & Engineering Consultant team will travel for the following milestones. At a minimum, the architect, mechanical and electrical engineers should be on these trips.
 - a. Within 45 days after contract award to perform a site survey (confirm site conditions and measurements).
 - b. At construction kick off meeting.
 - c. At 25% construction for progress review.
 - d. At 50% construction for progress review.
 - e. At 100 % construction for substantial completion review.
 - f. Attend Construction commissioning activities.

1.9 PRE- CONSTRUCTION SERVICES

- Submissions and Reviews: The Consultant must provide drawings, supporting specifications and reports for review and approval by the GAC Project Team and Fire protection authorities.
- The complete design must be based on the requirements of this Project Brief. The construction documents will be submitted at Design Development, 33%, 66%, 99% and 100% (Final) stages.
- The design must include a proposed phasing plan inclusive all assessed risks and complexities of working in an operational building.



- Review and acceptance of designs and other documents will proceed as follows:
 - GAC Project team will review all submissions and provide written comments directly on drawings.
 - The GAC Departmental Representative will return marked-up sets of documents and/or a written review to the Consultant on a Quality Assurance Review (QAR) form. The Consultant will provide written response to all comments on the same document or form.
 - Throughout each review period, the Consultant will maintain full production on the project and revise documents as necessary as and when review comments are received.
- No acceptance or approval by GAC, whether expressed or implied, will be deemed to relieve the Consultant of professional responsibility for correctness of design, details, dimensions, adherence to all codes and by-laws. Neither does acceptance of an estimate by GAC in any way abrogate the Consultant's responsibility to maintain the construction cost limit. If cost overruns occur the Consultant will be required to make revisions or participate in value engineering exercises in order to reduce the construction cost. Additional fees will not be considered for these services.
- All plans, specifications and commissioning documents submitted must be in English.
- The Consultant must use the same calendar date on all Construction Documents, drawings and specification. This is the date corresponding to the completion date of all construction documents.
- Upon final acceptance of Construction Documents, the Consultant must provide a hard copy of all reports, design criteria and calculations for mechanical, electrical, and structural design to the GAC Departmental Representative in the Format detailed below. Some of this information may be requested earlier during the design stages or working documents.
- As-built drawings must be submitted at the end of the Project. All As-Built submissions must bear the seal of the appropriate professional.
- Consultant must review close out documents for its completeness.

1.9.1 Optional Services

1.9.1.1 Provide all plans, specifications and commissioning documents in French.

1.9.2 Submission Format (also applicable to submission of Record Drawings)

1.9.2.1 Drawings:

- **AutoCAD Format: Release** 2012-19 (.DWG) file format.
- **AutoCAD support files:** including but not limited to drawing files (DWG), external reference (x-ref), shape files (SHX) and font files (SHX, TTF) and colour table file (CTB);
- **PDF Format**
- **Plotting & Layering instructions:** in hard copy (printed instructions) and electronic format (PDF, RTF or TXT);
- **Media & Quantity: two (2)** complete sets of files copied on USBs, or as directed by the Departmental Representative, the contractor is to upload all files to GAC's web based cloud storage.

1.9.2.2 Text documents and Spread sheets:

- **PDF Format**
- **Microsoft Word:** 2016 version.
- **Microsoft Excel:** 2016 version.



1.9.3 Pre-Design Submission

Intent: To investigate, evaluate study, analyse and recommend. Verify document information accuracy and suitability. Pre-Design Services demonstrate Consultant Team readiness to commence the Work.

The Consultant will visit the site and will provide a report on the existing condition and general information on the installation. This report will be used to:

- a. Validate the available information with the site conditions.
 - b. The phasing / area of work.
 - c. Determine the project impact on the operation and the phasing that will be necessary to maintain the operation.
 - d. Determine the existing condition and the risk to perform the work per phase.
 - e. To propose a strategy to implement the project, including the proposed systems and justification.
 - f. Evaluate the space in the ceiling and the technical rooms to provide solution that can be implemented.
- Provide Consultant Team sign-off on provided information as being of sufficient level of detail to proceed to Design Documents Services.
 - Discuss and confirm with Departmental Representative Work quality, scope, costs and schedule.
 - Confirm Sustainability requirements and targets.
 - Consult with GAC project stakeholder's project requirements and objectives.
 - Survey site and confirm existing conditions.
 - Confirm space program and project requirements.

Design Development Submission

- Provide support for an updated cost report.
- Project schedule updated.
- Preliminary Bill of Quantities.
- Mechanical, electrical, structural and fire protection outline documents.
- Provide project phasing plan.

1.9.3.1 Mechanical

- Systems Design Document: For each system provide a description with design criteria and calculations and the design intent to meet these criteria.
- Describe provisions to maintain acoustic sound levels.
- Establish an energy budget as described below.
- Drawings:
 - Plans showing demolition.
 - Plans showing preliminary design of all mechanical systems including location of air intake and extraction, location of the main equipment, general intent for the distribution.

1.9.3.2 Electrical

- Drawings, Symbols and Design: Use standard graphical symbols and provide drawings showing advanced development of the following:
 - Preliminary electrical demolition (if applicable).
 - Preliminary electrical receptacle layout including design of raised floor electrical and communication cable trays.



- Undertake load calculation and provide preliminary panel schedules. Confirm the anticipated connected load, maximum demand and diversity factors.
- Preliminary lighting layout c/w light fixture selection.
- Preliminary lighting control c/w day light harvesting strategy.
- Preliminary fire alarm layout..
- Preliminary grounding and bonding layout.
- Preliminary equipment selection including cut sheet of major equipment such as but not limited to, light fixtures, , any specialize equipment, life and safety and fire alarm devices, power distribution equipment etc..
- Assessment of space requirement for electrical equipment.
- Description and drawings of proposed electrical infrastructure required for the design phases.
- Code compliance report.
- Preliminary input to sustainable matrix and commissioning documents

1.9.3.3 Commissioning

- Provide a commissioning plan.
- Provide base of design

1.9.3.4 Structural

- 1.9.3.4.1 Drawings as required.
- 1.9.3.4.2 Seismic restraint details for walls and infrastructure.
- 1.9.3.4.3 Certification that higher than normal loads will not compromise the structure.

1.9.3.5 ICT

- Identify building or local distribution points (aerial, manholes, multi-tenant riser shafts, rooms) for telephony, data (Internet), cable TV.
- Identify IT, A/V and BAS room locations and sizes.
- Identify proposed location(s) for new technical rooms; SIGNET Equipment Room (SER) and Entrance Facility (EF).
- Identify cable tray/conduit locations as well as general outside plant requirements if any.
- Identify any other mission-specific IP systems such as queuing systems, digital signage, etc.
- Provide building elevation drawing clearly illustrating finished floor to finished ceiling heights by floor and slab to slab height by floor.
- Provide riser diagrams for all cabling requirements in this scope and communications related grounding and bonding.
- Provide conduit and cable tray plans for all cabling (horizontal & backbone) requirements in this scope meeting the Appendix G: Pathways for Data and Electronic Security Cabling.
- Ensure building services and telecommunications spaces do not intersect.
- Identify voice/data outlet locations.
- Identify wireless access point enclosure types.
- Provide material cut-sheets along with a master cut-sheet matrix (organized by discipline) illustrating the relationships to the location of the proposed material on the technical drawings.
- Provide detailed description of audio/video systems.
- Identify audio/video equipment locations including cabinets and connection boxes.
- Provide Building Automation System equipment locations for supervisory devices and field controllers.

1.9.3.6 Sustainability

- 1.9.3.6.1 Sustainability Report.



- 1.9.3.6.2 Narrative on how you will meet the sustainability requirements.
- 1.9.3.6.3 Comparison of the proposed system energy consumption and the 20% energy saving compare to the baseline building from ASHRAE 90.1.

1.9.3.7 Any additional drawings or documents required to complete the Design Development Drawings.

1.9.4 33% Construction Documents Submission

1.9.4.1 This submission indicates the intended scope of the construction documentation and illustrates the initial progress in developing the approved design.

1.9.4.2 All drawings previously prepared and revised from Design Development submission with addition of door/window schedules, room finish schedule, all wall sections, floor finish drawings, millwork details and transition details between finishes, washroom details, interior elevations of all corridor walls and key areas such as waiting, meeting rooms, kitchenettes and quiet rooms.

1.9.4.3 This submission incorporates all revisions required by the Design Development review.

1.9.4.4 Mechanical

All drawings previously prepared and revised from Design Development submission with addition of:

- All heat load and cooling calculations.
- the sizing of ventilation, cooling and heating systems showing the layout of all the ventilation, plumbing.
- Control schematic and sequence of operation.
- Control architecture for the monitoring system.
- Generic detail installation
- Show location of the main equipment and enlarge detail of the installation.
- Show access for the maintenance.
- Provide specification outline for the mechanical systems.

1.9.4.5 Electrical

All drawings previously prepared and revised from Design Development submission with addition of

- Floor elevations and room identification;
- Legend of all symbols used;
- 1:20 detail of technical rooms;
- Circuit numbers at outlets and control switching devices;
- All conduit and wire sizes except for minimum sizes which should be given in the specifications;
- A panel schedule with loadings for each panel;
- Kitchenette equipment schedule;
- Diagrams for power, fire alarm and other systems;
- Elementary control diagrams for each system;
- Lighting layout and fixture schedule clearly indicating methods of supporting fixtures;
- Photometric analysis;
- Location of all emergency lighting units and exit lights;
- Draft specifications;
- Any additional drawings, sections and details required to complete the design;
- Required input to the sustainable matrix and commissioning documents;
- Grounding diagrams.

1.9.4.6 Commissioning

- Include the commissioning and training information in the specifications.



- Develop verification checklists for all the systems included in the commission scope. The checklist must have instruction, an installation section, testing and start-up as required for each system.
- Identify the commissioning authority from the design firm.

1.9.4.7 ICT

- Provide detailed communications plans that indicate the location of all voice, data, audio/video, CCTV, Wi-Fi, BAS and any other smart building or IoT device.
- Provide details for all telecommunications services entering the building to the Entrance Facility.
- Ensure cable pathways are sized for the required fill ratios and that the overall pathway design respects the Departmental standard.
- Provide rack layouts, connection diagrams/details, cable schedule for Audio/Video, BAS and CATV services.
- Provide details for structural support of any rooms or antennas.

1.9.4.8 Update Sustainability Report and certification documentation.

1.9.4.9 Updated finish sample board based on comments from the Design Development submission.

1.9.4.10 Updated art plan and associated requirements.

1.9.4.11 Drawings and document list (at this stage, GAC will provide security input to the hardware schedule and identify the location of IT/Data outlets).

1.9.4.12 Updated Bill of Quantities.

1.9.4.13 Updated Project Schedule.

1.9.4.14 At this stage, GAC will fix the location of all communication outlets and undertake a final review of the architectural schedules.

1.9.4.15 Commissioning submission requirements as outlined in the commissioning section.

1.9.5 66% Construction Documents Submission

- All drawings previously prepared and updated from 33% Construction Drawings submission and updated to a 66% completion level.
- This submission incorporates all GAC revisions required by the 33% review.

1.9.6 99% Construction Documents Submission

- This submission represents the 99% completed construction documents prepared by the Consultants. All documents at this stage must include all revisions required by previous reviews. More than one 99% submission may be required as the documents must be revised to satisfy comments.
- Comprehensive Bill of Quantities.
- Updated Project Schedule.
- Drawings and specifications list.
- Commissioning submission requirements as outlined in the commissioning section.
- Updated Sustainability Report and certification documentation.
- Any additional information required for the completion of the design and/or to commence the Tender Process.

1.9.7 100% Construction Documents Submission



- This submission incorporates all revisions required by the 99% review.
- The Consultant(s) will sign and seal all architectural and engineering drawings.

1.10 CONSTRUCTION GENERAL

1.10.1 Pre-Tender Construction Cost Estimate

The Consultant shall:

- prepare for tender call purposes and submit for acceptance a final Construction Cost Estimate (Class "A") based on the approved and stamped Construction\Tender Documents, together with a breakdown thereof, in a form satisfactory to the Departmental Representative.

1.10.2 Tender Call

The Consultant shall:

- prepare list of local, qualified construction companies for invited bidding;
- produce and deliver to the project site eight (8) copies of the Construction\Tender Documents, and such other documents as are necessary for tender call purposes & Job showing;
- in consultation with the Departmental Representative, distribute the tender documents in accordance with the tendering strategy;
- in consultation with the Departmental Representative, provide information required for interpretation and clarification of the Construction\Tender Documents;
- in consultation with the Departmental Representative, assist with the preparation and issuance of addenda as necessary; and
- Attend and conduct one (1) job showing with the Departmental Representative and bidders.

1.10.3 Construction Contract Administration

The Consultant shall:

- provide construction contract administration services, including cost control, quality control, scheduling, processing change orders, monitoring the schedule and advising the Departmental Representative of any variances, and liaising with authorities having jurisdiction over the Project site; and
- accompany the Departmental Representative during site visits through the duration of the Project.

Construction Schedule

The Consultant shall:

- monitor and report to the Departmental Representative the progress of the construction, relative to the Construction Schedule;
- notify the Departmental Representative of any delays which may affect the completion date of the Project, and keep accurate records of the causes of delays; and

1.10.4 Construction Meetings

The Consultant shall:

- maintain a record of the proceedings of such meetings and provide the Departmental



Representative with a copy thereof; and

- notify the Departmental Representative of any urgent issue raised at such meetings requiring his\her attention.

1.10.5 Construction Permits

The Consultant shall:

- Support GAC and the Contractor to obtain construction permits.

1.10.6 Clarifications and Interpretations

The Consultant shall:

- in consultation with the Departmental Representative, provide clarification and interpretation of the Construction\Tender Documents in written or graphic form, as and when required by the Construction Contractor for the proper execution and progress of the construction.

1.10.7 Shop Drawings

The Consultant shall:

- review promptly, within 5 business days, the shop drawings provided by the Construction Contractor to determine general conformity with the requirements and intent of the Construction\Tender Documents, issue comments to the Construction Contractor as necessary to ensure conformity, and indicate such general conformity once achieved; and
- provide the Departmental Representative with one (1) copy when such conformity is confirmed.
- provide monthly report indicating status of shop drawings (date submitted, date reviewed, date returned, etc.).

1.10.8 Testing and Inspection

The Consultant shall:

- recommend the need for and review test reports of materials or construction;
- co-ordinate the provision of services for the inspection, testing and evaluation of suitability of materials and equipment in compliance with the Construction Contract;
- Require tests of any material and construction on site that appears of doubtful quality or performance.
 - Testing Laboratories must be accredited to ISO/IEC 17025 standard.
- instruct of remedial action to be taken by the contractor when material or construction fails to comply with the requirements of the Construction Contract, and advise the Departmental Representative accordingly.

1.10.9 Commissioning

The Consultant shall:

- ensure the provision of accurate and complete “Operating & Maintenance (O&M) Manuals”, and record “As-Built” Drawings. The “O&M Manuals” and the “As-Built” Drawings are to be provided to GAC no later than the dates contained in the Construction Contract and the A&E Services Contract;
- advise the Departmental Representative of any site related conditions that affect warranty



and/or the Contractor's obligations; and

- Provide verification checklists and start-up checklists.
- Ensure that the contractor fill the form and the commissioning team verify and validate the information.
- Witness the start-up of the systems and review air balancing report and sample to confirm the results.
- ensure the provision of training to building operators and Mission staff and provide GAC with a schedule for the testing and maintenance of building systems.

1.10.10 Field Services

The Consultant shall:

- make regular visits to the site, to review the Construction Contractor's Work in progress and to determine, on an adequate sampling basis, whether the Work is in general conformity with the Construction\Tender Documents;
- maintain and keep available for examination by the Departmental Representative an up-to-date record showing the number of persons and items of equipment employed from time to time on the Project by the Contractor and provide information necessary to assess the progress, determine the cause of any delays and verify any claims;
- record deficiencies and progress observed during each site visit;
- provide the Construction Contractor and the Departmental Representative with written reports of the deficiencies noted and recommend the actions to be taken to rectify them.
- include Health & Safety requirements in the general instructions section of the specification and provide Health & Safety inspections of the jobsite to ensure the Contractor is adhering to their submitted and approved Health & Safety Plan.
- act promptly to resolve questions arising from site conditions, work in progress and materials that may affect the progress and cost of the Project.

1.10.11 Changes to Work under the Construction Contract

The Consultant shall:

- submit all requests and recommendations for changes to the Work under the Construction Contract and the implications thereof to the Departmental Representative for approval. All changes, whether additions or deletions including those not affecting the construction cost, must be covered by Variation Orders in order to provide a complete record of variations from the original Construction Documents;
- upon written authorization by the Departmental Representative, issue Change Orders for all approved changes.

1.10.12 Progress Claims

The Consultant shall:

- examine progress claims promptly and, if acceptable, certify the progress claims for Work completed and materials delivered pursuant to the Construction Contract, and submit them to the Departmental Representative for processing and payment; and
- if the construction is based on unit prices, measure and record the quantities of labour, materials and equipment involved, for the purpose of certifying progress claims.



1.10.13 Record Drawings and Manuals

The Consultant shall:

- before issuance of the Interim Certificate of Completion provide the Departmental Representative with two (2) hard copy sets to scale of Record Drawings in English, one set for Mission, second set for Ottawa Headquarters and one (1) USB copy of AutoCAD files for Ottawa Headquarters, incorporating all recorded changes to the original working drawings based on marked-up prints, drawings and other information provided by the Construction Contractor, together with change orders and site instructions, and labelled "As Built" and dated and signed by the Consultant;
- provide a copy of the specification, marked up to show actual manufactured products and model numbers employed. Any schedule on the drawings will reflect actual equipment installed;
- mark all Record and As-Built drawings as "REVISED AS BUILT - MONTH/YEAR" and sealed format:
 - **Hard Copy: one (1) bound set.**
 - AutoCAD Format: Release 2012-19 (.DWG) file format.
 - AutoCAD support files: including but not limited to drawing files (DWG), external reference (x-ref), shape files (SHX) and font files (SHX, TTF) and colour table files (CTB).
 - PDF Format
 - Plotting & Layering instructions: in hard copy (printed instructions) and electronic format.
 - Media & Quantity: two (2) complete sets of files copied on USBs.
- Instruct Constructor to provide four (4) sets of Operation & Maintenance (O&M) manuals covering all project systems (electrical, mechanical, etc...) in English. The Consultant will review and approve the O&M manuals before recommending to the GAC Departmental Representative their acceptance.
- The Consultant will attend any training sessions being provided by the Constructor to GAC.

1.10.14 Optional Services

- 1.10.14.1** Provide the Departmental Representative with two (2) hard copy sets to scale of Record Drawings in French, one set for Mission, second set for Ottawa Headquarters and one (1) USB copy of AutoCAD files for Ottawa Headquarters, incorporating all recorded changes to the original working drawings based on marked-up prints, drawings and other information provided by the Construction Contractor, together with change orders and site instructions, and labelled "As Built" and dated and signed by the Consultant.

1.10.15 Interim Certificate of Completion

The Consultant shall:

- attend and witness all required on site tests (such as fire alarm commissioning);
- review the substantially completed construction with the Departmental Representative and the Construction Contractor, and record all unacceptable and incomplete construction detected on the Inspection & Acceptance Certificate which forms a part of the Interim Certificate of Completion. GAC then accepts the Project from the Constructor subject to correction of the listed deficiencies and issues an Interim Certificate of Completion;
- prepare and submit to the Departmental Representative for processing, and as a basis



for payment to the Construction Contractor, an Interim Certificate of Completion including a completed Inspection & Acceptance Certificate as required by the Construction Contract, together with all supporting documents properly signed and certified. Payment requires completion and signing, by the parties concerned, of the following documents:

- Cost Breakdown;
 - Inspection and Acceptance;
 - Interim Certificate of Completion; and
 - Statutory Declaration.
- prepare and submit an Occupancy Permit application to the authorities having jurisdiction over the project site and supply any additional information they may request before issuing the permit. The Consultant shall deliver the Occupancy Permit to the Departmental Representative.

1.10.16 Final Certificate of Completion

The Consultant shall:

- advise the Departmental Representative when all the unacceptable and incomplete construction listed on the Inspection & Acceptance Certificate has been completed in general accordance with the Construction Contract;
- make a final review of the construction with the Departmental Representative and the Construction Contractor and, if satisfactory, prepare and submit to the Departmental Representative, a Final Certificate of Completion as required by the Construction Contract, together with all supporting documents properly signed and certified, including manufacturers' and suppliers' warranties and guarantees;
- prepare and submit to the Departmental Representative for processing, and as a basis for payment to the Construction Contractor, a Final Certificate of Completion including a completed Inspection & Acceptance Certificate as required by the Construction Contract, together with all supporting documents properly signed and certified. Payment requires completion and signing, by the parties concerned, of the following documents:
 - Cost Breakdown;
 - Inspection and Acceptance;
 - Interim Certificate of Completion; and
 - Statutory Declaration.
- assemble completed documents and any required supporting documents and submit to the Departmental Representative for processing;
- Submit to the GAC Departmental Representative a USB with all the Contractors correspondence, minutes of meetings, correspondence with authorities, etc.

1.10.17 Take Over

- The official takeover of the project from the Constructor is established by the effective date of the Interim Certificate of Completion.

1.11 Post Construction Services

1.11.1 Warranty Review

The Consultant shall:

- review from time to time, during the Construction Contractor's warranty period, any defects detected, and instruct the Construction Contractor to make good the defects and advise the Departmental Representative when the said defects have been satisfactorily



rectified;

- prior to the expiry of the warranty period, carry out a review of the Project and record any defects observed or reported, and instruct the Construction Contractor to make good any such defects;
- prepare deficiency lists for the Contractor's correction;
- inform GAC in writing when all items listed on the ten month Warranty Inspection Certificate have been completed satisfactorily. GAC then convenes a final inspection of the Project by appropriate personnel.
- at the end of the warranty period, carry out a final review of the Project and, if satisfied that all recorded defects have been made good and the Project is acceptable, advise the Departmental Representative who will issue a notice of "Final Warranty Inspection" to the Construction Contractor and the Consultant.
- prepare deficiency lists for the Contractor's correction.
- inform the GAC Departmental Representative in writing when all deficiencies listed on the final warranty review deficiency list have been corrected.

END OF PART 1



PART 2 - ARCHITECTURAL AND INTERIOR DESIGN REQUIREMENTS

2.1 CODES, REGULATIONS, BY-LAWS

See **Part ONE** Section 1.3.

2.2 BUILDING PLANNING

2.2.1 Appearance and Character

2.2.1.1 The appearance and character of the Embassy of Canada will be similar to the quality of a class A office space. It will be representative of the Embassy of Canada and effectively integrate itself into the appearance and character of the existing building.

2.2.1.2 Quality and appearance of finished spaces will respond to 3 categories: Enhanced Areas, Office Standard Areas and Service Standard Areas (reference floor plans).

Enhanced Area: for public and representational areas, specifically waiting rooms, multipurpose, quiet rooms, conference room, HOM office and meeting rooms. These areas are to be finished in high quality and durable materials. These areas are intended to showcase Canada through their use of finishes.

Office Standard Area: for the general office functions of the chancery, specifically workspaces and common office areas; including kitchens and kitchenettes. These areas will be finished in a manner consistent with the quality and appearance of a class "A" office space and at minimum equal to the quality found in the existing building.

Service Standard Areas: for areas in the Chancery devoted to the operations of building and security systems specifically electrical and mechanical spaces as well as technical rooms related to chancery security and communications. These areas also include the janitor closet, washrooms and are all to be finished in a durable utilitarian manner.

2.2.2 Space Requirements

2.2.2.1 The required spaces of the embassy and their sizes will be as provided as indicated in Appendix B: Space Inventory.

2.2.3 Security Zone and Planning

2.2.3.1 The Chancery is comprised of four (4) distinct zones from the point of view of security and circulation control as follows:

Public-Access Zone: The area that surrounds or forms part of the Chancery. Examples include the grounds surrounding a building, and public corridors/elevator lobby in multiple-occupancy buildings.

Reception Zone: The areas accessible to the general public and Chancery staff with minimal restriction during normal hours of operation. This includes areas such as waiting rooms, screening areas and MPR areas. Access to these areas is supervised by locally engaged guards and receptionists.

Operations Zone: The area accessible to Canadian and locally engaged staff working at the Chancery. This includes workspaces, common office areas. Access from the reception zone to the operations zone is controlled by the receptionist through secure IDACS controlled doors.

Secure Zone: The area accessible only to Canadian employees. This includes workspaces and common office areas. Access from the operations zone to the secure zone is managed through IDACS controlled doors.

High Security Zone: The area containing classified activities and accessible only to Canadian individuals. Fit-up of these areas is done by DFATD managed resources.



Partitions, glazing and doors separating the zones from each other have specific requirements. See Physical Security Requirements.

2.3 BUILDING SYSTEMS

2.3.1 General

- 2.3.1.1 Standards and materials stipulated indicate the minimum acceptable.
- 2.3.1.2 All security related material and components must be approved by GAC. Reference Security Section.
- 2.3.1.3 All building systems are to be designed utilizing a conservative interpretation of relevant codes, particularly where considering the potential of natural forces such as earthquakes, floods, tornadoes, typhoons.
- 2.3.1.4 All systems are to be designed on the basis of providing: safety to personnel during operation and maintenance; ease of maintenance of equipment and operational economy.
- 2.3.1.5 Existing building systems are to be reused where practical and protected during construction.

2.3.2 General Architectural Interior

- 2.3.2.1 The Architectural fit-up and detailing will project a professional corporate image and coordinated office environment. Special emphasis will be given to upgraded finishes to public areas, public corridors, reception areas, meeting rooms and Head of Mission (HOM) office.
- 2.3.2.2 Enclosed spaces, open workspaces and common areas will be arranged as indicated in Appendix A GAC Proposed Floor Plan.
- 2.3.2.3 A GAC interior designer is responsible for the selection, procurement and installation of all movable furniture and furnishings. Consultant to coordinate services and infrastructure required for GAC supplied furniture.
- 2.3.2.4 All enclosed spaces in the chancery will be kept to the interior building core of floor areas when at all possible, to allow maximum natural light penetration from perimeter windows to infiltrate into interior. Interior offices will include glazing to allow transmission of natural daylight.
- 2.3.2.5 A finish and color scheme will be prepared by the consultant as part of the Construction Documents and subject to GAC approval and implemented by the Contractor. The finish and colour selection will encompass all interior surfaces including the ceiling system, walls, floors, baseboards, millwork, doors, hardware, lighting, any new washroom surfaces and glazing treatments. The GAC interior designer and architect will work closely with the Consultant on the coordination of all materials and colours.
- 2.3.2.6 The facility is to be equipped with fully compliant kitchens and washroom facilities.

2.3.3 Interior Doors

- 2.3.3.1 Doors for enclosed offices and other common areas in the chancery (meeting rooms, quiet rooms, etc.) may be wood veneer, glass or steel and will be coordinated with the overall interior scheme.
- 2.3.3.2 Door Frames: refer to Security Section.
- 2.3.3.3 Door Hardware: refer to Security Section.
- 2.3.3.4 Doors supplied by GAC are to be coordinated with design consultant as it relates to finishes of interior scheme, preparation of framed openings and fire ratings required by local code.



2.3.4 Door Hardware

- 2.3.4.1 Lock hardware for North American standard doors is supplied by GAC and installed as detailed in Supplementary Instructions. Refer to Security Section.
- 2.3.4.2 The Contractor shall supply hinges, kick plates, door stops, and all cabinet hardware. Refer to Security Section.
- 2.3.4.3 GAC will draft a hardware schedule indicating the type, make and quantity of hardware GAC will provide.
- 2.3.4.4 In general, mortise lock sets will be provided for all interior doors. Where narrow style metal doors are involved, Adams Rite mortise locks will be used. Locking panic hardware must be compatible with Medeco rim or mortise-type cylinders provided by GAC.
- 2.3.4.5 All permanent key cylinders will be supplied, pinned, coded and installed by GAC after take-over, replacing temporary cylinders used by the Contractor during construction.

2.3.5 Floors

- 2.3.5.1 The base building incorporates a raised floor system.
- 2.3.5.2 All floor finishes will be coordinated with interior scheme, approved by GAC interior designer and specified in accordance with the category of room indicated on the floor plan. Quality of finishes is:
 - Enhanced Areas:** will be provided with high quality durable hard finish material such as stone or tile.
 - Standard Office Areas:** will be finished with high quality commercial grade flooring such as carpet tile.
 - Service Standard Areas:** will be polished, sealed concrete, vinyl, ceramic or static dissipating vinyl.
- 2.3.5.3 All concrete floor slabs will be leveled prior to finish material application. Any variance in level will not exceed 12mm over a 14 meter radius.
- 2.3.5.4 Washrooms, kitchens and service areas are to be finished with appropriate high traffic, non-slip and moisture resistant hard surfaces. Acceptable materials include commercial grade ceramic / porcelain tile, vinyl tile, sheet vinyl and/or similar natural or man-made products.
- 2.3.5.5 All carpet will be commercial high grade from 100% solution dyed nylon with minimum gauge of 50.4 rows/10cm, minimum stitch 38.6pu/10cm, and maximum pile height of 4.7mm. All carpet tile will be peel and stick adhesive backed and conforming to flame spread requirements as per fire safety requirements.
- 2.3.5.6 The location of voice/data/power floor boxes or pedestals will be coordinated with furniture systems to ensure no obstructions are met by furniture, panels, chair legs, file boxes, etc.
- 2.3.5.7 SIGNET Equipment Room to be finished with Static Dissipative flooring.
- 2.3.5.8 Base skirting material / detail will typically complement the selected floor finish material. And be of commercial grade material.

2.3.6 Ceilings

- 2.3.6.1 All ceilings finishes will be coordinated with interior scheme, approved by GAC interior designer and specified in accordance with category of room type indicated on the floor plan. Quality of finishes is:
 - Enhanced Areas:** may be a mix of fixed hard surface ceiling finishes and coordinated access panels or ceiling tiles.



Standard Office Areas: will have a uniform drop ceiling height to provide flexibility for future floor plan changes. Enclosed spaces will have the same drop ceiling height as adjacent open office spaces. Exposed ceilings may also be considered.

Service Standard Areas: may be exposed ceiling or suspended access ceiling system.

- 2.3.6.2 The suspended ceiling system will incorporate luminaries, ceiling tiles and secondary ceiling suspension. The ceiling system will take into consideration smoke detection devices, sound masking system, CCTV, motion detectors and access panels.
- 2.3.6.3 All interfacing systems: ceiling suspension, air handling, luminaries, in fill safety devices and walls are to be coordinated for ease of relocation, visual consistency, range of relocation and operational compatibility. Special ceiling in-fill conditions at cores, perimeter walls, partitions, columns, etc. are to be minimized.
- 2.3.6.4 All ceiling areas used for horizontal system distribution will be readily accessible without requiring repair to interior finishes.
- 2.3.6.5 Ceiling, lighting and air handling systems will largely remain as per the base building wherever possible.

2.3.7 Artwork

- 2.3.7.1 GAC will implement a fine art program for the Chancery. The Consultant shall work with GAC to integrate fine art into the interior design. GAC will work with the Consultant to identify potential locations for the display of movable works of art, such as painting, photography, small sculpture, etc.
- 2.3.7.2 Picture hanging rails shall be installed along the tops of walls in areas that the GAC Technical Authority has identified works of art can be displayed. Art rails to be detailed appropriately for a seismic zone application.
- 2.3.7.3 Special lighting systems for art shall be identified and installed in key display locations for movable art.
- 2.3.7.4 In some cases, specified display walls will require enhanced design and fit-up b the Consultant for load bearing capacity or consideration of IT for digital art displays.

2.3.8 Walls, Full Height Partitions (reference GAC Concept Floor Plan)

- 2.3.8.1 Partitions finishes will be coordinated with interior scheme, approved by GAC interior designer and specified in accordance with the category of room indicated on.
- 2.3.8.2 For partitions required to be security barriers, assembly and construction details will be consistent with wall types indicated in Security Section of this brief. Any glazing in Type 3 (physically resistant partitions) will have a polycarbonate film laminated between two layers of glass meeting criteria referred to in Security Section.
 - i. Closed offices will generally be constructed of 90mm metal studs and 13mm gypsum board and/or tempered glass sections.
- 2.3.8.3 It is the consultant's responsibility to verify the load bearing capacity of the existing building structure and to design all necessary structural strengthening to bear any additional load from all security rated wall assemblies.
- 2.3.8.4 Any changes to the structure will be designed and certified by a licensed structural Engineer.

2.3.9 Signage

- 2.3.9.1 All required statutory, illuminated exit signs and other signs, will be specified by the Consultant and provided by the general contractor to meet local code requirements. Where possible, use pictograms rather than text (i.e. running man to illustrate exit). Where text is



required, all signage will be at a minimum in French and English.

2.3.9.2 All non-statutory interior signage is to be provided under an allowance by the contractor and designed, fabricated and installed per the GAC Embassy Signage guideline (refer to Appendix D).

2.3.9.3 Signage in the public areas will be in English and French.

2.3.10 Light Reflectance

2.3.10.1 General light reflectance on finished surfaces and materials will be as listed below:

- | | |
|-------------|------------|
| a. Ceilings | 80% |
| b. Walls | 40% to 60% |
| c. Floors | 30% |
| d. Windows | 40% to 60% |

2.3.11 Acoustics

2.3.11.1 Indoor Sound Level Criteria

- a. Consultant is to retain the services of acoustical engineer to develop design standards and details for the office and representational areas.
- b. Design to achieve the following indoor noise criteria (NC) levels:
 - 25-30 NC for boardrooms and conference rooms, and HOM's office;
 - 30-40 NC for private offices, reception rooms;
 - 35-40 NC for all other areas.
- c. The following are the design objectives for the indoor background sound levels due to exterior environmental sources of noise such as vehicular traffic, rail traffic, exterior mechanical equipment, etc.:
 - i. For private offices, semi-private offices, conference rooms, the average energy equivalent sound level (Leq) shall not exceed 45 dB during the daytime (7 a.m. to 7 p.m.) for vehicular traffic and Leq 40 dB for rail traffic.
 - ii. For general offices and public reception areas the average energy equivalent sound level (Leq) shall not exceed 50 dB during the daytime (7 a.m. to 7 p.m.) for vehicular traffic and Leq 45 dB for rail traffic.
- d. Multi-purpose room, board rooms for more than 10 people, Head of Mission offices, large reception areas and all interior spaces where speech intelligibility and echo control are desirable shall be treated with sound absorbing materials or with sound masking methods. The sound absorbing materials include one or a combination of the following: sound absorbing ceiling panels, special sound absorbing wall panels, carpeting and fabric furnishing materials. The objective shall be to achieve a maximum reverberation time (RT) of 0.6 to 0.75 seconds in the 500 and 1,000 Hz octave band.
- e. All services running between different rooms (e.g. ducts, shaft, pipes, etc.) shall be acoustically insulated so that the resulting sound levels and acoustic criteria are not compromised (i.e., minimize "cross-talk" between various rooms). Ceiling Attenuation Class (CAC), where applicable, should be 35 or higher.
- f. For complete list of areas where Privacy Index level is Confidential, refer to Room Data Sheets. Following sound Transmission Class (STC) rates must be achieved for these functions:

Enclosed offices of Program Heads: Standard Speed Privacy STC 45.

Meeting rooms: Enhanced Speech Privacy STC 45.

2.3.11.2 Open Office Space Acoustics



- a. Workstation partitions shall have the following features:
- Provide measures to obtain a minimum sound transmission class (STC) 25 and a minimum noise reduction coefficient (NRC) 0.75.
 - Ensure an optimum sound level of 48 to 52 dB in the open office area with the use of appropriate noise reduction measures.
 - Sound absorptive wall panels to be used where necessary to reduce the rooms RT to maximum 0.75 seconds and/or to reduce the reflected sound wave off large hard reflecting wall surfaces.

2.3.11.3 Indoor Vibration Levels

- Indoor vibration velocity levels due to exterior sources of environmental vibration shall not exceed an RMS value of 0.14 mm/sec between the frequencies of 4 to 200 Hz or the equivalent ISO Standard 2631 vibration base acceleration curve.
- Eliminate objectionable noise and vibration transmission. The noise levels shall not exceed the design criteria. Vibration isolation shall be 99% efficient for all rotating mechanical equipment to prevent transmission of vibration to the building structure, floors and walls.
- Floor vibrations shall not exceed recommended limits by the applicable codes, standards and regulations.

2.3.12 Fire Safety

- 2.3.12.1 The layouts, structure, systems, and materials of the facility shall meet local and Canadian codes, standards and regulations. In case of discrepancies between the two codes, more stringent interpretation of the codes shall apply.
- 2.3.12.2 The facility shall be provided with all necessary fire safety systems and components of fire prevention, fire detection and fire alarm systems, fire suppression systems, and any other required by the above-mentioned codes, standards and regulations.
- 2.3.12.3 The Consultant shall design and coordinate Fit-up of the Chancery with the Base Building fire detection, smoke detection, fire alarm, and fire suppression, and smoke control systems as well as methods of evacuation.
- 2.3.12.4 The requirements described in Canadian and local codes and other related documents and standards are minimum regulations for fire safety with respect to Government of Canada interest. Fire safety requirements are predicated on adequate firefighting means being provided.
- 2.3.12.5 Good judgement must be used in assessing fire safety requirements, and because of various factors such as security needs, elements of construction, use of materials, appliances, systems, equipment, etc. which may not be specifically covered by codes or standards. Standards cannot cover all possible situations. Therefore, alternative solutions may need to be developed to ensure that an appropriate level of safety is achieved and that the intents of codes / standards are met. The Consultant will provide a Fire Strategy Brief to the Departmental Representative for approval to address any conflicting life safety requirements.
- 2.3.12.6 Emergency egress from all accessible areas must be provided in compliance with National Building Codes of Canada (NBC) and local building regulations.
- 2.3.12.7 Certify service penetration components and assemblies, including back-up materials and supports in accordance with applicable codes, standards and regulations. Design combined or built-up site systems in accordance with local regulations and technical evaluation acceptable to Authorities Having Jurisdiction.
- 2.3.12.8 Ensure systems provide flame and temperature rating in accordance with those outlined in NBC and local building regulations, and provide an effective barrier against the passage of flame, smoke and gases. Where fire resistance rated assembly is required, establish assembly rating on tested assemblies from UL, ULC, or WH, or local equivalent of such



rating. The fire-resistance rated system (flame and temperature) should be not less than the fire-resistance rating of the surrounding floor, wall or other assembly.

- 2.3.12.9 Extend from the floor or ceiling all partitions required to support cable enclosures for electrical power, lighting, controls and data/communication lines. Floors to wall interfaces shall be detailed to provide adequate seals against passage of fire and smoke (fire stopping), which may be caused by wind pressure differences and stack effect.
- 2.3.12.10 All finishes shall have a minimum flame spread rating and smoke developed classification meeting the applicable codes, standards and regulations.
- 2.3.12.11 Structural openings for HVAC services shall be sealed with fire stops compound and water proofed.
- 2.3.12.12 Special fire protection measures may be required for designated areas such as computer server rooms and secure zones. These measures will be reviewed and approved by Departmental Representative.

END OF PART 2



PART 3 - MECHANICAL ENGINEERING

3 GENERAL

3.1 Introduction

The Mechanical Engineering chapter identifies criteria for the design of Heating, Ventilation, and Air-Conditioning (HVAC) systems, plumbing systems, and fire suppression.

Mechanical systems shall be specifically designed to function at the load associated with all projected occupancies and modes of operation.

3.2 Scope of Work

Provide complete mechanical systems as specified herein to meet the general and the specific facility needs in:

- a) Replacement and re-design of the Heating, Ventilation and Air-Conditioning (HVAC) Systems;
- b) Relocate or improve the garage extraction system
- c) System start-up, testing, adjusting and balancing, and commissioning;
- d) Administration (construction drawings, shop drawings, record drawings, samples, codes, attendance at meetings, permit fees, etc);
- e) Certificates of Completion and performance verification;
- f) Operating and Maintenance (O&M) manuals.

3.3 Drawings

The Engineer (Consultant) shall certify layout drawings and calculations. The consultant is responsible for all co-ordination with those of the HVAC, plumbing, electrical and other disciplines.

3.4 Specifications

Engineering specifications for construction of all mechanical systems are to include written descriptions of materials, performance, characteristics, installation, quality of work requirements the commissioning and the training required.

3.5 Training Manuals and Materials

Provide training, training materials and manuals in English.

3.6 BUILDING SYSTEMS ANALYSIS

- 3.6.1** The A&E Consultant shall consult indoor air quality report dated 05 February 2019 and the HVAC system condition assessment report dated 30 March 2022. These two reports identified many issues with the HVAC system that need correction. The site analysis will allow the designer to provide possible systems that will improve the indoor air quality and the comfort of the occupants.
- 3.6.2** For the garage extraction, the extraction is discharging along the terrasse where people are going to have their lunch. The assessment will help the consultant to find solution.
- 3.6.3** Provide a report, highlighting options for the replacement of the HVAC system and identifying the challenges that we will face to meet the GAC requirement included in this design brief.
 - Evaluate the space in the ceiling plenum for the installation.
 - Identify location for equipment location.
 - Assess and comment on the installation of fire dampers.



3.7 GENERAL REQUIREMENTS

The mechanical systems should consist of simple, proven systems selected for reliability, durability, flexibility, accessibility and ease and economy of operation.

Mechanical engineering should consolidate layouts using the minimum space consistent with maintenance and service requirements.

Mechanical systems and equipment shall be compatible and coordinated with electrical, architectural, structural and other building systems including interior design, controls, fire protection, security, communications, etc. All mechanical systems shall become an integral part of the architectural design.

The new fit-out work shall meet current codes. Conflicts between Canadian and South African codes shall be resolved with Departmental Representative as well as with the South African Authority Having Jurisdiction (AHJ).

During the life span of a typical Embassies, many minor and major alterations may be necessary. Mechanical systems shall be designed to provide some leeway for increase in load concentrations in the future. They shall also be designed to facilitate future alterations, i.e. new elements, such as piping, ductwork, etc.

Provide all required documentation to authorities as required. Provide all permits, licenses and certificates and arrange for inspection of all work by the appropriate authorities and pay all associated fees.

All welding, if required, shall be done by qualified and licensed welders.

Identify all equipment, piping and ductwork on drawings.

3.8 PERFORMANCE REQUIREMENTS

3.8.1 The mechanical systems must be responsive to each functional requirement of each area. They shall be designed, constructed, and commissioned to ensure the following:

- a) Occupant safety;
- b) Occupant comfort;
- c) Indoor air quality (IAQ);
- d) Reliability;
- e) Maintenance and operation simplicity;
- f) Energy conservation;
- g) Cost effectiveness; and
- h) Economy of installation.

3.8.2 New mechanical systems (materials and equipment), owned and installed by GAC, shall meet design requirements of a quality consistent with top tier equipment. Installation of equipment is to have a design life consistent with anticipated minimum building life expectancy. This includes service life of individual elements as follows:

- a) Air conditioning system split unit type: 15 - 20 years;
- b) Heat recovery system: 20 - 25 years;
- c) Control system 15 -20 years

The above-mentioned is dependent on good and regular maintenance being undertaken throughout the life of systems together with correct water treatment.

3.9 APPLICABLE CODES, STANDARDS AND GUIDELINES

3.9.1 CODE COMPLIANCE REQUIREMENTS

- a) The latest editions of publications and standards listed here are intended as guidelines for design. They are mandatory where referenced as such in the text of this chapter or in applicable codes. The list is not meant to restrict the use of additional guides or



standards. When publications and standards are referenced as mandatory, any recommended practices or features should be considered “required”. The requirements of all other authorities having jurisdiction shall apply.

- b) All mechanical systems designed and installed shall meet the latest version of all applicable codes, standards and regulations of the authority having jurisdiction. The most stringent codes and standards shall be applied.

3.9.2 CANADIAN PUBLICATIONS

- a) CAN/CSA B52-13: Mechanical Refrigeration Code
- b) “Handbook of Occupational Safety and Health”. Treasury Board of Canada
- c) National Fire Code of Canada of Canada (NFCC)
- d) National Building Code of Canada (NBCC),
- e) All applicable Treasury Board Standards and Guidelines.

3.9.3 UNITED STATES PUBLICATIONS

- a) ASHRAE: Handbook of Fundamentals, Handbook of HVAC Applications, Handbook of HVAC Systems and Equipment, and Handbook of Refrigeration.
- b) ASHRAE: Standard 55-2013: Thermal Environmental Conditions for Human Occupancy.
- c) ASHRAE: Standard 62-2016: Ventilation for Acceptable Indoor Air Quality.
- d) ASHRAE: Standard 90.1-2016: Energy Standard for Buildings Except Low-Rise Residential Buildings.
- e) ASHRAE: Standard 111: Practices for Measurement, Testing, Adjusting and Balancing of Building HVAC Systems.
- f) SMACNA (Sheet Metal and Air-Conditioning Contractors' National Association) for HVAC Duct Construction Standards

3.9.4 LOCAL PUBLICATIONS

- a) Any local code and standards equivalent to the above mentioned publications

3.10 MECHANICAL EQUIPMENT

3.10.1 MECHANICAL SPACES

- a) All mechanical systems and equipment shall be located and arranged so that they are readily and safely accessible for routine maintenance and repair, as well as for removal and replacement of major equipment as well as sub-components.
- b) Access hatches shall be provided to access equipment, plenums and ductwork, as required, for purposes of inspecting, maintaining and servicing.
- c) Mechanical equipment should be located such that sound will not be readily transmitted to other parts of the building. The transmission of noise and vibration from mechanical equipment to the structure should be minimized.

3.10.2 NOISE, VIBRATION and THERMAL LOSS CONTROL

Isolate all mechanical equipment, piping and ductwork to eliminate objectionable noise and vibration transmission.

a) NOISE LEVEL AND VIBRATION ISOLATION

- Noise criteria (NC) levels represent the overall and combined sound levels represent the overall and combined sound levels due to exterior environmental noise generated by interior mechanical equipment. The NC levels to be respected for the different spaces are:
 - 35-40 Office space



- 25 – 30 NC Meeting room, Head of mission, conference room
- 30-40 Private office , reception room
- Provide noise control equipment, as required, to prevent mechanical equipment from exceeding the noise criteria. Provide either silencers or employ other means to mitigate objectionable noises, where required, to achieve the noise criteria.
- If objectionable noise or vibration should be transmitted to occupied portions of the building by any part of the mechanical work, make necessary mitigation, to the owner's satisfaction and approval.
- Vibration isolation shall be 99% efficient for all rotating mechanical equipment to prevent transmission of vibration to the building structure, floors, and walls.
- Control of noise generated by air in air plenums and ducts shall be achieved by controlling air velocity, and by using sound attenuators.
- All services (i.e. ducts, pipes, etc.) running between different rooms shall be acoustically insulated so that the noise criteria is not compromised (minimize "cross-talk" between various rooms);

b) THERMAL INSULATION FOR DUCKWORK

- All supply ductwork shall be insulated. Insulation shall be applied to the outside of the ductwork only.
- If for acoustic reason, interior lining is required, the ductwork will have to be double wall duct.
- Insulation thickness and type to be in accordance with ASHRAE 90.1 Energy Standard for Buildings, Except Low-Rise Residential Buildings.

c) THERMAL INSULATION FOR PIPING

- All piping transporting fluids at temperatures other than room temperature shall be thermally insulated. If fluid temperatures are below the ambient dew point, insulate the piping and cover with a vapor barrier to prevent condensation on the pipe surface.
- Insulation thickness and type to be in accordance with ASHRAE 90.1 Energy Standard for Buildings, Except Low-Rise Residential Buildings.
- Insulation which is exposed to outdoor elements shall be covered in an embossed aluminum jacket for protection against UV rays.

3.10.3 SEISMIC PROTECTION

a) CODES AND STANDARDS

- CSA S832: Guideline for Seismic Risk Reduction of Operational and Functional Components (OFCs) of Buildings.

b) GENERAL REQUIREMENTS

All mechanical equipment is to be restrained laterally and vertically for seismic load requirement. All primary equipment, such as, air handlers, fan coil units, pumps, etc. shall remain fully operational during and after earthquakes.

South Africa is considered a low seismic zone area. All primary equipment is to be restrained for seismic load requirements accordingly. This shall include shock mounts for all pad mounted equipment or equipment suspended from the floor slab. Provide seismic restraints on, main ventilation ducts, water mains, standpipe and drain lines, etc., as necessary, to protect personnel and the facility from falling objects during an earthquake.



3.11 HEATING, VENTILATION AND AIR CONDITIONING – EFFICIENCY, COMFORT AND AIR QUALITY DESIGN PARAMETERS ENERGY EFFICIENCY AND BUILDING LOAD AND ENERGY ANALYSIS

3.11.1 GENERAL

- a) Cooling and heating loads shall be established and supported by engineering calculations and submitted to the departmental representative for review and record purposes. Cooling and heating load calculations and energy analysis shall be performed with a computer-based load and energy simulation program using the latest ASHRAE Handbook of Fundamentals developed for the hourly analysis of heating and cooling loads in commercial buildings.
- b) The program shall be capable of calculating each zone’s peak load cooling load as well as the whole building “block” loads. The program shall at a minimum calculate: solar heat gains through fenestration, internal heat gains from lighting and equipment, outside air loads (sensible and latent) from ventilation and infiltration, and heat gains or losses through fenestration, walls, floors and roofs.
- c) The program shall be based on an actual hourly data. Submit reports as a minimum at the concept design stage. The reports shall include an executive summary, spaces and zone information, all input sheets, schedules, building construction materials, output sheets and any other relevant data.
- d) Internal Heat Gain from Occupancy Levels
 - The minimum occupancy should be determined as per the functional program. Sensible and latent loads per person should be based on the latest edition of the ASHRAE “Handbook of Fundamentals”.
 - Lighting and other Equipment Loads: Lighting loads should be based on the actual design loads.
- e) For the HSZ area no system should transit though this area. The only system installation allow in this area is for the system required for the operation of these rooms. For this project, the HSZ area will be considerate out of contract.

3.11.2 OUTDOOR DESIGN CRITERIA

Outdoor design criteria shall be based on weather data tabulated in the latest edition of the *ASHRAE Handbook of Fundamentals*. Summer design conditions for sensible heat load calculations shall be based on the 0.4% dry bulb temperature with its mean coincident wet bulb temperature, if available or using the Carrier Hourly Analysis Program

3.11.3 INDOOR DESIGN CRITERIA

Provisions shall be made for measurement during commissioning of all factors making up the indoor environment as listed in Tables 5.1, 5.2 and 5.3.

Table 5.1: Indoor Temperature

Parameter	Occupied	Unoccupied	Measurement Location
Cooling mode	24°C	No cooling required	Waist height
Exceptions			
Technical rooms	temperature of 22°C		



Table 5.2: Indoor Humidity

Parameter	Relative Humidity
Summer	50% ± 5% maximum.
Exceptions	
Technical rooms	40% ± 5% maximum

Table 5.3: Other Requirements

Parameter	Value
Ventilation rate	Refer to ASHRAE 62.1
Air velocity	Minimum 0.10 m/s. Maximum 0.25 m/s
Carbon Dioxide	Less than 800 ppm

3.11.4 THERMAL COMFORT – TEMPERATURE AND HUMIDITY

Systems shall be capable of automatically maintaining space comfort conditions for all building load variations throughout the year. The distribution must be uniform to provide uniformity in the occupied space and the zone control adjusted to have smaller zones to increase the comfort. Enclosed offices must have individual temperature control and not share with another office or open space.

3.11.5 ZONING CRITERIA

- a) The GAC architecture zoning shall be respected Reception zone, operational zone, and secure zone.
- b) Interior thermostatic control zones should not exceed 139 m2 per zone for open office areas.
- c) Perimeter thermostatic control zones shall not exceed 28 m2 and shall be no more than 4.6 m from an outdoor wall along a common exposure.
- d) The HVAC system should be carefully zoned such that unoccupied areas can be set back for energy conservation without total shutdown.
- e) Independent zones should be provided for spaces, such as, enclosed office, waiting rooms, meeting rooms, entrance lobbies and kitchen areas.
- f) The reception zone, including the Pedestrian Screening, Waiting Area and Interview Booth (Public Side), MPR supply air can be a mixture of outdoor air and return air. However, there will be no return air from that area. This zone must be kept under less pressure relative to operational zone.

3.11.6 INDOOR AIR QUALITY

a) Indoor Air Quality Criteria

- Ventilation is defined as the supply of clean, odour-free and contaminant-free air to a space in sufficient quantities to dilute and remove space generated air contaminants and odours and to maintain the occupant oxygen requirements. Provide adequate ventilation to maintain proper indoor air quality. The ventilation rates of ASHRAE Standard 62 are the minimum acceptable for this project.
- Supply air should be evenly distributed to fully cover the entire occupied space. The minimum air supply shall be maintained during occupancy.

b) Exhaust Ventilation Criteria



Provide mechanical exhaust and make-up air systems to provide the following minimum requirements:

- Washrooms: the minimum exhaust rate shall be 25 L/s per fixture or a minimum of 10 air changes per hour (ACH); whichever is greater. Washroom areas should have dedicated exhausts and should be negative in pressure relative to surrounding spaces.
- Photocopiers/Business Center: Provide an exhaust rate of 2.5 L/s.m². As per ASHRAE Standard 62.1-2016.
- Kitchenette / Lunchroom: Provide an exhaust at a rate of 1.5 L/s.m². As per ASHRAE Standard 62.1-2016.
- Electrical Room: ventilation for electrical rooms shall have mechanical ventilation through the provision of an exhaust fan and door grille / undercut. Ventilation will be control by a thermostat: unless continuous cooling is required after heat load calculation.

3.12 HEATING, VENTILATION AND AIR CONDITIONING – SYSTEMS, EQUIPMENT AND SYSTEMS DESIGN

3.12.1 GENERAL REQUIREMENTS FOR HVAC SYSTEMS

- a) Heating, Ventilating and Air Conditioning (HVAC) systems shall be designed in accordance with the National Building Code of Canada and the National Fire Code of Canada for basic design requirements and with the Technical Design Standards included in the Handbooks published by ASHRAE. The HVAC system should allow individual operation of particular areas while operating the remainder of the floor area using the unoccupied control strategies. HVAC systems to be energy efficient at all part load conditions.
- b) The existing ventilation system do not meet the indoor air quality and is not meeting the basic comfort requirements. The Consultant will have to replace the system to meet the project requirement.
- c) Close attention shall be paid to energy conservation measures, commencing with comparison of possible systems through a life cycle costs analysis for a period of 40 years to justify the selected strategy.
- d) All work regarding HVAC systems shall be coordinated with other divisions including architectural, structural and electrical. Having condenser on the building façade will not be acceptable.
- e) The ventilation modifications might have to be done by a licensed contractor.
- f) A solution will have to be found for the extraction requirements for our space and the garage extraction.
- g) Provide sleeves for all ductwork crossing through walls.
- h) Provide dielectric coupling where dissimilar metals are joined.
- i) Provide pipe hangers and supports for piping, duct work and equipment. Provide pipe and duct work identification and flow direction indicators.
- j) Structural openings for HVAC services shall be sealed with fire stop compound and waterproofed

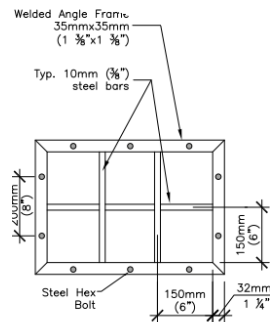
3.12.2 TECHNICAL ROOMS

- a) For the technical room requiring continuous cooling is required. The heat gain generate by the equipment will be communicate to the consultant at the design stage. The size of the unit will be between 1.6 to 4 kW per room.

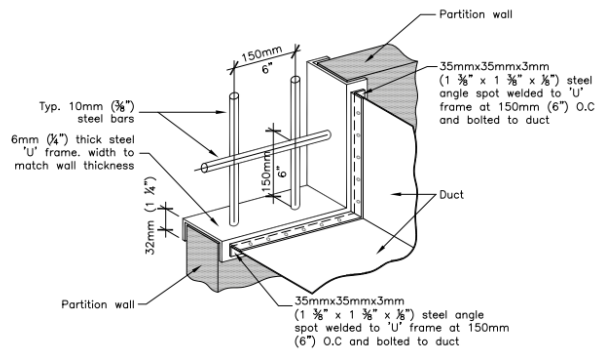


3.12.3 DUCTWORK

- Ductwork, reinforcing and sealing techniques is to be designed in accordance with ASHRAE: Handbook of Fundamentals, and constructed in accordance with the ASHRAE: HVAC Systems and Equipment Handbook, and the SMACNA Design Manuals.
- Energy consumption, security and sound attenuation should be major considerations in the routing, sizing and material selection for the air distribution ductwork.
- All ductwork shall be of galvanized steel, lock forming quality, G90 to ASTM A653.
- All ductwork joints and all connections to air handling and air distribution devices should be sealed with mastic including all supply and return ducts and all exhaust ducts.
- All services (i.e. ducts, pipes, etc.) running between different rooms or zone shall be acoustically insulated so that the resulting sound levels and acoustic criteria are not compromised (i.e., minimize "crosstalk" between various rooms).
- All ductwork connections to equipment having motors or rotating components should be made with 150 mm length of flexible connectors.
- Where ducts penetrate physical resistant walls, security bars are required when duct work penetrating these walls, exceeds a surface area of 0.06 m² (93 sq. in.). An access panel must be installed on the secure side of the wall for inspection purposes.



FRONT ELEVATION AT
TYP. DUCT GRILLE



ISOMETRIC VIEW DETAIL AT TYPICAL DUCT GRILLE

3.12.4 AIR HANDLING SYSTEMS DISTRIBUTION COMPONENTS

a) Diffusers, Registers and Grilles

All grilles and diffusers shall reflect high class standards. Equipment should be selected considering required flow rate, terminal velocity, throw, discharge air pattern adjustable, acceptable pressure loss, uniform air distribution, and acceptable sound level.

b) Balancing and Fire Dampers

- Balancing Damper
 - Provide a branch take-off at each diffuser.
 - All dampers shall be capable of tight shut-off with low leakage.
 - Install all dampers in accordance with SMACNA and manufacturer instructions.
 - Balancing dampers shall be fitted to all branch ducts as required to achieve correct balancing of the HVAC system.
- Fire Dampers
 - Provide fire dampers in ducts entering and leaving fire shafts and ducts penetrating fire walls and fire barriers.
 - All fire dampers shall withstand fire for at least 90 minutes.



- It might be location, where both, fire damper and security bars will be required.
- Connections
 - Flexible Connections: Provide flexible connections at all fan inlets and outlets.
 - Flexible duct for final connection to diffuser cannot exceed 1.5 m at the diffusers.

3.13 BUILDING MANAGEMENT SYSTEMS

3.13.1 BMS functionality

- a) Provide a complete Building Management /Automation System (BMS) to monitor, control and report on mechanical, electrical systems. The main system must be tied to all M&E systems and sub-systems in the building in order to run the building more efficiently and track all energy consumption/generation
- b) The metering should allow the collection of data permitting the analysis of where the energy is consumed; this mean that when possible a meter for each type of system.
- c) Wireless sensors / devices are not allowed even for the meters. Refer to metering above and in electrical section for the metering requirements.
- d) BMS devices / controllers must communicate over open protocols such as BACNet. Field meter controllers should support BACNet/IP or BACNet/SMTP with BTL compliance.
- e) The system must be hosted on premise, cloud based systems are not allowed
- f) The design of the BMS shall integrate the requirements of various building systems. All HVAC systems, domestic hot and cold water, pumps, tanks level (water and fuel), power generator, lighting control and metering shall be fully integrated with the BMS. The BMS shall be direct digital control (DDC) technology, with networked distributed processing, and be user programmable in the field for all required automated functions.
- g) All HVAC control strategies shall be programmed to optimize energy savings while maintaining indoor air quality. The BMS system shall be capable of calculating, reporting, archiving, and maintaining optimum energy utilization.
- h) The BMS must have custom-made graphics easy to read, showing the point in alarm and ease of navigation from different graphics. The graphics will have different levels.
Example HVAC: main system, terminal unit, room condition.
- i) BMS should have the following capabilities: a) creation of report for energy consumption; b) trends and analytics of building data on a web (browser) based dashboard via on premises (AKA on premise) application server accessible via local area network only; c) alarm notification via dashboard and dialer; d) dialer.
- j) Occupancy and / or vacancy and CO2 sensors for demand controlled ventilation must be used to control the ventilation.
- k) The BMS must have a sequence in its program to meet the demand response when required. The demand response requires reduction of 10% of the energy used
- l) BMS/BAS on-premises application server accessible from any computer on LAN only (no remote access for security reasons) complete with a local computer (desktop) colour monitor and printer for admin purposes only.
- m) The BAS controls points list shall be reviewed with respect to the Measurement and Verification Plan developed to ensure all design features will enable compliance to performance requirements of CaGBC Zero Carbon Building – Design and Performance standards.

3.13.2 Sequence of operation

Design shall meet applicable control strategies found in ASHRAE guideline 3-2018 High Performance Sequences of Operations for HVAC Systems. Incorporation of these sequences will translate in a reduction in energy consumption, cost and system downtime.



3.13.3 BMS function for operator

- a) Modify operating parameters (set-points, time, schedules, etc.);
- b) Acknowledge alarms;
- c) Perform dynamic analysis to verify efficient equipment operation;
- d) Make changes to system databases to allow changes to field hardware;
- e) Generate reports: alarm summary, alarm limits, run time logs, schedules, current readings or status, history log and trends;
- f) Allow for manual control of outputs and set points;
- g) Enable / disable control.
- h) Selectively turn ON or OFF all mechanical and electrical equipment;
- i) Reset temperature for occupied or unoccupied conditions;
- j) Allow for automatic ramping of temperature set point so that space temperatures can be gradually raised or lowered;
- k) Control the lighting

3.13.4 Building Management Systems architecture

- a) All BMS equipment must be designed by GAC zone (public zone, operation zone, secure zone and high secure zone) with no copper cable traversing from one zone to the next. See below
- b) All field devices must be wired. No wireless technology (such as ZigBee or WiFi) will be permitted.
- c) All BMS cabling must comply with ANSI/TIA-862-B
- d) All BMS endpoint /controllers/equipment will be terminated in the nearest BMS/electrical closet within the same zone.
- e) All BMS equipment input/output cabling between field controllers and endpoints must be gray in color installed within a dedicated BMS containment by the BMS contractor.
- f) All cabling interconnecting IP address devices such as supervisory shall be installed in standard level 0/1 containment.
- g) BMS systems must have local (on premise) server/s installed in the GAC Entrance Facility

3.13.5 BMS controllers

Controller must be programmable and include the following as a minimum:

- a) Microprocessor single board computer with memory and hardware sufficient for this installation plus 25% expansion capability;
- b) Operator interface terminal;
- c) Network interface to other controllers;
- d) Controller power supply shall accept local power and provide all conditioning necessary for reliable fail-safe operation;
- e) Battery-backed real time clock with 72-hour backup.
- f) Battery-backed RAM with 72-hour back up; and
- g) EIA communication connection with software support for operator terminal
- h) BACNet/IP or BACNet/MSTP with BTL compliance are the preferred communication protocols with BACnet/SC (secure) the protocol of choice.

3.14 START-UP, TESTING ADJUSTING AND BALANCING (TAB)

3.14.1 START-UP

- a) The main systems are installed and controlled by the Landlord. All modification made will have to be verified. The specifications shall indicate all the verification required.
- b) All equipment installed part of this project must be verified and adjusted to meet the specifications.
- c) Control functions shall be proven fully operational and read out design flow rates before testing and balancing starts.



- d) Verification form attesting proper installation is required for each assembly.
- e) Verification checklist is required for each system installed on this project.
- f) Start-up report is required for all new equipment / systems installed for this project.
- g) Provide a report demonstrating the proper control of the systems controlled by the Landlord. This must be done in collaboration with the Landlord's control company.

3.14.2 TESTING, ADJUSTING AND BALANCING (TAB)

- a) During the design development stage of the project, provide the proposed methodology and procedures for performing TAB.
- b) Provide the procedures for TAB and copies of verification sheets in the construction specifications.
- c) TAB is to be carried out for air moving system, hydronic, and plumbing systems.
- d) Test low pressure ductwork at static pressure of 500 Pa. Leakage shall not exceed 5% of the design air flow.
- e) Provide testing and verification of controller/programmable thermostats. This shall include pre-installation, completion of operational and acceptance tests.
- f) Provide TAB report. The report shall include schematic of as-built system. Submit preliminary TAB report and obtain Departmental Representative authorities approval for all procedures before finalizing the TAB report.
- g) The Consultant shall verify at least 30% of the measurements of TAB.

END OF PART 3



PART 4 – ELECTRICAL ENGINEERING

4.1 SCOPE /REQUIREMENTS

a) SCOPE OF WORK

- i. In a recent report it was concluded that the condition of the electrical and mechanical systems was found to be outdated and in need of upgraded and replacement.
- ii. Provide a design for the removal and replacement of the existing electrical system as specified herein to meet the general and the specific needs to upgrade to the electrical along with power supply to the mechanical systems at the High Commission as well as for telecommunications raceway system. Provide for start-up, testing and balancing of all electrical systems.
- iii. Close coordination of the design of new mechanical equipment will be required.
- iv. Phasing strategy of the work is imperative as the High Commission must remain operational during the project.
- v. The replacement of the electrical system shall include, but shall be not limited to the following:
 - i. Removal of existing electrical systems (wiring, raceways and panel boards) up to and including the main distribution panel.
 - ii. Installation of new main distribution panel for the building.
 - iii. New panel boards for branch circuits to supply normal/clean power outlets, lighting and mechanical equipment.
 - iv. Telephone & signet raceway systems.
 - v. Power distribution for special rooms.
 - vi. Wiring and raceways.
 - vii. Interior/Exterior lighting.
 - viii. Emergency lighting.
 - ix. Exit signs and directional exit signs.
 - x. Fire detection/fire alarm system.
 - xi. Fire suppression system.
 - xii. Surge suppression as required.
 - xiii. Residual Current Devices.
 - xiv. grounding and bonding.
 - xv. administration (construction drawings, shop drawings, record drawings, samples, codes, attendance at meetings, permit fees, etc.).
 - xvi. certificate of completion
 - xvii. system start-up, testing, balancing, adjusting and commissioning.
 - xviii. occupancy and maintenance (O&M) manuals.
 - xix. list of spare parts. And
 - xx. Others as outlined throughout the project brief.
- vi. Complete the design for the replacement of the electrical systems based on the requirements contained in this project brief. These requirements are intended to set



minimum criteria and provide guidance to the consultant who is to complete the electrical design.

- vii. The distribution system shall permit a minimum future growth factor of 25% without equipment revisions. Electrical systems shall also be designed to facilitate future alterations, e.g. new elements, such as breakers and conduits.
- viii. Flexibility of electrical distribution system to the workstation in open office space is paramount. Devise a plan for review by Global Affairs Canada (GAC) to provide power and IT resources to workstations not against or near a wall.
- ix. Posted operating instructions in English is required for manually operated electrical systems. They shall consist of simplified instructions and diagrams of equipment, controls and operation of the systems. Instructions shall be framed and posted adjacent to the major equipment of the system.
- x. Furnish inspection certificates, prior to final payment, to show installed work conforms to contractors' specifications, drawings and regulations.

b) GENERAL REQUIREMENTS

- i. The new design should explore opportunities to meet current standards within the constraints of existing structure. Determine which part of the existing building and its systems could be retained. Understanding the exact requirements of the user and building performance is essential to effectively implement the renovation project.
- ii. New work and alterations shall meet current codes, unless combining new and old systems creates a special hazard. Such conflicts should be resolved with Departmental Representative.
- iii. The following electrical features shall be incorporated, implemented, and maintained in the building:
 - i. Safety to personnel during operation and maintenance.
 - ii. Flexibility and reliability of electrical services.
 - iii. Proper co-ordination of all elements of the system such as but not limited to insulation levels, interrupting capacities, protective relaying, and mechanical strength.
 - iv. Energy conservation with respect to systems and equipment and their operation.
- iv. Distribution system to be designed to allow possible shutdown of major equipment for maintenance without affecting critical loads in the building.
- v. Standards and materials stipulated indicate are the minimum acceptable.
- vi. Considering building security, the Canadian mission maintains the right to restrict access within the building as all access is controlled

c) PERFORMANCE REQUIREMENTS

- i. The electrical systems, fixtures and equipment shall be fail-safe and meet design requirements of a quality consistent with anticipated minimum life expectancy of 25 years.
- ii. All system fault current levels shall be determined, and all equipment rated to withstand fault current stresses. A complete protection and coordination study including an arc flash and shock study shall be specified and completed.
- iii. The system fixtures and equipments selection shall be based on a life cycle costing analysis and proper product certification label.



- iv. Select the systems fixtures and equipment for their performance, reliability, durability, sustainability, flexibility, accessibility and ease of operation and maintenance, availability of parts from recognized global manufacturers.
- v. Systems shall provide pollutants-free operation and shall be designed to use a minimum amount of energy consistent with required performance standards.

d) ENERGY CONSERVATION

- i. Consultant should always make environmentally responsible choices regarding new building materials and disposal of discarded products.
- ii. Conservation of energy consumed by electrical systems is also dealt with in lighting and control. Illumination within an area shall be provided by the most efficient luminaries available for use in that area.

e) ELECTRICAL EQUIPMENT

- i. Electrical equipment shall be readily and safely accessible for routine maintenance and repair.
- ii. Provide suitable maintenance access panels and openings for all electrical systems and equipment. Pay particular attention to electrical junction box in the plenum when solid/drywall ceiling is provided. Provide space and ensure accessibility to allow for removal, maintenance and possible replacement of electrical equipment.
- iii. To safely operate and service equipment there must be sufficient clearances from building structure or other equipment to draw-out or remove equipment as required. To isolate equipment in a de-energized state there must be provision for use of portable mechanical lock devices.

f) SEIMIC and CRITICAL INFRASTRUCTURE PROTECTION

- i. Electrical infrastructure and cable trays shall remain fully operational during and after earthquakes. Refer to SAN 10160-4 for Seismic actions and general requirements for buildings for seismic design criteria.
- ii. In T-bar ceilings provide independent chain anchors for light fixtures to reduce the effect in the event of a collapsed ceiling.

g) CODE COMPLIANCE REQUIREMENT

- i. Electrical systems shall meet or exceed the requirements of most recent version of the following codes, standards, and guidelines. In case of conflict the most stringent code shall apply:
 - .g.i.1. SANS-10142-1- The Wiring of Premises – Part 1: Low-Voltage Installations
 - .g.i.2. IEC60364 – Electrical Installations
 - .g.i.3. CAN/CSA C22.1 - 15: Canadian electrical Code, Part 1
 - .g.i.4. SANS 10139 – Recommendations for the planning, design, installation, commissioning and maintenance of Fire Alarm Systems.
 - .g.i.5. BS-5839-1 Fire detection and alarm systems for buildings — Part 1: Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises.
 - .g.i.6. Canada Labour Code Part IV;
 - .g.i.7. Equipment to meet Canadian Standards Association (CSA) or equivalent (UL, ULC, EC, CE);



.g.i.8. Fire Alarm components to be certified to EN54 product standard.

h) ELECTRICAL SERVICE AND DISTRIBUTION

i. MAIN LOW VOLTAGE DISTRIBUTION SYSTEMS

.h.i.1. Main Distribution Panel shall be provided with a “Class C” industrial grade surge suppression device.

.h.i.2. Provide a TNS power distribution topology for the main distribution and final sub circuit. Neutral and earth conductors shall be separated.

.h.i.3. If required automatic power factor correction shall be provided for the entire electrical system **to achieve a power factor of 0.95 or better.**

ii. SECONDARY BRANCH POWER DISTRIBUTION

.h.ii.1. The secondary branch power distribution shall be classified as follows:

i. Normal power for lighting.

ii. Normal power for service outlets/equipment.

iii. Normal power for mechanical equipment.

iv. Clean computer grade electrical power for workstation outlets and Telecommunication and Security Equipment.

.h.ii.2. Normal power: The loads which are to be placed under normal power are those which do not require a level of reliability superior to that provided by the normal power grid. Power to the following electrical components will be provided by the normal power distribution network:

i. 100% of lighting fixtures for the interior and exterior spaces.

ii. Standard and special outlets in kitchens.

iii. Convenience outlets.

iv. HVAC system.

v. exit lights and directional exit lights throughout the building.

vi. all building management (automation) control systems.

vii. Other essential loads which become apparent during the design and working drawing phase.

.h.ii.3. Clean computer grade electrical power: The minimum requirement for “clean power” is the provision of a separate distribution panel. The equipment to be placed under clean power are outlets for workstations, printers, telecommunication closets and server rooms.

.h.ii.4. If found to be acceptable during design distribution panels shall be replaced and refed from existing positions.

.h.ii.5. Branch circuit Panels shall be protected from voltage surges by the installation of TVSS complying with ANSI/IEEE C62.41 - category "B". TVSS to have the lowest possible clamping voltage and be able to provide 140 KA (8/20) surge protection in accordance to UL 1449 and NEMA LS-1.

.h.ii.6. Both normal and clean power panelboards shall be provide with 25% spare capacity including 10% spare common breakers.

i) Provide Residual Current Protection devices as per the IEC06755 and as per the following: Circuits feeding receptacles: 30mA, Circuits feeding Lighting: 100mA, Circuits feeding exterior receptacles and receptacles 1.5 meter from a sink: 10mA, protection



against the risk of fire: 300mA – 500mA

j) RACEWAYS AND CONDUIT

- i. Cables and conductors shall be installed in authorized raceway systems for power consisting of metal conduit complete with manufactured couplings and connectors, approved certified wireways/cables and/or fully enclosed cable trays with covers.
- ii. If required, surface mounted raceways will be acceptable. Contractor shall provide availability of certified Raceways Similar to Wiremold-Legrand Communication raceways are to have adequate clearance to reduce EMF interference.
- iii. Conduits shall be installed parallel or perpendicular to the building lines.
- iv. Separate conduit systems shall be utilized for each secondary branch distribution panel.
- v. Empty conduit systems shall be provided with adequate strength nylon pull-cords and shall have plastic bushings at each end of conduit.
- vi. Use of non-combustible flexible armoured conduit or armoured cable shall be limited to final connections to equipment, e.g., motors, lighting, fixtures, outlets etc., and lengths kept as short as practical. Use of flexible armoured cable/conduit shall not to exceed 5 m at each respective connection unless approved by the departmental representative.
- vii. Cable and conduit systems to be protected from atmospheric and mechanical damage.

k) IDENTIFICATION

- i. Panel boards shall have a permanently attached lamicoïd identification nameplate.
- ii. Electrical circuits and conductors shall be identified at the panel. Panelboards shall have a circuit directory affixed inside each panels shall be comprehensive in nature and typewritten or computer printed in English. Each switch control and receptacle face plate shall have the circuit and panel number identification neatly installed on it using some form of self-adhesive labelling or identification system.
- iii. Provide identification at each starter; disconnect switch and /or controls.
- iv. Permanently attached lamicoïd nameplates shall be affixed to front door assemblies of each motor control centre identifying motor drives contained therein.
- v. All conduit systems are to be colour coded on the exterior with colour bands indicating system type.

<u>System</u>	<u>Primary colour / Secondary colour</u>
Fire Alarm	Red
Low Voltage	Yellow
Normal Power	Yellow
Clean Power	Yellow/ Blue
Ground	Green
BMS	Gray
Information Technology	Orange
VSAT	Orange/Black
Internet	Orange/Yellow
Security	Blue



CESS	Blue/Yellow	
CSAS		Blue/Black
CCTV		Blue/Green

l) WIRES AND CABLES

- i. Voltage drop shall not exceed 3% from the distribution panel to the rated load.
- ii. Cables and conductors must be rated specifically for application. All power feeders shall consist of copper conductors. Subject to the departmental representative approval, feeder conductors in conduit may be substituted for armoured cable.
- iii. All feeders and branch conductor shall be copper, minimum 2.5 mm² with RW-90 X – link 1000V insulation, 90°c installed in approved conduits.
- iv. All fire alarm system wiring shall be solid copper and installed in conduit or approved fire rated cable as per manufacturer recommendations. Stranded wiring shall not be used.
- v. All feeder conductors shall be provided with separate 100% sized neutral wire. All branch circuit conductors from clean power and special rooms' panelboards shall be provided with separate 100% sized neutral wire. Common neutral wire is not acceptable.
- vi. Each conduit to be complete with a ground conductor.
- vii. Avoid the use of single conductor armoured cables where electromagnetic interference may become an issue.
- viii. The demand load on a branch circuit shall be 80% of the rating of the overcurrent device protecting the branch circuit unless written permission is given from DFAIT.
- ix. Conductors to be colour coded as per local standard.

m) OUTLETS AND RECEPTACLES

- i. The main outlet distribution shall be from normal and clean power distribution panelboards. Where required, dedicated outlets shall connect to these panelboards. Dedicated outlets are stand-alone single outlets fed from their own circuit breaker.
- ii. In South Africa, power plugs and sockets (outlets) of type D, type M and type N are used. Ungrounded outlets are not allowed.
- iii. Every workstation shall have the capacity to have a minimum of two duplex clean power outlets. Provide a maximum of three workstations per circuit of clean power. This group of outlets shall be installed beside the IT computer data/phone outlet.
- iv. All power outlet location details shall be coordinated by the prime consultant's engineering team with the departmental representative. Furniture and equipment locations shall be integral into the design process. Enclosed offices with permanent partitions shall have convenience outlets on normal power on three perimeter walls (3 normal power outlets/office). Provide a maximum of 12 normal power outlets per circuit. Provide house keeping outlets on normal power in corridors located 15 m on centre and 7.5 m from corridor ends.
- v. Submit samples of all receptacles and switches for this project for approval by the departmental representative.

n) LIGHTING

- i. **INTERIOR/EXTERIOR LIGHTING AND ILLUMINATION LEVELS GENERAL REQUIREMENT**



- .n.i.1. Lighting shall be designed to assist in defining the overall building architecture, address organizational safety and security requirement and address the multiple task requirements of individuals in different type of spaces within the building.
- .n.i.2. Special lighting design concepts are encouraged in the main lobby, main boardroom and multi purpose room. The lighting design should be an integral part of the architecture and allow for a multi-scene lighting configuration from a local light controller.
- .n.i.3. Consideration shall be given to the options offered by direct lighting, indirect lighting, direct / indirect lighting. Consideration shall be given to design for glare, contrast, visual comfort, and colour rendering.
- .n.i.4. The arrangement of lighting fixtures shall be such as to provide an illumination with uniformity of 0.8 (minimum / average = 0.8) over the work are and provide maximum flexibility in rearrangement of the space.
- .n.i.5. Lighting at desk top level (750 mm above floor level) in the offices and at floor level in all other areas shall not be less than the maintained illuminance levels below:
- .n.i.6. Exterior lighting: replace all exterior lighting. Perimeter fence lighting not part of this project.

Interior Illumination Levels in the Building (Maintained)Description of task / interior space	Illumination (lx)
at entrance lobby	325 lx
at waiting area	325 lx
at visitor orientation areas	150 lx
in washrooms	220 lx
in corridors	220 lx
in circulation spaces	220 lx
at workstations	500 lx*
in conference rooms, and director offices (fully dimmable)	0 to 500 lx**
in kitchen(s)	500 lx
in library	500 lx
in stairwells	220 lx
in computer rooms	500 lx
in multi-purpose rooms and meeting rooms(fully dimmable)	0 to 500 lx**
in interview booths	750 lx
in electrical / telephone rooms	500 lx
in storage rooms	325 lx

* This level can be lowered to 400lux if workstations are provided with task light to supplement base building lighting level.

** One of those rooms will be designated for video conference. Light fixtures, lighting control and power distribution shall comply with the department Video conference guideline.

ii. EMERGENCY/SAFETY LIGHTING

- .n.ii.1. Emergency lighting shall be provided throughout the building and provides illumination to the area when there is a loss of power to normal lighting.
- .n.ii.2. Emergency lighting levels shall be provided to an average level of illumination not less than 10 lux, never less than a minimum of 1 lux at floor or tread level in principal access routes to exits, equipment rooms and rooms where the public may congregate.
- .n.ii.3. Emergency lighting battery packs shall provide for a minimum of 2-hour duration service. Battery packs to be provided with a self-diagnostic circuitry card (auto-test). Certified



safety to be provided with lighting battery packs consisting of self-contained rechargeable battery, battery charger, status indicator, transfer devise, test switch and pilot lamp able to operate under failure of the normal power system.

- .n.ii.4. Illuminated, universal symbol exit and directional exit signs shall be provided at all points of egress in the building. Exit light fixture shall provide for a minimum of 2-hour duration service similar to the emergency battery unit.



Left from here

Figure 14 — Example of a



Right from here

Figure 15 — Combination



Straight on

- .n.ii.5. Illuminated signs are required at emergency exits (fire stairwells), emergency evacuation route, the location and signing of life/safety equipment.

iii. LIGHTING FIXTURES

- .n.iii.1. All existing fluorescent fixtures be discarded and replace with new LED fixtures.
- .n.iii.2. New luminaires shall be RP-1 compliant and have LED lamps with a color rendering index above 85 with a color temperature of 3500 to 4000°K. New fixture shall be compatible with both type of ceiling finishes (suspended and open ceiling) and shall be utilized throughout the office space areas. The new layout should match the workstation positions and the required level of lux for each definite location. Architectural luminaires including new general lighting fixtures chosen for use for accent lighting, artwork lighting, the conference/meeting rooms and executive director/ director offices must be the most efficient type practical for use in that area given operational requirements, task requirements and architectural ceiling finishes.



- .n.iii.3. Luminaries and associated fitting should always be of high-end commercial design. Careful consideration to be taken in the design of lighting systems regarding servicing of the luminaries and replacement of LED lamps and driver.
- .n.iii.4. Luminaries shall harmonize with ceiling finishes and ceiling fixtures with low glare lenses shall comply with the recommendation of the CIBSE lighting guide or IESNA RP-1 to address veiling reflections on VDT screen utilized throughout the office space areas. If acrylic lenses or diffusers are used for fixture in other areas, they should be non-combustible, clear virgin acrylic plastic with prismatic configuration complete with UV inhibitors.
- .n.iii.5. Surface and suspended industrial type luminaries with reflectors shall be utilized in all building service areas and mechanical/electrical spaces.
- .n.iii.6. Fixtures in a T-bar ceiling shall be independently supported from the ceiling structure.
- .n.iii.7. Careful consideration shall be taken in the design of lighting systems regarding servicing of the luminaries and replacement of lamps and ballasts.

iv. LIGHTING CONTROL

- .n.iv.1. The segregation of activities within an open space shall form the basis on which to select switching zones and control arrangement. If required existing lighting control to be reorganized to match workstation layout.
- .n.iv.2. Each space enclosed by ceiling height partitions shall have at least one control device to independently control the general lighting within the space. Each manual device shall be readily accessible and located so the occupants can see the controlled lighting.
- .n.iv.3. Manual control in the offices shall consist of ceiling mounted dual technology ultrasonic/passive infrared motion control with an addressable light switch to ensure a manual-on automatic off feature. Automatic off setting to be between 30 sec to 30 minutes of the person leaving the space.
- .n.iv.4. Local manual lighting control shall be provided in technical areas.
- .n.iv.5. Circuit breakers shall not be used as manual lighting control, and the use of contactors shall be limited to allow zone segregation for possible system maintenance requirement.

o) MOTORS AND MOTOR CONTROL CENTRE

- i. Determine the characteristics and operating sequences of the mechanical equipment and ensure that the proper starters, auxiliary components, and disconnects are clearly provided for.
- ii. All mechanical rotating (such as fan, motor, chillers, condensers, fan coil, etc.) equipment to be provided with unfused disconnecting means/switch at each unit.
- iii. Preference shall be given to high efficiency design motors. Motors 550 W (: HP) or larger shall be three phases.
- iv. Final motor connections shall be made with liquid tight flexible metallic conduit.
- v. Motors shall be earth bonded using an insulated bonding conductor originating from MCC.
- vi. Permanent nameplates in English identifying motor drives shall be on front door assemblies.

p) GROUNDING AND BONDING

- i. A complete electrical grounding system is required for the building in accordance with the Canadian Electrical Code and local codes and standards. A low impedance (5



- ohms or less) earth ground grid system shall form the basis of the grounding network.
- ii. Non-current carrying metallic portions of electrical equipment shall be grounded. This includes main switchgear all distribution panel cabinets, motor frames, conduit, cable trays, mechanical ventilation ducts, etc.
 - iii. Electrical systems shall be connected to ground with separate continuous ground conductors. Breaker distribution panels shall have grounding termination busbars secured to the panel structure.
 - iv. Cable or conduit raceway power supply systems shall have separate designated grounding conductors. Metallic raceway systems are not accepted for grounding purpose.
 - v. Verify if the building reinforcing steel is connected to the ground grid. All major piping systems shall be bonded at earth potential. If raised floors are used for cable distribution metallic supports shall be grounded.
 - vi. Provision of complete Telecommunication grounding/bonding as per TIA-607 Standard

q) FIRE DIRECTION / ALARM SYSTEM

- i. Provide new microprocessor-based fire detection/alarm system as required by the applicable codes, standards and regulations throughout the space.
- ii. Configure fire detection/alarm system such that loss of function of fire alarm system on one floor does not disable the system on other floors.
- iii. Provide a dry contact for connection to an auto-dialler by DFATD security department.
- iv. The interaction of the fire detection/alarm system and the security systems shall be established in consultation with the departmental representative.
- v. Duct type smoke detectors will be provided in all recirculating air systems. System zoning will be in accordance with all relevant building codes and standards.
- vi. There is no specific pattern for the runs for the fire detection/alarm system, providing the sizes are maintained and they do not cross security zones.
- vii. Locate audible notification appliances supplied with this system below the level of suspended ceilings on permanent interior walls, and not on the moveable partitions. Where required, the audible notification appliances supplied may be mounted in the suspended ceilings in such a manner not to impose the weight of the audible notification appliances supplied on the acoustic ceiling tile. Audible devices to provide a minimum of 65db or 10 db above ambient noise.
- viii. Fire alarm installation shall have the capacity to provide visual signal appliance in the office areas. Provide visual signal appliances in the immigration area.
- ix. Obtain written approval from the departmental representative for proposed solutions before purchasing materiel or commencing installation.
- x. Fire alarm panel to be provided with a minimum of 24hrs emergency battery back-up.
- xi. System verification shall be in accordance with **SANS 10139 and BS-5839-1** Standards for the Verification of Fire Alarm Systems.

END OF PART 4



PART 5- STRUCTURAL ENGINEERING

5.1 APPLICABLE CODES AND STANDARDS

5.1.1 BUILDING CODE COMPLIANCE REQUIREMENTS

- 5.1.1.1 All, if any, new structural systems designed and installed will meet all applicable codes, standards and regulations of the authority having jurisdiction or the National Building Code of Canada 2015 (NBCC 2015), whichever is more stringent.
- 5.1.1.2 Seismic Risk Reduction of Operational and Functional Components, CSA S832
- 5.1.1.3 Refer to Part 1: Project Conditions - 1.3. Codes, Regulations, By-Laws for a complete description of the code compliance requirements.

5.2 DESIGN, EVALUATION AND PERFORMANCE OF STRUCTURE

5.2.1 STRUCTURAL LOADS

5.2.1.1 General Considerations

- a) Unless available from record drawings, determine the capacity of structural members to withstand, within acceptable deflection limitations, all current and planned occupancy loads. Provide the most efficient and cost effective solutions for any structural reinforcing, if required.
- b) Verify that floor slabs, horizontal framing members, and beams or girders have the required capacity to carry the loads resulting from the proposed layout. Uniformly distributed live load will not be modified by reduction factors.
- c) All verified general design load capacities will be clearly specified within the “General Notes” on the drawings. Any locations, where design load capacity exceeds that of the general load capacity, will be clearly identified on the drawings.

5.2.1.2 Office Space – Floor loading Review

- a) Verification of the structural framing is required for all floor areas supporting storage and filing rooms, mobile shelving units, and computer rooms. Minimum superimposed live load capacity will be:
 - Storage Areas and Server Rooms: live load 4.8 kPa
 - Mobile shelving units: live load 7.2 kPa
 - High Security Zone (HSZ): live load 7.2 kPa
 - Seismic Loading: To be provided by the GAC Senior Structural Engineer
 - Physical Security Loading: To be provided by the GAC Senior Physical Security Engineer

5.2.1.3 Hardened Walls

- a) Verify existing slab to carry the increased weight of hardened walls. The following weights are provided for wall surface, and therefore they must be multiplied by the height of the wall in order to calculate the load imposed on the slab.

5.2.2 FLOOR PENETRATIONS AND TRENCHING

- 5.2.2.1 Floor penetrations, if required, will be designed so as to **NOT** decrease the capacity of the Lateral Force Resistance System (LFRS).
- 5.2.2.2 All new openings for installation of mechanical, electrical, communication systems, connecting stairs, etc. must be reviewed by the structural engineer, and approved in writing. Cutting or coring of openings must **NOT** decrease the live load capacity of the slab or any other structural element.



- 5.2.2.3** All trenching required for installation of services, electrical, communication, IT, etc., must be reviewed and approved in writing by a licensed structural engineer.

5.2.3 SEISMIC LOADS

- 5.2.3.1** All operational & functional components (OFC's) identified in other sections of this brief will be braced in compliance with the requirements of "CSA -S832 – Seismic risk reduction of operational and functional components of buildings".

5.3 SUBMISSIONS

5.3.1 CONSTRUCTION DOCUMENT PHASE

5.3.1.1 Deliverables

- a) Construction drawings and specifications as required for any modification to the existing structure to accommodate the new floor openings and local higher loads;
- b) Written confirmation, signed and sealed by a Professional Structural Engineer, that the floor does have the capacity to carry the superimposed live load specified in item 0, and the additional security walls as specified under item 0.
- c) Slab reinforcing details (if required for increased load capacity).
- d) Review & written acceptance of floor penetrations and trenching for new mechanical, electrical and communication systems, or recommendation of alternate locations. Provide trenching and penetration drawings sealed and signed by a structural professional engineer.

END OF PART 5



PART 6 - PHYSICAL SECURITY BRIEF

6.1 GENERAL

Security should be an inherent and discrete part of the design. The Chancery space shall protect employees, property, and sensitive materials from threats of violence, and espionage penetration. Physical security barriers and check points are required throughout the mission. Controlled access to the space is to be provided for all pedestrians.

A Chancery will typically be set out in five zones. These usually include: Public, Reception, Operations (OZ), Secure (SZ) and High Security (HSZ).

6.2 GLOSSARY AND ACRONYMS

BR	Bullet and Physically Resistant Material
CCC	Classified Computer Center
CCTV	Closed Circuit Television
CCUR	Classified Common User Room
CESS	Chancery Electronic Security System
CSAS	Chancery Security Alert System
DCC	Designated Computer Center
EF	Entrance Facility
GAC	Global Affair Canada
HSZ	High Secure Zone
IDACS	Intrusion detections and Access Control System
MITNET	Multipurpose Integrated Telephone Network
MSR	MITNET Services Room
OZ	Operations Zone
SZ	Secure Zone
TC	Technical Closet
UPS	Uninterrupted Power Supply

6.3 HARDENED WALLS

6.3.1 PHYSICAL RESISTANT-TYPE III

The walls separating the reception zone to the Operation Zone, and the Operation Zone to the Secure Zone are to be Physical Resistant.

A rough location and type of barrier walls shall be identified by GAC after review of concept design. GAC shall liaise with the architect to develop and finalize barrier wall types and locations. Detailed drawings with appropriate sections shall then be submitted to GAC for approval and to ensure the framing and component structure follow Departmental norms.

The contractor shall source all material and construct all security walls as per GAC security requirements. In Annex A & B, a generic design will be provided, but the final design needs to be approved by the Infrastructure Protection and structural Engineer.

It is the Consultants responsibility to verify the load bearing capacity of the existing building structure and to design all necessary structural strengthening that guarantee it can bear the additional load from all the hardened walls.

For additional and site-specific information on the Physical Resistance wall, refer to the Infrastructure Protection Engineering section.

See Annex A for technical requirements on type 3 walls and Annex B for generic design.



6.4 GAC SUPPLIED DOORS AND FRAMES

6.4.1 Physical Resistant Doors and Frames

These doors are/may be used for fire exits from the Operational Zone/Secure Zone into a Public Zone, access doors separating the Operational Zone from the Secure Zone or Secure Zone to the High Secure Zone, and for any special rooms requiring IDACS. Physical resistant doors are supplied by GAC and come complete with frame and hardware, the contractor shall supply a rough reinforcing frame firmly anchored to the upper and lower slabs. The rough opening size varies due to door systems that come in different sizes based on the lock hardware installed or by the addition of sidelights or transoms. Therefore the Consultant must submit detailed door schedule for approval by the Departmental Representative.

See Annex A & B for technical requirements and rough opening dimensions for Physical Resistant Doors

6.5 LOCALLY SUPPLIED DOORS

The consultant shall provide all interior and exterior doors, with the exception of the GAC supplied doors. Once the developer and GAC agree on an approved door schedule, the contractor will be responsible for the installation of all the doors.

6.5.1 Interior Doors

Doors shall be minimum solid core wood door 45mm thick, non-rebated and must be capable of accepting GAC approved North American commercial grade lock hardware.

6.5.2 Exterior Doors

Doors shall be a minimum 16 gauge steel, reinforced and insulated door 45mm thick, non-rebated, and shall be reverse hung in a 14 gauge pressed steel frame using non-removable pin hinges. These doors must be capable of accepting GAC approved North American commercial grade lock hardware.

6.6 DOOR HARDWARE

GAC shall provide all door hardware, except for hinges, kick plates, door stops, weather stripping; cabinet-type hardware or for any special considerations (i.e. glass doors, washroom stalls).

GAC will liaise with the architect and developer to review and approve door and door hardware schedules. GAC will also provide guidance to the developer, architect or contractor on the application, preparation and installation of GAC approved, North American door hardware.

Approved door hardware shall be of North American manufacture and consistent with GAC standards. In general, mortise lock sets will be selected for all interior doors.

Any approved local doors separating security zones shall be equipped with non-removable hinge pins.

GAC shall supply, pin, code and install all permanent key cylinders after take-over, replacing temporary cylinders used during construction.

6.7 FIRE ALARM

Please refer to Electrical Brief Section



ANNEX – A

Hardened Walls

This section describes the barrier wall types together with associated technical requirements. For additional information, refer to the Infrastructure protection engineering section.

Deflection Gap Definition

A deflection gap is required in order to allow differential deflection between the floor slab and ceiling slab, and to prevent overloading of the slab below or the wall framing. This is in accordance with basic structural engineering requirements. A deflection gap is required for all interior and exterior non load bearing partition walls that are being installed within new and existing facilities. It is essential to maintain lateral support of the partition walls. This is one possible detail that satisfies structural and Infrastructure Protection Engineering requirements.

Type 3 - Composite Wall: Physically Resistant

The following technical requirements are to be adhered to in conjunction with Annex B generic drawing:

Security Figure 1.1.4 | Hardened Wall Type 3: Physically Resistant Composite Wall

Low level, this wall type is normally used in separating the Operations and Security Zones or in the construction of the perimeter wall where the wall forms a corridor accessible to the public.

One (1) top plate and one (1) base plate, both 100mm (4"), firmly anchored to the floor and ceiling slabs, with vertical studs on 400mm (16") centers are required. Affix a 3mm (1/8") thick mild steel plate, from slab to slab on the exterior or attack side. Install friction fit insulation for sound attenuation and an appropriate finish to designer's specifications. Any aperture in excess of 600 sq. cm. (93 sq. in.) shall be above the false ceiling line and shall be protected with 16mm (5/8") diameter solid steel rods firmly anchored on 150mm (6") centers. A slip connection shall be provided at the ceiling slab connection to allow for differential movement of a minimum of 25mm.

Physical resistant doors

The following technical requirements are to be adhered to in conjunction with the attached generic drawings:

Figure 1.2.3 | Reinforcing for Bullet and Physical Resistant doors in Composite Walls

Figure 1.2.5 | Physical Resistant Door Frame Attachment Details for Poured Concrete, Concrete Block and Composite Walls

Structural Reinforcing Requirements

Due to the significant weight and the attack resistance of the physically resistant doors it is necessary to structurally reinforce framed walls to receive these doors.

The contractor shall be responsible for constructing a structural frame which will support the Physically resistant door. Figures attached details the reinforcing construction for a typical building. Any deviation from this accepted design must be approved by GAC prior to construction.

The structural frame shall be constructed from C75x9 (C3x6) steel "C" channel and shall consist of two posts and a lintel. The assembly shall be electrically welded with the flat side of the channel facing to the inside of the opening. The posts shall extend from floor to ceiling slab and shall be securely fastened to both floor and ceiling slabs with an appropriate fastening system. A slip connection shall be provided at the ceiling slab connection to allow for differential movement of a minimum of 25mm. Once assembled, the framework shall provide a rough opening of no less than 1016mm (40") wide x 2185mm (86") high (from finished floor) into which the door and frame will be installed.

The door frame shall be provided with associated conduit to accommodate the electrical requirements of the door as per Annex B figures.

CHANCERY ELECTRONIC SECURITY SYSTEM (CESS)

IDACS - Intrusion Detection Access Control System

The following technical requirements are to be adhered to in conjunction with the attached generic drawings:



- Figure 2.1.1 | Conduit and electrical Boxes Requirements**
- Figure 2.1.2 | Conduit Requirements**
- Figure 2.1.3 | Color Coding**
- Figure 2.1.5 | Conduit Bends and Junction Box Requirements**
- Figure 2.1.14 | Recessed Door Contact Conduit Layout**
- Figure 2.1.15 | Wall Mounted Device Conduit Layout**
- Figure 2.1.16 | Ceiling Mounted Device Conduit Layout**
- Figure 2.1.17 | Keypad Back box – Composite Wall**

IDACS Conduit Requirements

All conduits to include nylon pull cords. All conduit measurements are inside diameter. 25mm (1") Conduit is to terminate in an electrical box approximately 100mm x 100mm x 50mm (4 x 4 x 2") and greater than 25mm (1") is to terminate in an electrical box approximately 150mm x 150mm x 50mm (6 x 6 x 2"), both sizes depending on local standards. The conduit runs shown for IDACS indicate a possible route that can be used by the contractor but can be installed in a different pattern provided the sizes are maintained and they do not cross public areas. All junction boxes must be marked with blue paint indicating that it is security infrastructure.

Bends in conduit runs should be avoided when possible. For the main security conduit backbone a maximum of one 90° bend between junction boxes. From the main security conduit backbone to endpoints there should be no more than a maximum of two 90° bends or a maximum of 180° bends in total between junction boxes.

Conduit Markings of all IDACS conduits will be marked with one (1) Blue band and one (1) Yellow band within 150mm (6") of any termination point and within 150mm (6") of every junction box. The bands should be no less than 25mm (1") wide.

For additional information please refer to the ICT section.

IDACS Device Requirements

Keypad Doors: All keypads are to be mounted centered on 1200mm (47") from the midpoint of face plate to finished floor. The mounting boxes will be supplied as soon as the contract has been finalized so the Contractor can install them during construction. Refer to figures in Annex B.

Door Contacts: All new construction is to utilize concealed door contacts. Refer to the figures in Annex B.

In those circumstances where surface mount contacts are required, it will only be necessary for the contractor to provide a 100mm x 100mm x 50mm (4 x 4 x 2") electrical box above the false ceiling, on the protected side. This box should appear directly above the latch side of the door to receive the protection.

END OF PART 6



PART 7 - COMMISSIONING (CX)

7.1 General

- 7.1.1** Commissioning is a process that takes place at all stages of the project. At concept design stages, commissioning activities serve to assure that the Owner's Project Requirements for items such as energy efficiency, sustainability, indoor air quality, fire protection and life safety, etc. are sufficiently defined and adequately and accurately reflected in the contract documents. It will provide the opportunity to assure that building systems and assemblies are installed as designed will function according to the user expectations.
- 7.1.2** The Consultant will be responsible to prepare the documentation for the commissioning process to be followed by the contractor. The process includes construction checklists developed with the intent to convey pertinent information to the installers regarding concerns on installation and long-term operation of the facility and systems. The approach to the structure of the checklists is to keep it short and simple by focusing on key elements. Checklists span the duration from when equipment is delivered to the job site until the point that the system/component is started up and operational. Construction checklists are tools for transferring the information contained in the contract documents (drawings and specifications) to the workers in the field. This includes testing, adjusting and balancing and control system tuning.
- 7.1.3** Typically, at the construction stage, the Consultant will supervise the installation of the equipment, material and systems, and witness the commissioning performed by the contractor and by an independent certification firm when required. The two overarching goals of the Construction Phase are to assure the level of quality desired and to assure the requirements of the contracts are met.
- 7.1.4** For this project, the building systems will be commissioned by the general contractor and the design firm prior to occupancy, with oversight and verification by Global Affairs Canada (GAC) team resources. During construction, quality assurance will be performed in collaboration with the Design Consultant, GAC Subject Matter Experts (SME)
- 7.1.5** The design consultant will be responsible to ensure that the quality of installation is in accordance to their design expectations. The design consultant will remain responsible for the design; if changes are required due to site conditions during construction, the design consultant will have to approve the proposed modifications.
- 7.1.6** The GAC Representative team will visit the site periodically. GAC will meet the Design Consultant to communicate our expectations. GAC SME will make observations on the installation and will communicate their concerns, if any, to the Project Manager documented through their trip reports.

7.2 Fire Protection and Life Safety Systems SOW

- 7.2.1** The Fire Suppression and Life Safety systems certification will be performed by the fire protection firm who installed and/or modified the system and the verification of the system will be witness by the design consultant.
- 7.2.2** Within the tender document specification, the consultant will identify the process, procedures, methods and documentation for each phase of the Commissioning process and describe the requirement of the verification and testing to be performed by the contractor.
- 7.2.3** Once the contractor installation, initial verification and testing is complete, the contractor will certify all of the fire protection and life safety systems installed in our floor space. The contractor must prepare a written report detailing the steps of all the verifications performed and a brief description of the process and instrumentation used and the result of the certification.
- 7.2.4** The completed Cx plan and certification, including all appendices must form part of the Cx records turned over at the end of the construction phase. All active and passive (components installed on the floor and walls and doors rating and operation) fire protection and life safety systems must be commissioned.



7.3 Electrical Systems – Scope

7.3.1 This section addresses static verification, start-up, and functional performance of four areas of the electrical system. The delineation of each system will be determined by the commissioning team for this project. The four areas are as follows:

- Main distribution system;
- Branch distribution system; and
- Fire alarm and detection system.

7.4 Electrical – Documentation

7.4.1 The following contract reference documents, as a minimum, will be provided to the commissioning team prior to commencement of the commissioning process:

- A complete set of contract drawings, specifications, and associated documents;
- single-line diagrams;
- control schematics;
- wiring diagrams;
- cable schedules; and
- AC/DC schematics.

7.5 Electrical – Intent

7.5.1 Section 7.3 is intended to address the verification and performance testing of the independent elements (equipment) and integrated systems of the services listed in 7.3.1. The requirements specified in 7.3 are intended to supplement, not replace, the requirements of the authorities having jurisdiction or of applicable codes and standards.

7.6 Electrical Static Verification

7.6.1 Static verification will be completed and performed prior to energization. Static verification will include, as a minimum, the following procedures:

- factory tests and verification documentation;
- field visual and mechanical inspections;
- field electrical tests;
- testing of field values;
- testing of key interlock schemes;
- testing of mechanical interlock schemes;
- operation of control circuits;
- operation of trip circuits; and
- Testing of safety interlocks and operations.

7.7 Electrical Start-up

7.7.1 As part of the overall commissioning of a particular system, all electrical components will be energized. Start-up will include, but not be limited to, the following procedures:

- completion of static verification;
- initial site energization;
- voltage measurements;
- phase rotation;
- thermographic survey/report;
- load balancing; and
- Post-energization visual inspections.



7.8 Electrical Functional Performance Testing

7.8.1 Before the performance testing of each system, the commissioning provider will ensure that the components and systems being tested have been installed and labelled in accordance with the contract documents. The documentation will include the following, as a minimum:

- Static verification of components; and
- Start-up of equipment and systems.

7.8.2 Commissioning procedures will be carried out to ensure that electrical equipment and systems are functionally operating in accordance with contract documents and shop drawings. Functional performance testing will include, but not be limited to, the following procedures:

- tests to ensure that equipment and systems, including components such as interlocks, conditional control logic, and control sequences, are operational under all normal operating modes (including part and full load) and abnormal or emergency conditions;
- power quality measurements;
- measurement of voltage drop for all major equipment;
- measurement of voltage drop at 3% of end devices (i.e., receptacles, hard-wired equipment connection points);
- receptacle testing;
- harmonic measurements;
- power factor measurements of load balancing;
- thermographic survey;
- Illumination measurements; and
- Grounding measurements.
- Megger all Fire Alarm conductors and conductors larger than 2.5mm².

7.9 Mechanical Systems – Scope and Documentation

7.9.1 Plumbing Systems, HVAC Systems, and Fire Protection Systems will be commissioned. More stringent verification and performance testing will be considered for Life Safety Systems and Information Technology Rooms. As a minimum, the following reference contract documents will be provided to the commissioning team prior to the commencement of the commissioning process:

- A complete set of contract drawings, specifications and associated documents;
- Annotated drawings as the project progress
- Shop drawings of all equipment and components;
- Controls drawings and sequences;
- Wiring diagrams;
- Operation Manuals; and
- Air and water balancing (and any associated pressure test reports) reports.

7.9.2 At each step of the verification, the contractor must fill the verification form, and the design consultant will verify the information and validate the information and perform sampling verification. Any condition that defer from the conception must be identify and included in the deficiency list.

7.10 Intent (Mechanical)

7.10.1 Commissioning of mechanical systems will include static verification, start-up, functional performance testing, post occupancy evaluation, and documentation of the installation and performance of all systems. Commissioning will begin with individual pieces of equipment before moving to complete systems and will progress from manual operation to fully automatic operation under building automation control. When the functional performance of all individual systems (including architectural) have been tested and proven acceptable, functional testing of the integrated systems will be performed and verified.



7.11 Mechanical Static Verification

7.11.1 Static verification activities include the verification and documentation that all system elements are in accordance with the design requirements and will include, the following procedures, as applicable.

- Hydrostatic pressure testing;
- Flushing/cleaning;
- Chemical water treatment;
- Inspections by Authorities Having Jurisdiction;
- Documentation of all equipment and systems information, such as, model number, serial number; and
- Engineer's review.

7.12 Mechanical Start-up

7.12.1 Before equipment start-up / system start-up, the following will be completed, witnessed and documented.

- Factory test and verification documentation;
- Field visual and mechanical inspections;
- Filed electrical tests;
- Checks of equipment and systems for proper operation;
- Tests of mechanical interlock schemes;
- Operation and control circuits;
- Tests of safety interlocks; and
- Phase rotation.

7.13 Mechanical Functional Performance Testing

7.13.1 Before the functional performance testing of each system, the commissioning authority will ensure that the components and systems being tested have been installed and labelled in accordance with the contract documents. Functional performance testing will include, as a minimum, the following:

- Start-up or activation of equipment and systems;
- Completion of testing, adjusting, and balancing; and
- Calibration and testing of controls.

7.14 Operation & Maintenance (O&M) Manuals

7.14.1 The manual will include: as-built drawings, equipment data, model numbers for the equipment, parts lists, equipment options, operating manuals for each piece of equipment, sequence of operation testing and balancing reports and certifications, maintenance schedules, videos, and warranty schedules. The manual must be reviewed and certified complete by the project manager before submission to the facilities manager.

7.14.2 Manuals are to be provided in English and in electronic format and two (2) hard copies.

7.15 As Built Drawings

7.15.1 As-built drawings will be provided at completion of the project and will reflect all changes made in the working drawings during the construction process. They will show the exact dimensions geometry and location of all elements of the work completed under this contract.

7.16 Training

7.16.1 Within the specification, the consultant will identify the training requirements that the contractor will be responsible to provide.



7.16.2 For each system installed and controlled by the Tenant and the base building, training will be provided to the property section describing the design objectives and how to operate the equipment installed in our space. In addition to the information provided in the O&M manuals, the sequence of operation and the trouble shooting guide will be provided and posted close to the system if possible.

7.17 Spare parts

7.17.1 The consultant will include a list of spare parts within the specifications that the contractor will be responsible to provide at the end of the project. For each system installed and in addition to the final operating set, provide spare parts that are routinely changed as part of the maintenance program that may cause an interruption in the operation if not readily available.

7.18 Systems to be commissioned

7.18.1 The systems to be commissioned will include but no limited to the following:

System / Equipment / Process Description	Description of Cx activities (provided by Contractor)
MECHANICAL	
Potable Water Piping system	
Sanitary Sewage system	
Grease Interceptor	
Ductwork	
Hot water tank	
Washroom accessories - Urinal Flushing valves, thermostatic valves	
Exhaust Fans / Variable Speed Drives	
Main Air Handling Units / Variable Speed Drives	
Variable Refrigerant Flow (VRF) systems: Outdoor unit and individual indoor units	
Testing, Adjusting and Balancing (TAB) of all fluid and air delivering systems.	
ELECTRICAL	
Distribution/sub distribution boards including circuit breakers	
Grounding and Bonding	
Cables, Low Voltage 1kv Max	
Outlets	
Switches and cut-outs	
Lighting Control system	
General Light Fixtures	
LIFE SAFETY SYSTEMS	
Exit Lights	
Emergency Lights	
Fire Alarm / Detection System	



System / Equipment / Process Description	Description of Cx activities (provided by Contractor)
Sprinkler System	
Fire / Smoke Dampers – operation and accessibility	
Fire exit and fire egress door hardware	

END OF PART 7



APPENDIX A TO ANNEX A – EXISTING DOCUMENTS LIST TABLE

The below documents are available through CentralCollab. For access to the folder, please provide the name and email address of the person who requires access to the Contract Advisor identified in the RFP title page, section A1.

B1. Indoor Air Quality Survey. Momentum OCSA Pty. Ltd. Wilmari Groenewald. February 2019.

B2. HVAC system condition assessment report. Q-Mech Consulting Engineers. AP Hoogenboezem. March 2022.



ANNEX B - SECURITY REQUIREMENTS CHECK LIST (SRCL)



Contract Number / Numéro du contrat 24-263048
Security Classification / Classification de sécurité

SECURITY REQUIREMENTS CHECK LIST (SRCL)

LISTE DE VÉRIFICATION DES EXIGENCES RELATIVES À LA SÉCURITÉ (LVERS)

PART A - CONTRACT INFORMATION / PARTIE A - INFORMATION CONTRACTUELLE

1. Originating Government Department or Organization / Ministère ou organisme gouvernemental d'origine GAC	2. Branch or Directorate / Direction générale ou Direction AWP
---	--

3. a) Subcontract Number / Numéro du contrat de sous-traitance	3. b) Name and Address of Subcontractor / Nom et adresse du sous-traitant
--	---

4. Brief Description of Work / Brève description du travail
A&E Services for Electrical and mechanical upgrades at the Embassy of Canada in Pretoria, South Africa

5. a) Will the supplier require access to Controlled Goods?
Le fournisseur aura-t-il accès à des marchandises contrôlées? No / Non Yes / Oui

5. b) Will the supplier require access to unclassified military technical data subject to the provisions of the Technical Data Control Regulations?
Le fournisseur aura-t-il accès à des données techniques militaires non classifiées qui sont assujetties aux dispositions du Règlement sur le contrôle des données techniques? No / Non Yes / Oui

6. Indicate the type of access required / Indiquer le type d'accès requis

6. a) Will the supplier and its employees require access to PROTECTED and/or CLASSIFIED information or assets?
Le fournisseur ainsi que les employés auront-ils accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS? (Specify the level of access using the chart in Question 7. c) / Préciser le niveau d'accès en utilisant le tableau qui se trouve à la question 7. c) No / Non Yes / Oui

6. b) Will the supplier and its employees (e.g. cleaners, maintenance personnel) require access to restricted access areas? No access to PROTECTED and/or CLASSIFIED information or assets is permitted.
Le fournisseur et ses employés (p. ex. nettoyeurs, personnel d'entretien) auront-ils accès à des zones d'accès restreintes? L'accès à des renseignements ou à des biens PROTÉGÉS et/ou CLASSIFIÉS n'est pas autorisé. No / Non Yes / Oui

6. c) Is this a commercial courier or delivery requirement with no overnight storage?
S'agit-il d'un contrat de messagerie ou de livraison commerciale sans entreposage de nuit? No / Non Yes / Oui

7. a) Indicate the type of information that the supplier will be required to access / Indiquer le type d'information auquel le fournisseur devra avoir accès

Canada <input checked="" type="checkbox"/>	NATO / OTAN <input type="checkbox"/>	Foreign / Étranger <input type="checkbox"/>
--	--------------------------------------	---

7. b) Release restrictions / Restrictions relatives à la diffusion

No release restrictions / Aucune restriction relative à la diffusion <input type="checkbox"/>	All NATO countries / Tous les pays de l'OTAN <input type="checkbox"/>	No release restrictions / Aucune restriction relative à la diffusion <input type="checkbox"/>
Not releasable / À ne pas diffuser <input type="checkbox"/>		
Restricted to: / Limité à: <input type="checkbox"/> Specify country(ies): / Préciser le(s) pays:	Restricted to: / Limité à: <input type="checkbox"/> Specify country(ies): / Préciser le(s) pays:	Restricted to: / Limité à: <input type="checkbox"/> Specify country(ies): / Préciser le(s) pays:

7. c) Level of information / Niveau d'information

PROTECTED A / PROTÉGÉ A <input type="checkbox"/>	NATO UNCLASSIFIED / NATO NON CLASSIFIÉ <input type="checkbox"/>	PROTECTED A / PROTÉGÉ A <input type="checkbox"/>
PROTECTED B / PROTÉGÉ B <input type="checkbox"/>	NATO RESTRICTED / NATO DIFFUSION RESTREINTE <input type="checkbox"/>	PROTECTED B / PROTÉGÉ B <input type="checkbox"/>
PROTECTED C / PROTÉGÉ C <input type="checkbox"/>	NATO CONFIDENTIAL / NATO CONFIDENTIEL <input type="checkbox"/>	PROTECTED C / PROTÉGÉ C <input type="checkbox"/>
CONFIDENTIAL / CONFIDENTIEL <input type="checkbox"/>	NATO SECRET / NATO SECRET <input type="checkbox"/>	CONFIDENTIAL / CONFIDENTIEL <input type="checkbox"/>
SECRET / SECRET <input type="checkbox"/>	COSMIC TOP SECRET / COSMIC TRÈS SECRET <input type="checkbox"/>	SECRET / SECRET <input type="checkbox"/>
TOP SECRET / TRÈS SECRET <input type="checkbox"/>		TOP SECRET / TRÈS SECRET <input type="checkbox"/>
TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>		TOP SECRET (SIGINT) / TRÈS SECRET (SIGINT) <input type="checkbox"/>

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PART A (continued) / PARTIE A (suite)

8. Will the supplier require access to PROTECTED and/or CLASSIFIED COMSEC information or assets?
 Le fournisseur aura-t-il accès à des renseignements ou à des biens COMSEC désignés PROTÉGÉS et/ou CLASSIFIÉS? No / Non Yes / Oui
 If Yes, indicate the level of sensitivity:
 Dans l'affirmative, indiquer le niveau de sensibilité :

9. Will the supplier require access to extremely sensitive INFOSEC information or assets?
 Le fournisseur aura-t-il accès à des renseignements ou à des biens INFOSEC de nature extrêmement délicate? No / Non Yes / Oui

Short Title(s) of material / Titre(s) abrégé(s) du matériel :
 Document Number / Numéro du document :

PART B - PERSONNEL (SUPPLIER) / PARTIE B - PERSONNEL (FOURNISSEUR)

10. a) Personnel security screening level required / Niveau de contrôle de la sécurité du personnel requis

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> RELIABILITY STATUS
COTE DE FIABILITÉ | <input type="checkbox"/> CONFIDENTIAL
CONFIDENTIEL | <input type="checkbox"/> SECRET
SECRET | <input type="checkbox"/> TOP SECRET
TRÈS SECRET |
| <input type="checkbox"/> TOP SECRET-SIGINT
TRÈS SECRET - SIGINT | <input type="checkbox"/> NATO CONFIDENTIAL
NATO CONFIDENTIEL | <input type="checkbox"/> NATO SECRET
NATO SECRET | <input type="checkbox"/> COSMIC TOP SECRET
COSMIC TRÈS SECRET |
| <input type="checkbox"/> SITE ACCESS
ACCÈS AUX EMPLACEMENTS | | | |

Special comments:
 Commentaires spéciaux : Contractor will require access inside operational zone but will be escorted at all time.

NOTE: If multiple levels of screening are identified, a Security Classification Guide must be provided.
 REMARQUE : Si plusieurs niveaux de contrôle de sécurité sont requis, un guide de classification de la sécurité doit être fourni.

10. b) May unscreened personnel be used for portions of the work?
 Du personnel sans autorisation sécuritaire peut-il se voir confier des parties du travail? No / Non Yes / Oui
 If Yes, will unscreened personnel be escorted?
 Dans l'affirmative, le personnel en question sera-t-il escorté? No / Non Yes / Oui

PART C - SAFEGUARDS (SUPPLIER) / PARTIE C - MESURES DE PROTECTION (FOURNISSEUR)

INFORMATION / ASSETS / RENSEIGNEMENTS / BIENS

11. a) Will the supplier be required to receive and store PROTECTED and/or CLASSIFIED information or assets on its site or premises?
 Le fournisseur sera-t-il tenu de recevoir et d'entreposer sur place des renseignements ou des biens PROTÉGÉS et/ou CLASSIFIÉS? No / Non Yes / Oui

11. b) Will the supplier be required to safeguard COMSEC information or assets?
 Le fournisseur sera-t-il tenu de protéger des renseignements ou des biens COMSEC? No / Non Yes / Oui

PRODUCTION

11. c) Will the production (manufacture, and/or repair and/or modification) of PROTECTED and/or CLASSIFIED material or equipment occur at the supplier's site or premises?
 Les installations du fournisseur serviront-elles à la production (fabrication et/ou réparation et/ou modification) de matériel PROTÉGÉ et/ou CLASSIFIÉ? No / Non Yes / Oui

INFORMATION TECHNOLOGY (IT) MEDIA / SUPPORT RELATIF À LA TECHNOLOGIE DE L'INFORMATION (TI)

11. d) Will the supplier be required to use its IT systems to electronically process, produce or store PROTECTED and/or CLASSIFIED information or data?
 Le fournisseur sera-t-il tenu d'utiliser ses propres systèmes informatiques pour traiter, produire ou stocker électroniquement des renseignements ou des données PROTÉGÉS et/ou CLASSIFIÉS? No / Non Yes / Oui

11. e) Will there be an electronic link between the supplier's IT systems and the government department or agency?
 Disposera-t-on d'un lien électronique entre le système informatique du fournisseur et celui du ministère ou de l'agence gouvernementale? No / Non Yes / Oui

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PART C - (continued) / PARTIE C - (suite)

For users completing the form **manually** use the summary chart below to indicate the category(ies) and level(s) of safeguarding required at the supplier's site(s) or premises.
Les utilisateurs qui remplissent le formulaire **manuellement** doivent utiliser le tableau récapitulatif ci-dessous pour indiquer, pour chaque catégorie, les niveaux de sauvegarde requis aux installations du fournisseur.

For users completing the form **online** (via the Internet), the summary chart is automatically populated by your responses to previous questions.
Dans le cas des utilisateurs qui remplissent le formulaire **en ligne** (par Internet), les réponses aux questions précédentes sont automatiquement saisies dans le tableau récapitulatif.

SUMMARY CHART / TABLEAU RÉCAPITULATIF

Category / Catégorie	PROTECTED / PROTÉGÉ			CLASSIFIED / CLASSIFIÉ			NATO				COMSEC					
	A	B	C	CONFIDENTIAL / CONFIDENTIEL	SECRET	TOP SECRET / TRÈS SECRET	NATO RESTRICTED / NATO DIFFUSION RESTREINTE	NATO CONFIDENTIAL / NATO CONFIDENTIEL	NATO SECRET	COSMIC TOP SECRET / COSMIC TRÈS SECRET	PROTECTED / PROTÉGÉ			CONFIDENTIAL / CONFIDENTIEL	SECRET	TOP SECRET / TRÈS SECRET
											A	B	C			
Information / Assets / Renseignements / Biens / Production																
IT Media / Support TI																
IT Link / Lien électronique																

12. a) Is the description of the work contained within this SRCL PROTECTED and/or CLASSIFIED?
La description du travail visé par la présente LVERS est-elle de nature PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification".
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire.

12. b) Will the documentation attached to this SRCL be PROTECTED and/or CLASSIFIED?
La documentation associée à la présente LVERS sera-t-elle PROTÉGÉE et/ou CLASSIFIÉE? No / Non Yes / Oui

If Yes, classify this form by annotating the top and bottom in the area entitled "Security Classification" and indicate with attachments (e.g. SECRET with Attachments).
Dans l'affirmative, classifiez le présent formulaire en indiquant le niveau de sécurité dans la case intitulée « Classification de sécurité » au haut et au bas du formulaire et indiquer qu'il y a des pièces jointes (p. ex. SECRET avec des pièces jointes).



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PART D - AUTHORIZATION / PARTIE D - AUTORISATION

13. Organization Project Authority / Chargé de projet de l'organisme

Name (print) - Nom (en lettres moulées) Clement, Rock <small>Digitally signed by Clement, Rock Date: 2024.03.04 15:45:12 -05'00'</small>	Title - Titre Project Manager	Signature
Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel rock.clement@international.gc.ca
Date		

14. Organization Security Authority / Responsable de la sécurité de l'organisme

Name (print) - Nom (en lettres moulées)	Title - Titre	Signature Crawford, Deanna <small>Digitally signed by Crawford, Deanna Date: 2024.03.07 07:50:52 -05'00'</small>
Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel
Date		

15. Are there additional instructions (e.g. Security Guide, Security Classification Guide) attached?
Des instructions supplémentaires (p. ex. Guide de sécurité, Guide de classification de la sécurité) sont-elles jointes?

No / Non Yes / Oui

16. Procurement Officer / Agent d'approvisionnement

Name (print) - Nom (en lettres moulées) Meagan Leclair	Title - Titre Procurement Specialist	Signature Leclair, Meagan <small>Digitally signed by Leclair, Meagan DN: cn=CN, o=GC, ou=INTERNATIONAL, ou=PERSON, ou=Leclair, Meagan Reason: I am approving this document with my legally binding signature Date: 2024.03.08 14:24:44-05'00' Full PDF Editor Version: 12.1.3</small>
Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel
Date		

17. Contracting Security Authority / Autorité contractante en matière de sécurité

Name (print) - Nom (en lettres moulées)	Title - Titre	Signature
Telephone No. - N° de téléphone	Facsimile No. - N° de télécopieur	E-mail address - Adresse courriel
Date		

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