

office tenant design & construction manual



Suncor Energy Centre
111-5th Avenue SW
Calgary, Alberta

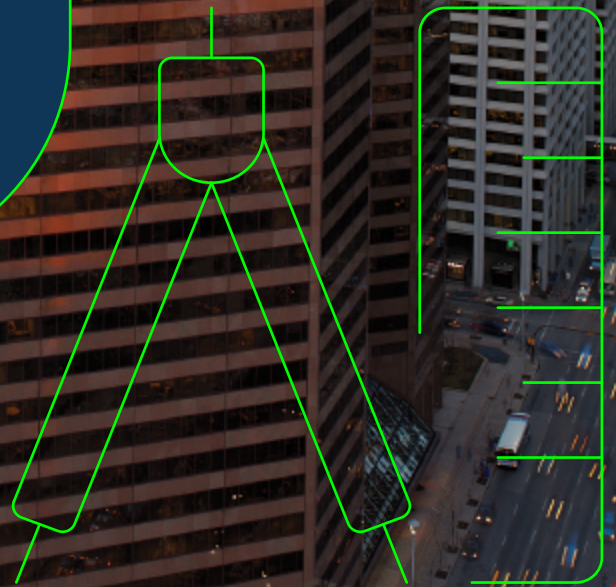


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INTRODUCTION

This Manual is prepared to assist and introduce the Tenant, the Tenant's Consultants and the Tenant's Contractors to the building standards used in the design and construction of this property. This standard also sets out the procedures, practices, rules, and regulations which will be applied to the Tenant's development of the Tenant's Work.

The integrity of the building developed by the Landlord and its manager, together with all their systems and installations, are the result of meticulous care and planning. Therefore, any contemplated changes or alterations of existing designs and conditions must be completely compatible with the building's operational or design specifications and/or established decor. It is imperative that any Tenant Leasehold Improvements - however small or limited in scope - be fully reviewed by the Landlord, before any implementation is permitted or undertaken.

Strict conformity to procedural guidelines for Tenant's Work as specified in the Lease is mandatory. Nevertheless, it must be clearly understood that in the event of any ambiguity of, or omission to the wording in this document, the approval authority to proceed or not to proceed with Tenant's Work will remain solely with the Landlord.

It will also be the Tenant's responsibility to ensure that a copy of this Manual is provided to the Tenant's Consultants and Tenant's Contractors and any person employed by them, and that the Tenant, the Tenant's Consultants and Tenant's Contractors and any person employed by them, adhere fully to the direction provided herein. Failure by the Tenant or the Tenant's Consultants and Tenant's Contractors, or any person employed by them, to comply with any of the general or specific guidelines because of a lack of understanding in, or awareness of, the Manual will not be accepted by the Landlord.

It is recommended that the Tenant and/or the Tenant's Consultants and Tenant's Contractors visit the Site to inspect and verify all Site conditions prior to the commencement of Tenant's Work.

The Tenant is responsible for the production of accurate and complete working drawings for the proposed construction within the Premises. Although the Landlord will supply the Tenant with base building drawings, neither the Landlord nor the Landlord's Representative shall be responsible for the same and the Tenant shall ensure that the Tenant's Consultants and the Tenant's Contractors confirm the accuracy of the dimensions in such drawings prior to the performance of the Tenant's Work.

Subject to Section 10.0 of this Manual, the Landlord reserves the right, from time to time, to add or amend the information, procedures and regulations contained herein.

In the event of an issue and where the Landlord is permitted, in accordance with the provisions of this Manual, to incur costs at the expense of the Tenant or the Tenant's Contractor, the Landlord will do so, but only after providing reasonable notice and reasonable time to allow the Tenant or the Tenant's Contractor an opportunity to remedy the issue. The Landlord will only incur costs on the Tenant's, or its Contractor's behalf, if the Tenant or its Contractor fails to remedy the issue or commence remedying the issue.

The Landlord reserves the right to enter the applicable portion of the Premises to complete Landlord Work. Such access shall be coordinated with the Tenant acting reasonably and in accordance with the Lease.

CONSTRUCTION COORDINATION

SECTION 1 - CONSULTANTS AND CONTRACTORS

1.0 BUILDING INFORMATION

Please refer to Appendix 1.

1.1 BASE BUILDING CONSULTANTS

Please refer to Appendix 2 for a complete list of Base Building Consultants.

1.2 APPROVED CONTRACTORS

Please refer to Appendix 3 for a complete list of Approved Contractors.

1.3 BASE BUILDING CONTRACTORS

Please refer to Appendix 4 for a complete list of Base Building Contractors.

CONSTRUCTION COORDINATION

SECTION 2 - GENERAL INFORMATION

2.0 LEGAL DESCRIPTION OF DEVELOPMENT LANDS

Please refer to Appendix 1.

2.1 LANDLORD'S REPRESENTATIVE

2.2 LANDLORD'S WORK

2.3 DEFINITIONS

2.1 LANDLORD'S REPRESENTATIVE

The Landlord will designate the Landlord's Representative for the Premises whose primary function will be:

- to provide guidance and assistance to the Tenant throughout the process of design and construction of improvements within the Premises; and
- to review, comment upon and approve all Tenant submissions prior to commencement of Tenant's Work within the Premises; and
- to be the liaison between the Landlord and Tenant, the Tenant's Consultants and Tenant's Contractors.

All questions, comments and submissions relative to Tenant's Work are to be addressed to the Landlord's Representative.

2.2 LANDLORD'S WORK

Construction contractors and consultants hired by the Landlord shall abide by all the requirements as outlined within this Manual as they apply to the Tenant.

2.3 DEFINITIONS

Unless otherwise defined in this Manual, capitalized terms used herein shall have the meaning ascribed to them in the Lease. Where the context so requires, defined terms in this Manual importing the singular sense shall include the plural sense and vice versa.

- a. "Addenda" means revisions to the final Issued for Construction documents.
- b. "Applicable Construction Laws" means applicable by-laws, codes, standards, regulations, laws, statutes, rules or ordinances including, without limitation, the current versions of the Alberta Fire Code, the *Building Code Act* and the *Alberta Occupational Health and Safety Act* and the regulations passed under such statutes or codes.
- c. "Approved Contractors" means the contractors identified in Appendix 3 and "Approved Contractor" means any one of them.
- d. "Authorities" means Governmental Authorities having jurisdiction at the location of the Building (including, without limitation, Authorities relating to Applicable Construction Laws).
- e. "Base Building Consultants" means the consultants identified in Appendix 2 and "Base Building Consultant" means any one of them.
- f. "Base Building Contractors" means the contractors identified in Appendix 4 and "Base Building Contractor" means any one of them.
- g. "Base Building Work" means the base building work for the Building as described in this Manual.
- h. "Building" means, as applicable, in which the Premises are or may be located, and as further described in Section 4.0.
- i. "Building Operational Hours" means the hours that a building operator is available on site. Confirm hours with the Landlord Representative.
- j. "Normal Business Hours" means (i) between 6:00 a.m. and 6:00 p.m. from Monday to Friday (inclusive) excluding statutory holidays in Alberta.
- k. "Design Control Zone" means the zone from the Lease line to approximately 6'-0" inside the Tenant's premises.
- l. "Design Process" means the development and completion of the design for the Tenant's Work.
- m. "Fixturing Period" means the period(s) provided for in the Lease.
- n. "Issued for Construction" means, as the term is commonly used in the construction industry, the final documents used for construction of the Premises.
- o. "Landlord" means SEC LP and ARCI Ltd., by their agent (and not as general partner): Brookfield Properties Canada Management LP, by its sole general partner: Brookfield Properties Canada Management Corporation.
- p. "Landlord's Representative" means the entity identified in Section 2.0.

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- q. "Lease" means the lease and all lease documentation subsequently executed between the Landlord and the Tenant.
 - r. "Manual" means this Tenant Design and Construction Manual.
 - s. "Open for Business" means the first day the Tenant begins the conduct of business in any part of the Premises.
 - t. "Premises" is as defined in the Lease.
 - u. "Project" means all work, coordination, management and activities required to complete the construction of the Development.
 - v. "Project Architect" means that Person identified in Appendix 1.
 - w. "Reviewed Drawings" has the meaning set out in Section 3.2.
 - x. "Safe Work Permit" means a permit that identifies certain types of work that may be potentially dangerous to building occupants or disruptive to the building services and operations.
 - y. "Site" means the site of the Building.
 - z. "Substantial Performance of the Tenant's Premises" means the date the Tenant's Premises are ready to be used for the Tenant's business or are being used for the Tenant's business.
 - aa. "Tenant" means the occupant and tenant under the Lease, including any Permitted Transferee, any person which has been granted a Sublease and
 - bb. "Tenants" means the tenants of the Landlord in the Building.
 - cc. "Tenant's Construction Manager" means such construction manager as the Tenant may appoint from time to time.
 - dd. "Tenant's Consultants" or "Tenant's Consultant" means the architects, engineers and other consultants, directly or indirectly, retained by the Tenant in connection with the Tenant's Work who shall be licensed or otherwise authorised to practise in Alberta.
 - ee. "Tenant's Contractors" or "Tenant's Contractor" means the contractors and suppliers, directly or indirectly retained by the Tenant in connection with the Tenant's Work including, without limitation, sub-contractors.
 - ff. "Tenant's Work" or "Tenant Leasehold Improvements" includes, without limitation, the Leasehold Improvements as set out in Section 4.2 of this Manual, and any other work performed on behalf of the Tenant in accordance with the Lease.
 - gg. "Turnover Date" means the date in respect of an applicable Fixturing Period which commences in accordance with the provisions of the Lease.
 - hh. "Work Authorization Permit" means a form to control and coordinate access to the Building while maintaining Building security and safe working conditions.
 - ii. "Working Day" means any day which is not a Saturday, Sunday or statutory holiday in Alberta.

CONSTRUCTION COORDINATION

SECTION 3 - TENANT'S DESIGN AND WORKING DRAWINGS

- 3.0 TENANT'S CONSULTANTS**

- 3.1 PRE-DELIVERY INSPECTION AND TURNOVER OF TENANT PREMISES**

- 3.2 SUBMISSION AND REVIEW OF DESIGN PLANS & SPECIFICATIONS**

- 3.3 SUBMISSION OF PRELIMINARY DESIGN AND SPECIFICATIONS**

- 3.4 APPROVAL OF PRELIMINARY DESIGN PLANS AND SPECIFICATIONS**

- 3.5 SUBMISSION OF FINAL PLANS AND SPECIFICATIONS**

- 3.6 APPROVAL OF FINAL PLANS AND SPECIFICATIONS**

- 3.7 REVIEW, APPROVAL AND COMMENTS**

3.0 TENANT'S CONSULTANTS

- The Tenant shall engage the Tenant's Consultants to prepare dimensioned construction drawings and specifications that are necessary for the construction of the Tenant Leasehold Improvements. The approval by the Landlord of the Tenant's Consultants including, the Tenant's architectural, interior design, mechanical, electrical, fire protection and structural consultants, shall be obtained by the Tenant prior to the Tenant engaging any of its Tenant's Consultants.
- The Tenant may wish to retain the Base Building Consultants under direct contractual arrangement for the production of working drawings. If the Tenant chooses to employ consultants other than the Base Building Consultants for its design work, the Landlord's Representative will have such drawings checked and the construction inspected by the Base Building Consultants to ensure compatibility with the building's systems. The cost of such work by the Base Building Consultants will be charged to and paid by the Tenant. Rates for such reviews are available upon request directly from the Base Building Consultants, prior to the commencement of the Design Process. A list of Base Building Consultants can be found in Appendix 2 of this Manual.
- All drawings, including but not limited to space plans, architectural, structural, mechanical and electrical drawings, must be reviewed by the Landlord prior to the commencement of any Tenant's Work.
- The Landlord, from time to time, may require the Tenant to produce additional or more detailed drawings or information which, in the Landlord's opinion, may be necessary to identify and describe the nature of the intended improvements.
- The Tenant shall ensure its consultants visit the Site to verify the actual Site conditions prior to the commencement of the Tenant's Work.
- By giving approval to the Tenant's plans, the Landlord and its consultants do not waive the Tenant's responsibility to ensure that any and all Tenant Leasehold Improvements meet the requirements of the Lease, this Manual and the Applicable Construction Laws. The Tenant and the Tenant's Consultants shall inform themselves regarding the requirements of the Applicable Construction Laws, as well as this Manual, before preparing the plans and specifications.

The Tenant shall require the Tenant's Consultants to purchase and maintain the following insurance coverage:

Worker's Compensation

<p><u>Minimum Required Limits:</u></p>	<ul style="list-style-type: none"> ▪ Worker's Compensation - Statutory Limits ▪ Employer's liability (where not covered by statutorily imposed Workers Compensation): ▪ \$1,000,000 Each Accident for Bodily Injury by Accident ▪ \$1,000,000 Each Employee for Bodily Injury by Disease ▪ \$1,000,000 Aggregate Policy Limit for Bodily Injury by Disease
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Commercial General Liability: Tenant's Consultant will place and maintain commercial general liability insurance covering all operations by or on behalf of the Tenant's Consultant on an occurrence basis against claims for bodily injury, property damage (including the loss of use thereof), personal injury and advertising injury.

Such insurance will have these minimum limits, terms and conditions:

<u>Minimum Required Limits:</u>	<ul style="list-style-type: none"> ▪ \$5,000,000 Products and Completed Operations Aggregate ▪ \$5,000,000 Bodily Injury/Property Damage Per Occurrence ▪ \$5,000,000 Personal Injury and Advertising Injury Limit ▪ (Limits may be a combination of Primary and Umbrella/Excess policies)
<u>Required Terms and Conditions:</u>	<ul style="list-style-type: none"> ▪ Commercial General Liability Policy (IBC 2100 03/05(R)) ▪ Products and Completed Operations coverage maintained for at least two (2) years after contract completion ▪ Blanket Contractual Liability ▪ Independent Contractors ▪ Broad Form Property Damage ▪ Cross Liability and Severability of Interest ▪ Explosion, Collapse and Underground (XCU) – if work involves digging or excavating ▪ Personal Injury and Advertising Injury ▪ Incidental Medical Malpractice ▪ Landlord and "Additional Insured" described below to be included as additional insured ▪ Waiver of Subrogation in favor of Landlord and all other "Additional Insured" described below ▪ Including non-owned and hired automobile Liability

Automobile Liability: If the Tenant's Consultant operates an automobile in the course of performing work, the Tenant's Consultant will maintain Business Auto Liability covering liability arising out of any auto.

<u>Minimum Required Limits:</u>	<ul style="list-style-type: none"> ▪ \$2,000,000 Combined Single Limit Each Accident
<u>Required Terms and Conditions:</u>	<ul style="list-style-type: none"> ▪ Business Auto Policy or Equivalent

Professional Liability (Errors and Omissions): Tenant's Consultant will purchase and maintain Professional Liability insurance.

<u>Minimum Required Limits:</u>	<ul style="list-style-type: none"> ▪ \$2,000,000 Each Claim and Annual Aggregate
<u>Required Terms and Conditions:</u>	<ul style="list-style-type: none"> ▪ Insured's Interest in Joint Ventures (if applicable) ▪ Punitive Damages Coverage (where not prohibited by law) ▪ Limited Contractual Liability ▪ Retroactive Date Prior to Start of Services ▪ Extended Reporting Period of 36 Months or More ▪ No Pollution Exclusion

Additional Insured:

SEC GP Inc., SEC GP Trust, SEC LP, ARCI Ltd., Brookfield Properties Canada Management Corporation, Brookfield Properties Canada Management LP, Brookfield Properties (Canada) Inc., and Computershare Trust Company of Canada must be named as additional insured under the contractor's general liability policies must be named as additional insured under the contractor's general liability policies.

The foregoing list of "Additional Insured" specified herein may be amended by Landlord from time to time upon reasonable notice in writing to the Tenant to add additional entities including, lenders, tenants, co-owners, joint ventures or other entities having an interest in the Building, as may be reasonably required.

All insurance policies shall be in a form reasonably acceptable to Landlord. The Landlord to provide reasonable written notice in the event of changing such requirements.

3.1 TURNOVER OF TENANT PREMISES

Prior to the Turnover Date of the Premises to the Tenant, the Landlord's Representative will schedule pre-delivery inspections with the Tenant and its agents. The Premises will include base building washrooms, and other on-floor common areas such as electrical and mechanical rooms.

Pre-delivery inspections will occur prior to the planned Turnover Date to review completion of the space against the turnover conditions as required in the Lease. In addition, the Landlord will accommodate access to the applicable portion of the Premises by the Tenant and/or the Tenant's Consultants at any other time prior to the respective Turnover Date, subject to Site conditions (and as determined by the Tenant and the Landlord acting reasonably) for the purposes of space planning and to verify Site dimensions and conditions.

3.2 REVIEW OF DESIGN PLANS & SPECIFICATIONS

- The Tenant's drawings will be reviewed by the Landlord for compatibility with the overall Project; comments and/or review will be marked on one (1) set of drawings or in a letter addressed to the Tenant or its designated representative. The distribution of such comments to the Tenant's
- Consultants shall be the responsibility of the Tenant.
- The Tenant's plans shall show Building grid lines, scale, Tenant's Consultant's building code identification number, designer's name and address, engineer's name, address and stamp, date of issue and revision number.
- For the purpose of this Manual, the Tenant's drawings reviewed by the Landlord shall be called "Reviewed Drawings". Any revisions made to the Reviewed Drawings by the Tenant and/or its agents must be submitted to the Landlord for further approval.
- The then-most current set of prints of the Reviewed Drawings must be kept on the Premises for the duration of the construction period and be available to the Landlord's Representative or its authorized representatives upon request.

3.3 SUBMISSION OF PRELIMINARY DESIGN AND SPECIFICATIONS

The Tenant will provide the Landlord with one (1) printed set of preliminary design plans and specifications for all of the Tenant's Work. These shall demonstrate design intent and shall be subject to the approval of the Landlord prior to the Tenant's preparation of final plans and specifications.

Preliminary drawings shall include the following information at a minimum (additional information is encouraged):

- Key Plan showing the location of the Tenant's Premises;
- Preliminary Floor Plans (1:100) indicating interior design (indicate all materials and finishes); Reflected Ceiling Plans (1:100) indicating ceiling materials, ceiling heights, the location, and type of all light fixtures, sprinklers, life safety, music speakers, air grilles, exit lights and signage; Samples and colour chips of all finishes visible in the common areas should be firmly applied to illustration boards (maximum size 216 mm x 356 mm (8 ½ " x 14")) and shall be clearly labelled and counter-referenced on the drawings.

3.4 APPROVAL OF PRELIMINARY DESIGN PLANS AND SPECIFICATIONS

Within ten (10) Working Days after receipt of the design plans and specifications, the Landlord shall notify its written approval thereof or indicate any changes required, in which case the Tenant shall resubmit for written approval, amended plans and specifications. Prior to resubmission the Tenant will, if necessary, discuss any required changes with the Landlord.

3.5 SUBMISSION OF FINAL PLANS AND SPECIFICATIONS

At least thirty (30) days prior to the commencement of each respective Fixturing Period, or any Fixturing Period provided for in the Lease, the Tenant shall submit one (1) printed set and one (1) PDF set of final Issued for Construction plans and specifications and such other information as may be necessary for the

Tenant's Work to be reviewed. Electrical, mechanical, and structural drawings must be signed and sealed by the engineer responsible for the design.

Each set of final plans and specifications shall be in metric dimensions and be of uniform size not exceeding 610mm x 914mm (24" x 36") to a minimum scale of 1:100 and shall include, but not be limited to, the following: (Not all the information is required within the specific disciplines listed below as long as all the information is provided within the drawings and specifications as a whole):

a. Architectural Submission

One (1) set of drawings (Scale 1:100 minimum) and a sample board of finishes. The Tenant must include the following:

- i. **Key Plan**
 - Where the Premises occupy less than a full floor, plans must be included of the entire floor showing the location (complete with dimensions) of the Premises and their relationship to the elevator lobby, exit stairs, washrooms, Fire Extinguishers, etc.
- ii. **Floor Plans**
 - Location of all major fixed elements within the Premises dimensionally related to grid lines and demising partitions;
 - Furniture plan with room designation and uses;
 - Location, and layouts of rooms of unusual loading concentration such as centralized filing areas, libraries, vaults, etc. (subject to the approval of the Landlord's structural engineer);
 - Materials and finishes throughout the Premises;
 - The number of people to occupy the Premises;
 - Telephone and power outlet plan dimensioned;
 - Location of inter-floor stairs if any (subject to the approval of the Landlord's structural engineer).
- iii. **Reflected Ceiling Plan**
 - Lighting layout;
 - Partition layout;
 - Location of any sound baffles above the ceiling;
 - The locations of any access panels required to service building systems;
 - Ceiling heights;
 - Location of proposed special light fixtures, their manufacturer's name and catalogue cut sheets, lamps to be used and mounting details (recessed, surface, etc.);
 - General pattern, grilles, diffusers, air transfer ducts, speakers, sprinkler heads, coves and recesses;
 - Specify ceiling material by name, thickness and colour, as well as fire rating if required by Applicable Construction Laws.
- iv. **Sections and Details**
 - At a suitable scale to indicate partition details, baffles, doors, millwork, etc.
- v. **Room Finish, Door and Hardware Schedules**
 - All elements including the keying which must be to base building standard.

b. Mechanical Submission (stamped by Engineer)

One (1) set of drawings (Scale 1:100 minimum) prepared by a registered professional engineer. Drawings are to show all alterations and/or additions to the existing Base Building Work, as well as base building conditions that remain unchanged.

i. H.V.A.C. Layout

- Ceiling plan complete with detailed ductwork layout;
- All duct sizes;
- Location of A/C units or fan-powered-boxes;
- Location of all dampers, grilles, and diffusers;
- Transfer-ducts;
- Thermostats;
- Access doors;
- All other equipment as required;
- Heating load calculations;
- Air quantities required at each diffuser and additional information, if applicable.

ii. Plumbing Layout

- Floor plan indicating piping runs for drains, vents and water supply;
- Location of valves;
- Location of clean-outs, grease traps, and back-flow preventers;
- Other special or specific requirements;
- Indicate location of water meter and location of hot water tank, if applicable.

iii. Sprinkler Layout

- A dimensioned layout of the sprinkler piping and size indicating all sprinkler heads (new and relocated) is required;
- Sprinkler layout is to include calculations where more than 5 heads are added to the system;
- A dimensioned layout of new or relocated fire extinguishers;
- Pressure Relief Valve (PRV) setting and data is also required.
- Show all kitchen fire suppression system equipment with associated support systems.

c. Electrical Submission (stamped by engineer)

One (1) set of drawings (Scale 1:100 minimum) prepared by a registered professional engineer. Drawings are to show all alterations and/or additions to the existing Base Building Work, as well as base building conditions, which remain unchanged.

i. Electrical Plan

- Locate light fixtures, emergency and exit light fixtures;
- Specify size, wattage, type and mounting of fixtures;
- Locate all life safety devices including speakers, pull stations, smoke detectors and heat detectors;
- Submit wiring diagram showing circuitry of all electrical elements within the Premises;
- Provide electrical load summary separating lighting, power, and disproportionate/high use loads;
- Tie-ins and extensions to base building security, fire alarm and communication systems must be also clearly shown.
- Any other specific requirements.

ii. **Metering**

- The Tenant shall provide all metering for electrical loads.

d. **Structural Submission (stamped by engineer)**

One (1) set of drawings (Scale 1:100 minimum) prepared by a registered professional engineer. Drawings and specifications are to show all structural modifications and or review of excessive

structural floor loading including but not limited to safes, lockers, file systems, and library shelving, to the base building.

e. **Specifications**

Specifications must be submitted with the working drawings describing the quality and performance standards for all of the Tenant's Work in "CSC (Construction Specifications Canada), 3 part format, Master format numbering system."

f. **Signage**

i. **Standard Signs**

- Main office lobby electronic directory (by Landlord). Order forms for the above will be sent directly to the Tenant for completion.

ii. **Corporate Identity**

- Interior signage seen through a glass entrance must be approved in writing by the Landlord's Representative prior to implementation.
- Signage is to be for corporate identification of businesses, but not for advertising the service(s) offered.
- Design drawings, separate from the standard architectural plans and sample board, if applicable, must be sent in duplicate to the Landlord to initiate the approval process. The drawings must indicate location, size, material, colour, and installation method of all proposed signage.
- Materials not acceptable are letraset, stencils, hand-drawn lettering, computer forms, photocopies, cardboard / gaterboard / chloroplast or plastic sign boards. Signs must be professionally designed and produced.

3.6 REVIEW OF FINAL PLANS & SPECIFICATIONS

Within fifteen (15) days after receipt by the Landlord of the Tenant's final plans and specifications, the Landlord shall provide its review/comments. The Tenant shall revise its drawings to include all the comments and provide the Landlord with a revised set of prints "Issued for Construction" prior to commencing the Tenant's Work. All revisions must be clearly identified on these revised drawings. The Landlord shall not be obligated to change or extend any of the dates contained in the Lease as a result of the drawings being rejected by the Landlord or its consultants, unless such rejection is not in accordance with this Manual or the Lease.

Subject to this Section 3.6, the Landlord's review of the Tenant's plans and specifications shall relate only to general compliance with this Manual and shall not extend to, and shall not be deemed to signify compliance with the Lease, Applicable Construction Laws, applicable laws, building codes or with life safety or emergency requirements of competent Authorities. The Landlord accepts no liability for claims against the Tenant in respect to any of these matters.

3.7 INTENTIONALLY LEFT BLANK

CONSTRUCTION COORDINATION

SECTION 4 - BUILDING DESIGN PARAMETERS

4.0 GENERAL

4.1 INTENTIONALLY LEFT BLANK

4.2 TENANT WORK

4.0 GENERAL

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4.1 INTENTIONALLY LEFT BLANK

4.2 TENANT WORK

The Tenant shall, at its expense, complete the Premises in accordance with the standards of other premises in comparable quality buildings of similar type and size in downtown core of Calgary, Alberta, and as reviewed by the Landlord, using new materials, including but not limited to the installation of:

Interior Partitions:	Interior partitioning, including the finishing thereof complete with millwork and fixtures.
Flooring Finish:	All flooring must be reviewed by the Landlord.
Power:	Power distribution within the Premises, to be distributed through partitions and to be carried out at the Tenant's expense. The Landlord will supply an electronic sub-metering system, on a floor by floor basis, approved by Measurement Canada. Tenants occupying space on a multi-tenant floor are required to supply and install receptacle panels, as required, within their own premises and separate electricity meter to meter all general power (plug loads), supplementary HVAC and any non-standard lighting loads. Purchase/installation of new meters must be arranged through the applicable Base Building Contractor. Floor lighting and HVAC electrical loads are metered by the base building meters that will be installed.
Mechanical Systems:	The Tenant may effect modification to the Landlord's on-floor mechanical systems within the Premises as may be required by the Tenant. Tenant will provide an air balancing report, to be performed by the Tenant using the applicable Base Building Contractor and reviewed by the Landlord.
Plumbing Connections:	Plumbing distribution within the Premises, to be distributed through partitions and underslab and to be carried out at the Tenant's expense. All equipment serving the Premises, must be noted on the drawings. All domestic water piping and connections to base building valves must be Type 'L' copper or braided steel enforced tubing with threaded fittings. All piping and connections to base building sanitary or vent systems shall be cast iron or DWV copper. PVC, PEX, and ABS are not acceptable.
Electrical Systems:	The Tenant may effect modification to the Landlord's on-floor electrical system within the Premises as may be required by the Tenant. Tenant will provide an electrical load balance report, to be performed by the Tenant using the applicable Approved Contractor and reviewed by the Landlord.
Fire Hose Connections and Sprinklers:	Modifications to the Landlord's fire safety systems required by Authorities having jurisdiction, which shall be performed by the Tenant using the applicable Base Building Contractor.
Fire Alarm System:	Modification to the Landlord's fire alarm and life safety system required by Authorities having jurisdiction, which shall be performed by the Tenant using the applicable Base Building Contractor.

Signs:	Any common area Tenant visible signage, proposals for which must be presented to the Landlord for written approval. In accordance with Section 3.5(f) of this Manual, only those signs which are compatible with the Building and are tasteful in size, colour and logo will be approved.
Ceiling Tiles:	Installation or relocation of ceiling tiles.
Elevator Lobbies:	Finishing and modifications of the elevator lobby, including but not limited to floors, walls, ceilings, mechanical, electrical, elevator devices, and lighting, where a tenant leases the whole office floor.
Building Automation System:	Any modification to Building controls required as a result of Tenant modifications which will be carried out exclusively by the Tenant using the applicable Base Building Contractor.
Additional Requirements:	Any additional requirements of the Tenant.
Noise Criteria:	Intentionally left blank
Communication Work	From building demarcation point to Tenant communication room. Tenant equipment is not allowed in base building rooms unless reviewed by the Landlord.

CONSTRUCTION COORDINATION

SECTION 5 - CONSTRUCTION PROCEDURES FOR TENANT WORK

5.0 TENANT'S REQUIREMENTS

5.1 TENANT'S CONTRACTORS' REQUIREMENTS

5.2 COMMENCEMENT OF CONSTRUCTION

5.3 PROCEDURES DURING CONSTRUCTION

5.4 COMPLETION OF TENANT CONSTRUCTION

5.0 TENANT'S REQUIREMENTS

The Tenant, at its expense, is responsible for the following:

- a. Execution of the Lease for the Premises.
- b. Insurance:

The Tenant must provide to the Landlord, evidence of insurance coverage for (a) Tenant's insurance as required in the Lease, (b) Tenant's Contractors' insurance (as outlined in this Manual) as amended from time to time by the Landlord, at the determination of the Landlord and with at least thirty (30) days prior written notice to the Tenant, prior to the undertaking of any construction in the Premises and/or any other areas requiring access within the Building and (c) Tenant's Consultants, as described in Section 3 of this Manual, at the determination of the Landlord and with at least thirty (30) days prior written notice to the Tenant prior to commencement of the design development. Insurance coverage shall be at least the minimum stated in the Lease and the Persons listed as "Additional Insured" in Section 3.0 of this Manual shall be named as additional insured.

- c. Obtaining written approval from the Landlord, acting reasonably, for final Issued for Construction documents.
- d. Permits:

The Tenant is responsible for obtaining all necessary permits and approvals from The City of Calgary, and any other Authorities having jurisdiction, in accordance with the Lease. The Tenant shall submit copies of the building permit and any other required permits or approvals to the Landlord, prior to the commencement of the Tenant's Work. The Tenant shall forward all comments from the Authorities to the Landlord's Representative for its review.

Upon receipt of the building permit, the Tenant shall forward one (1) copy of the building permit to the Landlord's Representative. One (1) copy of the stamped building permit drawings must be kept on site.

It is the Tenant's responsibility to have the Premises inspected by the building, electrical, plumbing and HVAC inspectors, ensure that the applications are closed, and provide evidence of permit closure.

- e. Lien Protection:

If a Lien arising from the Tenant or the Tenant's Work is registered against the Site or given to the Landlord, the applicable provisions of the Lease shall apply to such Lien.

- f. The fulfilment of the obligations and responsibilities of the Tenant's Contractors set out in this Manual.

5.1 TENANT'S CONTRACTOR'S REQUIREMENTS

The Tenant is required to engage its own contractors for the purpose of carrying out Tenant's Leasehold Improvements. The Tenant shall ensure that all Tenant's Contractors comply with the following:

- a. The Tenant's Contractors shall, or in the case of items 5.1(a)(iii) the Tenant, prior to commencement of construction, furnish evidence that they are adequately and properly covered by insurance according to the following items:
- i. Commercial General Liability policy to be in force with a limit to any one occurrence of \$10,000,000.00. Such coverage includes products and completed operations liability, blanket contractual liability, personal injury liability, occurrence basis property damage and non-owned automobile liability, owner's and contractor's protective insurance with respect to the Premises and Tenant's Contractor's use of the Tenant's Work and with cross liability, severability of interest and breach of conditions clauses;
 - ii. "All risk" of physical loss or damage policy be provided covering the total contract price for the Tenant's Work and shall include a waiver of subrogation rights against the Landlord, Brookfield Properties (Canada) Inc., Brookfield Properties Canada Management Corporation, Brookfield Properties Canada Management LP, and any person for whom the foregoing persons are legally responsible and an endorsement to the policy stating that such policy is primary;
 - iii. "All risk" of physical loss or damage policy be provided covering the Tenant's Contractors' owned tools, equipment and property and shall include a waiver of subrogation rights against the Landlord, Brookfield Properties (Canada) Inc., Brookfield Properties Canada Management Corporation, Brookfield Properties Canada Management LP, and any person for whom the foregoing persons are legally responsible and an endorsement to the policy stating that such policy is primary;
 - iv. An automobile policy be in force covering all owned vehicles, with a \$2,000,000.00 combined single limit liability for bodily injury and property damage;
 - v. The Landlord and while on Site, all contractors and subcontractors and trades of those insured, engaged in or connected with the construction of the Premises are listed as "Additional Insured" on the policy identified in 5.1(a)(i) above;
 - vi. All policies of insurance relating to Tenant's Work must be in amounts and in form and with insurers acceptable to the Landlord, acting reasonably, including an undertaking by the insurers to endeavor to give at least (30) days written notice of cancellation or material changes to the policy holder and the Landlord. The Tenant shall endeavor to give the Landlord at least thirty (30) days written notice of any material changes to any policy of insurance to be maintained by the Tenant or the Tenant's Contractor;
 - vii. Evidence of the existence of insurance coverage, referred to in this Section 5.1 must be submitted to the Landlord by means of a Certificate of Insurance from the Tenant's or the Tenant's Contractor's insurers or by a certified copy of the actual policy documents before commencement of Tenant's Work.
- b. The Tenant shall retain the Approved Contractors, or those contractors as approved by the Landlord, as applicable, for the performance of the Tenant's Work. Notwithstanding the foregoing, Tenant's Contractors who will be performing physical modification to the Building or to the Building Systems must be reviewed in writing by the Landlord.

The Tenant shall furnish evidence of good standing with the Workers' Compensation Board ("WCB") with a valid WCB Clearance Certificate, to be provided to the Landlord prior to initiation of the Tenant's Work. The Tenant's Contractors shall keep WCB coverage in force at all times for the duration of the Tenant's Work. The Tenant's Contractors will confirm in writing that all employees engaged in the Tenant's Work are covered in accordance with the statutory requirements of the Authorities having jurisdiction over such employees. Where not covered by statutorily imposed

Workers' Compensation, Tenant's Contractor will maintain Employers' Liability Insurance with limits of not less than \$1,000,000.00 per occurrence.

- c. The Tenant shall engage the services of the Approved Contractors including but not limited to Tenant's Work involving fire alarm, sprinklers, fire protection systems, lighting controls, temperature controls, data/communications, roofing, locksmith, x-raying, air balancing, electrical and mechanical work.
- d. The Tenant shall furnish the Landlord's Representative with all information listed in Section 5 of the Manual;
- e. The Tenant shall comply with all Applicable Construction Laws.
- f. The Tenant shall post on Site all permits obtained from Authorities. If the Tenant's Contractor fails to do so, the Landlord, with prior written notice to the Tenant but at its option, may cause the workmen, subcontractors and suppliers of the Tenant's Contractor to stop all work and leave the Premises. If after receiving adequate written notice the Tenant is unable to post all permits, the Landlord, at its option may remove all materials and work installed by the Tenant at the Tenant's expense.

5.2 COMMENCEMENT OF CONSTRUCTION

The Tenant must carry out all Tenant's Work in accordance with the Reviewed Drawings and construction work must comply with all Applicable Construction Laws.

It is the Tenant's responsibility to ensure that the Tenant's Contractors comply with all Applicable Construction Laws and requirements of the Workplace Hazardous Materials Information System ("WHMIS") and the Alberta Occupational Health and Safety regulations, policies and directives of the Landlord, as applicable, in accordance with Section 6 of this Manual, as may be amended in accordance with the Lease.

- a. Construction may proceed only after the following have been complied with:
 - i. The Lease for the Premises has been executed.
 - ii. The Tenant's plans and specifications have been reviewed in writing by the Landlord;
 - iii. The Tenant has provided acceptable evidence of insurance as per the Lease and this Manual, naming the Landlord and Manager and the other entities identified as "Additional Insured" in Section 3.0 above as additional insured; and
 - iv. The Landlord shall issue written notice to the Tenant advising that all the conditions prerequisite to the commencement of Tenant's Work have been complied with to the satisfaction of the Landlord provided such notice is without prejudice to any right or remedy available to the Landlord.
- b. Construction may proceed only after the applicable Tenant's Contractor has complied with the following:
 - i. Provided a copy of application for and issued building permit(s);
 - ii. Posted all required permits on Site, with a copy delivered to the Landlord's Representative;

- iii. Made available at the Premises, a set of prints of the Landlord Reviewed Drawings and building permit drawings for the duration of the construction period for reference by the Landlord's and The City of Calgary Building Department authorized representatives;
- iv. Provided acceptable evidence of insurance for itself and all sub-contractors, as required by Section 5.0, (unless provided by the Tenant) to the Landlord, naming the sub-contractors, Landlord and the Management Company and the other Persons identified as "Additional Insured" in Section 3.0 above as additional insured;
- v. Submitted a construction schedule; and
- vi. Submitted a valid certificate from Workers' Compensation Board; and
- vii. Submitted copies of Addenda; and
- viii. Provided a list of subcontractors indicating contact names and telephone numbers for after hour emergency use; and
- ix. Submitted completed Work Authorization Permit, as provided by the Landlord's Representative prior to any Turnover Date or adjusted Turnover Date.

5.3 PROCEDURES DURING CONSTRUCTION

- a. Tenant will submit to the Landlord's Representative during construction:
 - i. Copies of all on Site construction meeting minutes;
 - ii. Copies of contemplated changes to the Tenant's Work at time of issuance to Tenant's Contractors;
 - iii. Copies of all site visit reports by the Tenant's Consultants during the course of construction Tenant's Work;
 - iv. Copies of Site reports issued by Authorities having jurisdiction (if applicable); and
 - v. Copy of Designated Substance report (if applicable).
- b. Inspection of Tenant Premises as required:
 - i. Prior to commencement of any Tenant's Work, an inspection of applicable Tenant Premises shall be performed by the Tenant, its agents and the Landlord's Representative.
 - ii. Intentionally left blank.
 - iii. The Landlord and its agents, architects, engineers and consultants shall have reasonable access, subject to Tenant's permit access process described in the Lease, to the Premises for the purpose of inspecting the Tenant's Work in progress. The Landlord or its consultants may note deficiencies in the Tenant's Work, which shall be corrected by the Tenant promptly.
 - iv. The Tenant shall directly engage, at the Tenant's expense, Base Building Contractors, for all mechanical and electrical tie-ins to the base building systems, all sprinkler, fire alarm, and building controls work, and all air and water balancing.

- v. After completion of Tenant's Work another inspection shall be made between the Landlord's Representative and the Tenant for both Tenant areas and the floor, as well as the floors immediately above and below. Any damages caused by the Tenant's Contractors to the base building in the execution of the Tenant's Work shall be repaired by the Landlord's Representative at the Tenant's expense (see Section 8.0 of this Manual).
- c. Interface with base building:
 - i. Prior to commencement of any Tenant's Work which will connect to or interface with the base building systems and services such as water, electricity, fire services, and air handling, the Tenant shall:
 - a. Advise the Landlord that such connection or interface is necessary; and
 - b. Provide details of the work required to be performed; and
 - c. Provide a schedule as to when such work is anticipated to be performed; and
 - d. Provide the names of the Tenant's Contractors who will be performing the interconnection or interface work.
 - ii. The Tenant shall not proceed with any such interconnecting or interfacing work without first getting the approval of the Landlord as to the scope and timing of the interconnection and interfacing work and such work shall only be conducted by Base Building Contractors as set out in this Manual in Appendix 4. The commissioning, testing or inspection of Base Building Work services may occur during times when the Tenant's Contractors are performing Tenant's Work in which case the interconnection and interfacing work will not be permitted to proceed in a way that interrupts or impedes completion of testing, commissioning or inspections of the Base Building Work services.
- d. Safe Work Permit

A Safe Work Permit is a permit that identifies certain types of work that may be potentially dangerous to building occupants or disruptive to the building services and operations. A Safe Work Permit is completed at the same time as the Work Authorization Permit prior to work commencement.

All construction work requires a Safe Work Permit including but not limited to the following:

- Welding and open flame work (See Appendix 8)
- X-raying
- Drilling or cutting
- Lock-out or disabling of base building systems
- Fire alarm systems Sprinkler system modification (See Appendix 11)
- Dust producing activities
- Confined space entry
- Life Safety System testing or verification.

All contractors and Tenants must be aware that both the sprinkler and fire alarm systems, such as smoke detectors, cannot be simultaneously disabled or bypassed in a single work area at any one time during Tenant construction. The Tenant and their contractor are responsible to schedule their work in such a way that only one of these systems will be affected at any one time, and shutdowns will be scheduled accordingly.

5.4 COMPLETION OF TENANT CONSTRUCTION

- a. Upon completion of the construction and prior to opening for business within the applicable portion of the Premises, the Tenant will submit the following closing documentation to the Landlord's Representative:
 - i. Certificate of Substantial Performance of the Tenant's Premises (as applicable and available); and
 - ii. Confirmation from the Tenant that all electrical panels have been tagged and circuit directories updated; and
 - iii. Confirmation from Tenant that all surplus base building equipment and material such as (but not limited to) ceiling components, doors, door frames, hardware, light fixtures, speakers, etc., which the Tenant removes with the approval of the Landlord's Representative, remain the property of, and must be turned over to, the Landlord's Representative in working order; and
 - iv. Verification report of fire alarm devices; and
 - v. Material & test certificates for sprinkler and standpipe work; and
 - vi. One (1) copy of consultant's approved air balancing report prepared by contractor from Landlord's Approved Contractors list; and
 - vii. One (1) copy of consultant's approved electrical load balance report prepared by contractor from Landlord's Approved Contractors list; and
 - viii. Final Electrical Safety Authority certificate of inspection; and
 - ix. Verification of all required meter installations; and
 - x. Final engineers' and architects'/designers' inspection reports.
- b. Within 90 days of opening for business within the applicable portion of the Premises, or as noted below, the Tenant will submit the following to the Landlord's Representative:
 - i. Complete set of "as built" drawings (610mm x 914mm or 24" x 36" hard copy, PDF, and Auto CAD drawing format – most current version) approved by Tenant's Consultants to be provided within 90 days of being Open for Business in the applicable portion of the Premises; and
 - ii. Proof of closing of permit. Copy of clearance letter from The City of Calgary, indicating that the applicable Premises have been "completed substantially in accordance with plans issued with the permit(s)" and providing completion dates; and
 - iii. Executed statutory declaration from the Tenant and the Tenant's Contractors stating that all monies owing to their suppliers and subcontractors have been paid and that no Liens have been registered against the Lands; and
 - iv. Valid WCB Certificate from the applicable Tenant's Contractors; and
 - v. Proof of maintenance agreements for Tenant's supplementary equipment (as applicable); and

- vi. Operations & maintenance manuals divisions 1 to 16; and
- vii. Electrical load balance report.

A deficiency inspection will be carried out jointly by the Tenant and Landlord's Representative upon completion of the installations. Such inspection shall be scheduled by the Tenant with the Landlord's Representative.

CONSTRUCTION COORDINATION

SECTION 6 - RULES AND REGULATIONS

- 6.0 ALBERTA HUMAN RESOURCES OCCUPATIONAL HEALTH AND SAFETY ISSUES**
- 6.1 WORKPLACE AND PUBLIC SAFETY**
- 6.2 POLICING OF MEN, WORK PERMITS AND SECURITY BADGES EMERGENCY CONTACT**
- 6.3 EMERGENCY CONTACT**
- 6.4 WORKING HOURS**
- 6.5 SECURITY**
- 6.6 MATERIAL DELIVERIES AND HOISTING**
- 6.7 PARKING ACCESS**
- 6.8 FLOOR LOADING**
- 6.9 WORK AREAS**
- 6.10 GARBAGE REMOVAL AND EXCESS BASE BUILDING MATERIAL**
- 6.11 TEMPORARY SERVICES**

- 6.12 TEMPORARY FIRE PROTECTION
- 6.13 SPRAY FIREPROOFING
- 6.14 FIRE-STOPPING
- 6.15 TESTING AND TIE-INS
- 6.16 ACCESS PANELS
- 6.17 LANDLORD'S ACCESS TO PREMISES
- 6.18 POWDER ACTUATED DEVICES
- 6.19 DRILLING OR CUTTING
- 6.20 WELDING AND OPEN FLAME WORK
- 6.21 FIRE ALARMS / DEACTIVATION OF SMOKE ALARMS
- 6.22 FASTENING
- 6.23 DAILY CLEAN-UP
- 6.24 PRE-OCCUPANCY CLEANING
- 6.25 PROTECTION OF BASE BUILDING ELEMENTS

- 6.26 HAZARDOUS MATERIALS
- 6.27 ACCESS AND DELIVERIES
- 6.28 SYSTEM PROTECTION AND CLEANING
- 6.29 CARPET INSTALLATION
- 6.30 WORK CONFLICT
- 6.31 ROOF WORK / ACCESS
- 6.32 FINISH HARDWARE / LOCKSMITHING
- 6.33 AIR BALANCING
- 6.34 WATER BALANCING
- 6.35 AIR CONDITIONING UNITS
- 6.36 TENTANT'S DESIGN AND CONSTRUCTION GUIDELINES
- 6.37 LANDLORD'S TENANT CONSTRUCTION COORDINATOR
- 6.38 CO-ORDINATION

6.0 ALBERTA OCCUPATIONAL HEALTH & SAFETY

Each of the Landlord and Tenant will, and will cause their respective contractors to, cooperate and coordinate their work to ensure compliance with the *Occupational Health and Safety Act* (Alberta) and the regulations passed under such statute.

In order to clearly identify that neither the Landlord nor the Tenant shall incur obligations as the “prime contractor” (as defined in the *Occupational Health and Safety Act* (Alberta)) in connection with the performance of the Landlord’s Work or the Tenant’s Work, as applicable, the Landlord and the Tenant will each cause their respective Construction Managers and/or Approved Contractors or Tenant’s Contractors to be separate prime contractors for their respective work/construction projects.

More specifically, the Tenant acknowledges and agrees that pursuant to the *Occupational Health and Safety Act* (Alberta), for any Tenant’s work that is undertaken, it is responsible for meeting the Landlord/building owner’s obligations as an owner and further that it is a person in control of the work site.

Each of the Landlord and Tenant will, and will cause their respective contractors to, notify the Landlord immediately in writing of any OH & S incidents of any kind, including Near Misses, that occur on site.

6.1 WORKPLACE AND PUBLIC SAFETY

It is the Tenant’s responsibility to ensure that the Tenant’s Contractors observe and comply with all applicable laws. Should the Tenant, Tenant’s Contractors, or Tenant’s Consultants fail to comply with applicable construction safety regulations or applicable laws, the Landlord’s Representative shall give written notice to the Tenant of incident date, time, name of individual(s) involved and circumstances and incident details and a compliance directive. Should failure to comply result in any base building construction delay, the Tenant will be held responsible for all resulting reasonable, direct and verifiable costs in accordance with the Lease. The Tenant’s Contractors shall provide and maintain adequate first aid facilities during the completion of the Tenant’s Work.

All stairwell doors are to be kept closed at all times during construction for fire and safety reasons. Any construction site found to have stairwell doors propped open will be assigned a security guard, at the Tenant’s Contractors’ expense, until the situation is resolved.

Notice must be given in writing by the Tenant to the Landlord’s Representative, in advance, as noted in Section 5.3 of this Manual, of any proposed disruption to the Building’s air, power or water supply to be caused by the Tenant or the Tenant’s Contractors. In addition to the above systems, the integrity of the Building’s life safety or fire protection and security systems must be preserved at all times, no exceptions allowed.

The Landlord’s Representative will co-ordinate with the Tenant’s Contractors, the preparation of a scheduled shutdown of any of the aforementioned systems in order to safeguard the Building and its occupants.

6.2 POLICING OF MEN, WORK PERMITS AND SECURITY BADGES

The Tenant’s Contractor will be responsible for the safety and actions of its tradesmen and delivery people. Any individual found performing an unsafe act or exhibiting disregard for existing work, or disrespect towards Tenants or other people on the Project will be promptly removed from the property and not permitted to return.

Work Authorization Permit and Security Badges:

The Tenant shall complete Work Authorization Permits in advance of the Tenant's Work. Prior to the Turnover Date, the Landlord will provide a Work Authorization Permit number to be used by all Tenant's Contractors and identify a location on Site where Tenant's Contractors will obtain security badges for sub-trade personnel for the Project on a daily basis.

Only authorized companies named on the Work Authorization Permits will be allowed to sign out badges as well as keys and/or access cards. Badges, keys and access cards are to be surrendered to security at the end of each day. The badges must be worn in plain view while on Site. Any workman on Site without a badge will be escorted off the Site.

The Tenant's Contractors will be required to assume full responsibility for all keys, access cards and badges signed out to them and/or their subcontractors and shall be responsible for all direct, costs associated with the replacement of such keys and the re-keying of any locks necessitated by the loss of same by the Tenant's Contractors.

Access cards remain the property of the Landlord. No markings or defacing of any kind will be permitted.

6.3 EMERGENCY CONTACT

The Tenant's Contractor must provide the Landlord's Representative with the name, address, and 24 hr telephone number of the person to be contacted in case of an emergency on Site.

6.4 WORKING HOURS

Subject to the restrictions set out in this Manual, the Tenant's Work can be carried out within the Tenant's Premises during Normal Business Hours. All noisy, disruptive and odourous work must be completed outside of Normal Business Hours.

6.5 SECURITY

The Tenant and its Tenant's Contractors shall be fully responsible for the physical security of the Premises and the contents thereof, throughout the Tenant's Work period, which shall be deemed to have commenced at the time of the Turnover Date for each applicable portion of the Premises to the Tenant for construction of Tenant's Work.

6.6 MATERIAL DELIVERIES AND SERVICE ELEVATORS

Tenant's Contractors shall contact the Landlord's Representative who will advise of the times that service elevators and/or loading dock areas are available. Tenant's Contractors shall plan on doing the majority of deliveries, including garbage removal, outside of Normal Business Hours. Use of the service elevators will be allowed in accordance with the instructions outlined below, and in accordance with the Lease.

The service elevator will be equitably shared by all Tenants and their contractors performing construction activities within the Building. The Building service elevators are the only elevators that serve the tower floors from the truck loading dock and are available for small deliveries during the day on a first come first serve basis.

The Tenant Contractor shall notify the Landlord's representative for all deliveries. A minimum of forty-eight (48) hours advance notice is suggested for small deliveries and seven (7) days' notice is required for truck loads. Deliveries will only be received at the loading dock and shall be immediately delivered to the floors where the material is to be used. There shall be no stockpiling of materials permitted at or in the vicinity of the loading dock. Unscheduled deliveries shall be refused and any material left unattended at the loading dock will be removed and costs assessed to the Tenant's Contractor.

All large material deliveries, for both Landlord and Tenant, brought into the Building by the service elevator must be scheduled after Normal Business Hours. To ensure efficient use of the service elevator these times must be coordinated in blocks. Large deliveries shall be defined as deliveries that require exclusive use of the service elevator for one or more lifts.

All materials shall be delivered through the loading dock facilities. Truck sizes are restricted and are to be confirmed with the Landlord's Representative. Any Tenant's Contractor found moving materials into the Building in an unauthorized manner will be removed from the Building. Workmen are required to use the designated service elevators: under no circumstances are the passenger elevators to be used for construction material deliveries. Any damage verified as being caused by the Tenant or the Tenant's Contractors, whether or not reported, will be repaired by the Landlord at the Tenant's cost. Critical dimensions and load information for the service elevator cabs is provided in Appendix 6.

6.7 PARKING AND ACCESS

All required parking by Tenant's Contractors is the responsibility of the Tenant's Contractors, together with applicable parking fees. Under no circumstances are vehicles to impede or block access to the parking facilities or loading dock facilities, or be parked in the underground parking facilities.

Vehicles found in violation of the above will be towed away with all costs borne by the owner of the vehicle.

Parking at the loading dock is not permitted except for delivery purposes as approved by the Landlord's Representative.

6.8 TEMPORARY FLOOR LOADING

The Tenant's Contractors shall generally distribute material evenly across the floor and shall stack material over main building structure. Drywall piles are not to exceed 300mm in height so as to prevent over-loading of the slab.

6.9 WORK AREAS

All construction materials, tools, equipment and workbenches must be kept within the Premises throughout the Tenant's Work construction period. All public lobbies, washrooms and stairs shall be kept clean and clear of construction materials. The building washrooms shall not be used for the cleaning of tools or the disposal of materials.

Any damage verified as being attributable to Tenant's Contractors will be repaired by the Landlord's Representative at the reasonable and direct cost of the Tenant.

No materials or tools shall be kept or stored inside base building rooms, unless used for work inside these rooms. No material shall be stored in the service elevator lobbies or in any other fireman's access route.

The Landlord's Representative will, without notice, remove such materials and back charge the Tenant's Contractors for the cost of this service.

The Landlord is not responsible for the safekeeping of tools/equipment/material.

6.10 GARBAGE REMOVAL AND EXCESS BASE BUILDING MATERIAL

It is the Tenant's responsibility to ensure that all Tenant's Contractors, including telephone companies, remove all garbage and construction debris in proper containers and leave the Premises in a broom swept condition, on a daily basis.

All garbage removal must be performed after Normal Business Hours via the service elevator. The Tenant's Contractors and the Tenant are required to remove garbage directly from the Site without the use of a container unless approved as per below. All garbage must be staged on the floors until the Tenant's Contractor removal truck has arrived at the Site. Garbage may not be staged on the dock in anticipation of a disposal truck.

All excess and like new Building standard materials (i.e. uncut ceiling tiles, ceiling grid cross tees, light troffers, and light fixtures) provided by the Landlord for installation by the Tenant's Contractors shall be relocated to the designated storage by the Tenant's Contractors. The Landlord's Representative will advise the Tenant and the Tenant's Contractors of designated storage on Site.

Should the Landlord's forces be required to remove the Tenant's Contractor's garbage, the Tenant's Contractor will be charged for all associated costs.

Only approved waste disposal contractors will be allowed on Site. Arrangements for placing disposal bins must be made in advance through the Landlord's Representative. Disposal bin should be placed on ¾" plywood to protect the loading dock finishes.

Construction Waste Policy

The Landlord is committed to minimizing potential adverse effects on the environment while promoting the use of efficient management systems and tenant practices in its buildings. Compliance with this environmental commitment is the responsibility of all parties employed or contracted by Brookfield Properties.

Through the adoption and adherence to the principles of reduce, reuse and recycle, Brookfield Properties together with its Tenants and contractors will strive to minimize the potential negative environmental impact of excessive construction waste generation. We are committed to conducting construction in our buildings in accordance with all applicable laws, and where no law exists, to voluntarily adopt our own standards, where appropriate.

Construction and demolition work should be planned and managed in accordance with the Landlord's Construction Waste Policy, to be provided by the Landlord to the Tenant:

- Reduce the materials brought to the Site to the minimum required to construct the work and to the minimum required to package and transport the material; and
- Reuse material where appropriate on renovations or changes to existing work; and
- Recycle material by separation of recyclable material and diverting it to an appropriate recycling facility.

- Contractors shall provide confirmation of proper disposal of construction waste in keeping with regulations and guidelines in effect in the Province of Alberta and The City of Calgary.

6.11 TEMPORARY SERVICES

The Tenant's Contractors are responsible for the distribution of temporary power within the Premises during the construction period. Exposed electrical cords are not permitted outside the Premises. Tenant's Contractors are also required to provide temporary filters (MERV 8) for the HVAC system during the construction period of the Tenant's Work.

6.12 TEMPORARY FIRE PROTECTION

The Tenant and the Tenant's Contractors are responsible for providing operable fire extinguishers in the Premises throughout the construction period. These extinguishers must be sufficient in number and of suitable types to combat a potential (type A, B, or C) fire in the work area and to suit the requirements of The City of Calgary.

The base building fire extinguishers are not to be used for the above purpose.

6.13 SPRAY FIREPROOFING

Removal or dislodgment of spray fireproofing material from steel decks, beams, trusses, and columns must be avoided wherever possible. When fireproofing has been disturbed, the Tenant's Contractors must notify the Landlord's Representative. All fireproofing must be replaced with a suitable and approved fireproofing material. The replacement material must be installed in accordance with applicable building and fire codes. In no case may the original level of protection be reduced. Spray fireproofing shall be reinstalled by the Landlord's Representative, at the Tenant's expense.

Note: The Landlord reserves the right to request from the Tenant, an independent inspection of the fireproofing by a qualified consultant at the Tenant's expense.

6.14 FIRE-STOPPING

The Tenant's Contractors must ensure that all fire-stopping is reinstated where penetrations are required between building fire separations. The replacement material and method for reinstallation must meet the applicable building code and FM Global requirements. A CSA-ULC and FM Global approved material (i.e., "Firestop") must be used to seal all core and floor penetrations. All pipes passing through a floor penetration must be sleeved, caulked and waterproofed. If the Tenant's Contractors fail to undertake the appropriate provisions, the Landlord will complete the work at the Tenant's expense.

6.15 TESTING AND TIE-INS

The Tenant must obtain the Landlord's permission, prior to any testing or the installation of any tie-ins to mechanical, electrical, fire protection, security or life safety systems. The Tenant will be held fully responsible for any damages which may result from tie-ins performed by the Tenant or its Tenant's Contractors and be charged for any necessary repairs. All reasonable, direct costs associated with such tie-ins shall be at the Tenant's expense.

All tie-ins are to be done by the Tenant using Base Building Contractors only. Where the Tenant intends to tie into a closed-loop system, the Tenant's system shall be flushed, cleaned, and certified clean by the Landlord prior to the first connection. A summary of the potential tie-ins follows:

a. Sprinkler and Standpipe System

Scheduled interruptions to Tenant's life safety systems work, including but not limited to sprinkler and fire alarm, may be necessary to accommodate base building testing and approvals, and shall be scheduled in consultation with the Tenant with reasonable notice. All revisions to the base building sprinkler and standpipe system must be reviewed by the Landlord. After completion of all Tenant modifications the Tenant's system must be water pressure tested at 200 psi for two hours. An IAO test sheet must be witnessed by the Landlord's Representative, and the sprinkler system will be reactivated once the test has been approved. The Tenant must provide hydraulic calculations for all modifications required to the base building system. Requests for the sprinkler shutdowns must be processed through the Landlord's Representative in advance, as noted in Section 5.3 of this Manual. The costs for drain down and recharging of the sprinkler system testing and making this final connection by the base building sprinkler contractor will be billed to the Tenant's account.

To the extent that the sprinkler systems are energized no more than one standpipe will be drained down at a time. Riser system will not be open for more than ten minutes before it is reconnected or capped off.

b. HVAC Shutdown

All requests for air system shutdowns must be submitted by the Tenant in writing to the Landlord's Representative for approval in advance, as noted in Section 5.3 of this Manual.

c. Electrical Power Shutdown

All requests for electrical power shutdowns must be made by the Tenant in writing and submitted to the Landlord's Representative for approval in advance, as noted in Section 5.3 of this Manual.

d. Domestic Water Shutdown

All requests for water system shutdowns (fire line, chilled, heating, condenser, standpipe, sprinkler, domestic water, etc.) must be submitted by the Tenant for approval to the Landlord's Representative in advance, as noted in Section 5.3 of this Manual.

e. Revisions to Fire Alarm Speakers

All verification work on the fire alarm system will be done between the hours of 8:00 p.m. to 6:00 a.m., and on weekends. The Tenant shall provide advance notice to the Landlord's Representative, as noted in Section 5.3 of this Manual of proposed dates to the Landlord's Representative for approval.

Tenant's Contractor must make prior arrangements with the Landlord's Representative for any Tenant's Work to be performed that will affect the integrity of the life safety systems.

All modifications to the base building fire alarm speakers must be reviewed by the Landlord.

f. HVAC Controls

Request for additional controls or modification to control wiring must be made to the Landlord's Representative and carried out by the Tenant using the applicable Base Building Contractor, as set out in this Manual in Appendix 4, at the Tenant's expense.

g. Metering

All additional meters, except as specified in the Lease, required by the Tenant shall be supplied and installed by the Tenant using the applicable Base Building Contractor. Associated costs shall be borne by the Tenant. Metering to be based upon Landlord approved equipment products. Tenant is to coordinate connection to the BAS with the base building controls contractor.

6.16 ACCESS PANELS

The Tenant must provide access panels in floors, walls and ceiling construction of sufficient size as directed by its engineering consultants or the Landlord and as required by Applicable Construction Laws to permit necessary access to service and equipment by the Landlord or its agents. This includes all necessary structures to access such equipment. The design and location of access panels must be reviewed by the Landlord. Tenant shall perform access panel walk-through with building operations prior to installing ceiling system. All tenant and base building systems shall remain accessible.

6.17 LANDLORD'S ACCESS TO PREMISES

The Landlord and its representatives, consultants and contractors shall have unencumbered access to the Premises subject to proper notice to the Tenant, and in accordance with the Tenant's access permit process, at all times for the purpose of inspecting work. Copies of reports and/or minutes of such inspections shall be provided to the Tenant.

6.18 POWDER ACTUATED DEVICES

Powder actuated tools must not be used to secure fasteners which support ceiling suspension systems or equipment suspended from the underside of slabs.

6.19 DRILLING or CUTTING

The Tenant's Contractors are prohibited from drilling, cutting or chase openings of any description in any part of the building structure without the prior approval of the Landlord's Representative.

Where such work as described above is deemed to be necessary and acceptable to the Landlord's Representative (and the Landlord's structural engineers, if necessary), it will be carried out by the Tenant using the Approved Contractors at the expense of the Tenant. Prior to cutting, core drilling, or chasing openings of any size through the building's structure, the Tenant's Contractors must first mark the locations and have them reviewed by the applicable Landlord's consultant. Work of this type shall require x-ray inspection of the slab in addition to the Landlord's consultant's review, prior to cutting or drilling. The Tenant shall be responsible for all reasonable, direct and verifiable costs relating to such work including, without limitation, all of the reasonable consulting services provided by the Landlord's structural consultant and the cost of any x-ray required.

Precautions must be taken to ensure that cores do not fall on occupants or contents of the floor below and that all water is vacuumed away before draining to the floor below.

Subject to approval and with five working days advance notice by the Landlord's Representative, x-raying is to be performed after 10:00 p.m. and before 6:00 a.m.

Any damage to cast-in electrical wiring or plumbing will have to be repaired by the Tenant using the Approved Contractor at the Tenant's cost.

The Tenant's Contractors shall provide temporary firestop material in any penetrations through fire-rated walls or slabs to maintain appropriate smoke/fire separations during construction. Fire separations are to be restored to base building condition.

The Tenant's Contractors shall re-establish removed or damaged fire and smoke separations and baffles within the same work day (8 hours maximum) and shall provide permanent and/or temporary separations and baffles to maintain the base building design standards.

Subsequent removal and disposal of temporary facilities, including making-good of effected work, remains the Tenant's Contractors' responsibility.

6.20 INTENTIONALLY LEFT BLANK

6.21 FIRE ALARMS/DEACTIVATION OF SMOKE ALARMS

Prior to carrying out work which results in heat or fumes being generated, including but not limited to welding and cutting with a torch, all open flame work, all grinding, spray painting, cutting (wood, steel, floor, etc.), sweep dusting near a smoke detector, sanding, core drilling, draining and filling of sprinkler systems and testing of mag locks or other devices added to the fire alarm system, the Tenant or its Tenant's Contractor must give the Landlord's Representative daily notice, so that smoke alarms on the necessary floors can be deactivated.

In the event that the Tenant or its Tenant's Contractor neglects to notify the Landlord's Representative regarding the above-noted work and a fire alarm is activated resulting in a false alarm caused by the Tenant or its Contractors, the Tenant will be charged with the fire department's cost and all associated costs incurred. A subsequent alarm will result in the removal of the offending Tenant's Contractor from the property and the imposition of additional life safety management measures as required by the Landlord. All fines and charges will be the responsibility of the Tenant.

Since some time could elapse between the occurrence and the fire department invoice, the Tenant will be advised in writing immediately after the alarm that one of its Tenant's Contractors was responsible and that charges will be forthcoming. It is the responsibility of the Tenant to recover such costs from the Tenant's Contractor responsible.

In the event the Tenant does not pay such aforementioned amount within thirty (30) days after demand, the Landlord shall have the right, without limitation to any other right or remedy for the collection of such amount, to deduct such amount from the Leasehold Improvement Allowance owing to the Tenant, or any advanced rent deposit or security deposit being held.

Once work has been completed by the Tenant's Contractor in an area where a request was made for the fire alarm to be isolated, it is the responsibility of the Tenant's Contractor to contact the Landlord's Representative to have the zone(s) restored. If the Tenant's Contractor leaves the Site unsupervised and without fire protection, the Tenant will be charged the cost associated with restoring the zone(s).

6.22 FASTENING

The Tenant's Contractors are not permitted to use mechanical fastenings into curtain walls, window frames, or walls which may contain air/vapour barriers or special fire rated structures. Clips in lieu of screws must be used to fasten interior walls to the ceiling grid.

6.23 DAILY CLEAN-UP

Drains, including janitor's sinks may not be used to dispose of materials such as drywall compound, concrete or paint, which may clog or hamper flow through the drainage system. Tenant's Contractors must make arrangements to dispose of such materials off-Site. If the drainage system becomes clogged or restricted and is verified as being caused by the Tenant or the Tenant's Contractors, the Landlord may undertake, at the Tenant's expense, a full cleanup program.

6.24 PRE-OCCUPANCY CLEANING

Upon completion of Tenant's construction, the Tenant is to ensure that Tenant's Contractors clean up and remove all construction debris from the Premises, together with all equipment and tools and the Premises are left clean and in move-in condition. In addition, all public lobbies, circulation corridors, and stairwells must also be given a post-construction cleaning if affected by the Tenant's Work.

Prior to regular office cleaning procedures, the following items must be cleaned at Tenant's cost within the Premises:

- Light fixtures and lenses;
- Ceiling grid and ceiling tiles;
- Carpets and all other floor coverings;
- Public areas and service areas affected by the Tenant's work: corridor walls and doors, service rooms, utility rooms, stairwells and lobbies;
- All washrooms;
- Perimeter fan coil units, if applicable;
- Building supplied window coverings;
- Interior and perimeter supply air diffusers;
- Return and exhaust air grilles;
- Heating coils (cleaning shall be carried out by the Tenant using the Landlord's base building cleaners and charged to the Tenant's account);
- Inside faces of all exterior glazing including window frames and mullions;
- All interior partition glazing.

The Landlord's Representative will inspect the pre-occupancy cleaning to ensure that the Premises are acceptable for occupancy. In the event cleaning is not performed by the Tenant's Contractors to the Landlord's satisfaction acting reasonably, and the Tenant fails to remedy after reasonable notice, the Landlord's cleaning contractor may, at the option of the Landlord, perform such work as deemed necessary prior to move in, at the Tenant's expense.

6.25 PROTECTION OF BASE BUILDING ELEMENTS

Any damage verified as being caused by the Tenant or the Tenant's Contractors, or anyone for whom the Tenant is responsible in law shall be repaired forthwith to the reasonable satisfaction of the Landlord by the Tenant or, at the Landlord's option, by the Landlord at the Tenant's expense.

The Tenant and the Tenant's Contractors shall take great care to protect all Base Building Work elements accessible from within the Premises including, but not limited to, the following:

- a. Public Area: The Tenant shall be responsible for cleaning and making good, at the Tenant's expense, any damage verified as being made by the Tenant or its Tenant's Contractors in all public areas. In particular, this includes, but is not limited to, any damage to glazing, wall and floor finishes including sidewalks, laneways, and base building fixturing.

- b. The Tenant shall protect all Base Building Work within the Premises with appropriate protection materials and shall obtain the Landlord's Representative approval of the protection procedure proposal prior to commencing work, moving construction materials or equipment across or within public areas.
- c. Mechanical and Electrical Rooms: The Tenant shall be responsible for cleaning and making good, at the Tenant's expense, any damage to the mechanical and electrical rooms caused by the Tenant's Contractors.
- d. Washrooms: The Tenant shall be responsible for cleaning and making good, at the Tenant's expense, any damage verified as being made by the Tenant or the Tenant's Contractors to the washrooms designated for Tenant use during Tenant's Work. The Tenant or the Tenant's Contractors shall not use the washrooms for cleaning of construction tools, such as paint brushes, etc. and dumping of liquids and garbage.
- e. Stairs and Access Areas: The Tenant is responsible for cleaning and making good damage, at the Tenant's expense, to stairs and areas used for access during Tenant's Work. Fire doors in stairs shall not be wedged open by the Tenant or the Tenant's Contractors.
- f. Elevators: The Tenant shall use only those service and passenger elevators designated by the Landlord for vertical transportation of construction personnel, material, and equipment. Any damage verified as being made to the elevator cabs, mechanisms, doors and frames caused by the Tenant or the Tenant's Contractors, shall be repaired by the Landlord at the Tenant's expense.

6.26 HAZARDOUS MATERIALS

All waste of a hazardous chemical or flammable nature must not be allowed to accumulate. Such waste must be removed from the Site as quickly as possible, or when directed by the Landlord's Representative, but no later than the same day, in accordance with the material's Material Safety Data Sheet, (MSDS).

6.27 ACCESS AND DELIVERIES

Personal access and material deliveries to the Premises are to be only by routes designated by the Landlord's Representative and as indicated in Section 6.6 and 6.7. The handling of items which, due to weight or dimension, require special treatment must be reviewed and arranged with the Landlord's Representative. The Tenant's Contractors and/or Tenant are responsible to unlock the Premises each day for their trades' access. The Landlord shall not be responsible to unlock Tenant's Premises doors.

6.28 SYSTEM PROTECTION AND CLEANING

No work shall commence until arrangements have been made with the Landlord for the protection of on-floor air conditioning units. It will be the Tenant's responsibility, at the Tenant's expense, to return them to their original state, as determined at Tenant Turnover and in accordance with the Landlord's reasonable specifications.

Supply and install temporary filters at all mechanical return air openings to the compartment room, shafts and equipment. This shall include but not be limited to; compartment units, air handling units, induction units, fan coil units, heat pumps etc. Replace media throughout construction. Remove temporary filters prior to air balance and re-occupancy. Seal all open-ended ducts during construction and remove prior to connection or occupancy. Seal all open plumbing pipes and floor drains to prevent construction debris from entering piping systems during construction. Only remove upon completion of final cleaning of space.

6.29 CARPET INSTALLATION

Carpets may not be glued to the floor, except where a "quick-release" type of glue is used and Landlord's written approval has first been obtained.

Note: The Landlord reserves the right to approve other methods of application.

6.30 WORK CONFLICT

Tenant's Contractors' work shall be performed in a manner that will not unduly interfere or conflict with any activities of the Landlord, the Landlord's Representative, or other tenants. Other than pursuant to the requirements of this Manual, the Landlord shall not unduly interfere with the Tenant's Contractors work.

6.31 ROOF WORK

For any roof access, an Access To Rooftop Release from Liability and Waiver of Liability Agreement must be filled out and orientation provided by Operations. For a copy of the waiver form, please refer to Appendix 10.

6.32 FINISH HARDWARE/ LOCKSMITHING

The Tenant will provide a hardware schedule to the Landlord's Representative. All door hardware on both entrance and interior doors must have locks which are compatible with the Building master keying system and may be opened by the master keys for the Building. Only the Landlord's locksmith may produce master keys (see list of Base Building Contractors).

6.33 AIR BALANCING

The Tenant must provide the Landlord with an air balancing report upon completion of all Tenant's Work. The report must be completed by the Tenant using the Landlord's designated air balancing company, at the Tenant's expense, and must be reviewed by the Landlord's consultant prior to final submission to the Landlord's Representative. The report is to include the following:

- a. CFM at each light troffer and diffuser outlet when the thermostat is calling for full cooling and full heating; and
- b. Temperature at furthest light troffer and diffuser; and
- c. CFM, static pressure and temperature at AC-unit outlet when thermostat is calling for full cooling; and
- d. CFM and static pressure at exhaust grille and/or air boot outlet; and
- e. Supply and return air CFM, static pressure and temperature at main duct leaving and returning to mechanical room when thermostat is calling for full cooling; and
- f. Design and actual readings in all cases.

Any change to fan powered boxes shall be noted on an adhesive label showing original and revised minimum and maximum CFM. This label shall be at least 100mm x 50mm and placed in a readily visible location near the VAV controller. Also to be indicated on this label are corresponding differential pressure valves for revised minimum and maximum.

All changes to piping, duct work, and equipment shall be recorded in a record set of drawings and kept on-Site at all times.

Any and all work to re-balance or adjust air within Premises that is caused by base building testing or balancing work completed by the Landlord after the Tenant has completed its final balancing shall be at the cost of the Landlord.

6.34 WATER BALANCING

Water balancing by a Base Building Contractor is required for all tie-ins to base building water systems. The following items must be noted in the final report:

- a. GPM at each piece of equipment;
- b. Pressure drop at each column;
- c. Entering and leaving water pressures and temperatures;
- d. Final marked position of balancing valves;
- e. GPM at main service;
- f. Other balancing as directed by Landlord's Representative.

Each piece or equipment tied into a base building water system must be equipped with a circuit-balancing valve.

6.35 AIR CONDITIONING UNITS

Where air conditioning units are disconnected so that Tenant's Work may take place, the units must be fully serviced by the Tenant before being reconnected to the Building system. Prior notice of such disconnections must be submitted in writing to the Landlord's Representative. After the work is completed, the mechanical systems (chilled water, heating and condenser) must be flushed (both new and used lines) and samples must be provided to the Landlord.

Additional air conditioning units shall only be installed where required. Units may be added to the base building tenant chilled water system where available. All piping shall be pressure tested at 150% of operating pressure; tests shall be witnessed by the Landlord's Representative. All piping is to be chemically cleaned and flushed to the Landlord's Representative's satisfaction. The Base Building Consultant for water treatment shall supervise the cleaning process at the expense of the Tenant. Two (2) samples shall be required for testing and acceptance of cleaning as follows:

- i. with chemical cleaner added, after circulation as specified;
- ii. after flushing for a time as prescribed by the Base Building Consultant.

All products used for cleaning must be acceptable to the Base Building Consultant. Prior to tie-in to the base building system the above samples must be tested and accepted, and pressure testing completed, after which the Tenant must obtain prior written approval from the Landlord's Representative, allowing the tie-in to take place. Failure to do so may result in the Landlord's Representative causing a chemical cleaning of the building piping as well as cleaning of the associated building system at the Tenant's expense. For this reason, Tenant's Contractors are urged to work closely with the Base Building Consultant for water treatment. All piping circuits shall be equipped with isolation valves at the system riser and at each piece of equipment, suitably tagged and identified.

All piping is to be properly labeled identifying system and direction of flow every 6 meters and where piping passes through floors or walls. Each piping circuit shall be complete with circuit balancing valves for balancing purposes and future use. All chilled water, condenser water piping and condensate piping shall be insulated when installed enclosed in ceiling spaces, etc. Supplemental air conditioning units installed in electrical, communication and like areas shall be equipped with full coverage drip trays, piped to drain.

Domestic water connections for backup purposes must be complete with back flow preventers per plumbing code requirements and be valved at the A/C units (tagged and labeled). Backflow prevention devices shall be installed in accordance with Applicable Construction Laws including CAN/CSA-B64.

Backflow prevention devices shall be field tested in accordance with CAN/CSA-B64.10-94. Such testing shall be witnessed by the applicable Base Building Consultant or another individual as may be designated by the Landlord in advance of the scheduled testing date. Upon completion of the testing, the Base Building Consultant shall, at the Tenant's expense, issue to the Landlord's Representative a letter to confirm the testing. Such testing shall be coordinated by the Tenant and shall take place prior to the system being put into service.

Automatic switch over valves are not permitted, a control sequence must be provided for change over from condenser water to domestic water and only where the use of domestic water for such purposes is permitted by the City of Calgary. The control sequence will be verified during A/C unit commissioning and thereafter approved by the Landlord's Representative. A framed schematic, together with a control sequence and instructions for valve position during switch over, chemical cleaning and normal operation must be placed adjacent to the A/C unit for future reference. All valves must be permanently labeled or tagged.

If domestic water back-up feed is required then the Tenant shall provide a water meter complete with remote read-out, which must be installed without exception. A/C units utilizing domestic water as a primary cooling medium are not permitted due to their environmental impact and City of Calgary Bylaw 40M2006.

The Tenant or the Tenant's Contractors shall submit unit specifications, catalogue cuts, etc., to the Landlord's Representative for approval. The maintenance and upkeep of Tenant owned A/C units shall be the Tenant's responsibility. A maintenance contract, with an Approved Contractor, must be maintained at all times by the Tenant, at the Tenant's expense. The Tenant or the Tenant's Contractors shall forward a copy of the contract to the Landlord's Representative, for its records. All units using a condensate pump shall be wired such that if the condensate pump fails, the air conditioner cannot run.

6.36 TENANT'S DESIGN AND CONSTRUCTION GUIDELINES

Standard of Workmanship and Material: All Tenant's Work is to meet all Applicable Construction Laws. All work by the Tenant and the Tenant's Contractors within the Premises shall be completed with materials of high quality and shall be based on environmentally responsible designs which minimize environmental impacts of the construction process and during the Tenant's Work. All workmanship and materials shall be equivalent to the base building standard and quality as characterized by the plans and specifications. Inferior installed materials and workmanship, which do not meet the aforesaid standards or conform to Applicable Construction Laws, shall be replaced, by the Tenant, at the Tenant's expense. The Tenant shall ensure that the Tenant's Contractors comply with the following requirements:

a. Architectural

- i. Partitions and workstations should not prevent access to mechanical equipment, fan-powered boxes, controls, thermostats or other items that require periodic service. Further, partitions should align with window mullions and perimeter columns. Where applicable, to facilitate the removal of exterior windows, removable filler panels are to be used in order to extend partitions to the window mullions (see Appendix 7 of this Manual).
- ii. Mechanical fastening to T-bars or curtain walls or any mechanical enclosures are not permitted. Tracks are to be clipped to T-bar or mullion with non-staining gasket.
- iii. Obstructions to exterior glazing are not permitted.

- iv. Alterations to roller blinds are not permitted.
- v. Solid ceilings are to be provided with access panels to allow maintenance of plumbing connections, reheat coils, dampers, light fixtures, electrical junction boxes, alarm bells and other equipment with the potential for future access for maintenance or adjustment. The Landlord's Representative must be consulted for an inspection prior to solid ceilings being closed.
- vi. The Tenant's Contractors are responsible for the cleaning of fan powered box filters, once the Tenant's Work has been completed. Such Tenant's Work must be to the satisfaction of the Landlord's Representative or his delegate.
- vii. Partition changes will often necessitate a review and revision to the air handling system, i.e. supply and return ductwork, ceiling baffles and balancing, in order to achieve tenant comfort. Partition changes will often necessitate a review and revision to the sprinkler system to provide suitable coverage.
- viii. Locations requiring heavy loads, i.e. libraries, large filing systems, concentration of filing cabinets, safes and/or vaults, should be identified on drawings and loading checked and accepted by the Landlord's structural engineer. Any fees associated with this approval will be at the Tenant's expense.
- ix. All kitchens, serveries and washrooms are to have floor drains installed. All added mechanical spaces must be concrete-curbed, floors water-proofed and floor drains installed. The Landlord reserves the right to have areas relocated during the design phase, as not to cause potential damage to sensitive areas below. The Tenant may be required to add protective devices as applicable (i.e. drains pans, water sensors, etc.)
- x. Full height partitions in tenant spaces require return air openings suitably sized for the required air volume.
- xi. Keying of locks to be done by Building locksmith. (see Appendix 4)
- xii. Only water-based sealers are to be used for wood or stone flooring. No solvent sealers are to be used.
- xiii. All exposed metal furring at air slots is to be painted to match adjacent surface.
- xiv. Where drywall baffles occur above ceiling they are to extend across door openings and glazing.
- xv. Baffles are to be tightly fitted and caulked around ductwork and piping joints are to be taped.
- xvi. Ceiling system modification: Keep the ceiling in the Premises at the building standard height. No holes are to be drilled or punched in the base building T-bar system. Removal, relocation and/or replacement of installed ceiling tiles will be the responsibility of the Tenant at its expense. Ceiling tiles should be handled carefully to prevent damage. Any change in the base building ceiling height or material must be reviewed by the Landlord in writing prior to the commencement of work. Follow all code requirements where fixtures are relocated or new fixtures added adjacent to one another, i.e. the fixtures shall be self-supporting, independent of the ceiling.

- xvii. Partitions perimeter wall: Double sided tape must be used where Tenant partitions abut to perimeter curtain wall and ceilings. Fastening shall be accomplished without screws or bolts. All partitions which abut the curtain wall must be centered on the window mullions.
- xviii. Above ceiling baffles: The area above the finished ceiling acts as a return air plenum for the HVAC equipment. Care must be taken when introducing products and elements to this area. The use of fiberglass insulation for soundproofing, baffles, demising and air transfers, is subject to approval of the Landlord. Any fiberglass installed above the t-bar ceiling should be complete with an air/vapour barrier, sealing in all fibre. As an alternate, foil wrapped fiberglass with the unsealed edges painted (sealed) could be utilized. All to meet requirements of Applicable Construction Laws relating to flame spread and fibre retention.

b. Electrical, Communications and Cabling

- i. Conduit is to be used in all inaccessible areas, the ceiling plenum and for all home runs. BX cable is acceptable for short runs of not more than 10 linear feet and must be accessible and not visible from below the plenum space. Conduit must be secured to the structure. Conduit hung from other conduit, ceiling components or equipment will not be permitted.
- ii. Daisy chaining of light fixtures is not permitted.
- iii. All work by electrical and/or communications contractors will include zone conduit and/or cable tray for voice/data communications, a/v, security or similar low voltage cabling. The use of free-air cables is not allowed with the exception of fire rated cable per applicable code, which shall be neatly and securely fastened either in cable tray or appropriate cable supports and harnesses with maximal intersupport cable sag of 6" from the underside of floor slab above and spaced a maximum of 6' apart. All cables shall be completely supported by the harnesses so that no weight is transferred to any other existing non-structural fixture or ceiling cable structure. Cable supports are not to be supported from T-Bar support system. Provide cable installation and suspension details in addition to cable specifications.
- iv. If required, work in other Tenants' Premises is to be arranged through the Landlord's Representative. All such work must be coordinated for a mutual acceptable time frame. Security supervision, if applicable, may be required at all times, the cost of which will be at the Tenant's expense.
- v. Unused electrical/telephone floor holes must be properly filled with concrete and a suitable plastic cup/plug. The Tenant's Contractor will remove any abandoned wires in raceways or ceilings.
- vi. Not more than six (6) duplex outlets are to be installed on any one 15-amp circuit. All wiring shall be copper. Panel loading is subject to Landlord's approval.
- vii. The Tenant's Contractor will ensure that electrical panels, disconnects, and meters are properly sized and identified immediately upon completion of the Tenant's Work. Provide mechanically attached lamicoïd nameplates to all equipment. Lamicoïds to match base building standards.
- viii. Occupancy sensors are recommended for all private areas, open office areas and low use areas.

- ix. No bare wire is acceptable in ceiling spaces used as return air plenums. The Tenant's Contractor will ensure that wires shall be carried in EMT or flexible metallic jackets. All conduits up to and including 4" (100mm) size shall be EMT thin wall with steel set screw couplings and connectors. Provide flexible metal conduit for connections to motors and transformers. All conduits must be installed to conserve headroom, parallel and perpendicular to building lines. Do not caddie clip conduits to ceiling hangers.
- x. Where plenum rated communication cables are used, they must not be attached to the suspension wires supporting the T-bar. Laying the cable on top of the acoustic tiles is not acceptable or permitted. The Landlord will not assume any responsibility for damage which may result from the failure of the Tenant's Contractor to observe this requirement.
- xi. The Tenant's Contractor will be responsible for ensuring that openings, through walls or floors, are properly sealed, to safeguard the fire rating of electrical rooms and other spaces. Replacement fire stopping will be installed in accordance with Applicable Construction Laws. Under no circumstances shall the level of fire protection be reduced.
- xii. Upon completion of all electrical work, an electrical inspection is required and is to be obtained by the Tenant's Contractor. The Tenant's Contractor will co-ordinate same through the Landlord's Representative.
- xiii. The Tenant's Contractor will be responsible for ensuring the need for any special grounding for computer connections and that proper interfaces are used to avoid false alarms.
- xiv. New panel boards, disconnect switches, splitters and meters are subject to the Landlord's approval, acting reasonably.
- xv. Tenant data and voice telecommunications equipment must not be installed in base building telephone rooms.
- xvi. No telephone, communication, data, security, computer or other cables may be installed in the Building without the prior approval and consent of the Landlord's Representative. In any event, no wiring of any kind shall be installed without the required conduit; nor shall any loose wire or cabling be allowed to remain without a casing or unpanelled in the ceiling plenums unless approved for such installations and installed in a manner reasonably acceptable to the Landlord.
- xvii. No Tenant panels, transformers or distribution equipment shall be installed in the base building electrical rooms except as reviewed by the Landlord acting reasonably (exact location must be provided at the completion of the Landlord's schematic design phase). Any additional distribution equipment required by the Tenant shall be installed within the Tenant's leased space.
- xviii. All telephone communication cables must be identified at every floor level within the communication riser. Each cable or group of cables must be identified with the name of the Tenant, the installing Tenant's Contractor's name, telephone number and the date of installation. The installation of all infrastructure cabling within base building risers shall be in accordance with the base building cabling infrastructure management specifications, to be provided by the Landlord on completion of riser design, and requirements of the Landlord. Before proceeding, contact the Landlord's Representative who will arrange for access to Telephone Rooms.

- xix. All Tenant's Work to be done in the telephone rooms and infrastructure will be carried out exclusively by the applicable Approved Contractor.
- xx. All sound masking cabling and speakers will be supported independently from the ceiling.
- xxi. **Fire Alarm System**
Scheduled interruptions to Tenant's Life Safety Systems work, including but not limited to sprinkler and fire alarm, may be necessary to accommodate base building testing and approvals. Any changes to the fire alarm or life safety systems must be installed and verified by the Landlord's Base Building Contractors as per National Standards of Canada specification CAN/ULC-S524-M91 and CAN/ULC-S537-97 respectively, to preserve the integrity of Life Safety Systems. This includes any security door locks interface (electromagnetic locks) to the fire alarm system. The Tenant's Contractors will familiarize themselves with the appropriate municipal requirements for the installation of electromagnetic locks and provide verification from the base building electrical consultant.
- xxii. **Smoke Detectors**
Smoke detectors and duct-mounted smoke detectors will be isolated when work in an area may activate a smoke alarm (i.e. open flame, cutting or sanding).
- xxiii. **Heat Detectors**
Heat detectors will be isolated when work in an area may activate a heat detector alarm (i.e. open flame).
- xxiv. **Electromagnetic Locking Devices (EMLD's)**
The Tenant's Contractors must comply with all requirements of the Alberta Building and Fire Code as they apply to the installation, testing and commissioning of EMLD's, which must be tied into the base building fire alarm system. All final connections and verification of EMLD's that are to be connected to, and released by the alarm system, must be made by the fire alarm manufacturer at the Tenant's expense.

c. HVAC and Plumbing

- i. Tenant's Consultant is to verify that the fire hose coverage is code compliant.
- ii. Tenant's Contractor to install temporary filter medium (MERV 8) over pleated filters in compartment units and/or fan-powered box filters prior to start of the construction of the Tenant's Work as well as a temporary filter (MERV 8) on return air openings to prevent the migration of dust into all systems and areas of the Building and building equipment. At the completion of the Tenant's Work, the Tenant or the Tenant's Contractor shall remove and dispose of filters, clean diffusers, grills, vents, etc. clean fan-powered boxes and compartment unit and above ceiling air plenums and other areas as required by the Landlord's Representative.
- iii. Exhaust from printing machines, or kitchens are not to be connected to the sanitary exhaust system. The Tenant's Contractor will ensure that careful consideration is given to the inclusion of ecology units or special ductwork in kitchen exhaust systems.
- iv. Tenant's Contractor will ensure that each perimeter office, at a minimum, either shares a VAV box with its neighbour or has an individual unit. Each perimeter office should also have individual overhead linear diffusers or light troffer(s) as may be applicable for cooling. Consideration should be given to the placement of control thermostat locations and the tenant's

furniture layout. Do not install thermostats where they will be affected by heat generating equipment or items, or where radiant sun will affect proper operation.

- v. The Landlord's Representative requires that the thermostats be protected in order to prevent potential damage from airborne particles during the drywall sanding stages. All work in this regard, will be carried out by the Tenant at the Tenant's expense.
- vi. Both the Tenant and the Tenant's Contractor should give consideration to the provision of sufficient air to interior conference rooms in order to prevent overheating. Exhaust fans are a minimum requirement. A separate or dedicated fan powered box is more effective for tenant comfort.
- vii. The supplementary air conditioning units shall be inspected by the manufacturer's service representative upon installation at the Tenant's expense to ensure proper operation by the Tenant. Thereafter, at the request of the Tenant, inspection and servicing can be done under contract by the Landlord's forces as a contracted service at the Tenant's expense. All supplementary air conditioning units shall be installed in accordance with building standards and Applicable Construction Laws.
- viii. Tenant's Contractors will hire an air balancing company to re-balance the air system upon completion of work and provide a balancing report to the Landlord. System balancing is subject to the approval of the Landlord's Representative and will be accepted following review and approval by the applicable Base Building Consultant.
- ix. All internal plumbing and services are the responsibility of the Tenant. All equipment serving the Premises, must be noted on the drawings.
- x. All domestic water piping and connections to base building valves must be Type 'L' copper or braided steel enforced tubing with threaded fittings.
- xi. All piping and connections to base building sanitary or vent systems shall be cast iron or DWV copper. PVC, PEX and ABS are not acceptable. XFR may be acceptable in some areas of the Complex and the Tenant must request review and acceptance by the Landlord, prior to design submission.
- xii. Subject to the outline specifications in Appendix 5, potable water supply lines, drain lines, and vent risers will be provided with valved and capped connections by the Landlord to support future connections. All tie-ins required by the Tenant shall be completed with isolation valves and service designation.
- xiii. Tenant's Contractor will ensure that flexible ducts are secured to rigid ducts by mechanical fasteners and tape or sealant. (tape alone is NOT acceptable). No joints will be allowed on flex.
- xiv. Tenant's Contractor will ensure that piping and ductwork is installed according to industry standards and to the standards of the building construction (i.e. from slab or structure and not from existing piping or ductwork). Contact with ductwork or other piping/conduit is not allowed under any circumstances; all installations must be free from vibration.
- xv. Tenant's Contractor will ensure that no dissimilar metals come in contact with piping and that electric connectors are used where required.

- xvi. Provision must be made for the inclusion of a water check meter for all domestic water use.
- xvii. Tenant's Contractors will ensure that supply piping has shut-off valves and backflow preventers where required by Applicable Construction Laws (i.e. City of Calgary water backup and computer A/C units). The Tenant or the Tenant's Contractor shall provide backflow preventer field tests that are witnessed by the Landlord's Representative and associated reports prior to placing systems into operation. At no time will base building systems be tied into, operated or manipulated in any way without compliance with Section 5.3 of this Manual.
- xviii. All kitchens, serveries and washrooms constructed within the Premises are to have floor drains installed by and at the expense of the Tenant.
- xix. All mechanical spaces added within the Premises must be concrete-curbed, floors water-proofed and floor drains installed by the Tenant or Tenant's Contractor. The Landlord reserves the right to have areas relocated during the design phase so as not to cause potential damage to sensitive areas below.
- xx. With the respect to any water sourced installations, the Tenant may be required to add protective devices as applicable. This may include the following: waterproofing membranes, drains pans, water sensors, automatic water shutoffs, and B.A.S. connections as may be required for leak detection and containment.
- xxi. Tenant's Contractor will fill holes with concrete after removal of pipes or drains. Large openings shall be treated in accordance with the requirement of the Landlord's Representative following review by the applicable Base Building Consultant for structural engineering at the expense of the Tenant.
- xxii. Tenant's Contractor will caulk and seal new installations of floor pipes and drains to prevent water leakage and to maintain the fire rating of the assembly penetrated
- xxiii. It is the responsibility of the Tenant's Contractors pursuant to this Manual to seal any openings through walls or floors to safeguard the fire rating assembly in question
- xxiv. The Tenant is responsible for the supply and installation of electric hot water heaters. A leak detection system must be installed as a part of the hot water tank installation.

6.37 LANDLORD'S TENANT CONSTRUCTION COORDINATOR

At the Landlord's option, the Landlord may designate a Tenant Coordinator to coordinate Tenant's construction activities with the work and access of other tenants. In no event shall the involvement of the Landlord or the Tenant Coordinator constitute the Tenant Coordinator, the Landlord or the Landlord's Representative as a prime contractor under Applicable Construction Laws.

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CONSTRUCTION COORDINATION

SECTION 7 - LEED GUIDELINES

7.0 LEED GUIDELINES (OPTIONAL)

7.0 LEED GUIDELINES (OPTIONAL)

A LEED guideline for the benefit of those tenants who choose to pursue a LEED Commercial Interior (LEED-CI) certification for their Premises will be provided by the Landlord upon the Tenant's request.

CONSTRUCTION COORDINATION

SECTION 8 - BUILDING CHARGES AND LANDLORD SERVICES

8.0 BUILDING CHARGES AND LANDLORD SERVICES

8.1 INVOICING OF SERVICES

8.2 TERMS AND CONDITIONS OF SERVICES

8.0 BUILDING CHARGES AND LANDLORD SERVICES

The Tenant shall pay the following to the Landlord with respect to services ("Services") which the Landlord performs at the written request of the Tenant or other expenses arising pursuant to any obligation of the Tenant expressly required by this Manual.

The total costs and expenses (collectively, the "Costs") incurred or paid by the Landlord to third parties in connection with the Services including, without limitation, the following:

- i. Charges levied by Authorities in relation to the Services,
- ii. All taxes, and duties related to the Services,
- iii. For greater certainty, certain components of the costs shall be based on the applicable rates set out in Section 8.2 of this Manual, and
- iv. An administrative fee of 15% of the Costs ("Fee").
- v. In the case where the Landlord incurs costs as indicated within this Manual associated with damages, misconduct, and/or non-compliance caused by the Tenant or the Tenant's Contractor hereunder, and where the Tenant has failed to remedy or make reasonable efforts to commence remedy of the same, after reasonable notice has been given by the Landlord, an administration fee of fifteen percent (15%) shall apply to the Landlord's reasonable, direct and verifiable out of pocket expenses.

8.1 INVOICING OF SERVICES

The Landlord may submit invoices to the Tenant on a monthly basis. Each invoice shall be itemized for the Costs incurred or paid to date during the payment period, and the applicable Fee related to such Costs. The amounts set out in the invoice submitted by the Landlord shall be paid by the Tenant within thirty (30) days after submittal of the invoice to the Tenant.

In the event of a dispute or upon the Tenant requiring additional details with respect to invoiced charges, the Landlord shall provide such detailed back up within thirty (30) days of receiving the Tenant's written request. Such requests shall not preclude the Tenant's obligation to make payments for invoices as prescribed above, but Tenant shall have the right to dispute accuracy of statement, acting reasonably, and if there was an error in the statement, to recover costs from Landlord.

8.2 TERMS AND CONDITIONS OF SERVICES

Any work, equipment or services provided by the Landlord at the written request of the Tenant shall be authorized in writing by the Tenant and shall be paid by the Tenant as follows:

- a. Thirty-five percent (35%) of the amount payable by the Tenant as estimated by the Landlord shall be paid to the Landlord by the Tenant at the time the Tenant authorizes the provision of such work, equipment or services by the Landlord.
- b. On an incremental basis, the Tenant shall pay the balance of the amount payable by the Tenant for such work, equipment or services forthwith upon receipt of Landlord's invoices which shall be issued in conjunction with the incremental progress of the provision of such work, equipment or services work and be inclusive of all applicable hold backs deducted at source to the Landlord's contractors and consultants.

CONSTRUCTION COORDINATION

SECTION 9 – INTENTIONALLY LEFT BLANK

CONSTRUCTION COORDINATION

SECTION 10 - MANUAL REVISIONS

10.0 MANUAL REVISIONS

10.0 MANUAL REVISIONS

All changes shall be consistent with the construction of comparable quality buildings of similar type in the downtown core of Calgary, Alberta, including but not limited to design elements, finishes, materials, products, systems, functionality, efficiency, sustainability, and space usability aspects. Revisions shall also be consistent with the Lease, all relevant ancillary documents, and the existing Manual provisions such as respective Landlord and Tenant obligations and responsibilities, completion responsibilities, specifications, plans, reporting, payment obligations, communications. Changes shall not result in a reduction of services, communications and updates, and/or specifications, including without limiting the generality of the foregoing, those outlined in the appendices attached to this Manual.

CONSTRUCTION COORDINATION

APPENDIX 2 - BASE BUILDING CONSULTANTS

**Electrical
& Fire Alarm**

Mulvey & Banani International Inc.
Contact: Jaycee Elliott
Email: jaycee.elliott@mbeng.ca
Address: Suite 700, 110 – 12th Ave. SW, Calgary AB T2R 0G7
Telephone: (403) 781 7301

Mechanical:

TMP Consulting Engineers (Alberta) Ltd.
Contact: Harry G. Wollin
Email: harryw@tmpeng.ca
Address: 100, 3604 Burnsland Road SE, Calgary AB T2G 3Z2
Telephone: (403) 451-8922

Smith + Andersen (Calgary) Ltd.
Email: hans.rohmann@smithandandersen.com
Address: Suite 1205, 330 – 5th Ave. SW, Calgary, AB T2P 0L4
Telephone: (403) 261-8897

**Structural
Engineers:**

Read Jones Christoffersen Ltd.
Contact: Bryan Colvin
Email: bcolvin@rjc.ca
Address: 1816 Crowchild Trail NW, Suite 500, Calgary AB T2M 3Y7
Telephone: (403) 283-5073

CONSTRUCTION COORDINATION

APPENDIX 3 - APPROVED CONTRACTORS

Subject to further review or discussion with Tenants, the Approved Contractors shall be limited to the following:

Mechanical HVAC:	Arpi's Industries Ltd. Botting & Associates Modern Niagara Alberta Inc. Trotter & Morton Windmill Mechanical Services
Mechanical Plumbing:	Arpi's Industries Ltd. BCK Mechanical Systems Botting & Associates Chisholm Industries Ltd. Modern Niagara Alberta Inc. Trotter & Morton
Sprinklers:	Constant Fire Protection DT Fire Tyco Integrated Fire & Security Canada (Simplex Grinnell) Vipond Inc.
Electrical:	CANEM Systems Ltd. Custom Electric Ltd. O'Dell Electric Ltd. Trotter & Morton Electrical Western Electrical Management Ltd.

Note: Only joint ventures between Approved Contractors will be permitted.

CONSTRUCTION COORDINATION

APPENDIX 4 - BASE BUILDING CONTRACTORS

- Mechanical:** **Trotter & Morton**
Contact: Mike Loughlin
Email: mloughlin@tmlgroup.com
Address: 5711 1st Street SE, Calgary AB T2H 1H9
Telephone: (403) 255-7535 loc 427
- Electrical:** **Western Electrical Management Ltd.**
Contact: Rick Parkinson
Email: rparkinson@westernelectrical.com
Address: 3770 – 12th St. NE, Calgary AB T2E 8H9
Telephone: (403) 291-2333
- Fire Alarms:** **Western Electrical Management Ltd.**
(Chubb Edwards)
Contact: Rick Parkinson
Email: rparkinson@westernelectrical.com
Address: 3770 – 12th St. NE, Calgary AB T2E 8H9
Telephone: (403) 291-2333
- Sprinklers:** **Tyco Integrated Fire & Security Canada**
(Simplex Grinnell)
Contact: Walter Voice
Email: walter.voice@jci.com
Address: 431 Manitou Road SE, Calgary AB T2G 4C2
Telephone: (403) 444-3240
- Mechanical Controls:** **Johnson's Controls**
Contact: Brian Schamber
Email: brian.schamber@jci.com
Address: #104, 6046-12th St SE, Calgary AB T2H 2X2
Telephone: (403) 252-5549

Air Balancing: **Flowest Testing Balancing & Adjusting Services Ltd.**

Contact: Kaari Hornseth
Email: flowest@telus.net
Address: 340 Mt. Douglas Pl. SE, Calgary AB T2Z 3P3
Telephone: (403) 251-2787

Locksmith (Keying): **Brookfield Properties Canada Management Corporation**

Contact: Sam Sheronick
Email: sam.sheronick@brookfieldproperties.com
Address: Suite 327, 111 5th Ave. SW, Calgary AB T2P 3Y6
Telephone: (403) 213-5372

Elevators: **Otis Elevators**

Contact: Kevin Brittner
Email: kevin.brittner@otis.com
Address: #7, 777 – 64th Av SE, Calgary AB T2H 2C3
Telephone: (403) 461-6938

Water Treatment: **Suez Water Technologies**

Contact: Alison Darling-Thorburn
Email: Alison.Darling@suez.com
Address: Suite 2220, 335 – 8th Ave. SW, Calgary, AB T2P 1C9
Telephone: (403) 461-3950

Security Systems: **Convergint Technologies**

Contact: Jeff St.Cyr
Email: jeff.stcyr@convergint.com
Address: Bay 2, 6020 11th St SE, Calgary AB T2H 2L7
Telephone: (403) 310-7634

In order to protect the integrity of base building systems within the Building, the following work must be performed by the above-named Base Building Contractors:

The Base Building Electrical Contractor must perform the following electrical work, unless approved otherwise at the discretion of the Landlord:

- All modifications to the Base Building fire alarm system;
- All final connections and installation of the equipment within the riser rooms to the base building bus duct riser.

The Base Building Security Contractor must perform the following work:

- All final connections to the Base Building security systems including programming, commissioning, testing and verification.

The Base Building Mechanical Contractor must perform the following mechanical work:

- Not applicable.

The Base Building Sprinkler Contractor must perform the following sprinkler work:

- Not applicable.

The Base Building Contractors must also perform the following other work:

- Mechanical control work must be performed by the mechanical control work Base Building Contractor;
- Air and water balancing must be performed by the air and water balancing Base Building Contractor;
- Chemical water treatment and cleaning must be performed by the chemical water treatment and cleaning Base Building Contractor.

CONSTRUCTION COORDINATION

APPENDIX 5 – BASE BUILDING OUTLINE SPECIFICATION

GENERAL

This outline specification describes, in general terms, the Suncor Energy Centre (the "Complex") in Calgary, Alberta. All elements in this outline specification (unless otherwise noted) are base building items.

1. Architectural

a. General Overview

- Suncor Energy Centre consists of two office towers:
 - East Tower:
 - 111 - 5th Avenue SW
 - 32 stories
 - 607,773 SF
 - West Tower:
 - 150 - 6th Avenue SW
 - 52 stories
 - 1,187,848 SF
- The East and West Towers of the Complex are connected with main floor and Plus 15 level retail services, a 4-storey atrium on the North side of the complex and 4 levels of underground parking.
- A total of 24,679 rental square feet of retail space can be found on the main floor and Plus 15 levels currently.
- The Complex is LEED EB:OM Certified (2023), as well as WELL Health & Safety Rated, and is BOMA 360 Designated through BOMA International.

b. Below Grade Facilities Including Parking

i. General

- Within the East Tower there is one freight elevator serving floors P4 to 33 and one parking shuttle elevator serving floors P4 – Plus 15 Level.
- Within the West Tower there are two freight elevators serving floors P4 to 53 and two parking shuttle elevators serving floors P4 – Plus 15 Level.
- Parking levels P1 to P4 contain approximately 849 parking spaces. The Loading Dock is located on the P1 Level, and can be accessed off 5th Avenue SW, between 1st Street SW and Centre Street. The loading dock height is 12'4" (3.75 m).
- The Public Parkade height is 6'6" (1.98m) with deviations clearly marked.

- Suspended slabs in the garage slope to drains and have a traffic topping membrane protection system complete with waterproof membrane, which extends 150mm up columns and concrete walls. Driving aisles, loading dock areas, and turning radius areas have a heavy-duty traffic topping system.
 - Perimeter walls, core walls, partitions, columns, mechanical service lines and underside of structure in parking areas are painted white for enhanced security and maintenance. Columns are clearly banded with color coding to identify levels.
 - Parking stalls and traffic markings are clearly identified with yellow applied traffic paint.
 - Accessible parking spaces are provided adjacent to shuttle elevator lobbies. These parking spaces are identified by signage and wheelchair pictograms in blue paint.
 - Underground bicycle parking is available, as well as a future main floor tenant mobility center with end of trip showers and lockers with direct exterior access at grade. This new facility will accommodate approximately 270 bicycles, including secure VIP bike lockers, showers, change area and washrooms. This new facility will be card access only with CCTV coverage.
 - Clearly marked parkade wayfinding signage is extended throughout all parking areas.
 - Storage areas located on the parking levels have concrete floors with concrete block or gypsum board walls with resilient cove bases and painted exposed concrete ceilings. Storage areas are ventilated.
 - Electrical service rooms have painted, fire retardant plywood mounting and painted, ceilings and walls.
 - Mechanical service rooms have painted, ceilings and walls.
 - Exit stairs are cast-in-place concrete (painted with non-slip finish), with painted steel balustrades and handrails. Walls and ceilings are smooth finish painted cinder block, concrete, or gypsum board.
 - Entry to elevator vestibule on parking levels is through metal doors with power operators for touchless access. Elevator lobbies have dropped acoustic tile ceilings, painted cinder block walls, vinyl tile flooring and base.
- ii. Loading and Garbage Handling
- There are 6 loading stalls and 8 courier stalls available in the Loading Dock. Dock levelers are available in the 6 loading stalls. The Loading Dock is managed during the day by a Dock Master who operates out of the Loading Dock Office. After hours the dock is managed by Security.
 - One 40-yard garbage compactor serves all office and retail tenants. This compactor moves from the dock area into a compactor room via a beam on the loading dock ceiling.
 - The compactor, recycling and dock lock up rooms are air conditioned with epoxy floors and base. Walls are concrete block with epoxy paint. The ceiling and exposed structure is painted.

- There are 20 x 64-gallon organics totes, in the temperature-controlled organics room off of the loading dock.
- A recycling room is provided off the loading area for sorting and storage of paper, cardboard, glass, and metal containers. A cardboard baler is located at the dock to bind cardboard. Recycling containers are provided to serve all office and retail tenants.

c. Above Grade Facilities Including Typical Office Floors

i. General

- The East and West office towers have an exterior façade with alternate vision glass and granite panels.
- Openings in the facade at mechanical floors conceal intake and exhaust louvers behind. Opening surrounds are clad in metal.
- Both the West Tower entrance at 6th Avenue & 1st Street SW and the East Tower entrance at Centre Street and 5th Avenue SW have revolving glass doors, with glass canopies and adjacent glazed swing doors.

ii. Main Floor Public Space

- The West and East towers are currently connected by a 4-storey atrium accessed off 5th Avenue SW, enriched by the extensive use of landscaping in tiered planters, a large atrium staircase and escalators leading from the main floor to the Plus 15 level.
- The future Forum space (formerly "atrium") will provide a series of pathways ascending from the ground level up to the Plus 15 level, through tiered landscaping with various seating areas. An escalator connecting the main level to the Plus 15 will be installed south of the Forum space, on the main floor in between the East and West Towers.
- The main floor will also contain a future restaurant space.

iii. Plus 15 Retail and Food Hall

- The future renovation of the Plus 15 will consist of a 2-storey Food Hall and 6 food vendors including a bar.

iv. Plus 30 Tenant Amenity HUB

- The future renovation of the Plus 30 will consist of:
 - A full-floor fitness facility in the West Tower including showers, lockers and washrooms.
 - A full-floor conference facility in the East Tower.
 - A tenant lounge between the two towers overlooking the Plus 15 and main floor common areas.

v. Main Floor Directory

- An interactive freestanding computerized directory LCD screen is incorporated in both the East Tower and West Tower lobbies.

vi. Public Washrooms

- Floors and walls are porcelain tiles.
- Ceilings are suspended gypsum board, painted with pot lights over vanity, toilets, and urinals. Sprinkler heads are concealed, finished to match ceiling color.
- Vanities are granite with full width mirrors and LED lighting. All services below vanities are concealed from reasonable view.
- Pre-finished metal toilet partitions are ceiling hung for ease of regular maintenance and cleaning.
- Brushed stainless steel recessed washroom accessories.
- Floor drains are provided in all washrooms.
- Urinals, water closets, and lavatories are high efficiency, low flow fixtures with electronic flush valves and control. Electronic flush valves and faucet controls are hard wired. Refer to building LEED criteria for plumbing fixture performance.

vii. Fire Alarm and Control Facility

- The central alarm control facility ("CACF" Room") is located on the main floor and contains the following life safety system controls:
 - Emergency public address (PA) system
 - Elevator emergency recall panel
 - Fire alarm annunciator panel
 - Sprinkler system flow signal panel
- The CACF room has carpet tile and a cove base, painted gypsum board walls, and acoustic tile ceiling.

viii. Typical Single Tenant Floors

- The Landlord finished service areas include the service elevator lobby, exit stairs, and base building mechanical, electrical, and communication rooms.
- All base building electrical and communications rooms at and above grade have painted floors, walls. Backboards are fire retardant.
- All dry mechanical spaces at or above grade have epoxy finished concrete floor, painted walls, and exposed structure above. Wet mechanical areas have fuel-resistant waterproof flooring with an integral cove base. Floors slope to drains as required. Curbs are provided around wet mechanical areas to contain spillage, where practical.
- Core walls include stud framing, gypsum board taped, sanded, and primed and electrical outlets. At passenger elevator lobbies Landlord provides exposed concrete ceilings and concrete floors ready to receive finishes by the tenant. Sprinklers, emergency lighting and all life safety devices are installed in existing ceiling tiles by the Landlord to meet code requirements for open plan concept.

- The doors to services rooms and exit stairs are fire rated and 2100mm hollow metal doors in pressed steel frames.
 - Ceilings beyond the core are modular metric 750mm x 750mm non-directional acoustic ceiling tile in suspension system with 15/16" tees.
 - Typical office tower ceiling height from top of floor to underside of floor slab above is 3.49m.
 - Floors beyond core are concrete with steel trowelled finish, ready to receive floor finish by tenant.
 - Window treatment consists of PC7100 chain operated screen roller shades using fabric MScreen 3% open in colour 00M122 Charcoal/Grey-Stone complete with a flat welded in pocket hembar and white anodized front fascia. Blinds can be installed on the top of the window mullion to increase exposed vision glass. Exterior window blinds are installed by Landlord.
 - Sprinklers in tenant areas are a mix of semi-recessed and concealed type to suit base building open concept layout.
- ix. Base Building Washrooms
- Base building washroom floor finish and wall finish are porcelain tiles.
 - Washroom ceilings are suspended painted gypsum board. LED Pot lights are provided over toilets and urinals and vanities. Sprinkler heads are concealed, finished to match ceiling color.
 - Vanities are granite. Full width mirror above vanity extending to the tile line above.
 - Pre-finished metal toilet partitions are ceiling hung.
 - Washroom accessories are brushed stainless steel.
 - Floor drains are provided in all washrooms.
 - Urinals, water closets, and lavatories are high efficiency, low flow fixtures with electronic flush valves and control. Electronic flush valves and faucet controls are hard wired. Refer to building LEED criteria for plumbing fixture performance.
- x. Emergency Exits
- There are two clearly marked exits per floor.
 - Tenants are discouraged from using exit stairs to travel between floors, as they should be kept clear for emergencies. Exit stairwells should not be used for exercise.
 - Exit stairs are cast-in-place concrete (painted with nonslip finish), painted steel balustrades and handrails. Walls and ceilings are smooth finish painted concrete or cinder block.

xi. Hardware

- Tenant door hardware shall be compatible with Abloy Protec cylinders.

- Finish hardware is heavy duty commercial mortise type with lever handles. Finishes in public areas are brushed stainless steel. Lever handles are provided for barrier free access.

- Landlord provides base building recessed fire extinguisher cabinet modules with painted steel doors and trim and pre-finished steel tub. Cabinet doors & trim in service areas are painted steel.

xii. Elevators and Escalators

Firefighters' Elevator

- All passenger elevators are equipped with:
 - Destination Dispatch and after-hours card access security.
 - Automatic Phase I emergency recall and Phase II (in car) controls.

East Tower – A total of 17 OTIS elevators serve the East Tower as follows:

- There are seven elevators serving the low rise.
- There are eight elevators serving the high rise.
- There is one freight elevator serving floors P4 to 33
- There is one parking shuttle elevator serving floors P4-Plus 15

West Tower – A total of 32 OTIS passenger elevators serve the West Tower as follows:

- There are eight elevators serving the low rise.
- There are eight elevators serving the mid-low rise.
- There are six elevators serving the mid-high rise.
- There are six elevators serving the high rise.
- There are two freight elevators serving floors P4 to 53
- There are two parking shuttle elevators serving floors P4-Plus 15

◆

- All passenger elevator cabs have porcelain tile floors, LED light strips, stainless steel edging, handrail, and trim. The walls feature ¼ cut walnut veneer, mirrors, and acid etched glass to give a frosted look. The glass and mirror are both low iron which gives a very clean appearance.

- Service elevators are custom stainless-steel finish with diamond plating to protect from damage.

- Escalators have high quality finishes - stainless steel (skirt, front plate, comb, decking and covers), black Teflon handrails, clear glass balustrade, silver aluminum steps.

d. Mechanical Floors

- i. Mechanical Space Finishes
 - The penthouse mechanical and electrical spaces have a poured concrete floating acoustic isolation floor where required, with walk on pedestrian traffic topping with waterproof membrane in the mechanical areas.
 - Walls are concrete block or gypsum board, with paint finish. Ceilings are exposed structures (all fire rated as required). Mechanical piping is painted, and colour coded with banding.
- ii. Building Maintenance System Main Façade
 - Main building façades are maintained by a powered swing stage supported by davit arms located on the roof surfaces.
 - The swingstage is stored on the roof of each tower.
 - Interior façade maintenance at the main floor is by means of a portable scissor lift and/or genie lift where needed.
- iii. Power and Water
 - Power and water are provided at the main roof and at the main floor. All hose bibs are non-freeze type.

e. Signage

- i. Consistent signage program is used throughout the common areas, Plus 15, parking levels and exterior areas.
- ii. Office Tower, Main Floor and Plus 15 Level Signage
 - Main building (computerized) directory - 1 per tower
 - Common area directional signage
 - Base building room identification signage
 - On floor directory and tenant signage – multi tenant floors only
 - Washroom signage
 - Code related signage at elevator lobbies, exits, fire alarm devices.
 - Room number identification signage on multi-tenant floors
- iii. Parking Garage Signage
 - Entrance signage
 - Directional and instructional signage

- Painted markings, including parking space numbering (all spaces)

2. Structural

- **The West Tower consists of a cast in place reinforced concrete core with a structural steel floor system that supports a concrete floor on a metal deck.**
 - Typical slab thickness: 65mm slab on 76mm steel deck for a total thickness of 141mm
 - Top-of-floor to underside of floor above height is approximately 3.56m
 - Floor to floor top-of-slab to top-of-slab is approximately 3.7m
 - Elevator lobbies have a 150mm thick slab between elevator bays/stairs/etc.
 - Steel beams spaced at approximately 3050mm on center, spanning from exterior wall to elevator core.
- **The East Tower consists of a cast in place reinforced concrete core and concrete structural slab and beams**
 - Typical slab thickness: 130mm
 - Top-of-floor to underside of floor above height: 3.57m
 - Floor to floor top-of-slab to top-of-slab is 3.7m
 - Elevator lobbies have a 150mm thick slab between elevator bays/stairs/etc.
 - Concrete beams spaced at approximately 3700mm on center, spanning from exterior wall to elevator core.
- **Parkade slabs – Cast in place reinforced concrete construction:**
 - Slab on Grade/P4 lowest level – 130mm.
 - All other parking areas - typically 200mm.
 - Loading dock – 200mm structural slab, then a layer of waterproofing, drainage mat, and a 125-150mm thick topping slab.
 - The structural system employed in the parkade levels consists of column capitals to improve clear height driving lanes.
- **Fire Ratings**
 - The structure is designed for a 2-hour fire rating for the columns and 2 hours for floors and walls unless noted otherwise.
- **Typical Office Floor Design Criteria**
 - The floor areas of the Complex are designed to support a live load as follows:

- 3rd floor – 150 lbs/SF plus 25 lbs/SF for partitions
- 4th, 5th and 32nd East Tower Floors – 100 lbs/SF plus 25 lbs/SF for partitions
- Remaining floors – 50 lbs/SF plus 25 lbs/SF for partitions

3. Mechanical

a. General

- Plumbing, fire protection, heating, ventilation, and air conditioning are provided in accordance with the requirements of the latest applicable codes, standards, and local requirements of the City of Calgary, including the then current Model National Energy Code of Canada and the Alberta Building Code.
- To allow for the phased construction and potential future separation of each of the two office towers, each office tower has stand-alone mechanical systems, independent of each other.

b. Design Criteria

- The typical office floor HVAC system is designed to provide heating, ventilation and air-conditioning to maintain the following performance specifications.

Summer	Temperature Range (dry bulb)	75°F – 77°F
	Humidity (Maximum)	55% RH
Winter	Temperature Range (dry bulb)	75°F – 77°F
	Humidity (Maximum)	15% RH

- The cooling system for the Complex operates 24/7 to suit the supplementary cooling requirements for the Complex, as well as the Suncor data centre. Cooling loads range from 250 tons for after hour cooling to 2,200 tons cooling on a peak summer day. The design of the chiller plant of 3 solid state and 2 VFD chillers, each at 1000-ton capacity, provides a redundant solid state and VFD chiller.
- The chiller plant has the capacity to allow a supplementary cooling load of 10 tons / floor or an average of 2 watts/SF.

c. Main Heating Plant

- Heating is provided by 3 Cleaver Brooks fire tube hot water boilers, located in the penthouse of the East Tower. Hot water is the primary heating medium for the Complex.

d. Main Cooling Plant

- Cooling is provided by a mechanical cooling system with 5000 tonne capacity.
- Cooling is provided by two 970 Ton VFD Chillers, and three 1000 Ton Solid State Chillers (only used on full load), controlled by Metasys BAS system, as well as five 100 HP primary chilled water pumps and five 100 HP condenser pumps.

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e. Typical Office Floor

- The office floor air conditioning systems consists of compartment variable air volume units providing conditioned air on each floor for both space cooling and ventilation. Each unit consists of recirculating supply air fan, filters, cooling coil with automatic valve, sound attenuation and controls. Variable volume is achieved by using a variable speed drive on the supply fan.
- Reinforced low pressure ductwork, from compartment units, distributes primary air to supply perimeter zone DDC controlled variable air volume terminal units located at each corner office and on every structural bay (approx. 30 ft.). VAV boxes close to a minimum of 20% to ensure ventilation.
- Additional controls and zoning can be added to suit tenant specific requirements.
- The perimeter system consist of variable air volume box operates as a constant volume box and is sequenced with the with the four-pipe perimeter fan coils that provide both heating and cooling at the perimeter.

- The interior zone is served through variable air volume terminal units provided by the tenant. Air supply for the interior areas or other perimeter areas shall be provided by the tenant using square plaque ceiling diffusers.
- Return air is provided through approved grilles, and/or additional perimeter architectural return air slots provided in the hung ceiling plenums.

f. Base Building Ventilation System

- Preconditioned (heated, cooled, dehumidified, and humidified and filtered) outdoor air for ventilation is provided from the central air handling system located in the mechanical penthouse with vertical air distribution to each floor compartment air handling room. Each compartment air handling room has separate fresh air and smoke control automatic dampers connected to the vertical outdoor air distribution shaft. The fresh air outlet in the Compartment Room has a DDC controlled VAV box so that the capacity can be adjusted to meet floor occupancy requirements. The office floor air conditioning systems shall consist of compartment variable air volume units providing conditioned air on each floor for both space cooling and ventilation. Each unit consists of recirculating supply air fan, filters, cooling coil with automatic valve, sound attenuation and controls. Variable volume is achieved by using a variable speed drive on the supply fan. Reinforced low pressure ductwork, from compartment units, distributes primary air to supply perimeter zone DDC controlled variable air volume terminal units located at each corner office and on every structural bay (approx. 30 ft.). VAV boxes close to a minimum of 20% to ensure ventilation.
- Each perimeter variable air volume box is sequenced with the hot water heating controls.
- The interior zone is served through variable air volume terminal units provided by the tenant. Air supply for the interior areas or other perimeter areas shall be provided by the tenant using square plaque ceiling diffusers.
- Return air is provided through approved grilles, and/or additional perimeter architectural return air slots provided in the hung ceiling plenums.

g. Special Cooling and Heating Requirements

- Elevator machines, telephone and communication, and fire control rooms are mechanically cooled.
- Tenant cooling requirements beyond that provided in the base building air conditioning system are provided through a chilled water system for tenants to connect air conditioning equipment.
- All non-air-conditioned interior spaces are heated to maintain 21°C (70°F) minimum temperature with thermostatically controlled hydronic unit heaters, fan coils, convectors, or wall-fin radiation.
- On-floor Electrical/COMM rooms are mechanically cooled using fan coil units to maintain the required room temperatures.

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h. Smoke Control Ventilation Provisions

- The fire alarm system initiates smoke control consisting of smoke venting to aid firefighting. Fan and damper positions are monitored and controlled by the fire alarm system.
- The fire floor is automatically exhausted under control by the fire alarm system. The ventilation air riser and a smoke exhaust fan located in the mechanical penthouse are used for smoke exhaust. Low leakage smoke dampers located on the fresh air shaft are used to control smoke exhaust on each floor. Damper open and closed status are monitored and transmitted to the fire alarm system.
- Smoke control fans, dampers and controls are on emergency power and controlled from the CACF room. Tower exit stairs are pressurized in an emergency. Fresh air is tempered and introduced from the top and bottom of the Complex. Pressurization shafts are fire rated and air is injected on every 5th floor. Pressure control modulates the air volume to maintain a slight positive pressure in the stairwell.
- Stair pressurization fans and ductwork are provided to each stair extending below grade. Air is supplied at the lowest stair level and relieved to the outdoors at the highest stair level.
- Vestibules separating below grade stairs from parking areas are continuously pressurized with fresh air to prevent ingress of car fumes.

i. Fire Protection Measures

- The Property Team will assess based on the work to be completed whether fire protection or detection systems (smoke detectors, heat detectors, etc.) need to be bypassed or shut off. The Property Team will also contact the Fire Department and Monitoring Agency (if applicable) for impairments and according to any requirements in the Fire Safety Plan.
- Sprinklers: The entire Complex is covered by a wet system.
- Fire Hose Connections: Hose connections are in each of the two-emergency stairwell exits on each floor.
- Fire Extinguishers: Permanent fire extinguishers shall be provided by the Tenant and installed to conform to building codes.

- Each office floor is sprinklered in accordance with the Alberta Building Code and NFPA-13 requirements for an open office plan, changes to suit tenant layout are tenant's responsibility. The office sprinkler classification is Light Hazard with recessed pendant heads located one per 20.9 square meters. Retail and lobby areas are Ordinary Hazard Group 2 classified. Parking levels and loading dock are Ordinary Hazard classification systems. (All Hazard classifications and groupings indicated reference NFPA requirements.)
- A hydraulically designed combined sprinkler and standpipe system is provided. Risers are provided in each tower stair well and cross connected for redundancy. Fire pumps provide the necessary flows and pressures under emergency conditions.
- Fire department connections at 2.5 inches are provided in stairwells for each floor. Additional 100mm diameter connections are provided to enable future extension of the standpipe system provided under the tenant fit-up. Fire extinguisher cabinets are provided throughout the Complex to suit code requirements.
- Ten-pound dry chemical fire extinguishers are provided in all extinguisher cabinets.
- Additional dry chemical type fire extinguishers are provided in each floor's electrical and compartment room, as well as all other mechanical, electrical, and service rooms.

j. Plumbing System

- i. Tie-ins to base building sanitary and cold water are provided on each floor.

k. Emergency Generator, Exhaust and Cooling System

- i. Each tower has an emergency generator, independent of all outside services, to provide emergency power to energize life safety systems, emergency lighting and essential services in the Complex. Emergency power comes online automatically in the event of a normal power failure and re-transfers upon the return of normal power. Emergency power provides the following essential services:
 - Egress Lighting
 - Life Safety Systems
 - Building Automation System
 - Elevators (1 cab per bank + freight elevators)
 - Essential Mechanical Loads i.e.: fire pumps
- ii. Minimum of 24 hours duration of continuous supply to 100% load capacity of the generators. Fuel tanks are in a dedicated room on P1.
- iii. Exhaust stacks complete with a muffler system are provided from generator discharge to the exterior. Generator exhaust discharges are in a location suitable to meet local environmental requirements, distant from air intake and other critical receptors.

l. Parking and Loading Areas

- i. Parking areas are ventilated to meet the requirements of the local authority. Control of push/pull fan systems is from CO monitors located strategically throughout the parking areas.

- ii. Tempering of makeup air is provided from gas fired makeup units to maintain minimum temperature in the underground parking.
- iii. Loading dock exhaust fans are controlled from CO as well as HC monitors, to keep air quality within regulated limits. Heating of the dock area is provided to maintain a minimum set point temperature.

m. Controls and Monitoring

- i. The Complex is currently being upgraded to Direct Digital HVAC Controls throughout all base building elements as well as the newly renovated office floors.
- ii. Automated electronic building control and monitoring system (BCS) is incorporated as part of the overall strategy of controlling energy consumption, environmental comfort, and related costs.
- iii. The ECMS is an independent LAN based Direct Digital Control (DDC) system designed with open protocol technology.
- iv. The EMCS is separate from lighting, fire, and other functions, but will have status links to these systems.
- v. All programming has operator adjustable parameters and is capable of trending to permit fine tuning by building operators based on operational experience.

n. Commissioning

- i. A separate fundamental commissioning was conducted and included:
 - Water balance of all hydronic systems.
 - Air balance of all air systems.
 - Control system functional checkout.
 - Equipment and system start-up and checkout.

4. ELECTRICAL

a. General Overview

- i. The electrical system is designed to offer ease of operation, maintenance, and flexibility.
- ii. All components are of a modular construction for fast and efficient servicing and to provide flexibility for on-going reconfigurations.
- iii. All electrical work complies with or exceeds the minimum requirements of the applicable codes, rules, and regulations of the latest:
 - Alberta Building Code
 - Electrical Safety Code
 - Local Electrical Codes and Requirements

- CSA Standards
 - IEEE Standards
 - IES Standards
 - ASHRAE Standards
 - CaGBC LEED Gold EB:OM Certified (2023).
- iv. The Complex utilizes state-of-the-art components intended to satisfy the needs of a contemporary highly automated office environment.
- b. Life Safety Systems – Emergency Power**
- i. Each tower has an emergency generator, independent of all outside services, to provide emergency power to energize life safety systems, emergency lighting and essential services in both the East and West Towers. Emergency power comes online automatically in the event of a normal power failure and re-transfers upon the return of normal power.
- c. Exit Lighting**
- i. Illuminated exit signs are provided at all means of egress and paths leading to such means. The power supply is from the emergency power system described above. All exit signs are energy efficient LED type.
- d. Emergency Lighting**
- i. The existing lighting patterns within the first two building modules of the perimeter of the Complex must not be altered.
 - ii. Selected lighting fixtures are connected to normal/emergency system so that on failure of utility source power these will provide a minimum of 10 lux average illumination along all means of egress and paths leading to these.
 - iii. In addition to the emergency lighting powered by the generators, all above grade stairwells are provided with battery operated emergency lighting.
- e. Energy**
- i. State-of-the-art components utilized to minimize energy consumption wherever practical throughout the Complex, namely, high efficiency light sources and lighting fixtures with electronic ballasts.
 - ii. Occupancy sensors are provided in open office areas and most other spaces to conserve energy.

f. Power To Tenant Spaces - Typical Office Floor

- i. Power supply to the Complex is 2500A at 277/480 volts, 3 phase, 4 wires for distribution to building services with local sub-transformation to 120/208 volt for incandescent lighting, convenience outlets and small appliances.
- ii. A bus duct mounted cable tap box is provided on each floor to feed a splitter trough.
- iii. Lighting panels are provided for the base building lighting system, fed from the 277/480V splitter trough.
- iv. Dry-type transformers on each floor, one in each electrical room, are fed from the splitter trough. Each transformer in turn provides power to two electrical panels to feed tenant miscellaneous power loads. Transformers are harmonic mitigating type to withstand harmonic distortion created by non-linear loads.
- v. Space for future service is available on the bus duct cable tap off box and for one 200A connection.
- vi. Space within the core electrical room is available to accommodate two 42 CGS panels.
- vii. Typical office floor power is 6.0 watts/SF.

g. Lighting Design

- i. The current building standard consists of "lay in" 750mm x 750mm fluorescent fixtures, complete with lamps and lighting grid wiring system.
- ii. The new Base Building lighting consists of "lay in" 750mm x 750mm LED fixtures equipped with occupancy sensors for additional energy savings.

h. Telecommunications Infrastructure

- i. One (1) Telecommunication Service Providers ("TSP") room is provided as the service entry points for multiple carriers. The TSP rooms are designed to allow both fiber optic and copper-based telecommunication carrier services to the main telecommunications room.
- ii. Diverse riser pathways emanate from the TSP room, through the Enmax duct bank.
- iii. The TSP rooms are connected to a communications pathway riser system servicing all floors of the Complex for vertical transport of the backbone cabling requirements.

i. Fire Alarm and Detection Systems

- i. A computerized zoned, non-coded, modified two stage system is provided. This system is designed to fully integrate with other life safety, sprinkler, security, and smoke exhaust systems.
- ii. The system employs fully programmable addressable devices, each with its own unique address allowing the building operators to specifically identify the detector in alarm.

- iii. The primary means of detection/suppression is the automatic sprinkler system; however, in certain critical areas this system is supplemented by the following types of early warning detection:
 - Electrical & telecommunication rooms - smoke detector.
 - Stairwells - photo-electric smoke detectors every 3rd floor.
 - Elevator shafts - thermal detectors at top and bottom.
 - Air handling systems - duct mounted air sampling smoke detectors.
- iv. A complete emergency voice communication system is provided for fire-fighter monitoring and control of egress.
- v. Speakers to be used for audibility.
- vi. A central control and annunciator panel is located on the main floor, in the CACF room, adjacent to the main East Tower entrance.

j. Security System

- i. A security control room is the security command center for the entire Complex.
- ii. The security system is provided with a fully integrated intelligent distributed architecture approach utilizing a central control with fully standalone remote processing units located throughout the Complex.
 - The system automatically controls card access readers, electro-magnetic locks, strikes, door contacts and is connected to the fire alarm system. The system is also designed to allow for off-site monitoring from a recognized central station.
 - Computerized card access control allows the building operator to restrict movement or access to any part of the Complex to only those authorized to do so.
 - Card readers are provided in the Complex at critical points including exterior entrances, elevators, loading dock, typical floor communication rooms and other critical areas restricted to the public.

General Requirements:

The following requirements pertain to the design and installation of Tenant security systems:

- Any security installations outside the norm that are visible from the lobby or outside the Tenant space must adhere to the quality aesthetic appearance of the Complex in general and any unsightly installations of this nature will not be permitted.
 - All wiring practices shall conform to the guidelines as set out in the Design Criteria Manual as it relates to electrical installations.
- iii. All door and lock installations must be provided in accordance with the requirements of the latest applicable codes, standards, and local requirements of the City of Calgary, including the current Alberta Building Code.

- Tie-in to the Base Building security system may be performed only by authorization of the Manager, Security & Life Safety.
- System installations, repairs and changes are to be performed by the Base Building electrical and systems contractors only, unless approved by the Manager, Security and Life Safety.

Typical installations include:

- Standard door access set including reader, request to exit and locking device(s).
- Standard key-access doors equipped with a monitoring input.
- A card reader installed as a security register.
- Any non-typical field installations to the Base Building security system must be approved by the Manager, Security & Life Safety.

Non-typical installations include, but are not limited to the following:

- Interlocking mantraps
- Turnstiles
- Revolving doors
- Trace setups for mustering (entry/exit)
- Duress alarms and other security alarms
- Environmental alarms

- iv. Surveillance/CCTV system is provided to monitor critical points including public areas, main floor exits, elevator lobbies in parking and main floor, loading areas and building main entrances. All CCTV monitors are located within the security control room.
- v. There is one defibrillator station within the CACF room and one outside of the CACF room.

k. Building Lighting Control

- i. A microprocessor based low voltage lighting control and energy-monitoring system is provided to control all lighting in the Complex. Exterior lights, main floor, and typical office floor lighting are controlled by points in the system.
- ii. In addition to the low voltage lighting control system, occupancy sensors are provided throughout the Complex including all washrooms, typical floor rentable areas and new base building LED light fixtures within office areas.

l. Tenant Electrical Metering

- i. A microprocessor based electronic metering system is provided to allow accurate distribution of utility costs. All on floor electrical loads are metered including the air handling unit.
- ii. A metering 'riser' is established in the Complex to accommodate additional metering points (for multi-tenant floors for example). All metering data is centrally accumulated for proper allocation.

- iii. Each typical office floor includes three meters for metering the following: on-floor air handling unit, plug loads and base building lighting.

5. CONVEYING SYSTEMS

a. Elevator Systems

i. Description of Systems:

- Elevator S1 serves as the East Tower service elevator and goes from the P4 Parkade level to the mechanical penthouse floor on 33.
- Elevators S2 and S3 serve as the West Tower service elevators and go from the P4 Parkade level to the mechanical penthouse floor on 53.
- Elevator P1 serves as the East Tower Parkade shuttle and goes from the P4 level of the Parkade up to the main floor and Plus 15 level of the Complex.
- Elevators P2 and P3 serve as the West Tower Parkade shuttles and go from the P4 level of the Parkade up to the main floor and Plus 15 level of the Complex.
- The service elevators are designated as the fire-fighter's elevators.

ii. Special Operations:

- Independent Service: All Elevators
- Anti-Nuisance Service: All Elevators
- Standby Power: All Elevator

- Fireman's Emergency: All Elevator
- Earthquake Emergency: All Elevator
- Door Hold: All service elevators
- Attendant Service: All service elevators

iii. Additional Equipment:

- Central Control Station: All elevators, with single LCD monitor, keyboard control, and master intercommunication station.
- Fire Control Station: All elevators, as required by code.
- Counterweight Safeties: Provide as required by code.
- Destination Dispatch Compass Screens in each elevator bank for additional Security and efficiency.

iv. Hoistway Entrances:

- General: One-Piece welded 14-gauge frames, with flush type 16-gauge door panels.
- Passenger Elevators:
 - Type – Size: Center-Opening, 1100mm x 2400mm.
 - Main Floor: Cladded entrances with sub-frames; steel sheet, shop prime finish. Door panels; stainless steel finish with milled stainless-steel sills.
 - Typical Floors: Steel sheet, shop prime finish with extruded aluminum sills.

- Service Elevator:

- Type – Size: Two-Speed side opening, 1200mm x 2400mm.
- Main Floor: Stainless steel finish frames and doors, with milled stainless-steel sill.
- Typical Floors: Steel sheet, shop prime finish, with extruded aluminum sills.

b. Escalator Systems

i. Description of Systems:

- Escalators:

- Quantity: Two
- Size: 1000mm Step Width
- Step Speed: 0.5 MPS – Reversible
- Floors Served: Main, Plus15
- Balustrade: Glass

ii. Finishes:

- Balustrade: Structural glass w/o mullions; joints vertical.
- Decking & Molding: Stainless steel finish.
- Skirt Panels: Manufacturers' standard low friction material.
- Handrails: Teflon

CONSTRUCTION COORDINATION

APPENDIX 6 – SERVICE ELEVATOR CAPACITY & DIMENSIONS

	S1 (East Tower)	S2 (West Tower)	S3 (West Tower)
Door Height	7'3"	8'	8'
Door Width	4'	4'	4'10"
Cab Height	12'	12'	11'10"
Cab Width	6'11"	5'4"	6'
Cab Depth	6'2"	8'	8'
Max Weight	5,000 lbs (2315 kg)	4,000 lbs (1815 kg)	5,000 lbs (2313 kg)

CONSTRUCTION COORDINATION

APPENDIX 7 - TYPICAL STANDARD DETAILS

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CONSTRUCTION COORDINATION

APPENDIX 8 – HOT WORK PERMIT

Hot Work Permits (HWP) are available at the Security control desk. The Hot Work Permit process will ensure that any hot work done at a property will be conducted in the safest manner possible. Cutting, grinding, brazing, welding, soldering, thawing pipe, torch applied roofing are all examples of hot work which includes any operation that involves open flames or could produce heat and/or sparks.

The following hot work procedures are to be followed at all times:

- 1) The Hot Work Worker (collectively known as “Worker”) will sign in at the designated location and inform the property of the work to be completed. The Property will assess the work required and will follow the process and recommend alternatives to hot work. Every request for hot work should be evaluated for risk and alternative options should be explored. Hot work completed in a high hazard area must not be permitted or must be at the discretion of the Designated Hot Work Manager and be completed with increased safety precautions.
- 2) The Worker which is the person completing the hot work is responsible for:
 - Following all the procedures and the requirements contained in this policy and the permit.
 - Ensuring that hot work is completed in the safest way possible.
 - Taking all reasonable efforts to prevent false or nuisance fire alarms.
 - Conducting a fire watch in conformance with this policy and the insurance provider for the entire duration of the work including any breaks and for up to at least 1 hour after work has been completed.
 - Notifying the appropriate person(s) of the property of any hot work to be completed on the premises and the context of the work that is to be completed as well as expected start and end times. The Designated Hot Work Manager or designate will review the type of work and determine if fire alarm or other fire detection or protection system are to be bypassed or shut off.
 - Informing the appropriate person(s) at the property when any work has been completed or if circumstances have changed. The Worker will notify the appropriate person(s) at the property when it can return fire detection or protection systems to normal operations.
 - Providing accurate information to fill out the permit, ensuring the permit is filled out and signing the permit.
 - Ensuring that equipment used for hot work is in good working order and that all the required codes and standards are followed.
 - Transporting and storing pressurized gas cylinders in accordance with the applicable codes, standards and safety requirements.
 - Providing metal guards or fire-retardant tarpaulins if required for the work;
 - Ensuring the appropriate fire hose or fire extinguisher is available for use during hot work.
- 3) If hot work is required, the Property and the Worker will fill out the left portion of the hot work permit. Under “Permit Expires”, the expiry must be after the hot work task is completed and before the end of the Workers shift. No hot work for the task is permitted after the permit expires.
- 4) The Property will review the hot work permit for accuracy and completeness. The Property will not sign off on the permit until a pre-inspection is completed.

- 5) The Property will assess based on the work to be completed whether fire protection or detection systems (smoke detectors, heat detectors, etc.) need to be bypassed or shut off. The Property will also contact the Fire Department and Monitoring Agency (if applicable) for impairments and according to any requirements in the Fire Safety Plan.
- 6) The Property will not allow the Worker access to the work location unless they have all the required permits (ex. Work Authorization Permit and Safe Work Permit).
- 7) The Worker can now access the work location and start preparing it for hot work by removing combustibles within 35 feet, sweeping the area clean and checking all of the other safety precautions listed on the permit. Just preparations. No hot work is allowed until the property completes an inspection and signs off on the permit.
- 8) The Worker will inform the property that they are ready for pre-inspection. A Property representative (Security/Operations) also known as a Hot Work Inspector will conduct a pre-inspection of the space ensuring that all the safety precautions listed on the permit have been met and that the permit is complete. If the property representative is satisfied that all the requirements have been met, they will sign off on the permit. All the sections of the permit must be completed.
- 9) The stringed copy of the permit will be posted in the work area.
- 10) The hot work may now begin. The Worker will follow all precautions listed on the permit and conduct a continuous fire watch while hot work is being completed.
- 11) The person(s) conducting the fire watch are responsible for:
 - Must be separate individual(s) than the person performing the Hot Work;
 - Patrolling the affected area, the area above, the area below and any adjacent areas or rooms at pre-determined intervals during hot work and after hot work has been completed and for the entire duration of any impairment. A continuous fire watch is required during and for up to 1 hour after hot work has been completed;
 - Completing a Fire Watch Patrol Log Sheet which will detail the person completing the patrols, the date, the start and end time, the areas patrolled and any comments;
 - Notifying emergency services if fire, smoke or other dangerous occurrence is found;
 - Pulling a fire alarm pull station or alerting occupants by other means if fire or smoke is discovered;
 - Extinguishing any small fire as long as the person feels comfortable doing so, is adequately trained and is not in danger;
 - Inform the appropriate persons or departments at the property if any unsafe or other notable occurrences are discovered;
 - Stopping hot work and any other work if a fire occurs or fire alarm tones are heard.
- 12) The Worker will notify the property once hot work has been completed. The Worker must remain on site for at least 60 minutes after the hot work has been completed and conduct a continuous fire watch.
- 13) When hot work has been completed and after the 60 minutes of fire watch the Worker will notify the property that they are ready for the post inspection. A Property representative (Security/Operations) or Hot Work Inspector will conduct a post inspection of the hot work

space checking the work area, the area above and the area below for any indication of fire or unsafe condition.

- 14) After ensuring that work has been completed the property will return any fire detection and detection systems (smoke detectors, heat detectors, etc.) to normal operations. Be aware that any sweeping, sanding, dusting or other work may trigger a fire alarm and the proper precautions should be taken to avoid false or nuisance fire alarms.
- 15) The Property will conduct a fire watch for an additional 3 hours making sure to complete a fire watch log sheet. The fire watch conducted by the property will be at the discretion of the Designated Hot Work Manager and shall be based on the nature of work and hazards involved. A fire watch must be completed for the entire duration of any impairment.
- 16) The Property will retrieve the permit and file it in the appropriate location.

Additional requirements:

- Contractors found not to be following the policy may be subject to work stoppages, removal from site and/or subject to costs associated with false fire alarms and other expenses;
- The Contractor may enquire with the Security Department about hiring Security Personnel to conduct the fire watch. Any associated costs are the responsibility of the Contractor. The Property has the right to refuse based on any unsafe work conditions or other limitations;
- The Contractor may not at any time begin hot work without first notifying the Property, filling out the appropriate forms and ensuring the appropriate life safety systems are by-passed/shutoff. The Contractor will be liable for any costs associated with non-compliance.
- Contractors are responsible for having fire extinguishers, metal guards and fire retardant tarpaulins as required;
- Personal protective equipment supplied by the property must be worn by employees or contractors hired to work on behalf of the property when entering construction space;
- A fire alarm that occurs in hot work space will suspend all work including hot work until the alarm is investigated and the all clear is given;
- Hot work is not permitted in areas occupied by tenants or the public as it would create a hazard. Reasonable effort should be made to control access to the hot work area;
- Hot work should not be permitted in high hazard areas such as areas not protected by sprinklers or other fire suppression systems either by design or because of impairment. If hot work must be completed in the space, then the Designated Hot Work Manager must create additional safety precautions and contact the fire department and insurer to ensure the work is completed in the safest way possible. Additional safety precautions must be taken.
- Hot work is not permitted in high hazard areas that store flammable liquids or gas or areas that have an explosive atmosphere (due to dust, vapours, etc.)

XL Global Asset Protection Services, LLC

DANGER PREVENT FIRES

TO REPORT A FIRE SHOULD ONE OCCUR:

PHONE: _____

OR USE ALARM BOX LOCATED AT: _____

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Global Asset Protection Services, LLC

HOT WORK PERMIT

Date: _____ Time: _____ Permit: _____ Work By: <input type="checkbox"/> Employee <input type="checkbox"/> Contractor _____ Start Time: _____ Expected Completion: _____ Location: _____ Work to Be Done: _____ _____ _____ Person Doing Hot Work: _____	<p>Check the box when the item has been completed. Permit shall not be issued until the following precautions have been checked.</p> Yes N/A <ul style="list-style-type: none"> <input type="checkbox"/> Means other than Hot Work or moving to a safer location have been considered. <input type="checkbox"/> Hot work equipment in good repair. <input type="checkbox"/> Sprinklers, where provided, are operational and will not be taken out of service while this work is being done. <input type="checkbox"/> There are no combustible fibers, dusts, vapors, gases, or liquids in the area. Tanks and equipment previously containing such have been purged. Where normally present, the absence of gases or vapors has been verified by a combustible gas detection instrument. If there is a possibility of a leak developing in nearby piping, equipment, or tanks, this area is being continuously monitored. <input type="checkbox"/> The work will be confined to the area or equipment specified on this permit. <input type="checkbox"/> Surrounding floors have been swept clean, and if combustible, wet down where possible. <input type="checkbox"/> Ample portable extinguishing equipment such as hose lines or extinguishers have been provided. Located: _____ <input type="checkbox"/> All combustibles have been relocated 10 meters (35 ft) (further for elevated work) from the operation including areas on opposite sides of walls if heat can be transferred to them through the work piece, any which cannot be moved are protected with metal guards or fire retardant tarpaulins. <input type="checkbox"/> All walls, ceilings, or floors being worked on are of noncombustible construction (including internally). <input type="checkbox"/> All floor and wall openings within 10 meters (35 ft) of the operation have been tightly covered. <input type="checkbox"/> A fire watch has been assigned to watch for fires or the potential for fires in the work area, on floors above and below, and on the opposite side of walls. This watch shall continue during any lunch or rest period and for at least one hour after the work has been completed. To Report a Fire, Phone: _____ Or Use Alarm Box Located at: _____
<p>Precautions listed on the right column have been taken, the work area has been examined and the permit is authorized for this Hot Work.</p> Issuing Individual Signed: _____ Supervisor Signed: _____	
<p>This job has been reviewed with the area supervisor and Hot Work has been determined to be the only method available to complete this job. <i>(Required if work is in "high hazard area")</i></p> Area Supervisor Signed: _____	
<p>MAINTAIN PART 2 IN A CONSPICUOUS LOCATION WITHIN THE WORK AREA DURING THE HOT WORK. ISSUER SHALL COMPLETE AND RETAIN PART 1.</p>	
<p>PERMIT EXPIRES</p> Time: _____ Date: _____	

1477_01/2012

Global Asset Protection Services, LLC

HOT WORK PERMIT

<p>Date: _____ Time: _____</p> <p>Permit:</p> <p>Work By: <input type="checkbox"/> Employee <input type="checkbox"/> Contractor _____</p> <p>Start Time: _____ Expected Completion: _____</p> <p>Location: _____</p> <p>Work to Be Done: _____ _____ _____</p> <p>Person Doing Hot Work: _____</p> <p><i>I understand the area shall be monitored for 60 minutes after completion of the job and thoroughly inspected at the end of the 60 minutes.</i> After the 60 minute period, additional intermittent patrols should be made for an additional three hours (four hours total after hot work ceases). If your corporate guidelines specify another time interval or fire watch procedure, the corporate guideline takes precedence.</p> <p>Fire Watch Signed: _____</p>	<p>Check the box when the item has been completed. Permit shall not be issued until the following precautions have been checked.</p> <p>Yes N/A</p> <ul style="list-style-type: none"> <input type="checkbox"/> Means other than Hot Work or moving to a safer location have been considered. <input type="checkbox"/> Hot work equipment in good repair. <input type="checkbox"/> Sprinklers, where provided, are operational and will not be taken out of service while this work is being done. <input type="checkbox"/> There are no combustible fibers, dusts, vapors, gases, or liquids in the area. Tanks and equipment previously containing such have been purged. Where normally present, the absence of gases or vapors has been verified by a combustible gas detection instrument. If there is a possibility of a leak developing in nearby piping, equipment, or tanks, this area is being continuously monitored. <input type="checkbox"/> The work will be confined to the area or equipment specified on this permit. <input type="checkbox"/> Surrounding floors have been swept clean, and if combustible, wet down where possible. <input type="checkbox"/> Ample portable extinguishing equipment such as hose lines or extinguishers have been provided. Located: _____ <input type="checkbox"/> All combustibles have been relocated 10 meters (35 ft) (further for elevated work) from the operation including areas on opposite sides of walls if heat can be transferred to them through the work piece, any which cannot be moved are protected with metal guards or fire retardant tarpaulins. <input type="checkbox"/> All walls, ceilings, or floors being worked on are of noncombustible construction (including internally). <input type="checkbox"/> All floor and wall openings within 10 meters (35 ft) of the operation have been tightly covered. <input type="checkbox"/> A fire watch has been assigned to watch for fires or the potential for fires in the work area, on floors above and below, and on the opposite side of walls. This watch shall continue during any lunch or rest period and for at least one hour after the work has been completed.
<p>Precautions listed on the right column have been taken, the work area has been examined and the permit is authorized for this Hot Work.</p> <p>Issuing Individual Signed: _____</p> <p>Supervisor Signed: _____</p>	
<p>This job has been reviewed with the area supervisor and Hot Work has been determined to be the only method available to complete this job. <i>(Required if work is in "high hazard area")</i></p> <p>Area Supervisor Signed: _____</p>	
<p>FINAL CHECK: Work area and all adjacent areas to which sparks and heat may have spread including floors above and below and on opposite sides of the walls were inspected after the final patrol (four hours after the hot work ceases) is made.</p> <p>Signed: _____ Completed: _____</p>	<p>To Report a Fire, Phone: _____</p> <p>Or Use Alarm Box Located at: _____</p>
<p>PERMIT EXPIRES</p> <p>Time: _____ Date: _____</p>	1477_01/2012

CONSTRUCTION COORDINATION

APPENDIX 9 – WORK AUTHORIZATION PERMIT AND SAFE WORK PERMIT
PDF Version available upon request.

Brookfield Properties **WORK AUTHORIZATION PERMIT / ACCESS REQUEST FORM**

*A fire Alarm cancels/suspends ALL permits. When ALL CLEAR is announced, the work can re-commence.
*Access Request Form and Daily Hazard Permit are required to check out access cards and/or keys from Security.

Property : _____ Permit No. _____

TENANT / REQUESTOR INFORMATION

TENANT / REQUESTOR COMPANY NAME _____ DAY-TIME TELEPHONE _____ AFTER-HOURS TELEPHONE _____
 TENANT / REQUESTOR NAME _____ TENANT / REQUESTOR SIGNATURE _____

COMPANIES AND INDIVIDUALS REQUIRING ACCESS

1) COMPANY NAME _____ 1) CONTACT NAME AND PHONE # (24 hour contact) _____
 2) COMPANY NAME _____ 2) CONTACT NAME AND PHONE # (24 hour contact) _____
 3) COMPANY NAME _____ 3) CONTACT NAME AND PHONE # (24 hour contact) _____
 See Attached List for Additional Names Safe Work Permit Required

WORK INFORMATION

FLOOR(S) / AREA(S) WHERE WORK TO BE PERFORMED: _____

DESCRIPTION OF WORK TO BE PERFORMED: _____

DATES : _____
 *COMMENCEMENT DATE _____ COMPLETION DATE _____

TIMES : From: _____ To: _____ From: _____ To: _____
 *MONDAY TO FRIDAY *SATURDAY, SUNDAY AND HOLIDAYS

ELEVATOR AND LOADING DOCK REQUIREMENTS

BOOKING INFORMATION Call Security for Booking Confirmation: _____
 DELIVERY COMPANY _____ DATE REQUIRED _____ From: _____ To: _____
 RECEIVED TIMES _____

FOR BROOKFIELD MANAGEMENT USE ONLY

BROOKFIELD TECHNICAL SERVICES (check area that the keys are required for)

Telecom: Roof Top Equipment Rooms West MTR West MTR (A)* West MTR (B)*
 East MTR Royal Bank MTR Riser Room Riser Closet
 Vendor P.O.P. Contact Service Centre Other _____
 Technical Services Approval: _____ Date: _____

BROOKFIELD OPERATIONS (check area that keys are required for)

Base Building: Pans/Mechanical Riser Electrical Boiler Room Chiller Plant CACT/Life Safety
 Radio Rooms Rooftop/Fishmouths (Inc. Signed waiver)
 Swingstage Access Other _____
 Operations Approval: _____ Date: _____

OTHER REQUIREMENTS

Access to other Tenant Areas _____ TENANT NAME _____ FLOOR _____ DATE REQUIRED _____
 Tenant Contact: _____ Tenant Contact Signature: _____
 AUTHORIZED BY: _____

TENANT SERVICES DATE AUTHORIZED OPS/CONST. DATE AUTHORIZED SECURITY DATE AUTHORIZED
 Distribution : Ops./Const. Security & Life Safety Tenant Services Loading Dock Tech Services Other _____

PROPERTY		Permit No.	
Section 1 - PROJECT DESCRIPTION & PARTICIPANTS			
DESCRIPTION OF WORK TO BE PERFORMED (Please fill only for the duration to the work listed on the work authorization permit)		Work Authorization Permit No.:	
Location of Work (within project)		Work Start Date:	
		Work Completion Date:	
PRIMARY PROJECT CONTACTS	COMPANY	PHONE NUMBER	
SECTION 2 - HAZARDS ASSOCIATED WITH WORK TO BE PERFORMED			
<input type="checkbox"/> Electrical	<input type="checkbox"/> Dust, Mist, Fumes	<input type="checkbox"/> Public Safety	
<input type="checkbox"/> Hot Work (i.e., Welding, Cutting, Soldering)	<input type="checkbox"/> Noise	<input type="checkbox"/> Vehicle Traffic	
<input type="checkbox"/> Flammables / Explosives	<input type="checkbox"/> Automatic Machinery	<input type="checkbox"/> Roof Work - Annual Roof Waiver Required - Wind speed and weather conditions pending	
<input type="checkbox"/> Confined Space	<input type="checkbox"/> Working Alone	<input type="checkbox"/> Other: _____	
<input type="checkbox"/> Fall Hazard	<input type="checkbox"/> Electromagnetic Hazard - NARDA Required		
SECTION 3 - SPECIAL PRECAUTIONS REQUIRED			
The completion of the Special Precaution or Protection checklists in whole or in part does not limit the worker or contractor's safety measures, control and procedures required to complete this project. Any work arising from this project must be performed in full accordance with the applicable Occupational Health and Safety Act and provincial Regulations for this Jurisdiction. This Permit does not replace all other work permits required under legislation.			
GENERAL WORK SITE	LOCK-OUT / TAG-OUT	SPECIAL	WORKING ALONE
<input type="checkbox"/> Site Inspection Performed	<input type="checkbox"/> Electrical Switches	<input type="checkbox"/> Crane/Hoist/Rigging	<input type="checkbox"/> Radio
<input type="checkbox"/> House Keeping	<input type="checkbox"/> Valves	<input type="checkbox"/> Man-Lift	<input type="checkbox"/> Telephone
<input type="checkbox"/> First Aid Kit on Hand	<input type="checkbox"/> Machinery	<input type="checkbox"/> Confined Space Permit	Contact # _____
<input type="checkbox"/> Workplace MSDS	<input type="checkbox"/> Pneumatics	<input type="checkbox"/> Fall Protection Plan	IN AN EMERGENCY, CALL 9-1-1 THEN INFORM BROOKFIELD SECURITY
<input type="checkbox"/> Ladder/Scaffold Use	HOT WORK		
<input type="checkbox"/> Work Area Cordoned Off	<input type="checkbox"/> Designated Fire Watch	<input type="checkbox"/> Buddy System Required	
<input type="checkbox"/> Warning Sign Posted	<input type="checkbox"/> Fire Extinguisher	<input type="checkbox"/> Plumbing/Piping	
<input type="checkbox"/> Supplementary Illumination	<input type="checkbox"/> Fire Blanket		
<input type="checkbox"/> Other Precautions (Describe): _____			
SECTION 4 - PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS			
<input type="checkbox"/> Safety Boots	<input type="checkbox"/> Hearing Protection	<input type="checkbox"/> Traffic Vest	<input type="checkbox"/> Respirator
<input type="checkbox"/> Safety Glasses/Goggles	<input type="checkbox"/> Hard Hat	<input type="checkbox"/> Chemical Cloths / Suit	<input type="checkbox"/> Safety Harness/Lines
<input type="checkbox"/> Gloves	<input type="checkbox"/> NARDA Alert	<input type="checkbox"/> 2-Way Radio / Phone	<input type="checkbox"/> Others
SECTION 5 - AGREEMENT TO THE SAFE WORK PERMIT			
By signing below you agree to abide by the conditions outlined above in this Safe Work Permit and to the RULES AND REGULATIONS outlined on the back of this sheet. RANDOM CHECKS WILL BE PERFORMED TO ENSURE PRECAUTIONS ARE BEING TAKEN AND PPE IS PROPERLY USED AS PER THE REQUIREMENTS AGREED UPON ABOVE.			
CONTRACTOR ACKNOWLEDGEMENT			
Name _____	Signature _____	Occupation / Title _____	
TENANT / REQUESTER ACKNOWLEDGEMENT			
Name _____	Signature _____	Occupation / Title _____	
BROOKFIELD ACKNOWLEDGEMENT			
Operations Management _____	Security Management _____	Tenant Services Management _____	

CONSTRUCTION COORDINATION

APPENDIX 10 – ACCESS TO ROOFTOP RELEASE FROM LIABILITY AND WAIVER OF LIABILITY AGREEMENT

ACCESS TO ROOFTOP
RELEASE FROM LIABILITY AND WAIVER OF LIABILITY AGREEMENT

**THIS AGREEMENT EFFECTS YOUR LEGAL RIGHTS,
PLEASE READ THIS AGREEMENT CAREFULLY BEFORE SIGNING.**

- TO: SEC LP and its limited and general partners, SEC GP Inc., ARCI Ltd., Brookfield Office Properties Management LP Brookfield Office Properties Management Corporation, Brookfield Properties Management Corporation, Brookfield Properties Ltd. and, each such corporations' respective directors, officers, employees, agents, principals, partners, successors and assigns and, all persons for whom any of the foregoing persons are legally responsible (collectively, the "Company")
- RE: Access to the Roof of Suncor Energy Centre, 111 – 5th Avenue SW (East Tower) and 150 -6th Avenue SW (West Tower) and additional roof structures (Atrium/Plus 15 Bridges/Balconies) Calgary, Alberta (the "Building")

In consideration of the Company permitting the undersigned access to the roof of the Building and other good and valuable consideration (the sufficiency and receipt of which is hereby acknowledged by the undersigned), the undersigned, on his or her own behalf and on behalf of his or her heirs, executors, administrators, insurers, spouse, civil partner, children, attorneys, successors and assigns hereby waives, and hereby releases the Company of all liability, obligation and responsibility for or with respect to, any and all lawsuits, actions, claims, proceedings of any nature or kind, judgments, interest awards, damages, penalties, fines, losses, legal and other professional fees, charges and disbursements, and amounts paid in settlement (collectively, "Claims"), against the Company which may result from, or may arise directly or indirectly as a consequence of or be related to, or may be due to, the undersigned being granted access to the roof of the Building or from the granting by the Company of this permission and, the undersigned, on his or her own behalf and on behalf of his or her estate, executors, administrators, insurers, attorneys, successors and assigns, agrees to indemnify and save harmless the Company from, against and in respect of any personal injury (including, without limitation, bodily injury, injury resulting in death, personal discomfort, mental anguish, shock, sickness or disease), death, or, any loss of, damage to, disappearance of, or destruction of, property of any nature or kind, which may result from, or may arise directly or indirectly as a consequence of or be related to, or may be due to, the undersigned being granted access to the roof of the Building or from the granting by the Company of this permission.

The undersigned acknowledges that hazards exist on the roof of the Building, which hazards include, without limitation, tripping hazards, low head-room, heavy winds, temperature extremes, lightning and birds.

DATED this _____ day of _____, 20_____.

SIGNED, SEALED and DELIVERED in the presence of:

Name of Witness: _____

Contractor Name: _____
Company Name: _____
Phone No. _____

CONSTRUCTION COORDINATION

APPENDIX 11 - SPRINKLER SHUT OFF

1. Sprinkler Shut Off (RSVP – Restore Shut Valves Promptly) are available from the Landlord and must be filled out for any work requiring isolation of sprinkler lines. Please note the following: Only one impairment is allowed at a time;
 - Cease hazardous operations in the affected area. During isolation of sprinkler lines, the fire alarm system must remain active.
 - Remove, whenever possible, combustible materials from the affected area.
 - Take emergency measures to limit the area of impairment as much as possible.
 - Ensure that the impairment lasts for as short a time as possible.
 - Ensure all materials, equipment and labour is on hand ready to complete the work quickly.
 - If it is necessary to leave the work, re-commission the system; and
 - Maintain a continuous watch during the period of impairment.

RSVP*

*** RESTORE SHUT VALVES PROMPTLY**

Published as part of Global Asset Protection™ Services.

When necessary to shut off fire protection equipment for planned or emergency reasons, changes or repairs, 4 minutes or 4 hours, remember...

... External Contacts

- 1. Telephone Global Asset Protection 1-800-243-8222
- 2. Notify the public fire department
- 3. Contact your alarm service agency.

... Internal Precautions

Before the impairment

- 1. Schedule only one planned impairment at a time.
- 2. Brief department heads in areas where fire protection will be shut off.
- 3. Alert plant fire brigade.
- 4. Provide emergency access to impaired area.
- 5. Make sure all other plant fire protection equipment is in service.
- 6. Have all materials, tools and manpower ready when protection is shut off so the job can be completed as swiftly as possible.

RSVP*

*** RESTORE SHUT VALVES PROMPTLY**

Published as part of Global Asset Protection™ Services.

During the impairment

- 1. In areas of impairment:
 - Stop hazardous production or maintenance operations.
 - Prohibit the use or processing of flammable or combustible liquids.
 - Prohibit cutting, welding or other hot work.
 - Enforce "No Smoking" regulations.
 - Maintain continuous fire watch patrols.
 - Keep all fire doors closed whenever possible.
 - Have trained personnel with extra equipment, such as portable fire extinguishers and charged hose lines, standing by.
- 2. Attach the "RSVP" Shut Off Tag to each Shut Valve or other impaired equipment.
- 3. Keep the "RSVP" Office Reminder in a visible place.
- 4. Station someone at shut valve when excessive distance from work area.
- 5. If scope of impairment must be increased, call GAP immediately.
- 6. Work continuously until protection is restored.

After the impairment

- 1. Verify that full protection has been restored.
- 2. Report restoration to GAP and others as required.

Global Asset Protection Services
FIRE PROTECTION SHUT OFF
ATTACH TO VALVE OR DISCONNECTING DEVICE

SHUT OFF: _____ Date _____ Time _____

AUTHORIZED BY: _____

OR VALVE CLOSURE: _____

URNS TO CLOSE: _____

RAIN TEST: _____

PSI STATIC: _____ PSI FLOWING = _____ PSI

After valve has been opened, match this tag with the office reminder and the file until next Global Asset Protection Service Inspection

NOTIFY GAP SERVICES OF IMPAIRMENT 1-800-243-8222

Form 11-2022-01 Rev. 09/2020

Global Asset Protection Services
IMPAIRMENT REMINDER
THIS CARD SHOULD BE DISPLAYED IN A VISIBLE LOCATION UNTIL SHUT OFF TAG IS RETURNED

PROTECTION: SPRINKLERS FIRE PUMP CITY WATER
 UNDERGROUND ALARM SYSTEM SPECIAL EXT SYSTEM

VALVE NO: _____ LOCATION: _____

REASON: _____

SHUT OFF: _____ DATE _____ TIME _____

BY: _____

AUTHORIZATION BY: _____

NOTIFY GAP SERVICES OF RESTORATION 1-800-243-8222

RESTORED: _____ DATE _____ TIME _____

Form 11-USA

CONSTRUCTION COORDINATION

APPENDIX 12 – RETAIL TENANT SIGNAGE GUIDELINES

Prepared by Lemay.

Brookfield
RETAIL tenant signage guidelines

April 17, 2020



RETAIL SIGNAGE DESIGN INTENT

This Retail Tenant Signage Design Guideline is to ensure tenant signage is in alignment with the contemporary and curated refinement of the buildings experience. In pursuit of consistent design language within our building, this guideline for tenant signage sets out requirements, recommendations and materiality parameters to ensure compatibility with other tenants in tandem with the overall retail design aesthetic.

The Design Guidelines are a set of tools that the tenant is required to work with and expand upon. By establishing a common point of departure, freedom of expression for each retail tenant is encouraged as we collaborate to create a contemporary retail statement within a spirited entrepreneurial retail community.

THE GUIDELINES

Tenants are encouraged to develop aesthetically pleasing, professionally manufactured signage to further enhance the contemporary and entrepreneurial spirit of the building. Regardless of registered trademarks, the text of the Tenant's sign is limited to store name and / or logo as permitted and approved by the Landlord. The Landlord reserves the right to approve sign presentations on an individual basis and reject proposed signage based on composition, colour, content or other aesthetic criteria.

Tenants are required to install at least one storefront identification sign. All tenants may be permitted to install permanent, supplementary signage for additional information and branding suiting to the storefront location on an individual basis. The Tenant cannot erect or affix any sign or advertisement to the exterior face of the leased retail unit including windows and doors without the Landlord's approval, inclusive of temporary signage. Promotional materials both fixed and mobile are not permitted unless otherwise approved by the Landlord. Scale of signage must be sensitive to storefront dimensions and adjacent tenants. Signage footprint and letter heights are subject to Landlord's approval

All sign letter fastening devices, electrical devices, sign company name, ULC stickers and identification labels must be completely concealed. All illuminated signage must be an LED source, CSA approved and within a white shade spectrum. Conformance to these standards is the sole responsibility of the Tenant.

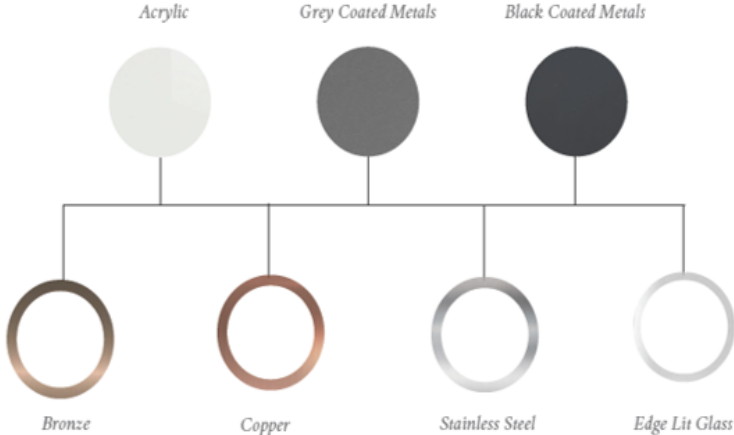
A complete set of signage drawings must be submitted to the Landlord in Electronic (PDF) format. Drawings must include plans, elevations, sections, size, letter style, colors, materials, fabrication detail, and anchorage detail. In addition, electrical detailing and method of illumination must be submitted where required for signage. All submitted drawings must be drawn to scale and shown in conjunction with the Storefront elevation they will conform to. Samples required at Landlord's request. All signage must be professionally installed and maintenance instructions must be submitted to the Landlord in conjunction with the drawing package.

Accepted sign types and materiality are as listed. Vinyl letters are subject to landlord's approval on a case by case basis and must align with the following specifications:

- *Avery Series 900 Supercast Metallic and Ultra Metallic, or similar*
- *Avery Series 900 Supercast Opaque, or similar*
- *Avery Series 900 Ultimate Cast Translucent, or similar*
- *Avoidance of economy or intermediate vinyl film, High Performance required*

ACCEPTED MATERIALS + SIGN TYPES

- Individual raised profile letters illuminated and non-illuminated
- Back illuminated, halo illuminated, or face illuminated - white shade luminaries accepted only
- Blade panel in partnership with main storefront signage
- Privacy Film in varying transparencies, white and grey scale only
- Pin letters and logos within material
- Vinyl letters are subject to landlord's approval on a case by case basis



SUPPORTING SIGNAGE EXAMPLES

In conjunction with the primary signage component of each CRU, the tenant may include for secondary, supporting signage at the Landlord's discretion. This typology exists for required privacy in confidential customer experiences (ex. Dentistry) or for detailed information on hours and personnel operating within the CRU. Sign types and materiality are in alignment with the primary signage guidelines. Below are supporting visuals to spark a direction that can speak for the culture of the tenant while honoring the contemporary and clean aesthetic of the building.



Graphic + Textured Vinyl Film

Undulating, contemporary patterns allow for screening without the aggressive termination of conventional privacy film. Aids visual connection to adjacent tenants.



Ombre Gradient Vinyl Film

Gradient film creates a natural flow from private to public transparency. This method also creates a gentle transition into adjacent tenants.



Cut Vinyl Appliqué
A clean vinyl application displays important tenant information while offering a visually seamless blend into the retail space.



Cut Vinyl Appliqué
For CRU's supporting multiple personnel, a directory within the material and scale guidelines allows for detailed information within an organized frame.

EXTERIOR SIGNAGE EXAMPLES

Exterior signage is limited to logo only. Hours of service, names of personnel and contact information are not accepted on the exterior face of the CRU. The following pages illustrate example schematic designs that exemplify the contemporary and clean aesthetic of the building that are within the material and signage typology framework.



Halo Lit Dimensional Letters w/ Graphic Privacy Film
Chanel letters give visible lift to branding with a deep and bold statement above an undulating pattern.



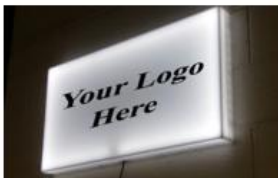
Hollow Stencil Letters w/ Graphic Privacy Film
A simple visual outline pairs well with an ombre film giving a refined and delicate punctuation from street view.



Dimensional Letters w/ Graphic Privacy Film
Chanel letters give visible lift to branding bringing depth against an undulating pattern that gives visual ease to adjacent tenants.

UNACCEPTABLE SIGN TYPES

- *Tape adhered signage*
- *Foam, cloth, paper, cardboard or sign types*
- *Uniform box signage*
- *Paint on glazing*
- *Sandblasted glass/wood signs*
- *Pylon or pole signs types*
- *Animated portions, flashing or auditory advertising*
- *Movable displays or signage (ex. Sandwich boards)*
- *Exposed or surface mounted box or cabinet type signs*
- *Promotional material affixed to glazing or face of retail unit*
- *Third party advertising affixed to glazing or face of retail unit*
- *Visible screws, ballast boxes, transformers, crossovers, fasteners, or conduit*
- *Vinyl letters are subject to landlord's approval on a case by case basis*



Internally Lit Box Signage



Paper Signage



Third Party Advertising



Vinyl Applique + Sheet Signage



Handwritten Signage



Flashing + Animating Signage

TIER
ONE | \$ \$ \$



Metal Cutaway Blade Signage



Serif Dimensional Lettering



Vinyl Lettering & Blade Signage



Metal Pin Letters



Minimalist Vinyl Lettering

TIER
TWO | \$ \$ \$



Channel Letters



Illuminated Blade Signage



Embossed Metal Blade Signage



Acrylic Signage + Dimensional Lettering



Illuminated Channel Signage

TIER
THREE | \$ \$ \$



Metal Pin Letters



Sculptural + Illuminated Blade Signage



Halo Illuminated Pin Letters



Individual Illuminated Channel Letters



Suspended + Illuminated Dimensional Signage