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#### INTRODUCTION

This Manual has been prepared to introduce Tenants to the Royal Bank Plaza Design, Systems and Building Regulations to assist in the design and construction of the leased premises.

This Manual is intended to be read, in conjunction with the building lease document. In the event of any conflict between this manual and the lease, the provisions of the lease or any other specific written agreements between Colliers Management and Tenant shall prevail.

Colliers Management reserves the right, from time to time, to add to or amend the information, procedures and regulations contained herein. Any such additions or amendments will affect any Tenant work undertaken after the addition or amendment has been issued.

#### TENANT COORDINATION

The Colliers Construction Team will guide and assist the Tenant throughout the construction and renovation period and will act as a point of contact within the Colliers organization. All questions, comments and submissions are to be addressed to:

Colliers ROYAL BANK PLAZA

200 Bay Street, Suite 1305 South Tower, P.O. Box 25 Toronto, Ontario, M5J 2J1 Adamo lannelli – Construction Project

Manager Email:

adamo.iannelli@colliers.com

Mobile: 647-709-9654

#### **GREEN BUILDING MEASURES**

At Colliers, we strive to be recognized by our customers, employees, shareholders, co-owners, and the market-at-large as industry leaders in sustainability. We embrace recognized standards and best practices, actively engage with our stakeholders, continuously measure, and improve performance, and seek to innovate at every opportunity.

During any facility renovations or large maintenance activities, we strive to adhere to green building best practices. Several Colliers policies, included as appendices, outline these requirements. The Colliers Green Measures document is currently being updated.

#### ROYAL BANK PLAZA - TENANT DESIGN AND WORKING DRAWINGS

For this manual, the drawings reviewed by Colliers shall be called 'Reviewed Drawings'. Reviewed Drawings are to be of a suitable scale i.e. 1/8"=1'-0" and to include but not be limited to, the structural, electrical, mechanical, reflective ceiling/lighting, sprinkler and life safety elements of the premises. To diminish or eliminate any misunderstandings, which may arise later, site visits by the various consulting disciplines in the production of the drawings, are mandatory.

Please submit for review a detailed scope of work, CAD, PDF of Tenant Design Working Drawings and Specifications of all work proposed within the leased premises. The drawings, plans and specifications will be reviewed within ten (10) working days and if found acceptable, drawings will be returned to the Tenant bearing Colliers approval and/or comments with the understanding that the drawings may be subject to changes requested by Colliers Management. Copies of the 'Reviewed Drawings' are to be kept on-site and be available to Colliers representatives throughout the construction period.

Any revisions made to the Reviewed Drawings must be submitted to Colliers for further review and approval of changes and work must not proceed until revised drawings are stamped and returned. Colliers reserves the right to demand certain additional or expanded information, for definition or clarification before approval is given. All revisions recommended by the Colliers Management Team must be included in the final specifications and drawings.

Collier's review in no way releases the Tenant's designer or engineers from ensuring that their design is compliant with all applicable codes and by-laws having jurisdiction.

The Tenant must provide Colliers with a construction schedule outlining the commencement date, duration of work, completion, and move-in date.

Projects must adhere to our policies noted in Green Building Measures. The Colliers Management Team, at its discretion, may also choose to ask for a review to be completed by the Green Building Consultant and the fee will be the responsibility of the Tenant.

The Tenant may wish to retain Colliers base building Designers or Consultants under a 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, Colliers will have such drawings verified by our consultants to ensure complete compatibility with the building's systems. The cost of this review will be borne by the Tenant at the discretion of Colliers Management. A list of our consultants is attached to this Manual. Please refer to the Lease and other documents regarding the time frames required.

#### **AS BUILTS**

Upon completion of construction, the Tenant is responsible for submitting "as built" Architectural, Electrical, Mechanical, Security, Communications, Data and Structural Drawings to the Colliers Team for their records.

#### **CONSTRUCTION SCHEDULE**

The Tenant must provide Colliers Management with a detailed construction schedule outlining the duration and hours of work of the project.

#### PERIMETER INDUCTION UNIT ACCESS REQUIREMENTS

If the Tenant design includes a non-accessible type of hard ceiling, such as drywall, access panels are required. These access panels are necessary to perform maintenance on the induction units. Specifications for the access panels are included in the appendices. It is the Tenant's sole responsibility to remove, clean and reinstate the induction unit covers. All furniture/room layouts must be done in such a manner as to ensure access to the window induction units. Non-moveable items including system furniture must maintain a minimum of 16" clear distance from the induction units.

#### CERTIFICATES AND APPROVALS

The Tenant is responsible for ensuring that all the following requirements have been complied with before construction begins:

- 1. Insurance Colliers Management requires Commercial Liability Insurance Certificates with coverage for bodily Injury for \$10,000,000.00 and Property Damage for \$10,000,000.00.
- 2. Colliers Management must be named as additional insured on the insurance certificate as follows:
  - Pontegadea Canada Inc. and Colliers Macaulay Nicolls Inc.

    \*Blaces he advised that the above parties must be patified in writing as
    - \*Please be advised that the above parties must be notified in writing not less than 30 days prior to any proposed material change, cancellation, or other termination of the insurance policies.
  - The Certificate Holder information should be reflected as follows: Pontegadea Canada Inc. c/o Colliers Macaulay Nicolls Inc. 19<sup>th</sup> Floor - 200 Granville St. Vancouver, BC V6C 2R6.

A copy of Colliers Management's standard Insurance Certificate is provided for your convenience.

1. ComplyWorks accreditation is mandatory for all General Contractors.

#### 2. Lien Protection

The Tenant undertakes to protect Colliers Management against the placing of liens under the Construction Lien Act by the Tenant's contractors or suppliers.

#### 3. Permits

Tenant's design and construction work must comply with all applicable by-laws. The Tenant must obtain all necessary permits and approvals from the appropriate government authorities before construction begins within the leased premises. A copy of all permits must be delivered to Colliers Management permits include: Building, HVAC/Mechanical, Electrical Safety Authority, Hot Work, and Plumbing. The Tenant must immediately correct any work, which does not meet with the approval of the building inspector, even though the tenant's drawings may have been reviewed previously by the appropriate government authorities and Colliers Management. Any revisions to the reviewed drawing requested by such authorities must be brought to the attention of the Colliers Management immediately. Should the Tenant unduly delay the required corrections, the Colliers Management may make the corrections at the Tenant's expense.

#### 4. Workers Compensation

The Tenant contractor shall furnish written evidence of good standing with the Workmen's Compensations Board and that all employees engaged in the work are covered in accordance with the statutory requirements of authorities having jurisdiction.

#### 5. WHMIS

All contractors, sub-trades and suppliers shall abide by the WHMIS (Workplace Hazardous Materials Information Systems) Regulations when working within the Royal Bank Plaza jurisdiction. Colliers Management reserves the right to request contractors to show signed WHMIS certificates required for staff members.

#### 6. Occupational Health and Safety

The Tenant acknowledges that it is solely responsible as an Employer under the Ontario Health and Safety Act, for the health and safety of all its employees and workers, as well as for the continuing safe conditions in the Demised Premises and the Lands. The Tenant shall comply with and shall require all of its employees and workers to comply with the provisions of all Laws, Statutes, Rules, Regulations, Notices and Orders including but not limited to all Federal, Provincial and Local Laws, Statutes, Rules, Regulations, Notice Orders and Amendments respecting Occupational Health and Safety, the Environment, Worker's Compensation and the safe condition of the Demised Premises and the Lands.

Weekly Health & Safety meetings must be held and attended by all trades and sub-trades. Colliers Management will, at their discretion, attend all meetings and minutes must be supplied for each meeting by the General Contractor.

All materials and supplies used by the Tenant's personnel in the Demised Premises and the Lands shall be used, handled, stored, otherwise dealt with, and properly labelled in accordance with the Workplace Hazardous Materials Information System.

#### APPOINTMENT OF CONTRACTORS

All Tenant contractors are subject to approval by Colliers Management and must ensure:

- a) All life safety work within the premises, including relocation and disconnection of speakers, fire pull stations, firemen's handsets, and maglocks must be completed by BASE BUILDING ELECTRICAL CONTRACTOR in conjunction with Onyx, Securitas ES exclusively.
- b) Only general contractors, mechanical contractors and electrical contractors approved by Colliers Management will be allowed to work in the building. (See Colliers Management approved Contractor list.)

#### COMMENCEMENT OF CONSTRUCTION

The Tenant is required to carry out its construction work in strict accordance with the "Colliers Management Reviewed Drawings".

Construction may proceed only after the Tenant has:

- a) Executed the lease agreement for the leased premises.
- b) Submitted acceptable evidence of insurance coverage to Colliers as set out in this Manual.
- c) Posted all required permits and safety signage on site.
- d) Received Colliers Management reviewed Tenant Design Working Drawings and Specifications and written notice from Colliers Management to proceed with construction.
- e) Made available on the leased premises one (1) set of prints, of the Reviewed Tenant Design Working Drawings and Specifications for the duration of the construction period for reference by the Colliers Management Tenant Coordinator.
- f) Submitted a schedule showing the timetable for the progress and completion of the Tenant's work and a list of all trades requiring access to the premises including the trades address and telephone number.
- g) Provide to Colliers Management a \$10,000.00 refundable deposit to be held until all close outs are submitted. In the event close outs are not submitted within 60 days from substantial completion the refundable deposit will be forfeited by the contractor. Colliers Management will then use these funds to complete the close-out submission. The contractor will still maintain all liability associated with the close-out submissions. Also, in the event closeouts are not submitted, Colliers Management, at its discretion may limit the contractor's ability to perform any work with the property.

Provided the required documentation as outlined in the Policies covering Green Building Measure.

#### COMPLETION OF TENANT'S CONSTRUCTION

Upon completion of the job within 30 days, the Tenant must submit a certificate to Colliers Management from its architect or designer stating that all work, including that of the mechanical and electrical contractors, has been completed in accordance with the reviewed drawings. An Electrical Safety Authority Inspection Report must also be submitted. The Tenant must also submit all required submittals and supporting documentation as outlined in the Policies covering Green Building Measures. Colliers reserves the right to withhold payment if the required documents are not submitted.

A full set of architectural, mechanical, and electrical "as built" CAD drawings shall accompany the above-noted certificates. In addition, Colliers Management requires copies of all permits and certificates issued by authorities having jurisdiction over all or any part of the Tenant's leasehold improvement work.

Furthermore, the Tenant shall submit to the Colliers Management, a statutory declaration stating that all accounts for labour, subcontractors, products, construction machinery and equipment and other indebtedness which may have been incurred in the performance of the work and for which the Tenant might in any way be held responsible have been paid in full except holdback monies properly retained and that no liens have been registered against the Colliers Management's property.

Any elements of the base building 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 Colliers Management, remain the property of and must be turned over to the Colliers Management should that be requested by Colliers Management. If Colliers Management does not require it, disposal will be by the Tenant.

\*Please reference the Project Closeout Checklist attached.

#### AIR BALANCING & WATER BALANCING

Upon completion of construction, the Tenant shall ensure that the air balancing of the premises is completed by the approved air-balancing contractor. An air balancing, water balancing, perimeter and interior HVAC systems reports are to be submitted to the Colliers Management for their file.

#### **B.A.S VERIFICATION**

Upon the completion of work related to the B.A.S a report indicating all systems are functioning as per the Base Building & Tenant Requirements.

## RULES AND REGULATIONS GOVERNING TENANT WORK



While carrying out work in the leased premises, the Tenant and all of its contractors, agents and employees are required to abide by the Contractor Code of Conduct as well as the regulations listed below:

#### INSPECTION OF TENANT WORK IN PROGRESS

The Colliers Management and its agents, architects, engineers, and Consultants shall have unlimited access to the Tenant's premises to inspect the Tenant's work in progress. The Colliers Management and its architects, engineers, or Consultants may note deficiencies in the Tenant's work which shall be corrected by the Tenant immediately upon notice.

#### SECURITY CONTROL

Tenant is responsible for providing its contractors access to the Premises.

Please note that Colliers Management's security requires all contractors to sign in at the security office located in the exterior loading dock entrance between the hours of 7:00 p.m. and 6:00 a.m. Access will only be allowed to contractors and sub-contractors of the Tenant whose name has been previously supplied to the Colliers Management.

Security access cards will be issued to contractors who have been approved by the Colliers Management for after-hours access. Contractors will be responsible for returning cards to the Colliers Management upon completion of the work. There will be a \$30.00 charge for lost cards.

Keys will be issued by Security to contractors who have been approved by Colliers Management for after-hours access. Contractors will be responsible for returning keys to the Colliers Management upon completion of the work daily. Any cost incurred by Colliers Management for lost keys is the responsibility of the contractor who signed them out.

The Tenant is fully responsible for the physical security of the leased premises and the contents therein throughout the construction period.

#### **PUBLIC SAFETY**

It is the Tenant's responsibility to ensure that the Tenant contractor observes and complies with all applicable construction safety regulations. Safety regulations imposed by an authorized representative of Colliers Management must be complied with immediately and fully. Should failure to comply result in any construction delays, the Tenant will be held responsible for all resulting costs.

#### **EMERGENCY CONTACT**

The Tenant and its contractor are required to post at the site the emergency contact name and telephone number with copies forwarded to Colliers Management.

#### TEMPORARY SERVICES

The Tenant's Contractor is responsible for the distribution of temporary power and telephone service within the leased premises during the construction period. Washrooms available for use by contractors will be designated by Colliers Management's Construction team. The Tenant and Tenant's Contractor are responsible for providing operable fire extinguishers on the premises throughout the construction period.

#### **WORK AREAS**

All construction materials, tools, equipment, and workbenches must be kept within the leased premises throughout the construction period. All public lobbies, corridors, washrooms, and stairs shall be kept clean and clear of construction materials at all times.

#### **GARBAGE**

Removal of garbage and construction debris generated by the work of a Tenant's contractor will be the total responsibility of the contractor. This includes ordering your own bins.

Please note that the removal of garbage and construction debris via bins or trucks is only permitted during the hours of 7:00 p.m. to 6:00 a.m. and only if prior arrangements have been made with Colliers Management.

It is the Contractor's responsibility to coordinate their own construction bins. Prior to delivery please coordinate and book your dock spot, subject to availability, along with your service elevator booking for debris removal via 1-877-255-5888., or Service.Centre@colliers.com.

All costs incurred are the responsibility of the Tenant and Contractor. Waste Diversion practices on all construction projects undertaken at the Royal Bank Plaza shall comply with Colliers Construction Waste Management guidelines as indicated in the Facility Maintenance and Renovation Policy (section 3.2). The Contractor is responsible for contacting Colliers Waste Management Consultant to coordinate their construction waste diversion efforts and meet the objective of the Policy. A tracking log must be used for the duration of the project.

#### HOURS OF CONSTRUCTION

All construction-related activities within the Royal Bank Plaza are to take place between the hours of 7:00 p.m. to 7:00 a.m. Absolutely <u>no</u> construction is to occur within the Complex between the hours of 7:00 a.m. and 7:00 p.m. without Colliers Management's prior written consent. Any contractor found not abiding by the above-noted hours of construction will be stopped and removed from the Complex.

#### **WASHROOMS**

Contractors are not to use the building washroom area for the cleaning or disposal of any construction material. If there is any damage to the washrooms due to incorrect usage by the Tenant's contractor, the Tenant will be responsible for repairs of all damage.

#### **ACCESS AND DELIVERIES**

All construction materials are to be delivered to the building loading dock at Royal Bank Plaza. The freight elevators are the only elevators to be used and at no time are deliveries allowed through the main lobby entrance of the building or moved through Common areas, Lower Concourse, Upper Concourse or Ground Level. Hours for freight elevator operation are from 6:00 p.m. to 7:00 a.m. Monday to Friday and 24 hours on weekends. The freight elevator must be booked in advance through Colliers Management. Please note that the loading dock area is for deliveries only. There is no parking permitted in the loading dock area.

#### SFRVICE ELEVATOR DIMENSIONS

#### SERVICE ELEVATOR – SOUTH TOWER (S1)

Door	4' 5"		
Elevator Height	10′ 0″	Width	8′ 1″
Depth	5' 5"	Maximum Capacity	2,041 kg.
SERVICE ELEVATOR – SOUT	ΓΗ TOWER (S2)		
Door	4′ 3"		
Elevator Height	15′ 2″	Width	5′ 10″
Depth	6′ 0″	Maximum Capacity	2,041 kg.
SERVICE ELEVATOR – NOR	TH TOWER (S3)		
Door	4' 5"		
Elevator Height	10′ 0″	Width	5′ 8″
Depth	5′ 5″	Maximum Capacity	2,041 kg.

#### **ELECTRICAL POWER SHUT-DOWNS**

All requests for electrical power shutdowns must be made, in writing and submitted for approval to the Colliers Management, 30 days prior to the required shutdown. Cost varies as per occurrence.

#### AIR SYSTEM SHUT-DOWNS

All requests for air system shutdowns must be submitted for approval to the Colliers Management at least 72 hours prior to the shutdown date. A Tenant's request for extended air conditioning will take precedence over a contractor's request for a shut-down period.

#### WATER SYSTEM SHUT-DOWNS

All requests for water system shutdowns must be submitted for approval to the Colliers Management at least 72 hours prior to the shutdown date.

#### **PLUMBING**

It is the responsibility of the Tenant to install PRV's (Pressure Reducing Valves) on all cold and hot water risers serving their equipment.

Hot water tank installation: The pressure temperature relief valves must be piped to a floor drain adjacent to the hot water tank. All Tenant hot water tanks must be equipped with a drain pan, pipe to drain c/w water sensor in pan tied back to the building automation system (BAS).

Water supply lines, drain lines and vent connections must be removed from the ceiling space back to the core riser and properly capped when being removed from a Tenant's premises.

#### **PARKING**

Vehicle parking required by Tenant's contractor is the responsibility of the contractor. The Colliers Management makes no representation that any such parking will be available. Under no circumstances are vehicles to impede or block access to the garage or loading dock facilities. No parking is permitted in the loading dock area.

#### DRILLING OR CUTTING

The tenant's Contractor is not permitted to drill, cut, or chase openings of any description in any part of the building structure without prior approval from Colliers Management. If such work is deemed necessary and acceptable to the Colliers Management and the Colliers Management's Structural Engineers, drilling, etc. shall be carried out after regular working hours by the Tenant's contractor at the Tenant's cost. Any work of this type may require an x-ray inspection of the slab prior to drilling, which will also be at the Tenant's expense. Any damage to cast-in electrical wiring shall be repaired by Colliers Management's contractor at the Tenant's cost.

#### X-RAYING/SCANNING AND CORING

There are three parts to the approval process requiring sign-off by the Project Manager, the Property Owner (Colliers) and the Structural Engineer. The first is a written document outlining the proposed modifications to be made to the structure or proposed penetrations through the structure. The second is a preliminary drawing outlining the proposal. The third item is the set of final drawings clearly showing all modifications. Approval and sign-off by the three parties are required at each stage before proceeding to the next step. Upon completion, a record of the actual changes made must be submitted. All requests for x-raying must be submitted at least four (4) business days before the x- raying date. All x-raying must occur between 11:59 pm and 4:00 am.

#### **DETAILED PROCEDURE:**

- a) No coring before 10:00 pm or after 5:00 am
- b) The Tenant shall submit a written proposal, with concept drawings if available, to the Project Manager for approval in principle.
- c) The Project Manager shall submit the signed-off proposal along with the concept drawings to Colliers for approval in principle.
- d) Once the written proposal is approved by both the Project Manager and Colliers, a drawing showing the location of the proposed opening(s) shall be submitted to the Structural Engineer for structural review and comment prior to any further action.
- e) Once approved by the Structural Engineer in principle, the drawings will be returned by the Structural Engineer to Colliers for their sign-off. In turn, Colliers will send the drawing to the Project Manager for sign-off. Upon receipt of the signed-off drawing, the Tenant shall prepare the final drawings for approval.
- f) The Tenant shall submit a final set of working drawings to the Project Manager for approval clearly showing the locations of all openings that have been approved in principle. Any new openings shall be reviewed on the basis of items 1 through 3 above.
- g) The Project Manager, Colliers and Structural Engineer shall sign off the working drawings before any work commences on site.
- h) Upon sign-off by the Project Manager, Colliers and Structural Engineer, X-rays shall be taken by the Tenant's contractor to determine the top and bottom reinforcement position within the slab.
- i) If the rebar interferes with a proposed opening(s), the Structural Engineer shall be advised immediately before taking any further action. Structural Engineers will review and advise regarding opening location(s), re-sizing or other appropriate action.
- j) Structural Engineers shall be allowed access to inspect the cutting of the opening. This inspection shall be undertaken at the Tenant's cost.

- k) On completion of the work to form the opening(s):
  - Structural Engineer shall be notified in writing;
  - An as-built drawing showing the exact location and size of the opening(s) shall be produced by the Tenant and submitted to the Structural Engineer;
  - Cores shall be retained for inspection by Structural Engineers.

Should the above procedures not have been followed by the Tenant and the necessary approvals not have been obtained the Tenant must bear any and all expenses associated with the following:

- Determination if the integrity of the structure has been compromised;
- Design by Colliers Management's Structural Engineer of any remedial measures necessary to restore the structural integrity through a method of external reinforcement;
- Implementation of such remedial measures.

#### WELDING

No open flame for welding, cutting or other purposes is permitted without the prior written approval of the Colliers Management. If pressurized gas cylinders are used, the Tenant's contractor shall ensure that their use is in accordance with requisite safety provisions and requirements. An operational fire extinguisher shall be available in the immediate vicinity of the work.

No welding or soldering on any part of a floor shall be done without the knowledge of the Colliers Management as these activities may trigger a fire alarm. Work Permits requesting the deactivation of a floor's fire alarm system must be obtained from Colliers Management.

Hot works permits should also be issued as well as obtained by the Colliers Management before commencing the project.

#### T-BAR AND ACOUSTIC CEILING

Base building T-Bar ceilings are not to be cut, drilled, or screwed into. The Contractor must use clips to secure partition walls in addition the contractor will be responsible for the cost of any repair required as a result of screwing into the T-bar grid.

T-bar suspension system Grid. Grid spacing 30"x 30". Induction unit metal covers are situated around the ceiling perimeter. Ceiling tiles and grids consist of the following:

- Acoustical Ceiling Tile Lay-in, wet formed, non-combustible mineral fibre type ceiling
  panels with square edges and factory-applied white acrylic latex finish on the exposed
  face such as Ultima 'Square' Edge by Armstrong. Noise reduction coefficient: Not less than
  0.70 NRC conforming to ASTM C423
- Grid Prelude XL by Armstrong World Industries Inc. Flat White

#### Drilling into window mullions is prohibited.

When installing drywall ceilings, access to all mechanical components above the ceiling must be provided, at the discretion of the Colliers Management.

#### BASE BUILDING DOORS & HARDWARE

Base building entry doors and frames are to be:

#### Door & Hardware Specifications:

WOOD DOORS	LINE:	SYSTEM 300 – CHERRY VENEER SERIES 340
AND FRAMES	MATERIAL:	MDF FRAMES WITH FLAT CUT CHERRY VENEER FINISH
	SPECIFICATIONS:	3' X 9' X 3/4" CHERRY DOOR WITH 20 MINUTE LABEL DOUBLE CHAMFER DOOR FRAME
LOCKSETS	MANUFACTURER:	SARGENT
(WOOD		MORTISE – LEVER TYPE HANDLE
DOORS)		
	LINE:	8200 LEVER LINE
	STYLE:	LNB LEVERS
	CYLINDERS:	SCHLAGE PRIMUS EVEREST
	FINISH:	BRUSHED CHROME
	I	
CLOSERS	MANUFACTURER:	ASSA ABLOY
	SERIES:	1430/1431 SERIES
	MATERIAL:	CAST ALUMINUM
		SURFACE MOUNTED CLOSER
	_	
HINGES	MANUFACTURER:	STANLEY
	SERIES:	CB LINE LIFESPAN 3 KNUCKLE HINGE 2 PAIR PER DOOR

**MANUFACTURER: CANDOR** 

#### RETURN AIR PLENUM

The return air plenum on the Tenant's floor is above the ceiling. This area is to remain unobstructed with the proper air transfer ducts in place to ensure proper flow of return air to the return air shaft. Induction unit clearance is required to perform maintenance and functionality.

HVAC Protection practices on all construction projects undertaken at the Royal Bank Plaza shall comply with all applicable control measures outlined in Colliers Facility Maintenance and

#### FIRE CONTROL/LIFE SAFETY

The minimum requirements for sprinklers, smoke detectors, heat detectors and fire alarm speakers are currently in place for each floor. Based on the Tenant's proposed design of the space, the Tenant shall ensure that the minimum requirements are maintained/ adjusted accordingly. Furthermore, all connections to the standpipe riser shafts must be welded.

Plastic covers are to be installed to protect smoke devices during construction.

#### FIRE STOPPING

Penetration through floors and fire-rated walls shall be sealed and packed with approved filler material to maintain the existing fire rating.

#### WIRING AND CONDUIT

All wiring shall be in a concealed conduit. Wiring in ceiling spaces shall be EMT.

All conduits and junction boxes are to be slab-hung. Do not clip to ceiling grid supports.

All wiring shall be a minimum of #12 AWG T 90 nylon stranded. Balance the loading on feeders so that the unbalanced load is less than 10%.

All floor duct access holes are to be sealed and the k cup covers properly secured and infilled w/ topping material.

#### LABELING

Identify all equipment (disconnect switches, meters, etc.) with lamacoid plates. Maximum fuse size on disconnect switches to be identified.

#### POWER DISTRIBUTION

The distribution to the lighting panel and the power transformer are to be separated. Utilize the existing 100 amp 600 Volt, 3 phase, 4 wire, disconnect switch mounted on the bus riser tap box to feed 2, 60 amp 600 volt 3 phase 4 wire disconnect switches. One 60 amp disconnect to feed the lighting panel and one 60 amp disconnect to feed the power transformer.

All single lines proposed must be reviewed by Colliers.

#### POWER DISTRIBUTION

The distribution to the lighting panel and the power transformer are to be separated. Utilize the existing 100 amp 600 Volt, 3 phase, 4 wire, disconnect switch mounted on the bus riser tap box to feed 2, 60 amp 600 volt 3 phase 4 wire disconnect switches. One 60 amp disconnect to feed

the lighting panel and one 60 amp disconnect to feed the power transformer.

All single lines proposed must be reviewed by Colliers.

#### FIRE ALARM SYSTEM

Any and all node connections, verification, and programming related to life safety systems (i.e. fire alarm, EVAC speakers, etc.) shall be included in the Tenant's electrical contractor tender price and they must employ and pay for the services of the Colliers Management's base building fire alarm contractor to complete this work. The system shall be tested, certified, and programmed for proper operation by the base building contractor upon completion of the work. Any work before the connections can be completed by the current approved Electrical Contractors that have the ability to perform FA work.

#### SECURITY SYSTEMS

All power and conduit work shall be included in the Tenant electrical contractor's tender price. Obtain exact requirements for the tie into the base building system from Colliers Management's base building security contractor Securitas ES.

#### **COMMUNICATION WIRING**

All cabling (i.e. data and communication) shall be installed in a complete EMT conduit system. Conduit "may not be required" when cabling with FT6 fire-rated plenum cables IF APPROVED BY THE COLLIERS MANAGEMENT. These cables would be allowed in the Tenant space only and properly slab hung every 4 feet. Conduit would be required in all ceiling space located outside of the Tenant area.

All requests to connect to the BBN (base building network) must be made through Rycom. All terminations to the BBN are performed by Rycom technicians with applicable service charges. Please refer to the BBN Vendor Installation guide attached to this manual.

Anyone who requires access to these rooms- tenants or service providers must contact Rycom TMP's Customer Service Customer Care outlining the request to the riser rooms. To ensure that access is not delayed, we ask for at least 24 hours' notice. To request access: Please contact Rycom TMP at customercare@rycom.ca, www.rycomtmp.ca or 1.877.792.6687

#### FIXTURES AND LIGHTING

#### **EXISITING 42X42 CEILING**

Lighting fixtures to be re-used shall be checked and tested for normal operation. Lighting is by way of one (1) electronic ballast (347 volt) per two (2) fixtures, and one (1) lamp per fixture. All lighting is to be connected to the base building lighting control Wattstopper system.

#### **NEW 30X30 CEILING**

Lighting Spec - LED Luminaires 30" x 30" LED recessed troffer luminaire, 4000K colour temp. 4000

lumens, 80-90 CRI, 347V, 0-10 Dimming. c/w Wireless Visioneering Modules.

These lamps are provided to the building as part of their lampage charge. There will be an additional charge to the Tenant for non-standard lamps.

All purchases are required to comply with Colliers Facility Maintenance and Renovations Policy). Waste Diversion practices on all construction projects undertaken at the Royal Bank Plaza shall comply with Colliers Construction Waste Management Policy which mandates the appropriate disposal of discarded lamps and fixtures.

#### **CONTROLS - HVAC AND LIGHTING**

Contractors must engage Ainsworth for any HVAC work related to the controls and stats. As well, Ainsworth must be contacted for reprogramming of revised or additional light switching being carried out in the building.

#### OCCUPANCY SENSORS

The Royal Bank Plaza has a continuous commitment to lowering our energy use wherever possible. One of those means is back requesting that our Tenants use occupancy sensors through their office space. Occupancy sensors are a simple and effective way to have the lights within a particular space turn off automatically when unoccupied. As we carry on and move toward more environmentally friendly ways of construction the Ontario Building Code will implement these measures accordingly. Please feel free to contact Colliers Management for any questions or for additional information.

#### **CARMA METERING**

All work and materials (i.e., CT's, PT's, cables, etc.) for the metering of the Tenant space shall be included in the Tenant electrical contractor's price Electrical Contractor is to co-ordinate the metering installation with the Colliers Management's metering contractor Carma Industries. Employ and pay for the verification and commissioning by Carma Industries.

#### ELECTRICAL/MECHANICAL & TELEPHONE ROOMS

Access is restricted to building personnel and approved contractors only. Contractors must signin with security at the security office at Royal Bank Plaza to gain access. Doors are to remain closed and locked at all times.

The Tenant's electrical, mechanical, data and telephone equipment is to be located within the leased premises. No such equipment is to be installed in the Building's electrical/mechanical room unless permission is given otherwise.

#### **THERMOSTATS**

Prior to the commencement of any demolition or construction, the thermostats in the affected areas must be removed by the base building HVAC contractor and reinstalled upon completion of construction. All thermostats and related non-based HVAC equipment is to be located within the Tenant's leased premises. This service will be provided at the Tenant's expense, at rates as determined by Property Management and the Building Engineering Department. Advance quotations may be provided at Tenant's request to assist in budgeting.

Furthermore, all the base building and associated wiring should be protected during the demolition and construction phase.

#### **DUST**

All base building perimeter air handling systems are to be protected from any dust or debris during construction.

IAQ Management practices on all construction projects undertaken at the Royal Bank Plaza shall comply with all applicable control measures (such as Dust Control) outlined in Colliers IAQ Best Management Practices Facility Alterations and Additions.

#### PRE-OCCUPANCY CLEANING

Tenants are responsible for ensuring before the premises are occupied or re-occupied that the following areas/items are cleaned:

- Light Fixtures and Lenses;
- Floor Tiles and Carpets;
- Corridor Walls and Doors immediately adjacent to leased premises;
- Perimeter Induction Units;
- Inside faces of Windows;
- Electrical Trench Header Ducts;
- All Services Rooms;
- Venetian Blinds; Roller Shades

IAQ Management practices on all construction projects undertaken at the Royal Bank Plaza shall comply with all applicable control measures (such as Housekeeping, Air Cleaning) outlined in Colliers IAQ Best Management Practices Facility Alterations and Additions.

#### PENALTIES FOR FALSE ALARMS

Fines for Nuisance/False Fire Alarms:

FIRST OCCURRENCE DURING ANY GIVEN CONSTRUCTION PROJECT:	\$2,500.00 + HST
SECOND OCCURRENCE DURING ANY GIVEN CONSTRUCTION PROJECT:	\$3,500.00 + HST
EACH ADDITIONAL OCCURRENCE WILL CARRY A PREMIUM OF:	\$4,000.00 + HST

All fines are accumulative and will be levied against the general Contractor and must be paid within 10 days from the date the invoice is issued.



#### ARE YOU READY TO START CONSTRUCTION?

Prior to a work permit being issued by Colliers Management, a Lease Agreement signed and executed by the Tenant, must be in possession of the Property Management office if applicable. In addition, the following items must be completed and submitted to Colliers Management's Construction Team.

#### PROJECT CHECK-LIST (Construction)

Project I	Name		Date		
NO	Х	DESCRIPTION	RESPONSIBLE	DUE	COMMENTS
DIST	RIBU	TION LIST			
1		Construction			
2		Security			
3		Operations			
4		PM Team			
5		Final Distribution to Site Security Team			
CON	STRU	ICTION TEAM			
1					
2		Confirmation of Signed Leasing Agreement	Colliers Site Team		
3		Construction Obligations	Colliers Site Team		
4		Insurance Certificate (\$10 million liability insurance coverage and ensure the following is included as additional insureds: Pontegadea Canada Inc and Colliers Macaulay Nicolls Inc. The Certificate Holder information should be reflected as follows: Pontegadea Canada Inc. c/o Colliers Macaulay Nicolls Inc. 19th Floor - 200 Granville St. Vancouver, BC V6C 2R6			
5		Building Permit	General Contractor		
6		WSIB	General Contractor		

7	Certificate of Insurance	General Contractor
8	Contractors List of Sub-Trades	General Contractor
9	Project and Construction Schedule	General Contractor
10	Project Drawings (Approval)	Colliers Construction Team
11	Executed Construction Agreement	Colliers Construction Team
12	Designated Substances (Hazardous Materials	Colliers Construction Team

#### **SECURITY**

13	Pre-Construction Documents Package (Building Permit, WSIB, Sub-Trades List, Etc.)	Security Supervisor
14	Access Cards for Freight Elevator and Floor Access	Access Card Officer
15	Smoke Bypass Request (Yardi Work Order)	Piper Dock Officer/Sec Supervisor
16	Sprinkler/ Standpipe Drain Down Requests (Yardi Work Order)	Piper Dock Officer/Sec Supervisor
17	Elevator Bookings for Debris Removal / Deliveries (Yardi Work Order)	Piper Dock Officer/Sec Supervisor
18	Hot Work Protocol Verification	Security Supervisor

#### PAYMENT AND FORM SUBMITTALS - COLLIERS SPECIFIC PROJECTS

We use a unique accounts payable system (PAYSCAN) for our property management division, to help expedite the processing and payment of your invoices. To ensure all conditions are met to process payments without errors and in an efficient manner, please follow below simple steps:

- Payscan Format "vendor ID# property code"
   Include "vendor code", "property code" and "address" on the Service Location/Job Site for all invoices:
  - Vendor code Contact the AP Coordinator for your Vendor Code
  - Property code e6365
  - Address location where work or service was done.
- 2. Update the "Bill To" address as follows:

Pontegadea Canada Inc. c/o Colliers ITF, 200 Bay Street South Tower, Suite 1305 Toronto, ON M5J 2J1

- 3. Deliver invoices via email to: <a href="mailto:REMS.CanadaAP@colliers.com">REMS.CanadaAP@colliers.com</a> fastest processing Note: emailed invoices can only be accepted in PDF format one invoice per file. Multiple invoices can be submitted in the same email but must be separated into individual PDF files.
  - If multiple invoices are included in one PDF file, invoices must be separated by Payscan Separator Sheet. Separator Sheet provided in the email.

- 4. Please do not send inquiries, statements, or any other correspondence to this email address. This is an automated, unsupervised inbox and emails will not be answered. For anything other than current invoices, please contact the Property Admin Team/Colliers Management at the site where the service was done.
- 5. We use EFT for our payments. To complete the payment process please provide us with your banking information from the bank written on the bank's letterhead with a signature from your bank's representative. Please send us a copy of an invoice that will show your remittance to address and your HST/GST registration number.

If you have any questions, please do not hesitate to contact the Accounts Payable Coordinator at <a href="mailto:Beverlyn.Bastareche@colliers.com">Beverlyn.Bastareche@colliers.com</a>.

## CONTRACTOR SECURITY ESCORT & FIRE PROTECTION REQUESTS - ALL PROJECTS

This is for any elevator bookings where you want exclusive access. We order a guard and place it on service.

- All requests are to be made through the Colliers 24-hour Service Centre at +1 877 255 5888
- This includes any fire-related items such as smoke bypass (can be done as a blanket weekly)
- Sprinkler drain downs, standpipe drain downs etc.
- Sprinkler and Standpipe drain downs are to be done between 7 am -11 pm Monday to Friday
- Bin drop-off requests are to be submitted through the <a href="mailto:service.centre@colliers.com">service.centre@colliers.com</a> email or 108770255-5888 to confirm loading dock spot availability. Bins are to be delivered after 7 pm and must be picked up the next day before 6 am on weekdays.

#### **CONTRACTOR CONSTRUCTION REQUESTS**

Collier Service Center: +1 877 255 5888

#### GENERAL RULES REGARDING WORK ORDERS

- 1. Work orders must be submitted when services are required and/or there is impact to the building's operation, such as work that may set off the fire alarm, HVAC services, x-ray, core drilling, access to another Tenant's suite, etc.
- 2. Work orders must be submitted with at least 48-hours advance notice to allow for proper approval, coordination, and in case there are further questions to be resolved. There must be at least 72-hours' advanced notice for fire alarm work that will impact the whole building, fire alarm downloads, and special requests, such as impactful shut- downs, etc. This applies to business days only; weekends and holidays do not count.
- 3. Standpipe and Sprinkler drain downs to be done between 7AM and 11PM, Monday to Friday only.

- 4. You may submit requests for one week at a time maximum. We will not accept requests for weeks or months.
- 5. Keep requests clear and simple, such as a smoke bypass with a security guard escort. Submit separate requests for separate tasks to keep things easier for tracking and billing.
- 6. Management reserves the right to deny work orders and if so, an explanation will be provided.
- 7. Please review your work order status to ensure that the work order is approved before coming to the site.
- 8. To avoid delays with access, we recommend that you provide your tradespeople with the work order reference number to give to security and operations.
- 9. All tradespeople coming to the site must sign in and out with security each time they come to the site, regardless of whether an email was sent.
- 10. Please note that some building services such as HVAC, smoke bypass, and sprinkler drain down are billable services. Our Construction Manager or Coordinator can supply our current rate table and it is available in our Design Criteria Manual.
- 11. Riser room & POP access (telecom, network & electrical only) is not covered by the Colliers Service Center. For access to our riser & POP rooms, contact RycomTPM: 1-877-792-6687 or <a href="mailto:customercare@rycom.ca">customercare@rycom.ca</a>



<sup>\*</sup>Highlighted items are considered Mandatory

#### **BASE BUILDING: ARCHITECTS**

WZMH 95 St. Clair Avenue West, Suite 1500 Toronto, Ontario, M4V 1N6

#### **BASE BUILDING: MECHANICAL**

THE MITCHELL PARTNERSHIP (TMP) 200 King Street West Toronto, Ontario M5H 3T4

#### **BASE BUILDING: ELECTRICAL**

MULVEY BANANI
90 Sheppard Avenue East, Suite 500 Toronto,
Ontario M2N 3A1

Tel: (416) 753-8898

Tel: (416) 961-4111

Contact: Jeffrey Leong-Poi

Contact: Dermot Barry

Tel: (416) 751-2520 x213

Contact: Robert Marcuzzi

#### **BASE BUILDING: STRUCTURAL**

QUINN DRESSEL & ASSOCIATES 890 Yonge Street, Suite 300 Toronto, Ontario M4W 3P4 Tel: (416) 961-8294 x220 Contact: Roger Ye

contact. Noger re

### BASE BUILDING: GREEN BUILDING CONSULTANTS

WSP GLOBAL INC. 2300 Yonge Street, Suite 2300 Toronto, Ontario M4P 1E4 Tel: (416) 487-5256 Contact: Greg Spangler

#### MANDATORY BASE BUILDING CONTRACTORS

#### BASE BUILDING: HVAC AIR & WATER BALANCING

DESIGNTEST & BALANCE CO. LTD. 70 East Beaver Creek Road, Unit 35 Richmond Hill, Ontario L4B 3B2 Tel: (905) 886-6513 Contact: Surrinder Sahota

#### \*BASE BUILDING: FIRE ALARM

PLAN GROUP 2740 Steeles Avenue West Vaughan, Ontario L4K 4T4 Tel: (416) 575-6371 Contact: Dave Hutchings

Tel: (416) 961-4111

Contact: Jeffrey Leong-Poi

#### **BASE BUILDING: ARCHITECTS**

WZMH 95 St. Clair Avenue West, Suite 1500 Toronto, Ontario, M4V 1N6

#### \*BASE BUILDING: FIRE ALARM

PLAN GROUP 2740 Steeles Avenue West Vaughan, Ontario, L4K 4T4

#### \*BASE BUILDING: FIRE ALARM

CMS Electrical Group 2721 Markham Rd, Unit 10 Scarborough, Ontario, M1X 1L5

#### \*BASE BUILDING: HVAC CONTROLS

AINSWORTH INC. 131 Bermondsey Road Toronto, Ontario, M4A 1X4

#### \*BASE BUILDING: METERING

CARMA INDUSTRIES 3080 Yonge Street, Suite 4076 Toronto, Ontario M4N 3N1

#### \*BASE BUILDING: ENVIRONMENTAL

PINCHIN LTD 2360 Meadowpine Blvd. Unit 2 Mississauga, Ontario L5N 6S2

#### \*BASE BUILDING: SECURITY SYSTEM

SECURITAS ES 405 Britannia Rd E Mississauga, Ontario L4Z 3E6 Tel: (416) 575-6371

Contact: Dave Hutchings

Tel: (416) 609-9992

Contact: Brad Herring

Tel: (866)-462-2846

Contact: Murtaza Abid

Tel: (416) 260-4264 x301

Contact: Ephram Spiegelman

Tel: (905) 363-1440 Contact: Anthony Rakic

Tel: (416) 678-7353

Contact: Tom Nanou

#### \*BASE BUILDING: LOCKSMITH

SAFEGUARD Tel: (416) 789-7889
2914 Dundas Street West Mobile: (416) 989-1484
Toronto, Ontario M6P 1Y8 Contact: Norm Almeida

E-mail: safeguardlocksmith@rogers.com

#### \*BASE BUILDING: ELEVATORS

OTIS CANADA INC.
Tel: (800) 233-6847
1655 Queensway East
Contact: Abass Bitar

Mississauga, Ontario L4X 2Z5

#### \*BASE BUILDING: ESCALATORS

SCHINDLER ELEVATOR & ESCALATOR

Tel: (416) 332-8280

3640 McNicoll Ave

Contact: Violet Gasparro

Toronto, Ontario M1X 1G5



#### **ELECTRICAL ENGINEERING CONSULTANTS**

- HIDI RAE CONSULTING ENGINEERS INC. Brian Woods, T: 416-364-2100
- QUASAR CONSULTING GROUP T: 905-507-0800 x8000
- SMITH & ANDERSEN T: 416-487-8151
- WSP GLOBAL INC. T: 905-882-4211

#### MECHANICAL ENGINEERING CONSULTANTS

- HH ANGUS T: 416-443-8212
- HIDI RAE CONSULTING ENGINEERS INC. T: 416-364-2100
- QUASAR CONSULTING GROUP T: 905-507-0800 x8000
- SMITH & ANDERSEN T: 416-487-8151
- WSP GLOBAL INC. T: 905-882-4211

#### STRUCTURAL ENGINEERING CONSULTANTS

• ENGINEERING LINK – T: 416-599-5465



#### **GENERAL CONTRACTORS**

- EASTHAM CONTRACTING INC. T: 905-458-7528
- FLAT IRON T:416-749-3957
- GILLANDERS CONSTRUCTION INC. T: 416-750-7313
- GOVAN BROWN & ASSOCIATES LIMITED T: 416-703-5100
- THE JESSLIN GROUP LIMITED T: 416-757-8280
- MARANT CONSTRUCTION LIMITED T: 416-425-6650

#### **ELECTRICAL CONTRACTORS**

- AINSWORTH INC. T: 416-751-4420
- CAMPBELL & KENNEDY ELECTRIC LTD. T: 905-761-8430 x28
- CMS ELECTRICAL T: 416-609-9992
- MULTITECH TRADES CORP. T: 905-812-7900
- PLAN GROUP T: 416-635-9635
- SYMTECH INNOVATIONS LTD. T: 905-747-8436

#### **MECHANICAL CONTRACTORS**

- AINSWORTH T: 416-751-4420
- APPLIED SYSTEMS TECHNOLOGIES T: 905-850-7080
- BLACK & MCDONALD T: 416-298-9977
- CMS MECHANICAL T: 416-609-999
- MULTITECH TRADES CORP. T: 905-812-7900
- OPUS MECHANICAL T: 416-312-4500
- LPI MECHANICAL T: 905-794-0755
- PLAN GROUP T: 416-635-9635

#### SPRINKLER CONTRACTORS

- GUARDIAN FIRE SYSTEMS INC. T: 905-567-4911
- ONYX FIRE PROTECTION SERVICE T: 416-674-5633
- TYCO INTEGRATED FIRE & SECURITY T: 905-212-4400

# TELECOMMUNICATIONS STANDARDS

## RYGOM TRM

RYCOM Inc. Unit 8, 6201 Hwy. 7 Vaughan, 0N L4H 0K7 Phone 905-264-4800 Fax 905-264-4808



#### **PURPOSE**

Colliers has asked RYCOM TPM to develop a set of telecommunication cabling standards for their properties. RYCOM TPM has prepared this document that will provide Telco Providers, Tenants and the Colliers Management with the requirements and expectations that Colliers has determined are minimum requirements.

#### CODES, STANDARDS & GUIDELINES.

All telecommunication work performed within Colliers must conform to ANSI/TIA/EIA telecommunication cabling standards, Ontario Electrical Code (OEC), National Fire Protection Association (NFPA) and Occupational Safety and Health Administration (OSHA). In addition to these codes and standards, contractors must use industry best practices as published by BICSI the designer not have an RCDD a minimum requirement of 5 years of design experience is needed to design and submit drawings to Colliers.

Outside Plant work which details conduits and telecommunication cabling outside of the building is the responsibility of the Telco Provider to design, engineer, and obtain permits for. The Final Entrance Facility location should be reviewed and approved by Colliers. The contractor designing and following the most current release of the Telecommunication Distribution Methods Manual.

Although not mandatory, it's recommended that the designer who is putting together the designs

of the telecommunication infrastructure is a BICSI-certified RCDD and in good standing. Should the work be provided all drawings over to Colliers for comment and review. RYCOM TPM will review the drawings and provide onsite project management which will be at RYCOM TPM's current billable rate.

RYCOM can be contacted for Communication Cabling and Networking.

RYCOM TPM 6201 Highway #7 Vaughan, ON 1-877-792-6687 customercare@rycom.ca

Derek Andreoff
RCDD® Telecommunication Infrastructure Specialist
derek.andreoff@rycom.ca
(D) 905- 264-4786 | (M) 905-441-1495
Visit us online at www.rycom.ca

#### PATHWAYS

- 1.1. Pathways are spaces that allow telecommunication cabling to run from a source to a destination location. These spaces consist of conduit and sleeves. Pathways can be installed through parking levels, concourse levels, lobbies, riser rooms, and common areas. Listed below are the specific requirements for pathways within the Colliers.
- 1.2. Telecommunication cabling shall be installed within conduit located within the parking garages, concourse levels, and common areas extending from the riser room to a Tenant suite. Cabling is permitted to be run free air within the riser space provided that best industry practices are followed, and the installation conforms to section 2.0 Cabling. It should be noted that any damage done to a cable running free air within the property shall be the responsibility of the owner to fix and replace. Colliers will not be held responsible for any damages done or revenues lost.
- 1.3. Should the Tenant or Telco provider want to install conduit within the riser it should be reviewed and approved by the onsite riser manager RYCOM TPM. It is recommended that the conduit is sized for the expected growth and not just the smallest or largest sized conduit installed.
- 1.4. Conduits, connectors, couplers, pull boxes, and covers located in the parking garage area and throughout other common visible areas must be painted powder coat white. This must be done offsite, and no other form of paint will be accepted.
- 1.5. When conduits are running horizontal, labels shall be placed approx. every 15 linear feet. (examples would be through the parking garage area)
- 1.6. Conduits and cabling must be labeled on both sides of each wall, floor penetration, and at both ends of a termination point.
- 1.7. Conduits running vertically in the riser system shall be labeled near the top, in the middle at eye level and one near the bottom close to the core hole. This label will provide a means of quick and accurate identification.
- 1.8. Labels shall clearly identify the ownership of the conduit. Colliers recommends that additional items such as source and destination locations as well as a contact phone number are included.
- 1.9. Any pre-existing conduits that are not currently labeled and have a single ownership should be labeled with the company who owns the pathway. (Common pathways with multiple ownerships do not need to be labeled.)
- 1.10. Any type of x-raying, scanning, or coring must have a permit which is assigned by the Colliers project management team. All concrete structures require x-raying prior to any core drilling taking place. If the Contractor decides to use a Colliers preferred Contractor for this work, then the x-ray and coring can take place on the same night. No cutting of the structural steel and/or rebar shall be permitted or tolerated. The Contractor is to have available on request a copy of the x-ray for the Colliers representative to review.

- 1.11. It's the contractor's responsibility to ensure that all vertical and horizontal holes their pathway and/or cabling passes through is correctly fire-stopped.
- 1.12. Where the cabling enters a conduit or connector it's the contractor's responsibility to provide fire-stopping of the conduit as well as the hole the conduit passes through the fire-rated wall.

#### 2. CABLING

- 2.1. Telecommunication cabling allows a service to be transported from a source to a destination location. These cables primarily come in copper and fibre and can be shielded or unshielded with different fire ratings.
- 2.2. All telecommunication cabling running free air within a plenum or non-plenum space shall have a minimum fire rating of FT6. This includes both Tenant and riser space. Cabling that is routed within the conduit for the entire length can have a minimum fire rating of FT4.
  - 2.2.1. Telecommunication cabling entering from the street and into the building is typically unlisted cabling. There are (2) statements that Telco providers must meet in order to route their unlisted cabling from the point of entry to their POP facilities.
  - 2.2.2. If the entry point (source location) of the unlisted cabling is located within the same room as the destination location, the unlisted cabling can be free aired over to the destination without the need for conduit provided that the room is sealed off and has a minimum 1-hour fire rating.
- 2.3. If the entry point (source location) of the unlisted cabling is located in a different room or the room is not sealed and/or doesn't contain a minimum 1-hour fire rating the Telco Provider is allowed by the Ontario building code to only have 3 meters of exposed unlisted cabling installed. The cabling can be extended to the destination location provided that the unlisted cabling is completely encased within the conduit, or a splice can is installed to transition from unlisted to a minimum FT6 fire-rated cable.
- 2.4. Telecommunication cabling servicing rooftop antennas or devices located external to the building shall be Outside Plant Rated (OSP). If the OSP cable has an FT4 or lower fire rating it shall be encased within the conduit for the entire length.
- 2.5. Copper cabling or conductive cabling entering the building from the outside shall be bonded to ground and copper pair cabling shall contain a surge protector. All dielectric non-conductive cabling does not require surge protection or bonding.
  - Shielded cabling should be bonded to the ground.

#### 3. SPACES

- 3.1. Spaces are places where telecommunication gear is located. This gear can include accumulation panels, passive equipment, active equipment, Telco gear, Tenant telecommunication rooms or Tenant gear.
- 3.2. No active components requiring electrical power shall be permitted to be installed within the riser rooms. These spaces are meant to be common and are to house equipment and components that serve base building systems and deliver Telco services to the Tenants.
- 3.3. Tenants will only be permitted to install demarcation extension cables inside riser rooms or to gain access to the cellular floor system. Under no circumstances shall the Tenant be permitted to install or terminate any station cabling within these riser rooms or place active gear.
- 3.4. Telco providers are permitted to set up Point-Of-Presence (POP) spaces within Colliers. These spaces require design drawings from an engineering firm. Telco Providers that are setting up these spaces are required to contact the base building riser manager, RYCOM TPM, to perform site review services. These site review services are billable back to the Telco provider at RYCOM TPM's current rates.
- 3.5. Consultants and designers are required to obtain the services of RYCOM TPM any time a piece of hardware is to be installed or mounted within the riser room. RYCOM TPM will provide written documentation notifying of our recommendations and find and assign the correct amount of space required. These site review services are billable at RYCOM TPM's current rates.

#### 4. MANAGEMENT AND REVIEW

Colliers requires that a contractor must contact RYCOM TPM Customer Care and have an access ticket issued to them any time they need access to a riser room.

- 4.1. The contractor's first point of contact for riser room access is RYCOM TPM Customer Care, who will issue the contractor an access ticket. RYCOM TPM Customer Care requires that the contractor provides them with the following:
  - 4.1.1. Start and end dates
  - 4.1.2. Name of Tenant, Telco, and General Contractor
  - 4.1.3. Required access
    - 4.1.3.1. A detailed scope of work stating the following:
    - 4.1.3.2. Who they are doing the work for (i.e. Tenant, General Contractor)
    - 4.1.3.3. Why they need access to the riser
    - 4.1.3.4. What they are doing in the riser room
    - 4.1.3.5. EXAMPLE. ABC Contractor is requesting access to 77 RYCOM Street
      West 34th floor riser room to do work on behalf of XYZ General

Contractors on the following date. ABC Contractor requires access to provide (1) additional multimode FT6 fibre cable from the 30th floor Tenant space to the 34th floor Tenant space VIA the riser in an existing EMT Conduit belonging to the Tenant. ABC Contractor will ensure that all firestopping and smoke seals are replaced.

- 4.2. Any installations passing vertically through more than (4) floors require a set of drawings that will be reviewed and approved by the riser manager, RYCOM TPM, prior to any work being conducted.
- 4.3. Cabling installations requiring site reviews will be inspected by RYCOM TPM and are billable at RYCOM TPM's current rates.
- 4.4. In addition to the codes and standards listed within this document, the Telco Agreements and Tenant agreements signed are in effect and form part of this document.

#### 5. ABANDONED CABLING & EQUIPMENT

Abandoned cabling and equipment are items that are located within the building that are non-active, not plugged in, or cabling that has been left cut and non-active. As per the National Fire Protection Association (NFPA) any of these items listed above are deemed to be abandoned and must be removed.

- 5.1. Telco Providers are to enforce an active role in removing as much of their abandoned infrastructure as possible. (Examples of this would be abandoned equipment, cabinets, cabling, and conduits.)
- 5.2. Tenants are to remove their abandoned backbone and horizontal cabling back to the nearest active source when their backbone cabling is no longer required.
- 5.3. No spare coils of horizontal cabling that are owned by the Tenant are permitted to be left within the riser rooms. All spare cabling is to be coiled back and left in the Tenant's space.
- 5.4. During a Back-To-Base Project, the Tenant's project manager and consulting firm are to review the Colliers Back-To-Base Clause.

All Tenant installed conduits is to be removed back to the nearest active source except for conduit ties from the riser to the Tenant space.

#### SAFETY REQUIREMENTS

At a minimum, all personnel that will be performing work within Colliers Riser Rooms must be current with WHMIS training and any technicians performing work on a ladder, scaffold, or other aerial device within the building must also have current Fall Arrest training. The legislation within the Ontario Health and Safety Act (OHSA) must also be always adhered to.

6.1. All competent workers prior to entering a space which has the potential to be classed

- as a confined space must ensure that the confined space hazard assessment and control program is implemented. There are many other steps to be taken before any competent workers can enter a space that has been classified as a confined space and it will be the responsibility of those competent workers who will be entering the confined space to see that the appropriate safety measures have been implemented.
- 6.2. Many injuries result from poor housekeeping. To insure a clean and hazard free workplace, all contractors must implement a daily cleanup program. Contractors will be responsible for removing their waste from site at the end of every working day. Materials and equipment are to always be stored neatly and in such a way that it does not in any way pose a hazard to personnel within the building.
- 6.3. All contractors must wear Personal Protective Equipment (PPE) as necessary to protect the worker against the hazards to which the worker may be expos



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www.rycomtpm.com

## **DISTRIBUTED ANTENNA SYSTEM (DAS)**

Bell, Rogers and Telus are currently in the process of upgrading their wireless infrastructure within the Royal Bank Plaza as the new wireless Long-Term Evolution (LTE) standard has now been implemented within the Greater Toronto Area. This has placed increased demands on the existing wireless systems capacity. To better service clients within the Royal Bank Plaza, the telecommunications service providers have been implementing their Distributed Antenna System (DAS) infrastructure within Royal Bank Plaza. The purpose of the DAS is to increase both the wireless cellular coverage and the wireless capacity within the buildings. By increasing wireless coverage and capacity, the Tenants and the patrons within Royal Bank Plaza will enjoy an enhanced wireless service with fewer dropped calls and increased data transfer rates.

The DAS infrastructure typically consists of 8 to 16 small white cone shaped antennas (see photograph below) per floor within Tenant space which are located on the underside of the suspended/drywall ceilings. The antennas are then connected back to the Telecommunications Riser Room with a ½" diameter heliax cable which is blue in colour (see photograph below). The cables and antennas are labeled with the name and contact information for the Telecommunications Service Provider (i.e., Rogers, Bell, or Telus) that is responsible for the building or floor.

To ensure the integrity of the DAS remains intact throughout the designed lifespan, it is important that Tenants and contractors that perform work on behalf of the Tenants are aware of the systems components and the process involved in the removal or relocation (if necessary) of infrastructure. In the event of a Tenant renovation, back to base project, or new build-out, the Colliers Project Manager assigned to the project must be informed that there is DAS infrastructure which may be located within the project construction area. At that point in time, the Colliers Project Manager will notify RYCOM who will then coordinate the removal and relocation of DAS infrastructure with the various stakeholders involved in the project.

The costs associated with the relocation and coordination of DAS infrastructure will be billed back to the Tenant or the contractor performing work on the Tenant's behalf.

Please contact Andrea La Sorda at RYCOM with any questions or concerns at 647-971-9614 or <a href="mailto:andrea.lasorda@RYCOM.ca">andrea.lasorda@RYCOM.ca</a>.

#### Andrea La Sorda

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#### CABLING GUIDELINES FOR COLLIERS BUILDINGS

The intent of this document to define guidelines that Colliers expects cabling Contractors and Carriers to follow. Where these guidelines exceed local building or fire codes, this guideline will be the governing document.

The major goals in this program are:

- 1. To ensure that cabling in the building is installed in professional manor.
- 2. To ensure that cables are properly labeled to determine ownership for future considerations.
- 3. To ensure proper Firestopping and reduced smoke and fuel loading in the event of a fire.

**Building Risers: Copper or Fibre Cables** 

- 1. Contractors will install cables in a professional manor adhering to standards such as published by BICSI and local building and fire codes.
  - a) Cables installed in a buildings riser system should be FT-6 fire rating.
  - b) Cables will be properly supported and "strain relieved."
  - c) Cables will be labeled on either end and on every floor.
  - d) Cables will be properly dressed.
  - e) Contractors will replenish the Firestopping in the riser sleeves that are used to route the cables, regardless of the previous condition of the Firestopping.

Building Floor Space: Copper or Fiber

- 1. Contractors will install cables in a professional manor adhering to standards such as published by BICSI and local building and fire codes.
  - a) Cables installed in the building's horizontal floor space will be plenum rated/FT-6, regardless of if the space is actually plenum or not.
  - b) Cables will be routed in conduit, cable trays or on J-hooks. Running cables over the ceiling tiles and light fixtures is not acceptable.
  - c) Cables will be properly dressed.
  - d) FT-4 rates cables can be used providing they are in metal conduit or FT-6 rated Innerduct.

If a contractor fails to implement the above guidelines, then they will be asked to perform remedial action to correct the deficiencies. If the contractor fails to correct the deficiencies, then the contractor will be barred from performing additional work in the building until the deficiencies are corrected.

#### RETURN TO BASE CABLING GUIDELINE

This guideline is to help Tenants understand their responsibilities regarding the removal of telecommunications cabling when vacating the premises at the expiry of their lease. It is understood that all costs associated with this work are borne by the Tenant.

#### Background

For the purposes of this guideline the demarcation point is the Main Telephone Room (MTR) and/or Point of Presence (POP) room which are located in the parking level floor of the building. The Incumbent Local Exchange Carrier's (ILEC) demarcation point - typically Telus or Bell - is the MTR. The Competitive Local Exchange Carrier's (CLEC) demarcation point - typically Allstream, Sprint, Group Telecom etc. - is a POP room. The ILEC usually uses the buildings main backbone cabling that they installed when it was built. CLECs usually install Homerun cables to the Tenant suite on an ad hoc basis.

The Tenant is responsible for in-suite horizontal cabling and the vertical cabling to the MTR or POP room.

#### Return to Base Building

In the Return to Base Building situation the Tenant at the discretion of the Colliers Management must remove all:

- Horizontal Cabling: Voice and data cabling used for in-suite distribution to the desktop
  from a communication room within the Tenant's suite and/or the riser room located on
  the same floor as the Tenant (this room may be located outside of the Tenant's suite). In
  addition, the Tenant must remove cables that run between floors where the Tenant
  occupied multiple floors. The Tenant is also responsible for the removal of any in house
  communications systems such as PA systems/security etc.
- Vertical Cabling: Voice and data cables between the MTR/POP room and the Tenant's suite through the building riser system. If the Tenant's cabling terminates on the Building's backbone, the Tenant is responsible for removing all cable to the backbone only.

#### Tenants are responsible for the following:

 Contact RycomTPM before removing wiring: 1-877-792-6687 (Option1) or customercare@rycom.ca. RycomTPM will inspect, tag or indicate in writing cabling that is to be removed. RycomTPM will perform a follow-up inspection to ensure that all redundant cabling as described above has been removed and will work with contractors to ensure that any necessary remedial work is performed correctly.

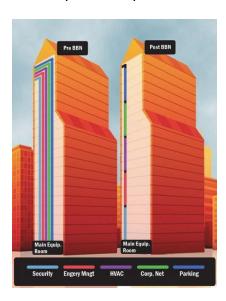
RycomTPM can remove cable at the Colliers Management's or Tenant's request if no contractor is available.

# ROYAL BANK PLAZA (RBP) - BASE BUILDING NETWORK (BBN) - VENDOR INSTALLATION GUIDE

#### Base Building Network (BBN) Description:

For years, property owners and managers have relied on their building system vendors to deliver their services which have included individual vendor backbone and network infrastructure installed in a building multiple time over. The end result is that Colliers Managements have continued to incur both capital and operating costs for each building system resulting in the duplication of systems. In recent years, technology has begun to play a more prominent role in building operations giving property owners and managers the ability to own and manage their own cabling and network infrastructure while minimizing reoccurring capital and operating costs. In addition, these Colliers Management owned networks can support many building vendor systems that are deploying IP based solutions and open system platforms. The ownership of a common backbone owned by the Colliers Management is the first step towards an integrated building or "SMART" building environment. The key benefits for implementing a BBN include the following:

- Control and ownership of the common communication system is transferred from building service vendors to the Colliers Management.
- Elimination of multiple vendor networks through the use of a common communication infrastructure (BBN) for all IP building systems.
- Smart vendor dispatch.
- Flexibility allows easier migration from one vendor solution to another.
- Faster commissioning and deployment of building services.
- Performance management and maintenance and energy optimization over the life of the asset.
- Modular architecture allows for easy scalability to accommodate service needs and budgets.



#### Section 1.0 - Vendor Installation & Port Activation Process:

When a vendor system requires a move, add, or change, the following process must be followed. This will ensure that consistency will be maintained regardless of the vendor or their equipment. This will allow the RBP BBN to maintain the telecommunications standards that were followed during the initial installation and ensure maximum longevity for the BBN infrastructure.

- When a vendor requires a new cable to be installed from one of the existing Consolidation Points (CPs) or Base Building Network (BBN) cabinets, the first step is to decide if the vendor will install their own cabling, perform the terminations at the device end, and perform the patching at the device end. Should a vendor not have the telecommunications expertise to complete this work to adhere to relevant codes and standards, RYCOM must be engaged to provide a quote for these activities (RYCOM main line (905)264-4800).
- Should a building vendor decide to complete the cabling, terminations (device end only), and patching (device end only) themselves or through the use of one of their telecommunications contractors, the building vendor must follow the installation instructions included below. The instructions to be followed depend on where the cable(s) would originate from. BBN Edge cabinets are located approximately every 5 floors and contain active network hardware. These Edge cabinets are intended to only serve vendor devices located on that same floor (See Section 2.0 below). Consolidation Points (CPs) are located on all other floors where active BBN Edge cabinets are not installed. Consolidation Points are also intended to serve as a connection point for the floor on which they are installed (See Section 3.0 below). All BBN cabinets and CPs are labeled, and a floorplan has been included below to show how the BBN cabinets and CPs are inter-connected and their locations throughout the property.
- While the vendor cabling is being installed, the vendor or their telecommunications contractor is required to contact the RYCOM Service team (1-800-653-5366 or by email at service@rycom.com) in order to activate the port(s) that are required. The RYCOM Service team will work with the vendor to ensure that the correct switch location, switch port(s), and VLAN are assigned to the vendor. Depending on the type of vendor device being installed, RYCOM Service will request additional information from the vendor to ensure that proper system documentation is recorded (MAC address, IP address, device description, etc) are recorded and to ensure that the required port functionality is available (ex. Power over Ethernet (PoE)). The RYCOM Service team will also collaborate with the RYCOM Field.

Services team to coordinate the termination and patching of the vendor cable(s) at the BBN Edge cabinet or Consolidation Point as required. The fees associated with RYCOM completing the cable terminations and patching would be payable to the Colliers Management (Oxford). Oxford/RYCOM will provide a quote to the building vendor/contractor for these services as required.

Once the installation and port activation(s) are complete, RYCOM will regularly monitor
the network port(s) to ensure that the BBN is functioning as expected. Network issues
such as switch/port outages will be resolved by RYCOM, or the building vendor will be
notified should the issue be present on the vendor device.

#### **Section 2.0 - BBN Edge Cabinet - Vendor Termination Process:**

BBN Edge Cabinets are enclosures that are placed throughout the property housing the Base Building Network Edge switches, UPS, cabling & smaller sized vendor devices. These cabinets are modified from a base cabinet to handle the additional equipment capacity, larger dust factors and air circulation that are common factors in a BBN Environment. For RBP the cabinets have been designed to handle up to a (192) cable capacity. The cabinet has been designed this way as it allows a single cabinet to service up to (5) floors.

• In order for a building vendor to gain access to a BBN cabinet location within one of the RBP Riser Rooms, the first step would be to request access to confirm the termination location and perform the physical cable installation. A RYCOM access ticket must first be obtained by contacting the Customer Care team at 1-877- 792-6687 or by email at customercare@rycom.com. RYCOM Customer Care will request vendor/contractor information including company name, technician names that require access, contact information, proof of insurance, scope of work, access requirements, date/time of installation, etc. Should the building vendor require access to the inside of the BBN cabinet.

To install conduit to the vendor device, this must be noted during the access request so that keys to the BBN cabinet(s) can be provided by RBP Security.

- Should the vendor request to complete the cabling work on their own, the materials used
  must match the same design criteria that the BBN was installed to. Only Category 6,
  FT6/CMP white UTP cable can be installed from a BBN cabinet to the vendor device
  location.
- For termination within the BBN cabinet, the vendor/contractor must contact RYCOM as mentioned in Section 1.0 above. New vendor free-air cabling must be left neatly coiled and labelled just outside the BBN cabinet or coiled neatly within the cabinet for cable runs installed within EMT conduit. Vendor cable installers must ensure that cabling is dressed with Velcro alongside the existing cabling where possible. Within the BBN cabinet, RYCOM will terminate all new cables with Panduit Netkey Category 6 blackjacks. All new cables MUST be terminated following the 568-A colour code. The fees associated with RYCOM completing the cable terminations and patching would be payable to Colliers Management (Oxford). Oxford/RYCOM will provide a quote to the building vendor/contractor for these services as required.
- Once the cable(s) have been terminated/tested at both ends, RYCOM will complete the
  patching within the BBN cabinet utilizing the port(s) provided by RYCOM Service (see port
  activation instructions in Section 1.0). RYCOM will use Panduit Category 6 blue patch cords
  (2' length) for all patching within BBN Edge cabinets. When working within the BBN

- cabinets, vendors must exercise extreme care to avoid damage to the fibre optic cabling, network devices, and other vendor cables installed within the cabinet.
- The final step will be to ensure that the device(s) are functioning properly. Once
  confirmed with the building vendor, RYCOM will seal all penetrations within the BBN Edge
  cabinet that were utilized as a pathway into the cabinet. This will help to minimize dust
  and debris from entering the cabinet. All waste will be removed from the cabinet and the
  cabinet will be locked and the keys returned to security upon completion.

#### Section 3.0 - Consolidation Point - Vendor Termination Process:

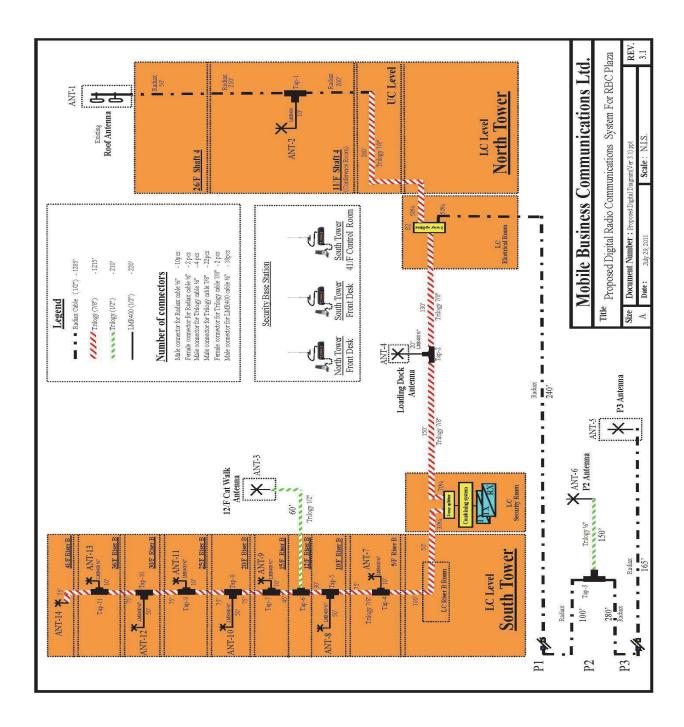
Consolidation Points (CP) make BBN connections readily available and accessible for vendor cable installations. The BBN for RBP allows for (1) BBN switch to provide coverage for up to (5) floors. To make BBN connections more easily accessible, a CP allows for vendor cables to be installed back to the riser room located on the same floor where the work is being performed. This minimizes the amount of Tenant disruption as cables no longer need to pass vertically between multiple riser rooms to reach an Edge switch. A consolidation point places (6) cables directly onto each floor. From there, vendor cabling only needs to be placed horizontally between the device and the consolidation point. This also minimizes the amount of vertical firestopping required during vendor cable installations as it is typically no longer required.

- For a building vendor to gain access to a BBN CP location within one of the RBP Riser Rooms, the first step would be to request access to confirm the termination location and perform the physical cable installation. A RYCOM access ticket must first be obtained by contacting the Customer Care team at 1-877-792-6687 or by email at customercare@rycom.com. RYCOM Customer Care will request vendor/contractor information including; company name, technician names that require access, contact information, proof of insurance, scope of work, access requirements, date/time of installation, etc. Should the building vendor require access to the inside of the BBN CP in order to install conduit to the vendor device, this must be noted during the access request so that keys to the BBN CP can be provided by RBP Security.
- Should the vendor request to complete the cabling work on their own, the materials
  used must match the same design criteria that the BBN was installed to. Only Category
  6, FT6/CMP white UTP cable can be installed from a BBN CP to the vendor device
  location.
- For termination within the BBN CP the vendor/contractor must contact RYCOM as mentioned in Section above. New vendor free-air cabling must be left neatly coiled and labeled just outside the BBN CP or left coiled neatly inside the BBN CP for cable runs installed within EMT conduit. Vendor cable installers must ensure that cabling is dressed with Velcro alongside the existing cabling where possible. Within the BBN CP, RYCOM will terminate all new vendor cables onto the front side of the existing CP GIGABix Impact Displacement Connectors (IDC) by utilizing a BIX connecting tool. Should additional CP cables be required at a location, RYCOM must be notified so that additional CP cabling can be added. All new cables MUST be terminated following the 568-A colour code. The fees

- associated with RYCOM completing the cable terminations and patching would be payable to the Colliers Management (Oxford). Oxford/RYCOM will provide a quote to the building vendor/contractor for these services as required.
- Once the cable(s) have been terminated/tested at both ends, RYCOM will complete the
  patching within the BBN CP and associated BBN Edge cabinet utilizing the port(s) provided
  by RYCOM Service (see port activation instructions in Section 1.0). As CPs originate from a
  BBN Edge Cabinet, the final patching and port activation would take place at the BBN Edge
  Cabinet. The location from which the CP originates has been provided within the as-built
  drawings included below. RYCOM will use Panduit Category 6 blue patch cords (2' length)
  for all patching within BBN Edge cabinets. When working within the BBN CPs, vendors must
  exercise extreme care to avoid damage to the CP components and other vendor cables
  installed within the CP.
- The final step will be to ensure that the device(s) are functioning properly. Once confirmed with the building vendor, RYCOM will seal all penetrations within the BBN CP that were utilized as a pathway into the enclosure. This will help to minimize dust and debris from entering into the enclosure. All waste will be removed from the enclosure and the enclosure will be locked and the keys returned to security upon completion.

#### TWO-WAY RADIO RISER PLAN

1. During renovation Tenant contractors are responsible for the protection of these mobile points are to remain in their current location. Any damages or loss of this equipment will be billed back to the Tenant with the 15% admin fee to reinstate. Please request this riser plan for use.





# BASE BUILDING HVAC CONSTRUCTION GUIDELINES



#### BASE BUILDING HVAC SPECIFICATIONS

South tower SHAFT 1, 2 & 6 North tower SHAFTS 3 & 4

#### **CONSTRUCTION - SCHEDULING**

For occupied floors, every reasonable means is to be taken to coordinate construction schedule/effort with the Tenant's operation and/or current construction schedule (if any).

Adjacent floors to HVAC construction

It is imperative that coordination of work is scheduled with both Tenants above and below the floor under construction.

Movement of furniture is the responsibility of the Tenant as long as access is coordinated with ample notice.

A schedule and walkthrough of the affected Tenant space, with the Tenant, is required prior to requested work.

Building security/services are to be coordinated prior to any work being undertaken.

#### **OPERATIONS - GENERAL**

#### Perimeter Loop

For occupied floors, the loop must be energized at the end of each night to control heating/cooling in Tenant space during the day.

Both the old pneumatic and new digital control system must be maintained (in parallel) and operational each day for control of Tenant space.

#### Perimeter & Interior

Individual controllers are to be set in "stand alone" mode until the system can be brought online. Shaft pneumatic controller to remain in place and operational until all VAV units have been updated to DDC control and are running in standalone mode. Once a shaft is complete, preliminary balancing should commence to minimize Tenant discomfort. Commissioning of controllers to the BAS front end should take place a.s.a.p. to avoid Tenant discomfort.

#### General HVAC function:

The system is comprised of fans, heating and cooling coils, filters and humidifiers. On each floor, air is delivered and extracted via vertical shafts located at the perimeter and core of both towers.

Heating is provided by steam coils located in the air stream of the air handling units.

Cooling is provided by chilled water coils also located in the air stream of the air handling units.

#### Old HVAC System:

The original equipment currently being replaced by the current HVAC capital project is comprised of two main components. The perimeter induction system and the interior constant volume air supply system.

*Perimeter Induction system* – is controlled via pneumatic controllers. The original design incorporates the induction units as a floor-mounted unit between the window mullions.

Interior Constant Volume System – The air supply to the interior portion of the floor is provided via a constant volume supply and exhaust fan located in the main air shafts. The constant velocity and is control through the damper on each supply shafts. The South Tower interior floor was divided into three main zones. The North Tower interior floor was divided into two main zones.

#### New HVAC System:

Upgrades include the following:

- Installation of variable frequency drives and advanced dampers that control the airflow to individual areas based on pressure and temperature.
- Installation of a fibre-optic backbone to support the newly installed Building Automation System (BAS).
- Installation of the BAS of which includes a centralized digitally controlled graphics-based system to monitor and schedule building HVAC operations.

#### Floor-by Floor design:

Perimeter induction system – The basic concept of the induction system is maintained. However, the induction units are removed from the floor and mounted in the ceiling space. These digital thermostatic controlled constant volume units will continuously wash the windows with cool air on warm days and vice versa, warm air on cool days. The secondary loop (chilled/heating) temperatures are based on an outside air reset schedule. The primary air in the winter ranges from 13C to 16C, summer 20C to 25C.

Interior zones - The interior portion of the floor will utilize variable air volume (VAV) boxes for the central portions of the floor. These boxes adjust the amount of air flow based upon the temperature requirements of the local area. The interior fans provide temperatures ranges from 13C to 18C, North and South Tower are set per floor .5" static but adjustable per floor.

#### Temperature Control Zones:

**South Tower**: There will be a minimum of 15 separate temperature zones on the exterior while the interior will have 14 temperature zones.

*North Tower:* There will be a minimum of 13 separate temperature zones on the exterior while the interior will have 12 temperature zones.

*Fresh Air:* The number of air turnovers per hour will be four with 22.5 cfm to each 150 square feet of useable office space.

With the implementation of the new HVAC design, the floor plate has been further subdivided from three original zones. This results in significantly smaller manageable zones that can accommodate personal needs, group dynamics and seasonal sun exposure to a portion of a floor.

HVAC Protection practices should comply with all applicable "Control Measures" outlined in SMACNA Appendix A of the Facility Maintenance and Renovations Policy.



# DESIGNATED SUBSTANCES (HAZARDOUS MATERIALS)



### DESIGNATED SUBSTANCES (HAZARDOUS MATERIALS)

With respect to resent Ministry of Labor regulation changes concerning Hazardous Materials the attached forms K forms must be filled out as follows:

- a) K form prior to construction commencement.
- b) KI form at the conclusion of your construction.

All contractors working within the property must be cognizant of the potential presence of Hazardous Materials and follow the proper protocol as prescribed by the Ministry of labor to ensure their removal or non-removal is dealt with accordingly.

With respect to re-sent Ministry of Labor regulation changes concerning Hazardous Materials, the attached form must be filled out as follows:

a) J. forms at the conclusion of your construction, and

All contractors working within the property must be cognizant of the potential presence of Hazardous Materials and follow the proper protocol as prescribed by the Ministry of labor to ensure their removal or non-removal is dealt with accordingly.



# **FEES SCHEDULE**

SERVICE TYPE	CONTRACTOR	FEES
Security	Paragon	\$45.00/hr - All Requests \$60.00/hr - Statutory Holidays
Access Cards	Colliers	\$25.00 – New Card \$30.00 – Lost Card
Smoke By-Pass	Colliers	\$100.00/occurrence
Sprinkler Drain Down	Colliers	\$250.00/occurrence
Fire Standpipe Drain Dow	n Colliers	\$450.00/occurrence
Maglock Testing - Zones E	By-Pass. Colliers	\$58.00/hr
		TBD on scope of work
Base Building Review.	Base Building Consultants	Range on Complexity Level
Cleaning	Hallmark Services	\$30.00-\$40.00/hr
After-Hours HVAC	Colliers	Based on Consumption
Administration	Colliers	15% per service

Note: Fees subjected to change without notice, please check periodically with Management.



- 1. Contractor Health and Safety Form
- 2. Colliers Work Permit (see attached in email)
- 3. Construction Lien Act (Create heading for this page. Link provided in email to be inserted on page. I will write the copy around it later.
- 4. Project Closeout Checklist (see attached in email)
- Hot Work Permit (see attached in email)
- K-K1 Contractor Acknowledgement Forms
- 7. Colliers Code of Conduct (see attached in email
- 8. AC Unit Identification Form (see attached in (email)
- Refundable Close-out Document Deposit Form (see attached in email)
- 10. Colliers Facility Maintenance & Renovation Policy (insert Excel files from email, creating heading consistent with other forms but no need to format the excel file)
  - A. Construction ESC Tracking Log (to be submitted in Excel format)
  - B. Construction IAQ Inspection Log (to be submitted in Excel format)
  - C. Construction Sustainable Purchasing Tracking Log (to be submitted in Excel format)
  - D. Construction Waste Tracking Log (to be submitted in Excel format)

# HEALTH AND SAFETY POLICIES AND PROCEDURES FORM - CONTRACTOR HEALTH AND SAFETY

#### **Purpose**

Where work is contracted to personnel not regularly employed by Colliers or any of its managed property locations; or where visitors may enter non-common areas of the business, it is important to ensure that all provisions for workplace health and safety are understood and complied with by these contract personnel and visitors.

The casual disregard of safety policies and safe work procedures by contract personnel or visitors could not only put Colliers at considerable risk in the case of an illness, accident, or injury, but may cause irreparable relationship damage, and significant credibility problems with regular employees.

The purpose of this section of the Manual is to formalize procedures to ensure that all contract personnel and visitors abide by the same safety standards established by Colliers for employees and maintained at all properties managed by the corporation. In doing so, we intend to ensure that previous performance in respect of safety of which we are aware is considered in the awarding of all contract work.

#### Colliers - Contractor Safety Requirements

- 1. Safety requirements will be clearly stated in tendering documents (where utilized) and will be discussed with prospective contractors. Compliance with all relevant legislation and Colliers corporate safety procedures is mandatory.
- 2. Where appropriate, contractors will have their own safety program in place, and it will be evaluated as part of the tender or other contract award process.
- 3. Contractors are responsible for the administration of their own safety program while working at any Colliers property, as well as maintaining their own W.S.I.B. coverage and clearance certificates, or other form of liability insurance: And will provide documented proof of same upon request. Contracted companies will promptly investigate any accidents or injuries to their workers, will prepare and maintain investigation reports and injury statistics, and will provide same to Oxford, upon request.
- 4. Contractors are responsible for ensuring the health and safety of their own workers and any sub-contractually arranged workers as well, while conducting work at any Colliers property location.

#### Contractor Selection

Colliers will maintain records of Contractors' safety performance and will document any unsatisfactory conduct and the reason for the note. Contracts shall not be re-awarded to those who display shoddy workmanship or lack of appreciation for workplace safety and health initiatives. Contractors should never be accepted if:

- Equipment and staff do not meet acceptable health and safety specifications.
- They have an unacceptable accident frequency as reported by WSIB/WCB

• Reference checks suggest either of the above

#### Monitoring

Contractor work will be monitored by the on-site Operations team to evaluate and ensure compliance with legislation and Colliers corporate safety standards. Results will be documented, and deficiencies immediately reported to the Contractor. Records will be filed for use in future contract considerations. Corrective action, up to and including termination of the contract will take place if unsafe work is observed and not corrected or continues despite prior notification and discussion.

The on-site Operations Manager or another Manager will stop the contract work if an unsafe condition is noted or persons may be exposed to an imminent hazard. Work will not resume until the situation identified has been corrected to the satisfaction of the Operations Manager, or other designated Manager.

Any Colliers employee, who observes a hazardous condition or an unsafe act by a contractor, will immediately report it to the Security Manager, or Operations Manager, to take appropriate corrective action.

#### Contractor Obligations and Operations Guide

Colliers operates in compliance with all provisions of the Occupational Health and Safety Act & applicable Provincial Safety Regulations and Statutes.

All Contract personnel conducting work or providing services for Colliers or any of its managed properties, are required to work in compliance with all provisions of Ontario Occupational Health and Safety legislation, and are to comply with, and ensure their employees and any other subcontractors or agents working on their behalf comply with, our Corporate Health and Safety Policy and written safe work procedures.

The following section is provided as part of our "briefing" for contractor personnel, which will include details of our Corporate H&S Policy and applicable safe work measures.

Contractors are responsible for their own safety program and for ensuring the safety and health of their own workers while working for Colliers or any of our managed properties. Contractors will promptly investigate any accidents or injuries involving their staff while working on our premises, and will prepare accident reports and injury statistics, and will provide same to us, upon request.

Where five (5) or more employees of any contract company are employed at any Colliers property location, a Health and Safety Representative shall be selected from amongst them to represent the contract workers' H&S interests on that project. The representative shall be introduced to our Operations Manager and Security Manager at the respective location.

Contract workers will be acquainted with all potential hazards in the work they are to conduct as well as those in our workplace, including exposure to toxic substances. All contract personnel will have received WHMIS training and provide proof of training upon request, where there is any likelihood of exposure to any potentially hazardous product.

The contractor will provide information, instruction, and supervision to their workers to protect their health and safety. Every reasonable precaution under the circumstances will be taken to ensure their safety while working at any Colliers property.

The contractor will ensure that appropriate protective equipment, materials, and devices for the protection of workers are provided, maintained in good condition, used by workers as prescribed by legislation and Colliers corporate safety policies and safe work procedures.

Contractors will immediately notify Security and/or the Operations Manager at that location, of any abnormal workplace conditions found during work being conducted and shall notify them immediately of any possible exposures to toxic or controlled products, or of chemical spills that may effect the environment, any person, or work being done.

Contract personnel shall properly label, store, and dispose of any potentially toxic or hazardous materials, off site in accordance with the applicable legislation.

Contractors shall obtain prior to commencing work, any necessary Municipal, Provincial or Federal approvals or permits, have them available at the site and provide them to Colliers representatives, upon request.

Colliers reserves the right to stop the work of any contractor or contracted employees where we deem the work to be unsafe, or contrary to our safe work procedures. In these instances, work will not resume until the situation has been corrected satisfactorily, and that of our employees, as appropriate.

This document is considered part of our continuous contractual working arrangement, understanding that Colliers reserves the right to terminate the contract at any time if acceptable health and safety standards are not maintained.

Signed by a Colliers representative, indicating that the provisions of the "Contractor Obligations Guide" were reviewed with the contractor.

Date:	
·	On behalf of Colliers
,	ne provisions of the "Contractor Obligations Guide" e complied with while conducting work on any
Date:	
	On behalf of Contractor

	Colliers
-	

Project: Floor(s): Building: Contractor:		Site Contac Forema Ce Ema	an ell:	
Project Manager: Cell: Email:		Tenant Contac Ce (Fappica	II:	
te Personnel & Subtrades: Contact:	(complete or attach separate list	t)	Cell:	Email
Tenant Design Criteria Ma	As Built Drawings  Tenant Approval	Rules and Regi	* (72 hr. advan odorous, or vibrated  Not Requiresextent of the condition plations for the Proper	cous or vibratory work)  ce notice required for noisy, atory work )  d  as within the Royal Bank Plaza ty. These I will adhere to in
Signature:			Date:	
	Print Name elli@colliers.com s A SIGNED COPY IS RETURNED TO THE	LANDLORD.		

### **CONSTRUCTION LIEN PROTECTION**

The Tenant is responsible for protecting the Landlord's property from the placement of liens under the Construction Lien Act by the General Contractor's sub-contractor(s) and/or supplier(s).

Colliers Management must be informed immediately any lien, claim or other action affecting title to the Land or Building or other Royal Bank Plaza property and will take immediate action to have the lien removed within five days. Colliers may also take action to remove the lien and the cost shall be assumed by the Tenant.

For more information on the Construction Lein Act follow the link: <a href="https://www.ontario.ca/laws/statute/90c30">https://www.ontario.ca/laws/statute/90c30</a>

# PROJECT CLOSEOUT CHECKLIST

CLOSE-OUT DOCUMENT CHE COMPLETE SUBMISSIONS ONLY - PARTIAL SUBMISSION		CCEPTED!	
Submission Format  Digital download link  In folders for each section  All documents to be saved as per checklist listed below to assist in expediting review process  THIS FORM MUST BE INCLUDED WITH CLOSE OUT SUBMISSION			General Contractor:  Tenant Contact:  Building Permit:  HVAC Permit:  Plumbing Permit:
	Minimum Required	Complete	Notes
PROPER SUBMISSION FORMAT - <u>See Above Description</u> As-Built Drawings:	Х		
- PDF - AutoCAD (DWG) - Sprinkler, Mechanical, Electrical, Architectural)	X		
Semeral Contractor Conditions   Project Schedule	X X X X X X		
urchitectural  - Architects/ Designers Certificate of Completion <u>with Building Permit number</u> referenced in the letter.  - Certificate of Substartial Completion  - Firishes Care and Maintenance specifications  - Hardware schedule complete with keying information  - Leed Documentation	X X		
Aechanical (HVAC and Plumbing)  Design Engineers Certificate of Completion with Building Permit number referenced in the letter  HVAC Cortrols Verification Certificate  Balance Report  Maintenance manuals and approved cut sheets  Warranties	X X		
Electrical  Design Engineers Certificate of Completion, with stamp and Building Permit number referenced in the letter. Electrical Safety Authority Certificate(s) Fire Alam Verification Certificate Maglock Permit (if applicable) Warranties Copy of Electrical Panel Circuit Cards	X X X X X		
prinklers  - Design Engineers Certificate of Completion with Building Permit number referenced in the letter - Engineers NFPA 14 letter & Contract Test & Materials Certificate on Stand Pipe Install or Relocations - with Building Permit number referenced Engineers NFPA 13 letter (Sprinkler head coverage) with Building Permit number referenced Approved design drawlings of other engineered systems (ie. Pre-action, FM, etc.) if applicable	x		



		HOT WO	RK PER	MIT		_	
	THIS PERM	IT IS ISSIIED SI	IIR IECT TO	THE OBSERVAT	ION		
		LES ON THE SE					
BUILDING:							
Project:				Suite Number:			
Tenant:							
Contact:				Phone #			
Project Start:				Project End:			
Contractor:							
Contact:			,	Superintendent:			
hone:			(	Other:			
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#### **GENERAL RULES FOR HOT WORK PERMIT**

#### WARNING

The use of welding equipment outside of the authorized area requires another permit.

#### **PRECAUTIONS**

Sprinklers are in service Cutting and welding equipment is in good repair

#### Precautions within 35 ft (10 m) of work

Floors swept clean of combustibles

Combustible floors wet down, covered with damp sand or fire resistive sheets

Flammable liquids removed, other combustibles protected with fire resistive tarpaulins or metal shields

All wall and floor openings covered

Fire resistive tarpaulins suspended beneath work

#### Work on walls or ceilings

Construction is non-combustible and without combustible covering or insulation Combustibles moved away from other side of wall

#### Work on enclosed equipment

Enclosed equipment cleaned of all combustibles Containers purged of flammable liquids

#### Fire Watch

Fire watcher must stay on the job thirty minutes after job is finished Check work area in 30 minute intervals for at lest the next 2-4 hours Fire watch is supplied with extinguishers, small hose Fire watch is trained in the use of this equipment and in sounding alarm

Issuance of this Hot Work Permit or any other directions from the Landlord does not relieve the contractor of their responsibilities for acquiring any necessary permits prior to commencing work.

The Landlord understands that all trades have contracted with the captioned Tenant for work to be done or materials to be furnished to the captioned premises. Please be advised, as agent for the Landlord of such premises, we hereby give notice that the Landlord will not be responsible for doing of the work or furnishing of materials and, accordingly, any builders lien filed against the Landlord's interest in the premises shall be ineffective. All Contractors are advised to govern themselves accordingly.

July-22

#### K-KI CONTRACTOR ACKNOWLEDGEMENT FORM

Working with asbestos can be dangerous. Inhaling asbestos fibres can cause various types of lung disease including cancer. Smoking increases the risk of lung cancer from asbestos exposure.

Colliers Properties Group has identified the presence of various friable and non-friable asbestos materials in the Building (both Tenant and Colliers Management space). An asbestos inventory report showing the locations and amounts of these materials is available for viewing from Property Management.

R.R.O. 2005, Reg. 278, "Designated Substance - Asbestos on Construction Projects and in Buildings and Repair Operations", applies to all maintenance and renovation work that may disturb asbestos containing/ hazardous materials. Contractors who have received training in asbestos-related precautions may only undertake the disturbance of asbestos building materials. Any activities that may disturb friable asbestos materials (i.e. Type 2 or Type 3 work), then Property Management must be notified. These activities are but not limited to:

- Removal of Drywall Compound Joint Material;
- Removal of repair of Asbestos Mechanical Insulation (various locations);
- Removal of Asbestos Ceiling Tiles;
- Removal of Vinyl Sheet Flooring; Removal of Vinyl Floor Tile;
- Any other operation, which may generate airborne asbestos.

There are also non-friable asbestos materials in the buildings, including vinyl composition floor tiles, transite sheeting, paper insulation, gaskets, and packings, etc.

As a condition of our contract to provide services and materials to the Building, we will not disturb asbestos- containing / hazardous materials without prior notification to Property Management. This firm and its workers will follow all procedures specified by Colliers Properties Group and/or R.R.O. 2005, Reg. 278. All asbestos waste will be packaged and disposed of in accordance with Ministry of the Environment Requirements.

COMPANY NAME		
SIGNATURE	DATE	
PRINT NAME		
PRINT TITLE		
WORK RECORD#	PO#	
WORK LOCATION	CONTRACT#	

# FORM KI - CONTRACTOR ACKNOWLEDGEMENT FORM

# CONTRACTOR ACM I HAZ MAT ACKNOWLEDGEMENT FORM

Tenant Name:		Suite/ CRU#	
Suite/ CRU. Please certify be installed or added to the Suite	elow that no te/ CRU during	nt to renovate and provide cons asbestos-containing/ hazardou g construction, and that all know e/ CRU are in good condition.	ıs materials have been
in the above-named	l Tenant Space	s-containing / hazardous materiale during construction activities anaterials are in good condition.	
		nown asbestos-containing/ haz whether it was removed or reta	
training in the handling of	ACMs   hazard	i11i11g ⊢hazardous materials lous materials as required by 0 bmit proof of training upon req	Ontario Regulation
HAZARDOUS MATERIALS	S REMOVAL	CONTRACTOR:	
MATERIALS REMOVED		MATERIALS REMAINING	
Material Type (Drywall, Vinyl Tile, etc.)	Sq. Ft.	Material Type (Drywall, Vinyl Tile, etc.)	Sq. Ft.

On attached drawing, show I) where asbestos-containing,	hazardous materials were
removed and 2) where they remain.	

COMPANY NAME		
G/C REP SIGNATURE	DATE	
PRINT NAME		
WORK RECORD#	PO#	
WORK LOCATION	CONTRACT#	

AIR QUALITY CERTIFICATE to be completed by Pinchin Environmental Ltd.	



#### Contractor Code of Conduct

At Colliers the Customer Experience is one of our highest priorities. We focus on hiring and working with the best people for every job, who live and breathe the culture and brand of the organization, are honest and considerate, and demonstrate an unrivaled focus on customer satisfaction:

Like our own staff, you and/or your organization represent our brand and we ask that you and all of your staff working in or on a Colliers Property share a code of conduct in line with our service promise.

#### Customer Care:

- Show respect and be courteous towards tenants, clients, and co-workers.
   Smile at everyone. Greet everyone. Be friendly, honest, and considerate.
- · Be proud of what you do and where you work. Refrain from using foul language or criticizing customers/properties.
- · If you need to enter an occupied space, please alert the occupants.
- Be conscious of the noise level you create while performing your work, especially when our customers are on the phone.
   Customers may have questions and concerns. If they engage with you, please respond to any request you may receive.
   If you have questions or concerns about the request, please discuss with Property Management.

Maximize elevator access for our customers. Use the service elevator whenever possible.

#### Property Care. Please take pride in our properties:

Do not use tenant/client facilities and property (including telephones, copiers, radios, coffee makers, kitchens, computers, office equipment, etc.).

- Workspaces should be neat and clean after your work is completed. If you need assistance, please contact Property Management.
- · Maintain all customer property without disturbing papers on desks, open drawers, and cabinets.
- · Remove all debris from the work site daily (lunches, cups, cans, renovation/repair debris, etc).

#### Safety and Security:

- · Follow building procedures by signing in and out with Security or Management Office.
- · Perform your work in a safe and efficient manner and wear personal protective equipment when required.
- Use tools and equipment in a safe manner. Ensure all tools and equipment are removed from the
  premises nightly or stored appropriately.

Where potential hazards exist, block off all work areas for the safety of all customers.

Close and lock (when previously locked) the door behind you when entering and leaving a tenant area.

Maintain property security. Do not assist any person in gaining access to the building or any other area within the premises.

Report building deficiencies to Property Management immediately.

- · Report suspicious persons/behavior to Security immediately.
- . Ensure you are not under the influence or alcohol or drugs while on the job.

# AC UNIT IDENTIFICATION FORM

AREA SERVED:

POWER SUPPLY -

	ROY	AC UNIT IDENTIFICATION
TENANT NAME:	(Please Print)	SUITE NO. :
CONTRACTOR:	(Olympia)	
	(Please Print)	
TENANT	(Please Print)  SUPPLEMENTAL AC UI	NIT INFORMATION
TENANT QUANTITY:		NIT INFORMATION
		NIT INFORMATION
QUANTITY:		VIT INFORMATION

PANEL NAME:

BREAKER NUMBERS:

# REFUNDABLE CLOSE-OUT DOCUMENT DEPOSIT FORM



Royal Bank Plaza 200 Bay Street, South Tower, Suite 1305

	Toronto, Ontario M5J 2J1
Re	efundable Close-Out Document Deposit Form
TENANT INFORMATION	<u>D</u> at e
Company	Building No.
Company Contact Name	Suite No.
Company Contact Title	E-mail
Authorization (signature)	Telephone No.
to properly docu THIS RE	riteria Manual, the following form must be submitted to the Construction Manager/Property Management Office. This is ument the refundable deposit. Please also keep a copy of this form for your record.
CONSTRUCTION SCOPE	CONSTRUCTION VALUE
Project Name	Project Start Date
Site Address	Suite
Description	
·	
PLEASE MA	AKE CHEQUE PAYABLE TO: OPGIManagement LP o/a Oxford ITF Royal Bank Plaza
Deposit Check Submitted By	(Comp any Name)
Name	(signature) Date
	(agricus e)

# COLLIERS FACILITY MAINTENANCE & RENOVATION POLICY

# **Construction ESC Tracking Log** (to be submitted in Excel format)

	Ero	sion and S	edimentat	tion Contro	I (ESC) CI	hecklist			
SSc: Site Manage					,				
Building Name:	CITICITE				Prepare	ad Dv			
Description:					Fiehai	ви Бу.			
Complete the following ch	ecklist weekly du	ring construction to	ensure that Fros	ion Control and Se	dimentation strate	raies were properly	v executed during	construction proje	cts where site
disturbance is anticipated						gico iicio piopon	, excoured during	oonou a onon proje	oto illioro otto
Instructions:	,	p							
1. Enter the date when the	ESC strategies we	ere inspected or exe	ecuted.						
2. Enter a "Y" if the measu		ed.							
3. Enter a "NA" if measure		A1501 10 7010	51.00 01.100						
<ol><li>Provide to Oxford's Con-</li></ol>	struction Manager	at the end of the pr	oject as part of the	close-out documen	t package.				
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ESC Checklist:									
		Stabilization Mea	sures:		St	ructural Control N	loasuras.		
INSPECTION DATE	Temporary						icusuics.		
		Permanent		Preservation of			Sediment traps	Sediment	Storm drain inlet
	Seeding	Permanent seeding	Mulching	natural	Earth dikes	Silt fencing		Sediment basins	Storm drain inlet protection
Fx .lul 6 2019	Seeding	seeding		natural vegetation		Silt fencing	Sediment traps	basins	protection
Ex. Jul 6, 2019			Mulching NA	natural	Earth dikes				
Ex. Jul 6, 2019	Seeding	seeding		natural vegetation		Silt fencing	Sediment traps	basins	protection
Ex. Jul 6, 2019	Seeding	seeding		natural vegetation		Silt fencing	Sediment traps	basins	protection
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Ex. Jul 6, 2019	Seeding	seeding		natural vegetation		Silt fencing	Sediment traps	basins	protection
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Ex. Jul 6, 2019	Seeding	seeding		natural vegetation		Silt fencing	Sediment traps	basins	protection
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Ex. Jul 6, 2019	Seeding	seeding		natural vegetation		Silt fencing	Sediment traps	basins	protection

ESC Checklist:									
INSPECTION DATE		Stabilization Me	asures:			Stru	ctural Control Meas		
	Temporary Seeding	Permanent seeding	Mulching	Preservation of natural vegetation	Earth dikes	Silt fencing	Sediment traps	Sediment basins	Storm drain inl protection
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# Construction IAQ Inspection Log (to be submitted in Excel format)

#### IAQ Inspection Checklist

Facility Maintenance and Renovations - IAQ Management During Construction

Building Name: Prepared By: Date of Inspection:

- Prepared By: Date of Inspection:

  <u>Description:</u>
  Complete the following checklist to demonstrate that SMACNA IAQ control measures have been met throughout construction. Photos are to be provided as supporting documentation.

  <u>Instructions:</u>
  1. Conduct weekly IAQ inspections during construction using the checklist below (or equivalent),.
  2. Provisions must be made to correct any deficiencies noted (e.g. moisture in HVAC systems, water damaged walls, construction debris in ceiling spaces, materials stored near air intakes, etc.).
  3. A minimum of six photographs shall be taken on three different occasions during construction to prove sustained compliance with this Policy. These photos are additional to any taken to document and remedy deficiencies. Each photographs shall be taken on those different occasions during construction to prove sustained compliance with this Policy. These photos are additional to any taken to document and remedy deficiencies. Each photograph is able to date and a description of the control measure depicted.
  4. Provide to Oxford's Construction Manager at the end of the project as part of the close-out document package.

	Observed Activities by Contractors and Trades	Yes	No	N/A	General Observations	Deficiencies Noted (if applicable)	Corrective Measures Taken	Photo Provided?
A	HVAC Protection							
1	Supply air intakes protected							
2	Filters in air intake during testing and balancing							
3	Exhaust/Return air system, system sealed							
4	Filters (MERV8), in return air system							
5	Return air ducts cleaned							
6	Other:							
В	Source Control							
1	Prefabricated insulated duct work protected against moisture during delivery							
2	Ductwork stored in clean and dry environment							
3	Motor vehicles limited in vicinity of air intake manifolds							
4	Ventilation with 100% outside air during installation of VOC emitting material							
5	Wet product containers closed							
6	Other:							
С	Pathway Interruption							
1	Dust curtains or temporary enclosures used		0					
2	Pressure differentials used							
3	Other:							
D	Housekeeping							
1	Dust collection suppression							
2	Coils, air filters, fans and ductwork kept clean							
3	Water accumulation checked							
4	Other:							
E	Scheduling							
1	Soft/porous, FF&E items after flushing							
2	New MERV 13 filters installed following flushing							
3	Other:							

# Construction Sustainable Purchasing Tracking Log (to be submitted in Excel format)

						Suetaina	ble Purci	nacae T	rackina	Log								
	Sustainable Purchases Tracking Log Facility Maintenance and Renovations - Construction Materials Purchases																	
Description: Complete the following sustainable p	purchasing log to determine the pe	mentage of sustainable i	products and ma	terials ox	nchased during anyt	acility renovatio	n or large maint	enance activit	x Instructions:									
Track the cost of all material purchase     Qualifying alterations must include or	sed for facility alterations and additions	that meet one of the liste	d sustainability ori	teria.							a duration of const	nution Ounlinia	a additions are th	on a that in second	the total helidin	us floor mon burst	Louis S.Y. Makeria	ale the huilding
elements include building components:	and structures (wall studs, insulation,	doors, windows); panels;	attached finishing											ose marina ease	the tota bollon	g iou aleabyat	PERSON NUMBERS	is or building
Excluded materials include: Land de     Record the product, manufacturer, or	ost, and quantity.			20														
<ol> <li>Record which of the listed sustainable</li> <li>Provide to Oxford's Construction Ma</li> </ol>				pliance u	ith the specific criteria													
Building Name: Prepared By:				T-4-	I Cost of Material	- Gardentian b												
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# Construction Waste Tracking Log (to be submitted in Excel format)

#### Construction Waste Management Calculator

Description:	and Renovations - correflect the ½of construction Yi	onstruction waste	ed from the laidfill. W3ybills :	a-eto be provided as supportin,;i do	oJmB71:C:tion.	
Tracking 1Tt1. Jstbe presented     Track durable goods sep.3rale     Excluded materials include: La     Enter/Otal recycled andfflaste     Enter !tie diversion rate for each	consistently by either l'Ileight or v. bly, such as1umiture, ft: <tures. elec<br="">und clearing debris and mechanical rale:sforeach material type. n material ty"pe. For comingled mat</tures.>	off Jme. Voff Jm maybe converted toweight usit tronic equipment and fluore; cent lamps i, electrical and plumbing componerd:s. lerial;;; the project must use tile recyclingf.3cility	ng conversion facto listed belo	)/11. rs. nori-comingled materi.31s I(J)ill h.3	e a di'ifersiori rate of 100%.	The diersiori rate must
riot e:ceed 100%. Ei. \Nasti: t:: all material sertto la 7. Provide to 0>1ord-; Cori-;tructior <b>Building Name:</b> Prepored by:	aridil. riot recycled or reused. ri M.ilri.ilger at the erid of the project	as p.lirt of the clo.:e- 01Jt doc1Jm' <ritpd<age.< td=""><td>Tracking Metri Tracking Units:</td><td>ic:</td><td></td><td></td></ritpd<age.<>	Tracking Metri Tracking Units:	ic:		
Ex: 8'1't'.2016	Waybill Reference 18078	Dlwrtad,611  Dcywa/1	Diversion Method Recycled	Waste Mar1age!flent	Total DI\H.:I 0.66	TdalHaJl.a 0.7"
Ex. 8'16-'.2016	,,,	Wcoo	,	HaMat-t:x-Hum ity	0.2	0.2
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