Toronto Metropolitan University

FACILITIES MANAGEMENT & DEVELOPMENT

CONTRACTOR MANUAL

Health & Safety, Conduct and Procedural Requirements

Our Commitment to Health and Safety

Toronto Metropolitan University (TMU) is committed to the prevention of illness and injury through the provision and maintenance of healthy and safe conditions on our premises. The university endeavours to provide a hazard-free environment and minimize risks by adherence to all relevant legislation and, where appropriate, through development and implementation of additional internal standards, programs and procedures.

Toronto Metropolitan University requires that health and safety be the primary objective in every area of operation and that all persons utilizing the university premises comply with procedures, regulations and standards relating to health and safety.

While working at Toronto Metropolitan University, the Contractor must adhere to the university policies and various procedures to avoid the interruption of normal operations. For a successful project implementation, the Contractor and their Subcontractors are required to familiarize themselves with this Contractor Manual.

It is the intent of this endeavor to minimize and prevent workplace risks, accidents and injuries that will have an adverse effect on the environment, operations and reputation of the university.

This manual will provide a common reference document that the Contractor, their Subcontractors and TMU can mutually agree to adhere to with respect to relevant health and safety practices, university internal practices and procedures.

The Contractor Manual is not intended to replace construction safety laws, regulations, codes, standards, or current legislation pertaining to the work and the work site.

It is the Contractor’s responsibilities to adequately follow and adhere to the following:

- Construction and work site safety such as; workers’ protection, equipment standards, material handling, and identification of hazardous substances
- Compliance with relevant and current legislation pertaining to workplace safety
- Committing to enforce the Contractor’s safety planning, training, management and control
- Personal conduct of workers on site and on campus
- Site specific safety and coordination issues
- Emergency procedures
- Security issues

It is the Contractor’s responsibility to ensure all site staff, including subcontractors, are provided with this manual. The Contractor must ensure relevant legislation, information, references, and permits are maintained and readily accessible on the job site at all times.

Toronto Metropolitan University reserves the right to amend, add or delete the information contained herein at any time and the Contractor is obliged to abide by such changes upon notification thereof.

Toronto Metropolitan University
Facilities Management & Development
285 Victoria Street, VIC-800
Toronto, Ontario M5B 1W1
Tel: 416-979-5091
http://www.torontomu.ca/facilities-management-development

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Version Control

Version	Author	Date	Description
1	T. Vieira	June 19, 2018	Revision to FORM 8 - Building System Shutdown Request
2	T. Vieira	July 3,2018	Addition of self-rescue harnesses requirement under section Equipment and Materials
3	T. Vieira	July 30, 2018	Addition of Insurance and Contract Security (Bonding) sections
4	M. Contreras	Aug. 1, 2018	Corrections overall
5	M.Meleca	Dec. 6, 2019	Payment Requirements Update (Prompt Payment)
6	M.Meleca	Jan. 14, 2020	Updates to forms, minor edits
7	C. Wong	Jan. 15, 2021	Changes to Fair Wage Policy and Insurance Requirements
8	C. Zoll	May 20, 2022	Change to TMU branding, updates to current map and Security information

1.0 GENERAL INFORMATION

1.1 Roles and Responsibilities

The Facilities Management & Development (FMD) Project Management Office (PMO) is responsible for the implementation of the construction projects within time and budget constraints across the Toronto Metropolitan University campus. The function includes prequalification of contractors, coordination between users, consultants and contractors, and removal of non-performing contractors from prequalified list as required. The PMO assigns a Project Manager to each construction project and they will be the Contractor's main point of contact for the duration of the work.

The Project Manager's portfolio includes but is not limited to; construction site health and safety, asbestos and designated substances management, coordination of systems shut down and construction schedule between the Contractor and the related departments in the university.

The Contractor / Constructor will have total control of the work and will effectively direct and supervise the work so as to ensure conformity with the Contract Documents. The Contractor will be solely responsible for the construction means, methods, techniques, sequences, and procedures with respect to the work and for coordinating the various parts of the work. The Contractor will keep the Project Manager informed of the progress of the work.

Any work that is done without the direction, consent and approval of the Project Manager will be taken at the risk of the Contractor. The Project Manager, without invalidating any current contracts, may make changes in the work, consisting of additions, deletions, or other revisions to the work via proper change configuration procedures. The Contractor will only accept communication from the Project Manager. Any change in the work that is done without the approval of the Project Manager is done so at the risk of the Contractor.

The health, safety and well-being of our students, faculty and staff are a matter of importance that cannot be compromised. In an effort to minimize and prevent workplace risks and accidents Toronto Metropolitan University requires that all Contractors to be well informed, trained and proactive when it comes to safety.

1.2 Emergency Procedures

TMU Security is located at 285 Victoria Street on the ground floor. For an overview of procedures and what to do in case of an event, please visit the TMU page on processes for Emergencies & Reporting.

In case of emergency, call 911. Contact TMU Security at 416-979-5040 or ext. 555040 from any internal phone and the Project Manager.

“Code Blue” poles and wall-mounted emergency stations can be found on campus grounds — pressing the red “EMERGENCY” button will put you in direct contact with TMU Security. Blue Emergency Pull Stations are located throughout campus buildings to summon TMU Security to your location. All common spaces (classrooms, labs, meeting rooms, lounges) have yellow emergency signage that have the room number, building name and address to help emergency services and TMU Security get to your location quickly.

Prior to project start-up the Contractor will ensure that all project personnel and those entering the site have been familiarized with emergency evacuation routes, procedures, all points of entry, exit routes, location of fire extinguishers, location of emergency pull stations, and telephones. The Contractor will post and update Emergency Evacuation Plan and Route(s) as required throughout the project.

During an emergency evacuation:

- Shut power off (where appropriate)
- Close all windows
- Leave area immediately
- Exit building via designated routes indicated on Emergency Evacuation Plan and Route(s)
- Do not use elevators
- Go to designated location outside of building
- Identify and account for all personnel. If a staff member is not accounted for immediately inform TMU Security

1.3 Emergency and Non-Emergency Contact Information

- **Emergency (Police, Fire Ambulance) — Call 911**
- **TMU Security**
  416-979-5040 or ext. 555040 from any internal phone
- **Facilities Management & Development**
  Facilities Help Desk: 416-979-5091 or ext. 555091 from any internal phone
- **Environmental Health & Safety (EHS)**
  416-979-5000, ext. 553770
- **Toronto Police Service**
  416-802-2222
- **Ontario Poison Centre**
  416-813-5900
- **Ontario Spills Action Centre (24 hour)**
  416-325-3000
  Toll-free: 1-800-268-6060

1.4 Hours of Operation

Normal hours of operation are from 8 a.m. to 5:00 p.m. Monday to Friday.

Research and academic activity may continue to 10 p.m. in many buildings throughout the year. Unless noted otherwise, in writing by Facilities Management & Development, all noisy or disruptive work (see section 3.16) and all work in public corridors, means of egress, exits, and occupied areas outside of the identified construction site must be **performed after hours from 10:30 p.m. to 7 a.m.**

1.5 Construction Site Health and Safety and Incidents

The university requires contractors, subcontractors and their agents to exercise due diligence in occupational health and safety. The Contractor is responsible to ensure strict compliance with the Ontario Occupational Health and Safety Act and any other applicable health and safety regulations. The Contractor will take all necessary precautions to safeguard workers and the public from injury and accident, while preserving the integrity of all private and public property.

The Contractor will take all necessary steps to protect personnel (workers, visitors, students, general public, etc.) and property from any harm during the course of the contract.

The Contractor will ensure that only competent personnel are permitted to work on site. Toronto Metropolitan University will also determine at the site introduction and throughout the term of the contract who is competent and will cause to remove from the site any persons not observing or complying with the safety requirements.

All work will be performed in accordance with, but not limited to, the Ontario Occupational Health and Safety Act and Regulations for Construction Projects. Contractors will take full responsibility for all risk management of the work.

All occupational health and safety construction incidents must be reported to TMU Security immediately. A written report must be filed within 24 hours with the Facilities Management & Development project manager, Facilities Management & Development's executive director of campus development and TMU Security.

Failure to comply with the Occupational Health and Safety regulations or to report any construction incidents may lead to immediate job site shut down. The Contractor will be required to indemnify Toronto Metropolitan University, its agents and individuals of all associated costs resulting from failure to comply with the stated provisions of the occupational health and safety standards and the university's contractor policy and procedures.

The Contractor will ensure that only competent personnel are permitted to work on site. Toronto Metropolitan University will also determine at the site introduction and throughout the term of the

contract who is competent and will cause to remove from the site any persons not observing or complying with the safety requirements. The Contractor will provide competent personnel to implement their safety program and ensure that Toronto Metropolitan University standards and those of the Ontario Health and Safety Act are being complied with.

The Facilities Management & Development and/or the Health and Safety officer will monitor regularly to ensure that the safety requirements are met and that safety records are properly kept and maintained. Continued disregard for safety standards can cause the contract to be cancelled and the contractor or subcontractors removed from the site.

The Contractor will comply with all federal, provincial and municipal safety codes and the Occupational Health and Safety Act. The Contractor will ensure that every “controlled product” used at the work site will meet the labelling requirements and have an updated corresponding material safety data sheet as per the Workplace Hazardous Materials Information System (WHMIS) legislation.

Contractors will ensure:

- The measures and procedures prescribed in the Occupational Health and Safety Act and the Regulations are carried out on the Project.
- Every employer and every worker performing work on the Project complies with the Act and the Regulations.
- The health and safety of workers on the project is protected.
- All sub-Contractors hired by him/her comply with the terms of this document and all Toronto Metropolitan University policies, including the requirements for liability insurance, workplace safety and insurance coverage and all requirements under the Occupational Health and Safety Act and related regulations.

Relevant legislation includes but is not limited to:

- Occupational Health and Safety Act – Revised Statutes of Ontario, 1990 and applicable Regulations
- Workplace Safety and Insurance Act, 1997. Statues of Ontario, 1997 and Chapter 539 and Regulations 1101 (First Aid Requirements) and 1102 (General).
- Ontario Building Code Act and applicable Regulations.
- Environmental Protection Act, Revised Status of Ontario, 1990 and associated Regulations.
- Transportation of Dangerous Goods Act, 1981, Statues of Ontario 1981 and Chapter 69 and associated Regulations.

1.6 Work Well Program

The university has commissioned an independent Occupational Health and Safety consultant as the Health and Safety Officer for construction projects. The Health and Safety Officer will visit construction sites periodically and report back to the Project Manager on all health and safety infractions, incidents, near misses and risks. A copy of the reports will be available to the Contractor by the Project Manager. These reports will be part of the prequalification evaluation for prospective proponents in all future requests for proposal and qualifications.

On behalf of Toronto Metropolitan University, the Health and Safety Officer has the authority to shut down any work site if they consider that immediate action is needed to divert any incident.

1.7 Harassment and Conduct Policies

Toronto Metropolitan University is committed to fostering a collegial study and work milieu that is free of discrimination and harassment and one in which all individuals are treated with respect and dignity. Every member of the Toronto Metropolitan University Community has a right to equal treatment with respect.

The university requires that all contractors who undertake projects on campus conduct themselves consistent with the university's policy and procedures, which prohibit harassment on any grounds currently covered by the Ontario Human Rights Code, Bill 168, and in accordance with TMU's Discrimination and Harassment Prevention Policy. The policy is available online at torontomu.ca/policies/policy-list/dhp-policy.

All construction personnel associated with university projects must ensure the following conduct is adhered to at all times while on campus:

- Appropriate Clothing: Construction personnel are required to wear appropriate work wear, hard hats and safety footwear on the project site. Articles of clothing will be neat and tidy in appearance, and will not display offensive language, symbols or graphics. Shirts and long pants should be worn at all times. For individual protection, do not wear; loose clothing or cuffs, greasy or oily clothing, gloves and/or boots, torn or ragged clothing or any encumbrances.
- Personal Protective Equipment (PPE) be worn at all times within the vicinity of a construction site. PPE will meet the requirements of the CSA or ANSI as outlined in Construction Regulations (O.Reg. 213/91).
- Smoking is not allowed on the project site or in any of the university buildings. Construction personnel will comply with all municipal, provincial and federal laws, including the Smoke-Free Ontario Act.
- Alcohol and/or cannabis consumption is prohibited on all project sites, including staging and delivery areas, in parking lots and on the campus grounds.
- Appropriate Use of Language: When working on campus, all contractors should act in a socially responsible manner and will be respectful and sensitive to all members of the

university community at all times. The use of profane, harassing or threatening behaviour (including language and gestures) is unacceptable, regardless of the actions of others. Respect, sensitivity and restraint should be shown at all times. In the event of an altercation, the Contractor will report the matter to the Project Manager immediately, TMU Security maybe requested to intervene.

Failure to abide by any of these requirements will result in a warning letter and /or immediate dismissal from the project site and campus.

1.8 Parking

It is the Contractor's responsibility to ensure provisions are made for parking company vehicles. Parking is not permitted within the campus grounds. To ensure that pedestrians walking on campus are able do so safely, under no circumstances will any vehicles impede or block access to roadways, pedestrian pathways, fire routes, loading facilities, entrances, disposal bins, etc.

For the purpose of loading and unloading, TMU Security will issue a 2-hour temporary parking pass upon the approval of the Project Manager. All temporary parking requests must be made to the Project Manager.

Unauthorized parked vehicles will be tagged and/or towed at the vehicle owner's expense. Toronto Metropolitan University will not be responsible for any damage or theft occurring to any vehicles.

1.9 Fair Wages Policy

The university does not require the Contractor and each subcontractor involved in the work to be governed by the Fair Wages Policy of the City of Toronto, which prohibits the university from doing business with contractors, sub-contractors and suppliers who discriminate against their workers.

The specific requirements of each project regarding the implementation of the policy are stipulated on a per project basis, as per RFP, PFQ, by the PM, etc.

1.10 Required Contractors

Due to the complexity of various systems on the TMU campus, and to provide a consistent standard of care and quality of work, specific or per-qualified service providers and suppliers for certain building systems need to be engaged when undertaking any project, including but not limited to Building Automation System (BAS), Fire and Life Safety system, security and door hardware devices. Please confirm with the Project Manager before proceeding with any subcontractors.

1.11 Violations

In an effort to educate, promote, and ensure that proper construction policies, procedures, and guidelines are followed throughout the project lifecycle, the university performs periodic site visits to review general health and safety and construction practices. Inappropriate behaviour, poor construction practices, unsafe workplace health and safety practices, etc. are not tolerated whatsoever. The Contractor's project team is encouraged to engage the university in discussions that would help promote the safe execution of their project while concurrently abiding by all applicable guidelines, policies, and this Contractor Manual.

The Contractor is responsible for the actions of the construction team including, but not limited to, subcontractors, tradespeople and delivery personnel. Any person found to be performing an unsafe act, exhibiting a blatant disregard for existing work, disrespect towards any Toronto Metropolitan University student, staff or community member or any other inappropriate conduct will be promptly removed from the campus and not permitted to return.

Each offence will be recorded and documented by Toronto Metropolitan University. Incidents will remain recorded for 18 months. Any costs associated with offences will be billed back to the Contractor. Continued neglect for the stated construction guidelines and expectations will result in suspension or removal from Toronto Metropolitan University's vendor of record (VOR) list. Toronto Metropolitan University has a zero tolerance policy to any Provincial and/or Federal Code Regulation violations.

1.12 University Campus Map

The most up-to-date Toronto Metropolitan University campus map that includes the list of building codes and addresses, may be downloaded as a PDF from the Facilities Management and Development website: torontomu.ca/content/dam/facilities-management-development/facilities-services/docs/contractor_map.pdf.

The map shows the location of the TMU Security kiosk for key pick-ups and returns and nearby parking options.

2.0 PRE-CONSTRUCTION AND PLANNING

2.1 Pre-Construction Meeting and Documentation

For all projects, unless noted otherwise by the Project Manager, the Contractor will hold a pre-construction (kick-off) meeting in which the space will be formally turned over to the contractor for construction and an existing premises condition report will be generated. The report may be in the Contractor's proprietary format or APPENDIX A - PREMISIS CONDITION REPORT can be used. The attendees will include, but are not limited Maintenance & Operations

staff, the Project Manager, independent Occupational Health and Safety consultant - Health and Safety Officer, project consultants and the Contractor's project team. The goal of this meeting is to introduce the key players involved, outline schedules and timing of the project, and address any concerns any team members may have.

Depending on how far in advance this meeting is scheduled from construction start, a second administrative meeting may be held approximately (2) weeks in advance of construction start. This meeting will ensure all preparations are on track to begin construction as scheduled and answer any outstanding questions.

Documentation:

The following documents/information must be submitted to the Project Manager, and is required before any proposed work can proceed:

- General Contractors must provide a copy of their Health & Safety Policies, and a letter which indicates that their policy will blanket all subcontractors
- All relevant university permit forms must be completed to the best of the Contractor's ability.
- Comprehensive contact information sheet showing all of the Contractor's and Subcontractors' employees designated to work on the project
- Emergency contact numbers and email addresses
- A copy of all relevant City of Toronto and governing authority permits (if applicable)
- A copy of the Notice of Project (if applicable)
- A copy of the Health Department Approval (if applicable)
- Valid WSIB Clearance Certificate
- List of hazardous / designated substances to be used (if applicable)
- MSD Sheets (if applicable)
- Certificate of Insurance with complete coverage and additional insured parties named
- FORM 1 - Acknowledgement and Acceptance
- FORM 3 - Security Key Access Request
- Clearance Letter(s) for Key Holder(s)
- List of required system isolations along with permit forms (if applicable)
- Construction Management Plan (i.e. hoarding, dust control measures and loading and unloading routes mapped and identified, etc.)
- Proof of bonding, if required by the university and/or contract documents

A walkthrough may be part of this process depending on the magnitude of the project and the

Contractor's familiarity with the facility, where the Contractor's team along with the Project Manager and the building operator review and documents the current existing conditions and any concerns. Locations of shutoff valves, electrical panels, riser location, etc. should also be reviewed and noted.

2.2 Insurance

Without restricting the generality of Contract Security (Bonding), provided that the project is under five million dollars ($5,000,000.00) and are of low risk, the Contractor will provide, maintain, and pay for at all times during the performance of the work, including any warranty period at its own cost and expense, the following minimum insurance:

- Commercial General Liability Insurance against third party bodily injury (including death), personal injury and broad form property damage (including loss of use) and including products and completed operations liability and blanket contractual liability for an amount of not less than five million dollars ($5,000,000.00) per occurrence. Such insurance will include the following clauses and/or endorsements;
    - Pay on behalf of
    - Deductible
    - Primary and non-contributory
    - Cross liability and severability of interests or Separation of insureds; and
    - An endorsement naming Toronto Metropolitan University, its governors, trustees, officers and employees as an Additional Insured.

- Standard automobile insurance for all vehicles owned, licensed or leased by the Supplier and non-owned automobile insurance, where required, for an amount of not less than two million dollars ($2,000,000.00), per occurrence for each type of coverage. Where the non-owned automobile insurance coverage is provided within a general liability policy, a separate policy is not required;
- Professional liability insurance for an amount of not less than two million dollars ($2,000,000.00) per occurrence, if applicable to the type of work offered under this Agreement. This insurance policy is required to be maintained throughout the duration of the Agreement and for a period of twenty-four (24) months after the completion of the work

Such other types of insurance as would be carried by a prudent person or as TMU may from time to time require, having regard for the nature of the work and its location.
The policies will be endorsed to provide Toronto Metropolitan University with not less than thirty (30) days' Notice in writing in advance of cancellation, change, or amendment restricting coverage.

2.3 Contract Security (Bonding)

Provided that the Contract Price is greater than $500,000 or if otherwise required in the Contract Documents or the procurement documents for the Project, the Contractor, prior to commencement of the work, will provide to Toronto Metropolitan University the following:

- a labour and material payment bond in an amount equal to not less than 50% of the Contract Price
- a performance bond in an amount equal to not less than 50% of the Contract Price

The Contractor will pay the premium for such bonds unless otherwise specified.

Such bonds will be issued by a duly licensed surety company authorized to transact a business of surety in the province or territory of the place of the work and will be acceptable to Toronto Metropolitan University. The bonds will contain a multiple obligee rider or endorsement in favour of TMU and any other parties designated by the university. The bonds will be for a term expiring no earlier than twelve (12) months after the date that Substantial Performance of the work is required to be attained and will be maintained in good standing until such date. In the event of any adjustment in the Contract Price in connection with any Change Order or Change Directive, the Contractor will arrange for supplemental or replacement bonds to be provided to Toronto Metropolitan University in accordance with this section and this to reflect the adjusted Contract Price or price of any contract with a Subcontractor as the case may be. The form of all bonds will be in accordance with form of performance bond and form of labour and material payment bond prescribed in the Regulations to the Construction Act.

2.4 Clearance Letter(s) for Key Holder(s)

The Contractor is required to provide a “Clearance Letter” (also known as a police background check) for each of the Contractor’s supervisors who will be managing the project on campus and to whom a set of keys will be issued to gain access to the job site. The individuals to whom keys are issued are deemed to be “key holders” by Toronto Metropolitan University.

A Clearance Letter is a formal document produced on secure paper indicating that the subject of the inquiry has no criminal convictions in the National Repository of Criminal Records maintained by the Royal Canadian Mounted Police (RCMP).

A request for a Clearance Letter must be made in person at the individual’s local or regional police services office. For more details, contact the following:

- City of Toronto
  www.torontopolice.on.ca

- City of Hamilton

www.hamiltonpolice.on.ca

- Regional Municipality of Durham
  www.police.durham.on.ca

- Regional Municipality of Halton
  www.hrps.on.ca

- Regional Municipality of Peel
  www.peelpolice.on.ca

- Regional Municipality of York
  www.police.york.on.ca

2.5 Project Site and Access

Contractors are solely responsible to secure the work site, all materials and equipment. It will be the responsibility of the Contractor to provide appropriate barricading, fencing, hoarding, drop sheets or other dust containment measures, warning lights and signage on the work site. The location and extent of the work site isolation will be discussed with the Toronto Metropolitan University Project Manager prior to the commencement of the work. Barricades must be placed in such a manner as to prevent unauthorized personnel from entering the work site and potentially placing themselves in danger of injury. No fire prevention equipment or fire exits may be blocked for emergency access. Please refer to Hoarding, Barriers and Signage for further details on barricades.

Prior to presenting for work, all maintenance contractors, and small works contractors, specialist service providers and consultants will:

- Have completed all safety courses applicable under the MOL requirements and any other relevant inductions (such as site specific-specific inductions, site inductions, building inductions, etc.)
- Contractors are responsible for ensuring that all site safety requirements for the workplaces under their control are met, including induction and identification of all workers and visitors on site.

In addition, all workers and other persons entering high-risk buildings/sites will be required to sign in/out manually in the site-specific ‘Visitor/Contractor Log’. Contractors are responsible for ensuring that all site safety requirements for the workplaces under their control are met, including observation of proper sign in/sign out procedures by all workers and visitors on site.

2.6 Access to Utility Rooms, Roofs and Occupied Spaces

Request to access utility rooms or other occupied areas of the facility, outside construction area, must be provided in writing to the Project Manager (5) working days in advance of the requested access date. Included should be; a brief description of work, duration and identification of potential impact to either the building systems or occupants.

Request to access roof areas, must be provided in writing to the Project Manager with (3) working days in advance of the requested access date. Included should be; a brief description of the work to be performed, identify work that will require penetration of any roof membrane and potential impact to either the building systems or occupants.

All personnel engaged on any roof activities must have completed the basics of Fall Protection Training in accordance with the Construction Safety Association of Ontario.

2.7 Hoarding, Barriers, Signage and Temporary Structures

The majority of Toronto Metropolitan University's project work is performed in occupied facilities.

The Contractor will install barricades, fencing, or hoarding ensuring access into the work site is secured. Access to existing fire exits and Fire and Life Safety equipment must be maintained throughout the project. If supplemental signage is supplied by the university, it must be returned, in good condition, to the Project Manager.

Signage is to be installed in prominent locations clearly identifying the appropriate protective wear to be worn on the work site. Post any additional information and/or warnings pertaining to job site safety. Signage should be updated, if required, to reflect current work in progress.

The contractor will be permitted to install their own hoarding provided it meets with Toronto Metropolitan University criteria:

- All barricades and barriers on construction sites will conform to all safety practices required by regulations and good practices.
- Hoarding must be built to the underside of the ceiling. Top portion to be angled back to ceiling to avoid damaging ceiling tiles, perimeter electrical outlets and hanging hooks
- Hoarding to be secured in place using 2-sided tape
- The hoarding door(s) will be keyed to base building for University access in case of emergency
- Ensure no sprinkler heads are blocked and can operate fully
- All hoarding to be marked with appropriate construction signage
- Barriers for work outside the construction site must be visible both day and night
- All walkways in close proximity to job sites will be built with overhead protection where overhead work is being performed

- In pedestrian areas adequate warning must be provided for visually impaired pedestrians. Chain link fencing or hoarding is preferred as it allows the visually impaired to feel the base of the barricades with their canes. Audible or tactile warning devices may also be required
- Before setting up barricades in pedestrian areas, the Project Manager will be notified at least 48 hours in advance

Complete hoarding and barrier installation is to be completed within a 3-day time frame, unless otherwise approved by the Project Manager.

The Contractor will have the sole responsibility (unless noted otherwise in the contract documents) for the design, erection, operation, maintenance and removal of temporary supports and structures required for the execution of construction work. Where required in the contract documents and the Occupational Health and Safety Act, structures will be designed, verified and approved by a registered Professional Engineer skilled in this area.

Suspended work platforms or scaffold must be designed, inspected and documented as to compliance with the design drawings by a registered Professional Engineer. All scaffold and suspended platforms must conform to the requirements of the most recent version of the Occupational Health and Safety Regulations for Construction Projects.

2.8 Site Protection

All existing building finishes, including glazing film (where applicable) and carpets must be adequately protected to prevent damage. Damage to the building finishes will be repaired by the Contractor at their expense. The Contractor will take great care to protect all base building standard elements including, but not limited to, the following:

- Public area: The Contractor will be responsible for cleaning and making good, at their expense, any damages made by them in all public areas. In particular, this includes, but is not limited to, any damage to glazing, wall and floor finishes including sidewalks, laneways, and base building fixtures.
- The Contractor will protect all base building work with appropriate protection materials and will obtain TMU's approval of the protection procedure proposal prior to commencing work, moving construction materials or equipment across or within public areas.
- The Contractor must supply and protect carpet finishes with plywood and plastic sheets.
- Dust control mats must be placed at all construction exit points.
- Mechanical and electrical rooms and system components: The Contractor will be responsible for cleaning and making good, at their expense, any damages to the mechanical and electrical components and rooms caused by the Contractor. In particular, floor drains will not be used for dumping of liquid, garbage, etc.

- Washrooms: The Contractor will be responsible for cleaning and making good, at their expense, any damages made by the Contractor to the washrooms designated for TMU user's use. The Contractor will not use the washrooms for cleaning of construction tools, such as paint brushes, etc.
- Stairs and access areas: The Contractor is responsible for cleaning and making good damages, at their expense, to stairs and areas used for access during the work. Fire doors in stairs will not be wedged open by the Contractor.
- Elevators: The Contractor will use only those elevators designated by Toronto Metropolitan University for vertical transportation of construction personnel, material, and equipment. Any damages to the elevator cabs, mechanisms, doors and frames caused by the Contractor, will be repaired by TMU at the Contractor's expense.
- Demising partitions: The Contractor will be responsible, at their expense, for repairing any damage made by the Contractor to the demising partition of the premises.
- Historic elements: The Contractor will not alter in any shape or form historically designated elements. Any damage caused will be repaired by Toronto Metropolitan University at the Contractor's expense to the satisfaction of the City of Toronto's Historical Board.

Any damage caused by contractors, subcontractors and/or their agents will be repaired forthwith to the satisfaction of Toronto Metropolitan University by the Contractor or, at TMU's option, by the university at the Contractor's expense.

2.9 Site Cleanliness

Contractors must ensure that the construction site and common areas are completely free of debris. Daily removal of dirt and marks from common areas is required.

All work near the elevator lobbies and air handling equipment requires the installation of adequate protection to ensure that infiltration of dust, dirt and debris does not enter the air handling or elevator shaft (e.g. a plastic sheet taped around elevator door perimeter to ensure a tight seal).

Safety precautions must be undertaken when extension cords are required. Where possible, the extension cord must be run through the ceiling to the desired location.

The Contractor must ensure that corridors are left free of debris and dirt and marks are removed from corridor walls, floors, doors etc., on a daily basis. If this work is not completed by the Contractor, the TMU will provide this service at the Contractor's expense.

Drains, including janitor's sink may not be used to dispose of materials such as drywall, concrete or paint, which may clog or hamper flow through the drainage system. Contractors must make arrangements to dispose of such materials off-site. If the drainage system becomes

clogged or restricted, the university may undertake, at the Contractor's expense, a full cleanup program.

2.10 Green Building Requirements

Toronto Metropolitan University is supporting Green Building implementation established by the Green Building Council in Canada. All projects will include sustainability goals and adherence to LEED standards and these take precedent to the basic requirements included below. The following are the minimum requirements of contractors and subcontractors working on projects on the TMU campus:

Recycled Content
Use building material that has high recycled content. If alternate products with at least 15% recycle content are higher than the proposed product in the contract, and if the additional material cost is less than 7%, the Contractor is to discuss with the Project Manager for the possibility of issuing a change order to increase the contract costs for material extras.

Indoor Air Quality
The Contractor must install dust protection to the adjacent area prior to any construction work. Failure to provide adequate dust protection will result in the Contractor being charged with the costs of the immediate cleaning of all affected areas. If complaints are filed from the occupant(s) in the adjacent area affected by the construction, the university will proceed with the cleanup process and charge the Contractor back to for the costs.

There must be protection of all HVAC supply and return ducts to prevent construction dust from entering the mechanical systems. Failing to protect the mechanical duct system, TMU may instruct the Contractor to clean the related ductwork and replace the affected filters.

Low Emitting Materials
The Contractor is to use low emitting materials to reduce the quantity of indoor air contaminants that are odorous, potentially irritating and/or harmful to the comfort and well-being of the installers and later the occupants.

Adhesives, sealant, primers, paint, varnish that has any volatile organic compound (VOC) content must be applied between 10:30PM to 5:00AM to allow the mechanical system to flush-out the building prior to working hours.

2.11 Equipment and Materials

All work equipment, materials and products will be in compliance with most current legislation for, but not limited to:

- Occupational Health and Safety Act - R.S.O, 1990 Chapter 0.1 as amended.

- Ontario Regulation 213/91 as amended Construction Projects
- Workplace Safety and Insurance Act, 1997. Statues of Ontario, 1997 and Chapter 539 and Regulations 1101 (First Aid Requirements) and 1102 (General).
- Workplace Hazardous Information of Material Safety
- Ontario Building Code
- NFPA and ASHRAE standards
- Canadian Standards Association

The Contractor will ensure that all employees/subcontractors wear appropriate clothing and personal protective equipment suited to the work being performed in accordance with the above noted legislation.

At all times the Contractor must supply and ensure suitably rated and charged fire extinguishers are maintained and available on the work site at all times. Toronto Metropolitan University will not supply or lend any equipment (including ladders), materials, or tools.

2.12 Ladders and Other Equipment

- When using ladders and other equipment, Contractors must ensure cones and proper signage are put in place to ensure safety of the public.
- Employ good ladder practice to ensure safety of user and public.
- Ensure all equipment inspected for damages and is used in a manner that complies with the manufactures specification and the OHSA.
- Contractors will be responsible to have all employees properly trained under all governing bodies. Working on elevated areas usually entails ladders so it is invaluable that ladder safety is a priority when observing fall protection in the workplace. Only self-rescue harnesses are permitted to be used on Toronto Metropolitan University project sites.

2.13 Asbestos and Other Designated Substances

2.13.1 Asbestos

The Contractor must carefully review the work area, documentation and drawings provided by the university. Prior to carrying out any ceiling entries, where asbestos has been identified, arrangements will be made to carry out work in accordance with the current Ontario Occupational Health and Safety Act, Ontario Regulation 278/05 Asbestos on Construction Projects and Buildings and Repair Operations, Ontario Regulation 279/05 Designated Substance, Asbestos.

Prior to any asbestos abatement work, the Contractor will hold a kick-off meeting, including the TMU Project Manager, Abatement Contractor and TMU Environmental Consultant to review

abatement scope, procedures, schedule, etc.

The Contactor will acknowledge that they have received a Designated Substance Survey included in the project tender documents and ensure that they and the abatement contractor(s) have adequate insurance to cover liability. The Contractor must also submit FORM 4A - ASBESTOS CONTRACTOR NOTIFICATION & ACKNOWLEDGEMENT prior to any work.

When work is being performed in a localized area on a ceiling or ceiling plenum where asbestos such as spray fireproofing containing chrysotile has been identified, Type 2 procedures must be performed in accordance with the most current Occupational Health and Safety Act. Work must commence, be completed and the site cleaned between 10:30PM and 7:00AM in any occupied area or public corridor. FORM 4B – CHECKLIST OF ASBESTOS WORK PROCEDURES and FORM 4C - ASBESTOS WORK LOG will be used during the abatement process and completed forms will be submitted to the Project Manager once work is complete for TMU records.

All asbestos containing material will be handled and disposed of in accordance with Ontario Regulation 347: General - Waste Management under the Environmental Protection Act.

Bagged asbestos containing material cannot be stored anywhere outside of the contained area. Disposal of the bagged material into the bin must be carried out between 10:30PM to 7:00AM. All bins for asbestos and designated substances must remain locked when not attended.

If the Contractor encounters asbestos containing material which has not been identified prior to project start-up, the Contractor will immediately stop all work, clear the area, secure the site and notify the Project Manager. All asbestos related operations will be carried out by prequalified contractors licensed, trained and certified to perform the work. Coordination of activities pertaining to abatement will be done by the Project Manager or their representative.

2.13.2 Other Designated Substances

Upon encountering other designated substances that have not been disclosed or identified at the time of project start-up, the Contractor will immediately stop all work, clear the area of workers, secure the site and notify the Project Manager.

2.14 Hazardous Materials Management

All hazardous materials brought on the university campus must be handled in accordance with all Federal and Provincial Regulations. Contractors must ensure:

- No spills or leaks occur which could expose anyone to any airborne contaminants and/or have an impact to the environment.
- Work procedures are developed to ensure contaminant exposure to building occupants, and any disruption of routine work, is minimized through supplementary ventilation, coordination of work activities and worksite isolation.
- Material Safety Data Sheets (MSDS) are available for all controlled products on site
- All containers are labelled in accordance with applicable regulations
- All employees are provided the necessary training and provisions to ensure they are fully qualified and properly equipped to handle all hazardous materials being used on the site
- All shipments of dangerous goods include proper documentation as required by the Transportation of Dangerous Goods (TDG) Regulations
- provide to the Project Manager a list of all hazardous materials that if spilled could pollute the natural environment
- provide to the Project Manager a copy of their procedures to safely control the use and storage of all hazardous materials that if spilled could pollute the natural environment
- provide to the Project Manager a copy of the emergency response procedures for the mitigation and reporting of spills of pollutants to the natural environment
- provide to the Project Manager written confirmation that all persons storing, handling or dispensing potential environmental pollutants have been trained in the safe storage, dispensing, use of and reporting of spills involving all potential environmental pollutants used on the project
- report all spills involving all potential environmental pollutants to the Project Manager and to TMU Security

2.14.1 Spill Reporting

Contractors are responsible for reporting spills that result from activities performed on campus. A spill is a direct or indirect discharge of a pollutant into the natural environment, which is the land, air or water of Ontario, from out of a structure, vehicle or other container, that is abnormal in quality or quantity in light of all the circumstance of the discharge. All spills are to be reported in accordance to the Environmental Protection Act and applicable governing regulations. In addition, all spills are to be reported to the Project Manager and an incident report generated.

The incident report concerning a spill should include:

- the date, time, location and duration of the release of the pollutant
- the identity of the pollutant released and the owner’s name

- the quantity of the pollutant released
- the circumstances and cause of the spill
- details of containment and clean-up efforts and the names of the individuals involved in the clean-up
- an assessment of the success of the containment and clean-up efforts;
- the method used, in accordance with subsection 96 (1) of the Act, to dispose of or use the pollutant or any matter, thing, plant or animal or any part of the natural environment that is affected by the spill and the location of the disposal site
- any adverse effects observed as a result of the spill

2.15 Waste Disposal and Construction Bins

All waste and debris is to be removed from the work site daily and disposed of in the designated construction bin/container. In an effort toward the future development of a Green Community at Toronto Metropolitan University, all contractors are encouraged to follow sustainable practices and LEED Guidelines with respect to demolition, recycling and disposal of construction material.

Disposal of water containing suspended materials, waste, or volatile materials will not be pumped or disposed of into the university's drainage system, storms and sanitary sewers. All hazardous or liquid wastes must be appropriately removed off campus, transported back and disposed of in accordance with current provincial regulations. The Contractor may be required to produce a bill of lading to verify all materials have been disposed of in accordance to local bylaws.

Covered material handling carts/containers are to be used to transport waste material through the facility to the location of designated bins. In the event TMU is required to clean up and/or dispose of material resulting from construction activities, then all costs incurred, including staff time and or external forces, will be charged back to the current contract.

No construction debris/waste are to be placed in any of Toronto Metropolitan University's disposal containers. Doing so will result in back charges to the Contractor. Construction bins are not to be placed in grassed areas. The Contractor must locate bins in the designated area as directed by the Project Manager along with Custodial Services. The grounds must be protected with full-length 3/4" plywood. Damage caused by bin, delivery, placement and removal will be subject to contract chargeback.

2.16 Hazardous Materials Disposal

Hazardous waste materials are substances covered by Transportation of Dangerous Goods Legislation that are intended for recycling, treatment or disposal. All hazardous waste materials will be temporarily stored, transported and/or disposed of offsite according to the handling labelling, record keeping and documentation requirements (i.e. waste manifests) of the Occupational Health and Safety Act, the Federal Transportation of Dangerous Goods

Regulations and any other regulations. The Contractor is responsibilities include, but not limited to:

- All hazardous material to be removed from site on a regular basis. There will be no undue delay in having waste materials removed from the university campus
- Hazardous waste materials, which are in temporary storage, to be stored in a secured area provided with secondary containment. The area will be secured and labels identifying the hazards will be placed in strategic locations
- Waste materials contaminated with solvents, oils, grease, paints, or flammable materials to be placed in covered metal containers and properly labelled
- If Hazardous waste materials are being held in temporary storage areas, fire extinguishers will be strategically located near the temporary storage area and clearly identified
- All shipments of dangerous goods must include proper documentation as required by the Transportation of Dangerous Goods Regulations

3.0 CONSTRUCTION MANAGEMENT

3.1 Contractor Sign–In Procedure

Toronto Metropolitan University requires that all contractors maintain a Sign-In Record Log (FORM 2) at the project site. The Sign-In Record Log should be located in the site office where it's visible and easily accessible and must also be adhered to for all after hour and weekend work. The site supervisor will be responsible to ensure that all site personnel, TMU staff, consultants and visitors sign the Sign-In Record Log if on-site. The Sign-In Record Log must be submitted to Project Manager on a weekly basis.

3.2 Identification Badges

It is the intent of Toronto Metropolitan University to provide a safe environment for all students, faculty, staff and visitors. Towards this the university is committed to: eliminating the perception and associated reality concerning non-affiliates accessing personal workspaces and living areas; increasing accountability of contractors moving about the university; giving the students, faculty, and staff a greater impetus to call attention to suspicious persons; and encouraging members of our community to verify non-affiliates before allowing them access to personal space.

Before work begins, the Toronto Metropolitan University Project Manager will obtain the names of all individuals who will be working at the project site as mentioned in the Pre-Construction Meeting and Documentation section.

The Contractor is to arrange for identification badges for all their subcontractors and tradespeople. Identification badges are expected to be worn at all times by all on-site personnel,

including visitors, while on University property. Workers who are discovered without a badge will be stopped, identified, and immediately reported to the Contractor, on-site supervisor, and the PMO Project Manager for corrective action. Those found without their badge may also be asked to leave the premises. The Contractor will be responsible for all badges, must keep a record of who has been given a badge, and must be able to produce this record at any given time. Badges must be worn in a location that can be easily viewed and will contain the following information (please refer to APPENDIX B - Identification Badge Template):

- Project Name
- Person's Name
- Company (Employer)
- ID Tag number
- Date Issued
- The project Constructor (General or Construction Manager)
- Toronto Metropolitan University Project Manager

Personnel may choose to use a lanyard or vinyl clip, depending on their situation. The information on the identification badges will also be reflected on FORM 2- Sign-In Record Log.

3.3 Security Keys

A Clearance Letter and Security Key Access Request (FORM 3) will be required for all key holders.

Only personnel that have been identified in writing by the Contractor and authorized by Project Manager will be allowed to sign out keys and/or access cards – no exceptions. Should an alternate person be required to sign out keys/card, Contractor must provide written notification to the Project Manager (2) working days in advance of the change.

Keys/cards assigned to the Contractor must be signed out on a daily basis from TMU Security. Personal and company identification must be shown at all times when picking up keys/card. Keys and cards must be returned upon completion of day's work to the TMU Security office located at 285 Victoria Street, ground floor.

A $250 fee will be charged back to the Contractor for failing to comply with this procedure. The loss of keys must be reported immediately to TMU Security and the Project Manager. The Contractor will be held liable and will be required to indemnify the university, its agents and individuals of all associated costs resulting from the loss of the keys.

3.4 University Permits

In order to manage the daily activities throughout the campus, the university used various permit

forms to create a line of communication between the contractor and the Facilities Management and Development units. The following list provides a description of the various forms and when they should be used.

Permit	Description and Advance Notice Requirement
Hot Work Permit (FORM 5)	● This permit is used to notify the Fire & Life Safety department of any work for the purpose of welding of any type. A Fire Protection System Bypass permit must accompany. ● 10 DAYS ADVANCE NOTICE required.
X-Raying, Scanning & Coring Work Permit (FORM 6)	● This permit is used to schedule x-raying, scanning and coring work (typically for plumbing and electrical floor penetrations). ● 10 DAYS ADVANCE NOTICE required.
Radiography Source Permit System (FORM 6A)	● This permit is to notify the department of Environmental Health & Safety of all planned x-raying work. ● Required with FORM 6, if applicable.
Fire Protection System Bypass Permit (FORM 7)	● This permit is used to notify the Fire & Life Safety units of any work on Fire Protection systems (e.g. sprinkler systems, fire alarms, etc.). ● ADVANCE NOTICE VARIES, refer to FORM 7
Building Systems Shutdown Request (FORM 8)	● This permit must be filled out and submitted. ● 10 DAYS ADVANCE NOTICE required for isolated shutdowns. ● 15 DAYS ADVANCE NOTICE required for parts of or entire building shutdown

The Contractor will be responsible for ensuring isolation of heat, smoke, alarm and sprinklers prior to proceeding with any of the above noted activities. Any incurred costs / charges levied by the authority having jurisdiction will be subject to a charge back to the contract.

Failure to obtain a permit for any of the above noted activities may result in immediate work stoppage at the Contractor’s expense.

3.5 Red Tag

Prior to working on any part of the existing Fire and Life Safety systems, a “Red Tag” must be installed by the university staff or their representative. Only persons certified and meeting Ontario Fire Code O. Reg. 213/07 under Fire Protection and Prevention Act, 1997, S.O. 1997, c. 4 will be authorized to work on any of the Fire and Life Safety systems.

3.6 Building System Shutdowns

The Project Manager coordinates system shutdowns and schedules between the Contractor and Custodial Services, Maintenance & Operations and any other university unit. All requests must be made in writing and submitted to the Project Manager a minimum of (10) days prior to the scheduled date for any isolated shutdowns. Request for shutdown of entire or part of the building’s system must be submitted in writing to the Project Manager a minimum of (15) working days in advance of the required date.

Please refer to FORM 8 - Building System Shutdown Request. Shutdowns may take place between 10:30PM and 7:00AM. Building shutdowns are categorized as described:

- **Routine** – shutdowns that are done on a regular, ongoing project basis for things like, fire alarm tests, emergency generator tests, fire sprinkler flow tests and other components tests.
- **Emergency** – shutdowns happening immediately when a hazard puts the safety of people, buildings, equipment or research projects at risk.
- **Critical** – shutdowns that are done on a regular, ongoing project basis that are imperative to project success. These include major system tie-ins, mechanical unit replacements, etc.

If there is a requirement to isolate the following building systems:

- Fire and Life Safety Systems (alarms, heat detectors, sprinklers, etc.)
- Electrical Systems (electrical panels, equipment, etc.) Note: ‘live’ work is not permitted
- Building Automation System (BAS)
- Air Systems (HVAC)
- Security Systems
- Gas
- Vacuum
- Air
- Water System

3.6.1 Facilities Management & Development Emergency Contacts

In case of emergency or a situation of concern, should the Project Manager not be available, the

Contractor may contact the Facilities Help Desk (Fixit). Emergency procedures should also be taken as described in the Contractor Manual.

Facilities Help Desk (Fixit)
Email: fixit@torontomu.ca
Phone: 416-979-5091
Fax: 416-979-5248
Regular operating hours: Monday to Friday from 8:00AM to 10:00PM

For urgent after-hours concerns, please contact TMU Security at security@torontomu.ca or 416-979-5040. **In the case of an emergency, call 911.**

Contractor Responsibilities for Electrical Shutdowns:

- vacuum inside tubs
- clean all insulators
- fill all tub openings with proper fillers
- check all connections for tightness
- update all panel schedules

Fire Watch Procedures During Life Safety System Isolation and Hot Work

- A fire watch is to be performed by the General Contractor whenever the Fire Alarm System or Automatic Fire Sprinkler System is impaired.
- Work will NOT proceed unless a “Hot Work / Red Tag Permit” has been issued by Facilities Management & Development and a fire watch notification has been posted in the area by the General Contractor
- The fire watch is to be performed by an individual(s) who:
    1. is NOT performing any other duties that would take attention away from the fire watch area being supervised
    2. is aware of the inherent fire hazards involved with the work
    3. is trained in the use of fire extinguishing equipment
    4. has a means of emergency communication;
    5. sounding the alarm throughout the building
    6. notifying the fire department
    7. instructing site personnel on what to do
    8. is able to tour the area and complete a fire Watch Log every hour is familiar with the surrounding facility, exits and Fire Safety Plan
    9. is familiar with the surrounding facility, exits and Fire Safety Plan

- For hot work, the fire watch needs to be performed for (1) hour after the hot work has been completed, and the area where the hot work took place needs to be monitored for (3) hours after the hot work has been completed.
- All standards for the safeguarding of construction / alteration and demolition work will be followed as detailed in the National Fire Protection Association Standard 241. This may include, requiring a fire watch in an adjoining area next to, above or below the area of work.
- The Contractor is to supply their own up-to-date tagged extinguishers. All fire protection and life safety equipment is to be maintained in accordance to applicable code standards.

3.7 Security Devices and Systems

All security systems and devices are to be handled by designated university personnel. Do not cut or disturb any conduit and wires that have not been clearly identified. Any security wires cut during construction will be subject to contract charge back. Work on doors that are wired with contacts and any related work must be coordinated with TMU Security personnel. Please refer to Required Contracts.

Security panels and equipment, including alarms, motion detectors, and card access readers are not to be tampered with. This and any related work must be coordinated with the university's security personnel.

Any unauthorized power shut down may damage the security systems. All associated costs required to reinstate the system will be subject to contract charge back.

Any work requiring coordination with Toronto Metropolitan University's security system and devices must be submitted in writing to the Project Manager**, fifteen (15) days in advance** of the request date. This work is only to proceed upon written approval and authorization by the Project Manager and TMU Security personnel.

3.9 Equipment Lockout / Tag Out

Use of lockout and tag outs are as required by the Ministry of Labour and will be used when working on equipment, electrical panels and valves that will be shut off. Lockout is defined in the Canadian standard CSA Z460-13 "Control of Hazardous Energy - Lockout and Other Methods" as the "placement of a lockout device on an energy-isolating device in accordance with an established procedure." A lockout device is "a mechanical means of locking that uses an individually keyed lock to secure an energy-isolating device in a position that prevents energization of a machine, equipment, or a process."

In practice, lockout is the isolation of energy from the system (a machine, equipment, or process) which physically locks the system in a safe mode. The energy-isolating device can be a manually operated disconnect switch, a circuit breaker, a line valve, or a block (Note: push

buttons, selection switches and other circuit control switches are not considered energy-isolating devices). In most cases, these devices will have loops or tabs which can be locked to a stationary item in a safe position (de-energized position). The locking device (or lockout device) can be any device that has the ability to secure the energy-isolating device in a safe position.

These tags must be maintained until such time that notification is received from the Contractor that work has been completed. If Maintenance & Operations isolates the systems, only M&O personnel will reactivate the system and remove their own locks and hasps. Systems isolated by Contractors with approval are to be restored to service by the party who isolated it.

3.10 Hot Work

Hot work, including welding, thermal or oxygen cutting or heating and other related heat or spark producing operations, are not to take place in any building area without a Hot Work Permit (refer APPENDIX C). Contractors must comply with Hot Work Permit Program and submit FORM 5 – Hot Work Permit for TMU's approval **ten (10) days in advance.** The only exception are new builds where the contractor may use their own system. The Contractor is responsible to ensure all their staff and subcontractors adhere to the program.

The essence of the Hot Work Permit program is as follows:

- The program should be supervised by a qualified individual such as a welding superintendent, maintenance foreman, fire chief, plant engineer or master mechanic.
- This individual should examine the location of any proposed work, insist on other methods if conditions cannot be made safe and make sure that the precautions listed on the permit are taken.
- The individual should then sign a permit (see illustration) and give it to the welder. No work should be allowed without a properly signed permit at the job site.
- If work at a location continues for more than one shift, a new permit should be issued for each shift.

Welders and other personnel who might be using hot work equipment should be instructed in precautions to be taken and a list of these precautions should be posted in the maintenance shop, on the equipment and on the permit. These precautions should include:

- Performing hot work in a properly arranged maintenance shop except when the job cannot be moved to it.
- Using only equipment that is in good condition. Valves, regulators, hoses and torches should be thoroughly checked.
- Refraining from using welding, cutting or other hot work equipment in a building where sprinklers are out of service.

- Moving combustibles at least 11 meters (35 Ft.) from hot work operations. If combustibles cannot be moved, they must be protected by metal guards or by flameproof curtains or covers rather than ordinary tarpaulins.
- Prohibiting hot work in or on vessels containing flammable or combustible materials, including residues, until they have been completely cleaned and purged or inverted.
- Checking the atmosphere for combustible gases or vapors where necessary, using reliable detection equipment. If there is a chance of a gas vapor release during hot work operations, continuous-duty portable combustible gas detectors should be used to constantly monitor the area.
- Prohibiting hot work until surrounding floors have been swept clean and, if combustible, wet down.
- Prohibiting hot work until all wall and floor openings within 11 meters (35 Ft.) of the operations have been tightly covered or otherwise protected with metal guards or flameproof tarpaulins.
- Prohibiting hot work until responsible persons have been assigned to watch for dangerous sparks in the area and on floors above and below.
- Securing gas cutting and welding cylinders so they will not be upset or damaged and replacing protective caps on all cylinders not actually in use.
- Carefully connecting the ground clamp when using electrical arc welding equipment. Since an improperly made ground can be a source of ignition, the ground clamp should be connected as close to the work as possible so that it may be easily observed.
- Arranging for a continuous fire watch to patrol of the area, including floors above and below, during work, any break in the work such as lunch or rest periods, and for at least one (1) hour after the work has been completed. Provide three (3) hours of periodic random patrols (not more than 15 minutes apart) through the work area after the fire watch has been released, for a total of 4 hours after work has been completed. If the hot work ends near the time of a shift change, make arrangements for the patrols to continue into the next shift.
- Using portable stands to elevate welding hose or cable off floor areas where it can be easily damaged.

3.11 X-Ray, Scanning and Coring

The location of all proposed penetrations through structural elements, masonry walls and shafts must be reviewed and approved by a structural engineer in advance of any x-raying, scanning or coring.

Request for X-raying, scanning and coring work must be submitted in writing to the Project Manager **ten (10) working days** in advance of the required date. This request must include proposed location of work, structural clearance by a structural engineer, the time and duration or

work. Written authorization to proceed with the work will be provided by Project Manager no less than (2) days of required date. Please refer to FORM 6 - X-Raying, Scanning and Coring Work Permit and FORM 6A - Radiography Source Permit System.

This work must take place after the building has been fully shut down from 10:30PM to 7:00AM Monday to Sunday, unless otherwise authorized by the Project Manager.

No less than **two (2) working days** in advance, the Contractor must post written notification of this work within the facility. X-raying operations are to be carried out only upon confirmation that all occupants have cleared the affected area. Never assume that areas are unoccupied after hours or at any time. During the X-ray period, the Contractor must provide patrol to prevent entry/access into the affect area and within 60 meter (200 ft.) radius in all directions both vertically and horizontally.

Work area and surroundings must be cleaned and cleared of any dust and debris prior to the next working day.

3.12 Deliveries

All equipment and/or material deliveries to the construction site are to be coordinated and handled by the Contractor. This will include unloading of goods, transporting, receiving and storing. TMU staff will not sign for, or accept any goods, materials or supplies on behalf of the Contractor. Any necessary handling of these items, by university personnel, will be subject to contract chargeback.

Loading requirements of delivery vehicles are to be in accordance with Ministry of Transport and City of Toronto. Delivery of hazardous substances will be clearly identified, unloaded and relocated to designated storage area by qualified personnel, and in accordance with the current Transportation of Dangerous Goods Act, 1981, Statutes of Ontario 1981 and Chapter 69 and associated regulations.

Contractors must take all necessary precautions to minimize damage to elevator walls, doors, floors and ceilings. The Contractor will be responsible for all costs associated with repairs to damaged items/finishes. Contractors are expected to report any property damage to the Project Manager immediately to ensure accountability.

At no time will equipment and/or material be left unattended in any common space. All construction items are the responsibility of the Contractor and should be kept in the construction area.

Equipment and/or material left unattended may be moved at the Contractors expense. Deliveries requiring the use of 105 Bond Street loading dock must be scheduled through the Shipping & Receiving Office; 416-979-5000 ext. 557021.

3.13 Elevating Devices

Toronto Metropolitan University has several types of elevating devices throughout the campus. Each device varies in size and use. These devices include; passenger elevators (hydraulic and geared), freight elevators, escalators, and accessibility lifts, which staff, students and the public are dependent upon for access. Attention to the following items should be noted:

- Hoisting and transporting construction material in any elevator is not permitted without prior written consent by the Project Manager
- When approval has been attained to use a passenger elevator to transport and hoist material; all interior walls, ceilings and fixtures must be protected. This will be the responsibility of the Contractor to do so
- Elevating devices are not to be loaded greater than the rated capacity for that device. Any damage arising from improper use, overloading or lack of protection will be the responsibility of the Contractor and it will be subject to a contract chargeback
- Escalators or accessibility lifts are not to be used to hoist any materials or goods
- In the event of a building emergency or fire all elevators MUST be put back immediately into regular service, and no further use should proceed
- Access into the elevator hoist way, top of car elevator car, or elevator machine room is strictly prohibited
- Prior to project start-up and ordering of material, it will be the Contractor's responsibility to review and confirm elevator cab size. If there is a serious conflict, then the Project Manager is to be informed immediately

Procedures for Elevator Access

- Submit in writing to the Project Manager a minimum of **three (3) working days** in advance of the requested access date. Included in the request; elevator location, purpose / use, time and duration of use.
- Obtain elevator key from the following location: TMU Security kiosk at the Victoria Building, 285 Victoria Street, Ground Floor.
- Prior to using elevators (with the exception of freight) ensure the walls, ceilings, floors have been adequately protected.
- If there are any problems or concerns in obtaining a key or accessing the device, immediately contact the Project Manager.

3.14 Cranes, Hoisting and Rigging

The university's campus is situated in a highly populated area with limited access to the facilities. Provisions to use cranes and rigging equipment are to be performed in accordance

with current Construction Regulations and only by workers qualified to operate a cranes or hoisting devices.

Where and when required all applicable municipal permits and police services are to be coordinated by the Contractor. Surrounding areas and pavement are to be protected.

Access to equipment and area of hoisting is to be restricted by means of barricades, site personnel and any other methods deemed necessary to ensure public safety. This work is to be performed between the designated hours as determined by the Project Manager and in accordance with local bylaws.

3.14.1 Approval Procedure for Use of Cranes

Submit in writing to the Project Manager **ten (10) working days** in advance of the requested date the following information; the purpose of the work, location, date, time, duration. Include a sketch outlining proposed area of work and set-up for restricting access.

Approval to proceed with these operations will be provided by Project Manager or their representative in the form of a written confirmation notice. This will be submitted to the Contractor no later than **three (3) working days** prior to proposed start-up.

3.15 Percussion Tools, Noisy and Sensitive Work

Construction may take place within the project space during normal business hours, but if the work is deemed too noisy, Toronto Metropolitan University reserves the right to immediately reschedule all work to the evenings. All noise generating work (i.e. demolition, all cutting, coring and the use of percussion tools such as hammers, chippers, etc.), that will cause disruption in the local surroundings must be scheduled between 10:30PM and 7:00AM, unless noted otherwise by the Project Manager. Working hours must be communicated to, agreed upon, and arranged with the assigned Project Manager.

The use of hammer guns is forbidden. If the structural engineer deems it as necessary in the retrofit of structural elements as an alternative to welding or cutting, an additional risk assessment may be required. Notify the Project Manager to advise TMU Security, Environmental Health and Safety, and Maintenance & Operations.

Sensitive work is defined as work which causes odours, vibrations, noise or other undesirable effects that emanate from the premises which, in TMU’s opinion, are objectionable and/or cause any interference with safety, comfort or convenience for the building and its occupants.

Sensitive work will take place outside of normal business hours.

4.0 CONSTRUCTION COMPLETION

4.1 Pre-Operational Cleaning

Upon construction completion, the space must be left in a clean, dust-free, “move-in” condition. In addition to the foregoing obligations, Contractors are responsible for ensuring, before premises are occupied or reoccupied, that the following areas and/or items are cleaned:

- all light fixtures and lenses
- ceilings and ceiling tiles
- floor tiles and carpets
- corridor walls and doors immediately adjacent to the occupied premises
- perimeter radiation or induction units (both inside and outside)
- intake grills, discharge grills, lint screens, coils, drains (as applicable) for induction units
- convector grills and fins for hot water heating/radiation systems
- interior face of perimeter windows
- electrical trench header ducts, including those adjacent to the occupied premises;
- all service rooms
- in instances of full floor occupancy, all restroom facilities
- all plumbing drains be flushed and cleared to the main plumbing stack

Contractors will clean, flush, and charge any and all new piping for “Closed Systems”. Contamination of any existing systems by means of an improperly cleaned and/or charged retrofit system(s) will be the responsibility of the Contractor. They will bear the cost of rectification, as determined by Toronto Metropolitan University, and all associated costs will be charged back to the Contractor.

To minimize cleaning costs, it is highly recommended that any HVAC systems affecting your work area be protected by supplementary filtration and periodic cleaning during construction. Prior to the TMU users occupying the space, the following items must be completed and verified:

- consolidated Air Balancing Report
- calibration of all induction unit controls and VAVs
- cleaning of all perimeter induction unit with steamed cleaning process
- duct cleaning (supply, return, exhaust and transfer)
- equipment cleaning of fan coils, heat pumps, exhaust fans, fume hoods and/or any other air handling equipment including replacement air filters and/or coil cleaning as determined to be necessary by Maintenance & Operations during Handover to the Contractor

- pressure sensing equipment
- condensate drains for HVAC equipment having such to the point of termination
- verification of all HVAC systems

4.2 Deficiencies

It is the Contractor's responsibility to close any and all noted deficiencies within 48 hours unless given written approval from the Project Manager otherwise. As part of establishing substantial performance, it is necessary to place a value on project deficiencies.

The Contractor will prepare a Memorandum of Record, compiling all identified deficiencies noted by the interested parties and address as many of the deficiencies as possible to then hold a formal deficiency review. This review requires the participation of Toronto Metropolitan University, consultants, contractor, and subcontractors. It is ineffective to hold the deficiency review until the finished lighting is operational as the quality and directional lighting may reveal defects which would not otherwise be noticeable. Subcontractors should be involved early in the deficiency process, preparing their own deficiency lists. This will make the final review much easier for all parties. The subcontractors must take responsibility for the quality of their work. A distinction should be made between cosmetic deficiencies and operational deficiencies so as to ensure that the proper individuals are involved in their correction. For example, an operational deficiency may need to have the input of maintenance staff. The goal is to have all deficiencies corrected prior to the consultant's review.

The Contractor will review the entire list and identify the deficiencies that are design deficiencies. Construction deficiencies are defects caused by the Contractor, either by failing to conform to the Contract (e.g. not in the proper location, having poor workmanship) or by damage caused by the Contractor's operation. Design deficiencies are corrective action items that are not construction deficiencies, but rather a request for additional work. If the Contractor identifies a corrective action items as a design deficiency, they will contact the initiator of the identified corrective action item in question to seek mutual agreement as to the classification of a deficiency as a design deficiency or as a construction deficiency. The Contractor will prepare a memorandum to the Project Manager listing all design deficiencies and any disputed deficiencies. The Project Manager will review the memorandum from and attempt to resolve disputed deficiencies with the initiating party. The Project Manager will decide if any of the design deficiencies should be corrected under the contract.

4.3 Post-Construction Handover, Commissioning and Training

A post-construction handover is to be part of the project close-out procedures where the Contractor returns the construction space to Toronto Metropolitan University. Training is required upon completion of ever project, a walkthrough may be part of this process, where the Contractor team along with the Project Manager and the building operator review newly

implemented building systems including, but not limited to, electrical and lighting systems, air systems (HVAC), building automation systems (BAS), Fire and Life Safety systems. Relocated and/or modified shutoff valves, electrical panels, riser location, etc. should also be reviewed to ensure familiarity with the university building operators.

Commissioning is a structured and documented process aimed at ensuring that mechanical and electrical systems are designed, installed, functionally tested, and capable of being operated and maintained according to the university's operational needs. The commissioning process confirms the design criteria with respect to achieving business functionality and occupant comfort. Ensuring that the HVAC and electrical systems will perform as designed and intended is paramount to the Tenant's satisfaction with the leased premises over the duration of the term.

It is essential to understand the fundamental differences between commissioning processes and the standard services provided by engineering consultants.

The contractor though the commissioning agent will furnish the following:

- Training of the Toronto Metropolitan University Facilities Representative (individuals who use, operate, or maintain) using current versions of the commissioning documents including Operations and Maintenance manuals. The training will be designed specifically for each group delivered both in classroom and on-site.
- A detailed narrative providing, in building operators' layman language, the specific instructions for start -up, shut down and seasonal changeover of the systems/components. This will be provided including all relevant detail s such as: exact type and specific location of each device and interlocks; list of conditions to be fulfilled prior to attempting the equipment start up (correct valve positioning, etc.)
- Document that provides the explanation of the ideas, concepts and criteria that are considered to be very important to the owner. The QPR cites specific measurable goals for the owner's objective.

An Operations and Maintenance manual details modes of operation with associated diagrams to illustrate the sequence of operation for each system and interaction between systems. The maintenance manual describes maintenance requirement and sequences, with the required bill of material.

As defined in the CSA Standard Building Commissioning, 2320-11 (or latest standard) and in accordance to ASHRAE/ANSI/IES when specificity referenced, provides the commissioning of the installation from the design phase to the complete operational cycle including preparation of manuals and training oversight and sign off. The standard CSA 2320-11 applies in its entirety expect when specifically mentioned otherwise:

- Form and lead the commissioning activity and team preparing an organizational chart with role definition describing responsibilities and accountabilities, to be reviewed and accepted

by the Project Manager.

- Develop and utilize a commissioning plan to manage time and resources that includes timeline for commissioning procedures for all aspects of building and commissioning phases. Identify with the Project Manager the specific items to be commissioned based on Project Manager's priorities and project risk.
- Development of site procedures and checklists with specific deliverables to verify acceptance of installation, start up, and final performance testing, both individually and systematically within the facility at specified component, system and environmental conditions as defined by the Owners Project Requirement (OPR).
- Prepares updated OPR document that addresses items as outlined in ANSI/ASHRAE/IES Standard 202-2013 section 6.2.3
- Review the Contractor's inclusion of submittals into the construction documents for all Building Systems to be commissioned. This review must be concurrent with the review of the Architecture/ Engineer of record and all comments are to be submitted to the Project Manager.
- Construction phase responsibilities include participation in full and complete review and verification of the receipt of as designed components in collaboration with the Architect or Design Engineers of record.
- Onsite verification of proper installation, with pretesting as possible, of system components during construction with continuous Project Manager feedback through prompt communication and follow up. Ensure correction of deviations immediately using specifications and Project Manager representation as required.
- Conduct site visits, as required, to witness compliance with the procedures and checklists developed for installation verification, start-up testing, and functional performance testing for the various building systems to be commissioned.
- Accountable to act as a Project Manager representative to document, administer and onsite verify all aspects of design, selection, installation, start up and final commissioning for all defined aspects of the facility, as specified by the Project Manager.
- Coordinate and witness the training of designated facilities representatives, i.e. building operations personnel. All training will be recorded. Commissioning agent will co-ordinate recording and editing of the recording.
- Oversee through review and critique the Operations and Maintenance Manual to describe building systems defining components and systems operating methodology and generally accepted maintenance practices. The document development and definition to be reviewed and approved by the Facilities Representative or designated representative. Document to include equipment bill of materials and OEM maintenance recommendations to be provided in both hard copy and electronic versions.
- Provides System manual as outlined in ANSI/ASHRAE/IES Standard 202-2013 section 14

and informative appendix L, including system description with narrative and Operating Instruction for Emergency Work. System manuals will be provided to the owner for the use in building operation and training of personnel

- Preparation, verification and completed execution of project turnover.
- Conduct a 11-month warranty review with the Project Manager to ensure that any warranty issues are identified prior to the end of the warranty period.
- Review building operation with the Project Manager over the first year of operation and develop a plan for resolving outstanding commissioning related issues including how occupants may report Internal Air Quality (IAQ) concerns, how these IAQ issues will be investigated/ addressed, and how the results will be reported back to the occupants.
- Post occupancy operation commissioning, including delayed and seasonal testing and warranty issues, will be performed as outlined in ANSI/ASHRAE/IES Standard 202-2013 section 16.

4.4 Close-Out Documents and Procedures

Project close-out documentation is a requirement for Toronto Metropolitan University for every project. The Contractor is required to provide all close-out documents (CAD and PDF) within four (4) months of the substantial completion of site work. The requirements of the documentation are as noted in the contract documents.

4.4.1 Documents

All project documentation will be turned-over in a soft/electronic copy to Toronto Metropolitan University, in addition to the other specific requirements. Toronto Metropolitan University will be relying on the ‘as built’ drawings and manuals for as long as the structure is in use. A monetary value may be assessed to the value of these documents up front so they are part of the Schedule of Values in the monthly Progress Draw system (in the bid specification). Close out documents are to be made a line item from the beginning of the project and they are to be either submitted or approved or not, no partial draws should be allowed. A value should be assigned that reflects the cost of creating the ‘as built” drawings and assembling the manual and acts as an incentive to submit them as soon as they are available.

On a larger project, Toronto Metropolitan University may place a monetary value on the Operation & Maintenance Manual materials. If a value is assigned to the documents, it should be a specific dollar amount, not a percentage of the project value. It may be also suggested to break down the monetary value of submittals against the mechanical / electrical manuals and release funds as each are submitted. Project documentation includes, but not limited to:

- Operation & Maintenance Manuals
- list of parts and equipment installed and current suppliers of those parts, including a list in Microsoft Excel format

- warranty documentation including a comprehensive list of included warranties
- shop drawings
- as-built drawings
- single-line drawings for electrical and plumbing
- project reports (i.e. TAB, environmental, IAQ, etc.)
- LEED project documentation (if applicable)

4.4.2 Operation & Maintenance Manuals

Operation & Maintenance manuals differ significantly from the compilation of shop drawings. This documentation provides information with regards to the regular maintenances and cleaning instruction of materials, necessary instructions in order to operate systems and equipment. Toronto Metropolitan University will be required to operate and maintain the systems and equipment. This documentation is considered essential at the turnover of phased, partial and final occupancy and should coincide with the demonstrations. O&M manuals are instructions regarding the upkeep required for finishes and various components of equipment and systems. These can specify, for example, cleaning methods and materials or regularly scheduled maintenance of equipment. This is essential at turnover as Toronto Metropolitan University will be responsible for complying with maintenance requirements in order not to void any warranties. There is a growing trend of contractors to provide the consultant or owner with binders already made up with divisions for Toronto Metropolitan University to insert the manuals as they are submitted by the contractor.

The Contractor is to provide all specified spare materials and tools and obtain a signed receipt of inventory from Toronto Metropolitan University's representative.

4.4.3 Submittals, Shop and As-Built Drawings

All final reviewed/approved submittal packages and shop drawings, if required, are to be submitted to Toronto Metropolitan University by the Contractor. The submittal of shop drawings is to be completed once they have been reviewed for general conformance by the consultants. The terms record drawings, as-built drawings and sometimes measured drawings are often confused and/or misused. Record drawings should not be mistaken for as-built drawings nor for measured drawings.

As-built drawings are those prepared by the Contractor as they construct the project and upon which they document the actual locations of the building components and changes to the original contract documents. These, or a copy of same, are typically turned over to the architect or Toronto Metropolitan University at the completion of the project.

Record drawings are those drawings prepared by the architect when contracted to do so. These are usually a compendium of the original drawings, site changes known to the architect

and information taken from the contractor’s as-built drawings.

Measured drawings is the term recognized in the industry to describe the drawings prepared from on-site measurements of an existing building or space. It can be for a building to which additions or alterations will be made; or for spaces which are intended for lease and from which drawings the areas for lease purposes will be calculated.

Preparation of As-Built Drawings

The Contractors is responsible for creating "as-builts" from field data collected during the course of the project. Field data is defined as information collected on site while constructing the project that is not available from the contract documents, addenda, change orders, or site instructions. It is of importance that the Contractor record on the as-builts all field information relating to concealed conditions.

Contractors may be required by the contract documents to provide a greater degree of accuracy in some areas of the as-builts. The contractor should include adequate monies for this work in their tender price.

The Contractor is not responsible for the creation of record drawings and should advise any client or architect who requests something other than the standard industry practice that the contractor cannot accept this responsibility. The record drawings contain the intellectual property of the architect and should be respected.

Contractors who have the capacity to use auto cad may offer to do so voluntarily, but will also be compensated appropriately for converting as-builts to this format. Contractors should raise this issue prior to tender closing with the tender authority and ensure that any additional costs that may be required are included in their bid.

4.5 Warranties

Warranties for the project typically start at substantial performance of the work or on the date of occupancy of a phased or partial occupancy. Any extended warranties typically start at the expiration of the contractor’s one-year warranty. As part of the final submittals, the contractor will typically provide a letter of warranty for the entire work. Letters from suppliers and subcontractors are not required as part of the submission unless they are for extended warranties. In these cases, the contractor is required to obtain these warranties for Toronto Metropolitan University and a direct contractual relationship between Toronto Metropolitan University and the respective subcontractor or supplier will occur after the initial one-year warranty.

The Contractor is to provide for a one-year comprehensive warranty for the work from substantial performance of the project. Contract specifications may provide for a two-year

comprehensive warranty that covers all the work. As part of the final submittals, a letter of warranty for the entire work may be required from the contractor. Under GC, it is the contractor who is responsible to administer warranty work, which is generally carried out by the subcontractor who installed the work, which is giving the problem. It is not always easy to pinpoint what the source of a problem is (i.e. roofing leaks), and therefore who is responsible to resolve it. This is where the expertise of the contractor is useful. It is frequently true that problems arise where the work of several subcontractors intersect.

Specifications often call for extended warranties of varying durations. These are provided by manufacturers of products such as windows, roofing materials, mechanical systems, etc. As part of the final submittals, the contractor will typically provide letters from suppliers and subcontractors setting out the terms of the extended warranties. In these cases, the subcontractor is required to obtain these warranties for Toronto Metropolitan University and a direct contractual (warranty) 26 relationship between Toronto Metropolitan University and the respective subcontractor or supplier will occur after the initial one-year warranty.

4.5.1 Warranty Period

During the comprehensive warranty period, Toronto Metropolitan University should be contacting the contractor who contacts the subcontractor to have a problem fixed. Refer to FORM 11 – WARRANTY NOTICE. The form should be filled out so that everyone in the chain knows what is happening. If there is an emergency, Toronto Metropolitan University will contact the relevant subcontractor directly to have emergency action taken. It is good practice to hold an eleventh month warranty review with the consultants, contractor, and the university in attendance.

4.5.2 Warranty Administration Process

Meet to discuss warranty Administration Process, the Contractor's role generally continues throughout the warranty period. Often Toronto Metropolitan University will go directly to the subcontractor, which is preferred in an emergency situation, however, the warranty chain is ideal (owner – contractor – subcontractor) as it lets all involved know what is happening.

4.6 Invoices and Payment

4.6.1 Payment Requirements

Contractors must submit invoices in accordance with the information required in SUPPLEMENTARY CONDITIONS TO CCDC 2 – 2008, ARTICLE A-5 – PAYMENT, 5.1.4.[VC1], ARTICLE A-6 – RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING, 6.6.1 (i)[VC2]

Invoices must be submitted to:

a) fmd.invoices@torontomu.ca;

b) The Architect/Payment Certifier; and,

c) The Project Lead.

Applications for payment and Proper Invoices will be considered given or delivered by the Contractor to the Owner (TMU) when they are received by the Owner (TMU) and such receipt can be verified, as detailed above.

A Proper Invoice has the meaning set out in the Construction Act, R.S.O. 1990, c. C. 30 (the "Construction Act").

For general inquiries or invoice status, email the Payment Help Desk at invoices@torontomu.ca or call 416-979-5010 for assistance.

TMU assumes no responsibility for payments of obligations except those incurred in accordance with current purchasing regulations. Invoices that do not include a valid purchase order number and applicable taxes are subject to return for corrective action.

[VC1] Must match the proper supplementary condition section reference.
Payment Article
CCDC 2: Article 5
CCDC 5: Article 9.1.6
CCDC 14: Article 5

[VC2] Must match the proper supplementary condition section reference.
Receipt Article
CCDC 2: Article 6
CCDC 5: Article 10.6.1 (i)
CCDC 14: Article 6

4.6.2 Payment Methods

Toronto Metropolitan University's payment methods include Petty Cash, Purchasing Card, Travel Card and Direct Deposit. TMU recommends using direct deposit (Electronic Funds Transfer (EFT)) to direct your payment to your financial institution. If you are interested in receiving your invoice payments as EFT's please contact **Mary Jane Pacheco - Manager, Payment Services at (416) 979-5000 ext. 554748.**

Toronto Metropolitan University can release payment only to suppliers that provide a Canadian Revenue Agency (CRA) business number. The Contractor Certification Form must be completed by all non-corporate suppliers.

5.0 KEY PERFORMANCE INDICATORS (KPIs)

Timely, efficient, and accurate service and accountability are critical components of Toronto Metropolitan University. To ensure these goals are met, key performance indicators are tracked. The key performance indicators will be monitored by Facilities Management & Development on a project-to-project basis. All work is to conform to TMU standards, TMU policies, the TMU Contractor Manual, Requirements of Law, industry maintenance and construction practices.

In providing services, Contractor's performance will be evaluated on a range of criteria that includes compliance with policy and procedure requirements, documentation, site protection and cleanliness, hazardous material management and waste disposal and working relationship with the university and collaborators. The criteria are assessed on a numerical point scale of Excellent (3), Average (2) and Poor (1).

Please refer to APPENDIX D – CONTRACTOR KEY PERFORMANCE INDICATORS for the full list and descriptions of KPIs.

6.0 DEFINITIONS

APPLICABLE LAWS
Means all the statutes, laws, bylaws, regulations, ordinances, orders and requirements of governmental or other public authorities having jurisdiction, and all amendments thereto, relating to the Work or the performance of the Work.

CONTAMINATION
Means the existence of any materials, substances or special (hazardous) wastes, the storage, manufacture, disposal, treatment, generation, use, transport, remediation, or release into the environment of which is now or hereafter prohibited, controlled, or regulated under the Applicable Laws.

CONTRACT
Means the legal, business agreement entered into between Toronto Metropolitan University and the Contractor and includes all of the documents listed in the Contract.

CONTRACT DOCUMENTS
Means the documents that are a part of the Contract.

CONTRACTOR
Means the Contractor named in the Contract.

DAY
Means a business day, considered every official work day of the week. These are the days between and holding from Monday through Friday, and do not include public holidays and weekends.

DEFICIENCY
Means the deficiency in the Work, or part thereof, for which the Contractor is responsible under the Contract Documents and included a deficiency in any design for which the Contractor is responsible

DRAWINGS
Means all the layout and construction drawings provided by Toronto Metropolitan University to the Contractor that illustrate the Work in detail.

FACILITIES MANAGEMENT & DEVELOPMENT (FMD)
Means the care of the physical environment of the Toronto Metropolitan University campus and strategic planning for existing and future spaces, including the impacts of those spaces.

HAZARDOUS MATERIAL
Means a substance or mixture of substances — other than a pesticide — that exhibits characteristics of flammability, corrosively, reactivity or toxicity, as provided in the Environmental Protection Act.

PLACE OF WORK/PROJECT SITE
Means the Work Site.

PRIME CONSULTANT
Means the individual or entity engaged by Toronto Metropolitan University and identified as such. The Prime Consultant is the Architect, the Engineer or entity licensed to practice in the province of Ontario.

PRODUCTS
Means the material, machinery, equipment and fixtures and other items forming the Work or part thereof but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work and normally referred to as construction machinery and equipment.

PROJECT
Means the total construction of which the Work to be provided under the Contract Documents may be the whole or a part.

PROJECT MANAGER (PM)
Means the individual from Toronto Metropolitan University's Facilities Management & Development Department assigned to lead the team that is responsible for achieving the project objectives.

PROJECT MANAGEMENT OFFICE (PMO)
Means dedicated to planning, coordinating and managing all renovations, new construction and

deferred maintenance projects for TMU's built environment.

PROJECT TEAM
Means the PMO Project Manager, Project Manager- Technical Systems, FFE Coordinator, Project Controls Administrator, Project Administrator, Project Assistant, and Prime Consultant.
REGULATORY REQUIREMENTS - synonymous with Applicable Laws.

SHOP DRAWINGS
Means drawings, diagrams, illustrations, schedules, performance charts, brochures and data that are to be provided by the Contractor to illustrate details of a portion of the Work.

SPECIFICATIONS
Means the written requirements provided by Toronto Metropolitan University and / or their representative that outline and expand the scope of the Work in detail.

SUBCONTRACTOR
Means a person, firm or corporation not contracting with or employed directly by Toronto Metropolitan University for the doing of any work but contracting with or employed by the Contractor or by another subcontractor of the Contractor to perform the Work or a portion thereof.

TOTAL COMPLETION OF THE WORK
Means all items arising from the Warranty Period have been corrected by the Contractor and the state of the Work is so declared in writing by Toronto Metropolitan University.

WARRANTY PERIOD
Means the period of time as described.

WORK
Means the doing of all things, whether temporary or permanent, that are to be done by the Contractor pursuant to the terms and provisions of the Contract and in particular, but without limiting the generality of the foregoing, includes the furnishing of labour, products and equipment necessary or incidental to the performance of the Contract, including all extra or additional work or products, matters or things which may be ordered by Toronto Metropolitan University as herein provided.

WORKERS
Means the sub-trades to the contracts, and includes mechanics, workers, labourers, owners and drivers of a truck or other vehicle employed in the execution of the contract by the contractor or by any sub-contractor under them and clerical staff.

WORK SITE
Means the areas outlined in the contract, or otherwise designated by Toronto Metropolitan

University, in which the Work takes place.

APPENDICES — PERMITS, APPLICATIONS & FORMS

APPENDIX A – ROOM/PREMISES CONDITION REPORT

PREMISIS CONDITION REPORT IS TO BE FILLED AT PROJECT KICK OFF MEETING

CONDITION LEGEND		
5	NEW	New or New-Like Condition; No Issues to Report
4	GOOD	Good Condition; No Reported Issues or Concerns
3	FAIR	Average Wear for Building Age; Not New but No Issues to Report
2	POOR	Worn from Use; End of Expected Life Cycle
1	CRITICAL	Extremely Worn or Damaged
N/A	— — —	Not Applicable; Not Observed Within Project Area

PROJECT INFORMATION		
Project Title:		
Project Number:		
Project Location(s):		
Space Ownership:		
PMO Staff:		☐ Site Visit
Date:		☐ VFA

EXISTING ARCHITECTURAL									
REF	BUILDING ELEMENT	5	4	3	2	1	N/A	TYPE / DESCRIPTION	COMMENTS / RECOMMENDED ACTIONS
1.1	CEILING								
1.2	DOORS								
1.3	DOOR HARDWARE								
1.4	WINDOWS								
1.5	BLINDS								
1.6	WALL FINISHES								
1.7	WAYFINDING / SIGNAGE								
1.8	CASEWORK								
1.9	BASE								
1.10	FLOORING								
1.11	THRESHOLDS / TRANSITIONS								

EXISTING ELECTRICAL	☐ Discussed with Building Operations Staff
COMMENTS / RECOMMENDED ACTIONS:	

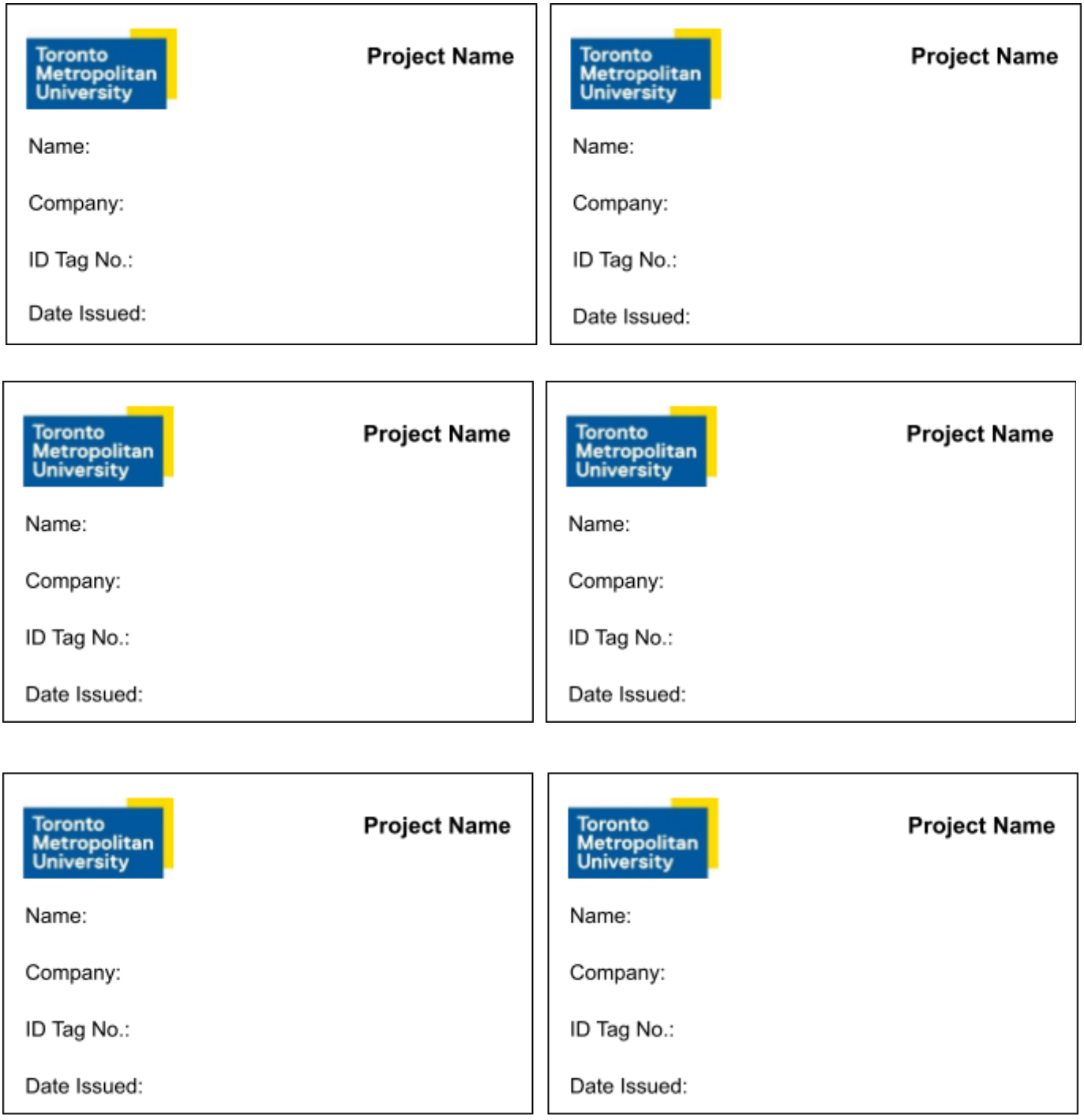
EXISTING ELECTRICAL	☐ Discussed with Building Operations Staff
COMMENTS / RECOMMENDED ACTIONS:	

ZONE OF IMPACT ASSESSMENT			
ADJACENT SPACE 1			
Room Number(s)	KHN 101, 102, 103	Area (Net Assignable):	2714 SF (252 SM)
Space Classification:	Classroom, Office	Department / Faculty:	School of Fashion
Department Contact:	John Smith, john.smith@torontomu.ca, ext. 1234	Hours of Operations:	M-F 8:00am-10:00pm, Sat. 12:00pm-6:00pm
Community Impact:	Students, Faculty, Staff	Level of Impact:	High
ADJACENT SPACE 2			
Room Number(s):		Area (Net Assignable):	
Space Classification:		Department / Faculty:	
Department Contact:		Hours of Operations:	
Community Impact:		Level of Impact:	

ADJACENT SPACE 3			
Room Number(s)	KHN 101, 102, 103	Area (Net Assignable):	2714 SF (252 SM)
Space Classification:	Classroom, Office	Department / Faculty:	School of Fashion
Department Contact:	John Smith, john.smith@torontomu.ca, ext. 1234	Hours of Operations:	M-F 8:00am-10:00pm, Sat. 12:00pm-6:00pm
Community Impact:	Students, Faculty, Staff	Level of Impact:	High
ADJACENT SPACE 4			
Room Number(s):		Area (Net Assignable):	
Space Classification:		Department / Faculty:	
Department Contact:		Hours of Operations:	
Community Impact:		Level of Impact:	
ADJACENT SPACE 5			
Room Number(s):		Area (Net Assignable):	
Space Classification:		Department / Faculty:	
Department Contact:		Hours of Operations:	
Community Impact:		Level of Impact:	
ADJACENT SPACE 6			
Room Number(s):		Area (Net Assignable):	
Space Classification:		Department / Faculty:	
Department Contact:		Hours of Operations:	
Community Impact:		Level of Impact:	

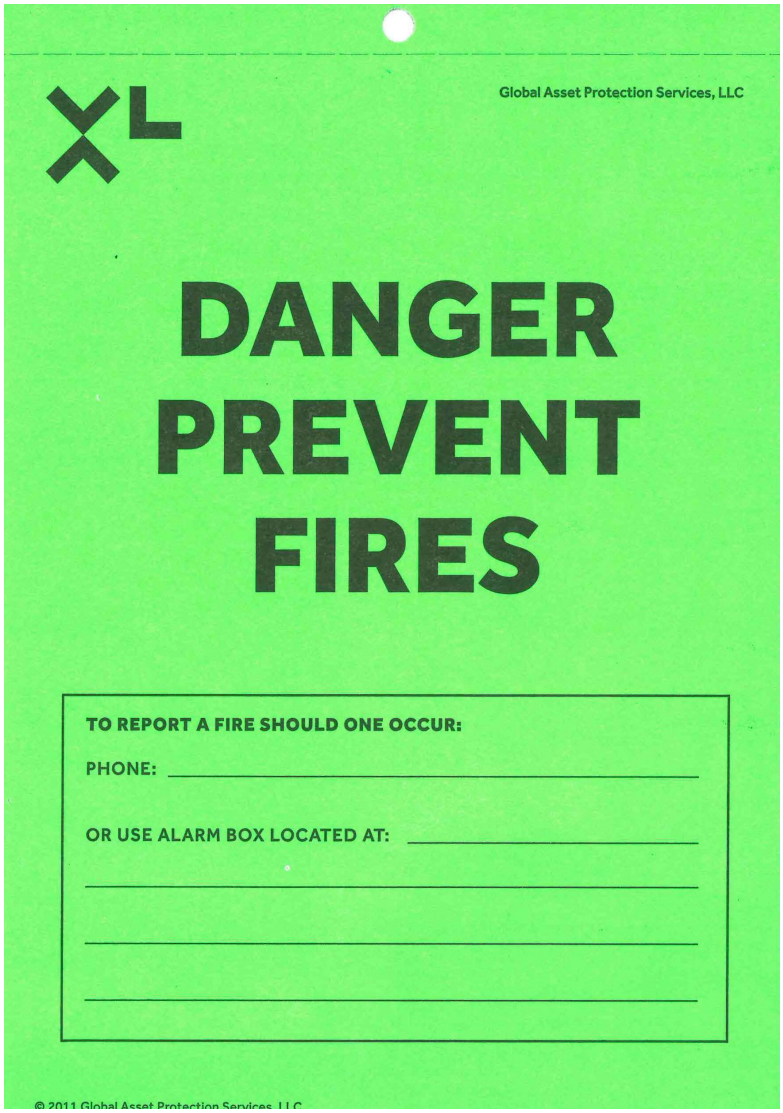
OTHER
COMMENTS / RECOMMENDED ACTIONS:

APPENDIX B – IDENTIFICATION BADGE TEMPLATE



APPENDIX C – HOT WORK PERMIT EXAMPLE

Sample of granted permit for Hot Work.



Global Asset Protection Services, LLC

DANGER PREVENT FIRES

TO REPORT A FIRE SHOULD ONE OCCUR:

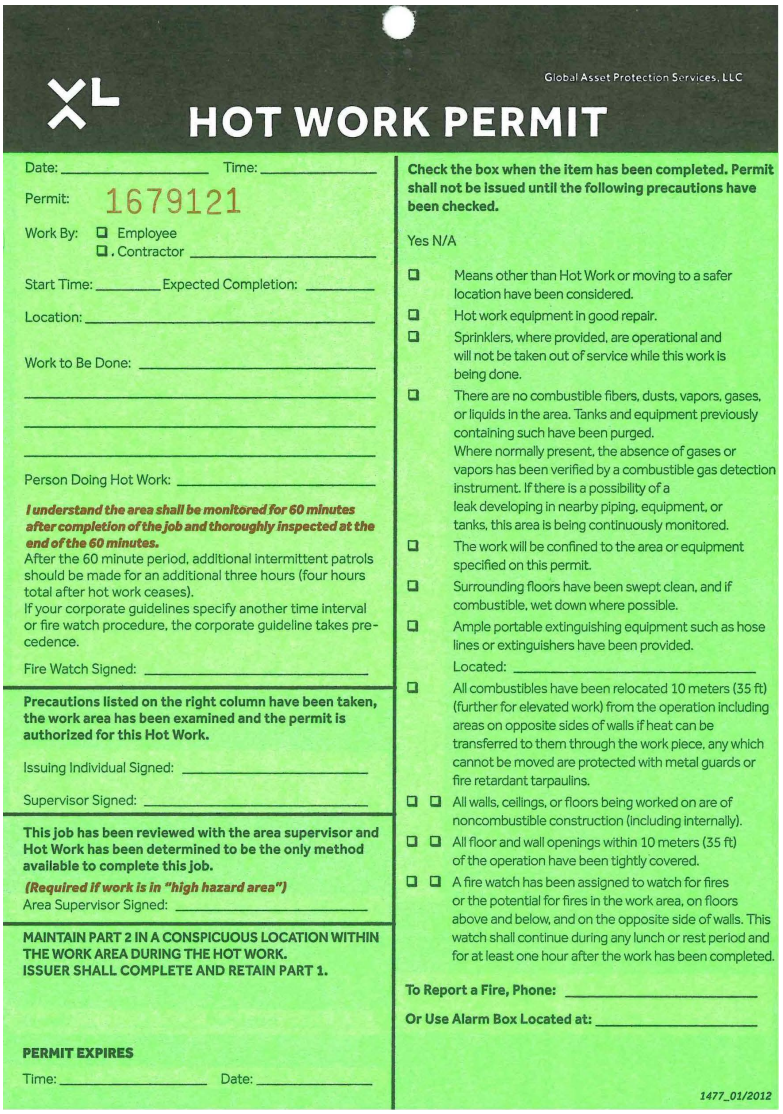
PHONE: _____

OR USE ALARM BOX LOCATED AT: _____

_____

_____

_____



Global Asset Protection Services, LLC

HOT WORK PERMIT

Date: _____ Time: _____

Permit: 1679121

Work By: ❑ Employee
❑ Contractor _____

Start Time: _____ Expected Completion: _____

Location: _____

Work to Be Done: _____

_____

_____

_____

Person Doing Hot Work: _____

I understand the area shall be monitored for 60 minutes after completion of the job and thoroughly inspected at the end of the 60 minutes.
After the 60 minute period, additional intermittent patrols should be made for an additional three hours (four hours total after hot work ceases).
If your corporate guidelines specify another time interval or fire watch procedure, the corporate guideline takes precedence.

Fire Watch Signed: _____

Precautions listed on the right column have been taken, the work area has been examined and the permit is authorized for this Hot Work.

Issuing Individual Signed: _____

Supervisor Signed: _____

This job has been reviewed with the area supervisor and Hot Work has been determined to be the only method available to complete this job.
(Required if work is in "high hazard area")
Area Supervisor Signed: _____

MAINTAIN PART 2 IN A CONSPICUOUS LOCATION WITHIN THE WORK AREA DURING THE HOT WORK.
ISSUER SHALL COMPLETE AND RETAIN PART 1.

PERMIT EXPIRES

Time: _____ Date: _____

Check the box when the item has been completed. Permit shall not be issued until the following precautions have been checked.

Yes N/A

- ❑ Means other than Hot Work or moving to a safer location have been considered.
- ❑ Hot work equipment in good repair.
- ❑ Sprinklers, where provided, are operational and will not be taken out of service while this work is being done.
- ❑ There are no combustible fibers, dusts, vapors, gases, or liquids in the area. Tanks and equipment previously containing such have been purged. Where normally present, the absence of gases or vapors has been verified by a combustible gas detection instrument. If there is a possibility of a leak developing in nearby piping, equipment, or tanks, this area is being continuously monitored.
- ❑ The work will be confined to the area or equipment specified on this permit.
- ❑ Surrounding floors have been swept clean, and if combustible, wet down where possible.
- ❑ Ample portable extinguishing equipment such as hose lines or extinguishers have been provided. Located: _____
- ❑ All combustibles have been relocated 10 meters (35 ft) (further for elevated work) from the operation including areas on opposite sides of walls if heat can be transferred to them through the work piece, any which cannot be moved are protected with metal guards or fire retardant tarpaulins.
- ❑ ❑ All walls, ceilings, or floors being worked on are of noncombustible construction (including internally).
- ❑ ❑ All floor and wall openings within 10 meters (35 ft) of the operation have been tightly covered.
- ❑ ❑ A fire watch has been assigned to watch for fires or the potential for fires in the work area, on floors above and below, and on the opposite side of walls. This watch shall continue during any lunch or rest period and for at least one hour after the work has been completed.

To Report a Fire, Phone: _____

Or Use Alarm Box Located at: _____

1477_01/2012

APPENDIX D – CONTRACTOR KEY PERFORMANCE INDICATORS

CONTRACTOR MANUAL KPI			3	2	1
NO.	DESCRIPTION		EXCELLENT	AVERAGE	POOR
1	Collaborative working relationship with FMD		3	2	1
2	Compliance with TMU Policies & Regulations		3	2	1
3	Construction Site Safety		3	2	1
4	Collaborative working relationship with Health & Safety Officer		3	2	1
5	Incident Reporting & Communications		3	2	1
6	Compliance with Parking Policy		3	2	1
7	Collaborative working relationship with TMU Required Contractors		3	2	1
8	Project Start Up & Documentation		3	2	1
9	Project Management Services/Systems		3	2	1
10	Compliance with Access to Utility Rooms, Roofs & Occupied Spaces		3	2	1
11	Hoarding, Barriers, Signage & Temporary Structures		3	2	1
12	Site Protection		3	2	1
13	Site Cleanliness		3	2	1
14	Hazardous Material Management		3	2	1
15	Waste Disposal & Construction Bins		3	2	1
16	Compliance with Contactor Sign-In Procedures		3	2	1
17	Compliance with University Permits & Advance Notification		3	2	1
18	Compliance with Equipment Lockout / Tag Out Policy & Procedures		3	2	1
19	Compliance with Hot Work Policy & Procedures		3	2	1
20	Compliance with X-Raying, Scanning & Coring Procedures		3	2	1
21	Compliance with Deliveries Procedures		3	2	1
22	Compliance with Elevating Devices, Cranes, Hoisting & Rigging Procedures		3	2	1
23	Compliance with Percussion Tools, Noisy and Sensitive Work Policy		3	2	1
24	Pre-Operational Cleaning		3	2	1
25	Deficiency Completion		3	2	1
26	Post-Construction Handover		3	2	1
27	Commissioning		3	2	1
28	Training Offered		3	2	1
29	Close-Out Documents		3	2	1
			87	58	29

FORM 1 - ACKNOWLEDGEMENT & ACCEPTANCE

This will confirm that I, _____ of _____:

Print Name - Signing Officer *Company Name*

Have a Health and Safety Policy under Section 25(2) (j) of the *Occupational Health and Safety Act, R.S.O. 1990, c. 0.1 as amended,* (the "Act") and have submitted this to TMU for their review and consideration.

Have read, reviewed and understand the information contained within Toronto Metropolitan University's Facilities Management & Development Contractor Manual (May 2022) and all work will be performed in accordance with the requirements.

Have assigned for this project the following Site Supervisor(s):

_____ _____

Site Supervisor Name *Site Supervisor Name*

And as defined by Section 1(1) of the Act each has:

- knowledge, qualifications, training and skill to organize the project work and staff in accordance to the Act;
- experience in mitigating potential risks hazards on construction sites and surrounding area;
- has familiarized themselves and understands TMU's policies, standards, and procedures as contained herein; and
- acknowledged and commit to adhering to Toronto Metropolitan University's Harassment and Conduct Policy

Agree that only the above named supervisor(s) will be assigned to the TMU project.

Understand that failure to comply with any of the above conditions may result in immediate termination of existing contract and removal from Toronto Metropolitan University's vendor of record (VOR) list.

Signature of Signing Authority: _____

Print Name and Title: _____

Witness Signature: _____

Date: _____

FORM 2 - SIGN-IN RECORD LOG

Contractor: _____ **TMU Building:** _____

Floor(s): _____ **Room(s):** _____

Date	ID Tag Number	Person's Name	Company / Department	Time-In	Time-Out

FORM 3 – SECURITY KEY ACCESS REQUEST

IMPORTANT – See procedures in Contractor Manual on Keys and Access to Buildings.
The following information is to be completed and this form sent via email to the Project Manager to request keys from TMU Security.

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Project Information

Nature of Work:

_____

Duration — From: _____ To: _____

Fire Systems Required to be on Disregard? Yes / No

(If "Yes", please provide details of time, date, and, location, as well as the name of the person who is authorized to order a system on and off disregard.)

Key #: _____

Key Holder(s): _____ _____

_____ _____

_____ _____

Note:
All keys are to be returned to TMU Security at the end of each day unless notified otherwise.

TMU Security
285 Victoria Street, Ground Floor
Telephone: 416-979-5040 **Fax:** 416-979-5380
Email: security@torontomu.ca

FORM 4A – Asbestos Contractor Notification and Acknowledgement

Toronto Metropolitan University has identified the presence of asbestos-containing materials at the site. A site-specific list of asbestos-containing or suspect asbestos materials is presented and can be found in TMU's Asbestos Management Plan, which is maintained on site by the university.

Ontario Regulation 278/05 and associated regulatory guidelines apply to all maintenance and renovation work that may disturb known or suspect asbestos-containing materials on site. Such regulations and guidelines state that disturbance of asbestos-containing materials may only be performed by qualified workers or outside contractors who have first received the required training in asbestos-related precautions.

Working with asbestos can be dangerous unless appropriate work practices and personal protective equipment are utilized. Inhaling asbestos fibres can cause various types of lung disease, including cancer.

As a condition of any contract to provide services and/or materials to Toronto Metropolitan University, we, the undersigned company, hereby agree to perform our work in such a manner so as **NOT** to disturb any asbestos-containing materials without:

1. Reviewing the most recent Asbestos Survey Report, including, but not limited to the project-specific Designated Substance Survey Report;
2. Advising employees, agents, contractors and representatives as to the appropriate precautions and safety measures to be taken;
3. Giving notice to the Project Manager that known or suspected asbestos-containing material has the potential to be disturbed; and,
4. Halting work and giving notice to the appropriate Project Manager and/or Project Coordinator when unforeseen suspected asbestos-containing materials are uncovered during the completion of work.

Further, our organization and our employees, agents, contractors and representatives:

1. Will conduct our work in accordance with such requirements and in compliance with all Provincial/Federal regulations and guidelines pertaining to asbestos;
2. That all asbestos waste will be packages and disposed of at a licensed landfill; and,
3. That we will be responsible for advising employees, agents, contractors and representatives with respect to potential exposure to asbestos-containing material while on or about the site.

We indemnify and save harmless Toronto Metropolitan University, its officers, employees, agents and representatives from any loss, damage, cost, or expense arising from any failure by our company and/or our employees, agents, contractors and representatives to comply with any requirements set forth by the owner and/or with any Provincial/Federal regulations or guidelines and/or our failure to oblige the conditions set out above.

Signature of Signing Authority: _____

Name and Title: _____

Date: _____

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Description of Work:

_____

_____

_____

_____

_____

FORM 4B – CHECKLIST OF TYPE 1 ASBESTOS WORK PROCEDURES

Asbestos Removal Type 1: Site investigation

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Project Description

_____

_____

_____

_____

_____

Contractors: _____ Duties: _____

_____ _____

_____ _____

_____ _____

Type 1 Operations — Checklist	Yes	No
1. Construction Health and Safety Branch notified.		
2. Visible dust removed from work area.		
3. Dust removed by damp wiping or vacuuming with HEPA filter-equipped vacuum.		
4. No eating, drinking, chewing or smoking in work area.		
5. Drop sheets (or other measure) to control spread of dust.		
6. Asbestos-containing products wetted, where practicable.		
7. Work area enclosed by walls or other enclosure		

8. Respirators cleaned, disinfected and inspection after use on each shift.		
9. Respirators in good state of repair		
10. Respirators fitted with an effective seal, where applicable.		
11. Written procedures for respirator use, care and selection.		
12. Clean, convenient and sanitary location for respirator storage.		
13. Instruction provided in the use and care of respirators.		
14. Compressed air not used to clean up or remove dust from any surface.		
15. Asbestos dust and waste cleaned up at regular intervals.		
16. Waste in dust-tight containers.		
17. Waste containers identified as containing asbestos.		
18. Drop sheets that will be reused to be cleaned by damp wiping or vacuuming with HEPA filter-equipped vacuum.		
19. Drop sheets that will not be reused to be wetted and disposed of as asbestos waste.		
20. Washing facilities for hands and face provided.		
21. Washing facilities used by workers.		
22. Instruction and training provided.		

FORM 4B – CHECKLIST OF TYPE 2 ASBESTOS WORK PROCEDURES

Asbestos Removal Type 2: Site investigation

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Project Description

_____

_____

_____

_____

_____

Contractors: _____ Duties: _____

_____ _____

_____ _____

_____ _____

Type 2 Operations — Checklist	Yes	No
1. Construction Health and Safety Branch notified.		
Preparation of the Work Area		
2. Drop sheets (or other measure) to control spread of dust.		
3. Signs warning of asbestos dust hazard.		
4. Mechanical ventilation system serving work area disabled.		
5. Ventilation ducts to and from work area sealed.		
6. Work area enclosed by walls or other enclosure.		

7. Friable material removed from surface of false ceiling when access obtained.		
Work Practices		
8. Friable asbestos-containing material removed from surfaces in work area.		
9. Friable material removed by damp wiping or vacuum equipped with HEPA filters.		
10. No eating, drinking, chewing or smoking in work area.		
11. Compressed air not used to clean up or remove dust from any surface.		
12. Wetting agent added to water for dust control.		
13. All friable material that may be disturbed should be wetted, unless wetting would create hazard or cause damage.		
14. Asbestos dust and waste cleaned up at regular intervals.		
15. Waste in dust-tight containers.		
16. Waste containers identified as containing asbestos.		
17. Drop sheets that will be reused to be cleaned by damp wiping or vacuum equipped with HEPA filters.		
18. Drop sheets that will not be reused to be wetted and disposed of as asbestos waste.		
19. Protective clothing and equipment worn by all persons at work area.		
20. Protective clothing provided by employer.		
21. Protective clothing made of material that does not readily retain or permit penetration of asbestos fibers.		
22. Footwear and head covering included as protective clothing.		
23. Protective clothing repaired or replaced if torn.		
24. Protective clothing decontaminated by damp wiping or with vacuum equipped with HEPA filters before leaving work area.		
25. Protective clothing decontaminated and disposed of as asbestos waste.		
26. Appropriate respirators according to O.Reg. 278/05 in use.		
27. Respirators cleaned, disinfected and inspected after use on each shift.		
28. Respirators in good state of repair, and fitted with an effective seal, where applicable		
29. Written procedures for respirator use, care and selection.		
30. Instructions provided on the use and care of respirators.		
31. Clean, convenient and sanitary location for respirator storage.		
Other Measures		
32. Washing facilities for hands and face provided.		
33. Washing facilities used by workers.		

34. Instruction and training provided.		
35. Asbestos work records.		
32. Washing facilities for hands and face provided.		
33. Washing facilities used by workers.		

FORM 4B – CHECKLIST OF TYPE 3 ASBESTOS WORK PROCEDURES

Asbestos Removal Type 3: Site investigation

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Project Description

_____

_____

_____

_____

_____

Contractors: _____ Duties: _____

_____ _____

_____ _____

_____ _____

Type 3 Operations — Checklist	Yes	No
1. Construction Health and Safety Branch notified.		
Preparation of the Work Area		
2. Work area separated from rest of workplace by walls, barricades, fencing or other suitable means.		
3. Work area identified by signs warning of asbestos dust hazard.		
4. Warning signs state that access is restricted to persons wearing protective clothing and equipment.		
5. Asbestos-containing dust removed from the work area by damp wiping or vacuum equipped with HEPA filters.		

6. Articles in work area removed or covered with polyethylene or other suitable material impervious to asbestos fibers.		
7. Watertight electrical systems for wet removal, where practicable.		
8. Temporary electrical systems for wet removal operations equipped with ground fault circuit interrupters.		
9. Mechanical ventilation system serving the work area disabled.		
10. Spread of asbestos dust controlled by an enclosure or polyethylene or other suitable materials.		
11. Entrances to and exits from work area fitted with curtains of polyethylene sheeting or other suitable materials.		
Work Practices		
12. Work area inspected at least daily for defects in enclosure, barriers or decontamination facility.		
13. Work discontinued until all defects repaired.		
14. Eating, drinking, chewing or smoking prohibited in work area.		
15. Wetting agent added to water to control the spread of asbestos dust.		
16. Wetting friable material that may be disturbed, unless wetting would create a hazard or cause damage.		
17. Dust and waste containing asbestos kept wet, where practicable.		
18. Compressed air not used to clean up and remove dust from any surface.		
19. Dust and waste containing asbestos cleaned up and removed frequently and at regular intervals.		
20. Asbestos waste placed in dust-tight containers that are impervious to asbestos and identified as containing asbestos waste.		
21. Respirators cleaned, disinfected and inspected after use on each shift.		
22. Respirators in good state of repair.		
23. Respirators fitted with an effective seal, where applicable.		
24. Written procedures for respirator use, care and selection.		
25. Instruction provided in the use and care of respirators.		
26. Clean, convenient and sanitary location for respirator storage.		
27. Protective clothing provided by employer.		
28. Protective clothing made of material that does not readily retain or permit penetration of asbestos fibers.		
29. Footwear and head covering included as protective clothing.		
30. Protective clothing repaired or replaced if torn.		
31. Protective clothing removed in decontamination facility.		

32. Protective clothing that will be reused decontamination by damp wiping or with vacuum equipped with a HEPA filter.		
33. Protective clothing that will not be reused decontaminated and disposed of as asbestos waste.		
Clean-Up Procedures		
34. Dust and waste cleaned up and removed immediately on the completion of the work.		
35. Work area cleaned by thorough washing and vacuum with HEPA filters before dismantling enclosure.		
36. Equipment and tools cleaned by damp wiping and vacuum with HEPA filters or disposed of as asbestos waste.		
Washing Facilities		
37. Shower room provided in decontamination facility.		
38. Shower provided with hot and cold water at a temperature between 40°C and 50°C.		
39. Controls available to regulate water flow and temperature (where applicable).		
40. Hot water supply adequate to maintain minimum temperature of 40°C.		
41. Shower room provided with towels.		
42. Shower used by every worker when leaving the work area.		
Other Measures		
43. Instruction and training provided.		
44. Asbestos work records.		

FORM 4C – ASBESTOS WORK LOG

<INSERT AS REQUIRED>

FORM 5 – HOT WORK PERMIT APPLICATION

IMPORTANT – See procedures in Contractor Manual on Hot Work. 10 DAYS ADVANCE NOTICE required.

Routine Emergency Critical

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Welding/Cutting Contractor Information

Company: _____ Contact: _____

Telephone: _____

Date of Work - From: _____ To: _____

Time of Work - From: _____ To: _____

Equipment:

_____

Scope and Location:

_____

_____

Note:

- Copy of permit must be posted at the project site
- The contractor MUST provide a Fire Watch for the area of welding and/or cutting work
- The contractor MUST provide a non-base building 10 lb. ABC fire extinguisher
- Check remains in work area for smoldering 1 hour after all work is completed
- Monitor the site for additional three (3) hours after all work is completed

TMU FACILITIES MANAGEMENT & DEVELOPMENT — CLEARANCE & APPROVAL

Project Manager:	Date:
Maintenance & Operations:	Date:
Project No. & Name:	Cost Centre:

FORM 6 - X-RAYING, SCANNING & CORING WORK PERMIT

IMPORTANT – See procedures in Contractor Manual on X-Raying, Cutting and Coring.
10 DAYS ADVANCE NOTICE required. FORM 6A - Radiography Source Permit System is required for all X-raying work.

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

X-Raying, Scanning and Coring Information

Company: _____ Contact: _____

Floor(s) affected during X-ray: _____ Floor(s) Requiring Access: _____

Work: X-Ray Scan

Direction of X-Ray Shooting: Up Down Location: North South East West

Core X-Ray Date/Time From: _____ (11:59PM) To: _____ (6:00AM).
Times may only be between 11:59PM and 6:00AM

Scan Dates - From: _____ (AM / PM) To: _____ (AM / PM).
Times - Day hours permitted

Core Dates - From: _____ (PM) To: _____ (AM).
Times may only be between 10:30PM to 7:30AM

Additional Details: _____

_____

_____

Note: X-raying/scanning/coring company must be pre-approved; technicians must be certified.

- All X-ray and Core permits must be accompanied by a plan indicating the proposed core locations
- Contractor is responsible for completely securing the x-raying/scanning/coring area

TMU FACILITIES MANAGEMENT & DEVELOPMENT — CLEARANCE & APPROVAL

Project Manager: Date:

Maintenance & Operations: Date:

Project No. & Name: _____ Cost Centre: _____

FORM 6A – RADIOGRAPHY SOURCE PERMIT

Radiography sources of significant energy are used by external contractors during renovation or construction work in University buildings. In order to minimize the possibility of exposure to ionizing radiation of any students, faculty, staff, visitors, experimental animals, plants, cell lines, photographic films or other radio-sensitive materials, the Environmental Health and Safety office (EHS) has developed protocols and a radiography source permit system for all such work. This permit is valid only for the specified time provided on the date indicated below. The permit must be posted outside the space while the work is conducted. The expired permit must be kept on record for a minimum of 3 years by the university project manager.

TO COMPLETED BY TMU FACILITIES MANAGEMENT AND DEVELOPMENT

Request for: Radiography source usage

Project Description _____ Project No.: _____
If applicable

Radiographer: _____ Company: _____

Location to be tested: Bldg: _____ Rooms: _____

Date: _____ Time: _____

Floor plan attached showing affected areas

Notification list of relevant Department Offices and staff attached

Relevant areas of potential exposure will be posted with warning signs (attach a copy of the warning signs)

FMD Contact: _____ Phone: _____ Email: _____

Authorized by: _____ Date: _____
Signature *DD/MM/YYYY*

TO BE COMPLETED BY RADIOGRAPHER

CNSC Licence Number: _____(attach a copy of the licence)

Radioactive Source: _____ Collimated: Yes No Activity:_____

Direction of Beam: Upwards Downwards Other (identify) _____

Locations of Potential Exposure: _____

I have reviewed all information provided above and verify that it is correct.

Access points to radiography site will be blocked by cautionary tape: Yes No

Relevant areas of potential exposure will be posted with warning signs: Yes No (attach copy of signs)

Copy of Permit will be posted outside of radiography site: Yes No

Certified by Radiographer: _____ (signature required)

Print Name: _____ Date: _____
DD/MM/YYYY

TO BE COMPLETED BY TMU EHS

Authorized by: _____ Date: _____
DD/MM/YYYY

FORM 7 – FIRE PROTECTION SYSTEM BYPASS PERMIT

Routine Emergency Critical

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Project Information

Duration – From: _____ To: _____

Hours of Work – From: _____ To: _____

Bypass:

Smoke Zone
72 HR. Notice Required

Sprinkler Drain Down (10:30PM – 7:00AM)
72 HR. Notice Required

Duct Smoke
72 HR. Notice Required

Heat Detectors
72 HR. Notice Required

Standpipe Drain Down (10:30PM – 7:00AM)
72 HR. Notice Required

Pre Action System
72 HR. Notice Required

Pull Station
72 HR. Notice Required

Verifications (10:30PM – 7:00AM)
72 HR. Notice Required

Installation/Relocation & Testing of Fire System Devices
72 HR. Notice for Smoke Detectors, Speakers & Fire Phones / 7 DAYS Notice for Pull Stations, Mag-Locks & Heat Detectors

Note:

- Permits submitted for a 24-hour duration will be approved for a 12-hour duration
- Bypass initiations and restores are not transferable

TMU FACILITIES MANAGEMENT & DEVELOPMENT — CLEARANCE & APPROVAL

Project Manager: _____ Date: _____

Maintenance & Operations: _____ Date: _____

Project No. & Name: _____ Cost Centre: _____

FORM 8 – Building System Shutdown

IMPORTANT – See procedures in Contractor Manual on Building System Shutdowns. 10 DAYS ADVANCE NOTICE required for any isolated shutdowns. 15 DAYS ADVANCE NOTICE required for parts of or entire building shutdowns.

Routine **Emergency** **Critical**

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Contractor Information

Company: _____ Contact: _____

Telephone: _____ Email: _____

Scope of System Shutdown Work

Date(s) – From: _____ To: _____
DD/MM/YYYY DD/MM/YYYY

Time – From: _____ To: _____

Types of services affected (mark as required):									
Power		**Water System**		**Air System (HVAC)**		**Steam**		**Other (Specify)**	
	Access Controls		Chilled Water		Supply Ventilation		High Pressure		Fire Alarm
	Emergency Generator		Condenser Water		Supply Cooling		Medium Pressure		Fire Protect Water
	Emergency Power		Pure Water		Supply Heating		Low Pressure		Natural Gas
	Building Power		Hot Domestic		Exhaust Laboratory		Condensate Return		Odours
	Elevators		Hot Lab Process		Exhaust General				Smoke
	Computers		Heating Hot Water		Exhaust Toilet	**Drainage**			Exhaust Hood
	Telephones		Cold Domestic		Compressed Control		Lab Waste		
	Lighting		Cold Lab Process		Compressed Lab Air		Sanitary		
	Corridor/Stairs		De-ionized		Lab Vacuum		Storm Drain		

	Equipment Lockout/Tag-out Procedure is Required	
Base Building Contractors Notified	**Investigated by:**	**Approved by:**
☐ Fire & Life Safety:	☐ 1.	☐ Mechanical:
☐ BAS:	☐ 2.	☐ Utility:
☐ Other:	☐ 3.	☐ Fire Protection:
☐ Other:		

The FMD approver(s) of the shutdown to determine as required:						
Shutdown Request sent to:	FMD Own Forces Required to be Present:	**Notice Distribution**				
		Always Include:		Include:		
☐ EHS Contact:	☐ EHS Contact:	X	Contractor	☐ Day Shift	☐ Electrical/Lighting	
		X	Bulletin Board	☐ Night Shift	☐ HVAC	
		X	FMD	☐ Fire Protection	☐ Piping	
☐ M&O Contact:	☐ M&O Contact:			☐ Utility	☐ Structure/Paint	
				☐ Technical	☐ Other:	
				☐ Carpenter		
☐ Other Contact:	☐ Other Contact:				☐ Other:	

TMU FACILITIES MANAGEMENT & DEVELOPMENT — CLEARANCE & APPROVAL

Project Manager: _____ Date: _____

Maintenance & Operations: _____ Date: _____

Project No. & Name: _____ P.O. No.: _____

Cost Centre: _____

FORM 9A - PROJECT CLOSE OUT FORM

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

ARCHITECTURAL

Description	Responsibility	Date Received	Date to TMU
Fire & Smoke Separation and Closures Completed			
All required exits and hardware are complete and operational including mag locks and signage if applicable			
Hold Open at rated doors have appropriate ceiling F.A. detectors			
All shaft enclosures are completed			
Elevator final acceptance notice			
Operating Manuals, As-Built Prints and			
AutoCAD files			
Consultant General Review Commitment signoff letter			
Structural			
Mechanical			
Electrical			
Other (i.e. landscape, elevating device consultant)(Structural Studs)			
Independent Inspection Soils, Concrete Masonry, etc.			
Independent Inspection Report for spray fireproofing conformance			
Independent Inspection / Roof			
Independent Inspection / Air Barrier			
Independent Inspection / Asphalt			
Deficiency Reports			
Spare Material Turn Over to Client			
Material flame spreads smoke generation info for Building and Fire Dept.			
Turn over shop drawings and list to owner			

FORM 9B - PROJECT CLOSE OUT FORM

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

ELECTRICAL

Description	Responsibility	Date Received	Date to TMU
Verification of fire alarm			
Security system verification			
Verification of diesel generator and transfer switching			
Independent inspection of electrical distribution system and infra-red test on distribution centre, power drop, ground and isolated power			
Verification of emergency lighting			
Verification of UPS system			
Certificate of Inspection by Electrical Safety Authority			
Operating manuals and as-builts and CAD files and hand over of spare parts and materials			
Mag lock verification and certificates			
Electrical engineer final review			

FORM 9C – PROJECT CLOSE OUT FORM

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

MECHANICAL

Description	Responsibility	Date Received	Date to TMU
Sprinkler test report and materials certificate			
Standpipe test and materials certificate			
Underground piping test reports and material certificate			
Fire Department witness to sprinkler and standpipe system			
TSSA certificate for medical gas			
Medical gas Inspector report			
Fire and smoke stopping completed			
Fire hoses and extinguishers in place and operational			
Plumbing inspection by Authority			
Demonstration sign off forms			
HVAC inspection by Authority			
Air and water balancing reports			
Verification of building automatic controls			
Smoke evacuation verification / pressurization			
Operating manuals, as-builts, prints and CAD files and hand over spare parts and materials			
Mechanical engineer final review			
Smoke evacuation verification / pressurization			
Operating manuals, as-builts, prints and CAD files and hand over spare parts and materials			
Tagging/ Identification of Equipment, Valves, etc.			
Deficiencies Corrected			
Training/ Demonstration of System/Equipment Completed			
Key Transfer (if Applicable)			
Mechanical engineer final review			

FORM 10 – WARRANTY INFORMATION

General Information

Building: _____ Floor(s): _____

Date: _____ TMU Project Contact: _____

Section 2	Title/Description	Manufacturer	Contact & No.	Remarks
2480	**Landscaping** 1 Year Warranty			
2500	**Paving & Surfacing** 1 Year Warranty			
2600	**Sewers and Water Mains** 1 Year Warranty			

Section 5	Title/Description	Manufacturer	Contact & No.	Remarks
5100	**Structural Metal Framing** 1 Year Warranty, As-Builts, Touch Up Work			
5300	**Metal Decking** 1 Year Warranty			
5500	**Metal Fabrication** 1 Year Warranty, Touch Up Work			

Section 6	Title/Description	Manufacturer	Contact & No.	Remarks
6100	**Rough and Finished Carpentry** 1 Year Warranty			
6400	**Architectural Woodwork** 1 Year Warranty			

Section 7	Title/Description	Manufacturer	Contact & No.	Remarks
7270	**Fire Stopping and Smoke Seals** 1 Year Warranty, Manufacturer's Certificates			Indicate batch number, manufacturing date(s) and be addressed to subcontractor.
7420	**Aluminum Composite Panels** 1 Year Warranty, Maintenance Data			
7510	**Built Up Bituminous Roofing** 5 Year and 10 Year Warranty			
7900	**Joint Sealers** 10 Year Manufacturer Warranty, 2 Year Written Warranty			

Section 8	Title/Description	Manufacturer	Contact & No.	Remarks
8100	**Metal Doors and Frames** 1 Year Warranty			
8200	**Wood and Plastic Doors** 3 Year Warranty (Institutional Doors), 1 Year Warranty (Residential Doors), Life of Installation Warranty (Interior Fire Doors)			
8400	**Entrances, Storefronts, Metal Windows** 1 Year Warranty			
8700	**Hardware** 1 Year Warranty, Maintenance Material			2 sets wrenches for door closure and locksets; 2 sets of manufacturer's instructions for door closers, locksets, door holders and panic hardware
8710	**Overhead Concealed Automatic Aluminum Slide Door System** 1 Year Warranty, Maintenance Material, Safety Data, O&M Materials			
8800	**Glass & Glazing** 1 Year Warranty			
8900	**Aluminum Curtain Wall** 1 to 5 Year Warranty			

Section 9	Title/Description	Manufacturer	Contact & No.	Remarks
9250	**Gypsum Wallboard & Acoustic Ceiling** 1 Year Warranty, Maintenance Material, Extra Stock			Extra Stock: 2% extra stock for each type of ceiling tile used
9400	**Terrazzo Tile** 1 Year Warranty, Maintenance Data			
9650	**Resilient Flooring** 1 Year Warranty, Maintenance Material, Extra Stock			Extra Stock: 2% extra stock for each type of floor tile used
9680	**Carpeting** Maintenance Data, Extra Stock 1 Year Warranty,			Extra Stock: over and above usable cuttings, provide 5% extra stock
9900	**Painting** 1 Year Warranty, Extra Stock			Extra Stock: 1L of each finish material in each colour used on site

Section 10	Title/Description	Manufacturer	Contact & No.	Remarks
10250	**Specialties** 1 Year Warranty			

Section 11	Title/Description	Manufacturer	Contact & No.	Remarks
11730	**Headwall Units** 1 Year Warranty			
11760	**Operating Room Ceiling Columns** 1 Year Warranty, O&M Data			

Section 15	Title/Description	Manufacturer	Contact & No.	Remarks
15000	**Mechanical**: General Requirements As-Builts, 1 Year Warranty, Extended Warranties, O&M Data			
15300	**Sprinklers** As-Builts, Extra Stock, O&M Materials, Warranties			Extra Stock: Furnish one approved metal cabinet containing eight spare upright type sprinkler heads and two spare pendant type sprinkler heads with the necessary tools for replacing the same.

Section 16	Title/Description	Manufacturer	Contact & No.	Remarks
16010	**Electrical: General Requirements** 1 Year Warranty, As-Builts, O&M Data (as per Specifications), Certificates (as per Specifications)			

FORM 11 – WARRANTY NOTICE

From: _____ Notice Number: _____
Toronto Metropolitan University

To: _____
Contractor

Address: _____

Project: _____
Project Name and Number

Warranty of the Contract dated _____between _____

and _____notice is hereby given of an observed defect or deficiency in the Work as outlined below. Commence correction of the said defect or deficiency within ____ days, and notify the Owner and Consultant upon completion.

Description:

Issued by the Toronto Metropolitan University:

Name and title of issuer	*Signature*	*Date (DD/MM/YYYY)*

Distributed to: