

APPENDIX 1:

WFPS STATION PROGRAM AND FUNCTIONAL REQUIREMENTS

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1.0 INTRODUCTION AND OVERVIEW

1.1 INTENT:

This document is intended to define the scale, scope, and nuances of a temporary modular fire paramedic station design. It is not intended as an exhaustive design specification, as much of the design development and product specifications will be developed in consultation with Winnipeg Fire Paramedic Service (“WFPS”) personnel at the time of design. Minor design variations will be permitted, with written justification and approval by WFPS and the City of Winnipeg.

1.2 PROJECT INTRODUCTION:

The WFPS is looking to acquire a modular, temporary fire paramedic station building that is delivered and commissioned as a complete, turnkey operational station. The delivered product will be fully fit out with all equipment.

The station is intended for temporary applications and repeated deployment. The station will be primarily used to provide fire paramedic service coverage in developing communities until a full-sized fire station is constructed. It would also be used to maintain service coverage during renovation, refit, or replacement of existing stations.

Unlike standard construction projects where the building is commissioned and then turned over to the owner for final fit-out, all owner-supplied components (as noted in this document) and their integration with the building and its construction must be coordinated by the Contractor. This is to ensure that all systems and components function properly, and the building is operational when turned over to the owner. The City’s own forces will work with the Contractor to ensure detailed information related to design, supply, and installation is provided in a timely manner.

The Project Budget includes

- Detailed design, manufacture, delivery and installation of the modular building.
- Design and Installation of site services related to the building.
- Site work:
 - excavation and preparation of the project site.
 - concrete and asphalt paving, hard and soft landscaping.

PROGRAM AREA BREAKDOWN:

Program areas are configured and described to suit a two (2) bay, six (6) person station. The living quarters are designed for 4 persons but could accommodate 6 persons for short periods of time. The areas are divided into three main sections:

OPERATIONS [DIRTY]

Space allocated for storage of apparatus and equipment directly used in firefighting and paramedic operations. Eg. apparatus bay, turnout gear storage, etc.

ADMINISTRATION [CLEAN]

Spaces allocated to non-emergency station operations such as offices and workstations and building systems such as mechanical and IT rooms.

DOMESTIC [CLEAN]

Spaces dedicated to day-to-day activities of firefighters and paramedics during their shift. Eg. kitchen and dining room, fitness area, dorms, etc.

1.3 GENERAL REQUIREMENTS + INFORMATION

The project must comply with all applicable codes, statutes, regulations, bylaws, rules, orders and other requirements enacted or imposed by Federal, Provincial, Municipal or other government bodies, agencies, tribunals or other authorities (as in force or amended or substituted from time to time).

The Contractor is responsible for obtaining any permits, licenses, certifications and inspections (including any associated fees or charges) required by such statutes, regulations, bylaws, rules, orders and other requirements and, at The City's request, the Contractor must provide to The City a copy of such permits, licenses or certifications.

1.4 REGULATORY STANDARDS

Further to E1 Applicable Specifications and Drawings, the following shall apply to the Work, including but not limited to design and construction of the modular building:

- City of Winnipeg Standard Construction Specifications
- City of Winnipeg Program and Functional Requirements for Modular Fire Paramedic Station
- City of Winnipeg WFPS Station Standards
- City of Winnipeg Accessible Design Standard
 - This standard will be applicable to the front entrance area and public washroom only
- City of Winnipeg Green Building Policy: New City-Owned Buildings and Major Additions
- City of Winnipeg Universal Design Policy
- City of Winnipeg Zoning Bylaw 200/06
- City of Winnipeg Building Bylaw 4555/87
- City of Winnipeg Building and Site Design Summary – New Construction and Additions
- City of Winnipeg Building Permit Application Requirements: Commercial
- Manitoba Building Code (National Building Code with Manitoba Amendments)
- Manitoba Energy Code for Buildings, or the requirements of Manitoba Building Code 9.36 'Energy Efficiency'
- National Fire Code of Canada
- National Plumbing Code
- Canadian Electrical Code

Building Occupancy: The building may be classified as multiple major occupancies:

- *Group F, Division-3 Low-Hazard Industrial [Storage Garage]*

- *Group D – Business and Personal Services*
- *Group C - Residential*

Refer to the Manitoba Building Code for information regarding requirements for fire separations and fire resistance ratings related to occupancy.

Note that, as a Fire Paramedic Station, the facility must be designed to meet the requirements of a Post-Disaster building as defined and detailed in the MBC.

OCCUPANT LOAD / SHIFT CONFIGURATION

As a single apparatus bay station, the station operates 24 hours a day and has a maximum occupancy of six [6] WFPS Firefighters and or paramedics. There are 4 different shifts that operate in the station.

Occupancy will normally be four [4] firefighters; although training, kitchen and dining areas should be sized to accommodate four [4] firefighters and two [2] paramedics or two [2] additional firefighters, for a total of six [6].

1.5 CITY PERMITTING PROCESS

The project will require both a development permit and building permit.

For information regarding the Commercial Permits process, please consult The City of Winnipeg's Planning, Property and Development website:

<https://winnipeg.ca/ppd/permits/Commercial/Resources.stm>

1.6 OWNER SUPPLIED COMPONENTS INSTALLED BY OWNER

With noted exceptions, all furniture and equipment are provided by the contractor. All specifications, equipment dimensions, and requirements must be confirmed with the City at the time of design. Warranties for all furnishings and equipment must be transferred to the City of Winnipeg at the time of turnover.

Rough-in wiring, ports, network racks, system cabinets, power supplies other than programming should be done by Contractor. Systems' head-end requirements /installations need to be collaborated with City Representatives. Confirm requirements for electronic card access and intrusion alarm.

IT, Communications, and Security systems will be installed by the City's own forces once the building is deployed on-site. Coordination and confirmation of system requirements and installation schedule is the responsibility of the Contractor.

1.7 DEPLOYMENT + TRANSPORTATION REQUIREMENTS

A critical component of this Temporary station project is the repeated ability to deploy the structure, with minimal costs, timelines, and repairs associated with transportation, set-up, and take-down.

Please note the difference between initial delivery time and deployment. Initial delivery is the amount of time required to construct and/or assemble the building components offsite and is expected to be a period of months. Deployment is the period of time where the finished portable structure is assembled and commissioned on-site and must be completed in the timeframes outlined below.

DEPLOYMENT TIMELINES:

It is expected that once delivered onsite, the structure will be 100% operational and ready for immediate occupation and use within one [1] month. This includes the installation of furniture and equipment, any systems tests, inspections, walkthroughs, etc.

Any work to be completed by the City's own forces must be established at time of design, and this work shall be coordinated by the Contractor during the one-month deployment period. This work is considered minor in nature and can occur concurrently with the building commissioning once the building is delivered onsite.

For example, once the building is delivered and energized, The City will install security card readers and communication IT systems into a supplied, pre-wired electrical box. In addition to Section 1.9 Build Systems below, Contractor to include terminated home run wiring/cabling to supplied system cabinets, patch panels, controllers and modules. Therefore, reopening walls, floors and ceilings are minimized or eliminated.

It is the responsibility of the contractor to liaise with City of Winnipeg WFPS to understand both the system requirements, and ensure when work needs to occur, and factor the installation time into their construction schedule and coordinate all work.

The Contractor must demonstrate both a viable deployment installation schedule that ensures successful deployment within the one [1] month window, AND a separate proposed decommissioning + removal schedule.

TRANSPORTATION RESTRICTIONS:

Transportation of all components must comply with all provincial and municipal rules and regulations, including Province of Manitoba Transportation and Infrastructure. Contractor shall obtain all necessary approvals and permits associated with transportation, and pay all fees. While the immediate application for this structure is bare sites in new communities, the structure could also be used to maintain service in existing communities while existing halls undergo renovation or replacement.

1.8 UTILITY REQUIREMENTS

Given the uncertainty of future deployment locations, the structure must accommodate both regular utility connections, and be able to stand alone with all potable water, wastewater, and

sewage stored onsite and trucked out at regular intervals. Tanks should be located inside a heated room with pump-out provision.

Capacities should be based upon four [4]-person shifts operating 24 hours a day, with two-week service intervals. Please note that capacity is only for domestic use - operational water requirements such as filling trucks and drying hoses will be done off-site at larger stations.

The building is to be served by UPS emergency backup or a generator that is appropriately sized to meet the power demands of the station for a period of 12 hours. Any additional requirements, including specific power continuity requirements will be discussed at the time of design.

1.9 BUILDING SYSTEMS

The clean spaces in the plan [Domestic + Administration] must have heating and air-conditioning. The Operations space can be served with heating only. Dorm rooms should be equipped with individual temperature controls and operable egress windows.

All base building electrical systems such as lighting, outlets, and controls must be pre-wired, installed, and fully functional. Unless otherwise noted, all spaces should be equipped with: overhead LED lighting fixtures, IT, and communications connections. Detailed conduit and wiring requirements will be determined at the time of design.

Awning style windows with locks and exterior mounted security screens, with those windows requiring larger sizes for fire egress standards built to 48x48 with locks and security glass.

Four (4) central electric HVAC 2 ton units with insulated conduits in suspended ceiling space; this space is utilized as a return air plenum to the unit; one automatic heat/cool electronic thermostat in Operation Apparatus Bay areas, Fitness Room, Administration/Living area, and each dorm room; make-up air heating as needed (A/C calculation based on 22,000 BTU per 800 Sq Ft (88000 BTU) - and 12,000 BTU/hr recovery)

LED Exit signs with emergency lights for each exit. Smoke, heat, CO and NOx detectors per National Building Code requirements.

60-gallon electric hot water tank

1.10 EXTERIOR FINISHES

Exterior colours and finishes will be confirmed at time of design and approved by WFPS. All exterior finishes must be durable, long lasting, and able to survive the rigors of repeated deployments.

Design Standard: Prefinished metal or fibre-cement panels are acceptable exterior cladding products.

1.11 INTERIOR FINISHES

All interior finishes should be required to meet WFPS Station Standards. Variations such as demountable partitions and the like will be tolerated to accommodate the temporary and transportable nature of the project.

Design Standards:

Administration / Domestic

- Interior Wall Surface: moisture resistant wall board, very durable, easy to clean
- Flooring: commercial grade non-slip sheet vinyl, welded seams, coved base
- Ceilings: suspended acoustic ceiling tile

Operations

- Interior Wall Surface: waterproof, very durable
- Flooring: waterproof, must be able to handle pooling water, very durable, must be able to handle weight of the trucks, and tire friction/point loading. Coved base with waterproof seams
- Ceilings: exposed ceilings

Any proposed alternative finishes should meet the performance and functional requirements of the finishes they intend to replace. [eg. impervious, durable, easily cleaned panel surface in place of ceramic tile]. All finishes and their application are to be confirmed at the time of design and approved by WFPS.

1.12 COMMISSIONING & CLOSEOUT

Contractor and Subcontractors shall conduct a review of the Work, identify deficiencies and defects, and repair as required to confirm to the Contract Documents. Building systems shall be tested in their appropriate season, and Contractor's Consultant shall confirm their full functionality.

Operations and maintenance manuals must be coordinated and submitted to the City Representative in both Digital PDF and Hard Copy form.

Any atypical systems or features should be noted and training in their operation should be provided. Training sessions should be video recorded, and videos added to the operations and maintenance.

1.13 SUSTAINABILITY

The City of Winnipeg expects to use this building for 50 years, with at least 5 moves in that time.

The structure and components must be maintainable by service providers who can be on site with 5 Business Days of a call for service. Providers within 100 km of the City of Winnipeg are preferred. Any parts must be accessible within three months of a purchase request.

Provide:

- Written maintenance strategies and procedures for any component that requires maintenance or servicing, including parts list

- Detailed written and video instruction on how to prepare the modular building for a move, and how to set it up again at its new site

2.0 DETAILED BUILDING PROGRAM: OPERATIONS

GENERAL NOTES:

- All specifications to be confirmed at time of design
- Minor design variations are permitted, with written justification and approval by the City.
- All furniture and equipment to be provided and installed by contractor unless otherwise noted. Warranties must be transferred to the City of Winnipeg upon delivery.
- Contractor is responsible for ensuring the interoperability and function of all system components during the design, construction, and delivery.

2.1 APPARATUS BAY 1

SUMMARY:

The primary apparatus bay holds the engine used to respond to calls. It must be easily accessed from all areas, and it requires sufficient space to load and unload equipment off an engine.

ADJACENCIES:

- Operational Equipment Area
- Shared Office
- Adjacent domestic circulation
- Turn out gear storage

MINIMUM PROGRAM AREA:

- +/-672 sf / 62.4 sm ideal 768 sf 71.3 sm

PROGRAMMING REQUIREMENTS:

- Apparatus bay dimensions are a minimum of 15' x 42' clear internally.
- Minimum clear height inside of apparatus bay is 14'-9". All equipment including but not limited to, exhaust, acoustic baffles, lights, heaters, cord reels, etc. must be above this limit.
- Apparatus floor must be capable of supporting the weight of a fully loaded engine [+/- 35 000 lbs / 16 000 kgs]
- Apparatus Bays must have dedicated drainage equipment/plan which should include catchment and cleanout, and sump pump(s) as required to discharge
- Operations floor shall be 2" below Administration and Domestic, to prevent any pooling water from migrating into those areas
- Operations must be a consistent floor level to permit movement of equipment on rolling racks.
- Man doors entering onto Apparatus Bay must have a minimum clear width of 40" and swing in the direction of the Apparatus Bay. These doors are subject to frequent use and require appropriate hardware and protection.

- The head end of the engine should be accessed from any point in the station at a distance of not more than 45m, with the ideal being less than 30m total travel distance [based on a desired response time of 90 seconds, with a person travelling 0.5m/s].
- Man door egress from the Apparatus Bay to the exterior is also required.
- Walls: Apparatus bay walls must be constructed of durable, waterproof materials that will resist damage from impact and water.
- Floors: must be constructed of durable, waterproof materials that can withstand standing water, and weight/movement of the trucks. Waterproof coved base is required.
- Wall space must be kept clear of controls and mechanical equipment wherever possible to ensure adequate space for racking and equipment storage.

SYSTEMS REQUIREMENTS:

- Annunciation\PA Speaker Equipment (used by the PA system and the Station alerting system)
- IR radiant heating system
- Emissions control systems, Design Standard: PlymoVent
- Ceiling mounted 20A cord reel

FURNITURE / EQUIPMENT REQUIREMENTS:

OVERHEAD DOOR

- Fast operating, insulated and weather-stripped overhead door
- Must be a minimum of 14' x 14' clear
- Transparent panels at eye level are required
- Controlled by automatic controls adjacent to the opening and controls within apparatus
- Door motor must be side mounted
- Door must have a manual chain drive override mounted on driver's side
- Swipe card controllers on the outside of the bay
- Contractor to supply, install, and test doors and controllers

EMISSIONS CONTROL / EXHAUST EXTRACTION

- One [1] dedicated emission control system sized to 600 CFM minimum.
- Confirm equipment requirements at time of design
- Please refer to operational equipment area for additional exhaust requirements
- Design Standard: PlymoVent

GENERAL EQUIPMENT

- ceiling mounted 20A electrical cord reel

MISC. COMPONENTS:

- Guide strips
- Wheel stop
- Acoustic Treatments

2.2 APPARATUS BAY 2

SUMMARY:

This secondary bay could hold an ambulance or district chief truck. It is accessed from the primary bay. It would be occupied up to 15% of the time by vehicles. The remainder of the time the back of the bay would be used as additional work space for the Bay 1 Engine, and additionally it may be used as gym space. It must have excellent ventilation. If the space was used as gym space, ideally it would have a removable separation between Apparatus Bay 1 and the additional gym space.

ADJACENCIES:

- Operational Equipment Area
- Turnout gear storage
- Decontamination room

MINIMUM PROGRAM AREA:

Min 512 sf / 47.6 sm ideal- +/- 672 sf / 61.4 2 sm

PROGRAMMING REQUIREMENTS:

- Apparatus bay dimensions are minimum 15' x 32' clear internally. Confirm apparatus dimensions at time of design.
- Minimum clear height inside of apparatus bay is 14'-9". All equipment including but not limited to, exhaust, acoustic baffles, lights, heaters, cord reels, etc. must be above this limit.
- Apparatus floor must be capable of supporting the weight of a fully loaded engine [+/- 35 000 lbs / 16 000 kgs]
- Apparatus Bays must have dedicated drainage equipment/plan which should include catchment and cleanout, and sump pump(s) as required to discharge
- Operations floor shall be 2" below Administration and Domestic, to prevent any pooling water from migrating into those areas
- Operations must be a consistent floor level to permit movement of equipment on rolling racks.
- Man doors entering onto Apparatus Bay must have a minimum clear width of 40" and swing in the direction of the Apparatus Bay. These doors are subject to frequent use and require appropriate hardware and protection.
- The head end of the vehicle should be accessed from any point in the station at a distance of not more than 45m, with the ideal being less than 30m total travel distance [based on a desired response time of 90 seconds, with a person travelling 0.5m/s].
- Man door egress from the Apparatus Bay to the exterior is also required.
- Walls: Apparatus bay walls must be constructed of durable, waterproof materials that will resist damage from impact and water.
- Floors: must be constructed of durable, waterproof materials that can withstand standing water, and weight/movement of the trucks. Waterproof coved base is required.
- Wall space must be kept clear of controls and mechanical equipment wherever possible to ensure adequate space for racking and equipment storage.

SYSTEMS REQUIREMENTS:

- Annunciation\PA Speaker Equipment (used by the PA system and the Station alerting system)
- IR radiant heating system
- Emissions control systems, Design Standard: PlymoVent
- Ceiling mounted 20A cord reel

FURNITURE / EQUIPMENT REQUIREMENTS:

OVERHEAD DOOR

- Fast operating, insulated and weather-stripped overhead door
- Must be a minimum of 14' x 14' clear
- Transparent panels at eye level are required
- Controlled by automatic controls adjacent to the opening and controls within apparatus
- Door motor must be side mounted
- Door must have a manual chain drive override mounted on driver's side
- Swipe card controllers on the outside of the bay
- Contractor to supply, install, and test doors and controllers

EMISSIONS CONTROL / EXHAUST EXTRACTION

- One [1] dedicated emission control system sized to 600 CFM minimum.
- Confirm equipment requirements at time of design
- Please refer to operational equipment area for additional exhaust requirements
- Design Standard: PlymoVent

GENERAL EQUIPMENT

- ceiling mounted 20A electrical cord reel

MISC. COMPONENTS:

- Guide strips
- Wheel stop
- Acoustic Treatments

2.3 DECON AND EQUIPMENT AREA

SUMMARY:

This is a dedicated area immediately adjacent the Apparatus Bays that provides space for storage and upkeep of supporting equipment such as hoses, and self-contained breathing apparatus (SCBA) gear. Unlike larger stations with dedicated rooms for various equipment, the temporary fire station model relies on an "open concept" and employs mobile racking to make best use of space.

MINIMUM PROGRAM AREA:

- +/- 100 sf / 9.3 sm

PROGRAM REQUIREMENTS:

- Operations must be a consistent floor level to permit movement of equipment on rolling racks.
- Equipment area must be separated by walls constructed of durable, waterproof materials that will resist damage from impact and water penetration.
- Freestanding stainless-steel double utility sink
- Work bench 48" x 30"

SYSTEM REQUIREMENTS:

- Confirm electrical and mechanical requirements of mobile equipment listed below and ensure all supply and exhaust requirements are met at time of design
- Confirm equipment requirements at time of design

FURNITURE / EQUIPMENT REQUIREMENTS:

- Freestanding stainless-steel double utility sink
- Work bench 48" x 24"

MOBILE EQUIPMENT:

All equipment requirements to be confirmed with WFPS at time of design.

- Hose storage racks supplied by WFPS
- SCBA Cylinder Storage Racks supplied by WFPS

FIXED EQUIPMENT

Decontamination area

- Emergency eye wash station. It is intended for in-station accidents such as spills and is not intended to serve as post-incident decontamination. Contractor to supply and install plumbing and drain, eye wash station supplied by WFPS.
- Small fixed workbench mounted for small repairs and fabrication. It is typically equipped with hand tools, as any large repairs would be done off-site. All tools, equipment, and contents provided by WFPS. Supplied by WFPS
- Double stainless-steel sink provided for equipment cleanup floor mounted.
- Self-closing fire-proof cabinet, for the safe storage of flammable products such as cleaning products, solvents, and paints. Supplied by WFPS
- Ready rack for extra hose storage. Supplied by WFPS

2.3 TURNOUT GEAR EQUIPMENT AREA

SUMMARY:

This is a dedicated area immediately adjacent the Apparatus Bays that provides space for storage and upkeep of supporting equipment such as turnout gear. It will accommodate turnout gear lockers for 20 staff.

MINIMUM PROGRAM AREA:

- +/- 150 sf / 13.9 sm ideal 200 sf 18.6 sm

PROGRAM REQUIREMENTS:

- Apparatus Bay and Operations areas must be a consistent floor level to permit movement of equipment on rolling racks.
- Equipment area must be separated by first floor walls constructed of durable, waterproof materials that will resist damage from impact and water penetration.
- Turnout gear room able to accommodate minimum 20 sets of kit

SYSTEM REQUIREMENTS:

- Good ventilation

FURNITURE / EQUIPMENT REQUIREMENTS:

- Turnout gear lockers: 18" deep, 24" wide x 72" high (supplied by WFPS). If space is limited, hangers may be acceptable.

MOBILE EQUIPMENT:

All equipment requirements to be confirmed with WFPS at time of design.

3.0 DETAILED BUILDING PROGRAM: ADMINISTRATION

3.1 WATCH DESK ROOM

SUMMARY:

The watch desk room is a millwork area that serves as an information hub for staff responding to a call. Here crews can quickly access the CAD system, and radios, etc. before being sent out on a call. It will contain all battery charging stations. It also serves as a control point to monitor the front entry. Lastly it would be a space for administrative tasks, or personal activities such as studying. It is independent of the administrative office. There needs to be a fold out bed to accommodate rest during overnight monitoring. This function could be incorporated into the Training/Day Room if space is an issue.

ADJACENCIES:

- Front entry
- Apparatus Bay
- Admin office

MINIMUM PROGRAM AREA:

- +/- 80 sf / 7.4 sm -- +/- 90 sf / 8.4 sm

PROGRAMMING REQUIREMENTS:

- Counter space to accommodate radio, defibrillator, Auto Pulse, and CO detector charging stations
- Wall area to accommodate maps, tack board, and hanging clipboards
- Storage for any additional equipment identified at time of design
- Desk for administrative tasks and study
- Area should not impede access to the Apparatus Bays
- glass on both sides of the room allowing the visibility through the watch room from the living space to the front of the building
- Fold-down Murphy bed
- Operable window coverings on any interior openings to ensure privacy. (Black-out roller blinds per WFPS specifications).

SYSTEMS REQUIREMENTS:

- Multiple duplex outlets (2 separate circuits, 6 outlets, 2 UPS outlets)
- IT connections discussed at time of design
- Confirm equipment requirements at time of design

FURNITURE / EQUIPMENT REQUIREMENTS:

- One [1] 4x4' whiteboard
- One [1] 4x8' tack board
- 2 x desks (one for study one for the watch computer)
- Fold-down Murphy bed
- 2 x office chairs provided by WFPS
- Computers provided by WFPS
- Charging Stations provided by WFPS: Radios, SCBA, Defibrillator, CO Monitor, Auto Pulse
- 5 lockers in room or in locker area. Lockers are 18" w x 18" d x 72 h

3.2 ADMINISTRATIVE OFFICE

SUMMARY:

The administrative office is to conduct day-to-day administrative tasks and may also serve as a place to hold private meetings and conversations.

ADJACENCIES:

- Apparatus Bays
- Main living area

MINIMUM PROGRAM AREA:

- +/- 90 sf / 8.4 sm ideally 100sf /9.3 sm

PROGRAMMING REQUIREMENTS:

- Sized to accommodate a 5' x 4' L shaped workstation that can also serve as a one-on-one meeting space.

- Operable window coverings on any interior openings to ensure privacy (Black-out roller blinds per WFPS specifications).
- Officer sleeping quarters

SYSTEMS REQUIREMENTS:

- 2 duplex receptacles per workstation
- UPS power supply to workstation
- 2 data ports per workstation
- Confirm equipment requirements at time of design

FURNITURE / EQUIPMENT REQUIREMENTS: [NOTE CITY SUPPLIED COMPONENTS]

- Workstation
- 2x office chair provided by WFPS
- File storage provided by WFPS
- Computer provided by WFPS
- One [1] clipboard hanger
- Operable window coverings
- Fold-down Murphy bed
- 5 lockers in room or in locker area. Lockers are 18" w x 18" d x 72 h

3.3 MEDICAL SUPPLIES

SUMMARY:

This is a lockable closet or two lockers with shelving for medical supplies.

MINIMUM PROGRAM AREA:

- +/- 15 sf / 1.4 sm

3.4 IT/COMMUNICATIONS, ELECTRICAL ROOM

SUMMARY:

This is an enclosed room that houses electrical system control, and a separate, secured area, panel, or racking that controls IT and security aspects of the building and UPS. This room also houses annunciation control systems.

ADJACENCIES:

- N/A

MINIMUM PROGRAM AREA:

- +36sf/3.3sm ideal- +-50 sf / 4.6 sm

PROGRAMMING REQUIREMENTS:

- IT / Security racking components may share a room with building electrical components, however, IT / Security Components must be secured in a locked cabinet / rack separately from building electrical.

SYSTEMS REQUIREMENTS:

- Network and Communications equipment requirements confirmed at time of design. Communications equipment comes with battery backup.
- Security System Infrastructure [conduit, backing, etc for security cameras, swipe cards, motion sensors, etc. To be coordinated at time of design with COW and WFPS Corporate Security]
- Security System components [Cameras, card readers, etc] supplied and installed by COW
- Annunciation Control System Infrastructure [To be coordinated at time of design with WFPS, Corporate Security + Emergency Dispatch]
- Electrical Panel + Breakers
- Wireless router [serving dormitories]
- Additional Requirements to be confirmed at time of design

FURNITURE / EQUIPMENT REQUIREMENTS:

- ¾" plywood backing for all communication and electrical equipment
- Secure component area [locker, racking, etc] to be confirmed at time of design

MISC. INFORMATION

- Intumescent paint applied to plywood surfacing
- Anti Static/ Rubber Flooring required by WFPS IT.
- Sound Baffling/ Acoustic Paneling may be required.

3.5 GENERATOR / BACKUP POWER ROOM

SUMMARY:

Provision for emergency backup power must be provided in case of a power failure. External emergency generator (supplied by WFPS) will be used to power overhead Apparatus Bay doors, heating system, pumps, refrigerator and all lighting. Contractor to provide all connections, switching and controls, including external generator connection point. Additional requirements and specific power continuity requirements will be further discussed at the time of design.

Design consideration should be given for external generator location, with special attention to generator connections, filling and maintenance access, and proximity to WFPS rest room and residential buildings.

ADJACENCIES:

- Away from air intakes
- Away from bedroom walls

MINIMUM PROGRAM AREA:

- +/- 15 sf / 1.4 sm
- consider proximity to domestic areas

PROGRAMMING REQUIREMENTS:

- External Generator connection point must be located so that generator can be easily placed, and easily accessed for filling / maintenance by a large truck

SYSTEMS REQUIREMENTS:

- Generator requirements to be determined at time of design

FURNITURE / EQUIPMENT REQUIREMENTS:

MISC. INFORMATION

- Generator information should be included in supplied Operations and Maintenance Manuals.

3.2 MECHANICAL ROOM

SUMMARY:

Room shall be sized to accommodate mechanical equipment that serves the station.

MINIMUM PROGRAM AREA:

- +/- 40 sf / 3.7 sm

SYSTEMS REQUIREMENTS:

- GFCI Receptacles
- 60-gallon electric water heater
- Additional equipment to be determined at time of design.

3.4 JANITORIAL + STORAGE + LAUNDRY

SUMMARY:

Space for cleaning supplies and storage. As well as room for a stacked washer dryer.

ADJACENCIES:

- Administration and Domestic circulation

MINIMUM PROGRAM AREA:

- +/- 30 sf / 2.8 sm

PROGRAMMING REQUIREMENTS:

- Ideally centrally located for ease of access

SYSTEMS REQUIREMENTS:

- GFCI Receptacles
- Washer dedicated circuit and receptacle, Dryer dedicated circuit and receptacle
- Dryer Vent

FURNITURE / EQUIPMENT REQUIREMENTS:

- Floor Mounted Stainless Steel Janitorial Sink
- Shelving for storage of cleaning products and station supplies
- full-size stackable washer & dryer (installation to wall outlets only, WFPS to supply appliances)

3.5 MAIN + PUBLIC ENTRY

SUMMARY:

The main entry is where guests are welcomed and where the public engages with firefighters and paramedics. It can also serve as 911 emergency access for the public.

ADJACENCIES:

- Watch Desk
- Public Washroom

MINIMUM PROGRAM AREA:

- +/- 70 sf / 3.7 sm

PROGRAMMING REQUIREMENTS:

- Clear view from Watch Desk and Training/Day area
- Glass doors or generous sidelights to ensure visibility from within station

SYSTEMS REQUIREMENTS:

- Doorbell, with security feature to permit remote door release
- Card Access and Arming Station to be supplied, installed and programmed by Contractor.
Design Standard: Johnson Control, City of Winnipeg to provide acceptable model number.

FURNITURE / EQUIPMENT REQUIREMENTS:

- Bulletin board

4.0 DETAILED BUILDING PROGRAM: DOMESTIC

4.1 KITCHEN + DINING

SUMMARY:

The Kitchen and Dining area is the heart of the station, where firefighters spend a great deal of their time preparing meals, eating, and team building. Some program and area overlap can exist between the kitchen / dining and the Training/Day room. Additionally, the dining area is often used for table-top training and should be sized to accommodate such activities.

A complete list of kitchen equipment will be confirmed at time of design.

ADJACENCIES:

- Immediate access to Apparatus Bays
- Training/Day Room
- Man-door access to exterior [for access to outdoor barbeque]

MINIMUM PROGRAM AREA:

+/- 234 sf /21.7 sm - +/- 330 sf / 30.7 sm

PROGRAMMING REQUIREMENTS:

- Dining for 4, + 2 guests, seating for six [6] total
- Individual, lockable pantry storage for each shift, four [4] in total

SYSTEMS REQUIREMENTS:

- Counter Height Duplex Receptacles 4' O.C.
- Lighting should be dimmer controlled, and switched.
- Lighting should be separate for kitchen preparation area and dining area

FURNITURE / EQUIPMENT REQUIREMENTS:

- Dining table sized for 6 provided by WFPS.
- 4' x 6' Health and Safety Tack board
- 2 x full sized residential fridges provided by WFPS.
- Stainless Steel Countertops
- Stainless Steel cabinets without doors
- Min. 4 burner stove, with central grill
- Full size oven
- Dishwasher
- Kitchen exhaust fan
- Commercial grade deep single-bowl stainless steel sink c/w commercial grade grease interceptor, gooseneck faucet.
- 4 kitty lockers for storage of dry goods per shift, minimum 18"d X 20"w (24"w preferred) X 40"h
- 4' x 6' whiteboard located near kitty lockers.

Contents to be confirmed at time of design.

4.2 TRAINING/DAY ROOM

SUMMARY:

Combines space for ongoing training, distance learning, formal and informal briefing, and rest and recovery of WFPS personnel. It is typically configured in a AV/ Theater seating. Some area overlap can exist between Kitchen / Dining, and the Training/Day Room.

ADJACENCIES:

- Kitchen / Dining
- Apparatus Bays

MINIMUM PROGRAM AREA:

- +/- 200 sf / 18.6 sm

PROGRAMMING REQUIREMENTS:

- Space for 4 individual recliners [fully extended] with room to move about the recliners when fully extended.
- Adequate viewing distance and angles from each recliner is mandatory.

SYSTEMS REQUIREMENTS:

- Duplex Receptacles to code
- Cable TV outlet with adjacent duplex receptacle
- Data Outlet
- Voice Outlet

FURNITURE / EQUIPMENT REQUIREMENTS:

- AV equipment to be provided and installed by WFPS
- Four [4] Recliners supplied by WFPS
- One [1] Large Coffee table supplied by WFPS
- Operable Window coverings as required.
- One [1] 8x4' whiteboard

MISC. INFORMATION:

- Lighting should be dimmer controlled, and switched.

4.3 DORMITORIES AND LOCKERS

SUMMARY:

Sleeping quarters and private area for WFPS firefighters and paramedics while on shift. 5 lockers per room should be located in the hallway.

ADJACENCIES:

- Circulation adjacent to Apparatus Bays
- Washrooms

MINIMUM PROGRAM AREA:

- +/- 75 sf / 7 sm for 4 bedrooms (not including the offices)
- Total minimum space 420 sf/ 39 sm

PROGRAMMING REQUIREMENTS:

- Single occupancy units based around a XL twin mattress
- Acoustic separation between rooms is mandatory.
- An Operable, egress window in each room is required
- Bed design should be based off a XL twin
- Lockers should be full closet depth, lockable and heavy duty
- Lockers in the hallways
- Each room should have individual thermostat, controlling heat + AC
- Lighting should be dimmer controlled, and switched.
- True blackout roller blinds

SYSTEMS REQUIREMENTS:

- Standard duplex outlets
- USB charging outlet
- Dimmable/switched reading light
- Annunciation system shall be audible from room

FURNITURE / EQUIPMENT REQUIREMENTS:

- XL Twin Mattress provided by WFPS
- XL Twin Bed frame provided by WFPS
- Small desk
- Reading Light
- Blackout window covering
- Annunciation equipment provided and installed in the hallways
- Lockers: Minimum 26, preferred 30 (This includes the 10 locker for the administrative officer and the watch desk. Dimensions 18"w x 18"d (24"d preferred) x 72"h

4.4 WASHROOMS

SUMMARY:

- One private washroom and two private showers for staff while on shift
- A public Universal Toilet Room (UTR) that meets the City of Winnipeg Accessibility Design Standard

ADJACENCIES:

- Dormitories

- Accessible by public

MINIMUM PROGRAM AREA:

- +/- 180 sf / 16.7 sm

PROGRAMMING REQUIREMENTS:

- Two separate shower rooms
- Single occupancy
- UTR and access to UTR must comply with City of Winnipeg Accessibility Design Standard

SYSTEMS REQUIREMENTS:

- GFCI Electric razor outlet at counter height at each sink
- Automatic Extraction Fan with Timer
- Motion Activated lighting

FURNITURE / EQUIPMENT REQUIREMENTS:

- Sink with standard residential fixture [single mixed outlet, no sprung taps, etc]
- Toilet c/w touchless sensor flush
- Enclosed Shower
- Mirror
- Wall mounted soap dispenser
- Wall mounted paper towel dispenser
- Towel Hooks x4
- Towel Bar x 1
- Shower curtains and rods
- Grab bars and appropriate blocking in UTR

4.5 FITNESS

SUMMARY:

The fitness area is allocated for the various workout and weight training equipment required for firefighters to ensure operational level of fitness. The fitness area must be sized to accommodate the entire shift working out together. Workouts are typically programmed around a circuit of various stations. A full complement of workout equipment found at a full-sized station may not be feasible given space restrictions. Design and layout of equipment will be completed by WFPS Fitness Design consultant, with equipment provided by WFPS.

ADJACENCIES:

- Apparatus Bays

MINIMUM PROGRAM AREA:

+/- 200 sf / 18.6 sm, ideally 300 sf / 27.9 sm

PROGRAMMING REQUIREMENTS:

- Operable window
- Impact resistant wall finishes and flooring
- Minimum 10' ceiling height
- Air Quality:
 - o If Fitness Room is a separate room, ensure sufficient air turnover
 - o If Fitness Room uses Apparatus Bay space/air, air quality monitoring will be required

SYSTEMS REQUIREMENTS:

- 15A 120V standard duplex receptacles to code
- 20A 120/240V receptacle for treadmill or equivalent
- High mounted duplex receptacle and cable TV connections for television
- Good air exchange system based on air quality levels

FURNITURE / EQUIPMENT REQUIREMENTS:

- Rubber matting or equivalent resilient flooring material
- One wall with full length mirror
- TV bracket and appropriate blocking for high wall-mounted television (TV provided by WFPS)
- 2-3 cardio machines i.e. treadmill, bike ,rower, cardio machines provided by WFPS
- Squat rack, Free weights rack and Weight bench, all provided by WFPS

5.0 ESTABLISHED PROGRAM METRICS

Program Areas: MINIMUM SQ. FT\Meters		Min SQ. Feet	Min SQ. Meters	Ideal SQ. Feet	Ideal SQ. Meters
2.0 Operations					
2.1	Engine Apparatus Bay X 1	672	62.4	768	71.3
2.2	Ambulance Apparatus Bay X 2	512	47.6	768	71.3
2.3	Turnout gear storage	150	13.9	200	18.6
2.4	Equipment decon and storage	100	9.3	100	9.3
3.0 Building Operations					
3.1	Watch desk office	80	7.4	80	8.4
3.2	Shared Administrative Office	90	8.4	90	8.4
3.3	Medical supply storage lockers	15	1.4	15	1.4
3.3	IT/ Coms/ Electrical Room	36	3.3	50	4.6
3.4	Mechanical Room	40	3.7	40	3.7
3.5	Generator Room (optional)	15	1.4	15	1.4
3.6	Janitorial / Laundry	30	2.8	50	4.6
3.8	Main + Public Entry	40	3.7	40	3.7
4.0 Domestic Areas					
4.1	Kitchen + Dining	234	21.7	330	30

4.2	Training/Day Room	200	18.6	200	18.6
4.3	Dormitories	300	27.9	300	27.9
4.4	25 Hallway & Lockers	300	27.8	362	33.7
4.5	Washrooms / Change Rooms X 2	170	15.8	200	18.6
4.6	Recreation + Fitness	200	18.6	300	27.9
	Total	3184	295.8	3908	363

6.0 SITE CONSIDERATIONS:

6.0 INTENT:

As this is a transportable building, the requirements of each site will vary significantly. This section is intended to outline the general site design intent and any specific mandatory requirements. Specific site design components, including development permit requirements, will be determined at the time of design once a specific site has been selected.

6.1 GENERAL:

Site disturbance should be limited to landscape elements required for the Development Permit [eg. fencing, signage, garbage enclosure, heavy duty asphalt apron, etc]. Site features that can be mounted on the building [such as site lighting, flag poles, etc] should be included in the building design to minimize site disturbance. The intent is to have minimal site remediation required to return the site to its original state once the structure has been removed.

Building positioning onsite is predominantly driven by the access orientation and minimizing heavy-duty asphalt apron area. The apron must be at least 40' clear to back of curb [or walk] to provide space to park apparatus in front of overhead doors.

Pedestrian access to main entry must also be included but can be constructed of normal asphalt. 12 stall site parking will be discussed at time of design, but must include one [1] visitor stall, and one [1] accessible parking stall. If possible to park vehicles next to the building, vehicle plug-ins should be building mounted to reduce site impact.

6.2 SITE WORKS AND ACCESS IMPROVEMENTS:

A Geotechnical report has been provided in Appendix B of the RFP documents for the Contractor's use.

- Site leveling and grading as required for building placement
- Site leveling and Grading [ensuring vehicle access and proper drainage]
- Site Access for Apparatus vehicles [concrete approach, heavy duty asphalt apron]
- Site Control [fencing] to be installed by WFPS
- Site parking improvements [wheel stops, headlight fence with electrical receptacles]
- Steps and ramps should be avoided

- Design and Installation of all underground services. Locate and connect to existing underground utilities.

6.3 EXTERIOR BUILDING COMPONENTS

A number of site features that are typically included in the landscape and site design should be building mounted, with the aim of simplifying site works and deployment schedules.

Such features shall include:

- Flag pole [x1]
- Site lighting in front of the apparatus bays, entrances and sides of the building
- Site parking electrical outlets 4 per building side (only if site configuration allows parking around building).
- Site signage station name in 12" font
- Alternate power transfer switches for use with WFPS supplied external generator
- Patio for a barbeque and table (not in contract, to be provided by others)

All features must be discussed at time of design and be approved by WFPS.

6.4 CONTEXTUAL ARCHITECTURAL CONSIDERATIONS

Consideration should be given for the provision of quality, human scaled, site built features that "soften" the overall impression of the structure. Examples of such features include seating and plantings at the public entry, or a deck and barbeque area adjacent the kitchen space.

Any strategies on specific design variations to suit deployment in existing neighbourhoods are welcome.

7.0 OPTIONAL ADDITIONAL FEATURES – SEPARATE PRICING

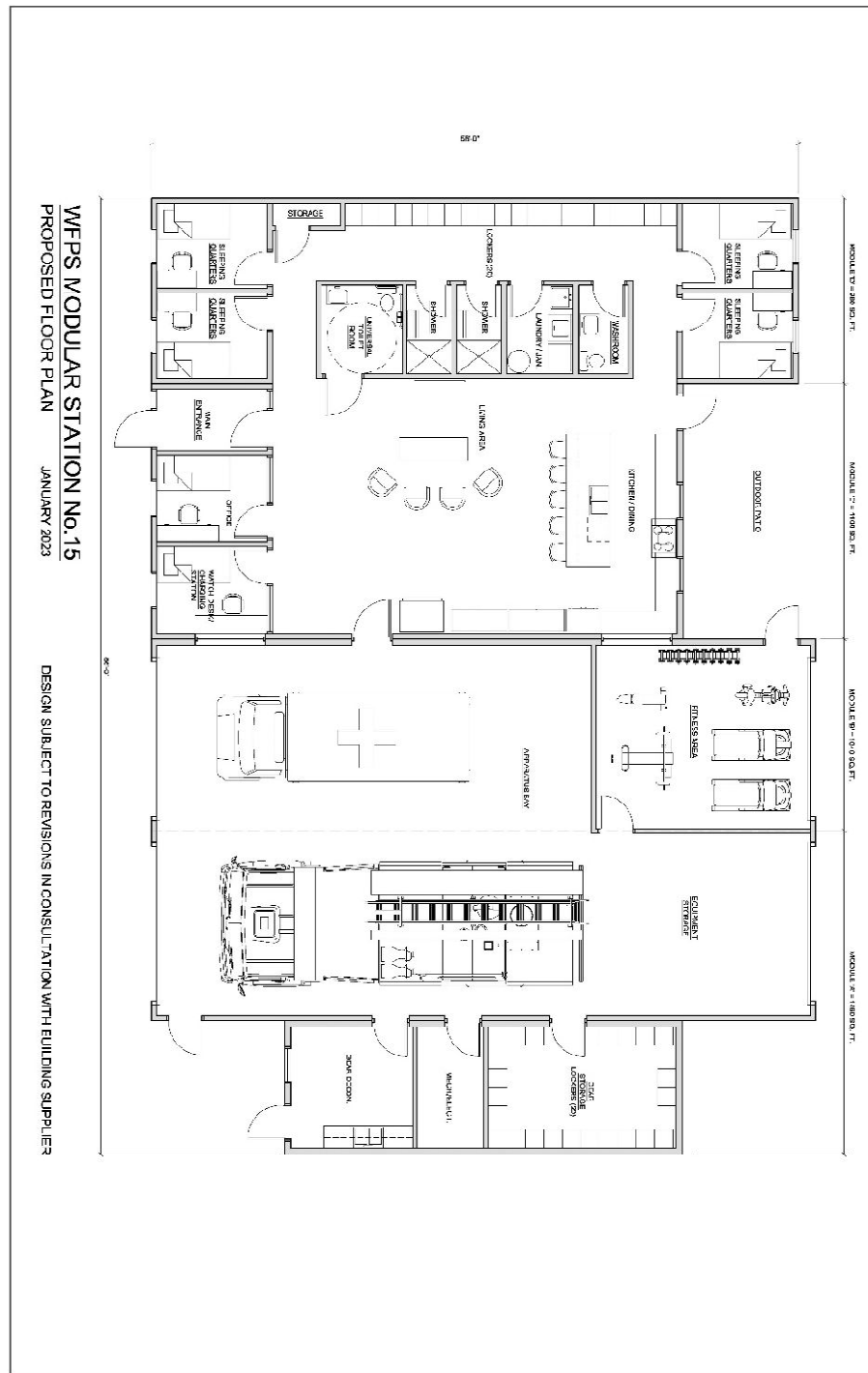
Provide separate quotes for the following features.

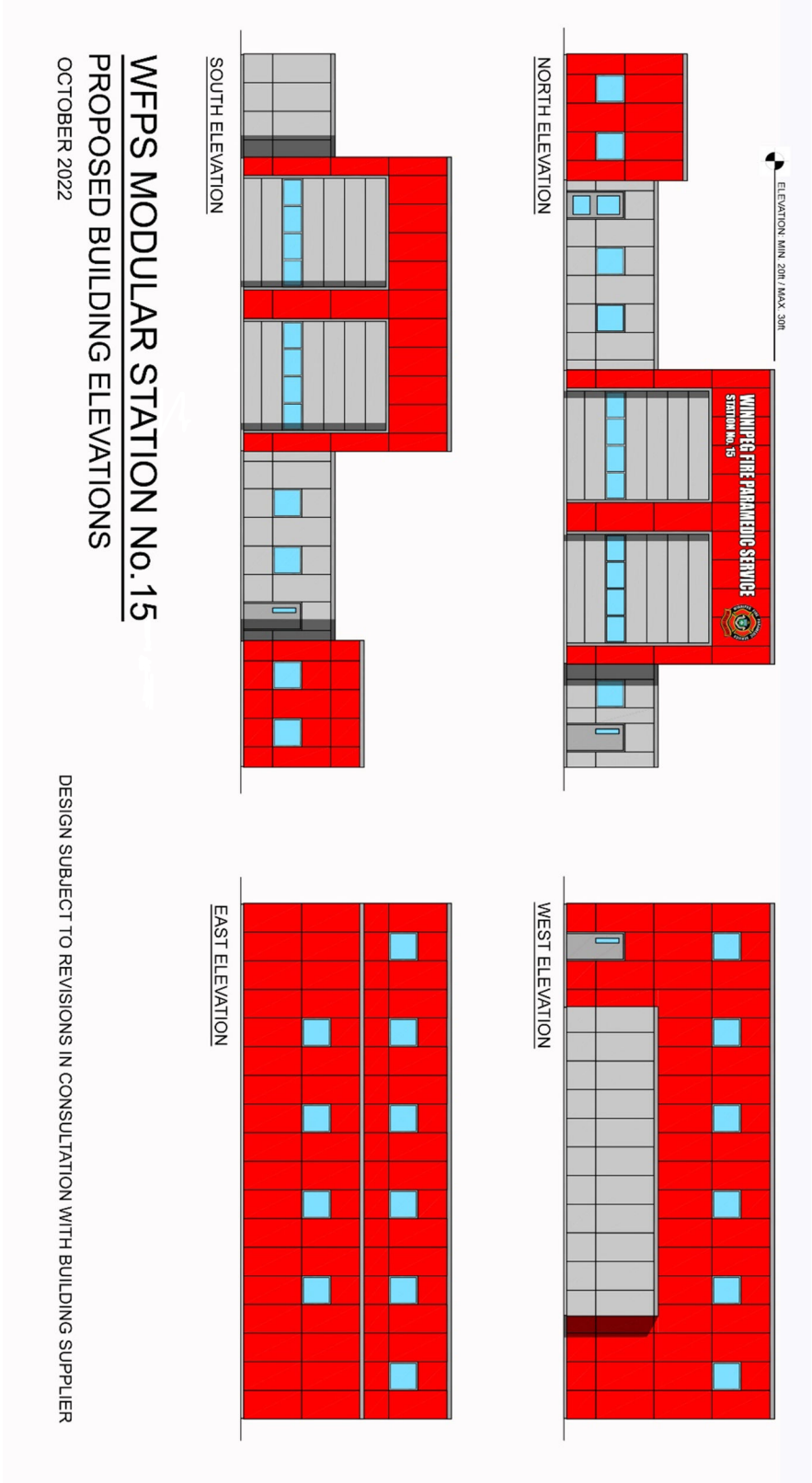
7.1 SOLAR PANELS

To reduce operating costs, provide a separate quote for 88 panel, 23kW solar system on the roof of the station. Identify any additional electrical and structural considerations that would be required to accommodate the panels.

APPENDICES:

APPENDIX A1: POSSIBLE BUILDING LAYOUT AND ELEVATIONS





APPENDIX A2: POSSIBLE SITE PLAN

