



Bartsch

BARTSCH CONSULT (Pty) Ltd

UMSUNDUZI MUSEUM

AMAFA SUBMISSION REPORT – MAIN BUILDING - UMSUNDUZI MUSEUM,
351 LANGALIBALELE STREET, PIETERMARITZBURG, KZN, 3201

PREPARED BY
BARTSCH CONSULT

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1. BACKGROUND

The uMsunduzi Museum precinct consists of multiple heritage buildings on a site located at the corner of Langalibalele & Boshoff Street in central Pietermaritzburg.

The original building started construction around 1876 with additions added in 1881 and 1884, and was then a Boys Model School. In 1890 it became a girl's school (Longmarket Girls School) which was completed around 1905/06 and is now the main building of the uMsunduzi Museum which was previously the Voortrekker Museum that opened in 1989. The building is an AMAFA heritage building, being declared a National Monument in 1975. Over the years the site has had numerous buildings added and adapted to form the museum precinct as current, consisting of roughly twelve individual buildings.

Bartsch Architects was awarded a tender by the uMsunduzi Museum to carry out the final stages of an existing upgrades and refurbishment project, undertaken by the Client 10 year prior. The previous project never reached construction stage, and the Client now desires to implement that project scope for construction. The project is now known as the *"Refurbishment and Upgrading of uMsunduzi Museums Buildings"* project.

The existing project consisted of upgrading the electrical, mechanical, fire and universal access facilities, as well as maintenance related building work to all of the buildings falling within the Museum precinct.

After budget constraints and consideration of the updated recommendations from the Consulting team, the Client identified Block M (Main Building) as the prioritised building with a critical items list. This list was confirmed as being the extent of the contract works and consists of the following items:

1. Generator installation with UPS essential supply backup.
With upgrading of the municipal main supply distribution board for the precinct.
2. Upgrade of the current electrical fittings to current more efficient up to date types i.e. lights, plugs, wire ways etc.
3. Upgrade to the existing Fire detection and Evac systems.
4. HVAC installations and upgrades of current systems for office areas, exhibition hall, auditorium, library, general spaces and reception/ display.
5. Fire protection and signage upgrades to existing installations.
6. Installation of a new disabled platform lift, to access the mezzanine of the main exhibition hall.
Which would, for regulation purposes, include the construction of a new place of refuge on the mezzanine level of the main exhibition hall.

2. GENERAL PROJECT INFORMATION

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Site:

The uMsunduzi Museum
351 Langalibalele Street
Pietermaritzburg, 3201
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Extent of the works:

1. New air handling units and ducting (in existing ceiling void) for the Main Exhibition hall.
2. New air handling unit for the Auditorium hall, with refurbishment of existing (in ceiling void) ducting.
3. Upgrading of split units and repositioning of existing split units for the Reception & Office and smaller Exhibition areas of the main hall.
4. New fresh air supply to existing office spaces and meeting spaces where existing AC is being upgraded.
5. Installation and upgrades of existing extraction for toilets and kitchen spaces.
6. Upgrading of the municipal main supply Distribution Board.
7. Installation of new generator with the construction of new generator plinth and housing.
8. Upgrading of all light fittings & electrical fixtures to newer current generation/ energy saving type fittings.
9. Installation of a Platform Lift in the Main Exhibition Hall, for wheelchair access onto the display areas of the mezzanine floor.
10. Construction of a new place of refuge for the mezzanine level of the main exhibition hall.

Quality of the works:

The Museum Main Building is a listed Heritage building and therefore only experienced and qualified tradesmen are permitted to carry out the work for this project where any changes to the existing building and its finishes are affected.

All work and specifications to be carried out for the project must be done in strict accordance to the issued drawings as listed below and attached in *Annexures A & B & C* of this document.

Issued drawing numbers - Architects: 5044-001; 5044-100; 5044-101; 5044-200 & 5044-300
Mechanical: 2204-HVAC 100; 2204-HVAC 101; 2204-HVAC 110
Electrical: WD-001; WD-002; WD-003; WD-004

3. PROPOSED WORKS WITH SPECIFICATIONS

3.1 ELECTRICAL including RELATED BUILDING WORKS

3.1.1 Municipal Supply Upgrade:

The main municipal supply Distribution Board will be upgraded from the current 200amp supply to a new 540amp supply, this upgrade is to allow for the air conditioning to be upgraded and added to.

3.1.2 Generator Installation:

A new generator to match the capacity of the upgraded electrical supply will be installed as a full single type unit inclusive of fuel tank.

This will include a new plinth with housing to protect the generator, as per below specifications:

- Concrete floor on red face brick base
170mm thick reinforced concrete floor with 170mm high up stand
30mm Grano Screed, laid to fall
100mm DIA overflow valve pipe
- Red Face Brick Walls
Corobrik Firelight Satin FBX
Plaster Coping to Top of Parapet Walls – Painted with 3 coat system: primer, undercoat, finishing coats (1x Dulux Trade Plaster Primer & 2x Dulux Pearlgló)
- Treated SA-Pine Timber Rafters with Timber Purlins
252x50 High Grade Treated SA-Pine Rafters
76x50mm High Grade Treated SA-Pine Purlins
222x32mm SA-Pine Fascia Boards.
Painted with 4 coat system: primer, undercoat, finishing coats (1x Dulux Wood Primer & 1x Dulux Undercoat & 2x Dulux Trade 100 Gloss Enamel)
- Sheet Metal Roof Sheeting
0.53mm GRS IBR Roof Sheets, Colorplus ‘Slate’
405 Reflective Sisolation Underlay
Seamless Aluminium Gutter to Match Roof Sheets (with 80mmDIA PVC Downpipe)
- Steel Fence Infill Panels (to match design of existing perimeter fence)
Panel constructed by using 40x10mm flat bars and 12mmØ steel rods.
Panels to be bolted onto 40x10mm flat bars which are built into the brickwork columns
Painted with 4 coat system: primer, undercoat, finishing coats (1x Dulux Steel Eching Primer & 1x Dulux Undercoat & 2x Dulux Trade 100 Gloss Enamel)

3.1.3 UPS Installation for Essential Supply Back-Up

A provision has been made for a new 5kva UPS to be installed in the main museum server/ IT room. This will not disrupt the existing building, as it would be connected to existing circuitry (if installation thereof is carried out).

3.1.4 Electrical Infrastructure

The electrical infrastructure will be updated to newer more modern energy saving type fittings and fixtures, only the existing newer installed fixtures will be updated.

All original circa 1905 to 1940 fittings and fixtures will remain, and only new energy saving bulbs will be installed in these light fittings, if feasible, otherwise left in current state.

- LED fittings will be installed in light fixtures.
- ZA Plug type sockets will be fitted at one per area, only if existing conditions allow.
- New LED type fittings will be installed to replace existing newer fittings.

3.1.5 Wire Ways & Support

Electrical wire ways will be fitted where required, mainly for new cabling and piping required for air conditioning installations.

- In ceiling conduit and wire ways will be installed with-in existing voids.
- New power skirting will be fitted to walls where new plugs and connections are to be fitted.

3.1.6 Fire Detection & Evacuation System

Existing fire detection system will be upgraded to match current technologies and regulation requirements.

Evacuation system and alarm will be upgraded to match current technologies and regulation requirements.

3.1.7 Auditorium Display Area

Light fittings, electrical fixtures and wiring to be replaced.

- Dismantling
Existing light fittings which are of old technology and not operational is to be dismantled and safely disposed.
Electrical fixtures which are no longer fit for purpose or not operational is to be dismantled and safely disposed.
Existing electrical wiring to all light fitting and electrical fixtures to be stripped and safely disposed.
- Installations
Energy efficient LED light fittings are to be installed to meet SANS 10114-1 lighting levels.
Electrical fixtures are to be replaced if found to be not operational.
All new electrical light fittings and fixtures are to be wired utilizing new wiring.
Existing wire ways and switching positions are to be utilized.

3.1.8 Auditorium

Light fittings, electrical fixtures and wiring to be replaced.

- Dismantling
Existing light fittings which are of old technology and not operational is to be dismantled and safely disposed.
Electrical fixtures which are no longer fit for purpose or not operational is be dismantled and safely disposed.
Existing electrical wiring to all light fitting and electrical fixtures to be stripped and safely disposed.
- Electrical Installations
Energy efficient LED light fittings are to be installed to meet SANS 10114-1 lighting levels.
Electrical fixtures are to be replaced if found to be not operational.
All new electrical light fittings and fixtures are to be wired utilizing new wiring.
Existing wire ways and switching positions are to be utilized.

3.1.9 Auditorium Toilet

Light fittings, electrical fixtures and wiring to be replaced.

- Dismantling
Existing light fittings which are of old technology and not operational is to be dismantled and safely disposed.
Electrical fixtures which are no longer fit for purpose or not operational is be dismantled and safely disposed.
Existing electrical wiring to all light fitting and electrical fixtures to be stripped and safely disposed.
- Electrical Installations
Energy efficient LED light fittings are to be installed to meet SANS 10114-1 lighting levels.
Electrical fixtures are to be replaced if found to be not operational.
All new electrical light fittings and fixtures are to be wired utilizing new wiring.
Existing wire ways and switching positions are to be utilized.

3.1.10 Main Exhibition Hall

Light fittings, electrical fixtures and wiring to be replaced.

- Dismantling
Existing light fittings which are of old technology and not operational is to be dismantled and safely disposed.
Electrical fixtures which are no longer fit for purpose or not operational is be dismantled and safely disposed.
Existing electrical wiring to all light fitting and electrical fixtures to be stripped and safely disposed.

- Electrical Installations
Energy efficient LED light fittings are to be installed to meet SANS 10114-1 lighting levels.
Electrical fixtures are to be replaced if found to be not operational.
All new electrical light fittings and fixtures are to be wired utilizing new wiring.
Existing wire ways and switching positions are to be utilized.

3.1.11 Main Exhibition Hall (side exhibition spaces)

Light fittings, electrical fixtures and wiring to be replaced.

- Dismantling
Existing light fittings which are of old technology and not operational is to be dismantled and safely disposed.
Electrical fixtures which are no longer fit for purpose or not operational is be dismantled and safely disposed.
Existing electrical wiring to all light fitting and electrical fixtures to be stripped and safely disposed.
- Electrical Installations
Energy efficient LED light fittings are to be installed to meet SANS 10114-1 lighting levels.
Electrical fixtures are to be replaced if found to be not operational.
All new electrical light fittings and fixtures are to be wired utilizing new wiring.
Existing wire ways and switching positions are to be utilized.

3.1.12 Office Spaces (ground/ reception)

Light fittings, electrical fixtures and wiring to be replaced.

- Dismantling
Existing light fittings which are of old technology and not operational is to be dismantled and safely disposed.
Electrical fixtures which are no longer fit for purpose or not operational is be dismantled and safely disposed.
Existing electrical wiring to all light fitting and electrical fixtures to be stripped and safely disposed.
- Electrical Installations
Energy efficient LED light fittings are to be installed to meet SANS 10114-1 lighting levels.
Electrical fixtures are to be replaced if found to be not operational.
All new electrical light fittings and fixtures are to be wired utilizing new wiring.
Existing wire ways and switching positions are to be utilized.

3.1.13 Office Spaces (mezzanine & first floor)

Light fittings, electrical fixtures and wiring to be replaced.

- Dismantling
Existing light fittings which are of old technology and not operational is to be dismantled and safely disposed.
Electrical fixtures which are no longer fit for purpose or not operational is to be dismantled and safely disposed.
Existing electrical wiring to all light fitting and electrical fixtures to be stripped and safely disposed.
- Electrical Installations
Energy efficient LED light fittings are to be installed to meet SANS 10114-1 lighting levels.
Electrical fixtures are to be replaced if found to be not operational.
All new electrical light fittings and fixtures are to be wired utilizing new wiring.
Existing wire ways and switching positions are to be utilized.

3.2 MECHANICAL HVAC INSTALLATIONS

3.2.1 Auditorium Display Area

Installation of split unit at the display area, currently no AC in this area currently.

New HVAC installation:

- Decommissioning
No decommissioning required as no systems are currently installed.
- HVAC Works
Install new split unit – condenser on wall above display area roof and mid-wall indoor unit on wall above doorway.
Interconnecting pipework and electrics. All visible pipework to be housed in rectangular trunking, painted to match walls.
- Builders Work
Opening in roof for pipework and electrics.
Drilling for mounting brackets for indoor and outdoor units.

3.2.2 Auditorium

Replace the existing split type unit to new VRF type condensing unit which is to current technologies and correct sizing.

The existing ceiling grilles & openings will be reused, to eliminate the need to disrupt the existing ceiling.

Installation of new HVAC system:

- Decommissioning
Condensing unit – on roof.
Air handling unit – in ceiling void above auditorium.
Supply and return ductwork – in ceiling void above auditorium.
Interconnecting electrics and pipework.
- HVAC Works
Install new variable refrigerant flow (VRF) condensing unit – mounted in a similar position to existing.
Install new air handling unit – assembled in the ceiling void, in the same position of existing.
Install new supply and return ductwork – to follow similar routing and connect to existing grilles.
Clean existing supply and return grilles for reuse.
- Builders Work
Construct new support structures for condensing unit and air handling unit.
Refurbishment of existing steel louvered doors and platform leading into ceiling void.

3.2.3 Auditorium Toilets

The existing ceiling mounted fans will be replaced with new correctly sized extraction fans, making them compliant with current regulations.

Installation of new extractor fans:

- Decommissioning
Ceiling mounted extraction fans – 1-OFF per ablution.
- HVAC Works
Ceiling mounted extraction fans – 2-OFF per ablution.
- Builders Work
Closing off existing openings (will be reused if possible).
New openings for additional ceiling fans.

3.2.4 Main Exhibition Hall

Install new air handling unit and condenser units, all with new ducting and grille outlets. All ducts will be with-in the existing ceiling void and only penetrations for diffusers will be made in the existing ceiling.

All work will be done with minimal effect to all existing structure and ceiling finishes:

- Decommissioning
No decommissioning required as no systems are currently installed.
- New Installations
Replacement of grilles on south-west elevation gable end wall, to match existing and be used as fresh air intake grilles.
Install new fresh air intake grilles to match existing and to be installed on north-west elevation gable end wall.
Install new 100% fresh air VRF ducted units (4-OFF) – in ceiling void.
Install new supply air ductwork for each ducted unit – in ceiling void.

Install new VRF condenser units (2-OFF) – mounted on roof (near existing auditorium condenser unit).

Interconnecting pipework and electrics. All visible pipework to be housed in rectangular trunking), painted to match walls.

Install new jet nozzle diffusers (8-OFF) for air supply into room – Through flat section of ceiling.

- Builders Work

Circular cut-outs in ceiling for jet nozzle diffusers – Ø400mm openings. Ceilings to have front and back support framing installed prior to the cut-outs being made, for protection of the ceiling.

Opening on north-west elevation gable end wall (approx. 1100x2200mm opening) for new fresh air intake grilles.

Construct new support structures for condenser units.

Installation of new gable grille for AC ducting on the NE elevation wall, this grille will be behind the apex of the first floor office and boardroom space. Therefore it will not distract from the aesthetics of the building.

New AC wall grille, as per layout plans:

- Wall Cut-Out

3250Lx765Hmm cut-out into existing gable wall.

Reveal to be plaster, ready to receive new grille. Painted with 3 coat system: primer, undercoat, finishing coats (1x Dulux Trade Plaster Primer & 2x Dulux PearlGlo)

- Aluminium Grille

Trox type horizontal louvers in an aluminium frame, per the mechanical engineer specifications.

Colour to be 'charcoal grey' powder coated finish.

New paraplegic platform lift to be installed going from ground floor to mezzanine level, the lift is a full stand-alone unit that does not require alterations to the buildings structure and is simply bolted into place. The 'pit' of the lift will be constructed by building a steel surround that bolts onto the existing ground floor slab.

Installation of new platform lift:

- Lift Pit

40x40x3mm hollow section welded together to form frame, Painted with 4 coat system: primer, undercoat, finishing coats (1x Dulux Wood Primer & 1x Dulux Undercoat & 2x Dulux Trade 100 Gloss Enamel)

Remove existing floor finish (carefully), install frame onto floor with chemically anchored pins.

Install stainless steel 'grip-plate' onto frame, using pop-rivets.

- Platform Lift

The platform lift will be a steel frame type, with glass infill panels. The lift will be bolted directly onto the existing ground floor slab, where the existing floor finish has been removed. Painted with 4 coat system: primer, undercoat, finishing coats (1x Dulux Steel Eching Primer & 1x Dulux Undercoat & 2x Dulux Trade 100 Gloss Enamel)

The existing balustrade will require modification where the lift doors open, the existing balustrade will be cut out to the required size for the lift door opening.

Modification of balustrade:

- Cut Balustrade

Cut out the existing balustrade, keep the removed piece of balustrade aside for reuse of materials where required.

- Refurbish Cut Section of Balustrade

The portion of the balustrade that has been cut must be fully refurbished and restored, to match the current design. This would include sanding down a preparing for paint finish. Steel to be paint finished, with colour to match existing. Painted with 4 coat system: primer, undercoat, finishing coats (1x Dulux Steel Eching Primer & 1x Dulux Undercoat & 2x Dulux Trade 100 Gloss Enamel). Entire section of the balustrade to be repainted.

With the installation of a lift and no ramps in the building that can provide escape for persons with disabilities, it is a statutory requirement that a place of refuge be constructed in the event of a fire. The place of refuge consists of 230mm clay brick walls with plaster on both sides, atop the walls will be a 170mm thick concrete slab:

- Clay Brick walls

Corobrik imperial Brick NFX. To have 2.8mm Galvanised NHBRC Brickforce every 4th course. Mortar to be class 1 @14.5mpa.

Plaster to both sides of walls – Painted with 3 coat system: primer, undercoat, finishing coats (1x Dulux Trade Plaster Primer & 2x Dulux Pearlgló)

- Concrete Roof

170mm thick reinforced concrete roof, atop of brick walls.

Concrete to be plastered fully, externally and internally. Painted with 3 coat system: primer, undercoat, finishing coats (1x Dulux Trade Plaster Primer & 2x Dulux Pearlgló)

- Floor

Existing floor finish to be removed.

New 30mm Grano screed to be applied to existing concrete floor.

3.2.5 Main Exhibition Hall (side exhibition spaces)

These side exhibition spaces do not currently have any AC systems in place and the new system installed in the main hall space will not cover these areas.

Installation of new VRF mid-wall units:

- Decommissioning
No decommissioning required as no systems are currently installed.
- New Installations
Install new VRF mid-wall units, 2-OFF installed at either ends of the single volume areas (4-OFF in total).
Install new VRF condenser unit – mounted on roof (near existing auditorium condenser unit).
Interconnecting pipework and electrics. All visible pipework to be housed in rectangular trunking, painted to match walls.
- Builders Work
Drilling for mounting of mid-wall units.
Construct new support structure for condenser unit.

3.2.6 Office Spaces (ground/ reception)

Replacement of mid-wall split units with heat recovery (HR) VRF cassettes, installation of a mid-wall split as a back-up unit for the server room and installation of a dedicated fresh air systems for all occupied areas. VRF system shared with offices in double story section.

- Decommissioning
8-OFF existing split units – mid-wall units in each office and outdoor units mounted in various positions on the external face of the building, inside the display area and on first floor balcony.
Interconnecting electrics and pipework.
- New Installations
Install new HR VRF condensing unit – on first floor balcony floor.
Install heat recovery unit – on first floor balcony at high level.
Install new ceiling cassettes installed in each office (8-OFF).
Install new split unit – condenser on south-east wall above ground floor roof and mid-wall indoor unit internal of south-east wall.
Interconnecting pipework and electrics between all relevant equipment. All visible pipework to be housed in rectangular trunking, painted to match walls.
Install new dedicated fresh air systems (1-OFF for each floor) – intake louvres on first floor balconies, fans in ablutions/store ceiling voids, ductwork within the ceiling and fresh air disc valves through the ceiling in each space.
- Builders Work
Making good of existing openings and holes from existing split units.
Removal (if required) and installation of new ceilings and bulkheads to hide HVAC installations.
Installation of access panels and making of required openings for all HVAC equipment.
Openings in first floor slab for ductwork, pipework, and electrics.
Various wall openings for ductwork, pipework, and electrics.
Drilling for mounting brackets for split unit (indoor and outdoor units).

New ceilings will be installed where required, as per layout plans:

- Ceiling Grid
Pelican Jumbo suspension system, system suspension rods to go through existing ceiling. Penetrations to be made sparingly, with backing support frames being installed prior to cut-outs being made.
- Ceiling Board
9mm Gypsum Skimmed Joint, screw fixed to suspension grid system.
Painted with 3 coat system: primer, finishing coats (1x Dulux Plaster/ Timber Primer, 2x Dulux Trade 65 Matt)
- Cornice
Cornice to be made using MDF, to match the existing exactly in size and profile.
Painted with 3 coat system: primer, finishing coats (1x Dulux Plaster/ Timber Primer, 2x Dulux Trade 65 Matt)

3.2.7 Office Spaces (mezzanine & first floor)

Replacement of mid-wall split units with HR VRF mid-wall units (including reception). VRF system shared with offices in triple story section. Installation of new dedicated fresh air system for the first-floor offices (shared with first-floor public areas).

- Decommissioning
5-OFF existing split units – mid-wall units in each office and outdoor units mounted in various positions inside the display area and on first floor balcony
Interconnecting electrics and pipework.
- New Installations
Install heat recovery unit – on first floor balcony at high level.
Install new mid-wall units installed in each office (5-OFF).
Interconnecting pipework and electrics between all relevant equipment. All visible pipework to be housed in rectangular trunking, painted to match walls.
Install new dedicated fresh air system – intake louvre on first floor balcony ceiling, fans in first floor ceiling void, ductwork within the ceiling void and fresh air grilles through the ceiling in each space.
- Builders Work
Making good of existing openings and holes from existing split units.
Openings in first floor slab for pipework and electrics.
Various wall openings for pipework and electrics.
Openings in first floor ceiling for fresh air grilles and intake.
Drilling for mounting brackets for mid-wall units.

New ceilings will be installed where required, as per layout plans:

- Ceiling Grid
Pelican Jumbo suspension system, system suspension rods to go through existing ceiling. Penetrations to be made sparingly, with backing support frames being installed prior to cut-outs being made.

- Ceiling Board
9mm Gypsum Skimmed Joint, screw fixed to suspension grid system.
Painted with 3 coat system: primer, finishing coats (1x Dulux Plaster/ Timber Primer, 2x Dulux Trade 65 Matt)
- Cornice
Cornice to made using MDF, to match the existing exactly in size and profile.
Painted with 3 coat system: primer, finishing coats (1x Dulux Plaster/ Timber Primer, 2x Dulux Trade 65 Matt)

3.2.8 Ground Floor Public Areas

Replace split-type AHU with an upsized split-type AHU and add areas with no HVAC onto the new system.

- Decommissioning
Condensing unit – in covered veranda.
Air handling unit – in AC plant room.
Supply ductwork – in AC plantroom and display area.
Interconnecting electrics and pipework.
Fresh air louvre.
- New Installations
Install new variable refrigerant flow (VRF) condensing unit – mounted in a similar position to existing.
Install new air handling unit – assembled in the plant room, in the same position of existing.
Install new wall mounted grilles in all areas, with exception to reception.
Clean reception’s existing ductwork and ceiling mounted diffuser for reuse.
Install new supply ductwork – to follow similar routing to existing and connect to new wall mounted grilles as well as existing ductwork in reception area.
Clean existing return air grilles in reception and display area for reuse.
Install new return air grilles on doors between the Birth of Democracy Exhibition room and the AC plant room.
Install new upsized fresh air louvre in the same area of the existing.
- Builders Work
Modification of plinths to support upsized units.
Openings in doors between the Birth of Democracy Exhibition room and the AC plant room for return air grilles.
New wall openings for supply air grilles.
Enlarging of wall opening for upsized fresh air grille.

3.2.9 First Floor Public Areas

Replacement of mid-wall split units with mid-wall VRF units and adding areas with no HVAC onto the new systems. Installation of new dedicated fresh air system for the first-floor offices (shared with offices in double story section).

- Decommissioning
2-OFF existing split units – mid-wall units in each office and outdoor units mounted in on first floor balcony.
Interconnecting electrics and pipework.
- New Installations
Install new VRF condensing unit – on first floor balcony floor.
Install new mid-wall units installed in each office (5-OFF).
Interconnecting pipework and electrics between all relevant equipment. All visible pipework to be housed in rectangular trunking, painted to match walls.
Install new dedicated fresh air systems – intake louvre and fan allowed for elsewhere, ductwork within the ceiling void and fresh air grilles through the ceiling in each space.
- Builders Work
Making good of existing openings and holes from existing split units.
Various wall openings for pipework, and electrics.
Openings in first floor ceiling for fresh air grilles and intake.
Drilling for mounting brackets for mid-wall units.

3.2.10 Fire Protection & Signage

All fire protection and fire signage will be upgraded to match current required regulations. The current fire protection is mostly up to date and serviced, with only a few areas requiring updated and or additional equipment and signage.

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Prepared by:

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