

PERFORMANCE SPECIFICATION

For

Rapid Deployment Cell Programme

EPIM xxxxxx – BPRN xxxx

April 2022

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1.0 CLIENT'S BRIEF

1.1. The Project

The MoJ Estate Directorate has appointed Mace Group to provide performance specifications for the provision of Rapid Deployment Cells, to be located on a number of identified suitable prison sites.

The brief is to provide and install units suitable for both single and double stacked configurations, with associated walkways and stairs. The units are required to have a minimum life span of 15 years and to be suitable for relocation every 5 years, possibly offering also a 'buy back' option.

The units will be occupied by security assessed/low risk residents, therefore there is no requirement to fully adhere to the MoJ standards (refer to par. 2.1 and in particular for all **MoJ standards exclusions and limitations** refer to "**App.1 Standards Document Index 19_08_2021_RCP Mace comments**")

1.2. Scope and responsibilities

To facilitate the reading of this document, please note:

- **Modular Contractor (MC)** responsibilities are highlighted in **red text**
- **Principal Works Contractor (PWC)** responsibilities are highlighted in **green text**
- Joint responsibilities involving **PWC and MC** are highlighted in **blue text**
- Joint responsibilities involving **Client, PWC and MC** are highlighted in **yellow**

2. STANDARDS

All *Client's* works and projects are to adhere to the Government Buying Standards (GBS) when purchasing materials, equipment, products or services. This policy is to be reviewed in detail at the outset of each project so that the appropriate clauses and inclusions can be incorporated into the design, procurement, construction and handover stages of the project.

Evidence of compliance with the procurement standards must be provided on request from the *Client* and to be included in the post contract documentation.

2.1. Technical Standards

The technical standards shall include, but should not be limited to the following:

- All current Building Regulations (*), British Standards and Codes of Practice including BS EN 7346, BS EN 12101, BS 7974, BS EN 671-1: 2012 and:
 - BS 7671 including all amendments.
 - BS 5839 (Fire alarms) including all amendments.
 - BS 5266 (Emergency Lighting) including all amendments.
 - BS5499 - Safety Signs and Signals
 - BS 5839-1:2017 - Fire Detection and Fire Alarm Systems for Buildings
 - BS 5306-8:2012 - Fire extinguishing, installations, and equipment on premises
 - BS 5266-1:2016 - Emergency Lighting

(*) The Client does not expect full compliance with Building Regulations Approved Doc. Part M/Equality Act 2010, only a partial application is required as and where specified in this document.

- UK government guidelines and regulations
- MoJ Estate Directorate Technical Standards and Design Guides. **Note: for exclusions and limitations refer to “App.1 Standards Document Index 19_08_2021_RCP Mace comments”**
- Custodial Premises Fire Safety Design Guide v.4 (HMPPS)
- Equality Act 2010
- CDM and Health and Safety regulations and guidelines
- All relevant *Client’s* requirements, policies and agreements
- BIM requirements as detailed in section S1900 of the Scope and schedule 6
- Environmental Health Agency standards
- Government Soft Landings as included in section S445 of the Scope in schedule 10
- Health and Safety at Work Act 1974 and Amendment
- Electricity at work regulations – 1989.
- HSE Guidelines and safety legislation.
- Control of Asbestos Regulations 2012
- The Electricity Safety, Quality and Continuity Regulations 2002.
- Health and Safety at Work Act 1974.
- Fire Precautions Act 1971.
- The Regulatory Reform (Fire Safety) Order 2005
- CIBSE, BSRIA, HVCA and all other industry guidance
- BS7671 IEE Wiring Regulations
- BRE guidance
- NFPA guidance
- The Water Supply (Water Fittings) Regulations
- The Workplace (Health Safety & Welfare) Regulations
- The Pressure Systems Safety Regulations 2000

- The Control of Substances Hazardous to Health Regulations 2002
- Loss Prevention Council (LPC) Technical Briefing Note 14 May 1999 – Legionella and Fire Fighting Systems
- Government protocols on COVID 19

2.2. Health and Safety and Technical Assurance

The Principal Works Contractor and Modular Contractor are required to appoint their own Principal Designers for the project to act in this capacity and fulfil all duties associated with this role under the Construction (Design & Management) Regulations.

The modular contractor's Principal Designer role will cease once the modules are delivered on site.

The Principal Works Contractor and Modular Contractor are required to appoint competent designers and to prepare detailed information to demonstrate that the project scope requirements are incorporated into the built solution.

The appointed designers will be required to liaise with the *Client's* representative(s) on these issues. Drawings shall be prepared to a sufficient level of detail and submitted in reasonable time to enable the *Client's Project Manager* and *Technical Assurance team* to assess them for compliance, prior to the relevant section of work being commenced on site.

All contractors and their design team must comply with all applicable sections of the Construction (Design and Management) Regulations 2015.

The Principal Works Contractor is to provide all necessary Health & Safety signage to ensure occupational health and safety compliance in accordance with the Safety Sign Regulations 1980.

The Principal Designer shall attend all relevant coordination, design and progress meetings to review H&S issues.

2.3. Quality Standards - Building Construction

All materials and workmanship shall comply with the appropriate current British Standard and any British Board of Agreement Certificate, and where fixed shall be completed so in a manner approved by the manufacturer and in accordance with relevant Codes of Practice.

Workmanship shall generally be in accordance with BS 8000, in compliance with manufacturer recommendations and relevant standards applicable to the specific element being installed.

As part of the design of the engineering services the *Contractor* shall demonstrate:

- Economy of running
- Ease and economy of maintenance
- Ease of operation
- Use of proven technology
- Adequate provision for future maintenance or removal of equipment

2.4. Design Life

The units shall have a minimum serviceable life of **15 years** (given fair wear and tear), unless more frequent renewal is anticipated in the normal course of building upkeep.

All units are expected to withstand disassembling and relocation every 5 years approximately. They should be easily repairable, as replacement will not be viable during use.

The new modular units should be well detailed, well designed and of attractive appearance, using tried and tested forms of construction. The Modular Contractor is responsible for ensuring that all parts of the work comply with the current Building Regulations, including approved codes of practice, HSE Guidance Notes and British Standards. Regulations shall comply with all relevant construction, fire, health and safety and environmental legislation together with *Client's* policies.

All materials shall be fit for their intended use as stated in, or reasonably to be inferred from, the Performance Specification, and be stored and fixed in accordance with the manufacturer's written instructions and recommendations. They are to comply with the current British Standards and Codes of Practice and shall be to the approval of the *Client's* representative. The design and performance requirements in this specification lay down the minimum requirements that are acceptable. Where materials, products, and workmanship are not fully detailed or specified in this document, they shall be of a standard appropriate to the works and in accordance with good industry practice.

Suitability, durability and replacement availability should be considered in the selection and use of all building components, materials, fittings, fixtures, furniture and equipment. Floor and wall constructions, coatings and finishes are likely to be subjected to heavy use and must therefore be capable of withstanding and enduring the long-term effects of such use.

When considering the choice of materials, goods and services to be used it is important that the whole lifecycle impact is assessed. This is to ensure that materials and goods last, that they do not require excessive amounts of maintenance or need regular

replacement and are easy to re-use and recycle at end of life. Those materials, goods and services that have a lower lifecycle impact should be chosen. This should result in lower operational and maintenance costs for the *Client*.

Areas to consider include:

- Designing out waste during manufacture and installation and whilst in use, for example, taking into consideration number of consumable parts requiring regular replacement.
- The amount of energy and water consumed in use.
- The level and frequency of maintenance required.
- Content of hazardous material.
- Reuse and recycling at end of life.

2.5. Environmental and Energy Standards

Consideration shall be given to minimize any adverse effects that construction may have on the environment in line with the MoJ core requirements. This includes ensuring that the units operate without the use of fossil fuels.

2.6. Materials

The Principal and Modular Contractors shall seek to avoid the use of unacceptable materials in line with the MoJ core requirements.

2.7. Samples

Samples of proposed materials shall be submitted for review and acceptance by the *Client Project Manager* in accordance with the project programme requirements to ensure that progress of the works is not impeded. Timings of acceptance by the *Client* and the *Project Manager* shall be identified on programme in accordance with the contract. The Modular Contractor shall allow for Stakeholder engagement into the sample process. Samples will specifically be required for the following:

- External Wall, finished.
- External Doors
- Internal doors, joinery, vision panels and ironmongery
- Sanitary fittings samples
- Floor finishes
- Wall finishes
- Statutory signage
- luminaires, lighting controls, small power accessories, distribution equipment and containment details.

- Supply Diffusers and Extract Grilles
- Water flow saving devised
- Point of use water heaters for basins and sinks
- Point of use showers.
- MVHR (Following Technical Submittal)
- Electric Panel Heaters.
- Temperature sensors (separate control)

2.8. Acoustics

The Modular Contractor is to comply with all relevant Building Regulations and British Standards, particularly ref Building Regs Approved Doc E and Section 7 of BS 8233:2014 and MoJ Design Guidance: Core Requirements for all projects ST/Z/DG/053.

2.9. BREEAM and Sustainability

BREEAM rating is not required.

2.10. Building regulations Part L

The Modular Contractor is to conduct a **Building Regulations Part L2a assessment** for the standardised modular unit. The standardised unit shall be assessed using both the Leeds and Southampton Test Reference Year (TRY) for the most current year. The modular unit is to be modelled on north, east, south and west facing orientations. Compliance reports for each weather file and orientation are to be issued.

The Modular Contractor will confirm whether their design meets the requirements of Part L2a, and whether it conforms to this performance specification. Where the Modular Contractor cannot confirm compliance with this performance specification, or the buildings have not met compliance with Part L2a, the Modular Contractor will identify additional measures required (for example photovoltaic panels) required to achieve compliance.

The Principal Works Contractor will be required to undertake final Building Regulations Part L submissions for the finalised location and orientation of the buildings. This will include inclusion of any additional technologies such as PV required to achieve compliance with Building Regulations.

2.11. Approach to waste management

The Principal and Modular Contractors shall support the Ministry of Justice in achieving our Waste to Landfill targets. This will include working to:

- Identify actions to reduce waste and waste to landfill and increase reused and recycled content, starting at the commencement of service.
- Ensure that financially and technically viable actions are incorporated in the design and in the approach to construction.
- From an early design stage, develop a Site Waste Management Plan (SWMP) that exceeds regulatory requirements by setting project specific targets (in the form of t/£100k) for waste reduction and recovery.
- Recover a minimum of 70% of construction materials and aim to exceed 80%.
- Ensure that at least 10% of total material value derives from reused and recycled content, select the top opportunities to exceed this figure without increasing cost.

Before starting on site, the Principal and Modular Contractors shall provide a copy of the Site Waste Management Plan (SWMP), clearly identifying:

- The estimated total mass of waste and the estimated recovery rate before mitigating actions.
- Actions to reduce waste and increase the level of recovery.
- A revised estimate of the total mass of waste and the estimated recovery rate after mitigating actions.

The Site waste management plan should set out the Contractors' policies and intention for the management, reduction and recovery of waste at its factories.

On completion of the Works, use the WRAP W2L Reporting Portal to provide the following indicators of actual performance:

- Tonnes of waste to landfill per £100k construction value.
- Tonnes of waste per £100k construction value.
- Percentage of recycled content by value.

All of the waste data should be consistent with WRAP's 'measuring and reporting construction waste guidelines' as adopted by members of the UK *Contractors* Group.

A range of free tools and guidance to assist in reducing and managing construction waste are available from WRAP at www.wrap.org.uk/construction.

As part of the tender response the Modular Contractors should identify waste produced per £100k construction value, split out between factory production and site installation works.

2.12. Testing

The Principal and Modular Contractors shall allow for providing all testing and commissioning certification required for each unit, demonstrating statutory compliance and to satisfy the requirements of the Building Regulations. This shall include all 'out of hours' testing to minimise disruption to end users/building occupants.

The following schedule of certificates, but not limited to, that will be required:

- Electrical installation inspection test and complete certificates as required by BS 7671
- Emergency lighting test certificate and BS 5266 format log book.
- Commissioning records for lighting and emergency lighting levels
- Water Chlorination Test Certificates
- Water Hygiene Risk Assessment undertaken at hand-over in accordance with HSG274 part 1-4
- Fire alarm certificates

It shall be both Principal and Modular Contractors responsibility to ensure that ALL relevant certificates in line with MoJ requirements are submitted prior to final completion. Note: the Modular Contractor will be responsible for the all the units specific certificates whereas the Principal Works Contractor will be responsible for the site wide installations.

3. ARCHITECTURAL & STRUCTURAL PERFORMANCE SPECIFICATION

3.1. Scope of works

The units are to be factory-produced, pre-engineered modular units, delivered to site and assembled as large volumetric components to form a self-supporting structure, placed on a prepared foundation / substructure designed to suit local ground conditions.

Minimum internal dimension of a single bay module:

- 2100mm width x 5700mm length x 2300mm height

Notes:

The Modular Contractor shall also aim to comply with Planning Permitted Development Rights where applicable and appropriate

- standard unit heights to allow for double stacked configurations to not exceed 6m height from the external ground floor level, ensuring minimum internal floor to ceiling heights of 2.3 m).
- the cumulative footprint will not exceed the greater of 25% of the cumulative footprint of the prison buildings as it was on 21st April 2021 or 250 sqm (whichever is greater).
- the units shall be located +15m from the external boundary (there is a 1.5m 'allowance' for plant-based MEP above the 6m).

Unit types:

Please refer to table below:

Category	Function
Typical Accommodation Unit; Single bedroom with ensuite WC/shower	
1.	One bay
Typical Low mobility / Accessible Accommodation Unit; Single bedroom with ambulant accessible ensuite WC/shower	
2.	One bay
Multi-function room (A) that might be a Dining room / Association room / or Group room	
3.	One bay
4.	Two bay
5.	Three bay
Self-Cooking Facility Unit	
6.	One bay
7.	Two bay
Servery Unit	
8.	One bay

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9. Two bay	
Pin phone	
10. One bay	
Toilet	
11. One bay	
Staff cabin; Comprising a WC, kitchenette and office area	
12. One bay	
13. Two bay	
Laundry Unit	
14. One bay	
Multi-functional room (B) that might be a:	
15. One bay	Store Unit
16. One bay	Interview room
17. One bay	Medical / dispensary room

Each module is likely to comprise:

- Wall construction may comprise of a primary structural frame and secondary steel members typically channel sections, with flat steel faces, subject to detailed design (**ref to par 3.3**);
- Cross members (Secondary steel sections) and vertical bracing may be incorporated for stability.
- Pre-finished double skin walls, providing acoustic insulation.
- Factory integrated services, including small power and data points, drainpipes, cable trays, ducts, wall hung radiators and pipework etc.
- Low mobility / Accessible Accommodation units with step free access and accessible doors into the unit and within.

The **Modular Contractor** shall manage and coordinate the fabrication and transport to site of the modular units and produce all necessary design information for all elements of this project. All associated enabling works will be managed and supplied by the **Principal Works Contractor**, who shall liaise with the **Modular Contractor** to ensure all requirements are fully coordinated and agreed prior to the start on site.

3.2. Doors

External Doors

New external doors to be manufactured in aluminium alloy or similar/equivalent to comply with BS4873:2016. The finish of external doors is to be polyester powder coated (PPC). All powder coated finishes to be to a marine grade, to a minimum of 40 microns and 50 microns on average, to withstand the corrosive atmosphere and salts in a coastal environment.

All external doors to swing inwards.

The door frames are to be mechanically fixed and sealed in the cladding panels, through insulated reveals and heads as required.

External doors are to incorporate internally beaded, double glazed vision panel units with external hinged panel on magnetic closure. Framing to incorporate thermal breaks and seals to jambs, heads and thresholds to be to a heavy-duty rating.

Doors are not generally required to be fire rated in case of double travel escape routes (preferred option). In case of single travel distance escape routes, doors shall instead be 60' minutes fire rated as per the external envelope of the units, to comply with MoJ FSDG4 (Fire Safety Design guide).

External Doors are to comply with the following standards:

- Air Permeability: as per emerging Approved Doc Part L- $8\text{m}^3/(\text{h.m}^2)$ @50Pa
 $1.57\text{m}^3/(\text{h.m}^2)$ @at 4Pa
- Water tightness BS EN 12208: 2000 – Class 9A
- Resistance to Wind load BS EN 12210: 2000 – Class AE2400
- Security – see ironmongery section.

Door specification to be submitted by the **Modular Contractor** for 'Secured by Design' approval and to be independently tested by a UKAS accredited testing authority.

All doors to accessible units and to communal areas to meet EA2010 requirements.

Internal Doors

The internal doors do not require to be fire rated.

Internal door sets to comprise high performance door sets of suitable acoustic rating as per Approved Doc Part E and BS 8233:2014.

Internal doors to be solid core, hardwood lipped with laminate finish. Doors to en-suite toilets within cells to swing outwards and to incorporate undercut for ventilation make up air provision.

All architraves around door linings to be factory finished painted softwood. All internal softwood and hardwood to be painted in a severe duty rated trade standard acrylic wood primer/undercoat system and a satinwood top coating system.

Colour of internal doors/linings must contrast visually with internal wall / partition colours. Thresholds to all internal doors must be entirely level with adjacent finished floors.

Door stoppers and kick plates are to be provided.

Finishes and colours to be in line with the MoJ colour Guide STD/A/DG/065.

Ironmongery

All ironmongery to both external and internal doors to be grade 316 stainless steel finish and graded as heavy duty.

All main entrance doors to all units to have non standard issue prison locks, euro profile cylinder locks with thumb-turn on the inner face, with lever handles and kick plates. All cylinder locks to be unique to each cell, suited with sub masters and master keys. All lock casings to be factory fitted prior to delivery to site.

Toilet doors within ancillary units (staff and public WCs) are to incorporate thumb turn lock with lever handles, kick plates and 'engaged / vacant' indicator bolt.

Toilets within cell units shall not be lockable, to be provided with lever handles only.

Refer also to **par 3.15** for signage.

3.3. External Walls

Min. U Value **0.26W/(m²K)** As per emerging Approved Document Part L and European Design Codes, British Standards, Codes of Practice.

The units shall be installed avoiding any gaps in between and where not feasible such gaps shall be closed off with mesh to prevent access by insects or rodents by the Principal Works Contractor.

External walls to achieve overall 60' minutes fire rating, to comply with MoJ FSDG4 (Fire Safety Design guide).

External walls shall be non-load bearing composite elements which shall comprise of painted flat steel faces separated by insulation. External walls shall be supported by the primary steel framing of the structure. Depending on insulation characteristics and architectural floor space requirements, timber stud work may be installed in the inner face of external walls to house building services. The interface between external walls and structural frame shall be designed to prevent cold bridging using flexible non-shrink sealants where applicable. All elements should be impervious to moisture.

The Structural System of each module may comprise of a structural steel frame consisting of square hollow sections joined together with corner fittings which provide a full moment connection between structural elements. Where corner fittings are designed as pinned connections, stability is derived from horizontal cross members (or plan bracings).

Where units are stacked (in two storey applications), additional steel columns may be required mid-span at ground level to transfer upper floor loads to foundations. Square hollow sections are suitable in such applications.

Vertical cross bracings may be required for additional lateral stability at end bays where double bay units are specified. At four bay units (dining room area), intermediate columns should be avoided as far as practicable.

Following detail design the Modular Contractor may specify structural systems and section types that differ from the above, provided fundamental principles of stability are satisfied.

3.4. Roof

The roof shall comprise of an acoustically and thermally insulated profiled metal system, with vapour barrier and waterproofing. **Min. U Value 0.18W/(m²K)** As per emerging Approved Document Part L and European Design Codes, British Standards, Codes of Practice

Roof to be 60' minutes Fire Rating as per the rest of the envelope to comply with MoJ FSDG4 (Fire Safety Design guide).

Roof access and maintenance

Access for maintaining guttering via a mobile scaffold tower or a mobile elevating work platform (MEWP), is preferred choice of strategy. Modular Contractor to provide an access and maintenance strategy as part of the design proposals.

Renewables

Photovoltaic (PV) panels will be installed at all sites where possible. PV installation will be by the Principal Works Contractor. Non-penetrative fixings will be required for panels, panel supports, cables and inverters.

The Modular Contractor shall make provision for cable routing and positioning of inverters in a suitable location to allow PV panels to be installed without having to penetrate the outer skin of the units.

Roof Structure

The primary structural frame to the roof may comprise of square hollow sections spanning the short width of the modules. Secondary steel sections (C-sections where applicable) may be specified to directly support roof level loads where Photovoltaic Cells are to be installed at roof level. The location of supporting steelwork and associated loadbearing capacity shall be advised to the Principal Works Contractor.

Although PVs are required on a selection of sites only, all units shall be designed to be robust enough to support PVs.

Roofs shall be designed for standard loadings including allowance for loads imposed during maintenance or repair. Where photovoltaic cells are to be installed at roof level, additional imposed loading of 0.5kN/m² should be allowed.

3.5. Windows

New external windows to comply with BS4873:2016 and manufactured in aluminium alloy or similar/equivalent. The finish is to be polyester powder coated (PPC). All powder coated finishes to be to a marine grade, to a minimum of 40 microns and 50 microns on average, to withstand the corrosive atmosphere and salts in a coastal environment. The windows are to be fixed using stainless steel clamp fixings, through insulated reveals, heads and cills as required.

Windows to be generally half height. Windows in WC's to be high level (clear opening dimensions to prevent escape/climbing in and out at the rear of the cell).

Windows are to be double glazed and thermally broken, complete with security fastenings, internally beaded, window restrictors, trickle vents, lockable cockspur handles, fully ventilated and drained, with concealed drain channels.

Windows to have toughened glass panes. Glazing to be kite marked. Glass edges to be bevelled.

Window handles to be colour contrasting. All new windows to meet 'Secured by Design' standards.

Opening lights to be generally top hung and restricted to 100mm. High-level units to be operated with remote winding operating gear compliant with Approved Document part M requirements where required in accessible and communal facilities.

Windows are not generally required to be fire rated in case of double travel escape routes (preferred option). In case of single travel escape routes, the windows located along single routes shall instead be 60' minutes fire rated as per the external envelope of the units, to comply with MoJ FSDG4 (Fire Safety Design guide).

Windows are to comply with the following standards:

- Air Permeability: as per emerging Approved Doc Part L- 8m³/(h.m²) @50Pa
1.57m³/(h.m²) @at 4Pa
- Water tightness: BS EN 12208: 2000 – Class 9A
- Resistance to Wind load BS EN 12210: 2000 – Class AE2400Ironmongery and Other Accessories

Windows to achieve **min. U Value 1.60W/(m²K)** As per emerging Approved Document Part L and European Design Codes, British Standards, Codes of Practice

Window blinds:

Window blinds are to be provided and installed by the Modular Contractor.

3.6. Internal Partitions and Wall Finishes

The internal partitions within the scope of this project do not require to be fire rated.

Internal partitions are to be double layer proprietary metal stud partitioning system, to provide high impact resistance and satisfy BS5234 strength and robustness requirements to severe duty rating. Where toilets are located within communal areas the partitions are to provide acoustic insulation as per Building Regs Approved Doc Part E and BS8233:2014.

Internal walls in general are to receive a washable, severe duty decorative finish. Wet areas to be provided with suitable waterproof surface (vinyl/impervious pvc lining or equivalent).

Internal walls and partitions to incorporate full height, plywood pattering, where required, to allow for wall hung fittings (e.g. services, notice boards, shelves, cupboards, blinds, kitchen units, toilets and shower fittings etc.).

3.7. Floors

The ground floor shall comprise of an insulated suspended steel frame floor system.

Min. U Value 0.18W/(m²K) As per emerging Approved Document Part L and European Design Codes, British Standards, Codes of Practice.

Ground and upper floor frames shall comprise of secondary steel members spanning across the primary structural frame. The primary frame may consist of square hollow sections (SHS) welded together in full moment connections. C-sections are considered suitable for secondary steel members, **however the Modular Contractor may specify any preferred section type based on ease of installation, provided minimum deflection criteria are satisfied.**

Ground and first floor shall be designed to a blanket imposed loading of 2.5kN/m² and a 0.5kN/m² allowance for partitions, in accordance with the MoJ core standards requirement for imposed loads.

Ground and first floor surfaces may consist of a suitable non-slip floor covering (as outlined in section 3.8) underlain by a cellulose fibre cement board decking (or similar/equivalent).

Floors to be 60 minutes fire rated, to comply with MoJ FSDG4 (Fire Safety Design guide - ref. floor compartmentation requirements).

Floors to be level throughout and finished with vinyl as described at **par 3.8** below.

The Principal Works Contractor is responsible for closing the gap between the foundation and the underside of the module with a mesh to prevent access to this zone by insects or rodents.

3.8. Floor Finishes

As per MoJ standards STD/Z/DG/071, floor finishes to be 2.5 mm welded vinyl sheet, fitted to manufacturer's recommendations. All edges against the walls will be sealed with suitable mastic.

Supply and lay floor finishes in accordance with manufacturer's instructions and details. Modular Contractor to make allowance for sub-flooring where required to level floor surfaces and facilitate laying of floor finishes.

Shower Rooms & WC's

Heavy-duty non slip vinyl to BS EN ISO 10874:2012 Durability-Domestic 23 (heavy use) - Slip resistance value-36minimum- tested against barefoot slip resistance category B. 150mm coved skirting, acoustic underlay.

Store Rooms, Cleaners Stores & Laundry Rooms

Heavy-duty non slip vinyl to BS EN ISO 10874:2012 Durability - Commercial 33 (Heavy use), R11 SRV 36 or greater 150mm coved skirting, acoustic underlay

Servery / Self cooking facility

Heavy duty non slip vinyl BS EN ISO 10874:2012 Durability –Safestep R12 Safety Vinyl, 150mm coved skirting, acoustic underlay.

Accommodation, Group /Interview rooms, Medical room, Rest & Staff areas

Vinyl to BS EN ISO 10874:2012 Durability - Domestic 22 (Medium use) resilient acoustic layer to be placed below the vinyl to control impact sound, painted timber skirting.

Skirtings

Skirtings to vinyl areas to comprise 150mm coved vinyl, using coved formers, to match associated floor type in material and colour, and capped in hardwood.

3.9. Furniture, Fixtures and Fittings

As far as possible all FF&E within accommodation units must be heavy-duty and comply with the MoJ design guide for cellular accommodation (STD/Z/DG/071). There are no anti-ligature requirements.

Refer to “**Appendix 2 - FF&E**” for FF&E requirements, sourcing and installation responsibilities.

The Modular Contractor is required to provide layout drawings showing the FF&E as per requirements listed below and in line with additional details including furniture dimensions listed in Appendix 2 of this document. Refer also to typical accommodation layouts drawing XXXXXX-XXXX-ZZ-XX-DR-A-0100 in Appendix 4 of this document.

Furniture required by room type :

Typical Accommodation Unit (single bedroom with ensuite WC/shower)

- 1no x single bed
- 1no x double desk
- 1no x chair
- 1no x wardrobe
- 1 no x wall mounted TV with bracket
- 1no x Noticeboard
- 1no x mirror
- 1no x WC pack containing
 - 1 x shower cubicle with shower tray and glazed doors
 - 1 x WHB
 - 1 x WC

Typical Low mobility / Accessible Accommodation Unit- Single bedroom with ambulant accessible ensuite WC/shower

- 1no x single bed
- 1no x single desk
- 1no chair
- 1no x wardrobe
- 1 no x wall mounted TV with bracket
- 1no x Part M WC/shower pack containing
 - 1 x accessible shower, with level wet floor, drop-down seat and grab rails

- 1 x privacy shower curtain on ceiling mounted tracks
- 1 x accessible WC with wall mounted and drop-down grab rails
- 1 x accessible WHB with wall mounted grab rails

Multi-function room (A) that might be a Dining room / Association room / or Group room

- Tables and chairs
- Notice boards

Self-Cooking Facility Unit (**)

- 1no x Fridge/freezer (*)
- 1no x Kitchen sink
- 1no x Cooker (*)
- 1no x worktop
- Above and below worktop cupboards
- Tables and chairs

(*) all appliances to meet energy efficiency requirements.

(**) sink worktops to be installed at accessible height (850 mm) with clear space underneath.

Servery Unit (**) to comply with STD/Z/DG/075 including the below items (refer also to "Appendix 2 FF&E")

- 2no x Double stainless-steel sinks
- 1no x worktop
- Above and below worktop cupboards
- 1no x Double stainless-steel Wash Hand Basin
- 2no x servery units

(**) sink worktops to be installed at accessible height (850 mm) with clear space underneath.

Pin Phone

- 4no x Wall mounted Pin phones
- 1no x Noticeboard

Toilet unit:

- WC packs each containing
 - 1 x WHB
 - 1 x WC

Staff cabin - Comprising a WC, kitchenette and office area

- 1no x Kitchenette
- 1no x Kitchen sink
- 1no x worktop
- Cupboards over and under worktop as required and fitted.
- Desks & chairs
- 1no x WC pack containing
 - 1 x WHB
 - 1 x WC

Laundry Unit

- 3no x Washing machines (*) – 1no per 20 prisoners on smaller sites
- 3no x Drying machines (*) - 1no per 20 prisoners on smaller sites
- 1no x cleaner's sink
- 1 lockable cupboard for cleaning equipment

(*) all appliances to meet energy efficiency requirements.

Multi- functional room (B) that might be: Store unit/Interview room/medical-dispensary rooms:

Store unit

- Shelving racks as required

Interview room

- 1 table and chairs

Medical / dispensary room

- 1 bed
- 1 WHB
- 1 desk
- 2 chairs
- Full height cupboard with shelves (this room would not comply with MoJ physical security standards, therefore controlled drugs will not be stored in here)

3.10. Sanitary Ware

All sanitaryware to be in vitreous china. There is no requirement for anti ligature fittings.

All accommodation units to include shower trays. Low mobility accommodation units to have wet floor shower rooms.

All taps to sinks and wash basins to be of the water saving / aerated type WRAS compliant. Lever head taps may only be used in accessible facilities and communal kitchens, servery units.

Colour of sanitary fittings and grab rails to all toilets must contrast visually with walls / floors.

Laundry room to incorporate cleaner's sink, with splash back and bucket frame.

Full height IPS panels and cubicles in solid grade laminate may be installed to WCs rooms where required. IPS panels to have easy to remove but lockable access panels for maintenance.

Internal risers are not allowed. All domestic cold and hot water supplies and waste drainage pipework is to be external and concealed/secured. All external water supplies shall be provided with freeze protection thermal insulation and trace heating.

3.11. External Gantry Walkway, Stairs and Canopy

Canopy requirements for single stacked configurations:

1. over door canopies shall be provided to all unit types:

External gantry and stairs to be provided for the double stacked units configuration, with covering canopy.

Canopy must provide shelter to walkways, designed to prevent as much as possible walkways from becoming wet and therefore resulting in potential injuries.

For fire safety, canopies are required to be of a material rated class A2-s3, d2 or better in all instances (i.e. connecting two units, cantilevered or centrally self-supporting).

The structural frame of the stairs and gantries shall be standard galvanised steel sections. Floor plates to be slip resistant. The walking surface shall be imperforate (i.e. there should be no holes or perforations in the structure so that in case of fire users are protected from the effects of heat or smoke from below).

The gantry, access ramps, external staircases and canopies shall be designed as structurally independent components with isolated foundations and stability systems.

3.12. Fire strategy

The Modular Contractor is required to produce a "building" fire strategy for the model of unit being used and if necessary any supporting infrastructure also being supplied – e.g. ancillary power unit etc. The strategy document should describe all fire safety

measures incorporated into the unit(s) and is to be based on Building Regulations template B1 through to B5, detailing – where fitted, the following areas:

1. Fire safety systems – detection and warning of fire systems, emergency lighting.
2. Means of escape – evacuation strategy, horizontal and vertical means of escape, final exits, protection of escape routes, automatic doors, evacuation of mobility impaired persons, inner rooms, escape signage.
3. Internal fire spread and fire resistance – elements of construction, fire compartmentation and separation, fire doors, openings for pipework and fire stopping, ducts, concealed spaces, internal wall and ceiling linings.
4. External fire spread – boundaries, external fire spread over external faces of building.
5. Access and facilities for fire service – firefighting water supplies, emergency information pack.

The Modular Contractor is required to supply the Principal Contractor with a completed document in a format that allows them to amend the document to reflect the “As built” facility.

The Principal Works Contractor is responsible for developing the site wide and compound layout's fire strategy information, upon receipt of the concept site layouts that will be provided by the Client Technical Assurance teams on a site by site basis.

The Principal Works Contractor is responsible for amending the fire strategy document to reflect the “As built” configuration design – reflecting the number / type of units involved, fire safety measures incorporated to reduce fire spread in close proximity settings, fire stopping of shared services between units etc and any additional features added to meet fire safety regulations. The strategy document should describe all fire safety measures incorporated into the unit(s) and is to be based on Building Regulations template B1 through to B5, detailing – where fitted, the following areas:

1. Fire safety systems – detection and warning of fire systems, emergency lighting.
2. Means of escape – evacuation strategy, horizontal and vertical means of escape, final exits, protection of escape routes, automatic doors, evacuation of mobility impaired persons, inner rooms, escape signage.
3. Internal fire spread and fire resistance – elements of construction, fire compartmentation and separation, fire doors, openings for pipework and fire stopping, ducts, concealed spaces, internal wall and ceiling linings.
4. External fire spread – boundaries, external fire spread over external faces of building
5. Access and facilities for fire service – **access route** firefighting water supplies, emergency information pack.

The Principal Works Contractor is required to supply the Client with a completed document that reflects the “As built” facility.

Travel distances

The Principal Works Contractor shall produce the gantry layouts and stairs design in compliance with MoJ FSDG4 (Fire Safety Design guide) and Approved document part B and part K, based on site specific compound layouts, occupancy and fire strategy layouts.

The double stack gantry layouts for all sites should preferably allow for **max double travel escape routes of 35 meters** (subject to compliance with Approved Doc Part B v.2 Requirement B5 “Access and facilities for fire services”), since in case of double travel escape there is no requirement for fire rating to doors and windows. **Should single direction travel distances be required instead, these shall be max 9 meters and in this case a 60’ minutes fire rating would be required for external doors and windows located along the single travel route.**

Distance between facing rows

With regards to fire safety, based on the design assumption that doors and windows to sleeping rooms would not generally be fire rated where alternative means of escape exist, the distance between facing rows shall be **no less than 4m space separation for single storey layouts and 10 meters for double storey layouts**. At detail design stage the distances between facing modules shall be confirmed by the designers according to site constraints and ensuring compliance with Approved Document Part B(4), “Methods for calculating acceptable unprotected areas”.

For single storey developments, where over door canopies are likely to obstruct fire vehicle access, consideration should be given to leaving a road width of 3.7 meter minimum, for fire truck access, clear of overdoor canopies overhang.

With regards to the operational, access, daylighting and natural ventilation requirements, the distance between facing rows (from wall to wall) in double stacked configuration, shall in no case be less than 9 meters, with a gap between gantries of minimum 3 to 5 meters.

Access for fire service and Blue Light responders

Access strategy for fire emergencies to comply with Approved Doc Part B v.2 Requirement B5 “Access and facilities for fire services” and in particular:

- 1. Singular access through the centre of the units is restrictive from a response point of view and alternative means of firefighter / vehicle access should be included.**
- 2. The site layout design should include a number of alleyways / passages between the units to give Blue Light responders options in the means of dealing with an incident. A central lay-by type area to allow vehicle access should be of a size to allow 3 vehicles to operate from.**

3.13. Fire Fighting Equipment

First aid fire fighting equipment such as portable fire extinguishers shall be provided to the Client and installed by the Principal Works Contractor in accordance with BS 5306-8. Provision of fire fighting equipment shall be included within the fire strategy by the Principal Works Contractor.

3.14. Fire barriers

Allowance to be made for all necessary fire barriers as per Modular Contractor's fire consultant advice.

3.15. Insulation and Fire Stopping

Any work connected with the installation of fire barriers in ceiling or wall cavities shall only be carried out by suitably qualified specialist installers. Work shall be executed in full accordance with the material manufacturer's recommendations. Completed work shall be offered for inspection to Building Control / Fire authorities prior to any covering up.

Provide compartmentation and cavity barriers in accordance with Building Regulations. Ensure that all fire stopping material is fixed or retained in position so it cannot become dislodged and can accommodate anticipated deflection and movement in the surrounding materials.

Ensure the integrity of any wall or other barrier is maintained where penetrated by new openings, services and the like.

All insulation materials to be HCFC and CFC free.

Certificates of compliance to be issued before Practical Completion, covering the fire stopping and fire related insulation.

It is noted that subsequent relocation of modules would require new/re-instated cavity barriers.

3.16. Signage

The Modular Contractor shall supply and install all statutory new signage in accordance with Building Regulations, British Standard guidance and Fire Officer's approval including new directional, room identification and fire signage.

Allow also for signage to warn against hanging anything on the heaters.

All signage to be in stainless steel to match ironmongery.

It is the Modular Contractor's responsibility to design, procure and manage the delivery of the door signage and way finding in accordance with the requirements set out within this document. The Modular Contractor shall allow for liaison and discussion with the *Client* Representatives and team to agree the exact configuration and specifics relating to Door Signage and way finding design.

3.17. Internal fencing and gates

The Principal Works Contractor is required to install fences with gates (or equal/approved anti tamper alternative appropriate solution) to provide protection to the services in service zones where required (*).

(*) In the case of closed estate the assumption is that the service zones are to be fenced off/protected unless there are different site specific requirements; for open estates the services zones may instead be open by default, unless there is a specific requirement to close them off.

3.18. Special Structural and Installation Requirements

The Penetrations

All modules shall be delivered with all required structural penetrations to limit on-site cutting and hot work. The Modular Contractor shall provide a layout drawing of all Building Services, coordinated with structure, prior to foundation construction to avoid post-drilling into concrete sub-structure.

Fixings and Mechanical Support Systems

External and internal walls shall be non-load bearing. Therefore, mechanical system supports shall require embedded structural anchor systems local to fixing points. Where penetrations are required to allow passage of mechanical services, local reinforcement of openings may be required subject to load requirement. All mechanical penetrations shall require fire stopping hence openings should be sized to accommodate fire rating.

Connections

As far as reasonably practicable, all primary steel frame joints shall be full moment connections welded off-site. All mechanical tie systems between modules (unit stacking pins) shall provide the required robustness and load transfer.

Foundation Design

The Modular Contractor (i.e. super structure supplier) shall provide super-structure loading and foundation support reaction values to facilitate foundation design being undertaken by the Principal Works Contractor. The Modular Contractor shall also provide super-structure layout drawings clearly indicating design finished floor levels

and support reaction points. Where holding down bolts are required, the Modular Contractor shall provide the associated specification and installation methodology.

Module installation

The Modular Contractor shall provide details of module transportation plan including trailer axle loading, trailer widths and any special access requirements. The Modular Contractor shall also undertake the module lift analysis and design of spreader systems were needed. Liaising with the establishment's facilities management team, the Modular Contractor shall determine a safe location for a temporary module lay down area. All lifting and operational requirements shall be clearly detailed within the Modular Contractor's installation method statement.

Module removal and re-location

The Modular Contractor shall ensure that the detailing of corner fittings and stacking pins allow for safe removal of modules. The Modular Contractor shall provide a method statement for safe decommissioning, removal, and relocation of modules.

The units are required to have a minimum life span of 15 years and to be suitable for relocation every 5 years (possibly offering also a 'buy back' option), therefore modules' connections should provide the required robustness and adaptability to suit.

Ground conditions assumptions

Standard set of ground conditions for tender response:

- Site will have access for a 100 tonne crane within 30m of the location of the modules.

The modular contractor can price on this basis and expectations can be managed on the basis of compensation event during contract.

4. MEPH CONNECTIONS

The Modular Contractor shall provide a 'plug and connect' weatherproof system to each modular unit.

This will include all MEPH systems, and all details shall be provided for Client and Principal Works Contractor information.

5. ELECTRICAL PERFORMANCE SPECIFICATION

5.1. General Design Principles and Electrical Requirements

5.1.1. Mains Low Voltage Distribution

Provision of new local Distribution Boards to serve small power, lighting, heating, security/safety alarm and data systems.

The distribution boards shall consist of SP+N mcb type, with MCB protection for specific equipment subject to final design/equipment and RCBO for small power including ancillary circuits.

Final design, devices, and circuit layout shall be provided by the design contractor for client technical assessment.

Assessment of AFDD and electrical load required for client review.

5.1.2. Lighting and Emergency Lighting

New installation works will consist new low energy LED luminaires, complete with emergency lighting to suit area layout.

The lighting shall be designed to meet both environment and comfort requirements to suit unit area layout.

Where practical use of lighting controls in non-accommodation unit to MoJ Standards can be provided and subject to TA/*Client* approval.

Internal lighting in all areas shall be designed to provide illuminance (lux) levels and colouring rendering index in accordance with MoJ standards, the SLL Code for Lighting 2012 and any other relevant industry standard (e.g. CIBSE Lighting Guide 9).

5.1.3. Small Power

Provision of new small power outlets and containment to suit unit layout within each unit, complete with an electrical load schedule for client assessment.

Provision of Electrical supplies to living area wall mounted room heater, and heated towel rail, electric shower supply, hand basin water heater and ventilation units. Electrical sizes of equipment to be determined by Modular Contractor including electrical load schedule for client review.

In non-accommodation units provide environmental mechanical controls, heating and small power to suit furniture layout, sizes to be determined by Modular Contractor including electrical load schedule for client review.

5.1.4. Fire Alarm

The Modular Contractor shall provide containment within each unit for interconnecting to relevant external sitewide services. External works and connection to site wide systems shall be undertaken by Principal Works Contractor.

5.1.5. Comms and Telephones

The Modular Contractor shall provide containment to each unit. The Principal Works Contractor would then connect internal containment to site wide services.

5.1.6. Digital Master Antenna TV Systems

The Modular Contractor shall provide containment to each unit for interconnecting to relevant external standalone or sitewide services. External works and connection to site wide systems shall be undertaken by Principal Works Contractor.

5.1.7. CCTV

Provision of CCTV and containment shall be provided by Principal Works Contractor for interconnection to site wide security services and main control room.

5.1.8. General Alarms

Provision of General alarms and containment shall be provided by Principal Works Contractor for interconnection to security services and main control room.

5.1.9. Cell call

Cell call system requirements will be confirmed by the Client on a site-by-site basis. If required, containment shall be provided within each unit for connection to relevant external cell call systems sitewide services.

The Modular Contractor shall provide containment to each unit. The Principal Works Contractor would then connect internal containment to site wide services.

5.1.10. Disabled alarm

Disabled alarm containment, with external beacon, shall be provided within the low mobility ensuite, for connection to relevant external system sitewide services.

The Modular Contractor shall provide containment to each unit. The Principal Works Contractor would then connect internal containment to site wide services.

5.1.11. Pegging

The Principal Works Contractor shall provide pegging system with weatherproof containment to suit site layout and in line with MoJ Security Standards. The system shall interface with the existing pegging system arrangements for each site. The pegging system shall cater for zones around unit and circulation areas.

5.1.12. Lightning protection

The Principal Works Contractor is to provide risk assessment for lightning protection and forward calculation for Client review.

All modular units shall be clamped together by the Principal Works Contractor using earth clamps.

5.1.13. Local Plantroom for dry services

The local plant rooms will be provided by the Principal Works Contractor.

Local Plantroom will include Electrical switchgear, Fire Alarms, Digital Master Antenna TV Systems, CCTV, General Alarms and ducting termination points. Provide environmental mechanical controls, heating and small power to suit layout. Separate Mechanical plant room to be provided for mechanical services.

Electrical sizes of equipment to be determined by both contractors including electrical load schedule for client review.

The Modular Contractor shall provide the equipment sizes for anything that is being fitted in each modular unit prior to coming to site for Principal Works Contractor's information and calculations.

The Principal Works Contractor shall coordinate with all services provided in each unit and plantroom.

5.1.14. External lighting

The Modular Contractor shall provide LED plain bulkhead with built-in movement sensor, complete with emergency lighting back-up, above each entry/exit door for each unit. The luminaire shall be suitable for external environment, minimise light pollution and securely fixed. The luminaire shall be provided with suitable protective surround to avoid damage to luminaire when the unit is relocated.

The Principal Works Contractor is responsible to install external lighting including emergency lighting throughout the site including within the gantries, circulations area and stairs, as required based on site specific containment layouts and exclude unlit areas.

Provision of site area floodlighting to provide overall lighting levels to meet MoJ and security requirements. Area floodlighting will provide overall consistent lighting level for external areas and CCTV to suit site layout.

5.2. Energy

Refer to paragraph 2.10 for Part L2a assessment. Information will need equipment details with energy ratings and manufacture specifics.

6. **MECHANICAL & PUBLIC HEALTH PERFORMANCE SPECIFICATION**

6.1. General Design Principles and Requirements

6.1.1. Heating

Provision of wall mounted electric panel heaters complete with individual temperature control for all accommodation and non-accommodation modules.

Each panel heater shall be provided with an electronic temperature controller that shall include a pre-set adjustable set point to limit the maximum room temperature.

Power will be derived from the local DB that will include an adjustable timer.

Provision of an electric towel rail heater to en-suite WC / Shower areas. Power will be derived from the local DB that will include an adjustable timer.

The heaters shall be of the flat panel type, robust design, construction with secure fixings and smooth surfaces.

The heater shall additionally be of the low surface temperature design.

6.1.2. Ventilation

Accommodation units.

Provision of mechanical extract and or supply and extract ventilation system using MVHR units to provide background and automatic boost ventilation as required.

Boost ventilation function shall be used during en-suite WC / Shower operation and to limit the environmental temperature.

Non-accommodation units

Provide mechanical supply and or extract ventilation equipment utilising MVHR units as appropriate. Servery, Self Cooking units and Laundries will be provided with additional dedicated extract ventilation to remove cooking odours and humid air at source.

The medical unit shall be provided with full fresh air supply and extract ventilation only. Ventilation fans shall be interlinked and incorporate variable speed controls.

All ventilation equipment shall be provided with securely located standalone adjustable electronic controllers.

Power will be derived from the local DB that will include an adjustable timer.

6.1.3. Domestic Hot Water Service.

Provision of point of use electric water heaters serving wash hand basins and sinks as required by the module type. Water heaters should be installed in a secure location where practical. Power will be derived from the local DB that will include an adjustable timer.

Provision of point of use electric showers.

Water saving flow devices shall be utilised.

6.1.4. Domestic Cold Water Services

The Modular Contractor shall provide water supply including water saving flow devices to all sanitary appliances sinks, with the exception of WC cisterns and equipment. The Principal Works Contractor shall provide a main cold water supply to the modular building termination point.

6.1.5. Drainage Services - Foul Water

The Modular Contractor shall provide foul water service connection from all sanitary appliances to terminate at a hook up point(s) externally to the module. The Principal Works Contractor shall provide a foul water connection to the modular building termination point.

6.1.6. Drainage Services - Surface Water

Provision of a surface water connection from the roof drainage to terminate at a hook up point(s) externally to the module. The Principal Works Contractor shall provide a surface water connection to the modular building termination point(s).

6.1.7. Electrical Loads associated with Mechanical Equipment.

Provision of an electrical load schedule for the mechanical equipment for each accommodation and non-accommodation unit.

6.1.8. Calculations.

Provision of calculations using IES thermal modelling or equal to confirm heating demand, background and boost ventilation rate to limit summertime temperature.

Provision of domestic hot, cold and drainage services calculations utilising, Demand Unit methodology.

Refer to paragraph 2.10.

7. Appendices

7.1. Appendix 01 - Standards Document Index 19_08_2021_RCP Mace comments

7.2. Appendix 02 – FF&E - scope matrix and Furniture dimensions and requirements

7.3. Appendix 03 – Deliverables

7.4. Appendix 04 – Typical accommodation units - concept design