

**ER Version 18: CONTENTS****Employer's Requirements Version 18****New Build Specification**

Revision 18 – October 2023

**Specification for Principal Contractor (AR)****Specification for Principal Contractor (Shared Ownership)****Specification for Principal Contractor (MMC)**

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## ER Version 18: SUITE OF DOCUMENTS

ER Version:	Principal Contractor (AR)	Principal Contractor (Shared Ownership)	Principal Contractor (MMC)
Description of specification:	Complete specification for traditional/timber frame affordable rent schemes.	Complete specification for traditional/timber frame shared ownership or sale schemes.	Specification for schemes where the MMC system has been specified separately.  NOTE The <b>Principal Contractor</b> responsibilities include: <ul style="list-style-type: none"> <li>● Procuring, call off &amp; supervising the installation of the modular homes.</li> <li>● Procuring, call off &amp; supervising the installation of all services.</li> </ul>
<b>ER v.18 suite of documents:</b>	<b>Specification documents to be used:</b>		
<b>TECHNICAL SPECIFICATIONS</b>			
ER V.18: <b>Principal Contractor (AR)</b>	Required	N/A	N/A
ER V.18: <b>Principal Contractor (Shared Ownership and Sale)</b>	N/A	Required	N/A
<b>ALTERNATIVE TECHNICAL SPECIFICATIONS</b>			
ER V.18: <b>Principal Contractor (MMC)</b>	N/A	N/A	Required
<b>PROCEDURAL SPECIFICATION</b>			
ER v.18: Section 1 Procedural Issues	Required	Required	Required
<b>TECHNICAL ADDENDUMS</b>	<b>Can be included when relevant to the scheme:</b>		
ER V.18 <b>Great Places Apartment Specification</b>	Optional	Optional	Optional
ER v.18 <b>Addendum A</b>	Superseded	Superseded	Superseded
ER v.18 <b>Addendum B</b>	Superseded	Superseded	Superseded
ER V.18: <b>Addendum C:</b> Specification for Trees & Tree Planting	Required	Required	Required
ER V.18: <b>Addendum D:</b> Specification for MVHR	Optional	Optional	Optional
ER V.18: <b>Addendum E:</b> Accessibility	Optional	Optional	Optional
ER V.18: <b>Addendum F:</b> Fire Specification - Alarms and Detection	Required	Required	Required
ER V.18: <b>Addendum G:</b> Door Entry System Specification	Optional	Optional	Optional
ER V.18: <b>Addendum H:</b> Electric Gates Specification	Optional	Optional	Optional
ER V.18 <b>Addendum J:</b> Approach to Part L/ O/ F	Required	Required	Required
ER V.18 <b>Addendum K:</b> Site Investigation Brief	Required	Required	Required

**ER Version 18: 1.0 PROCEDURAL ISSUES**

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
1.0	Procedural Issues	See separate procedural issues document: <a href="#">ER Version 18 - Section 1: Procedural Issues</a>	See separate procedural issues document: <a href="#">ER Version 18 - Section 1: Procedural Issues</a>

## ER Version 18: 2.0 DESIGN STANDARDS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
2.0	Introduction	This new build specification defines our minimum requirements for all new build <b>Affordable Rent</b> schemes and has been developed to enable all staff, consultants and contractors involved in procuring construction to be able to work together to an agreed set of design standards and construction procedures.	This new build specification defines our minimum requirements for all new build <b>Shared Ownership and Private Rent</b> schemes.
		The Contractor is free to take all measures that they deem necessary to satisfy themselves as to the correctness of the information contained in these documents and all other Appendices, and that the information contained herein is able to achieve the specific scheme Fire and Building Safety requirements.	As Affordable Rent specification.
		The Contractor shall be entirely responsible, at all stages, for ensuring that his detailed proposals will conform with the current Building Regulations. Where these ERs and associated documents call for standards higher than those indicated in the Building Regulations, those standards shall be followed. It will be the contractor's responsibility to obtain all necessary statutory approvals in this respect. The contractor shall procure any MMC elements of work, unless instructed otherwise by Employer, and ensure that all enabling works are coordinated with any MMC system design, details, and warranty requirements	As Affordable Rent specification.
2.1	Associated Documents	When relevant the Contractor shall meet the specification in the following addendum documents: ER Version 18 - Great Places Apartment Specification. ER Version 18 - Addendum C: Specification for Trees & Tree Planting. ER Version 18 - Addendum D: Specification for MVHR ER Version 18 - Addendum E: Specification for Accessibility. ER Version 18 - Addendum F: Fire Specification - Alarms and Detection. ER Version 18 - Addendum G: Door Entry System Specification. ER Version 18 - Addendum H: Electric Gates Specification. ER Version 18 - Addendum J: Approach to Part O/ L/ F ER Version 18 - Addendum K: Site Investigation Brief	As Affordable Rent specification.
		The Contractor's proposals are to be provided for each scheme in addition to this document and will form part of the contract documents.	
		The requirements in this document will apply to all projects. Any variation or shortfall from these standards or procedures must be formally approved recorded and agreed with the Employer.	
		The ER is reviewed and updated regularly. At the commencement of any project all consultants and contractors must confirm that they are working to the most current version of the document.	
2.2	Non Compliance	Evidence of consent for the non-compliance must be documented with the reasons for the recommendation and decision. All agreed non-compliances are to be confirmed by the Employer.	
		Unless appropriate written approval has been obtained to non-compliant items, or unless a varied provision has been agreed, the Employer expects all housing at hand-over to reflect and conform in every respect with the ER's, third party and legislative requirements.	As Affordable Rent specification.
		It will be deemed that the stipulations within this document apply unless variation has been specifically pre-agreed or notified before tender acceptance. Where any conflicts exist between briefing materials it will be deemed that the higher quality alternative solution will be provided. Nothing within the Contractor's proposals will supersede this view.	
2.3	Testing	The Contractor shall carry out and provide certificates as required to demonstrate compliance and provide all necessary certified instruments, plant, labour and materials for tests. In the event of any section or sections of the installation not passing the prescribed tests the Contractor shall remedy the faults and they shall be re-tested to the satisfaction of the relevant authority.	As Affordable Rent specification.
2.5	Design Standards	The development shall comply with all relevant statutory legislation, including (but not limited to):- Planning Legislation, Building Regulations, British Standards, Environmental Health, Disability Discrimination, Fire, Health and Safety and Party Wall legislation. Nothing within the ER will override any relevant statutory legislation. All instructions & recommendations of the manufacturer's of the materials and products used are to be complied with. The design and construction shall have regard to an anticipated life of 60 years for the main structural components assuming normal regular maintenance.	As Affordable Rent specification.
	Standard of finish	All fittings and finishes shall be adequately protected during construction, including protection to sanitary ware, floor finishes, kitchen fittings, windows and doors.	
		The works will be snagged by the Employer, in line with the NHBC standards; A consistent approach to finishes as well as any relevant performance standards within the ERs. See s.1.0 Procedural Issues for details of the snagging and handover process.	
	Building Regs Part L	In order to achieve Part L the following approach shall be followed - refer to addendum J: Enhanced fabric U-Value, Enhanced air-tightness, Ventilation Strategy to meet the requirements of Part F/ L/ O in-line with site constraints. Solar PV (see also clause 9.12: PV Panels) Heating and hot water system as dictated by SAP calculation (see also clause 20: Heating & Hot Water Systems)	As Affordable Rent specification.
	Renewable Energy	Where any alternative renewable technologies are necessary either to meet a statutory requirement or by instruction from a Local Authority then options shall be discussed and agreed by the Employer prior to start on site.	As Affordable Rent specification.
2.6	General Requirements	As a minimum the scheme must comply with the most recent versions of the standards set out in clauses 2.6.1 - 2.6.12 below:	As Affordable Rent specification.
2.6	Design Guide	The Contractor shall ensure that thorough consideration is given to the following design elements and shall provide drawings and design rationale for review by the Employer: <b>Main entrance design</b> <b>Corridor width</b> <b>Vertical circulation</b> <b>Means of escape</b> <b>Fire separation/ compartmentation &amp; Evacuation Strategy</b> <b>Servicing strategy, including bins/ refuse strategy and vehicle and cycle parking strategy</b> <b>Parcel delivery and storage</b> <b>Uplift in finishes to public facing common spaces</b> <b>Plant space allocation</b> <b>Specialist end user requirements (e.g. Over-55's schemes).</b> <b>Refer to Employers Design Quality Guide</b>	As Affordable Rent specification.

2.6.1	Homes England Best Practice and Guidance	<a href="https://www.gov.uk/government/organisations/homes-england">https://www.gov.uk/government/organisations/homes-england</a>	As Affordable Rent specification.
2.6.2	Great Places Design Guide	Available on request.	As Affordable Rent specification.
2.6.3	ICN Standard House Types	ICN has a portfolio of Standard House Types and will expect these to be used, wherever practicable, on all projects. Access is available to ICN standard house types on request. Where alternative house layouts are shown to be necessary, these are to be developed to reflect the principal design approaches defined within the Standard House Types and Space Standards as set out below. <b>All house types shall be approved by the Employer.</b> Consideration will be given to alternative and/ or supplier standard house types as appropriate for scheme specific requirements	As Affordable Rent specification.
2.6.4	Space Standards	Unless otherwise dictated by planning the minimum acceptable property sizes are to be as follows:	As Affordable Rent specification.
	2 storey	<b>Dwellings (2 storey)</b> 2b 3p: 59m <sup>2</sup> 2b 4p: 70m <sup>2</sup> 3b 4p: 71m <sup>2</sup> 3b 5p: 82m <sup>2</sup> 3b 6p: 95m <sup>2</sup> 4b 5p: 82m <sup>2</sup> 4b 6p: 95m <sup>2</sup> 4b 7p: N/A	As Affordable Rent specification.
	3 storey	<b>Dwellings (3 storey)</b> 3b 4p: 76m <sup>2</sup> 3b 5p: 85m <sup>2</sup> 3b 6p: 100m <sup>2</sup> 4b 5p: 87m <sup>2</sup> 4b 6p: 100m <sup>2</sup>	As Affordable Rent specification.
	NDSS	NDSS space standards shall be achieved when required. For any house types not listed above, property sizes shall be approved by the Employer.	As Affordable Rent specification.
2.6.5	Building Warranty	For each property the Contractor is required to obtain a 12 year building warranty under either NHBC 'Buildmark Choice' or LABC Warranty or Premier Guarantee. Insurance is to include cover for insolvency, the payment of professional fees, removal of debris, additional costs, alternative accommodation, and loss of rent. The maximum excess is to be agreed with the Employer but in all cases to be the lowest available excess.	As Affordable Rent specification.
	BOPAS	Subject to construction methodology	Subject to construction methodology
2.6.6	Mitigating increased overheating risk	Our Development Team work with design consultants and contractors to ensure that all homes are in line with the latest Regulations and Requirements and are designed and constructed to: <ul style="list-style-type: none"> <li>Limit unwanted solar gains in summer</li> <li>Provide an adequate means of removing excess heat from the indoor environment</li> </ul> <p>In meeting this requirement contractors must demonstrate the following has been assessed:</p> <ul style="list-style-type: none"> <li>Safety and wellbeing issues: noise at night, pollution, security, protection from falling and protection from entrapment</li> <li>Mechanical cooling has been adopted only where mitigation of overheating cannot be achieved via air circulation and extraction</li> </ul> <p>Allowable temperature in the home (includes bedrooms between 7am and 10pm), may spend no more than 3% of the year at more than 1°C above the comfort temperature of 26°C. In addition to the above, bedrooms may only be warmer than 26°C for 1% of the year's sleeping hours (10pm-7am).</p> <p>Compliance with building regulations Part O may be demonstrated by either:</p> <ul style="list-style-type: none"> <li>Simplified Method, or,</li> <li>Dynamic Thermal Modelling</li> </ul> <p>To ensure the most suitable method to demonstrate Part O compliance is utilised, the Contractor is responsible for ensuring the lead design consultant provides all required studies, and analysis and assessments are completed in advance of detailed design development. Please note it is unlikely flatted blocks/ mid-terrace units/ cottage style apartments will demonstrate compliance under the simplified method without significant trade-offs between quality of space and compliance with the simplified method. To allow for maximum design flexibility and to ensure the provision of an optimal design solution for building comfort the dynamic thermal model should be used.</p> <p>Where required to achieve compliant design solar gains in summer should be limited by any of the following means;</p> <ul style="list-style-type: none"> <li>Fixed shading devices</li> <li>Glazing design</li> <li>Building design</li> <li>Shading provided by adjacent permanent buildings, structures or hard landscaping.</li> </ul> <p>N.B. Although internal blinds and curtains provide some reduction in solar gains, they should not be taken into account when considering whether compliance with Part O has been met. Foliage, such as tree cover, can provide some reduction in solar gains. However, it should not be taken into account when considering whether compliance with Part O has been met.</p> <p>Where required to achieve compliant design excess heat should be removed from the residential building by any of the following means, in order of priority and preference;</p> <ul style="list-style-type: none"> <li>Opening windows.</li> <li>Ventilation louvres in external walls.</li> <li>A mechanical ventilation system.</li> <li>A mechanical cooling system</li> </ul> <p>The proximity to airborne noise or pollution from busy roads, railways and industrial uses may prevent an occupant from opening and using the windows as they were intended.</p> <p>Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits.</p> <ul style="list-style-type: none"> <li>40dB LAeq,T, averaged over 8 hours (between 11pm and 7am).</li> <li>55dB LAFmax, more than 10 times a night (between 11pm and 7am).</li> </ul> <p>Compliance may be achieved using mechanical ventilation for those sites where windows cannot be opened.</p> <p>Dwellings should be constructed to mitigate overheating risk using passive means as far as reasonably practicable. It should be demonstrated to the building control body that all practicable passive means of limiting unwanted solar gains and removing excess heat have been used first before adopting mechanical cooling.</p> <p>A section on 'staying cool in hot weather' should be included in the property's Home User Guide including information about the overheating mitigation strategy and its maintenance requirements.</p> <p>Where standard dwelling types are available, these should be dynamically thermally modelled in different locations and orientations, incorporating changes as required to achieve Part O compliance for each scenario. This should include a library of approved products and variations, as required to suit scenario driven overheating risk, such as window types, shading devices, and ventilation opening details).</p>	As Affordable Rent specification.

2.6.7	Construction Design Management Regulations 2015 (CDM15)	<a href="http://www.hse.gov.uk/pubns/books/153.htm?ebul=gd-cons/jul15&amp;cr=2">http://www.hse.gov.uk/pubns/books/153.htm?ebul=gd-cons/jul15&amp;cr=2</a>	As Affordable Rent specification.
2.6.8	Secure by Design	The Contractor shall seek scheme specific advice from local police design advisers prior to detailed planning and be fully aware of the detail guidance available from the ACPO. The design of the site, boundaries and dwellings shall follow the guidance set out in SBD "New Homes 2019" as well as guidance and updates from <a href="http://www.securedbydesign.com">www.securedbydesign.com</a> <a href="https://www.securedbydesign.com/images/downloads/HOMES_BROCHURE_2019_NEW_version_2.pdf">https://www.securedbydesign.com/images/downloads/HOMES_BROCHURE_2019_NEW_version_2.pdf</a> Any areas of non-compliance with the above guidance shall be agreed with the Employer before proceeding. The Contractor shall provide any uplift for securing full SBD certification for all properties, requirement for certification level obtained shall be agreed with the Employer.	As Affordable Rent specification.
2.6.9	Design Council (CABE) Building for Life	The Contractor shall ensure that the design meets the best practice recommendations contained in the Building for a Healthy Life guidance. At Design Stage, designers must provide the Employer with a report to confirm design response to each of the 12 criteria and to demonstrate how the 'green light' target is to be met. At PC stage, designers must provide the Employer with a report to confirm design response to each of the 12 criteria and to demonstrate how the 'green light' target has been met on site. Designers shall also make reference to the guidance document "Achieving Building for Life", published by Homes England. <a href="https://www.creatingexcellence.net/wp-content/uploads/2020/07/Building-for-a-Healthy-Life-July-2020.pdf">https://www.creatingexcellence.net/wp-content/uploads/2020/07/Building-for-a-Healthy-Life-July-2020.pdf</a>	As Affordable Rent specification.
2.6.10	Gas Safe Regulations	<a href="http://www.legislation.gov.uk/ukxi/1998/2451/made">http://www.legislation.gov.uk/ukxi/1998/2451/made</a>	As Affordable Rent specification.
2.6.11	IET (previously NICEIC) Regulations	<a href="https://www.niceic.com/contractor/essentials/downloads">https://www.niceic.com/contractor/essentials/downloads</a>	As Affordable Rent specification.
2.6.12	Considerate Constructors Scheme	We are committed to recognising and encouraging construction sites that are managed in an environmentally and socially considerate manner. As one of Considerate Constructors Associate Members the Employer has agreed to register all their sites with the Scheme, and to comply with all aspects of the Scheme's Code of Considerate Practice. All schemes are to be registered and monitored by the Considerate Constructors Scheme. The Employer requires that a score in excess of 35 is achieved. <a href="http://www.ccscheme.org.uk/">http://www.ccscheme.org.uk/</a>	As Affordable Rent specification.
2.7	Sustainability	The Contractor shall meet the specification previously required by the Code for Sustainable Homes in the areas specified below by following guidance set out in the current version of the BREEAM New Construction Technical Manual. Available at <a href="http://www.breeam.com/new-construction">http://www.breeam.com/new-construction</a> The Contractor shall employ a suitably qualified environmental assessor and demonstrate this compliance.	As Affordable Rent specification.
2.7.1	Sustainable Materials	The Contractor shall ensure the specification of construction materials which meet the sustainable materials requirements as previously required by the Code for Sustainable Homes.	

		Technical guidance in the BREEM Technical Manual shall be followed (see section "Materials").	As Affordable Rent specification.
2.7.2	Daylighting	The Contractor shall ensure that daylight calculations are carried out on all dwellings to ensure daylighting provision as previously required by the Code for Sustainable Homes. I.e. minimum of 1.5% to all habitable rooms and 2% to kitchens, using the BRE daylight calculator.	As Affordable Rent specification.
		Technical guidance in the BREEM Technical Manual shall be followed (see section "Health and Wellbeing – Visual Comfort").	
2.7.3	Sound Insulation	The Contractor shall ensure that the design meets an enhanced specification which achieves airborne and impact sound insulation values that are at least 5dB improvement over Part E of the building regulations.	As Affordable Rent specification.
		Technical guidance in the BREEM Technical Manual shall be followed (see section "Health and Wellbeing – Acoustic performance").	
2.8	Apartments	All Apartments shall meet the <a href="#">Great Places ER V.18 Apartments specification</a> . Design for accessibility and adaptations for wheelchair use in ground floor cottage flats and bungalows shall be agreed with the Employer at design stage where required (including the incorporation of Part M4(2) and Part M4(3) criteria).	As Affordable Rent specification.
2.9	Wet Rooms	All ground floor apartments, cottage flats and bungalows shall include a wet room with level access shower (baths are not required). See clause 22: <a href="#">Wet Rooms</a> .	The inclusion and design of wet rooms in Shared Ownership ground floor apartments and bungalows shall be agreed with the Employer at design stage. If wet rooms are included then the shared ownership specification in clause 22: <a href="#">Wet Rooms</a> shall be used.
2.10	En-suites	Provision of en-suites shall not be included in rented properties unless otherwise agreed with the Employer.	Provision of en-suites in Shared Ownership properties shall be agreed with the Employer. Generally the following shall be included: En-suites shall be provided in all properties with 3 bedrooms or more. En-suite provision in 2 bedroom properties shall be agreed with the Employer at design stage.
2.11	Accessibility	The design shall take into account the requirements of the end user and the FRA. The Contractor shall provide evidence that this has been reviewed and incorporated into the design as necessary, in the form of a design statement or similar. In all schemes the Contractor shall allow for the following: Level access at all ground floor access points (including access to private garden areas if applicable).	
	Level Access	All bungalows and ground floor cottage flats shall have level access at both the front and rear doors. Secondary DPC shall be provided. Access path needs to maintain 150mm below DPC except at the doors.	
2.11.1	Aids & Adaptations	Specialist schemes will require additional items to be included, the Contractor shall engage with the Employer to agree any additional items, including but not limited to the following:	
	Over-55's housing	In over-55 housing schemes the Contractor shall allow for the following: <a href="#">Addendum E: Accessibility</a> specification shall be included. Corner protection shall be included. Scooter storage and charging facilities shall be provided (fire risk assessment required). Parking spaces shall be sized as disabled parking spaces. Access to all ground floor gardens/external areas shall have accessible thresholds (as described in Part M). Assisted doors shall be included. Handrails around corridors shall be included. Evacuation chairs shall be included as per Regulations & Fire Risk Assessment. Refuge areas shall be included as per Regulations & Fire Risk Assessment.	As Affordable Rent specification.
	Supported housing	In supported/specialist housing schemes the Contractor shall allow for the following: Suitable wall finishes to achieve increased robustness. Anti-ligature fixtures and fittings LD1 Fire alarm system Additional access control by storey level	
	Evacuation strategy	Evacuation strategy for vulnerable persons shall be provided for the identified end user as per the Fire Risk Assessment. Redcare line, refuge areas and EVC shall be provided as required by Regulations/Fire Risk Assessment.  The Contractor shall request the scheme specific aids and adaptations specification from the Employer for any further adaptations if applicable.	
2.11.2	Customer Profile	The design shall take into consideration the customer profile and accommodate changing profile so far as is practicable and all fire strategy and design shall make reference to the end user.	
2.12	Coastal Areas	It is the Contractor's responsibility to provide a suitable design and specification for coastal areas. The below specification shall be followed as a minimum requirement.  Design and materials for external components on any site within 5km inland from the shoreline shall take into account increased risks for high wind speed, rain penetration and salt corrosion.  The Contractor shall provide evidence for suitability for use in a coastal regions for all external materials and fixings. This shall include (but is not limited to): Design and construction of walls & roofs, External fixings and ironmongery including operating mechanisms for opening elements TV aerials, PV panels & support systems, Cladding systems, and masonry restraint External metalwork, railings etc.	As Affordable Rent specification.
2.13	Windows	All kitchens, dining rooms and lounges shall have an opening window as well as the rear door/patio door. See also clause 11. <a href="#">Windows</a> .	As Affordable Rent specification.

2.14	<b>Fire Protection</b>	<p>The Contractor shall provide evidence/records of installation of all passive fire protection for all plots, including but not limited to:</p> <ul style="list-style-type: none"><li>• Cavity fire socks</li><li>• Fire protection at the party wall at spandrel panels</li><li>• Fire protection at the party wall at roof tiles and eaves</li><li>• Fire protection between cottage flats.</li><li>• Fire protection at fire sockets on a fire rated wall.</li><li>• Fire protection at penetrations through the cavity, including meter boxes, ducts etc.</li></ul> <p>Etc.</p> <p>See also clause 1: <a href="#">Procedural Issues</a>.</p>	As Affordable Rent specification.
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**ER Version 18 - Apartments: 2A PROVISION OF INFORMATION**

<b>Clause</b>	<b>Affordable Rent and Shared Ownership</b>
<b>2A.0 Provision of Information</b>	<p>The Contractor shall provide all necessary information from the Construction phase as required for:</p> <ul style="list-style-type: none"> <li>• Building Regulations,</li> <li>• Fire Risk Assessment,</li> <li>• Fire Safety Act,</li> <li>• Building Safety Bill,</li> <li>• Safety Case.</li> <li>• Golden Thread Data Requirements (See 1.18 Appendix 7)</li> </ul> <p>Information shall be updated following any changes to the design/construction.</p> <p>Information format Information shall be provided in a format as agreed with the Employer</p>
<b>2A.1 Fire strategy Report</b>	<p>Fire strategy at design stage shall be lead by the client or shall be signed off by the client. Fire Strategy Report shall be by an accredited 3rd party.</p>
<b>2A.2 Construction Stage Safety Information Requirements</b>	<p>The Contactor shall provide the following information to the Employer:</p> <p>Site records shall contain the following information. All information shall be provided to the Employer.</p> <ul style="list-style-type: none"> <li>• Fire stopping manufacturers test data sheets and dimensionally detailed technical illustrations.</li> <li>• Details of third party certification for the product being installed.</li> <li>• System designers’ project-specific detailed and dimensioned arrangement drawings incorporating: <ul style="list-style-type: none"> <li>○ the compartment walls and location of fire stopping.</li> <li>○ cross references back to a schedule of all fire stops to include their rating and location.</li> <li>○ specification and location of all fire doors.</li> <li>○ specification and location of fire protection of penetrations and voids.</li> </ul> </li> <li>• Activity programme clearly detailing the sequence of installation relative to each contractor.</li> <li>• Installation checklist.</li> <li>• Inspection and handover checklist/requirements.</li> <li>• Any additional or special requirements.</li> <li>• Inspection and handover requirements including need for labelling of finished installations.</li> <li>• Service support arrangement (if applicable).</li> <li>• Maintenance requirements.</li> <li>• Identification of all parts of the construction acting as part of a compartment and identification of all materials.</li> </ul> <p>List details of all tags for passive fire protection of penetrations through compartmentation separating elements, documentation to include identification of location, ID number and photographic evidence.</p>
<b>2A.3 Information on Fire Safety/Safety Management Systems</b>	<p>The contractor shall provide the following information for all safety management systems, including fire and carbon monoxide detection systems and sprinkler/suppression systems:</p> <ul style="list-style-type: none"> <li>• Specification &amp; Installation information.</li> <li>• Evidence of commissioning and testing.</li> <li>• Manufacturer's recommended maintenance &amp; testing regime.</li> <li>• Training for the Employer on the use of the system.</li> </ul>

<p><b>2A.4 Training on Systems Installed</b></p>	<p>The Contractor shall provide training for the Employer on the use of all installed systems. Separate demonstrations are required for each systems</p> <p>The Contractor shall ensure training opportunities are provided when the systems are fully commissioned, prior to handover. The Contractor shall allow time in the programme for this process.</p> <p>The Contractor shall ensure that the relevant specialists from the sub-contractors involved in the installation of the systems are available to meet on site and demonstrate the systems to the relevant personnel from Great Places.</p> <p>Systems requiring training shall be agreed with the Employer, this shall include the following (or as necessary for the scheme):</p> <ul style="list-style-type: none"> <li>• Door Entry System</li> <li>• Fire Detection Systems and AOV's</li> <li>• Lifts</li> <li>• Water pumps</li> <li>• Communication systems, Aerials/Satellites, CCTV systems</li> <li>• Fall protection systems</li> <li>• Heating and hot water systems</li> <li>• Mechanical Ventilation systems</li> <li>• Electrical services, location of landlord consumer unit, isolation switches etc.</li> <li>• PV systems</li> <li>• Vehicle Gates</li> <li>• Electric vehicle chargepoints</li> <li>• Overview of apartment block layout including service risers, roof access, store areas etc.</li> <li>• Any other scheme specific specialist systems</li> </ul>
<p><b>2A.5 Warranty Information Inspections &amp; Maintenance during the DLP</b></p>	<p>The Contractor shall provide all necessary warranty, maintenance and inspection information for all systems installed, as stated under the relevant sections of the ER's.</p> <p>The Contractor shall undertake all statutory inspections and maintenance on systems during the DLP, including but not limited to:</p> <ul style="list-style-type: none"> <li>• Fire detection systems &amp; AOV's</li> <li>• Lifts</li> <li>• Door Entry Systems and electric gates</li> <li>• Water pumps, boosters and storage systems</li> <li>• PV systems</li> <li>• Communal heating and hot water systems</li> </ul>

2A.6 Thermal record  
minimum  
requirements

- 1 – Foundations & Ground Floor: To indicate continuity of thermal insulation at
  - a - Ground floor perimeter edge insulation
  - b - External door threshold
  - c - Below damp-course on external walls
  
- 2 – External walls: To indicate insulation continuity for each wall type at
  - a – Ground floor to wall junction
  - b – Structural penetrating elements
  
- 3 – Roofs: To indicate insulation continuity for each roof type at
  - a – Joist/ rafter level
  - b – Eaves and gable edges
  
- 4 – Openings: To indicate insulation continuity for openings at
  - a – Window position in relation to cavity closer or insulation line
  - b – External doorset positioning and insulation line
  
- 5 – Air tightness:
  - a - To clearly identify air tightness details and penetrations.
  
- 6 – Services: To clearly show space and water heating/ renewable tech/ ventilation etc
  - a – Equipment makes and model and identification
  - b – Continuity of insulation for primary pipework
  - c – Ventilation ductwork and continuity of insulation.

## ER Version 18: 3.0 SITE INVESTIGATION

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
3.0	Site Investigation	Refer to Addendum K - Site Investigation Brief	Refer to Addendum K - Site Investigation Brief
3.1	Site Investigation Generally	<p>A full site investigation shall be undertaken by the Contractor, any hazards identified and removed from site. The Contractor shall comply with all recommendations identified in the site investigation and fully remediate the site in compliance with Planning, the Warranty Provider's requirements and Building Control.</p> <p>The Contractor shall investigate and advise on how the effects of redirecting or placing increased demand on services is likely to impact on the cost of proposed programming of the new development. Furthermore, the Contractor is required to inspect the site and carry out detailed and comprehensive searches, through the relevant authorities, to discover the existence of any existing or redundant sewers, drains, water, gas, electric or other such services. Where a site investigation has been provided by the Employer, the Contractor shall be deemed to have satisfied himself as to its accuracy and included for undertaking all necessary additional checks, searches and investigations as deemed necessary. Where the Contractor has procured the site investigation report it shall be owned by the Employer.</p>	As Affordable Rent specification.
3.2	Invasive Species	<p>It is the Contractor's responsibility to ensure that investigations have proved that there are no invasive weeds on the site such as; Japanese Knotweed, Giant Hogweed, Himalayan Balsam or any other weed as defined in the Wildlife and Countryside Act 1981.</p> <p>Should there be any evidence of an invasive species then the Contractor must employ the services of a suitably licensed removal contractor and ensure that services include an insurance backed warranty for a period of 10 years from the date of eradication/removal, before construction work commences on site.</p> <p>The warranty must be in the name of the Employer.</p>	As Affordable Rent specification.
3.3	Environmental Assessment	<p>A suitably qualified ecologist shall be appointed to determine the species per hectare and the recommendations for any proposed planting implemented. All consideration must be given to deliver bio-diversity net-gain in accordance with the following hierarchy to achieve a minimum 10% net uplift in biodiversity to each scheme;</p> <p>avoidance of reduction in ecological value,  minimisation of impact of development on existing bio-diversity,  restoration of habitat delivered on site,  delivered uplift in the immediate community,</p>	As Affordable Rent specification.
3.4	Land drains / Waterlogged gardens	<p>The Contractor shall perform close examination of the site investigation report and an assessment of the ground permeability to avoid creating waterlogged gardens.</p> <p>The Employer requires a minimum 600w x 900d land drain be provided to the edge of patio junction with garden to the full width of the plot.</p> <p>Where the prevailing sub strata conditions are not predominantly clay and of high permeability, the Contractor may offer an outline designed solution to reduce this scope. Guidance provided in BS 4428 – Landscape shall be followed, see also clause 25.3 Site Drainage.</p>	As Affordable Rent specification.

## ER Version 18: 4.0 FOUNDATIONS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
4.0	Foundations	To be in accordance with NHBC Guidance Chapter 4	
4.1	Foundations Generally  Design	<p>The choice, design and construction of foundations and the co-ordination of service entry points are the Contractor's responsibility and shall in all cases meet with the requirements of the current Building Regulations.</p> <p>Foundations shall be designed to suit local ground conditions and suitable for the loads to be imposed.</p> <p>Foundations shall be designed in such a way so as to show brickwork above finished ground levels externally.</p> <p>All work shall be in accordance with Structural Engineer's requirements. Any variations due to ground conditions and/or warranty providers requirements shall be the Contractor's responsibility. Sulphur resisting cement shall be used where the Structural Engineer indicates ground conditions warrant. Tolerances of installed works are to meet the requirement of the chosen superstructure construction methodology. Accuracy and coordination of substructure elements with above ground works is the responsibility of the principal contractor</p>	As Affordable Rent specification.
4.2	Facing Brickwork below DPC	Two courses of facing bricks to match those on the external walls immediately above ground level are required below finished ground level or paving level. Mortar classification shall be of suitable strength to BS EN 998-2:2010 (Specification for mortar for masonry. Masonry mortar) and to the correct exposed application.	As Affordable Rent specification.

## ER Version 18: 5.0 GROUND FLOORS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
5.0	Ground Floors		
5.1	Ground Floors Generally	Timber ground floors are not acceptable unless specifically approved for the chosen method of installation by building control body and warranty provider.	As Affordable Rent specification.
		The choice, design and construction of the ground floor is the Contractor's responsibility and shall in all cases meet with the requirements of the current Building Regulations.  All work shall be in accordance with Structural Engineer's requirements.	As Affordable Rent specification.
5.2	Vented sub-floor void	Sub-floor ventilation shall meet with the requirements of current Building Regulations & the warranty provider.	As Affordable Rent specification.
5.3	Treatment under Concrete Suspended Floors	Surfaces of ground shall be levelled and treated with weed killer. No materials which may contain wood rotting agents shall be left under ground floor slabs and any filling of the sub floor shall be free from vegetable matter and comprise a minimum 100mm thick blinded and inert hard-core.	As Affordable Rent specification.

## ER Version 18: 6.0 EXTERNAL WALLS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
6.0	External Walls	All external walls shall meet current building regulations, in addition to this external walls shall meet the requirements of Clause 6.1-6.9.	As Affordable Rent specification.
6.1	General Requirements		
	Secondary DPC	Paths adjacent to the property shall be maintained at 150mm below DPC around the full perimeter. Secondary DPC shall be installed to all walls with level access/less than 150mm below DPC.	
	Timber Frame (cavity)	For timber framed external walls a minimum clear cavity width of 50mm shall be maintained between the external brick skin and the face of the timber frame.	
	Insulation	Where masonry cavity walls are to be fully filled details proposed and contractors testing and inspection plan, including recording and reporting of thermal junctions and thermal continuity to be agreed by Employer prior to commencement of works. PIR Insulation to have LPBC certification from BRE to confirm standards related to fire performance have been met via third party certification.	As Affordable Rent specification.
	Movement Joints	Positions of movement joints shall be determined by a structural engineer appointed by the Contractor; preferred position of movement joints is in corners or behind rainwater pipes where possible.	
	Fire Protection	Construction drawings shall clearly illustrate the proposed positioning of cavity barriers proposed in the context of the type of wall construction to be used, and the approved documents of the Building Regulations.	
	Provision of information	The Contractor shall provide all necessary details of fire protection, including the detail for the party wall at the eaves. See also clause 2.14: Fire Protection	
	Core drilling	All holes through the external facing brickwork, other than formed openings, shall be core drilled	
6.2	Facing Bricks	Facing bricks shall be clay only. Alternative facing brick details to be provided to Employer for consideration.  The Contractor shall provide a range of brick samples for the Employer to choose from, taking into account any planning restrictions as necessary. A variety of colour and texture options shall be provided. Bricks shall be from an intermediate price range as a minimum.  Engineering bricks with water absorption less than 7% shall be used for brickwork below DPC.	As Affordable Rent specification.
6.2.1	Technical Requirements	Masonry units and mortar shall comply with BS EN 1996-1-1. For buildings higher than three storeys, masonry shall be designed by a suitably qualified Engineer.	
	Freeze/thaw resistance	Brickwork on exposed parts of the building (copings, cills, parapets, chimneys etc.) or brickwork for schemes in extremely exposed areas shall be freeze/thaw-resistant F2,S2 or F2,S1 to BS EN 771.  Brickwork for general wall areas shall be moderately freeze/thaw resistant F1,S1 or F1,S2 to BS EN 771, provided they are classified in the manufacturer's recommendations as satisfactory for the exposure, the Contractor shall provide evidence confirming this.	
	Compressive strength	Bricks for one and two storey homes shall have a minimum compressive strength of 9N/mm <sup>2</sup> unless otherwise stated by a suitably qualified Engineer.  Bricks for three storey homes shall have a minimum compressive strength of 13N/mm <sup>2</sup> to all storeys unless otherwise stated by the Engineer.	As Affordable Rent specification.
	Water Absorption	Facing bricks above DPC shall have water absorption of 15% or less.	
	Mortar	Mortar classification shall be of suitable strength to BS EN 998-2:2010 (Specification for mortar for masonry) and shall be suitable for the works exposure condition. Unless coloured mortar is specified on a scheme by scheme basis natural mortar shall be used.	
6.2.2	Bricklaying	Facing bricks shall be chosen from 3 packs and be well mixed when laying. Bricks shall be selected having regards to the works exposure condition in relation to frost resistance. Brick type, make up and appearance to be agreed with the planning authority and the Employer prior to order.  Two courses of facing bricks to match those on the external walls immediately above ground level are required below finished ground level or paving level.	As Affordable Rent specification
6.2.3	Sample Panel	Sample Panel – Prior to commencement of the brickwork, the Contractor shall prepare sample panels indicating the various facing bricks and associated mortars he proposes to use for approval by the Employer and include for all costs for this in his tender. Sample panel shall include cladding sample when relevant to the scheme.	As Affordable Rent specification
6.2.4	Brick Slips	Brick slips are not accepted unless otherwise agreed with the Employer. Any slip system must be mechanically secured - bonded systems will not be considered.	As Affordable Rent specification.
6.3	Stone	Stone for external walls shall be gauged dressed coursed stone. Axed dressed stone with irregular quoins is not accepted. All stonework shall be dressed from manufacturer, with square edges to form neat alignment of reveals, unless guided by Planning Conditions with designated natural stone.	As Affordable Rent specification.
6.4	Finishing of Joints	Face brickwork shall be pointed with a bucket handle joint (unless stated otherwise by the Employer).	As Affordable Rent specification.
6.5	Cavity Cleaning	Brickwork cavities shall be kept clean during bricklaying. Method of inspection to be agreed with the COW.	As Affordable Rent specification.

6.6	<b>Alternative Cladding</b>		
6.6.1	Cladding Systems Generally	Systems proposed for rain screen cladding, unsupported rain screen cladding (timber frame), decorative feature finishes, unsupported render panels (timber frame) or any feature that attaches to the main structure shall be designed to meet all current regulations in order to resist the spread of fire over the walls and from one building to another. All cladding shall comply with clause 6.6.1 - 6.6.3:	As Affordable Rent specification.
	Colour	RAL colour of cladding shall be agreed with Employer.	As Affordable Rent specification.
	Decorative Feature Panels	Decorative feature finishes or panels shall comply with all current building regulations, and in addition to this, decorative feature panels must not extend across a fire separating element (e.g. compartment wall or floor, cavity barrier, or construction enclosing a protected escape route) or contain any penetrations (e.g. pipework, flues, cables). All materials shall be fixed in accordance with the Manufacturer's recommendation to a suitable carrier system.	As Affordable Rent specification.
	Carrier Systems	The Contractor shall identify the carrier system employed and make an assessment of its suitability for the intended environment. The carrier system shall have BBA approval and shall be installed by approved installers to the system specification. Systems shall be inspected and signed off by suitably qualified inspectors appointed by the Contractor and documentation presented as part of the handover package. All documentation pertaining to maintenance, upkeep and removal shall be provided.	As Affordable Rent specification.
	Finished Panel Systems	The Contractor shall identify the finished panel system and make an assessment of its suitability for the intended environment, and also with regard to performance in accordance with BS 476 (British Standard Fire Tests). Further that the location and constituents of such panels complies with Approved Document B Volume 1 (Dwelling Houses) or approved Document B Volume 2 (Buildings other than dwellings) for habitable buildings above 18m.	As Affordable Rent specification.
	Fire Risk Assessment	The Contractor shall seek and employ a fire risk assessment from specialists in order to prevent the spread of fire throughout the cladding system externally and mitigate the risk of spread of fire from external surfaces to internal surfaces or vice versa. Such measures (including fire resisting systems, fire protection construction products, fire-separating elements, fire breaks, stops and compartmentalisation) shall be indicated clearly on drawings and be installed and inspected by suitably qualified people appointed by the Contractor. All as built and inspected records shall be made available at handover for transfer into the health and safety file.	As Affordable Rent specification.
6.6.2	<b>Timber Cladding</b>	Timber cladding is not acceptable.	As Affordable Rent specification.
6.6.3	High Pressure Decorative Laminates (HPL) & Fibre Cement Decorative Boards	Low maintenance, rot free alternatives to traditional timber weatherboarding are acceptable as decorative cladding panels, including Trespa Metion, Marley Eternit Cedral Weatherboard, Hardie Plank or equal approved product.  Panels shall be fixed in accordance with Manufacturer's recommendations (see also clause 6.6.1: Cladding systems generally) and the cladding system shall meet the following requirements: <ul style="list-style-type: none"> <li>Class 0 fire rating, as defined in the Building Regulations or A2-s1,d0 classification in accordance with BS EN 13501-1.</li> <li>Capable of accepting the wind loading and impacts likely to be met in the location in which it is to be installed, in accordance with BS EN 1991-1-4 (Actions on structures. General actions. Wind actions) and BBA test methods.</li> <li>Durable, with an expected service life in excess of 30 years.</li> <li>BBA certification.</li> <li>High Pressure Decorative Laminates shall meet BS EN 438-7.</li> <li>Fibre Cement Boards shall meet BS EN 12467.</li> </ul>	As Affordable Rent specification.
6.7	<b>Render</b>	Render is acceptable only with the prior approval of the Employer; Render shall be through coloured silicone render, applied to the substrate in accordance with the manufacturer's instructions.	As Affordable Rent specification.
	Colour	Care must be taken in detailing and colour selection to ensure that weathering and water staining does not occur. Preferred colours are: 'Champagne' & Light Grey Colours not accepted are: 'Buttermilk'	As Affordable Rent Specification
	Design	The Contractor shall ensure that the following design criteria are met: <ul style="list-style-type: none"> <li>Provide a minimum 150mm overhang at roof verge and eaves level and minimum 50mm overhang at eaves and elsewhere.</li> <li>Render shall be finished with a suitable detail at a minimum of 150mm above ground level in all areas around the building.</li> <li>White colour render is not acceptable.</li> </ul> NHBC best practice shall be followed for accommodation of movement in rendered walls; movement joints shall be continuous through the render and background. Austenitic stainless steel bed joint reinforcement conforming to BS EN 845-3 shall be placed in the first two courses of the external leaf, above and below any openings. Where possible the reinforcement shall extend 600mm beyond the opening.	As Affordable Rent Specification
6.8	<b>Steel or Concrete Frames</b>	A qualified Structural Engineer shall be employed to design any steel or concrete frames required in the construction of the building and full details shall be provided together with details of Building Regulation approval.	As Affordable Rent specification.
6.9	<b>Timber Frame / Structural Insulated Panel System (SIPS)</b>	Timber framed structures are only allowed for low rise single dwellings up to 3 stories, including cottage flats.  <b>Multi storey and/or multiple occupancy buildings shall not be constructed in timber frame.</b>	As Affordable Rent specification.
	Design / Manufacture	Timber Frame structures shall be designed and manufactured by a member of TRADA and all components and construction shall comply with the requirements of the Building Regulations.	
	HB225 Cert	All timber frame construction shall have HB2445 certification, a copy of the certificate shall be provided to the Employer.	
6.10	<b>Pattresses</b>	Ply lining/pattresses shall be provided as necessary to allow the fixing of the following: <b>N.B. Pattress material is subject to wall system manufacturer fire test data.</b> Stair balustrades and handrails, Bathroom grabrails/ future provision Wall mounted MEP, Radiator panels Kitchen wall units, Scheme specific equipment e.g. aids and adaptions	As Affordable Rent specification.



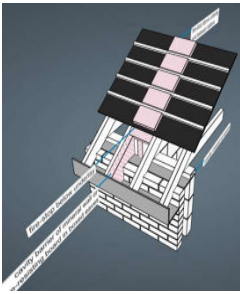
## ER Version 18: 7.0 INTERNAL WALL AND PARTITIONS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
7.0	<b>Internal Walls and Partitions</b>		
7.1	<b>Non-Load Bearing Walls</b>	Non-load bearing walls shall be min. 75mm x 50mm softwood (C16-C24) or galvanised metal stud partitions constructed in accordance with the specification of the approved plasterboard manufacturer's technical data. All to comply with the current Building Regulations.	As Affordable Rent specification.
7.2	<b>Ply lining &amp; Pattresses</b>	Ply lining/pattresses shall be provided for future proofing to allow the fixing of the following:  Bathrooms & Wet Rooms Provide additional noggins at 450 centres and 18mm bond class II plywood (WBP) facing to all stud walls in bathrooms to accommodate future handrails and other fittings.  Wet rooms See also clause 22: <a href="#">Wet Rooms</a> .  Pattresses Pattresses shall be included to enable the secure fixing of all fittings as necessary, including but not limited to, radiators, kitchen units, stair handrails, boilers/heating systems, sanitary ware, bathroom fittings.	As Affordable Rent specification.  N/A  See also clause 22: <a href="#">Wet Rooms</a> .  As Affordable Rent specification.
7.3	<b>Internal Wall and Ceiling Finishes</b>	The Employer will accept traditional plasterboard and skim coat or taped and jointed tapered plasterboard to internal walls and ceilings. All plasterboard shall be installed to British Gypsum recommendations. Internal brick and block walls shall be finished with a plasterboard & skim coat plaster finish or two coat plaster at the discretion of the Contractor.	As Affordable Rent
7.4	<b>Plasterboard</b>	In addition to the above, the Contractor shall meet the following:	As Affordable Rent specification
7.4.1	Bathrooms and En-suites	All bathrooms and en-suites shall receive moisture resistant plasterboard to all walls.	As Affordable Rent specification
	Bathrooms, En-suites, Kitchens & Utility	All bathrooms, en-suites, kitchens, and utility rooms to receive vapour check plasterboard to all ceilings. Additional studing for rigidity is required to partitions receiving wall tiling.	
7.4.2	Moisture Resistant Plasterboard	Where moisture resistant plasterboard is to be plastered, surfaces shall be treated with Thistle Bond-It, or equal and approved bonding agent, as described in the British Gypsum technical literature for moisture resistant boards. See White Book Chapter 08, Section 02, Page 06.	As Affordable Rent specification
7.4.3	Tape and Jointed plasterboard	Tape and jointed boards shall be treated with Gyproc Drywall Primer or Sealer, or equal and approved plasterboard primer, in accordance with British Gypsum technical literature. See White Book Chapter 08, Section 03.	As Affordable Rent specification
7.5	<b>Party Walls</b>	Party walls shall meet current Building Regulations. Party Walls must be Cavity Filled with Edge Sealing to qualify for 0.00W/m <sup>2</sup> k heat loss in SAP.	As Affordable Rent specification.

## ER Version 18: 8.0 UPPER FLOORS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
8.0	Upper Floors	Floor depths to allow for air quality management systems ducts. Provisional minimum depth of 150mm clear zone to be allowed for houses, and common spaces to allow 250mm minimum clear zone	
8.1	Pre-cast Concrete Floors	Dependant on the form of construction all floors between adjacent dwellings (apartments) are to be proprietary reinforced concrete either beams with concrete infill blocks or wide slab units of sufficient design (or an approved system) to span between load bearing walls. Alternate construction methodology in accordance with engineered design/ details acceptable by agreement with Employer.	As Affordable Rent specification.
8.2	Suspended Timber Floors	All suspended timber floors shall comprise min. 22mm tongue and grooved moisture resistant "weatherdeck" type composite flooring on structural joist to the Structural Engineer's design.	As Affordable Rent specification.
8.3	Protection during Construction	All flooring and stairs shall be adequately protected during construction to prevent damage, and shall be handed over in a clean condition - tape/protective plastic/plaster shall not be left on the floorboards.	As Affordable Rent specification.




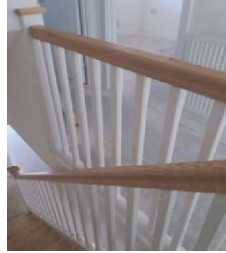
## ER Version 18: 9.0 ROOF

Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)
9.0	Roof			
9.1	Roof Generally	Roof design needs to be carefully considered to avoid an increased likelihood of failure due to complicated detailing requiring extra work on site.		As Affordable Rent specification.
	Flat roofs	Flat roofs are not acceptable. Where this is unavoidable, cannot be designed out, and has been agreed by the Employer, a BBA certificate must be provided together with relevant manufacturers and installers guarantee for a minimum of 30 years.		
	Roof drainage	All pitched roofs including porches are to have gutters, downpipes and associated drainage, all shall be fixed in accordance with manufacturers recommendations.		
	Fire protection	Fire Breaks over party walls shall extend into soffit voids using a non-combustible material to prevent the passage of smoke along the soffit void area.		
	Provision of information	Information shall be provided to identify the position of all fire breaks required by building regulations and the timber frame manufacturer (if applicable) and shall be available on site for reference. See also clause 2.14: Fire Protection.		
	Snagging	Consideration must be given to allow clerk of works time to snag the roof and re-inspect any issues raised prior to stripping the scaffold.		
9.2	Roof Structure	The roof structure shall comprise either softwood trussed rafters or softwood rafters and all trussed rafters and associated bracing shall be detailed, designed and manufactured by a member of TRADA QA scheme for trussed rafters, and all components and accessory bracing shall comply with the requirements of the Building Regulations and BS EN 1995-1-1:2004+A2:2014 (Eurocode 5: Design of timber structures. General. Common rules and rules for buildings).		As Affordable Rent specification.
		Alternate construction types such as light gauge steel frame panel and cassette based roof systems are acceptable by agreement with Employer.		
	Truss clips	All trusses shall be fixed with truss clips and not cross nailed to wall plate.		
	Ceiling hoists	Where there is a requirement for future provision of a disabled persons' ceiling hoist the roof structure shall be designed to accommodate this additional loading.		
9.3	Roof Tiling	Tiles shall be fixed in accordance with the Manufacturer's instructions with a layer of breathable membrane supplemented by proprietary PVC over eaves fillet.		As Affordable Rent specification.
	Tiles	Subject to planning, tiles shall be Marley Edgemere or other equal and approved concrete interlocking roof tiles, as agreed by the Employer.		
		Alternative tiles/ roof materials details to be provided to Employer for consideration.		
	Roof components	Consideration shall be given to using maintenance free components in all areas. Dry fixed ridges, hips and cloaked verges shall be used. All verges to be continuous verge system as Kytun or similar.		
	Dry Fix Systems	All proprietary dry fix systems shall be in accordance with BS 8612.		
	Roof membrane	All overlaps in the roofing felt shall be secured to meet BS 5534, the Employer does not accept the use of an intermediate batten to secure the overlap of the roofing felt (due to H&S trip hazard).		
	Fascia	Minimum 18mm thick UPVC fascia including box ends, cover strips and jointing strips shall be used. Fascia boards shall be fixed twice to each rafter.		
	Soffit	Minimum 10mm thick UPVC soffit board including jointing strips shall be used.		
9.4	Roof Flashings	All flashings shall be lead and shall be a minimum of 1.8mm Code 4 adequately chased and wedged into brickwork and sealed. Code 5 lead shall be used for gutters. Alternative substitutes such as Ubiflex lead free flashing will be considered where theft is extremely likely or has already occurred prior to handover. Work shall be in accordance with the lead sheet association recommendations.  <a href="http://leadsheet.co.uk/service/rolled-lead-sheet-the-complete-manual/">A pocket guide can be located at: http://leadsheet.co.uk/service/rolled-lead-sheet-the-complete-manual/</a>		As Affordable Rent specification.

9.5	Canopies	<p>All plots shall have a canopy unless otherwise agreed with the Employer. Doors with canopies in close proximity shall be fitted with a single canopy to cover both doors.</p> <p>GRP canopies shall be fitted with an additional cover flashing to the canopy upstand to prevent water ingress into the canopy. Flashing shall be of lead, or a suitable alternative to be approved by the Employer in areas where theft is likely to occur, flashing to be chased and secured into brickwork joint and sealed with suitable external sealant in accordance with BS 6915.</p> <p>The Contractor shall assess canopies for taking the weight of a person (risk of standing on canopy to clean windows). This risk shall be designed out or a suitable warning shall be provided for all canopies.</p>		As Affordable Rent specification.
9.6	Roof Ventilation	<p>All pitched roofs shall be vented in accordance with the Building Regulations and BRE recommendations. In addition to further reduce the risk of condensation all roofs shall have cross ventilation by means of soffit or over fascia vents and ridge vents. All roof ventilation shall have fly mesh protection.</p> <p>An air path of at least 50mm wide shall be maintained in all areas (i.e. above insulation at eaves level), for further guidance refer to BRE 'Thermal Insulation: Avoiding Risks'.</p> <p>Ventilation requirements must be clearly detailed on drawings.</p>		As Affordable Rent specification.
9.7	Extract Ducts in roof spaces	<p>See also clause 19.10: Mechanical Ventilation.</p> <p>Design &amp; Installation</p> <p>Extract fan ducts, where passing through roof voids, shall be positioned above the insulation and lagged to prevent condensation.</p> <p>The Contractor shall seek the manufacturer's recommendations on the suitability and size of fans where ducting is situated in roof voids and shall provide evidence that the proposed fan will meet the performance standards in accordance with the current "Domestic Ventilation Compliance Guide".</p> <p>Extract ducting shall be fixed with straight runs, taking the most direct route from fan to roof and shall be supported as required.</p> <p>Flexible extract vent ducting shall be a maximum of 2m in length, lengths exceeding this shall be agreed with the Employer prior to installation.</p>		As Affordable Rent specification.
	Condensate trap	Any ducting longer than 2m shall be fitted with a condensate trap.		As Affordable Rent specification.
9.8	Equipment in Roof Spaces	<p>Installation of serviceable equipment in the roof space shall be avoided.</p> <p>If serviceable equipment is installed in the roof space the following specification shall be followed:</p> <ul style="list-style-type: none"> <li>• Equipment shall be in an accessible location.</li> <li>• The area around any service equipment shall be boarded out to allow safe access, location and access area to be agreed with the Employer prior to installation of equipment.</li> <li>• A light fitting and light switch shall be provided in the roof space.</li> <li>• Adequate thermal insulation shall be maintained in all areas.</li> <li>• All electrical outlets, including switches, sockets and fuse spurs, shall be accessible and shall be securely mounted to the roof structure, above the level of the insulation.</li> <li>• Suitable and sufficient number of Multi-sensor fire detectors shall be positioned in the loft/ void space and form part of the designed system, see Clause 19.</li> </ul>		As Affordable Rent specification.
9.9	Aerials	<p>Aerials shall be installed inside the roof space, securely fixed to the structure.</p> <p>Aerials installed externally shall only be accepted if sufficient signal using booster cannot be achieved within the roof space.</p> <p>Aerials installed externally shall have stainless steel fixings.</p>		As Affordable Rent specification.
9.10	Access Hatches	<p>All ceiling voids shall be provided with a prefabricated loft hatch with draught proofing, minimum U value of 0.15W/m<sup>2</sup>K and shall be <b>lockable with a key (not tool / budget lock operation)</b></p> <p>Size and location of hatches shall be suitable for safe access for maintenance or repair and agreed by the Employer.</p> <p>The access hatch shall be installed as per the manufacturers instructions and the access hatch frame shall have secure fixings on all four sides, the Contractor is required to fit nogging trimmers within the ceiling joists as necessary in order to achieve this.</p>		<p>All ceiling voids shall be provided with a prefabricated loft hatch with draught proofing and minimum U value of 0.15W/m<sup>2</sup>K.</p> <p>Key lock not required.</p> <p>Size and location of hatches shall be suitable for safe access for maintenance or repair and agreed by the Employer.</p> <p>The access hatch shall be installed as per the manufacturers instructions and the access hatch frame shall have secure fixings on all four sides, the Contractor is required to fit nogging trimmers within the ceiling joists as necessary in order to achieve this.</p>
9.11	Roof Inspection	The Contractor shall provide a suitable set of steps to enable the COW to check the roof space. Steps shall enable safe inspection of the roof space from the loft hatch, access and inspection of all roof spaces shall be agreed with the Employer prior to inspections (swingback stepladder, open height 1.7m, Class 1 BS2037 or BS EN 131 provided at 14 day snagging would normally be suitable).		As Affordable Rent specification.

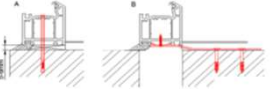
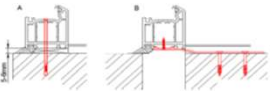
9.12	PV Panels	Photovoltaic panels shall not be installed without prior agreement with the Employer (all dwellings shall meet building regulations with a fabric first approach if possible).		As Affordable Rent specification.
	Warranty	PV panel system shall have a min. 10yr warranty for the materials including the supporting framework and inverters. PV panels shall have a 25yr output warranty, with min. 80% efficiency at 25yrs		As Affordable Rent specification
	Information requirements	The Contractor shall provide the following information prior to the approval of the system by the Employer: <ul style="list-style-type: none"> <li>• Orientation assigned in SAP on a plot by plot basis to ensure efficiency of system is correct within SAP report.</li> <li>• PV design and layout to ensure if there are any Building Control objections, planning conditions regarding the visual impact of PV etc.</li> <li>• Total annual output of PV.</li> <li>• Kwh peak of PV.</li> <li>• Predicted hourly demand of the meters the PVs are connected to.</li> <li>• Predicted annual on site consumption of the generated electricity.</li> <li>• Total consumption demand on the meters over a 24 hour period.</li> <li>• Predicted efficiency of the PVs over time.</li> <li>• Break down of predicted savings to the customer.</li> <li>• Maintenance schedule and predicted costs/service charge costs</li> </ul>		As Affordable Rent specification.
		Ensure PV system is capable of linking with other renewables/ low carbon systems such as hot water tank in the future.		As Affordable Rent specification.
	Design	The Contractor shall provide design information, including all warranty and tariff information, to the Employer prior to acceptance of the panel. The Contractor shall provide design information to evidence capability of safe access for maintenance of the solar panels.  Properties with solar panels shall have a minimum output of 2.5 KWH peak per property and an MSC certificate. The design shall ensure that the roof has the maximum number of panels that is practical for the roof.		As Affordable Rent specification.
	Inverter location	Inverters located in the roof space shall be accessible for maintenance, a light fitting & boarding shall be provided for safe access if located in the roof space. See also clause 19.12: Smoke & Heat detectors for fire detection systems in roof spaces.  Nuisance noise caused by the inverter is a problem; where possible the inverter shall not be located over bedrooms. The inverter shall be located close to the loft hatch, over the landing or bathroom where possible.		As Affordable Rent specification.

**ER Version 18: 10.0 STAIRCASES**





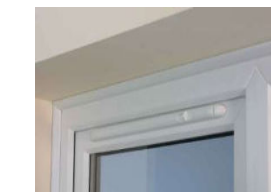
Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
10.0	Staircases	Staircase construction shall comply with current Building Regulations including all designs of balustrades and handrails.		As Affordable Rent Specification	
	Fixing	A continuous timber shall be fitted under each kite winding step, screwed and glued to tread and riser in order to provide a robust fixing.		As Affordable Rent Specification	
	Design	Staircase design shall allow for the retrofitting of a stair lift within houses. Stairs with double winders shall be avoided. Where they are unavoidable staircases shall have a removable or hinged balustrade to allow for furniture removal.		N/A	
	Carpet Fitting Label	The Contractor shall provide clear labelling to each set of stairs to identify instructions for future carpet fitting, as per the manufacturers instructions. Generally this shall include the wording: "Do not nail carpet grippers to the treads and risers, grippers must be either glued or screwed"		As Affordable Rent specification.	
10.1	Stair Handrail and Balustrade	Handrail shall be adequately secured, and fitted to a pattress as required. Pattress shall be painted to same colour as the wall.  Handrails and balustrades shall be fixed so as to avoid any flex, long sections may require additional fixings/bracing.  A continuous handrail shall be fitted to the full length of the flight, preference if for a full handrail, avoiding the use of the newel post as part of the handrail.		As Affordable Rent specification	
	Finishes	The Contractor shall provide a sample of the balustrade, handrail and fixing brackets for approval by the Employer prior to ordering.  Stair and balustrade handrail shall be round/oval, crown or pig's ear profile, note that pig's ear profile handrails are not accepted on over-55's, or supported housing schemes.  Stair and balustrade handrail, and newel caps shall be either pre-finished ash/natural wood with clear varnish finish, timber with coloured stain or white gloss paint. The Contractor shall provide samples, choice to be agreed by the Employer.  Balustrade spindles shall be square plain spindles. Spindles and newel post shall be softwood, finished in white gloss paint.		The Contractor shall provide a sample of the balustrade, handrail and fixing brackets for approval by the Employer prior to ordering.  Stair and balustrade handrail shall be round/oval, crown or pig's ear profile.  Stair and balustrade handrail, and newel caps shall be either pre-finished ash/or similar with clear varnish finish or white gloss paint, to be agreed with the Employer.  Balustrade spindles shall be square plain spindles. Spindles and newel post shall be softwood, finished in white gloss paint.	


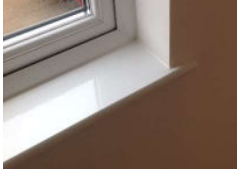
ER Version 18: 11.0 WINDOWS

Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
11.0	Windows				
11.1	Windows & Glazed Doorsets Generally	<p>Windows &amp; glazed doorsets shall be of a thermally broken profile with frame arrangement and depth suitable of accepting future install triple glazed units, as Eurocell Modus or equal and approved by the Employer, with 80% recycled PVC-U content. Alternative products shall be agreed by the Employer and must demonstrate similar recycled content. All windows shall be 100% Lead, Barium and Cadmium Free.</p> <p>Aluminium/ composite/ curtain wall systems are acceptable subject to provision of details of proposals for Employer consideration.</p> <p>Window hardware shall be from manufacturers accredited list of Kitemark 33520 Pas 24 Approved Hardware.</p> <p>The Contractor shall provide written evidence supplied by the manufacturer that the product and components meet the requirements stated in clause 11 of the ER's.</p>		As Affordable Rent specification.	
	Warranty	<p>All glazing systems to BFRC certified</p> <p>Windows shall be supplied with an independent 10 year insurance backed guarantee. Warranties and guarantees shall be made in the name of the Employer.</p> <p>See also Procedural Requirements clause <a href="#">1.7.1 Windows</a>.</p>		As Affordable Rent specification.	
	Energy Rating	<p>All windows shall be minimum A++ rated in the Window Energy Rating System and shall comply with current Building Regulations and Secured by Design requirements. Building Regulation Approval, accreditation by the British Board of Agrément (BBA) and British Standards Institute (BSI) shall be obtained for all window installations.</p>		As Affordable Rent specification.	
		<p>Glazing to be approved and cross checked between Part L and Part O compliance to ensure uniform approach. Glazing values to be provided to SAP assessor/overheating modeller when available to confirm performance based on actual as-built performance rather than a designed value.</p>			
	Design	<p>Windows shall be fitted with obscure glazing to bathroom, en-suite &amp; WC windows, glazing pattern to be agreed with the Employer prior to ordering.</p> <p>All kitchens, dining rooms and lounges shall have an opening window as well as the rear door/patio door.</p> <p>Patio doorsets shall be fitted with opening sidelights.</p> <p>See also the accepted compliant window patterns drawing stored on the ICNW web portal.</p>		As Affordable Rent specification.	



<p>11.2</p>	<p><b>Window Installation</b></p>	<p>Windows shall be installed in accordance with the manufacturer's recommendations.</p> <p>Fixing of windows and glazed doors shall be carried out with mechanical fixings; either through frame fixing or where this is not possible due to the position of the cavity, internally fitted fixing clips shall be used as shown, with screw fixings into both the frame and the structure (see detail).</p> <p>PVC-U windows shall be glazed using internal beads.</p>		<p>As Affordable Rent specification.</p>	
<p>11.3</p>	<p><b>Technical Requirements</b></p>	<p>Windows and ironmongery shall comply with the most current version of the following documents:</p> <ul style="list-style-type: none"> <li>• Approved Document Q1 'Unauthorised Access' and PAS 24:2016 for doors and windows.</li> <li>• Approved Document L1A</li> <li>• Approved Document B, <b>Emergency Escape</b></li> <li>• EN 14351-1:2006+A2:2016 (Windows and doors. <b>Product standard, performance characteristics.</b> Windows and external pedestrian doorsets).</li> <li>• BS 6375-1:2015+A1:2016 (Performance of windows and doors. Classification for <b>weather tightness</b> and guidance on selection and BS specification).</li> <li>• BS 6375-2:2009 (Performance of windows and doors. Classification for <b>operation and strength</b> characteristics and guidance on selection and specification).</li> <li>• BS 6375-3:2009+A1:2013 (Performance of windows and doors. Classification for additional <b>performance characteristics</b> and guidance on selection and specification).</li> <li>• BS 8213-1:2004 (Windows doors and roof lights. <b>Design for safety in use</b> and during cleaning of windows, including door-height windows and roof windows. Code of practice).</li> <li>• BS 7412:2007 (<b>Specification for windows and doorsets</b> made from plasticized polyvinyl chloride (PVC-U) extruded hollow profiles).</li> <li>• BS EN12608 for extrusion performance standards.</li> <li>• BS EN 1279 for insulating glass units.</li> <li>• British Plastics Federation Code of Practice 356/1 (Code of Practice for the design and installation of PVC-U windows and doorsets in new domestic dwellings).</li> <li>• Secured by Design</li> <li>• NHBC Standards</li> <li>• Disabilities Discriminations Act Part 3 2005</li> <li>• Housing Providers' Disability Equality Duty</li> </ul>		<p>As Affordable Rent specification.</p>	
<p>11.4</p>	<p><b>Window Hardware/ Ironmongery</b></p>	<p>All elements including ironmongery shall be guaranteed a minimum of 2 years and samples shall be submitted for approval by the Employer.</p> <p>All window hardware/ironmongery shall meet a minimum of BS EN 1670:2007 Class 4 (240 hours) corrosion resistance.</p> <p>All ironmongery fitted to windows in coastal areas shall have increased corrosion resistance of Class 5 (480 hours) corrosion resistance.</p>		<p>As Affordable Rent specification.</p>	




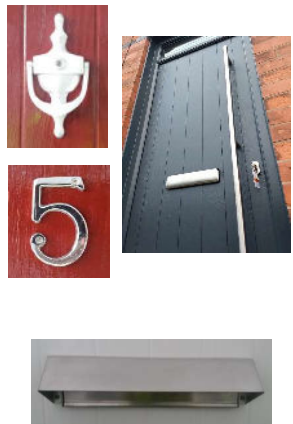
11.4.1	Window Handles	<p>All ground floor windows shall be fitted with handles incorporating push release mechanism with key operated barrel lock.</p> <p>All escape windows shall be fitted with non-locking handles.</p> <p>All handle components shall be capable of sustaining a minimum of 30,000 cycles of operation in accordance with BS EN 1191 &amp; BS EN 12400. All handles shall be BBA certified.</p>		As Affordable Rent specification.	
11.4.2	Anti-Jemmy Catches	<p>All ground floor windows shall be fitted with anti-jemmy device. Hinge side guide wedges shall be provided to avoid deflection of the opening sash.</p>		As Affordable Rent specification.	
11.4.3	Restrictors	<p>All upper and ground floor windows shall incorporate child restrictors within the hinge or fixed separately within the sash.</p> <p>All relevant hardware shall comply with BS EN 13126-5:2011 Requirements &amp; Test Methods. Devices that restrict the opening of windows.</p>		As Affordable Rent specification.	
11.4.4	Hinges	<p>The Contractor shall provide evidence that the strength of the hinge is suitable to support the weight of oversize sashes and glazed doors.</p> <p>All hinge components shall be capable of sustaining a minimum of 30,000 cycles of operation in accordance with BS EN 1191 &amp; BS EN 12400. All hinges shall be BBA certified.</p>		As Affordable Rent specification.	
	Easy Clean Hinges	<p>The window design shall permit safe cleaning of windows from within the property without putting the occupier in a dangerous position in accordance with BS 8213-1. Opening sashes shall incorporate "easy clean" hinges to enable this.</p>		As Affordable Rent specification	
11.4.5	Trickle Vents	<p>It is preferred that all trickle vents are located in the head of the sash not the head of the frame. The Contractor shall ensure that all trickle vents are clear of plaster if vents are to be incorporated in the head of the frame. Any dwellings that pass Part O via natural ventilation ie. No supply air must have trickle vents fitted to windows.</p> <p>Plots passing via mechanical vent due to window opening restrictions to omit trickle vents from the design.</p> <p>All windows shall meet requirements of NHBC document: "BUILDING REGULATIONS GUIDANCE NOTE NHBC BUILDING CONTROL: GLAZING, GUARDING AND RESTRICTORS IN DWELLINGS"  <a href="http://www.nhbc.co.uk/Builders/ProductsandServices/BuildingControl/documents/filedownload.40525_en.pdf">http://www.nhbc.co.uk/Builders/ProductsandServices/BuildingControl/documents/filedownload.40525_en.pdf</a></p>		As Affordable Rent specification.	
				As Affordable Rent specification.	





11.5	<b>Internal Window Boards</b>	<p>Window boards shall be 25mm bullnosed, water resistant MDF (with bullnosed return ends). PVC window boards are not acceptable.</p> <p>Window boards shall be fixed using window board straps, with minimum of two straps and a spacing no greater than 600mm.</p> <p>MDF window boards shall be fitted to all windows except kitchens, utility rooms (with sink), bathrooms and en-suites (see clause 15.6: <a href="#">Window cills</a> for tiled cills).</p> <p>All window boards shall have white gloss paint finish.</p>		<p>Window boards shall be 25mm bullnosed water resistant MDF (with bullnosed return ends). PVC window boards are not acceptable.</p> <p>Window boards shall be fixed using window board straps, with minimum of two straps and a spacing no greater than 600mm.</p> <p>MDF window boards shall be fitted to all windows except bathrooms and en-suites (see clause 15.6: <a href="#">Window cills</a> for tiled cills).</p> <p>All window boards shall have white gloss paint finish.</p>	
11.6	<b>Rooflights</b>	<p>Rooflights shall be VELUX roof windows, or equal and approved by the Employer, and must be capable of being opened from a floor standing position. If this cannot be achieved, then a purpose made pole shall be provided. All rooflights shall be fitted with proprietary blinds.</p> <p>Opening sash of rooflight shall be capable of rotating 180 degree to enable safe cleaning from inside the property.</p>		As Affordable Rent specification.	
11.7	<b>Alternative Windows</b>	<p>Alternatives to PVC-U windows, such as timber or metal, will be considered by the Employer on an individual scheme by scheme basis. An equivalent high performance specification will be required. Full details of the proposals shall be approved by the Employer.</p>		As Affordable Rent specification.	
11.8	<b>Protection during Construction</b>	<p>All windows &amp; ironmongery/hinges shall be adequately protected during construction to prevent damage, and shall be handed over in a clean condition - tape/protective plastic/mortar shall not be left on the windows.</p>		As Affordable Rent specification.	








**ER Version 18: 12.0 DOORS**

Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
12.0	Doors	The Contractor shall obtain confirmation from the external door provider as to whether the frames provided come to site permanently glazed. All temporary glazing shall be made permanent once on site.		As Affordable Rent specification.	
12.1	External Doorsets				
	Front Doorsets	Front doors shall be insulated composite GRP doors with a laminated timber door frame in a minimum of 4 RAL colour choices, colour options shall include Anthracite Grey RAL 7016. Colour choice to be approved by the Employer.		Front doors shall be insulated composite GRP doors with a laminated timber door frame in a minimum of 4 RAL colour choices, colour options shall include Anthracite Grey RAL 7016. Colour choice to be approved by the Employer with additional sign off from Plumlife.	
	Rear Doorsets	Rear doors shall be either insulated GRP doorset (as above) or glazed PVC-U patio doorset. Glazed patio doorsets shall also meet the specification for uPVC frames and glazing as per clause 11: Windows. All outward opening rear doors and patio doors shall be fitted with overhead restrictors.		As Affordable Rent specification	
	Bi-fold doorsets	Not required.		Bi-fold doorsets shall be aluminium, not uPVC.	
	Warranty	All external doors shall be supplied with an independent 10 year insurance backed guarantee. Warranties and guarantees shall be made in the name of the Employer.  All external door ironmongery shall be supplied with min. 2 year warranty.		As Affordable Rent specification.	
	Installation	External doorsets shall be fully supported under threshold and fixed as per manufacturers installation details. Concrete door cill required below the door frame, a bullnose kerb is acceptable. All level access doorways are to be provided with linear slot drain threshold drainage.		As Affordable Rent specification.	

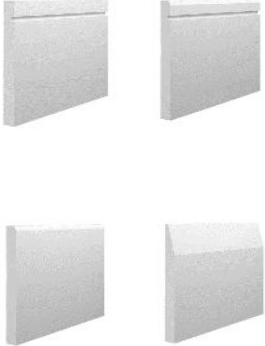
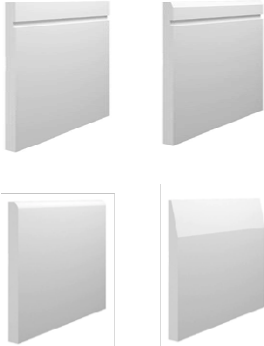
<p>12.2</p>	<p><b>External Doorsets - Technical requirements</b></p>	<p>All external entrances shall be fitted with pre-hung security door sets complying with the most current versions of the following;</p> <ul style="list-style-type: none"> <li>• Approved Document M. Front door (or primary entrance) shall include accessible threshold. Level of compliance, M4 (1), (2) or (3), shall be agreed with the Employer.</li> <li>All level access thresholds are to be provided with linear slot drainage.</li> <li>• Approved Document Q1 'Unauthorised Access' and PAS 24:2016 for doorsets and windows.</li> <li>• Approved Document L1A.</li> <li>• Approved Document B.</li> <li>• BM TRADA enhanced security Q Mark accreditation (or similar independent 3rd party accreditation for enhanced security).</li> <li>• BS EN 14351-1:2006+A2:2016 (Windows and doors. Product standard, performance characteristics. Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics).</li> <li>• BS 6375-1:2015+A1:2016 (Performance of windows and doors. Classification for weather tightness and guidance on selection and specification).</li> <li>• BS 6375-2:2009 (Performance of windows and doors. Classification for operation and strength characteristics and guidance on selection and specification).</li> <li>• BS 6375-3:2009+A1:2013 (Performance of windows and doors. Classification for additional performance characteristics and guidance on selection and specification).</li> <li>• BS EN 1303:2015 (Building hardware. Cylinders for locks. Requirements and test methods).</li> <li>• BS EN 13724:2013 (Postal services. Apertures of private letter boxes and letter plates. Requirements and test methods).</li> <li>• BS EN 1935:2002 (Building hardware. Single-axis hinges. Requirements and test methods).</li> <li>• BS 8529:2017 Composite doorsets. Domestic external doorsets. Specification.</li> <li>• BS 8300:2009+A1:2010 (Design of buildings and their approaches to meet the needs of disabled people. Code of practice).</li> <li>• Disabilities Discriminations Act 2005 Part 3.</li> <li>• Housing Providers' Disability Equality Duty 2006.</li> <li>• Secure by Design</li> <li>• NHBC Standards.</li> </ul> <p>Access doors shall meet requirements of NHBC document: "BUILDING REGULATION GUIDANCE NOTE NHBC BUILDING CONTROL: ACCESS TO AND USE OF BUILDINGS - DWELLINGS"</p>		<p>As Affordable Rent specification.</p>	
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<p>12.3</p> <p><b>External Door Fittings/ Ironmongery</b></p>	<p>All external door fittings/ironmongery shall meet a minimum of <b>BS EN 1670:2007 Class 4 (240 hours) corrosion resistance</b>.</p> <p>All ironmongery fitted to external doors in coastal areas shall have increased corrosion resistance of Class 5 (480 hours) corrosion resistance.</p>		<p>As Affordable Rent specification.</p>	
<p>Hinges</p>	<p>External doors shall be fitted with minimum 3 no. adjustable hinges. Hinges shall meet the requirements of:</p> <ul style="list-style-type: none"> <li>• <b>BS 6375 minimum of 50,000 cycles of operation.</b></li> </ul> <p>Preference is for hinge type to be in-line hinge not flag hinge.</p>		<p>As Affordable Rent specification.</p>	
<p>Locks</p>	<p>All external doors shall be fitted with multipoint locking system and cylinder lock to meet the following minimum requirements;</p> <ul style="list-style-type: none"> <li>• Anti-bump Locking cylinder approved to 3* Sold Secure Diamond Standard (SS312 Diamond) or 3 star Kitemark (TS007).</li> <li>• BS EN 1303 Building Hardware: Cylinder for Locks.</li> <li>• BS 3621 Thief resistant lock assembly. Cylinder shall be stamped with kite mark.</li> <li>• BS 6375 - Cylinder shall meet durability grade 5, minimum 50,000 cycles.</li> <li>• Key related security to grade 6 - 100,000 key differs.</li> <li>• Attack resistance grade 2 - Anti-drill 5-10 minutes.</li> </ul>		<p>As Affordable Rent specification.</p>	
<p>Handles</p>	<p>Handles shall meet the requirements of <b>TS007</b> and <b>BS EN 1670 Grade 4 for corrosion resistance (240hrs)</b>.</p>		<p>As Affordable Rent specification.</p>	
<p>Split spindle</p>	<p>Split spindle is not required.</p>		<p>As Affordable Rent specification.</p>	
<p>Furniture / Fittings</p> <p>Letter Boxes</p>	<p>In addition all front (primary) entrance doors shall have the following:</p> <ul style="list-style-type: none"> <li>• Thumb turn.</li> <li>• Draught proofed letter plate with corrosion resistant 304 grade stainless steel external flap.</li> <li>• Letter box security cowl.</li> <li>• Combined door knocker and spyhole. Min. 120 degree viewer to meet TS002, with internal swivel cover.</li> <li>• 50mm high corrosion resistant door numbers.</li> <li>• Security chain to meet TS003.</li> <li>• Weather bar at foot of door.</li> <li>• Threshold shall be securely supported.</li> <li>• Chrome finish front door handle.</li> </ul> <p>Location of furniture/fittings shall be agreed with the Employer prior to installation.</p> <p>All letterboxes shall comply with TS008 Enhanced Security and General Requirements for Letter plates, BS EN 1670 &amp; BS EN 13724.</p>		<ul style="list-style-type: none"> <li>• Thumb turn.</li> <li>• Draught proofed letter plate with corrosion resistant 304 grade stainless steel external flap.</li> <li>• Letter box security cowl.</li> <li>• Combined door knocker and spyhole. Min. 120 degree viewer to meet TS002, with internal swivel cover.</li> <li>• 50mm high corrosion resistant door numbers.</li> <li>• Security chain to meet TS003.</li> <li>• Weather bar at foot of door.</li> <li>• Threshold shall be securely supported.</li> <li>• Chrome finish front door handle with contemporary bar handle externally.</li> </ul> <p>Location of furniture/fittings shall be agreed with the Employer prior to installation.</p>	

	Barrier Mat	Barrier mat shall be installed at front doors, see clause 16:Floor Coverings. Front door shall be fitted at suitable height to clear the finished flooring.		As Affordable Rent specification.	
12.4	Fire Doorsets	All fire doors shall be supplied as doorsets from a single source, as described by BS EN 12519 with single fire certificate identifying the components used. <b>Fire Door Assemblies are not accepted.</b>		As Affordable Rent specification.	
12.5	Internal Doors	Internal doors shall be moulded vertical 5 panel with middleweight/semi-solid core.  Facing shall be moulded wood fibre face, doors shall be finished in white gloss (see clause 23.1: Interior decorations).  The Contractor shall provide a sample to be approved by the Employer prior to final ordering.		As Affordable Rent specification.	
	Installation	Maximum trimming/planing permitted shall be as per the manufacturers instructions or 6mm from the bottom and 4mm from each vertical edge if not stated by the manufacturer.  All internal doors shall be fitted with 20mm ventilation gap between the unfinished floorboard and the base of the door to meet current building regulations.  Lightweight doors are not acceptable		As Affordable Rent specification.	
	Door Casings	Door casings shall be timber or moisture resistant MDF.			




12.6	<b>Ironmongery</b>	<p>Lever latches and handle furniture shall be provided on all internal doors and cupboards, fixed with through bolts. All latches shall be metal. Nylon or plastic latches are not acceptable.</p> <p>The Contractor shall provide a sample board of all proposed ironmongery for approval by the Employer prior to ordering.</p>		<p>Lever latches and handle furniture shall be provided on all internal doors and cupboards, fixed with through bolts. All latches shall be metal. Nylon or plastic latches are not acceptable.</p> <p>Internal door ironmongery shall be modern style with clean simple line handle, brushed chrome or satin finish, round or small square rose. The Contractor shall provide a sample board of all proposed ironmongery for approval by the Employer prior to ordering. Ironmongery chosen for Shared Ownership properties may vary from Affordable Rent properties on mixed tenure sites.</p> <p>The Contractor shall provide a sample board of all proposed ironmongery for approval by the Employer prior to ordering.</p>	
12.7	<b>General Internal Door Requirements</b>				
	Hinges	<p>Internal doors shall be fitted with one and a half pairs of 75mm (performance ball race) steel butt hinges.</p> <p>Fire doors shall be fitted with one and a half pairs of 100mm (performance ball race) steel butt hinges.</p>		As Affordable Rent specification.	
	Door Stops	<p>Door stops shall be fitted to the floor or skirting board where the door opens against a wall or fitting. Spring loaded types are not acceptable.</p>		As Affordable Rent specification.	
	Door Closers	<p>Concealed hydraulic door closers shall be fitted as required to comply with Building Regulations and also as specified by a specialist supplier to meet specific scheme requirements and the end user group.</p>		As Affordable Rent specification.	
	Store Door Vents	<p>All store doors shall be vented with vent plates to either side of the door, colour and finish to match the paint finish of the door.</p>		Store door vents are not required.	
12.8	<b>Bathroom Door Ironmongery</b>	<p>Bathroom, en-suite and downstairs WC doors shall be fitted with lever handles as described in clause 12.6: <b>Ironmongery</b> and separate escutcheon with thumb turn locking mechanism that can be operated in an emergency from the circulation area.</p>		<p>Bathroom, en-suite and downstairs WC doors shall be fitted with lever handles as described in clause 12.6: <b>Ironmongery</b> and separate escutcheon with thumb turn locking mechanism that can be operated in an emergency from the circulation area.</p>	
12.9	<b>Protection during Construction</b>	<p>All doors &amp; ironmongery/hinges shall be adequately protected during construction to prevent damage, and shall be handed over in a clean condition - tape/protective plastic/mortar shall not be left on the doors. Particular care shall be taken to protect the locking mechanism &amp; hinges.</p>		As Affordable Rent specification.	




## ER Version 18: 13.0 SKIRTING AND ARCHITRAVE

Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	
13.0	Skirting and Architrave				
13.1	Skirting	<p>Skirting shall be softwood or MDF (min. dimensions 18 x 94 mm). The Contractor shall provide a minimum of 3 profile options, skirting choice to be approved by the Employer.</p> <p>Note that skirting is not to be used below wall tiles</p> <p>Skirting in WCs, bathrooms/en-suites and kitchens/utility rooms shall have clear (or alternative colour to be agreed on site) silicone sealant joint with vinyl floor coverings.</p> <p>MDF/timber skirting is not acceptable in wet rooms, see clause <a href="#">22: Wet Rooms</a>.</p>		<p>As Affordable Rent specification.</p> <p>Skirting in WCs, bathrooms/en-suites and kitchens/utility rooms shall have clear (or alternative colour to be agreed on site) silicone sealant joint with vinyl floor coverings.</p> <p>In bathrooms/en-suites the Employer shall have the choice of tiling to the floor (on tiled walls) as an alternative to skirting.</p> <p>MDF/timber skirting is not acceptable in wet rooms, see clause <a href="#">22: Wet Rooms</a>.</p>	
13.2	Architrave	<p>Architraves shall be softwood or MDF in a section to match the skirting (min. 18 x 69 mm).</p> <p>Full architraves shall be achieved around all door frames/casings (especially at heads where storey-height frames are fixed). Architraves shall not be cut down or cut out around switches/ittings.</p>		<p>As Affordable Rent specification.</p>	



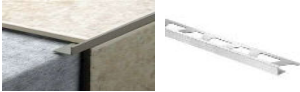


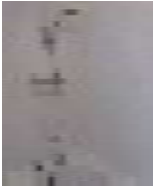
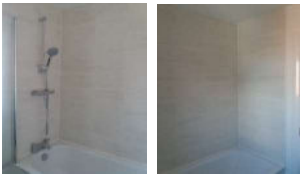


## ER Version 18: 14.0 MISCELLANEOUS FITTINGS




Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)
14.0	Miscellaneous Fittings	The Contractor shall provide samples of all items for approval by the Employer prior to ordering. All heights and positions of fittings shall be agreed with the Employer on site prior to installation.		Note that the following are not required in shared ownership / sale properties:
	Curtain Batten	Curtain rail battens, 50mm x 16mm (50mm x 18mm PAR Redwood), above all windows and patio doors extending 150mm beyond openings, painted with wall colour.		Curtain battens are not required.
	Coat Hooks	Four double hat and coat hooks fixed to a pattress; either preformed or timber with sanded and splayed edges painted with wall colour		Hat and coat hooks are not required.
	Shower Curtain	Shower curtain and rail over bath. Shower rail shall be screw fixed to walls /ceiling (not spring loaded).  For shower curtains in wet rooms see clause <a href="#">22: Wet Rooms</a> .		Shower curtains are not required (see clause <a href="#">21.7.2: Bathroom</a> for shower screen spec).
	Mirror	Minimum size 600mm x 450mm safety backed mirror, pre-drilled & fixed with 4 no. chrome dome headed screws above WHB's in main bathroom only. Sizes in exceptional circumstances to be agreed.		Mirrors are not required.



Medicine Cupboard	Lockable medicine cupboard, by means of a locked wall unit in the kitchen.		Lockable medicine cupboards are not required.
Towel Rail	Towel rail to each bathroom and WC, fixed to a timber pattress of softwood or MDF with sanded and splayed edges painted with wall colour.		Towel rails are not required (see clause 20.5 for heated towel radiator spec).
Toilet Roll Holder	Toilet roll holder to each bathroom and WC, spring loaded toilet roll holders are not acceptable.		Toilet roll holders are not required.
Robe Hooks	A pair of robe hooks, fitted in the bathroom, fixed to a pattress size 150x100x18mm, softwood or MDF, with sanded and splayed edges painted with wall colour (robe hooks must not be fitted to the door).		Robe hooks are not required.

**ER Version 18: 15.0 WALL TILING**


Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
15	Wall Tiling				
15.1	General Requirements	Tiling shall be provided in bathrooms and kitchens, ground floor WC's and shower rooms using waterproof adhesive and mould resistant grout.  Tiles shall be glazed to current British Standards. No seconds will be accepted.		Tiling shall be provided in bathrooms, en-suites, ground floor WC's and shower rooms using waterproof adhesive and mould resistant grout.  Tiles shall be glazed to current British Standards. No seconds will be accepted.	
	Plot choice schedule	N/A		The Contractor shall produce a tile choice plot schedule, including choice for wall tile, feature tile, grout colour, tile trim colour, & silicone colour.	
	Sealant	Mould resistant silicone sealant shall be provided at all joints with sanitary appliances or worktops to ensure a watertight seal. Flexible sealant/expansion joint shall be provided at each corner of full and half height tiling.  All silicone sealant to wall tiles/sanitary ware shall be either matching colour or white, unless otherwise agreed with the Employer.		Mould resistant silicone sealant shall be provided at all joints with sanitary appliances or worktops to ensure a watertight seal. Flexible sealant/expansion joint shall be provided at each corner of full and half height tiling.  All silicone sealant to wall tiles/sanitary ware shall be either matching colour or white, unless otherwise agreed with the Employer.	
	Grout	Grout shall be white mould resistant.		Grout shall be mould resistant in white or colour co-ordinated to match tiles (i.e. grey grout for grey tiles), grout colour shall be as per the manufacturer's recommended spec where available, and as agreed with the Employer as part of the tile choices.	
	Tile Trim	Suitable tile edge trim shall be provided at all exposed edges of tiles.		All exposed edges of tiles shall be fitted with tile trim.  Tile trim shall be corresponding colour to match tiles or aluminium with brushed chrome finish, tile trim shall be agreed with the Employer as part of the tile choices.  Thickness of tile trim shall be selected to suit the thickness of the tiles.	
	Spare Tiles	In addition to the wall tiling, the Contractor shall provide 6 no. spare kitchen wall tiles to be left behind the plinth and 6 no. spare bathroom wall tiles to be left behind the bath panel.		Additional tiles not required.	
	Samples & Choices	N/A		The Contractor shall provide samples of all tiles proposed including feature tiles, for approval by the Employer prior to ordering. The contractor shall offer a minimum of 8 tile samples and shall allow for an unlimited number of tile choices (each with corresponding feature tile).	
	Tile Ranges	N/A  N/A		Preferred supplier and ranges are: <b>Porcelanosa Tiles</b> Level 1 Ceramic Tiles Level 2 Ceramic Tiles  Alternative ranges shall be from Johnson Tiles or other equal and approved by the Employer.	



	Sizes	See clause <a href="#">15.2 &amp; 15.5.</a>		<b>Tiles shall be minimum 250mm x 440mm</b>	
	Layout / Feature tile	N/A		<p>All tiles shall be laid landscape pattern.</p> <p>The location/layout of feature/border tiles shall be specified by the Employer when selecting tile choices.</p> <p>The colour of the grout and the silicone sealant shall be agreed with the Employer when selecting tile choices.</p> <p>In bathrooms/en-suites the Employer shall have the choice of tiling to the floor (on tiled walls) as an alternative to skirting.</p>	
<b>15.2</b>	<b>Bathroom wall tiling</b>				
	Wall tiles	In bathrooms wall tiles shall be white 150mm x 150mm ceramic tiles.		In bathrooms wall tiles shall be Porcelanosa or Johnson ceramic wall tiles, or equal approved by the Employer. Acceptable tile choices are listed above.	
	Tiling at baths / showers	<p>Wall tiling shall extend to full height on all walls around baths.</p> <p>Wall tiling shall extend to full height on all walls around showers.</p> <p>At the shower curtain, tiling shall extend 150mm past the edge of the bath and to full height (floor to ceiling), or to the edge of the reveal of any window/ door reveal within 450mm</p>		<p>Wall tiling shall extend to full height on all walls around baths.</p> <p>Wall tiling shall extend to full height on all walls around showers.</p>	
	Tiling at basins / toilets	Wall tiling for basin splashbacks shall extend a minimum of 300 mm above all basins and 150mm beyond basin edges		<p>Wall tiling shall extend to half height (approximately 1100mm, or to window cill height if applicable) on all walls and pipe boxings behind the basin and WC.</p> <p>Note: In bathrooms the Employer shall have the choice of tiling to the floor (on tiled walls) as an alternative to skirting.</p>	
	Feature tile	N/A		A feature tile wall shall be incorporated into the design; location of feature tile shall be agreed with the Employer prior to tiling.	
	<b>Wet rooms</b>	See clause <a href="#">22: Wet Rooms.</a>		See clause <a href="#">22: Wet Rooms.</a>	

15.3	<b>En-suite wall tiling</b>				
	Wall tiles	In en-suites (if applicable) wall tiles shall be white 150mm x 150mm ceramic tiles.		In en-suites wall tiles shall be Porcelanosa or Johnson ceramic wall tiles, or equal approved by the Employer. Acceptable tile choices are listed above.  A feature tile wall shall be incorporated into the design; location of feature tile shall be agreed with the Employer prior to tiling.	
	Tiling at showers	Wall tiling shall extend to full height on all walls in the shower enclosure and to the edge of the reveal of any window/ door reveal within 450mm		Wall tiling shall extend to full height on all walls in the shower enclosure and to the edge of the reveal of any window/ door reveal within 450mm	
Tiling at basins / toilets	Wall tiling for basin splashbacks shall extend a minimum of 300 mm above all basins and 150mm beyond basin edges		Wall tiling shall extend to half height (approximately 1100mm, or to window cill height if applicable) on all walls behind the WC and basin.  Note: In en-suites the Employer shall have the choice of tiling to the floor (on tiled walls) as an alternative to skirting.		
15.4	<b>Ground Floor WC wall tiling</b>				
	Wall tiles	In WCs wall tiles shall be white 150mm x 150mm ceramic tiles.		In WCs wall tiles shall be Porcelanosa or Johnson ceramic wall tiles, or equal approved by the Employer. Acceptable tile choices are listed above.	
	Tiling at basins / toilets	Wall tiling for basin splashbacks shall extend a minimum of 300 mm above all basins and 150mm beyond basin edges		Basin splashback shall be a minimum of four tiles, (generally two tiles high and two tiles wide) and shall extend a minimum of 150mm past each side of the basin and a minimum of 400mm above the basin.	

15.5	<b>Kitchens and Utility Rooms wall tiling</b>	In kitchens and utility rooms wall tiles shall be white 200mm x 100mm ceramic tiles.		In kitchens and utility rooms, worktop upstands shall be fitted.	
		<p>Wall tiling shall extend up to the underside of wall units and 1 tile below worktops behind cooker spaces.</p> <p>Wall tiling shall extend to a minimum of 760mm above the cooker space and a minimum of 150mm to either side, tiling shall extend to the nearest wall unit where applicable.</p>		Wall tiling is not required in kitchens and utility rooms if there is a worktop upstand.	
15.6	<b>Window cills</b>	Window cills and reveals in bathrooms, en-suites, kitchens and utility rooms (with sink) shall be tiled unless otherwise agreed with the Employer. Window cills in downstairs WC shall be MDF painted gloss white unless otherwise agreed with the Employer.		Window cills, reveals and shelf tops in bathrooms and en-suites shall be tiled. All other window cills shall be MDF painted gloss white.	




## ER Version 18: 16.0 FLOOR COVERINGS

Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
16.0	Flooring Generally	Finish	All floors shall be free from nibs, rough spots & major irregularities. All concrete and screeded floor areas shall be painted with a light grey floor paint. See also clause 23. <a href="#">Painting</a> .	As Affordable Rent specification.	
				As Affordable Rent specification.	
	Barrier Matting	The Contractor shall provide barrier matting to the full width of the hallway and min 900mm deep to front entrance door on all properties. Mat to include PVC edge trim.		As Affordable Rent specification.	
	Floor Protection	The Contractor shall provide protection to all floor surfaces including floorboards and stairs.		As Affordable Rent specification.	
16.1	Vinyl	Slip resistant vinyl floor coverings shall be <b>Polysafe Wood FX PUR</b> by Polyflor Ltd, or other equal and approved by the Employer.  All joints in vinyl flooring shall be hot-welded. Strip or plank flooring is not permitted.		Slip resistant vinyl floor coverings shall be: <ul style="list-style-type: none"> <li>• <b>Polyflor 'Expona Wood' or 'Camaro'</b> luxury vinyl tile ranges by Polyflor Ltd, or</li> <li>• <b>Karndean 'Knight Tile'</b>, or</li> <li>• Other equal and approved by the Employer.</li> </ul>	
	Areas	Vinyl shall be laid throughout the following areas: <ul style="list-style-type: none"> <li>• Kitchen,</li> <li>• Open plan kitchen/diner or kitchen/lounge - the flooring shall extend to a location to be approved by the Employer.</li> <li>• Utility room,</li> <li>• Laundry room/cupboard,</li> <li>• Downstairs WC</li> <li>• Bathroom,</li> <li>• En-suite.</li> </ul>		Vinyl shall be laid throughout the following areas: <ul style="list-style-type: none"> <li>• Kitchen,</li> <li>• Dining room</li> <li>• Open plan kitchen/diner - the flooring shall extend throughout the dining space.</li> <li>• Open plan kitchen/lounge - the flooring shall extend to a location to be approved by the Employer.</li> <li>• Utility room,</li> <li>• Laundry room/cupboard,</li> <li>• Downstairs WC</li> <li>• Bathroom,</li> <li>• En-suite.</li> </ul>	
	Kitchen	Vinyl flooring shall extend underneath kitchen plinths.		Vinyl flooring shall extend fully underneath kitchen plinths.	
	Bathrooms / en-suites	Vinyl flooring shall be laid under sanitary ware (prior to fitting the toilet and wash basin pedestal), and shall extend fully behind the basin, toilet and under the bath panel.  Vinyl flooring shall be sealed around penetrations.		Vinyl flooring shall be laid under sanitary ware (prior to fitting the toilet and wash basin pedestal), shall extend fully behind the basin, toilet and under the bath panel.  Vinyl flooring shall be sealed around penetrations.	
	Wet rooms	See clause 22: <a href="#">Wet Rooms</a>		See clause 22: <a href="#">Wet Rooms</a>	

	Installation	The vinyl shall be installed in accordance with BS 8203 and the manufacturer's guidelines. The Contractor shall ensure that the subfloor is free of contaminants, suitably dry, and suitably prepared prior to installation of the floor covering. Vinyl floor shall be installed to the manufacturer's installation instructions using manufacturer's approved adhesive.		As Affordable Rent specification.	
	Samples	The Contractor shall allow for 3 colour choices for all finished flooring. The Contractor shall provide a sample board of all floor finishes proposed for approval by the Employer prior to ordering.		The Contractor shall provide a sample board of the complete range of the above floorings for approval by the Employer prior to ordering. The Contractor shall allow for an unlimited number colour choices for finished flooring across the site.	
	PVC edging	PVC edging shall be provided at all exposed edges of vinyl flooring for example at door thresholds.		As Affordable Rent specification.	
	Sealant	All perimeter joints to flooring shall be finished with clear or translucent high performance silicone sealant, unless otherwise specified.		As Affordable Rent specification.	
16.2	<b>Protection during Construction</b>	All floor finishes shall be adequately protected during construction to prevent damage, and shall be handed over in a clean condition - tape/protective plastic/plaster/paint shall not be left on floor finishes.		As Affordable Rent specification.	







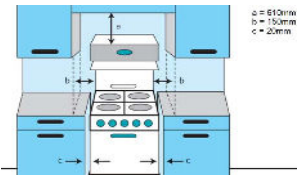
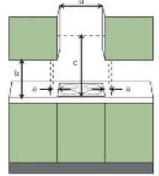
**ER Version 18: 17.0 STORES AND AIRING CUPBOARDS**








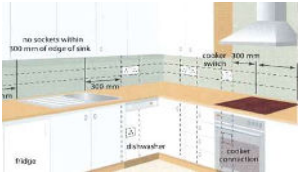
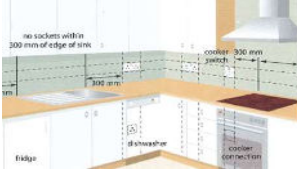
Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
17.0	Store Cupboards				
	Shelves	All full height storage cupboards and storage over stairs shall have a minimum of 2 rows of removable softwood slatted shelving where achievable.		As Affordable Rent specification.	
	Heating Loop	Any heating provisions to the store cupboard shall be agreed with the Employer.		As Affordable Rent specification.	
	Store door vents	Appropriate venting shall be provided and is subject to the approval of the Employer (see also clause 14).		Store door vents are not required.	


**ER Version 18: 18.0 KITCHEN FITTINGS**


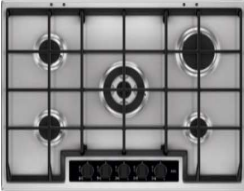


Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
18.0	<b>Kitchen Fittings</b>				
	Design review	For each house type on the site, the Contractor shall provide drawings showing the kitchen design for review and subsequent approval by the Employer prior to ordering the kitchen fittings, see also clause 1: <a href="#">Procedural Issues</a> .		For each house type on the site, the Contractor shall provide drawings showing the kitchen design for review and subsequent approval by the Employer prior to ordering the kitchen fittings, see also clause 1: <a href="#">Procedural Issues</a> .	
	Kitchen design	The kitchen & utility room layout, including no. of base and wall units shall be agreed with the Employer at the earliest possible stage of the design.  Fridge freezer space shall not be located behind kitchen door. Corner base unit doors shall be a minimum width of 500mm (where achievable).		The kitchen & utility room layout, including no. of base and wall units shall be agreed with the Employer at the earliest possible stage of the design. Where possible an indicative kitchen layout shall be agreed pre-contract.  Fridge freezer shall not be located behind kitchen door. Corner base unit doors shall be a minimum width of 500mm (where achievable).	
18.1	<b>Kitchen Fittings General Requirements</b>	All kitchen units shall comply with BS 6222-2 Level H (structural performance) and all surface finishes shall comply with BS 6222-3 (durability of worktops and finishes). Kitchen fittings and worktops shall have FIRA gold product certification.		As Affordable Rent specification.	
	Storage volume	Kitchen storage volume minimum capacity requirements (which must include drawers) are: <ul style="list-style-type: none"> <li>• 1 person - 1.3 cu m</li> <li>• 2 persons - 1.5 cu m</li> <li>• 3 persons - 2 cu m</li> <li>• 4 persons - 2.1 cu m</li> <li>• 5 persons - 2.2 cu m</li> <li>• 6 persons - 2.4 cu m</li> <li>• 7 persons - 2.6 cu m</li> </ul> Note total cubic capacity includes any storage capacity in the utility room where applicable.		As Affordable Rent specification.	

18.2	<b>Kitchen Ranges</b>	<p>The contractor shall provide the full range of units and associated carcasses for the Employer to choose from.</p> <p>All carcasses shall be matching/complimentary colour to unit doors, including end panels, infill panels/corner posts, and plinths.</p> <p>Accepted suppliers and ranges are:</p> <p><b>Symphony:</b> Hacienda Virginia</p> <p><b>Moores:</b> Jazz</p> <p><b>Magnet:</b> Trieste Ascoli</p> <p>Or other equal and approved by the Employer.</p>		<p>The contractor shall provide the full range for the Employer to choose from. Choices shall include both matt and gloss doors where available from the manufacturer.</p> <p>All carcasses shall be a matching/complementary colour to the unit doors, including end panels, infill panels/corner posts, and plinths.</p> <p>Accepted suppliers and ranges are:</p> <p><b>Symphony:</b> New York Gloss Woodbury Urban Harvard</p> <p><b>Howdens:</b> Greenwich Gloss Allendale</p> <p><b>Magnet:</b> Luna Tribeca</p> <p><b>Roundel:</b> Carston Carnoch</p> <p>Or other equal and approved by the Employer.</p>	
	Handles	<p>Stainless steel or chrome. Bar or D-shape handle.</p>		<p><b>Handle choice options shall be provided from the kitchen range selected.</b> Or equal and approved</p>	
	Uplift spec	N/A		<p>If required for the scheme, the Contractor shall provide an uplift kitchen choice specification from a selection of higher ranges from the specified kitchen supplier.</p>	
	Samples	<p>The contractor shall provide samples for the full range of unit doors, handles, carcass, and worktop options.</p>		<p>The contractor shall provide samples for the full range of unit doors, handles, carcass, and worktop options.</p>	

18.3	<b>Base and Wall Units</b>				
	Base units	Base units shall be standard height and depth, approximately 900mm to top of worktops manufactured from 15mm high density chipboard, all edges are to be lipped and suitably sealed to prevent water ingress. All chipboard used in manufacture shall comply with BS EN 312 P2 (Particleboards Specifications).		Base units shall be standard height and depth, approximately 900mm to top of worktops manufactured from 15mm or 18mm high density chipboard, all edges are to be lipped and suitably sealed to prevent water ingress. All chipboard used in manufacture shall comply with BS EN 312 P2 (Particleboards Specifications).	
	Unit colour	All exposed side panels, corner posts and infill panels shall be colour coded to the door facings.		All carcasses shall be a complementary colour to the unit doors, including blended end panels, plinths and infill panels.  Note – some kitchen manufacturer's (e.g. Symphony) require 18mm carcass to be fitted in order to colour match to unit doors (15mm carcass is not accepted if it does not match the unit doors).	
	Adjustable legs	Adjustable legs shall be fitted as standard to all units.		As Affordable Rent specification.	
	Drawers	Drawer system shall be 15mm chipboard base, metal enamel coated drawer sides/back with parallel guides and drawer stop for smooth running.		As Affordable Rent specification.	
	Hinges	Hinges shall be 170 degree concealed fully adjustable metal hinges.		Hinges on all unit doors and drawers shall be fitted with a <b>soft close</b> mechanism.	
	Shelves	Shelves shall be height adjustable shelves supported in 6 positions, shelves shall be fitted in all units.		As Affordable Rent specification.	
	Unit backboards	Unit backs shall be hardboard, backboards shall be fitted in all units including sink units.		As Affordable Rent specification.	
	Corner base units	All corner base units shall be either fitted with pull out carousel shelves or have fold back doors (to enable use of corner storage space). The minimum size of corner unit door shall be 500mm.		As Affordable Rent specification.	
	Larder unit	Full height larder unit shall be included (except where not possible because of space restrictions).		Full height larder unit shall be provided (except where not possible because of space restrictions). Larder unit doors shall match height of fridge freezer unit doors if positioned side by side.	
	Lockable unit	Lockable wall unit shall be included; the specific unit the lock is fitted to shall be agreed with the Employer prior to fitting.		Lockable unit not required.	
	Wall units	Wall units shall be 900mm high fitted above worktop, height above worktop to be agreed with the Employer.		As Affordable Rent specification.	
	Removable unit for Dishwasher	A removable 600mm base unit shall be fitted with future provision for a dishwasher (power/water/waste to be provided). This unit shall not be counted toward cubic storage capacity.		As Affordable Rent specification.	
	Clearance at fridge space	No wall units shall be located above refrigerator spaces, which shall be located at the end of a run of units where possible.		N/A	
	Clearance at cooker	No wall units shall be located within 150 mm of the cooker space. Minimum clearance shown in diagram shall be met. Minimum requirement of 300mm clear worktop each side of the hob location. See also clause 18.5: <b>Worktops</b> for minimum clearances at worktops. See also clause 15.5: <b>Kitchens and Utility Rooms wall tiling</b> for minimum tiled splashback requirements.		Minimum requirement of 300mm clear worktop each side of the hob location. Minimum clearance shown in diagram shall be met. A = min. 50mm (see also clause 18.5: <b>Worktops</b> for min. worktop requirements). B = min. 460mm C = min. 760mm D = width of hob	
	Recycle bin	Recycle bin not required.		Recycle bin not required.	
Plinths	The Contractor shall supply material for plinth return where there are pull out units.		The Contractor shall supply material for plinth return where there are pull out units. Plinth colour shall match the unit doors.		

<p>Heating control unit/ boiler</p>	<p>If this is located in the kitchen it shall be housed in a boiler unit to match the kitchen. Note that this must be a unit specifically design for the boiler, larder units cut to fit the boiler are not accepted. If the boiler is too large to fit in a unit then it shall not be located in a store cupboard or utility room.</p> <p>The Contractor shall ensure that the minimum clearance for maintenance (as specified by the boiler manufacturer) is achieved around the boiler without having to remove the boiler unit.</p>		<p>If the boiler is located in the kitchen or utility room it shall be housed in a boiler unit to match the kitchen. Note that this must be a unit specifically design for the boiler, larder units cut to fit the boiler are not accepted. If the boiler is too large to fit in a unit then it shall not be located in a store cupboard.</p> <p>The Contractor shall ensure that the minimum clearance for maintenance (as specified by the boiler manufacturer) is achieved around the boiler without having to remove the boiler unit.</p>	
<p>Hob splashback</p>	<p>N/A</p>		<p>Hob Splashback - An opaque glass splashback shall be fitted behind the hob. Splashback shall be full height between the worktop (no upstand below splashback) and the and the extract hood, and shall be minimum height 760mm. Splashback shall be full width of the hob.</p> <p>The Contractor shall provide minimum 3 colour choices &amp; samples of the splashback for approval by the Employer prior to ordering.</p>	
<p>18.4 Kitchen Sink</p>	<p>The kitchen sink and drainer shall be made from minimum 1.1mm gauge, 18/10 stainless steel to BS EN 13310:2015 (Kitchen sinks functional requirements and test methods).</p> <p>All kitchen sinks shall have a drainer. Kitchen sink shall be 1 bowl sink; bowl size shall be a minimum of 345 x 420 x 170mm (Suggested sink: Clearwater Contract BS 0.9mm gauge s/s sink).</p> <p>Sink tops shall be fixed &amp; sealed in accordance with the manufacturer's recommendations.</p>	 <p>CONTRACT BS 2 tap hole</p>  	<p>The kitchen sink and drainer shall be Kensington Single Drainer inset sink or equal and approved by the Employer, minimum 1.1mm gauge, 18/10 stainless steel to BS EN 13310 (Kitchen sinks functional requirements and test methods) or granite composite material.</p> <p>All kitchen sinks shall have a drainer. Kitchen sink shall be 1.5 bowl sink, main bowl size shall be a minimum of 340 x 400 x 170mm, fitted with Monobloc kitchen tap (see clause 21.5: Taps)</p> <p>Sink tops shall be fixed &amp; sealed in accordance with the manufacturer's recommendations.</p> <p>Kitchen sinks shall be fitted with monobloc tap, waste, and plug. The Contractor shall ensure that the kitchen sink and Monobloc tap are compatible; sink must be capable of supporting tap without flexing.</p> <p>Sink tap shall be fitted with tap brace.</p> <p>Sink shall have metal strainer plug.</p>	 
<p>Sink Taps</p>	<p>Kitchen sinks shall be fitted with low flow deck mixer taps, waste, plug and chain.</p>			
<p>Tap brace</p>	<p>N/A</p>			
<p>Sink Plug</p>	<p>Sink shall have plug on chain.</p>			
<p>Wiring Accessories</p>	<p>Sockets and switches shall not be located within 300mm of the kitchen sink.</p>		<p>Sockets and switches shall not be located within 300mm of the kitchen sink.</p>	

18.5	Worktops	Worktops shall be 40mm moisture resistant laminated worktops in accordance with BS 312 P3 and BS EN 438 (High-pressure decorative laminates) and shall be sealed as necessary between worktop and wall with a suitably coloured sealant.  Cooker space shall have a minimum of 300mm of worktop to both sides. Sockets & switches shall not be located within 300mm of the cooker space.  All cut edges shall be sealed in clear silicone (e.g. at sink cut out).		Worktops shall be 40mm post formed or square edged laminate worktops in accordance with BS 312 P3 and BS EN 438 (High-pressure decorative laminates) and shall be sealed as necessary between worktop and wall with a suitably coloured sealant.  Cooker space shall have a minimum of 300mm of worktop to both sides. Sockets & switches shall not be located within 300mm of the cooker space.  All cut edges shall be sealed in clear silicone (e.g. at sink cut out).	
	Upstand	N/A		Worktops shall have a matching upstand min. height 75mm, fitted to the wall above the worktop in all areas except at the hob splashback.	
	Tiler Saver	Aluminium "Tile Saver" strip shall be fitted to all worktops between the wall tiles and the worktop to enable the removal of the worktop without damaging the wall tiles.		N/A	
	Joints	Aluminium joint strip shall be fitted to all joints in worktops.		Worktops shall have butt and scribe joints.	
	Edge strips	Aluminium worktop edge strips shall be fitted at the end of all worktop edges adjacent to cooker spaces.		N/A	
	Ranges	Accepted suppliers and ranges are: <b>Symphony:</b> Alpine White, Alaska, Brazilian Walnut, Copper Slate, Dark Ash, Everest Black, Marble Sirocco, Natural Ash, Oak Block, Pastel Oak, Stella Mare, Tectonica.  Moores:  Rixonway:		Accepted suppliers and ranges are: <b>Symphony:</b> Alpine White, Alaska, Brazilian Walnut, Copper Slate, Dark Ash, Everest Black, Marble Sirocco, Natural Ash, Oak Block, Pastel Oak, Stella Mare, Tectonica.  <b>Howdens:</b> Quartzstone White Smooth, Quartzstone Grey Smooth, Oak Block, Walnut Block, Grey Oak Block, Grey Oak Effect, Dark Granite, Walnut Block.	
	Uplift spec	N/A		If required for the scheme, the Contractor will provide the following uplift specification choice options:  <b>Symphony Worktops:</b> 40mm premium laminate worktop - Arctic Marble, Chalet Oak, Cinnamon, Cloudy Cement, Colmar Oak, Grey Terrazzo, Liberty Rock, Platinum Metallic, Roman Oak, Venice Marble, Volcanic Ash, Woodstone.	

18.6	Kitchen/ Utility Room Appliances				
18.6.1	Integrated Appliances	N/A		<p>The Contractor shall supply and install the following integrated kitchen appliances with stainless steel finish (see example images). Samples shall be agreed with the Employer prior to ordering.</p> <ul style="list-style-type: none"> <li>• Fan assisted oven for 2 bed properties</li> <li>• Fan assisted double oven for 3 and 4 bed properties</li> <li>• 5 burner Hob (gas with gas supply point) or Induction hob for 3 and 4 bed properties</li> <li>• 4 burner Hob (gas with gas supply point) or Induction hob for 2 bed properties</li> <li>• Slimline Cooker Extractor Hood or Integrated Cooker Hood to match kitchen range. Cooker hood shall extract out to air unless otherwise specified in the ventilation strategy.</li> <li>• Integrated Fridge Freezer.</li> </ul>	
18.6.2	Fridge Freezer	N/A		<p>Fridge freezer shall be integrated; proportion split shall be agreed with The Employer. Split of the fridge freezer shall be the same as the full height larder unit (if positioned next to the integrated fridge freezer).</p> <p>Aluminium plinth vent with minimum area 200cm squared shall be fitted below the freezer unless otherwise stated by the manufacturer's installation instructions.</p>	
18.6.3	Approved Manufacturers	N/A		<p>Integrated appliance shall be mid-range by an approved manufacturer from the list below and exact model shall be approved by The Employer prior to ordering:</p> <ul style="list-style-type: none"> <li>• NEFF</li> <li>• Hotpoint</li> <li>• Indesit</li> <li>• Baumatic</li> <li>• Bosch</li> <li>• AEG</li> <li>• Electrolux</li> <li>• Zanussi</li> </ul> <p>other equal and approved by the Employer.</p>	
	Energy Rating	N/A		All appliances shall have a minimum EU Energy Efficiency rating of A.	

18.6.4	<b>Appliance spaces</b>	Appliance spaces shall be provided for a minimum of 3 appliances (fridge, cooker, washing machine).  All necessary power/waste/water shall be located in or adjacent to the space. Sockets must not be mounted on unit backboards.  The no. and location of appliance spaces shall be agreed with the Employer prior to ordering the kitchen.		Appliance spaces shall be provided for a minimum of 2 appliance (see detailed specification below).  All necessary power/waste/water shall be located in or adjacent to the space. Sockets must not be mounted on unit backboards.  The no. and location of appliance spaces shall be agreed with the Employer prior to ordering the kitchen.	
	<b>Dimensions</b>	Appliances spaces shall have a minimum clear depth of 600mm (no pipes/fittings within the 600mm depth).  Appliance spaces shall have a minimum clear width of 625mm.		Appliances spaces shall have a minimum clear depth of 600mm (no pipes/fittings within the 600mm depth).  Appliance spaces shall have a minimum clear width of 625mm or width suitable for integrated appliance, with plinth and door provided (to be agreed with the Employer at review of kitchen layouts).	
	<b>Fridge space</b>	Fridge space shall have a minimum clear width of 700mm.		N/A	
	<b>Kitchen Appliance spaces</b>	There shall be a minimum of 3 appliance spaces provided within the kitchen for cooker, fridge/freezer and washing machine.  A removable unit shall be fitted with future provision for a dishwasher (power/water/waste connections to be provided).		There shall be a minimum of 2 appliance space provided within the kitchen for the washing machine and dryer  A removable unit shall be fitted with future provision for a dishwasher (power/water/waste connections to be provided).	
	<b>Utility Room Appliance spaces</b>	House types with a utility room/laundry store: Washing machine space shall be located in the utility room/store not the kitchen. See also clauses <a href="#">18.7:Utility Room</a> & <a href="#">18.8: Laundry Cupboard</a>		House types with a utility room/laundry store: Washing machine space shall be located in the utility room/store not the kitchen. See also clauses <a href="#">18.7:Utility Room</a> & <a href="#">18.8: Laundry Cupboard</a>	
	<b>Provisions</b>	The Contractor shall provide all necessary power sockets, switches, water supply pipework and waste pipework in a location accessible for each appliance (see also clause <a href="#">21.9: Plumbing for Kitchen/ Utility Room Appliances</a> ). Holes shall be drilled into the side of sink base unit to allow access for waste, and cold water supply pipework as necessary.		The Contractor shall provide all necessary power sockets, switches, water supply pipework and waste pipework in a location accessible for each appliance (see also clause <a href="#">21.9: Plumbing for Kitchen/ Utility Room Appliances</a> ). Holes shall be drilled into the side of sink base unit to allow access for waste, and cold water supply pipework as necessary.	















18.7	<b>Utility Room</b>	Where applicable, utility room layouts shall include the following:		Utility room layouts shall include the following, unless otherwise agreed with the Employer:	
	Sink	<ul style="list-style-type: none"> <li>• Sink not required.</li> </ul>		<ul style="list-style-type: none"> <li>• Sink (as per specification in Clause 18.4: Kitchen sink)</li> </ul>	
	Worktop	<ul style="list-style-type: none"> <li>• 40mm moisture resistant laminated worktop (as per specification in clause 18.5: Worktops)</li> </ul>		<ul style="list-style-type: none"> <li>• Laminate worktop and upstand (as per specification in Clause 18.5: Worktops)</li> </ul>	
	Wall Units	<ul style="list-style-type: none"> <li>• Wall units and base units – amount and location to be agreed with the Employer depending on design/style of utility room (as per specification in clause 18.3: Base and Wall units)</li> </ul>		<ul style="list-style-type: none"> <li>• Wall units and base units – amount and location to be agreed with the Employer depending on design/style of utility room (as per specification in clause 18.3: Base and Wall units)</li> </ul>	
	Appliances	<ul style="list-style-type: none"> <li>• Washing machine space (min. clear width 625mm), including un-switched socket, fused spur switch, cold water supply pipe with washing machine hose connections, waste pipe and provision shall be made for waste discharge.</li> <li>• Additional utility room appliance spaces shall be agreed with the Employer prior to ordering the kitchen/utility room.</li> </ul>		<ul style="list-style-type: none"> <li>• Washing machine space (min. clear width 625mm), including un-switched socket, fused spur switch, cold water supply pipe with washing machine hose connections, waste pipe and provision shall be made for waste discharge.</li> <li>• Additional utility room appliance spaces shall be agreed with the Employer prior to ordering the kitchen/utility room.</li> </ul>	
	Flooring	<ul style="list-style-type: none"> <li>• Polysafe Wood FX PUR (as per specification clause 16: Floor Coverings).</li> </ul>		<ul style="list-style-type: none"> <li>• Polyflor Expona or Camaro flooring (as per specification in clause 16: Floor Coverings).</li> </ul>	
	Extract Fan	<ul style="list-style-type: none"> <li>• Extract Fan with boost switch and isolator switch located above door or at high level adjacent to fan (as per specification clause 19.10: Mechanical Ventilation).</li> </ul>		<ul style="list-style-type: none"> <li>• Extract Fan with boost switch and isolator switch located above door or at high level adjacent to fan (as per specification clause 19.10: Mechanical Ventilation).</li> </ul>	
18.8	<b>Laundry Cupboard</b>	If the property contains a laundry cupboard/room the following spec shall be used:		All properties without a utility room shall contain a laundry cupboard/room with the option to fit a washing machine and condenser dryer. The laundry cupboard shall contain:	
	Worktop	<ul style="list-style-type: none"> <li>• Laminate worktop (as per specification in clause 18.5: Worktops).</li> </ul>		<ul style="list-style-type: none"> <li>• Laminate worktop and upstand (as per specification in clause 18.5: Worktops).</li> </ul>	
	Appliances	<ul style="list-style-type: none"> <li>• Appliance space below the worktop for a washing machine (min. clear width 625mm) with un-switched socket, fused spur switch, cold water supply pipe with washing machine hose connections, waste pipe and provision for waste discharge as required for the appliance specified.</li> <li>• Appliance space above the worktop for dryer (min. clear width 625mm) with un-switched power socket and fuse spur switch as required for the appliance specified.</li> </ul>		<ul style="list-style-type: none"> <li>• Appliance space below the worktop for a washing machine (min. clear width 625mm) with un-switched socket, fused spur switch, cold water supply pipe with washing machine hose connections, waste pipe and provision for waste discharge as required for the appliance specified.</li> <li>• Appliance space above the worktop for dryer (min. clear width 625mm) with un-switched power socket and fuse spur switch as required for the appliance specified.</li> </ul>	
	Light	<ul style="list-style-type: none"> <li>• Light fitting (batten holder fitting) and light switch.</li> </ul>		<ul style="list-style-type: none"> <li>• Light fitting (batten holder fitting) and light switch.</li> </ul>	
	Flooring	<ul style="list-style-type: none"> <li>• Polysafe Wood FX PUR (as per specification clause 16: Floor Coverings).</li> </ul>		<ul style="list-style-type: none"> <li>• Polyflor Expona or Camaro flooring (as per specification in clause 16: Floor Coverings).</li> </ul>	
	Extract Fan	<ul style="list-style-type: none"> <li>• Extract Fan with boost switch and isolator switch located above door or at high level adjacent to fan (as per specification clause 19.10: Mechanical Ventilation).</li> </ul>		<ul style="list-style-type: none"> <li>• Extract Fan with boost switch and isolator switch located above door or at high level adjacent to fan (as per specification clause 19.10: Mechanical Ventilation).</li> </ul>	




18.9	<b>Protection during Construction</b>	All kitchen components shall be adequately protected during construction to prevent damage, and shall be handed over in a clean condition - tape/protective plastic/plaster/paint shall not be left on kitchen units/appliances.		As Affordable Rent Specification.	
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**ER Version 18: 19.0 ELECTRICAL INSTALLATION**



Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
19.0	<b>Electrical Installation</b>				
19.1	<b>Existing Services</b>	It is the sole responsibility of the Contractor to ascertain the actual locations and routes of all services on site and make all timely arrangements for diversions, disconnections, crossings or protection as required. All costs or fees in respect of this shall be included in his tender.		As Affordable Rent specification.	
		All wayleave agreements shall be approved by the Employer although approval will not be unreasonably withheld. The Contractor shall be responsible for preparing the required documentation and all costs or fees in respect of this are to be included in his tender.		As Affordable Rent specification.	
		The Contractor will be required to indemnify the Employer for all costs arising from the interruption or damage to any services by his action.		As Affordable Rent specification.	
		The Contractor shall pay all necessary fees arising out of any works to existing services by statutory authorities.		As Affordable Rent specification.	
19.2	<b>Street and External Communal Lighting</b>	All street lighting shall be to Local Authority requirements in adopted areas. Non-adopted street and external lighting shall comply with LA adoption requirement standards and shall be low energy LED, column or wall mounted, and shall be vandal proof.		As Affordable Rent specification.	
		The external lighting proposals shall ensure a reasonable level of illumination of all recesses and similar areas (where intruders may lurk). All costs shall be included in the tender. The Contractor shall provide proposals for approval by the Employer prior to the commencement of works.		As Affordable Rent specification.	
		Any lighting columns over 3m high shall be articulated for ease of maintenance.		As Affordable Rent specification.	
		Street light heads shall be LED.		As Affordable Rent specification.	
		All external lighting, whether adopted or unadopted, shall be designed and positioned to avoid excessive glare to bedrooms and other habitable room windows.		As Affordable Rent specification.	
19.3	<b>Electricity Sub-Station</b>	If required, the cost of the installation shall be met by the Contractor, who shall minimise possible disruption by noise and visual impact to residents through best use of location and materials.		As Affordable Rent specification.	
19.4	<b>Electrical Installation General Requirements</b>	The whole of the electrical installation shall comply with the latest edition of the Regulations issued by the Institution of Electrical Engineers and Local Electricity Board Regulations and shall comply with the Electrical Equipment (Safety) Regulations. A test certificate shall be provided upon completion.		As Affordable Rent specification.	
		All fittings shall comply with British Standards BS 7671 (Requirements for electrical installations. IET Wiring Regulations. Seventeenth edition).		As Affordable Rent specification.	
	Design Review/ Mock-up	For each house type on the site, the Contractor shall provide drawings (and mock-up if requested by the Employer) showing the electrical design for review and subsequent approval by the Employer prior to work commencing on site, see also clause <a href="#">1: Procedural Issues</a>		As Affordable Rent specification.	

19.5	<b>Meters and Consumer Unit</b>	Plots to be fitted with either smart gas meter or smart electricity meter depending on the heating system and design		As Affordable Rent specification.
	Meter Boxes	<p>Early consideration shall be given to meter box location and positions shall be defined on tender drawings. Meter boxes to individual houses shall be sited externally, locations shall be as required by house type layout/ arrangement and construction methodology, as agreed with the Employer.</p> <p>All meter boxes to meet current regulations &amp; service provider requirements.</p> <p>Meter boxes shall be painted to match the facing brickwork or alternative colour to be agreed with the Employer.</p>		As Affordable Rent specification.
	Earth bonding	Earth bonding is required at gas meters.		As Affordable Rent specification.
	Consumer Unit	Consumer unit shall meet all current Building and Electrical Regulations and shall be Wylex all metal consumer unit, or other equal and approved by the Employer.		Consumer unit shall meet current building and electrical regulations.
		The consumer unit shall be mounted a height to meet current regulations (currently set at 1350mm-1450mm above FFL to meet Part M).		The consumer unit shall be mounted a height to meet current regulations (currently set at 1350mm-1450mm above FFL to meet Part M).
		The consumer unit shall be located in a store cupboard, or a hallway/downstairs WC provided that the unit is recessed into the wall.		Consumer units shall be situated in either the store cupboard, utility room, garage or downstairs WC. Consumer units located in the downstairs WC shall be recessed. Consumer units shall not be located in the hallway.
		Consumer unit shall be wired using RCCD's in 'split box' arrangement and MCB's. The Contractor shall provide any sub mains required to accommodate store cupboard/hallway location.		Consumer unit shall be wired using RCCD's in 'split box' arrangement and MCB's. The Contractor shall provide any sub mains required to accommodate store cupboard/hallway location.
Date of Inspection	Date of next inspection shall be identified on consumer unit and certification as 5 yrs.		Date of next inspection shall be identified on consumer unit and certification as 10 yrs.	

19.6	Lighting	Lighting pendants and LED bulbs shall be provided to all rooms with the exception of the kitchen, bathroom & en-suite. All lights fitted to be 75lm/w efficacy to comply with Part L 2021. A lighting schedule to be provided to the SAP assessor as soon as it becomes available to confirm compliance.  Light fittings shall be standard bayonet or screw fit type. Dedicated light fittings are not accepted.		As Affordable Rent specification.  As Affordable Rent specification.	
	Samples	The Contractor shall provide samples of the kitchen, bathroom & en-suite lights for approval by the Employer.		The Contractor shall provide samples of the kitchen, bathroom & en-suite lights for approval by the Employer.	
	Bathrooms	Bathrooms shall be fitted with a white circular multiple LED bulkhead lamp; min. 283mm diameter, opal diffuser, 4000K, 21W (or min. required to meet required lux levels).  Bathroom fittings shall have an IP65 rating. Bathroom light fitting shall have a min. 5 year warranty.		Bathrooms shall be fitted with minimum 4 no. recessed low energy downlighters with chrome or brushed chrome finish. Lights shall have replaceable GU10 LED bulbs. Adjustable spring clips shall be used to ensure lights are fitted tight to ceiling Bathroom fittings shall have an IP65 rating.	
	En-suites	If applicable, en-suites shall be fitted with light fitting, specification as per bathroom light fitting. En-suite fittings shall have an IP65 rating.		En-suites shall be fitted with minimum 2 no. recessed low energy downlighters with chrome finish. En-suite fittings shall have an IP65 rating.	
	Kitchens	Kitchens shall be fitted with a lighting bar with 4 LED spots and a pendant over the dining table area.		Kitchens shall be fitted with minimum 6 no. recessed low energy downlighters with chrome or brushed chrome finish. Lights shall have replaceable GU10 LED bulbs. Adjustable spring clips shall be used to ensure lights are fitted tight to ceiling  Kitchen wall units shall be fitted with minimum of 2 no. under cabinet LED downlighters. Under-cabinet lights shall be LED strip lights, sample to be approved by the Employer prior to ordering the kitchen.	
	Kitchen/diner or Lounge/diner	Kitchen/diner or lounge/diner shall be fitted with pendant light fitting over the dining table.		Kitchen/diners or lounge/diners shall be fitted with pendant light fitting located over the dining table area.	
	Utility & Store Cupboards	Utility & Store Cupboards shall be fitted with batten light fittings in order to maximise room height.		As Affordable Rent specification.	
19.7	External Lighting to Dwellings	External low energy light shall be fitted adjacent to the front door, light shall be controlled by dusk 'til dawn sensor and from within the dwelling by switch override.  Sample shall be approved by the Employer prior to ordering.		As Affordable Rent specification.	
		External low energy light shall be fitted adjacent to the rear door, light shall be controlled by a switch internally. PIR/dusk 'til dawn sensor not required.  Sample shall be approved by the Employer prior to ordering.		As Affordable Rent specification.	

19.8	<b>Power Circuits</b>				
	General Requirements	Fixing heights for sockets, switches and other electrical outlets shall be as detailed in the "Mounting Heights of Electrical Equipment in Dwellings" available at www.niceic.org.uk In developments considered to be at risk from flooding all sockets, switches and other electrical outlets shall be mounted a minimum of 600mm above the ground floor datum.		As Affordable Rent specification.	
	Radial Circuits	For domestic dwellings the use of radial circuits is the preferred method of installation, however ring main circuits supplying 13A socket outlets is accepted with prior agreement with the Employer.		As Affordable Rent specification.	
				N/A	
	Sockets & switches generally	All electrical switches and sockets shall be Click Polar in white.		All visible kitchen switches and sockets shall be brushed chrome finish with black or grey inserts (extent of chrome sockets to include the whole room including kitchen/diner or kitchen/lounge in open plan layouts). All other switches and sockets shall be white. Samples to be approved by the Employer prior to ordering.	
	USB charger outlets	Kitchen and lounge shall include a minimum of 1 no. double socket with two USB charger outlets.		All bedrooms, lounge, dining room, kitchen and any other habitable rooms shall include a minimum of 1 no. double socket with 2 USB charger outlets.	
	General Provision	All rooms shall include a luminaire and light switch, unless otherwise stated. Rooms shall include the electrical accessories stated below as a minimum:		All rooms shall include a luminaire and light switch, unless otherwise stated. Rooms shall include the electrical accessories stated below as a minimum:	
19.8.1	<b>Roof space</b>	<ul style="list-style-type: none"> <li>• 1 No. single gang socket in roof space for aerial boost if required to achieve sufficient signal strength.</li> <li>• If serviceable equipment is located in the roof space a light fitting and light switch shall be provided in the roof space, see also Clause 9.8.</li> </ul>		As Affordable Rent specification.	
19.8.2	<b>Lounge Lighting</b>	<ul style="list-style-type: none"> <li>• Two way light switch; supply and fit a two way light switch for the light fitting in the room which the back door serves, one switch is to be located next to the back door and one switch next to the internal door.</li> </ul>			
	Sockets TV	<ul style="list-style-type: none"> <li>• 3 No. double sockets (inc. 1no. with USB charger outlets),</li> <li>• 1 No. four socket combination plate adjacent to the TV,</li> <li>• 1 No. data plate adjacent to the TV, including a minimum of:                             <ul style="list-style-type: none"> <li>• 1 No. BT socket,</li> <li>• 1 No. Co-axial socket and facility to link to bedroom 1.</li> </ul>                             Note that the TV provisions should be located in the centre of the wall (at low level) where possible.                         </li> </ul>		As Affordable Rent specification.	
19.8.3	<b>Dining room</b>	<ul style="list-style-type: none"> <li>• 2 No. double sockets.</li> </ul>		<ul style="list-style-type: none"> <li>• 2 No. double sockets (inc. 1no. with USB charger outlets).</li> </ul>	

19.8.4	<b>Main bedroom</b>	<ul style="list-style-type: none"> <li>• 3 No. double sockets,</li> <li>• 1 No. BT socket,</li> <li>• 1 No. Co-axial.</li> </ul>		<ul style="list-style-type: none"> <li>• 3 No. double sockets (inc. 1no. with USB charger outlets),</li> <li>• 1 No. Co-axial.</li> </ul>	
19.8.5	<b>All Other Bedrooms</b>	<ul style="list-style-type: none"> <li>• 2 No. double sockets.</li> </ul>		<ul style="list-style-type: none"> <li>• 3 No. double sockets (inc. 1no. with USB charger outlets),</li> <li>• 1 No. TV socket.</li> </ul>	
19.8.6	<b>Landings</b>	<ul style="list-style-type: none"> <li>• 1 No. double socket on all landings,</li> <li>• Landing light switch; switch shall be 2 way switch (locations shall be agreed with the Employer),</li> <li>• Hall light switch; switch shall be 2 way switch (locations shall be agreed with the Employer),</li> <li>• Additional intermediate light switches shall be fitted in the landing where necessary, locations shall be agreed with the Employer.</li> </ul>		As Affordable Rent specification.	
19.8.7	<b>Hallway</b>	<ul style="list-style-type: none"> <li>• 1 No. fused spur for future installation of a burglar alarm (alternatively alarm fuse spur can be located in the hall store),</li> <li>• 1 No. fused spur (or single socket) at the foot of all staircases for the future installation of a stair lift,</li> <li>• Hall light switch; switch shall be 2 way switch (locations shall be agreed with the Employer),</li> <li>• Landing light switch; switch shall be 2 way switch (locations shall be agreed with the Employer),</li> <li>• Additional intermediate light switches shall be fitted in the hall where necessary, to be agreed with the Employer.</li> </ul>		<ul style="list-style-type: none"> <li>• 1 No. fused spur for future installation of a burglar alarm (alternatively alarm fuse spur can be located in the hall store),</li> <li>• Hall light switch; switch shall be 2 way switch (locations shall be agreed with the Employer),</li> <li>• Landing light switch; switch shall be 2 way switch (locations shall be agreed with the Employer),</li> <li>• Additional intermediate light switches shall be fitted in the hall where necessary, to be agreed with the Employer.</li> </ul>	
19.8.8	<b>Kitchen</b>	<ul style="list-style-type: none"> <li>• 3 No. double sockets (inc. 1no. with USB charger outlets),</li> <li>• Switched electrical cooker control with terminal at low level in cooker space,</li> <li>• 1 No. single socket outlet (for igniter) at low level in cooker space,</li> <li>• Fridge/freezer single socket outlet (unswitched)</li> <li>• Fridge/freezer fused spur switch,</li> </ul> <p>If a dishwasher space is included:</p> <ul style="list-style-type: none"> <li>• Dishwasher single socket outlet (unswitched)</li> <li>• Dishwasher fused spur switch.</li> </ul> <p>Switches and sockets shall not be located within 300mm of the cooker space and sink.</p>		<ul style="list-style-type: none"> <li>• 3 No. double sockets (inc. 1no. with USB charger outlets),</li> <li>• Switched electrical cooker control with terminal at low level in cooker space. Note contractor shall also supply and fit integrated oven &amp; hob (see clause 18.5),</li> <li>• 1 No. single socket outlet (for igniter) at low level in cooker space,</li> <li>• Fridge/freezer single socket outlet (unswitched). Note Contractor shall also supply and fit integrated fridge freezer (see clause 18.5),</li> <li>• Fridge/freezer fused spur switch,</li> <li>• Dishwasher single socket outlet (unswitched),</li> <li>• Dishwasher fused spur switch.</li> <li>• Cooker extract hood single socket (unswitched). Note Contractor shall also supply and fit cooker extract hood (see clause 18.5),</li> <li>• Cooker extract hood fused spur switch.</li> </ul> <p>Switches and sockets shall not be located within 300mm of the cooker space and sink.</p>	



	Kitchen (or Utility Room)	<ul style="list-style-type: none"> <li>• Washing machine single socket outlet (unswitched),</li> <li>• Washing machine fused spur switch,</li> </ul> <p>If a dryer space is included:</p> <ul style="list-style-type: none"> <li>• Dryer single socket outlet (unswitched),</li> <li>• Dryer fused spur switch.</li> <li>• 1 No. double socket above worktop (utility room only).</li> </ul>		As Affordable Rent specification.	
	Fused Spurs (kitchen and utility room)	<p>Fused spurs to kitchen and utility rooms shall be switch operated from above worktop level with switches/multi grid switch serving the socket outlets below the worktop. All switches shall be engraved accordingly.</p> <p>Grid switch faceplate shall have modules contained in separate openings (see image).</p>		<p>Fused spurs to kitchen and utility rooms shall be switch operated from above worktop level with brushed chrome finish switches/multi grid switch serving the socket outlets below the worktop. All switches shall be engraved accordingly.</p> <p>Grid switch faceplate shall have modules contained in separate openings (see image).</p>	
19.8.9	<b>Bathrooms</b>	<ul style="list-style-type: none"> <li>• 1 No. Shaver socket.</li> <li>• Bathroom and shower room fittings shall be enclosed type switched from outside the room.</li> </ul>		<ul style="list-style-type: none"> <li>• Bathroom and shower room fittings shall be enclosed type switched from outside the room.</li> </ul>	
19.8.10	<b>Store Cupboards</b>	<p>All full height store cupboards with floor area greater than 1m<sup>2</sup> and all stores which require access for maintenance (e.g. stores containing heating and hot water system, consumer unit, etc.) shall have a batten holder luminaire switched from outside the store with a neon indicator switch.</p> <ul style="list-style-type: none"> <li>• 1 No. Double socket to 1st floor store.</li> </ul>		<p>All full height store cupboards with floor area greater than 1m<sup>2</sup> and all stores which require access for maintenance (e.g. stores containing heating and hot water system, consumer unit, etc.) shall have a batten holder luminaire switched from outside the store.</p> <ul style="list-style-type: none"> <li>• 1 No. Double socket to 1st floor store.</li> </ul>	
19.8.11	Garages	N/A		<p>If Applicable, all garages shall be fitted with the following:</p> <ul style="list-style-type: none"> <li>• Pendant light fitting with low energy bulb.</li> <li>• Light switch located next to garage door.</li> <li>• Two way light switch, with switches located at main garage door and personnel door if present.</li> <li>• 1 no. double socket, location shall be agreed with the Employer.</li> <li>• External security light with PIR sensor and internal fuse spur switch shall be fitted to detached garages and garages without an internal door into the dwelling.</li> <li>• All electrical installation shall comply with BS 7671 Requirements for Electrical Installations.</li> </ul>	



19.9	<b>Communica-tions Infrastructure</b>	The Contractor shall ensure that all works comply with Building Regulations Part R – Electronic Communications.		As Affordable Rent specification.	
	19.9.1 Telephone Infrastructure Installation	Telephone infrastructure shall be provided via underground cable system to each dwelling either pre-wired or complete with draw wire. The location of the main telephone inlet point shall be agreed with the Employer.		As Affordable Rent specification.	
19.9.2	Digital Television	Individual digital aerial systems shall be installed in each property with the aerial located in the roof space if possible. A single gang unswitched outlet shall be provided in the roof space above the insulation for amplification. Aerial shall be tested to ensure a good signal. The Contractor shall provide a copy of the aerial signal strength test certificate at handover.		As Affordable Rent specification.	
19.9.3	Infrastructure for high speed electronic communications networks	The Contractor shall provide the following infrastructure for high speed electronic communications network:			
	Fibre to the Premises (FTTP) Network	The Contractor shall inform the Employer of any partnership with a services provider (such as BT or Virgin) which includes the provision of a 'Fibre to the Premises' network within the dwelling.  The FTTP equipment shall be housed either in a store/cupboard or at the TV location in the lounge, the location shall be agreed with the Employer prior to installation.  Cabling and installation shall be in accordance BSI and Government best practice guidance: <a href="#">PAS2016:2010 Next generation access for new homes.</a> <a href="#">CLG guidance on data ducting for new homes.</a>		As Affordable Rent specification.	
				As Affordable Rent specification.	

19.10	Mechanical Ventilation	Ventilation shall comply with Part F of the Building Regulations. Ventilation system to be cross checked with Part O/L/F/E, including any environmental conditions within the decision notice that goes beyond baseline compliance. Mechanical extract fans shall be <b>Vent Axia</b> , or equal and approved by the Employer. Fans shall be installed in accordance with the manufacturers recommendations and Approved Document F.		As Affordable Rent specification.
		Installation and testing shall be carried out in alignment with the Domestic compliance guide.		
		Due to the occupation type of some developments, additional provisions may need to be made where windows cannot be opened past a restricted angle. In this case, additional fans should be fitted such as a Nuair IAQ-Box or similar to allow increased air supply.		
	Data logger & Humidistat	All extract fans shall have a data logger and humidistat. Fans shall be installed with continuous trickle and boost by means of a humidistat.	N/A	
	Extract duct	Extract ducting shall meet requirements set out in clause 9.7: <a href="#">Extract Ducts in Roof Spaces</a> .		As Affordable Rent specification.
	Fire collars	Ceiling mounted extract fans/ducts shall have third party approved fire collar when mounted on a ceiling forming part of the compartmentation of the building. Fire collar must be certified for use with the specific model of fan fitted.		As Affordable Rent specification.
	Ventilation Strategy	The design, specification and installation of the mechanical extract system shall meet the combined requirements of Part O/ L/ F/ E See also guidance set out in Procedural Issues clause 1.2.2: <a href="#">Preferred Ventilation Strategy</a> .		As Affordable Rent specification.
19.11	MVHR	The use of MVHR systems is only accepted with prior agreement with the Employer; the specification and design shall be agreed with the Employer prior to the commencement of any works and the Employer's specification <a href="#">Addendum D: MVHR</a> shall be followed.		As Affordable Rent specification.
19.12	Smoke and Heat Detectors	The contractor shall design, install and commission a domestic fire detection system with the use of Aico Multi-Sensor smoke alarms and Aico heat alarms. The system shall be in full accordance with BS 5839.		As Affordable Rent specification.
		System shall be <b>Grade D1, Category LD2</b> .		As Affordable Rent specification.
		Grade D1 - A system of one or more mains powered detectors, each with a tamper-proof standby supply consisting of a battery or batteries		As Affordable Rent specification.
		Category LD2 - system incorporating detectors in all circulation areas that form part of the escape routes from the premises, and in all specified rooms or areas that present a high fire risk to occupants, including any kitchen and the principal habitable room. <ul style="list-style-type: none"> <li>• Hallway</li> <li>• Landing</li> <li>• Living Room</li> <li>• Kitchen (Heat alarm)</li> </ul>		As Affordable Rent specification.

Roof spaces	Where any electrically powered mechanical systems such as MVHR, or any systems such as PV, inverters or solar thermal systems or similar are installed in a loft space or void area, then a suitable and sufficient number of Multi-sensor fire detectors shall be positioned in the loft/ void space and form part of the designed system.	As Affordable Rent Specification
Cottage flats	In cottage flats a smoke detector is required in every bedroom, in addition to the above requirements.	As Affordable Rent specification.
Installation	All alarms shall be installed in accordance with the manufacturer's instructions	As Affordable Rent specification.
Wiring	<b>Smoke and heat alarm circuits shall be wired to a local lighting circuit within the consumer unit</b> and shall be protected by an RCBO/AFDD within a high integrity consumer unit.	N/A
Certification	On completion of the installation the contractor is to provide a Domestic Fire Alarm Certificate.	As Affordable Rent specification.
Detectors	All detectors shall be fully compliant with BS5839 part 6 & therefore shall have integral (tamper proof) lithium 10 year cell.	As Affordable Rent specification.
Heat detector	Aico Ei144, or other equal and approved by the Employer, mains operated heat detectors with battery back up shall be installed in kitchens.	Mains operated heat detector with battery back up shall be installed in kitchens.
Smoke detector	Aico Ei146, or other equal and approved by the Employer, mains operated optical smoke detectors with battery back up.	Mains operated optical smoke detectors with battery back up.
Combined heat and CO detectors	Kitchens with a boiler shall be fitted with mains operated Aico Ei3028 Combined Heat & CO detector with battery back up.	Kitchens with a boiler shall be fitted with mains operated Combined Heat & CO detector with battery back up.
Sprinkler system	Domestic Sprinkler System - If installation of a sprinkler system is required, the specification of the system shall be designed on a case by case basis by an accredited company. See also the Employer's sprinkler system addendum specification.	As Affordable Rent specification.

19.13	<b>Carbon Monoxide Detectors</b>	A mains wired carbon monoxide detector shall be provided in the same room as a gas boiler or in a position as recommended by the manufacturer.		As Affordable Rent specification.	
	Combined heat and CO detectors	Kitchens with a gas boiler shall be fitted with combined Aico Heat & CO detector - Ei3028		Kitchens with a gas boiler shall be fitted with combined Aico Heat & CO detector - Ei3028	
19.14	<b>Burglar Alarm</b>	A 13amp non-switched fused spur, suitable for an Alarm system, shall be installed in the ground floor entrance hallway or ground floor store cupboard.		As Affordable Rent specification.	
		Burglar alarm is not required.			
19.15	<b>Electric Showers</b>	Shower source to be from hot water cylinder, not electric showers wherever practicable Thermostatic showers shall be provided (see clause 21.8: Showers), unless the use of the following specification for electric showers is agreed with the Employer. Electric shower shall comply with BS EN 60335-2-35.		Shower source to be from hot water cylinder, not electric showers wherever practicable Thermostatic showers shall be provided (see clause 21.8: Showers), unless the use of the following specification for electric showers is agreed with the Employer. Electric shower shall comply with BS EN 60335-2-35.	
	Shower	Electric shower shall be Triton T80z 8.5KW shower or other equal and approved by the Employer. Pipework shall be hidden.	<p>Triton T80z</p> 	Electric shower shall be a contemporary style Triton with brushed chrome finish, minimum 8.5KW with chrome fittings e.g. Triton Aspirante 8.5KW or other equal and approved by the Employer. Pipework shall be hidden.	<p>Triton Aspirante</p> 
	Cable/fuse/ switch requirements	As per current electrical regulations.		As per current electrical regulations.	
	Isolation switch	Isolation switch shall be fitted outside the en-suite, position of switch shall be agreed with the Employer.		As Affordable Rent specification.	
	Design	For showers installed in a shower enclosure, the shower unit and head shall be installed on the wall adjacent to the shower door, not on the wall opposite the door.		As Affordable Rent specification.	

19.16	<b>Electric Heating and Hot Water</b>	The use of electric heating and hot water shall be agreed with the Employer prior to designing the system, and the design shall be approved by the Employer prior to commencement. See clause <a href="#">20: Heating and Hot Water Systems</a> .		As Affordable Rent specification.	
19.17	<b>EV Charging</b>	Electric vehicle (EV) charging points shall be provided to all dwellings with an associated parking space when required as part of the planning conditions for the development. If EV charging is required (as stipulated above) <b>the following minimum specification shall be used:</b> <ul style="list-style-type: none"> <li>• Electric vehicle charging points shall comply with guidance provided by HM Government 'Electric Vehicle Charging in Residential and Non-Residential Building 2019'.</li> <li>• Chargepoints shall provide a minimum power rating output of 7kW and shall be suitable for Fast Charging.</li> <li>• Chargepoints shall be fitted with a universal socket.</li> <li>• Chargepoints shall be minimum Mode 3 or equivalent, Chargepoints shall allow 'smart' charging.</li> <li>• Chargepoints must comply with the appropriate parts of BS EN 61851-1</li> <li>• Chargepoints should be 'untethered', i.e. there should be a universal connector.</li> <li>• Chargepoints shall be installed adjacent to the plot driveway. All infrastructure, ducting and suitable mounting pillar shall be provided as required.</li> </ul>		As Affordable Rent specification.  As Affordable Rent specification.	
19.18	<b>Electrically Operated External Gates</b>	Electric gates shall not be included without prior approval by the Employer. See <a href="#">Addendum H: Electric Gates Performance Specification</a> .		As Affordable Rent specification.	


## ER Version 18: 20.0 HEATING &amp; HOT WATER SYSTEMS




Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
20.0	Heating and Hot Water Systems				
20.1	General Requirements	The whole of the plumbing works shall be executed in accordance with the requirements of the Local Water Authority and local bye-laws.		As Affordable Rent specification.	
		The heating and hot water system shall be designed to meet current Building Regulations Part L and to meet the required SAP calculations. The heating and hot water system design shall be approved by the Employer. Alternatives to gas boilers shall be comparable in performance and costs (both installation and running costs) as far as possible.		As Affordable Rent specification.	
		The system shall be designed to maintain a minimum of 21 degrees centigrade when the external ambient temperature is -1 degrees centigrade. Calculations validating the system design and sizing shall be provided by the Contractor to the Employer.		As Affordable Rent specification.	
	Drain cocks shall be provided at the lowest point of any wet system.	As Affordable Rent specification.			
	Design Review/ Mock-up	For each house type on the site, the Contractor shall provide drawings (and mock-up if requested by the Employer) showing the heating & plumbing design for review and subsequent approval by the Employer prior to work commencing on site, see also clause 1: <a href="#">Procedural Issues</a> .		As Affordable Rent specification.	
20.2	Installation				
20.2.1	Pressure Checks	The Contractor shall carry out system pressure checks on all pressurised systems and provide a certificate of confirmation for every property before handover.		As Affordable Rent specification.	
20.2.2	Design	The heating and hot water system shall be sized for the dwelling.		As Affordable Rent specification.	
20.2.3	Location	All serviceable parts shall be accessible for maintenance, with sufficient space around the fittings to carry out maintenance.		As Affordable Rent specification.	

	Boilers	Boilers shall be located in a utility room or store cupboard.  If there is not a suitable store cupboard the boiler can be located in the kitchen.  If the boiler is located in a kitchen it shall be housed in a specific boiler cupboard to match the kitchen specification. See also clause <a href="#">18: Kitchens</a> . Boiler and pipework shall be fully concealed by the boiler cupboard. Cut down larder units are not accepted.			
	Hot water cylinders	Hot water cylinders shall be sized for the dwelling and shall be housed in a suitably sized store cupboard with double doors.		As Affordable Rent specification.	
	Alternative heating and hot water systems	Locations for installations for alternative heating and hot water systems shall be agreed with the Employer. Locations shall be suitably designed to meet the requirements of the system.		As Affordable Rent specification.	
	Un-heated spaces	If any elements of the heating and hot water system are located in an unheated space they shall be suitably protected and insulated as necessary. Frost thermostat & pipe thermostat shall be fitted and system shall be installed as per the manufacturers instructions, specification and heating design.		As Affordable Rent specification.	
20.3	<b>Electric Heating and Hot Water</b>	The use of electric heating and hot water shall be agreed with the Employer prior to designing the system, and the design shall be approved by the Employer prior to commencement.  The Contractor shall install on an agile tariff to allow low cost electric for heating/hot water.		As Affordable Rent specification.	
20.3.1	<b>Heating system</b>	Heating shall be Dimplex Quantum panel heater, or equal and approved by the Employer		As Affordable Rent specification.	
	Radiators	Electric radiators shall be Lot 20 compliant. Controls for radiators shall be fixed, remote controls are not accepted. See also clause <a href="#">20.6: Radiators</a>		Electric radiators shall be Lot 20 compliant. Controls for radiators shall be fixed, remote controls are not accepted. Bathrooms and en-suites shall be fitted with electric chrome towel radiator. See also clause <a href="#">20.6: Radiators</a>	
	Controls	Heating controls shall be agreed with the Employer.		As Affordable Rent specification.	
20.3.2	<b>Hot Water system</b>	Hot water cylinder shall be Dimplex Edel, McDonald Cubeflow, Mixergy or equal and Approved by the Employer.		As Affordable Rent specification.	
	Hot water cylinder	Hot water cylinder shall be sized for the dwelling and shall be housed in a large, suitably sized store cupboard with double doors. Cylinder shall be housed in a store cupboard and shall be accessible for maintenance.			





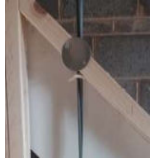
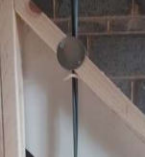


	Controls	Hot water controls shall be agreed with the Employer.		
	Warranty	Heating and hot water system shall have min. 5 year warranty.		Heating and hot water system shall have min. 5 year warranty.
20.4	Gas Boiler	Boiler to have an efficiency of no less than 88.9% during winter. Boiler system to be compatible with Mixergy 200 litre water cylinder tank as per Great Places Part L 2021 Strategy. All installations shall be in accordance with the manufacturer's instructions.  Alternative boilers shall meet the following requirements: - Vaillant • Worcester Bosch I (preferred alternative). with • A minimum 25-30kw rating • A minimum Flow rate of 14.0L/pm @35 degree C • Boiler Plus compliant		Boiler to have an efficiency of no less than 88.9% during winter. Boiler system to be compatible with Mixergy 200 litre water cylinder tank as per Great Places Part L 2021 Strategy. All installations shall be in accordance with the manufacturer's instructions.  Boiler shall meet the following requirements:  • A minimum flow rate of 14.0l/m @ 35°C • A minimum 25-30kw rating • Boiler Plus compliant • From the following approved list of manufacturers: Vaillant Worcester Bosch Baxi Potterton Ideal
	Warranty	Boiler shall have min. 5 year warranty.		Boiler shall have min. 5 year warranty.
	Boiler location	Location of boiler shall be agreed with Employer. Where possible boiler shall be located in the utility room.		Location of boiler shall be agreed with Employer. Where possible boiler shall be located in the utility room.
	Flue	Boiler flues shall be fully accessible throughout their length with all joints visible for inspection in accordance with BS 5440-1:2008 (Flueing and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases). Consideration shall be given to flue runs in relation to SVPs and other services.		As Affordable Rent specification.
	Filling Loop	Where applicable, installations shall have the filling loop disconnected with cap covers in place over the pipes, and check valves to prevent back contaminate. The filling loop shall be zip tied to the boiler.		As Affordable Rent specification.
	Pipe Boxing	Where applicable the Contractor shall provide pipe boxing or boiler housing to conceal pipework below and/or above the boiler, design to be agreed with the Employer.		Boiler and pipework shall be fully concealed by the boiler cupboard, see clause 20.2.
	Pipework	If 10mm pipework is used, the Contractor shall be responsible for ensuring the boiler pump is suitable for use with 10mm pipework.		As Affordable Rent specification.
	Condensate Pipework	Condensate shall discharge into internal waste system where possible.		Condensate shall discharge into internal waste system where possible.
	ASHP	ASHP to have an SCOP of no less than 5.0, ASHP to be compatible with Mixergy 200 litre cylinder. ASHP kW size to be confirmed by M&E Consultant. All system design details and specification to be provided to Employer for review prior to commencement of works.		As Affordable Rent specification.








20.5	<b>Heating System Protection</b>				
	Filter System	All wet systems shall be fitted with a MagnaClean Professional high efficiency, full-flow, filter system by Adey Ltd or equal and approved by the Employer.		MagnaClean not required.	
	Cleaner & Inhibitor	On completion of the installation system, the system shall be treated with Sentinel X300 Cleaner and X100 Inhibitor, or other equal and approved by the Employer. The Contractor shall forward the test sample to Sentinel and proof certificate shall be provided. Sentinel X100 inhibitor sticker shall be affixed to the boiler in a location where it is visible for maintenance purposes.		As Affordable Rent specification.	
20.6	<b>Radiators</b>	Radiators shall be suitably sized and specified for the heating system installed.		As Affordable Rent specification.	
	Gas boiler/wet system radiators	Radiators shall be pressed steel convector type panel radiators complete with thermostatic radiator valve (TRV) and lock shield valve. TRV's shall be fitted to all radiators except the radiator in the reference room (with room thermostat).		As Affordable Rent specification.	
	Electric system radiators	Electric radiators shall be Lot 20 compliant. Controls for radiators shall be fixed, remote controls are not accepted. Electric panels that meet the following requirements will be considered; a. Minimum 5 year warranty for radiator body and seals b. LED digital programmable control / thermostat c. Ecodesign Lot 20 Compliant d. Ideally convention fins to the top of the radiator and a flat panel design e. Dimplex, Electrorad or alternative major manufacturers are acceptable		Electric radiators shall be Lot 20 compliant. Controls for radiators shall be fixed, remote controls are not accepted. Electric panels that meet the following requirements will be considered; a. Minimum 5 year warranty for radiator body and seals b. LED digital programmable control / thermostat c. Ecodesign Lot 20 Compliant d. Ideally convention fins to the top of the radiator and a flat panel design e. Dimplex, Electrorad or alternative major manufacturers are acceptable Bathrooms and en-suites shall be fitted with electric chrome towel radiator.	
	Design	Radiators shall be wall hung, and sized, positioned & fixed in accordance with heating layouts and manufacturer's recommendations.		As Affordable Rent specification.	
		Radiators shall take into account furniture arrangements, and shall not be located behind doors, sofa's or dining tables (where possible).		As Affordable Rent specification.	
Bathroom radiators shall not be located in close proximity to the toilet.			Bathroom/En-suite heated towel radiators shall not be located in close proximity to the toilet. Consideration shall be given to mounting radiator at high level about bath shelf if possible.		
Radiators shall not be located within 500mm of the fridge/freezer space.			Radiators shall not be located within 500mm of the fridge/freezer.		
Warranty	Warranty information shall be provided for radiator panel and control valves.		As Affordable Rent specification.		






20.6.1	Heated Towel Radiator	If electric heating is being installed, bathrooms and en-suites shall be fitted with an electric chrome towel radiator.		<p>Heated chrome towel rail with chrome TRV shall be fitted in the main bathroom and en-suite.</p> <p>Minimum dimension of bathroom towel radiator shall be 600mm x 800mm.</p> <p>Minimum dimension of en-suite towel radiator shall be 500mm x 750mm.</p>	
20.7	Heating & Hot Water Controls				
	Heating Zones	The heating zones shall comply with building regulations, room thermostats shall be fitted to meet current building regulations and positioned to meet the guidance set out in the current Domestic Building Services Compliance Guide.		The heating zones shall comply with building regulations, room thermostats shall be fitted to meet current building regulations and positioned to meet the guidance set out in the current Domestic Building Services Compliance Guide.	
		Single zone heating is preferred where suitable.		Heating shall be two zone unless otherwise agreed with the Employer. Programmer shall be compatible for two zone heating.	
	Programmable Room Thermostat	<p>Hard wired, programmable room thermostat shall be wall mounted in an easily accessible location.</p> <p>Programmable room thermostat shall be <b>Neomitis RT7PLUS</b> or equal and approved by the Employer.</p> <p>Programmer/room thermostat shall meet boiler plus legislation, shall have load compensation, and shall be compatible with the boiler.</p>		<p>Digital programmable room thermostat shall be wall mounted in an easily accessible location.</p> <p>Contractor shall provide sample of room stat for approval by the Employer.</p> <p>Programmer/room thermostat shall meet boiler plus legislation and shall be compatible with the boiler.</p> <p>Programmable room thermostat shall be easy to use with simple display/functions, sample to be agreed by the Employer prior to ordering.</p>	
	Alternative heating and Hot Water Systems	For alternative heating and water systems, where the above specification is not suitable, alternative controls shall be agreed with the Employer.		For alternative heating and water systems, where the above specification is not suitable, alternative controls shall be agreed with the Employer.	





**ER Version 18: 21.0 PLUMBING**





Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
<b>21.0</b>	<b>Plumbing</b>				
<b>21.1</b>	<b>General Requirements</b>	The whole of the plumbing works shall be executed in accordance with the requirements of the Local Water Authority, all relevant codes of practice, British Standards and all relevant bye-laws. All cocks, valves and fittings to be approved by the Employer.		As Affordable Rent specification.	
	Fittings	All fixtures and fittings shall be of the current relevant British Standard quality. Any items not covered by a British Standard shall have an appropriate BBA Certificate. All pipework through walls and floors shall have sleeves and be suitably sealed if fire/sound criteria are relevant.		As Affordable Rent specification. As Affordable Rent specification.	
	Isolating Valves	Isolating valves shall be fitted in an accessible position on the supply pipe to all individual outlets/appliances.		As Affordable Rent specification.	
	Gate Valves	All isolating valves on heating system pipework (i.e. isolation of MagnaClean) shall be accessible and shall be gate valve type.		Gate valve type isolation valves not required.	
<b>21.2</b>	<b>Pipework</b>	All pipework shall be appropriately sized and shall be fitted in strict accordance with the manufacturers' recommendations and relevant British Standards. All plastic pipework shall be Hep2O or Speedfit.		As Affordable Rent specification.	
		All pipework shall be fully encased within wall voids, installation shall be as recommended by the manufacturers good practice guidance and pipework shall be terminated into an air tight termination box.		As Affordable Rent specification.	
		Pipework passing within a timber stud wall shall be trace marked with metallic tape.		As Affordable Rent specification.	
		Pipework passing through a horizontal timber shall be protected by means of nailing plates and pipework shall be sleeved where passing through a stud wall.		As Affordable Rent specification.	
		Pipework at heated towel rails shall protrude from the stud wall at the correct position in line with radiator valves and shall be copper, either painted or chrome plated.		As Affordable Rent specification.	
		All hot water pipework is to be fully insulated.		As Affordable Rent specification.	
		All pipework shall be installed and clipped in a manner that prevents nuisance noise from vibrating pipes.		As Affordable Rent specification.	
		Any exposed pipework at point of connection to an outlet shall be copper, either painted or chrome plated and shall include an accessible isolation valve.		As Affordable Rent specification.	
To ensure the pipework and fittings have been installed correctly it is essential that the system is checked and hydraulically wet tested. Testing shall be carried out to manufacturers' recommendation. Test certificate shall be provided.		As Affordable Rent specification.			

21.3	Hot and Cold Water Installations	All hot and cold water installations shall be installed in accordance with the Water Supply (Water Fittings) Regulations 1999 Defra, UK - Environmental protection - Water - Water Supply (Water Fittings) Regulations 1999.		As Affordable Rent specification.	
		At the point of use, the water pressure shall be an adequate pressure for the purpose of the installation. It is the Contractors responsibility to ensure that sufficient pressure is achievable.		As Affordable Rent specification.	
		Pipework located in unheated parts of the building shall be insulated.		As Affordable Rent specification.	
		Every pipe which carries domestic water shall be flushed out to remove debris etc. and chlorinated ready for use, in accordance with regulations.		As Affordable Rent specification.	
		Underground or inaccessible pipework shall be capable of withstanding at least twice the normal working pressure. All other pipework and fittings shall be capable of withstanding one and a half times the normal working pressure. All completed installations shall be subject to a hydraulic test. Test certificate to be provided.		As Affordable Rent specification.	
		Cold water to come from mains		As Affordable Rent specification.	
	Surestop Switch	Surestop switch not required. Note supported housing schemes shall be fitted with Surestop switch.		Surestop switch not required.	
21.4	Soil and Waste Pipes	Soil pipes and fittings shall be uPVC soil system or other approved in situations where plastic pipe is not acceptable.		As Affordable Rent specification.	
		Soil and waste pipes shall be internal unless otherwise agreed with the Employer, with adequate rodding facility as appropriate to each length of pipework.		As Affordable Rent specification.	
		Waste pipes and fittings shall be uPVC high temperature waste system or equal approved.		As Affordable Rent specification.	
		Overflow pipes and fittings shall be uPVC overflow system.		As Affordable Rent specification.	
		All joints to all systems shall be solvent welded with allowance for movement at base of stock and fixed points.		As Affordable Rent specification.	
21.4.1	Access for maintenance	Adequate and accessible rodding points shall be provided to all SVP's and shall meet all requirements of Building Regulations Part H.  Note preference is for external rodding points.		Adequate and accessible rodding points shall be provided to all SVP's and shall meet all requirements of Building Regulations Part H.	
	Access Points	Access points shall be provided at all rodding points (if required) and durgo valves with either pre-formed access panels or fully removable boxing fixed with cup and screw fixings. Any pipe boxing containing a stub stack with durgo valve shall also be fitted with pre-formed white plastic soffit vent or similar approved.		N/A	

21.4.2	Boxing-in of waste pipework	All bathroom waste pipework (unless concealed behind bath panel or pedestal), WC soil pipes and WC water supply pipework shall be boxed in with water resistant MDF and gloss painted.		Timber boxing in of pipework shall be avoided.  All pipework shall be concealed within the walls where possible to avoid unsightly pipe boxings. In ground floor WC, all basin waste pipes shall go directly into waste pipe floor socket, horizontal pipe boxing is not accepted.  All bathroom waste pipework shall be concealed; generally wall behind basin & WC shall be boxed in to window cill height, all boxed areas in bathrooms shall be tiled to match the walls unless otherwise agreed with the Employer.	
		Soil pipes and waste pipes shall be boxed in and rockwool type insulation shall be used for sound proofing to comply with Building Regulation sound requirements. Where appropriate the colour of goods shall be agreed with the Employer.		As Affordable Rent specification.	
	Boxing-in generally	The type and location of the boxing in of pipework shall be agreed with the Employer. All visible pipework shall be boxed in. Access panels shall be provided where required.		The type and location of the boxing in of pipework shall be agreed with the Employer. All visible pipework shall be boxed in. Access panels shall be provided where required.	
		All boxing shall be fixed with cup and screw fixings to allow full access to pipework.		All pipe boxing shall have concealed fixings (i.e. not with cup and screw fixings as in AR spec) and shall be painted to match the walls (unless in a tiled area, see above).	
Wet Room pipe boxing	See clause 22: Wet Rooms		See Clause 22: Wet Rooms		
21.5	Taps	Taps shall be fitted with restrictors to comply with the higher water usage requirements under building regulations part G of 110 litres per person per day, unless otherwise required. All taps shall be of all metal construction by Pegler or other equal and approved by the Employer, and shall be chrome plated with brass back nuts. All taps shall comply with BS 1010 and with any requirements of the Local Water Authority.		As Affordable Rent specification.  All taps shall be of all metal construction by Bristan or other equal approved by the Employer, and shall be chrome plated with brass back nuts. All taps shall comply with BS 1010 and with any requirements of the Local Water Authority.	
	Kitchen sink taps	Kitchen sink taps shall be low flow deck mixer with lever taps.  Monobloc mixers are not acceptable.		Kitchen sink taps shall be Bristan, from the following ranges:  <ul style="list-style-type: none"> <li>• Bristan Cinnamon monobloc sink mixer tap,</li> <li>• Bristan Ruby monobloc sink mixer tap,</li> <li>• Bristan Pistachio monobloc sink mixer tap,</li> <li>• Bristan Vegas monobloc sink mixer tap,</li> <li>• or equal and approved by the Employer.</li> </ul> <p style="text-align: center;">N/A</p>	
	Wash basin and bath taps	Wash hand basin and bath taps shall be Bristan or Peglar lever taps, or equal and approved by the Employer.		Basin and bath taps shall match, from the following ranges: <ul style="list-style-type: none"> <li>• Bristan Cobalt Mixer tap,</li> <li>• Bristan Quadrato Mixer tap,</li> <li>• Bristan Blitz Mixer tap,</li> <li>• or equal and approved by the Employer.</li> </ul>	





21.6	Waste Outlets	<p>All waste outlets shall be chromium plated brass plates with a brass backnut. Centre screwed wastes are not acceptable. All waste outlets shall be fitted with suitable chain and chrome plug. Traps to include anti vac system to prevent back syphonage of the water in the traps.</p> <p>Pop up wastes are not acceptable.</p>		<p>Basin and bath wastes shall be chrome clicker or pop up waste. All waste outlets are to be chromium plated brass plates with a brass backnut. Traps to include anti vac system to prevent back syphonage of the water in the traps.</p>	
21.7	<p><b>Bathrooms and Ground Floor WCs Generally</b></p> <p>Sealant</p> <p>Protection during Construction</p>	<p>All sanitary ware shall be pure white vitreous china and shall comply with BS 3402.</p> <p>All sanitary ware shall be silicone sealed appropriately and as per manufacturer's installation instructions.</p> <p>White mould resistant silicone sealant shall be used on all sanitary ware. Silicone beads shall be kept to minimal width, wide sealant joints are not acceptable at junctions with sanitary ware, flooring or wall tiling.</p> <p>All sanitary ware &amp; taps shall be adequately protected during construction to prevent damage, and shall be handed over in a clean condition - no tape/protective plastic/plaster/paint to be left on sanitary ware or taps.</p>		<p>All sanitary ware shall be pure white vitreous china and shall comply with BS 3402. Sanitary ware shall be from the approved manufacturers below:</p> <ul style="list-style-type: none"> <li>• Roca</li> <li>• Twyford</li> <li>• Armitage Shanks</li> <li>• Porcelanosa</li> </ul> <p>As Affordable Rent specification.</p> <p>Sealant colour shall be selected to match, white for sanitary ware, grey for grey wall tiles, etc. Silicone colour choice shall be approved by the Employer.</p> <p>Silicone beads shall be kept to minimal width, wide sealant joints are not acceptable at junctions with sanitary ware, flooring or wall tiling.</p> <p>As Affordable Rent specification.</p>	
21.7.1	<p><b>Downstairs WC</b></p> <p>Wash basin</p> <p>Toilet</p>	<p>Downstairs WC layouts shall allow space for; toilet and wash basin.</p> <p>Size of wash basins shall be agreed with the Employer prior to ordering.</p> <p>Toilet shall be Twyford or other equal approved (Armitage Shanks WCs are not permitted) close coupled dual flush WC complete with heavy duty seat and cover.</p> <p>The Contractor shall provide minimum of one tool for tightening the toilet seat per property. To be included in handover pack.</p>		<p>Downstairs WC layouts shall allow space for; toilet and wash basin.</p> <p>Basin shall be wall hung with semi-pedestal or chrome waste and concealed pipework.</p> <p>Size of wash basin shall be appropriate for the room and layout, generally minimum width shall be 450mm. Size of wash basins shall be agreed with the Employer prior to ordering.</p> <p>Toilet shall be vitreous china close coupled dual flush WC from approved range. Seat shall be soft close.</p> <p>The Contractor shall provide minimum of one tool for tightening the toilet seat per property. To be included in handover pack.</p>	 <p>Twyfords basin</p>  <p>Ideal Standard Concept Cube</p>

21.7.2	Bathroom	Generally bathroom layouts shall allow space for; toilet, wash basin, bath with shower over, or shower depending on the end user.		Bathroom layouts shall allow space for; toilet, wall hung wash basin with vanity unit and bath with thermostatic shower over.	
	Tiling	See clause 15: Wall tiling		See clause 15: Wall tiling	
	Bath	Bath shall be a pressed vitreous enamelled finished steel bath complying with BS 1390:1990 complete with 2 No. handgrips earthed to I.E.E Regulations, and with slip-resistant finish. Bath litre capacity to comply with the water usage requirements under building regulations (generally 110litres per person per day).  Baths shall be filled with water and weighted down prior to final fixing and tiling, to ensure any later movement is prevented.		Minimum dimensions of bath shall be 1700mm x 700mm and shall be min. 370mm deep. The Contractor shall ensure that the dwelling complies with water efficiency requirements of current Building Regulations.  Baths shall be filled with water and weighted down prior to final fixing and tiling, to ensure any later movement is prevented.	Ideal Standard Concept bath 
	Bath Panel	Bath panel shall be 9mm water resistant MDF with lacquered facing and shall be colour compatible with the baths.		Bath panel shall have straight, smooth (no pattern) profile with concealed fixings and shall be reinforced white plastic or mdf with gloss white finish. The Contractor shall provide a sample panel for approval by the Employer prior to ordering. The bath panel shall be sized correctly for the bath fitted; panels must not be cut down to fit unless specified by manufacturer.	
	Shower over bath	Thermostatic shower over bath as per specification clause 21.8: Showers		Thermostatic shower over bath as per specification clause 21.8: Showers with glass shower screen shall be provided in all house types (including house types with en-suites and/or separate shower enclosure).	
	Shower screen	N/A		Shower Screen - Contemporary safety glass shower screen to BS EN 14428 shall be fitted over bath. Minimum height of screen shall be 1400mm.	
	Shower Curtain	See clause 14.0: Miscellaneous Fittings.		N/A	
	Shower cubicle	Shower cubicles (where required) shall comprise of a pivot or bi-fold cubicle and stone resin base as a minimum. Shower units shall comply with BS 6340.		See clause 21.7.3: En-suite for shower cubicle specification.	
	Wash basin	Size of wash basins shall be agreed with the Employer prior to ordering.		Size of wash basin shall be appropriate for the room and layout, generally minimum width shall be 550mm. Size of wash basins shall be agreed with the Employer prior to ordering.	

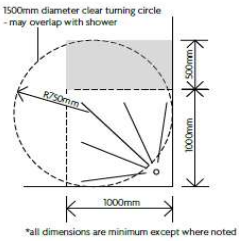
	Vanity unit	N/A		White or cashmere gloss vanity unit with one or two drawers, shall be fitted below the basin in the bathroom and en-suite. Sample shall be agreed with the Employer prior to ordering.	
	Toilet	Toilet shall be Twyfords or other equal approved (Armitage Shanks WCs are not permitted) close coupled dual flush WC complete with heavy duty seat and cover.		Toilet shall be vitreous china close coupled dual flush WC from approved range. Seat shall be soft close.	
21.7.3	En-suite	Provision of en-suites is not required in rented properties unless otherwise agreed with the Employer.		Provision of en-suites in Shared Ownership properties shall be agreed with the Employer. Generally the following shall be included: En-suites shall be provided in all properties with 3 bedrooms or more. En-suite provision in 2 bedroom properties shall be agreed with the Employer at design stage.	
		Where applicable, en-suite layouts shall allow space for; toilet, wash basin with vanity unit, and shower tray and enclosure with thermostatic shower (or electric shower subject to approval by the Employer).		En-suite layouts shall allow space for; toilet, wash basin with vanity unit, and shower tray and enclosure with thermostatic shower (or electric shower subject to approval by the Employer).	
	Shower	As per specification clause 21.8: Showers.		As per specification clause 21.8: Showers.	
	Shower cubicle	Shower cubicles shall comprise of a pivot or bi-fold cubicle and stone resin base as a minimum. Shower enclosure shall comply with BS EN 14428.		Shower Cubicles shall comprise of pivot door (alternative style of door to be approved by the Employer prior to ordering) with chrome finish and clear glass. Shower tray shall be plain, low profile, acrylic capped stone resin shower tray. Shower enclosure shall comply with BS EN 14428.	
	Wash basin	Size of wash basin shall be appropriate for the room and layout. Size of wash basins shall be agreed with the Employer prior to ordering.		Size of wash basin shall be appropriate for the room and layout, generally minimum width shall be 500mm. Size of wash basins shall be agreed with the Employer prior to ordering.	
	Vanity unit	N/A		White or cashmere gloss vanity unit with one or two drawers, shall be fitted below the basin in the bathroom and en-suite. Sample shall be agreed with the Employer prior to ordering.	
	Toilet	As per specification clause 21.7.2.		As per specification clause 21.7.2.	
21.7.4	Wet Rooms	See clause 22: Wet Rooms		See Clause 22: Wet Rooms	
21.8	Showers	Thermostatically controlled mixer showers with chrome plated finish shall be provided in all bathrooms over the bath, shower shall include the following:		Thermostatically controlled mixer showers with chrome plated finish shall be provided in all bathrooms over the bath (even if there is a separate shower enclosure) and to all en-suites.	
		<ul style="list-style-type: none"> <li>• Separate temperature and flow controls.</li> <li>• Controls with a small lever are preferred, to enable people with poor grip easier use of the controls.</li> <li>• Adjustable slide bar and shower head in chrome finish.</li> <li>• Minimum 5 year guarantee.</li> </ul> <p>The Contractor shall provide a product sample or product catalogue information for approval by the Employer prior to ordering.</p>		Shower shall be Bristan Frenzy thermostatic bar shower with multi-function handset, or equal and approved by the Employer.	



		<p>Showers supplied via mixer taps are not acceptable. Shower units shall comply with BS 6340.</p> <p>For all showers (electric or thermostatic) installed in a shower enclosure, the shower unit and head shall be installed on the wall adjacent to the shower door, not on the wall opposite the door.</p>		<p>Showers supplied via mixer taps are not acceptable. Shower units shall comply with BS 6340.</p> <p>For all showers (electric or thermostatic) installed in a shower enclosure, the shower unit and head shall be installed on the wall adjacent to the shower door, not on the wall opposite the door.</p>	
<b>21.9</b>	<b>Plumbing for Kitchen/ Utility Room Appliances</b>	<p>Each dwelling shall be installed with a cold water supply pipe to the washing machine and dishwasher positions complete with washing machine hose connections (with protective caps to prevent accidental discharge) to meet the water regulations and UU prevention of dead leg runs.</p> <p>Each dwelling shall be installed with waste pipework incorporating accessible rodding eye to the washing machine and dishwasher positions. Provision shall be made for appliance waste discharge where an appliance is not next to the sink waste pipework.</p> <p>Holes (75mm diameter) shall be drilled into the side of sink base unit to allow access for waste, and cold water supply pipework as necessary.</p>		<p>As Affordable Rent specification.</p> <p>As Affordable Rent specification.</p> <p>As Affordable Rent specification.</p>	
<b>21.10</b>	<b>Outside tap</b>	<p>Brass outside tap with double check valve and hose connection shall be provided to all properties. Tap shall be located in the rear garden.</p> <p>Tap shall have insulating cover for protection from freezing.</p> <p>Exposed external copper pipework shall be painted black/to match brickwork.</p> <p>Isolation valve with label shall be provided under the kitchen sink.</p>		<p>Brass outside tap with double check valve and hose connection shall be provided to all properties. Tap shall be located in the rear garden.</p> <p>Tap shall have insulating cover for protection from freezing.</p> <p>Exposed external copper pipework shall be painted black/to match brickwork.</p> <p>Isolation valve with label shall be provided under the kitchen sink.</p>	

21.11	Gas Cooker	Where a gas supply is installed to the property, a gas connection point with back plate shall be fitted to the rear of the cooker space in kitchens.		Contractor shall supply and fit electric oven and gas hob, see clause 18.6: Kitchen Appliances.	
		Gas connection point shall be centred at 750mm above the finished floor level, installed in accordance with gas regulations.			
		All gas installations shall comply with BS 6891:2005 installation of low pressure gas pipework up to 35mm in domestic premises.		All gas installations shall comply with BS 6891:2005 installation of low pressure gas pipework up to 35mm in domestic premises.	
21.12	Rainwater Installations	All rainwater goods shall be deep flow round section down pipes and gutters incorporating approved anti-rust fixings.		As Affordable Rent specification.	
	Design	The colour of rainwater goods shall be agreed with the Employer. Positions of all outlet points shall be shown on the roof layout drawings.		As Affordable Rent specification.	
		All roofs including porches shall have gutters, fixed in accordance with the manufacturer's recommendations.			
	Leaf guards	Gutters in close proximity to trees shall have leaf guards.		N/A	
	Internal rainwater pipes	Internal rainwater and soil pipes shall be tested to withstand a constant air test pressure of 38mm water gauge for a period of 3 minutes.		As Affordable Rent specification.	
	Gullies	All rainwater downpipes shall drain into a gully with removable trap. Gully shall be located so as to allow access (i.e. not below the fence line).		As Affordable Rent specification.	

## ER Version 18: 22 WET ROOMS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
22.0	<b>Wet Rooms</b>	All ground floor apartments and bungalows shall include a wet room with level access shower (baths are not required).  Note this specification is not for building regulations Part M4 (2) or M4 (3) wheelchair accessible or wheelchair user dwellings.	The inclusion and design of wet rooms in Shared Ownership ground floor apartments and bungalows shall be agreed with the Employer at design stage. If wet rooms are included in Shared Ownership plots then the following specification shall be used:  Note this specification is not for building regulations Part M4 (2) or M4 (3) wheelchair accessible or wheelchair user dwellings.
	Design	Wet rooms shall be designed and constructed with tanking and drainage laid to fall to a connected gully capable of draining the floor area when used as a shower.  The Contractor shall provide tanking detail design drawings and specification for review and subsequent approval by the Employer.	N/A  N/A
	Fittings & materials	All fixtures, materials and floorings shall be suitable for use in a wet room.	N/A
	Drawings	The Contractor shall provide wet room design / construction drawings for review and subsequent approval by the Employer.	The Contractor shall provide wet room design / construction drawings for review and subsequent approval by the Employer.
22.1	<b>Shower Area</b>		
	Shower tray/former	Level access shower area shall be formed from a compressed GRP tray former or equal and approved alternative, sample to be approved by the Employer.	1200 x 900mm low profile acrylic capped stone resin shower tray with anti slip finish.
	Shower drainage	Drains shall be specifically designed for use with sheet vinyl in wet rooms and sized to allow adequate flow rate of drainage from the shower area, drain/gully to be approved by the Employer.	Shower tray waste shall have chrome finish. Waste cover/flange shall be easily removeable to enable cleaning.
	Shower area size	Shower area shall be a minimum size of 1000 x 1000mm unless otherwise agreed with the Employer. It is preferable that the shower area dimensions meet the requirements set out in Part M (2) accessible and adaptable dwellings, see diagram.	Minimum 1200 x 900mm shower tray.
	Part M (2) dimensions		N/A
Shower screen	Glass shower screen or enclosure with sliding door.	Glass shower screen or enclosure with sliding door.	

22.2	<p><b>Walls</b></p> <p>Internal walls</p>	<p>Provide additional noggins at 450 centres and 18mm WBP plywood facing in partitions to all bathrooms to accommodate future handrails and other fittings (as per clause 7.2: <a href="#">Ply lining &amp; Pattresses</a>).</p> <p>All walls, ducts and boxings shall be strong enough to support grab rails and other adaptations that could impose a load of 1.5kN/m<sup>2</sup>.</p>	<p>Provide additional noggins at 450 centres and 18mm WBP plywood facing in partitions to all bathrooms to accommodate future handrails and other fittings.</p> <p>All walls, ducts and boxings shall be strong enough to support grab rails and other adaptations that could impose a load of 1.5kN/m<sup>2</sup>.</p>
22.3	<p><b>Wall tiling</b></p> <p>Wall tiling areas</p>	<p>The Contractor shall provide a tiling layout contract drawing for approval by the Employer.</p> <p>Wall tiling shall extend to full height to all walls in the shower area and shall extend 3 full tiles past the shower curtain.</p> <p>All pipe boxings shall be fully tiled, generally boxing /wall tiling shall extend to window cill height / half height behind sanitary ware, allowing for boxing in of waste pipes.</p> <p>All other aspects of wall tiling specification shall be as per clause 15: <a href="#">Wall tiling</a>.</p>	<p>The Contractor shall provide a tiling layout contract drawing for approval by the Employer.</p> <p>See clause 15: <a href="#">Wall Tiling</a>.</p>
22.4	<p><b>Sanitary Ware</b></p>	<p>See also clause 21: <a href="#">Plumbing</a> for all sanitary ware requirements not specified below.</p>	<p>See clause 21: <a href="#">Plumbing</a></p>
	<p><b>Wash Basin</b></p>	<p>Wash Basin shall have semi-pedestal.</p>	
22.5	<p><b>Pipe Boxing</b></p>	<p>No timber/MDF shall be installed at floor level</p> <p>Boxing for WC and wash basin waste shall be formed from moisture resistant plaster board and fully tiled, see also clause 15.3 <a href="#">wall tiling</a>.</p>	<p>All pipework shall be concealed within the walls where possible to avoid unsightly pipe boxings.</p>
22.6	<p><b>Vinyl flooring</b></p>	<p>Vinyl floor shall be <b>Polysafe Hydro</b> (or equal and approved by the Employer).</p> <p>Vinyl floor shall be installed to the manufacturer's installation instructions using manufacturer's approved adhesive.</p>	<p>See clause 16: <a href="#">Floor coverings</a></p>
22.7	<p><b>Skirting</b></p>	<p>No timber/MDF skirting shall be used at floor level.</p> <p>Vinyl shall have appropriate floor to wall finish to ensure a water tight joint. Flooring shall be site coved to wall using cove formers and capping strips, or to manufacturer's specification.</p>	<p>See clause 13: <a href="#">Skirting and Architrave</a> &amp; 15: <a href="#">wall tiling</a>.</p>



## ER Version 18: 23.0 PAINTING AND DECORATING




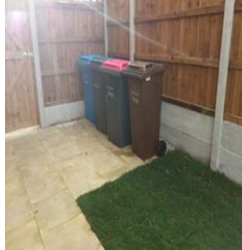
Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
23.0	<b>Painting and Decorating</b>	All paint work shall be carried out to manufacturer's recommendations.	
23.1	<b>Interior Decorations</b>		
	<b>Internal walls and ceilings</b>	Prepare and apply one mist coat and two full coats matt emulsion paint on all plastered walls and ceilings to all rooms. Timber bases in stores shall be painted white.	As Affordable Rent specification.
	<b>Paint</b>	Paint shall be Crown or Dulux. Walls and ceilings shall be white contract matt emulsion.	
	<b>Specific requirements</b>	Kitchens, bathrooms, wet rooms and WCs shall have additional fungicidal additive. Where taped joints are used a high performance primer sealer shall be used.	
	<b>Internal woodwork</b>	All internal exposed woodwork shall be finished in white gloss, with the exception of: <ul style="list-style-type: none"> <li>Pipework ducts, which shall be painted out to match wall colours.</li> <li>Stair handrails, which shall be finished in either white gloss or wood stain, finish shall be agreed with the Employer.</li> </ul> Any stain coating shall have 1 complete coat of base stain before fixing and at least 2 full coats to provide full, even colour.	As Affordable Rent specification.
	<b>Floors</b>	All concrete and screeded floor areas shall be painted with a light grey floor paint.	As Affordable Rent specification.
<b>Pipework</b>	Copper pipework shall be painted white where visible. Pipework visible in stores or cupboards shall be painted grey/silver, or shall be left clean & free of any paint residue.	As Affordable Rent specification.	
23.2	<b>Exterior Decorations</b>	External timberwork shall be avoided, where planning dictates the use of timber externally then all finishes shall be approved by the Employer prior to work commencing. All paint work shall be carried out to manufacturer's recommendations.	As Affordable Rent specification.
	<b>Timber Fencing</b>	Timber fencing and timber products used for bin stores, gates and similar external elements shall be treated off site with stain or non-creosote preservative coating. All fence panels and components shall have an even finish, all cut ends shall be treated similarly (see also clause 25.9: <a href="#">Boundaries and Fences Generally</a> ).	As Affordable Rent specification.
	<b>External Steelwork</b>	External steelwork shall be fully galvanised by hot dipping. Where appropriate, additional paint finish over galvanising is acceptable (Scope is to be agreed with the Employer at Design Stage). All paint systems and preparation shall be fully compatible with, and recommended by, the system manufacturer for the galvanised coating. All exposed lintels to openings shall be painted. Where required, exposed structural steel shall receive intumescent paint fire protection installed in strict accordance with the manufacturer's recommendations.	As Affordable Rent specification.
	<b>Exposed pipes</b>	Exposed external copper pipework shall be painted black/to match brickwork.	As Affordable Rent specification.
	<b>Meter Boxes</b>	Meter boxes shall be painted to match the facing brickwork or alternative colour to be agreed with the Employer.	As Affordable Rent specification.

## ER Version 18: 24.0 GARAGES

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
24.0	Garages	Rented properties shall not have garages.	If garages are included in the design the following specification shall be used.
24.1	Minimum Dimensions	N/A	All garages shall meet the following minimum dimensions:  Single Garage Minimum garage door width (not including frame size): 2134mm (7ft) Minimum garage door height (not including frame size): 2134mm (7ft) Minimum internal dimensions of garage (width x length) 2.6m x 5m  Double Garage Minimum garage door width (not including frame size) 4269mm (14ft) Minimum garage door height (not including frame size): 2134mm (7ft) Minimum internal dimensions of garage (width x length) 5m x 5.2m
24.2	Finish to internal walls, floors & ceilings	N/A	Generally the garage shall be designed as per the relevant clauses in ER Version 18 – AR Specification (4: Foundations, 5: Ground Floors, 6: Externals Walls, 9: Roofs), unless specified otherwise below.
	Walls		Garage walls shall: <ul style="list-style-type: none"> <li>• not be less than 90mm thick</li> <li>• have adequate lateral restraint against wind loading.</li> <li>• have DPC at a level at least 150mm above the level of adjacent ground.</li> <li>• in the case of walls 200mm thick or less, have piers at the corners and at intermediate centres not exceeding 3m.</li> <li>• resist the penetration of damp from wind driven rain. In areas of severe exposure single leaf walls may require surface treatment to prevent an unacceptable level of rain penetration.</li> </ul> Wall to unheated garage classed as sheltered wall, target u-value of 0.16w/m2k as per the external wall u-value. Internal walls shall be fair faced brick or blockwork; all mortar joints shall be solidly filled and bucket handle pointing. All visible blockwork shall be clean and free of mortar snots & stains. Positions of movement joints shall be determined by a structural engineer appointed by the Contractor.
	Floors		Garage floors shall transmit all loads to either the foundations or the ground safely and without undue movement. Concrete floors shall have a DPM below the ground floor slab and the floor shall have a float finish.
	Ceilings		No ceiling finish required.
24.3	Garage Doorsets	N/A	Garage doorsets shall have a minimum of 10 years warranty.  Garage doorsets shall be either side hung or up-and-over type doors. Style and colour of door shall be agreed with the Employer prior to ordering. Garage door and frame shall be RAL 7016 anthracite grey to match window frames and/or front door (if grey). Side hung doorsets shall be fitted with door stays. Doorsets shall be either steel, GRP, aluminium or timber and shall be agreed with the Employer prior to ordering. Doorsets shall be factory finished, durable, low maintenance & rivet free.
24.4	Locks	N/A	All up and over garage doorsets shall include 2 point locking system as a minimum. All side hung doorsets shall have min 2no. shoot bolts to fixed leaf and euro lock.




**ER Version 18: 25.0 EXTERNAL WORKS**









Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)	Example Images
25.0	External Works	All hard and soft landscaping shall be explicitly defined on tender drawings, including defining each hard material, types and extent of planting etc. Landscaping, roads, paving and site works shall be subject to detail design approval by the Employer prior to work commencing on site.		As Affordable Rent specification.	
	External Timber	Timber shall not be used externally (unless specified elsewhere for fence/sheds). In particular: <b>Timber shall not be used for handrails, decking or structures.</b>			
25.1	Highways & Parking	The Contractor is required to liaise with the Local Authority with regard to the access road, car parking and paths to all dwellings.		As Affordable Rent specification.	
25.1.1	Roads	For adoptable areas the Contractor is required to enter into a Section 38 and 104 Agreement with the Local Highways Authority or utilities provider, in order to ensure the adoption of the highway/drainage to a maximum extent and to assume responsibility for all costs associated with such adoptions.		As Affordable Rent specification.	
		All highway construction, including parking areas, turning heads, driveways and footpaths, shall be to adoption standards in accordance with the specification of the Local Authority. Highways design information is to be submitted for T.A. at point of planning approval. Access roads and footpaths serving dwellings shall be tarmacadam, unless otherwise agreed with the Employer.		As Affordable Rent specification.	
25.1.2	Shared Driveways	All unadopted shared driveways & non-adoptable roads shall be built to adoptable standards.		As Affordable Rent specification.	
	Manholes & gullies	Manholes in shared driveways shall be pre-cast concrete manhole rings. Manhole covers & gully grates shall be rated to class D400.			
25.1.3	Driveways	Driveways shall generally be tarmacadam. Where in curtilage parking is provided the dimensions of the parking bay shall comply with the minimum planning requirements.  In addition to this driveways adjacent to structures or soft landscaping shall be <b>minimum 3.0m wide</b> to allow access to and from the vehicle.  Driveways which incorporate the access path to the front door or the bin route to the rear garden shall be <b>minimum 3.3m wide to allow for the width of the drive and a path.</b>		As Affordable Rent specification.	
	Pin kerbs	Perimeter of driveways shall be finished with concrete pin kerbs. Pin kerb shall be used to separate adjacent drives.			

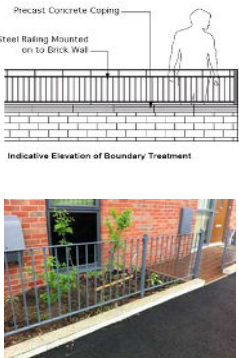
	Parking bay numbering	Driveways or parking bays which are not located directly in front or adjacent to the property shall be identified with the house number painted on the bay itself or alternative signage as agreed by the Employer.  Visitor parking bays shall be identified with "V" painted on the bay itself or alternative signage as agreed by the Employer.			
25.2	<b>In Curtilage Paving Requirements</b>	Paving shall be 50mm thick pre-cast concrete paving slabs on a suitable laying course, sub-base and approved solid compact base. All hardstanding shall be laid to fall away from the property.		Paving shall be 50mm thick pre-cast concrete paving slabs on a suitable laying course, sub-base and approved solid compact base. All hardstanding shall be laid to fall away from the property.	
	Paths	<b>Minimum provision within private curtilage shall be as follows:</b> <ul style="list-style-type: none"> <li>• 900mm wide path from the parking space or from the pedestrian gate to the primary entrance door.</li> <li>• 900mm wide path from the front of the property to the secondary entrance.</li> <li>• 1200mm x 900mm minimum level flagged area outside all external doors.</li> <li>• 900mm wide path to the rear gate.</li> </ul>	 	<b>Minimum provision within private curtilage shall be as follows:</b> <ul style="list-style-type: none"> <li>• 900mm wide path from the parking space or from the pedestrian gate to the front door.</li> <li>• 900mm wide path from the front of the property to the secondary entrance.</li> <li>• 1200mm x 900mm minimum level flagged area outside all external doors.</li> <li>• 900mm wide path to the rear gate.</li> </ul>	 
	Patio	<ul style="list-style-type: none"> <li>• 1800mm x 1800mm patio area to the rear of the property.</li> </ul>		<ul style="list-style-type: none"> <li>• 1800mm x 1800mm patio area to the rear of the property.</li> </ul>	
	Bin area	Bin area shall be located in the rear garden whenever possible.  <ul style="list-style-type: none"> <li>• Flagged area of sufficient size for all refuse bins, with 900mm wide path to the collection point. See also clause <a href="#">25.7: Bin and Refuse Stores</a>. Path shall have level access (no steps) to point of bin collection.</li> </ul>		Bin area shall be located in the rear garden whenever possible.  <ul style="list-style-type: none"> <li>• Flagged area of sufficient size for all refuse bins, with 900mm wide path to the collection point. See also clause <a href="#">25.7: Bin and Refuse Stores</a>. Path shall have level access (no steps) to point of bin collection.</li> </ul>	
	Shed base	<ul style="list-style-type: none"> <li>• Concrete or flag base for external store/shed with min 600mm wide flagged path to the shed. See also clause <a href="#">25.8: Garden sheds</a>.</li> </ul>		<ul style="list-style-type: none"> <li>• Shed and shed base are not required.</li> </ul>	
	Atplax boxes	<ul style="list-style-type: none"> <li>• Atplax boxes shall be located in an area of hard standing. If located in an area of soft landscaping the Atplax box cover shall be set with an area of flagging.</li> </ul>		<ul style="list-style-type: none"> <li>• Atplax boxes shall be located in an area of hard standing. If located in an area of soft landscaping the Atplax box cover shall be set with an area of flagging.</li> </ul>	
	Mowing strip	<ul style="list-style-type: none"> <li>• 300mm wide flagged mowing strip around all elevations.</li> <li>• 100mm wide gravel strip shall be included between the flag and the property if required by the warranty provider.</li> </ul>		<ul style="list-style-type: none"> <li>• 300mm wide flagged mowing strip around all elevations.</li> <li>• 100mm wide gravel strip shall be included between the flag and the property if required by the warranty provider.</li> </ul>	
	Stone chippings	<ul style="list-style-type: none"> <li>• Loose gravel/stone chippings are not acceptable anywhere without prior agreement with the Employer.</li> </ul>		<ul style="list-style-type: none"> <li>• Loose gravel/stone chippings are not acceptable anywhere without prior agreement with the Employer.</li> </ul>	
	Requirements for in curtilage paths	Paths adjacent to the property shall be maintained 150mm below DPC around the full perimeter. Secondary DPC shall be provided at paths forming a level access (see clause <a href="#">6.1 External Walls - Secondary DPC</a> ). Paths shall have a maximum cross fall at 1:40.  For timber frame properties an appropriate base and DPC detail shall be included to ensure there is no damp ingress to sole plate position as shown in the Trada Detail for level thresholds for timber frame and NHBC details for level access using traditional masonry (documents available on request).		As Affordable Rent specification.	
				As Affordable Rent specification.	



	Level Access	<p>All primary access paths (to the front door wherever possible) shall not be stepped and shall have a gradient no greater than 1 in 20, (or shall be designed as a ramp). All bungalows and ground floor cottage flats shall have level access at both the front and rear doors.</p> <p>Secondary DPC required. Access path needs to maintain 150mm below DPC except at the doors.</p>		<p>As Affordable Rent specification.</p> <p>All bungalows and ground floor cottage flats shall have level access at both the front and rear doors.</p> <p>Secondary DPC required. Access path needs to maintain 150mm below DPC except at the doors.</p>	
25.3	Site Drainage	<p>The Contractor shall provide drainage of topsoil and subsoil by the insertion of pipes, or the formation of channels, below ground in such positions that they will gather water at depths chosen on the basis of soil, structure, vegetation, climate and designed activity as necessary in order to:</p> <p>a) lower an existing water-table to a depth that will enable optimum root penetration in zones of intermittent or permanent saturation; and/or</p> <p>b) gather water, arriving by direct precipitation, from zones of non-saturation and so assist in drying the topsoil and upper layers of the ground.</p>		As Affordable Rent specification.	
		<p>Drainage and surface water run off shall be designed to be fully in accordance with the requirements of the Local Authority and their requirements for adoption, and to comply with all their requirements including water attenuation. Flood risk assessments and mitigation measures shall be included in accordance with Local Authority requirements.</p> <p>The contractor shall ensure all site drainage and new connections are coordinated with the dwelling foul and surface water layout and design</p>		As Affordable Rent specification.	
		<p>All impervious surfaces shall be drained either onto permeable garden areas, into 'Aco drains' or into trapped gullies connected to a soak-away or the drainage system and always away from the building. All in accordance with British Standards and NHBC requirements.</p>		As Affordable Rent specification.	
		<p>The finished site levels and design of the external works and drainage shall be carried out so as to prevent flooding, or ponding occurring to gardens, patios, car parking, roads, footpaths and paving and to ensure that grass and planted areas drain naturally within a reasonable timescale. Landscape and drainage shall be designed in accordance with BS 4428 (landscape).</p>		As Affordable Rent specification.	
		<p>The Contractor shall ensure that adequate site investigation is carried out in order to achieve the above specification and all necessary drainage shall be installed prior to practical completion. Compliance with the above shall be monitored during the defects liability period, and the Contractor shall be responsible for the provision of all additional drainage measures and associated costs required in order to achieve compliance after completion.</p> <p>The Employer requires a minimum 600w x 900d land drain be provided to the edge of patio junction with garden to the full width of the plot.</p> <p>Where the prevailing sub strata conditions are not predominantly clay and of high permeability, the Contractor may offer an outline designed solution to reduce this scope. Guidance provided in BS 4428 – Landscape shall be followed</p>		As Affordable Rent specification.	

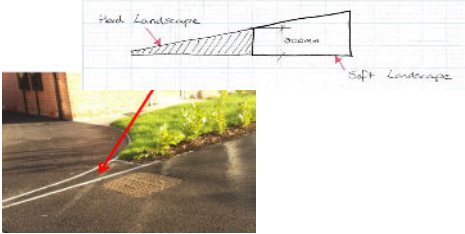
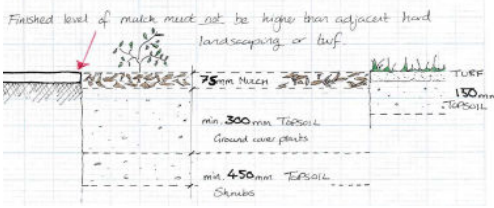
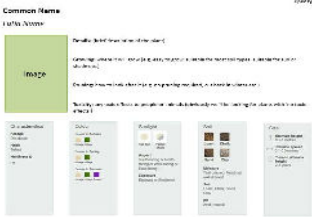
25.4	Rainwater Installations	See clause 21.12: Rainwater Installations		As Affordable Rent specification.	
25.5	Postal Numbering and Naming	The Contractor shall allow for the provision of all estate road names, direction, numbering signs and scheme signs to a detail approved by the Employer and the Local Authority.		As Affordable Rent specification.	
		The Contractor shall be responsible for liaising with the relevant Local Authorities after consultation with the Employer, to agree postal numbering and naming of the proposed development.		As Affordable Rent specification.	
		Signage shall be fixed in sufficient site locations to ensure the ready identification of a particular dwelling by a visitor to the completed development.		As Affordable Rent specification.	
		The Contractor shall allow for the provision of any signage to comply with the Planning Officers' or Fire Officers' requirements.		As Affordable Rent specification.	
25.6	External Drying Areas	Provide a rotary clothes line with sleeve in a cast concrete base adjacent to patio or path, location to be agreed with the Employer prior to installation.		Rotary dryer not required.	
25.7	Bin and Refuse Stores	The Contractor is responsible for providing all bins and shall meet all costs for the provision of all bins.		As Affordable Rent specification.	
		The minimum space provision and arrangement and access of storage shall comply with the recycling requirements of the local authority. The Contractor shall ensure the storage area is suitable for the size and no. of bins required.		As Affordable Rent specification.	
		Design and location of bins shall comply with Building Regulations; reference shall also be made to NHBC document 'Avoiding Rubbish Design'.		As Affordable Rent specification.	
		<a href="http://www.nhbcfoundation.org/Publications/Guide/NF60-Avoiding-rubbish-design">http://www.nhbcfoundation.org/Publications/Guide/NF60-Avoiding-rubbish-design</a>		As Affordable Rent specification.	
		Where required suitable refuse stores shall be provided to accommodate standard wheeled bins, and multiple re-cycling bins where a recycling scheme is in operation.		As Affordable Rent specification.	
		For dwellings with direct access to external rear gardens, refuse areas shall be provided as hardstanding within the gardens, adjacent to an accessible and direct route to the side or rear gate. Bin areas shall not be positioned in front of windows. See also clause 25.2 paving requirements.		As Affordable Rent specification.	
		Where rear access to back gardens is not possible, a bin store shall be provided at the front of the property, which is accessible, robust and inconspicuous. Bin store shall be sized for the required number of bins (minimum of three standard wheelie bins).		As Affordable Rent specification.	
25.8	Garden Sheds	In houses, to each rear garden provide a minimum 1423mm x 940mm x 1420mm timber shed on concrete flagged base to the following specification: <ul style="list-style-type: none"> <li>• Preservative treated to provide a 10 year Anti Rot Guarantee</li> <li>• 10mm Solid Sheet OSB Board Floor</li> <li>• 12mm Tongue &amp; Groove Cladding</li> <li>• 8mm Solid Sheet Board Roof</li> <li>• Turn Button (Butterfly) Catch and padlock</li> <li>• Sand Felt roofing material</li> </ul>		Shed not required.	
	Shed location	The location of the shed shall be agreed with the Employer and indicated on the site layout plan. Where possible sheds shall be positioned at the rear of the garden away from the property with a 600mm wide flag path provided to access the shed.		N/A	

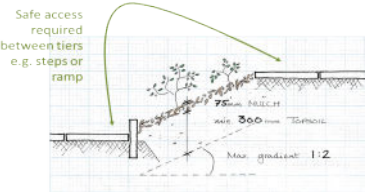
25.9	<b>Boundaries and Fences Generally</b>				
	Timber Knee Rails	Timber knee rails are not accepted.		As Affordable Rent specification.	
	Timber Fencing	Timber fencing shall be Concrete H post and timber infill panel system close boarded timber fence with min. 3 no. timber horizontal rails (as shown in photo). All timber fence panels shall have 300mm concrete gravel board at ground level. Close boarded fences shall have a 2mm gap between boards to allow for expansion. Each linear run of fencing shall have a start and an end post.		As Affordable Rent specification.	
		All timber fences shall be in accordance with BS 1722, all concrete fencing elements shall be in accordance with BS EN 12839. Fencing timbers shall be British Standard fencing grade pressure impregnated off-site with approved preservative, cut ends dipped, all prior to fixing.		As Affordable Rent specification.	
		Where trellis is fitted, this must be secured to the lower panel. Where fence panels are accessible from public spaces, for example driveways or shared spaces, these must be secured to prevent theft.		As Affordable Rent specification.	
	Timber Gates	Rear timber gates shall be of ledged and braced construction, with full length timber stop fitted to the post/frame on both sides of the gate. Gates shall be fitted with the following: <ul style="list-style-type: none"> <li>• 1 No. pair galvanised steel hook and band or tee gate hinges, min. length 300mm.</li> <li>• 1 No. galvanised gate latch, Suffolk latch or locking latch.</li> <li>• 1 No. galvanised steel lockable barrel bolt or pad bolt with elongated bolt keep.</li> </ul>	 	As Affordable Rent specification.	 
	Timber Vehicle Gates	Rear vehicle gates, where provided, shall be double timber gates between suitably sized brick piers, full height and shall have ironmongery as above. Double gates to drives shall be fitted with additional bolts and sleeves at ground level to secure gates in both closed and open positions. Minimum clear opening width of vehicle gates shall be 2.4m.		As Affordable Rent specification. As Affordable Rent specification.	
	Metal railings	Metal railings shall be formed from minimum 12mm thick section and fully galvanised by hot dipping. Additional paint finish over galvanising also required.		As Affordable Rent specification.	
Timber porch	Timber porch posts shall not be in contact with the earth and shall in all cases be provided with a suitable metal shoe or cast into concrete base. Porch post design and sample shall be approved by the Employer prior to ordering		As Affordable Rent specification.		

25.10	<b>Boundary Treatments</b>	The extent and specification of boundary walls and fencing shall be agreed by the Employer before planning submission. Generally the following specification shall be used:	As Affordable Rent specification.	
	Between two rear gardens	1800mm high privacy screen (including 300mm concrete gravel board) extending 1.8 m beyond rear elevation of dwellings, then reducing to minimum 1500mm high party fences between rear gardens.	As Affordable Rent specification.	
	Between rear gardens and front gardens/private gardens	Generally to private rear access paths or other rear gardens provide an 1800mm timber vertical boarded fence (including 300mm concrete gravel board) with an access gate as required.  Clear width to garden gates shall be min. 850mm.  Where timber fence, concrete posts and gravel boards are installed bordering publicly accessible areas, all fence panels and trellis work shall be secured to prevent removal.	As Affordable Rent specification.	
	Between rear gardens and highways/POS	Where private boundaries abut public highways or public open space, the boundary structure shall be an 1800mm high brick wall and 300mm timber trellis topping to deter climbing. Total height of boundary minimum 2100mm.  Walls shall be minimum 215mm thick in a suitable bond, (with stainless steel ties if required), and with brick piers as required for stability, as specified by Engineer. 1 course above ground and 2 courses below shall be engineering brick.  Walls shall be protected by copings with drips to throw water away from the face of the wall. Brick on edge is not acceptable as a coping without clay creasing tiles. Frost resistant F2 bricks shall be used for copings. Engineering bricks with water absorption less than 7% shall be used for DPC courses.	As Affordable Rent specification.  As Affordable Rent specification.  As Affordable Rent specification.  As Affordable Rent specification.	
	Between two front gardens	900mm high metal railings or demarcation with landscaping using shrubs/hedge plants.	As Affordable Rent specification.	
	Between front gardens and roads	In vulnerable areas, including main thoroughfares and gateway situations, a 600mm high brickwork wall topped by 600mm robust metal railings shall be provided. Walls shall be protected by copings with drips to throw water away from the face of the wall. Brick on edge is not acceptable as a coping without clay creasing tiles.  In less vulnerable areas and where the property is less than 2m from a public footpath, 900mm high metal railings over a concrete conservation kerb upstand (see photo) shall be provided. Where a kerb or wall is not provided, railings are to have a minimum 150mm high litter plate fitted to the base of the railings.  Where the property is more than 2m from a public footpath, or in more secluded areas, robust planting or hedges shall be provided.	As Affordable Rent specification.	

	At SUDS, ponds & water courses	A barrier shall be provided to prevent easy access to any SUDS, ponds or water courses. Boundary treatments and locations shall be approved by the Employer.		As Affordable Rent specification.	
<b>25.11</b>	<b>Electrically Operated External Gates</b>	See clause <a href="#">19.18: Electrically Operated External Gates</a>		As Affordable Rent specification.	
<b>25.12</b>	<b>Retaining Walls</b>	All retaining structures over 400mm shall be designed by a competent Engineer, with a minimum service life of 60 years.		As Affordable Rent specification.	
	Materials	Facing material to retaining walls in public areas shall be brickwork. For walls facing private gardens, and with prior approval of the Employer, interlocking timber or concrete 'crib lock' or stone filled gabions may be acceptable.  Brick specifications for retaining walls shall be provided by the Engineer.  Flag on edge may also be used for small changes of level, subject to confirmation of its adequacy by a structural engineer.			
	Design	Retaining walls shall be designed & adequately guarded to allow safe access, use and maintenance as necessary.  Concrete gravel boards shall not be used as a retaining wall above a height of 300mm.		As Affordable Rent specification.  As Affordable Rent specification.	
<b>25.13</b>	<b>Outside Tap</b>	See clause <a href="#">21.10: Outside Tap</a> .		As Affordable Rent specification	

ER Version 18: 26.0 TURF & LANDSCAPE

Clause		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)
26.0	<b>Key Principles</b>	The Contractor shall meet the following key principles as well as the detailed specification that follows:		As Affordable Rent specification.
	1	<p><b>The maximum gradient of all front and rear gardens shall be 1:12</b></p> <p>For gardens on steeply sloping sites see clause 26.1 below.</p>		As Affordable Rent specification.
	2	<p><b>Soft landscape shall not be used for small areas.</b></p> <p>Any area narrower than 0.3m and/or shorter than 1m shall not be planted/turfed.</p>		As Affordable Rent specification.
	3	<p><b>The finished level of any mulch must not be higher than the adjacent hard landscaping or turf.</b></p> <p>Mulch must be retained as necessary to ensure that the level is not higher than the adjacent hard landscape</p>		As Affordable Rent specification.
	4	<p><b>The Contractor shall provide an information sheet for each species of plant used, to include the following:</b></p> <p>(to enable the Employer to approve the landscape layout &amp; to be included in the HUG).</p> <ul style="list-style-type: none"> <li>Plant name (Latin &amp; common name).</li> <li>Description of plant (size, colour, hardness).</li> <li>Growing conditions required for plant (soil type, sunlight, moisture).</li> <li>Pruning requirements.</li> <li>Toxicity (plant species which are toxic to humans are not accepted).</li> </ul>		As Affordable Rent specification.

<p>26.1</p>	<p><b>Soft Landscaping - In Curtilage areas</b></p>	<p>Plant species selection and layout shall be carried out by a qualified Landscape Design Consultant.</p> <p>The Contractor shall provide landscape drawings. The landscape design shall be made available for review/comment by the Employer prior to works commencing on site.</p> <p>The proposals are subject to approval by the Employer prior to work commencing on site.</p> <p>Plot boundaries in areas of soft landscaping to the front of properties shall be demarcated with the use of planting, suitable shrubs shall be used to create a physical boundary unless an alternative, such as railings, is used.</p> <p>All landscape drawings shall identify the species, size and number of plants.</p> <p><b>The Contractor shall provide images of all plants to enable the Employer to identify and approve the planting design.</b></p>		<p>As Affordable Rent specification.</p>
	<p>Sites with steep gradients</p>	<p>Gardens steeper than 1:12 shall be tiered to form level sections.</p> <p>The design of tiered gardens and the landscaping to any slopes greater than 1:12 shall be agreed with the Employer at design stage, or as soon afterwards as possible.</p> <p>Planted areas must not be steeper than 1:2.</p> <p>Turfed areas must not be steeper than 1:12.</p> <p>All maintainable areas must have safe access e.g. ramps or steps. Turf must not be used in areas where it is not safe to access with a lawn mower.</p> <p>All rear garden areas shall be secure.</p> <p>All garden areas shall have safe access, tiered gardens shall have stepped access or alternative access route agreed with the employer.</p> <p>All garden areas shall have gated access secured with latch and bolt.</p> <p>Unsupported granular soil should be 5° less than its natural angle of repose.</p> <p>Unsupported cohesive soil should not exceed 9° (1:6).</p>		<p>As Affordable Rent specification.</p>
	<p>Restrictions</p>	<p>Careful consideration shall be made regarding on-going maintenance of landscaped areas.</p> <p>The Contractor shall provide maintenance guidance for all soft landscaped areas.</p> <p>Small areas and narrow strips of soft landscaping are not acceptable; hard landscaped alternatives for small areas shall be agreed with the Employer.</p> <p>Grass turf shall not be laid below metal fencing or any areas inaccessible to lawn mowers.</p> <p>Grass turf shall not be laid on steep slopes where it would not be possible to cut with a lawnmower.</p> <p>Bark mulch shall not be applied on steep banks.</p> <p><b>Finished level of bark mulch shall not be higher than the surrounding hard landscaping or turf, or shall be retained with concrete pin kerbs.</b></p>		<p>As Affordable Rent specification.</p>

<p>26.2</p>	<p><b>Planting Specification for Shrubs</b></p>	<p>All planted areas shall be kept weed free or treated with Glyphosate based weed killer 10 days prior to planting.</p> <p>All plants shall be healthy, hardened off and with good fibrous root system and in accordance with all relevant British Standards. All pot grown plants shall be near "pot bound". All plants shall be protected from wind exposure at all times.</p> <p>All plants shall be pit-planted, with sufficiently large pit to accommodate root system without bending roots. A minimum size of 450 x 450 x 450mm depth for shrubs and feathered/whips, and 300 x 300 x 300mm for ground cover plants.</p> <p>Pits shall be filled with a 50/50 mixture of topsoil and compost. Growtab fertiliser shall be placed in bottom of each pit.</p> <p>All planting shall be undertaken in accordance with the relevant British Standards. All handling and transport of plants shall comply with ICL Code of Practice. No plants or roots shall be exposed to sun or drying winds.</p> <p>All plants shall be soaked in water for several hours prior to planting and shall be well watered in.</p> <p>75mm depth sterilised bark mulch shall be applied to ground cover and around all shrubs/planting. Level of mulch shall be below the level of any surrounding hard landscaping or turf, or retained with concrete pin kerb so as to avoid the mulch spreading everywhere. Bark mulch shall not be applied on steep banks.</p> <p>All planting areas shall be tidy and weed free upon completion. All pots and rubbish shall be taken off site. Plant labels shall be removed.</p> <p>The Contractor shall take up and replace any shrub which has died or is not developing its full foliage throughout its branches, as identified during the DLP.</p>	<p>As Affordable Rent specification.</p>
<p>26.3</p>	<p><b>Planting Specification for Trees</b></p>	<p>The Contractor shall provide a minimum of 1 tree per plot.</p> <p>Species of trees shall be suitable for the intended location.</p> <p>Locations of trees shall be agreed with the Employer.</p> <p>All trees shall be pit-planted, with sufficiently large pit to accommodate root system without bending roots. A minimum size of 900 x 900 x 600 mm for selected standard trees.</p> <p>All trees shall be secured with sound treated stake 1m long with 600 mm below ground and secured, and with spacer 300 mm above ground.</p> <p>Trees shall be planted in accordance with <a href="#">Addendum C: Specification for Trees &amp; Tree Planting</a>.</p> <p>The Contractor shall take up and replace any tree which has died or is not developing its full foliage throughout its branches, as identified during the DLP.</p> <p>For maintenance purposes trees shall always be planted within red line boundaries and shall not be planted on the red line boundary line itself.</p>	<p>As Affordable Rent specification.</p>
<p>26.4</p>	<p><b>Planting Specification for Turf</b></p>	<p>All grassed areas shall be laid with turf (not seeded) and shall be properly protected, maintained and watered prior to handover. No turf shall be laid in exceptionally dry or frosty weather.</p> <p>The Contractor shall supply and deliver a good quality meadow turf consisting of dwarf natural grasses free from weeds.</p> <p>Preparation: Garden areas shall be free from obstructions beneath the surface and adequately prepared for cultivation.</p> <p>All rubble, concrete, brickwork, and similar obstructions occurring within 300mm of the finished ground surface shall be removed.</p> <p>All vegetable matter, stones, rubble and other debris shall be removed from the garden and any other areas around the property.</p> <p>The garden shall be graded to an even gradient (max. gradient 1:12). The topsoil shall be spread evenly and shall be free from localised undulations/hollows.</p>	<p>As Affordable Rent specification.</p> <p>As Affordable Rent specification.</p> <p>As Affordable Rent specification.</p>





<p><b>Topsail</b></p>	<p>A minimum of 150mm topsoil shall be applied before laying turf. Topsoil shall meet requirements set out in BS 3882 - Specification for topsoil. No subsoil shall be placed over the topsoil.                      Topsoil shall also meet the following requirements:                      • Stones: topsoil shall not contain any stones greater than 20mm.                      • Foreign matter: On visual inspection, soil shall be free of fragments and roots of aggressive weeds, sticks, straw, subsoil, pieces of brick, concrete, glass, wire, earth clods, large lumps of clay or vegetation, and the like.                      Topsoil shall be rotavated to a min. depth of 300mm.</p>		<p>As Affordable Rent specification.</p>
<p><b>Laying Turf</b></p>	<p>Laying: Turf shall be laid off battens to 25mm above the finished level for the surrounding kerbs or paved areas, bonded with joints well butted up, beaten with wooden turf beater, fine soil brushed into joints, lightly rolled and watered as may be necessary. Turf shall meet requirements set out in BS 3969 - Recommendations for Turf for general purposes.</p>		<p>As Affordable Rent specification.</p>
<p><b>Mulch</b></p>	<p>Mulch perimeter of minimum 200mm width shall be provided around the edge of the turf at all fences/walls.</p>		<p>As Affordable Rent specification.</p>
<p><b>Watering Turf</b></p>	<p>Watering: Watering shall be carried out by means of an oscillating spray during early mornings and late afternoon to prevent grass being damaged by scorch or lack of moisture. Where shrinkage occurs and joints open, the Contractor shall supply and brush in good quality fine top soil and well water. The Contractor shall replace any areas of scorched turf at his own expense.                       The Contractor shall take up and replace any turf which has died (unless due to resident misuse or lack of maintenance), as identified during the DLP.</p>		<p>As Affordable Rent specification.</p>
			<p>As Affordable Rent specification.</p>
<p><b>26.5</b></p>	<p><b>Soft Landscaping - Communal/ POS areas</b></p> <p>Careful consideration shall be made regarding on-going maintenance of landscaped areas because of high maintenance costs and service charges. Communal landscaped areas shall be kept to a minimum and shall be either hard landscaped or planted with slow growing, hardy and easy to maintain shrubs and not planted with grass. Steep banks and small areas of grass which will need regular cutting shall be avoided.                       The landscape design for any communal areas or public open space shall be provided for comment/review by the Employer prior to works commencing on site. Landscape plan for any communal areas shall also be reviewed by the Environmental Services Manager.                      See also Addendum C: Specification for Trees &amp; Tree Planting.</p>	<p>As Affordable Rent specification.</p>	
<p><b>26.6</b></p>	<p><b>Landscaping Maintenance during DLP</b></p> <p>The Contractor shall carry out maintenance of any communal landscaped areas during the DLP. This is to comprise grass cutting at monthly intervals during Apr-Sept, two monthly in winter Oct-Mar and all other work in accordance with the Employer's grounds maintenance specification (Copies available from the Asset Manager) inclusive of the sweeping/cleaning of all hard surfaced areas.                       Trees shall be well watered in at the time of planting unless conditions are such as to prohibit watering in which case they shall be watered at the earliest opportunity.                      The Contractor shall take up and replace any shrub, tree or area of turf which has died or is not developing full healthy growth, as identified during the DLP.                      See also Addendum C: Specification for Trees &amp; Tree Planting.</p>	<p>As Affordable Rent specification.</p>	

## ER Version 18: 27.0 SPECIFICALLY REQUIRED PRODUCTS &amp; APPROVALS

Clause		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
27.0	<b>Specifically Required Products and Approvals</b>	The following items are specifically required to be provided, unless an equal alternative is approved by the Employer. Any variance from these suppliers will not be accepted without previous consent from the Employer.  Samples shall be provided for approval by the Employer for all items where requested in the specification. The Contractor is responsible for providing samples in adequate time for approval prior to ordering. Note, all products shall meet the specification as detailed in the relevant section.	The following items are specifically required to be provided, unless an equal alternative is approved by the Employer. Any variance from these suppliers will not be accepted without previous consent from the Employer:-  Samples shall be provided for approval by the Employer for all items where requested in the specification. The Contractor is responsible for providing samples in adequate time for approval prior to ordering.
(6.1)	Cavity wall insulation	PIR board to achieve a thermal conductivity of 0.022W/m2k or lower.	PIR board to achieve a thermal conductivity of 0.022W/m2k or lower.
(6.6.3)	Cladding	<b>Trespa Metion, Marley Eternit Cedral Weatherboard, Hardie Plank</b> or equal approved product	<b>Trespa Metion, Marley Eternit Cedral Weatherboard, Hardie Plank</b> or equal approved product
(9.3)	Roof tiles	<b>Marley Edgemere</b>	<b>Marley Edgemere</b>
(10.1)	Stair Handrail - profile Stair Handrail - finish	Round, oval or crown profile or similar, sample to be approved. Pre-finished ash/natural wood with clear varnish finish, timber with coloured stain, or white gloss paint, sample to be agreed.	Round, oval or crown profile or similar, sample to be approved. Pre-finished ash/natural wood with clear varnish finish, or white gloss paint, sample to be agreed.
(11.1)	Windows	<b>Eurocell Modus or similar</b>	<b>Eurocell Modus or similar</b>
(11.4)	Window ironmongery	All elements shall be guaranteed a minimum of 2 years and samples shall be submitted for approval by the Employer.	All elements shall be guaranteed a minimum of 2 years and samples shall be submitted for approval by the Employer.
(11.6)	Rooflights	<b>VELUX</b>	<b>VELUX</b>
(12.1)	Front doors	Front doors shall be insulated composite GRP doors with a laminated timber door frame in a minimum of 4 RAL colour choices, on mixed tenure schemes one of colour options must be Anthracite Grey RAL 7016. Colour choice to be approved by the Employer.	Front doors shall be insulated composite GRP doors with a laminated timber door frame in a minimum of 4 RAL colour choices, on mixed tenure schemes one of colour options must be Anthracite Grey RAL 7016. Colour choice to be approved by the Employer.
(12.5)	Internal doors	Middleweight/semi-solid core, moulded 4 or 6 panel doors, sample to be approved.	Middleweight/semi-solid core, moulded vertical 5 panel, sample to be approved.
(12.6)	Internal ironmongery	Lever latches and handle furniture fixed with through bolts, sample board of ironmongery to be approved.	Lever latches and handle furniture, modern style with clean simple line handle, brushed chrome or satin finish, round or small square rose. Sample board of ironmongery to be approved.
(13.1)	Skirting	Softwood or MDF, min. 19 x 94 mm, profile to be approved by the Employer.	Softwood or MDF, min. 19 x 94 mm, profile to be approved by the Employer.
(14.0)	Miscellaneous items	The Contractor shall provide samples of all items for approval by the Employer: Hat & coat hooks, Shower curtain, Mirror, Towel rail, Toilet roll holder, Robe hooks.	N/A
(15.1)	Wall tiles	N/A	<b>Porcelanosa</b> or <b>Johnson</b> wall tiles. Tile & feature tile, tile trim, and grout colour to be agreed with the Employer.
(16.1)	Flooring	<b>Polysafe Wood FX PUR</b> sheet vinyl. Extent of flooring in open plan rooms shall be agreed with the Employer.	<b>Polyflor Expona Wood</b> or <b>Camaro</b> , or <b>Karndean Knight</b> vinyl flooring. Extent of flooring in open plan rooms shall be agreed with the Employer.
(17.0)	Store door vents	Vents and locations to be agreed with the Employer.	N/A
(18.1)	Kitchens	<b>Symphony, Moores</b> or <b>Magnet</b> The Contractor shall supply a sample worktops, unit door/drawer fronts, and handles for approval.	<b>Symphony</b> or <b>Howdens</b> The Contractor shall supply a sample worktops, unit door/drawer fronts, and handles for approval.
(18.2)	Hob splashback	N/A	Opaque glass splashback, sample to be approved.
(18.4)	Sink	N/A	Kensington 1.5 bowl drainer inset sink.
(18.5)	Worktop	<b>Symphony, Moores</b> or <b>Magnet</b>	<b>Symphony</b> or <b>Howdens</b>
(18.6)	Appliances	N/A  N/A	Integrated kitchen appliances with stainless steel finish, samples to be agreed from the following approved manufacturers: NEFF Hotpoint Indesit Baumatic Bosch AEG Electrolux Zanussi or equal and approved by the Employer.

(19.5)	Consumer unit	<b>Wylex</b> all metal consumer unit.	N/A
(19.6)	Lighting	N/A	Under-cabinet lights shall be LED strip lights, sample to be approved by the Employer.
(19.7)	External lighting	External front and rear low energy lights, sample to be approved.	External front and rear low energy lights, sample to be approved.
(19.8)	Switches & Sockets	<b>Click Polar</b> switches and sockets.	Kitchen sockets - brushed chrome finish with black or grey inserts, sample to be approved.
(19.10)	Extract fans	<b>Vent Axia</b> extract fans.	N/A
(19.12)	Heat detector	<b>Aico Ei144</b> heat detector.	N/A
(19.12)	Smoke detector	<b>Aico Ei146</b> mains operated optical smoke detectors	N/A
(19.12)	Combined heat and smoke	<b>Aico Ei3028</b> Heat & CO detector.	
(19.15)	Electric shower	<b>Triton</b> T80z 8.5KW or equal and approved.	<b>Triton Aspirante</b> 8.5KW or equal and approved.
(20.3)	Boiler	Boiler to have an efficiency of no less than 88.9% during winter. Boiler system to be compatible with Mixergy 200 litre water cylinder tank as per Great Places Part L 2021 Strategy. All installations shall be in accordance with the manufacturer's instructions.  Alternative boilers shall meet the following requirements: - Vaillant • Worcester Bosch I (preferred alternative). with • A minimum 25-30kw rating • A minimum Flow rate of 14.0L/pm @35 degree C • Boiler Plus compliant	Boiler to have an efficiency of no less than 88.9% during winter. Boiler system to be compatible with Mixergy 200 litre water cylinder tank as per Great Places Part L 2021 Strategy. All installations shall be in accordance with the manufacturer's instructions.  Boiler shall meet the following requirements:  • A minimum flow rate of 14.0l/m @ 35°C • A minimum 25-30kw rating • Boiler Plus compliant • From the following approved list of manufacturers: Vaillant Worcester Bosch Baxi Potterton Ideal
(20.4)	Heating System filter	<b>MagnaClean</b> Professional high efficiency, full-flow, filter system	N/A
(20.4)	Heating system cleaner & inhibitor	<b>Sentinel X300</b> cleaner and <b>Sentinel X100</b> inhibitor.	<b>Sentinel X300</b> cleaner and <b>Sentinel X100</b> inhibitor.
(20.6)	Heating Controls	<b>Neomitis RT7PLUS</b> programmable room stat	N/A
(20.4)	ASHP	ASHP to have an SCOP of no less than 5.0, ASHP to be compatible with Mixergy 200 litre cylinder. ASHP kW size to be confirmed by M&E Consultant. All system design details and specification to be provided to Employer for review prior to commencement of works.	ASHP to have an SCOP of no less than 5.0, ASHP to be compatible with Mixergy 200 litre cylinder. ASHP kW size to be confirmed by M&E Consultant. All system design details and specification to be provided to Employer for review prior to commencement of works.
(20.3.2)	Hot Water Cylinder	Hot water cylinder shall be Dimplex Edel, McDonald Cubeflow, Mixergy or equal and Approved by the Employer.	Hot water cylinder shall be Dimplex Edel, McDonald Cubeflow, Mixergy or equal and Approved by the Employer.
		Hot water cylinder shall be sized for the dwelling and shall be housed in a large, suitably sized store cupboard with double doors. Cylinder shall be housed in a store cupboard and shall be accessible for maintenance.	Hot water cylinder shall be sized for the dwelling and shall be housed in a large, suitably sized store cupboard with double doors. Cylinder shall be housed in a store cupboard and shall be accessible for maintenance.
(21.5)	Taps	<b>Pegler</b> lever taps	<b>Bristan</b> taps.  Kitchen sink taps: Bristan Cinnamon monobloc sink mixer tap, Bristan Ruby monobloc sink mixer tap, Bristan Pistachio monobloc sink mixer tap, Bristan Vegas monobloc sink mixer tap, or equal and approved by the Employer.  Bathroom taps: Bristan Cobalt Mixer tap, Bristan Quadrato Mixer tap, Bristan Blitz Mixer tap, or equal and approved by the Employer.
(21.7)	Sanitary Ware	<b>Twyford</b>	<b>Roca, Twyford, Armitage Shanks or Porcelanosa</b>
(21.7.2)	Bath Panel	N/A	Straight, smooth (no pattern) profile with concealed fixings. Reinforced white plastic or mdf with gloss white finish. The Contractor shall provide a sample for approval.
(21.7.3)	Shower Enclosure	N/A	Pivot door or alternative style of door to be approved by the Employer.
(21.8)	Thermostatic shower	Thermostatically controlled mixer showers with chrome plated finish, sample to be approved.	<b>Bristan Frenzy</b> thermostatic bar shower.
(22.1)	Wet room shower tray	Compressed GRP tray former or equal and approved alternative.	Compressed GRP tray former or equal and approved alternative.
(22.6)	Wet room vinyl	<b>Polysafe Quattro PUR</b>	<b>Polysafe Quattro PUR</b>
(26)	Landscaping	Landscape design including species, size and number of plants to be approved by the Employer. The Contractor shall provide images of all plants to enable the Employer to identify and approve the planting design.	Landscape design including species, size and number of plants to be approved by the Employer. The Contractor shall provide images of all plants to enable the Employer to identify and approve the planting design.

## ER Version 18: ADDENDUM C: Specification for Trees &amp; Tree Planting

Addendum C		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
C 1.0	Site Constraints		
C 1.1	Underground Services	The Contractor shall obtain and consult utilities plans and carry out CAT scan before commencing excavations. Location, depth, diameter and nature of pipes or ducts found are to be recorded and reported to the Employer/Landscape Architect to allow inspection before backfilling the trial pit or proceeding with tree planting.	As Affordable Rent specification.
C 1.2	Aerial Services	Do not plant trees where they may foul overhead lines and cables, block windows, road signs, or interfere with street lighting or CCTV cameras.	As Affordable Rent specification.
C 1.3	Existing Tees	Avoid planting near existing trees in gardens and footpaths.	As Affordable Rent specification.
C 1.4	Road Junctions	The Contractor shall consult the Highways Department if a tree location may impair sight lines on the approach to a junction or turning.	As Affordable Rent specification.
C 2.0	Pit Excavation / Construction		
C 2.1	Pit size for Heavy Standard & Semi-Mature rootball trees	Pits shall be a minimum 300mm wider than the width of the rootball. Machinery suitable for the site conditions shall be used, hand tools should be used where it is impractical to use machinery.  Minimum depth of topsoil shall be 900mm, the depth of the pit should be sufficient to accommodate the rootball and to obtain the correct planting depth. Break up the base of the pit to 150mm deep and scarify the sides of the pit with a fork to get rid of any 'polishing'.	As Affordable Rent specification.
C 2.2	Drainage	Lay minimum 100mm depth of clean stone, 20mm nominal size, over the base of newly excavated pits to allow surplus water to drain away from the rooting zone, ensure that pit base is broken up first.	As Affordable Rent specification.
C 3.0	Tree Stock and Topsoil		
C 3.1	General Requirements	Condition Trees shall be delivered in an undamaged, sturdy, healthy condition. Appearance Trees shall be of good shape without elongated shoots. Hardiness Trees shall be grown in a suitable environment and hardened off. Health Trees shall be free from pests, diseases, discolouration, weeds and physiological disorders. Root System and Condition Root system shall comply with relevant parts of BS 3936 and balanced with branch system. Species Trees shall be true to name and as specified. Origin/ Provenance Trees shall be as specified on the agreed landscape drawing and as per the meaning given in the National Plant Specification. Suppliers The supplier shall be members of The Horticultural Trades Association Nursery Certification Scheme and approved by the Landscape Architect and/or the Employer.	As Affordable Rent specification.
C 3.2	Delivery, Handling and Storage	Delivery, handling and storage shall all be in accordance with BS 4043:1989.  The Contractor shall ensure that trees are stored and carried in such a way that the stem and branches are not damaged. The rootball shall be protected from frost and wind during transportation and storage. Trees damaged by mishandling during lifting, packaging, delivery and storage will be rejected.	As Affordable Rent specification.
C 3.3	Imported Topsoil	Imported topsoil shall meet all requirements set out in section 23 of the Employers Requirements.  Topsoil shall be of premium quality, with a light texture, dry/friable and weed free, conforming to BS 3882 'General Purpose Category'. Topsoil contaminated with subsoil, rubbish or other materials that are hazardous or detrimental to plant growth is not acceptable.	As Affordable Rent specification.
C 4.0	Tree Planting Operation and Accessories		
C 4.1	Planting Depth	The natural thickening between the trunk and the root collar shall be at the finished top surface of the planting medium.	As Affordable Rent specification.
C 4.2	Planting and Backfilling	Plant trees upright and vertical, leaning trees are not acceptable. Trees planted in a pit shall, unless otherwise instructed, be planted in the centre of the pit. Backfill around the rootball with specified material in 150mm layers, treading lightly to compact each layer. Ensure that any underground guying system is installed prior to completing backfilling.	As Affordable Rent specification.
C 4.3	Weldmesh Tree Guards	Trees in vulnerable or public areas shall be fitted with Greencoat tree guards by Greenleaf Ltd 1800mm high x 600mm diameter, or similar approved green PVC coated galvanised steel weldmesh 3" x 1" x 12 gauge, to be fixed to wooden stakes using 40mm long u-staples at min. 300mm centres.  If guards are cut to fit ensure that the exposed cut ends and any sharp edges are filed off or folded back in to avoid risk to pedestrians.	As Affordable Rent specification.
C 4.4	Staking and Tying	Stakes shall be 75mm diameter by 2.4m long or as indicated on the landscape drawings, round and planed softwood. Stakes shall be pressure treated with Alkaline Copper Quaternary (ACQ), peeled chestnut, larch or oak, free from projections and large edge knots and with pointed lower end. Cut off stakes just below lowest branch or top of guard if present.  Ties Trees shall be firmly but not rigidly secured to stake with at least two nylon reinforced belts fixed to stake with 40mm U fencing staples at approx. 1600mm height, overlapped by belt to deter tampering.	As Affordable Rent specification.
C 4.5	Mulching	All mulch shall be organic composting bark mulch, medium coarse grade (nominal particle size 5-50mm) weed and pest free, suitable for professional landscaping applications. Mulch shall be laid to a minimum 100mm depth around the trunk, flush or slightly below surrounding ground level. Avoid mounding mulch up around the trunk. Colour shall be brown or gold.	As Affordable Rent specification.
C 4.6	Watering	Watering shall be provided immediately for watering-in following planting, at 25 litres per tree.	As Affordable Rent specification.






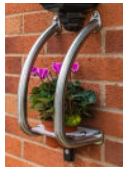
C 5.0	<b>Aftercare and Maintenance</b>		
C 5.1	Planting Maintenance in Public Areas	<p>During the 12 months Defects Liability Period, and 3 year maintenance period where applicable, the Contractor shall carry out the following operations:</p> <p>Make visits at approximately monthly intervals during the growing season and as necessary to fulfil the requirements of this specification.</p> <p>During the maintenance visits, the Contractor shall carry out the following checks:</p> <ul style="list-style-type: none"> <li>· Check condition of stakes, ties, guys and guards.</li> <li>· Replace broken or missing items and adjust ties if necessary to prevent rubbing of bark.</li> <li>· Check stability of trees. Trees that are supported by underground guys should be checked for stability, if necessary the wires will need to be exposed and tightened.</li> <li>· Cut back any damaged bark to a clean healthy area.</li> <li>· Trees in grass must be kept clear of grass and weed growth over an area of 1m diameter for trees up to 30cm diameter girth. This shall be done by hand during the first year after planting or by approved herbicides during subsequent years.</li> <li>· Prune trees to remove dead or dying and diseased wood and suckers and to promote healthy growth and natural shape. Pruning shall take place between November and the end of February or early July to August. Vandalised, ripped and hanging branches shall be removed immediately, whatever the time of year.</li> <li>· Remove timber stakes and guards 3 years after planting and/or when the tree is showing signs of strong growth.</li> </ul>	As Affordable Rent specification.
C 5.2	Watering	<p>During the establishment period the Contractor shall provide watering as necessary. Suggested watering; 90 litres of water per tree at fortnightly intervals between May and September unless weather conditions dictate otherwise.</p> <p>Once during the maintenance period, in March or April, apply liquid fertiliser to each tree, in accordance with the manufacturer's instructions.</p>	As Affordable Rent specification.
C 5.3	Failures of Planting	<p>The Contractor shall be responsible for the successful establishment of all tree planting during the 12 months Defect Liability Period and will be required to carry out tree replacements in the following circumstances:</p> <ul style="list-style-type: none"> <li>· Any trees which are dead, dying or otherwise defective at the end of the DLP. Trees shall be replaced with approved equivalent tree at the next suitable planting season unless otherwise instructed. This will not apply if the defects are caused by malicious damage after Practical Completion, unless otherwise stated in the contract.</li> <li>· All trees will be assessed for growth throughout the DLP and at the end of the growing season (Sept/Oct) within the DLP. If the trees are dead, making insufficient growth or showing crown die-back, or have a percentage of dormant buds over and above that which could reasonably be expected, then they shall be replaced by the Contractor in accordance with the relevant specifications.</li> <li>· If it becomes necessary to replace a tree or trees, the Contractor shall be responsible for the protection of surrounding paved or grass areas, and for lifting and reinstating any tree guards or grilles if fitted.</li> </ul>	As Affordable Rent specification.
C 5.4	Evidence	The Contractor shall provide dated photographic evidence of all agreed works specified above.	As Affordable Rent specification.

## ER Version 18: ADDENDUM D: Specification for MVHR

Addendum D		Principal Contractor (Affordable Rent)	Principal Contractor (Shared Ownership)
D 1.0	Introduction	The Contractor shall provide a ventilation system suitable for the volume of the dwelling. The Contractor shall provide accurate design information to allow accurate volume calculations by the MHVR installer/ Designer.	As Affordable Rent specification.
D 2.0	Standards and Guidance	The contractor shall comply with all relevant regulations and shall ensure that best practice guidance is incorporated into the design & specification of the ventilation system. As a minimum, the following shall be followed: <ul style="list-style-type: none"> <li>· Chapter 2.1, Approved Document F.</li> <li>· Domestic ventilation compliance guide, section 3 of the technical handbook.</li> <li>· NHBC best practice guidance on MVHR.</li> <li>· Manufacturer's Installation Instructions.</li> </ul>	As Affordable Rent specification.
D 3.0	Compliance	MHVR systems shall only be installed by operatives who are; <ul style="list-style-type: none"> <li>· Competent and familiar with the system being installed.</li> <li>· Trained in accordance with the BPEC installer scheme.</li> </ul>	As Affordable Rent specification.
D 4.0	Design	Designs and specifications shall be produced in a clearly understandable format, include all relevant information, and shall be distributed to the appropriate personnel. The Contractor shall provide the following information: <ul style="list-style-type: none"> <li>· Location of all ductwork runs, the fan unit and controls (avoid loft space for fan unit).</li> <li>· Type, size and position of ducts and terminals.</li> </ul> The location of exhaust terminals shall be positioned away from the supply intake(s) so as to prevent short circuiting. <ul style="list-style-type: none"> <li>· Direction of fall for horizontal ductwork.</li> <li>· Type and spacing of clips and fixings.</li> <li>· Type and location of ancillary components, including those used for fire safety and acoustic purposes.</li> <li>· Design airflow-balancing figures for the system.</li> </ul>	As Affordable Rent specification.
D 5.0	Building Integration	The Contractor shall ensure that MHVR systems are compatible with other building elements and do not adversely affect the performance of the building. In particular the Contractor shall follow the requirements set out in sections D 5.1 - 5.4 below:	As Affordable Rent specification.
D 5.1	Weather Tightness	Proprietary roof terminals shall be used to ensure the weather tightness of the roof covering.	As Affordable Rent specification.
D 5.2	Installation of MVHR	The Contractor shall ensure that the ventilation system is designed by a suitably qualified person. MHVR fan units shall only be fixed to parts of the building that are capable of taking the required load. Where fan units are supported by framed structures, additional components such as noggins may be required to provide a secure fixing point. Fan units shall be located, oriented and fixed in accordance with the design, using the clips, brackets and fixings recommended by the manufacturer. Fan units shall be so located so as to facilitate easy access for periodic maintenance, access panels should not require anything other than basic hand tools to gain access.  The Contractor shall ensure that any MHVR unit, fan or ducting sited outside the insulated envelope of the dwelling are so insulated as to not compromise the performance of the equipment or promote the formation of condensation and subsequent mould growth.  Maximum length of flexible ducting shall be no greater than 300mm and shall only be located adjacent to fan units and air valves. The Contractor shall ensure that all internal doors are so trimmed to allow sufficient air transfer throughout the dwelling. There should be a minimum of 7,600mm <sup>2</sup> undercut in all internal doors above the floor finish. For a 762 wide door the undercut would need to be 10mm above floor finishes (allow 20mm where floor coverings are not fitted).  The Contractor shall provide confirmation if trickle vents on windows are not required where MHVR is in use. Designers and suppliers shall consult to mitigate the inclusion of such vents.  The Contractor shall ensure that air valves located on the wall are positioned a maximum of 400mm from the ceiling, and those that are located on the ceiling are positioned a minimum of 200mm from a wall. The Contractor shall ensure air valves are positioned on the opposite side of the room from door openings. Consultation with the Architect's proposed furniture layout shall be undertaken when determining the position of air valves. Air valve positions behind sofas and over bed spaces are to be avoided if at all possible. Consultation and acceptance of final positions shall be agreed with the Employer.  Extract air valves shall be positioned above the source of potential pollutant wherever possible (e.g. over showers). Supply air valves should be located to encourage air flow across the room.  The Contractor is advised that where it is absolutely necessary that the main unit is placed in the loft (no other alternative) then a duty is placed upon them to design safe access to the unit from the loft access position. This shall include access boards and lighting and light switch within the roof space.	As Affordable Rent specification.
D 5.3	Fire Stopping	MHVR fan units and ducting runs shall be so designed as to not compromise the resilient fire envelope of a structure.	As Affordable Rent specification.
D 5.4	Kitchen Extract Ventilation	The Contractor shall provide evidence that the MVHR system is capable of providing adequate ventilation to all areas of the property and furthermore that the system is capable of quick removal of cooking smells in kitchen areas, if necessary additional mechanical extract ventilation shall be installed in the kitchen, as specified in the ER's.	As Affordable Rent specification.

D 6.0	<b>Testing and Commissioning</b>	<p>The Contractor shall ensure that the following testing and commissioning is carried out by a suitably qualified person:</p> <ul style="list-style-type: none"> <li>· Ensure that the systems are checked and that filters are clear of dust and contaminants accumulated during the construction process.</li> <li>· Ensure that systems are commissioned to confirm their performance and adjusted using the air valves and controls to achieve the correct balancing and air flow rates.</li> <li>· Ensure that the completed system is checked and that it complies with the design.</li> <li>· Ensure that controls are appropriately labelled.</li> </ul> <p>The final commissioning figures shall be included in the handover information provided to the Employer.</p>	As Affordable Rent specification.
D 7.0	<b>Handover / Operation and Use</b>	<p>The Contractor shall ensure that the end user is provided with clear and detailed information and instruction in a format intended for a non technical user.</p> <p>The Contractor shall provide the following information:</p> <ul style="list-style-type: none"> <li>· The commissioning certificate.</li> <li>· User instructions for the system and controls.</li> <li>· A user friendly pictorial description and explanation of the system (including locations of the components) and predicted running costs.</li> <li>· Details of routine maintenance.</li> <li>· Method of cleaning ductwork (where required).</li> <li>· Guidance for the use of summer bypass and boost settings (where installed).</li> <li>· Details of the installed system, including part numbers.</li> <li>· Details of any maintenance and service agreements (warranties).</li> <li>· Copies of each unique document shall be uploaded to the portal.</li> <li>· 1 copy of any common documents shall be uploaded to the portal.</li> </ul>	As Affordable Rent specification.
D 7.1	Portal Path	<p>All design information, product information, certificates for testing and commissioning shall be uploaded to the portal.</p> <p>The Contractor shall provide and upload the required information in the format as specified below: Your company name / your site name /operations and maintenance /035 Summary of systems installed/MHVR</p> <p>Create the following folders:</p> <ul style="list-style-type: none"> <li>· Design drawings and calculations: upload relevant information</li> <li>· Products installed: upload relevant information</li> <li>· Operation and maintenance: upload relevant information</li> <li>· Test and commissioning certificates: upload relevant information.</li> </ul>	As Affordable Rent specification.

**ER Version 18: ADDENDUM E: Accessibility Specification**

Addendum E		Principal Contractor (Affordable Rent)	Example Images	Principal Contractor (Shared Ownership)
E1.0	<b>Accessibility</b>	All ground floor apartments, cottage flats, bungalows and adapted housing shall have the following fittings for accessibility: Fittings shall be 'Invisible Creations' or equal and approved by the Employer.		As affordable Rent specification
E1.1	<b>Bathroom</b>	Shower riser grab rail, note it is the Contractor's responsibility to ensure the shower rail is compatible with the shower.  Shower shelf grab rail  Mirror grab rail  Raised toilet flush, note it is the Contractor's responsibility to ensure the flush button is compatible with the toilet.  Toilet roll holder grab rail	        	As Affordable Rent specification
E1.2	<b>Front Door</b>	Front door grab rail - for properties with an external front door only (not required in to internal front doors on apartments).		As Affordable Rent specification
E1.3	<b>Scooter Storage</b>	Scooter storage area shall be provided. Details to be agreed with the Employer. Scooter charging facility shall be provided, fire risk assessment to be provided.		As Affordable Rent specification
E1.4	<b>Parking spaces</b>	Parking spaces shall be designed as disabled parking spaces, minimum width 3.6m, minimum length 6m		As Affordable Rent specification
E1.5	<b>Level Access</b>	All entrances (front and rear doors) shall have level access with accessible thresholds (as described in part M).		As Affordable Rent specification
E1.6	<b>TMV's</b>	Thermostatic Mixing Valves shall be included on all hot water outlets (not just the bath).		As Affordable Rent specification



## ER Version 18: ADDENDUM F: Fire Specification - Alarms and Detection

Addendum F		Affordable Rent and Shared Ownership	
<b>F1</b>	<b>System Types</b>	The following system types shall be installed depending on building type/use, see sections <a href="#">F1.1</a> - <a href="#">F1.6</a>	
<b>F1.1</b>	<b>Retirement Housing Inc Extra Care Locations (Timber Frame and/or Externally Clad – Higher Risk)</b>	<b>Dwellings *BS 5839-6:2019</b>	<b>Communal *BS 5839-1:2017</b>
		<b>Grade D1 / Category LD1</b> <ul style="list-style-type: none"> <li>Smoke detector in dwelling lobby.</li> <li>Smoke detector in dwelling living room.</li> <li>Smoke detector in dwelling bedrooms.</li> <li>Smoke detector in store rooms and cupboards.</li> <li>Heat detector in kitchen.</li> <li>Multi sensor (Heat/Smoke) detector should be installed in living room at close proximity of the kitchen if the dwelling has an open plan kitchen/lounge instead of the heat alarm in the kitchen.</li> <li>All smoke and heat alarms need to be interlinked within the dwelling.</li> <li>Detectors to be linked to the Category L2 Grade A System.</li> <li>Low-level wall mounted test and hush switches connected to local automatic fire detection system.</li> <li>No detection installed to bathrooms or WC.</li> </ul>	<b>Category L1 Grade A</b> <ul style="list-style-type: none"> <li>Full Coverage including cupboards greater than 1m<sup>2</sup> and void spaces of 800mm and above.</li> <li>Smoke detectors must be installed to all communal areas: corridors, stairways, lounges.</li> <li>Additional detection added near window frames</li> <li>Smoke detectors must be installed to all offices, gyms, activity rooms, hair salons, games rooms.</li> <li>Smoke detectors must be installed to all lift shafts, electric meter cupboards, cleaners' cupboards.</li> <li>Heat detectors must be installed to all plant rooms.</li> <li>Heat detectors must be installed to all commercial / communal kitchens and kitchenettes.</li> <li>Multi-sensor (Heat/Smoke) must be installed to laundry room.</li> <li>No detection installed to any communal bathrooms or WC.</li> <li>Fire alarm control panels for the communal System should be addressable, giving an exact location description of the activation with an adequate and accurate zone plan fitted next to the control panel.</li> <li>Repeater panel should be installed to larger sites at an alternative entrance point, where there is more than one main entrance showing the state of the fire panel at the main entrance area.</li> <li>System to be linked to the ARC (Remote Monitoring) system and Cause and Effects written to alert site office/staff (pre-alert)</li> <li>System to have option of fire service control to aid with phased or full evacuation</li> </ul>
<b>F1.2</b>	<b>Retirement Housing Inc Extra Care Locations (Traditional Build and no External Cladding – Lower Risk)</b>	<b>Dwellings *BS 5839-6:2019</b>	<b>Communal *BS 5839-1:2017</b>
		<b>Grade D1 / Category LD2</b> <ul style="list-style-type: none"> <li>Smoke detector in dwelling lobby.</li> <li>Smoke detector in dwelling living room.</li> <li>Heat detector in kitchen.</li> <li>Multi sensor (Heat/Smoke) detector should be installed in living room at close proximity of the kitchen if the dwelling has an open plan kitchen/lounge instead of the heat alarm in the kitchen.</li> <li>All smoke and heat alarms need to be interlinked within the dwelling.</li> <li>Detectors to be linked to the Category L2 Grade A System.</li> <li>Low-level wall mounted test and hush switches connected to local automatic fire detection system.</li> <li>No detection installed to bathrooms or WC.</li> </ul>	<b>Category L1 Grade A</b> <ul style="list-style-type: none"> <li>Full Coverage including cupboards greater than 1m<sup>2</sup> and void spaces of 800mm and above.</li> <li>Smoke detectors must be installed to all communal areas: corridors, stairways, lounges.</li> <li>Smoke detectors must be installed to all offices, gyms, activity rooms, hair salons, games rooms.</li> <li>Smoke detectors must be installed to all lift shafts, electric meter cupboards, cleaners' cupboards.</li> <li>Heat detectors must be installed to all plant rooms.</li> <li>Heat detectors must be installed to all commercial / communal kitchens and kitchenettes.</li> <li>Multi-sensor (Heat/Smoke) must be installed to laundry room.</li> <li>No detection installed to any communal bathrooms or WC.</li> <li>Fire alarm control panels for the communal System should be addressable, giving an exact location description of the activation with an adequate and accurate zone plan fitted next to the control panel.</li> <li>Repeater panel should be installed to larger sites at an alternative entrance point, where there is more than one main entrance showing the state of the fire panel at the main entrance area.</li> <li>System to be linked to the ARC (Remote Monitoring) system and Cause and Effects written to alert site office/staff (pre-alert)</li> <li>System to have option of fire service control to aid with phased or full evacuation</li> </ul>

<p><b>F1.3</b></p>	<p><b>Care Homes</b></p> <p><u>Dwellings *BS 5839-6:2019</u></p> <ul style="list-style-type: none"> <li>No dwelling detection required in rooms the communal L1 system to provide</li> </ul>	<p><u>Communal *BS 5839-1:2017</u></p> <p><b>Category L1 Grade A</b></p> <ul style="list-style-type: none"> <li>Full Coverage including cupboards greater than 1m<sup>2</sup> and void spaces of 800mm and above.</li> <li>Smoke detectors must be installed to all communal areas: corridors, stairways, lounges.</li> <li>Smoke detectors must be installed to all offices, gyms, activity rooms, hair salons, games rooms.</li> <li>Smoke detectors must be installed to all lift shafts, electric meter cupboards, cleaners' cupboards.</li> <li>Heat detectors must be installed to all plant rooms.</li> <li>Heat detectors must be installed to all commercial / communal kitchens and kitchenettes.</li> <li>Multi-sensor (Heat/Smoke) must be installed to laundry room.</li> <li>No detection installed to any communal bathrooms or WC.</li> <li>Fire alarm control panels for the communal System should be addressable, giving an exact location description of the activation with an adequate and accurate zone plan fitted next to the control panel.</li> <li>Repeater panel should be installed to larger sites at an alternative entrance point, where there is more than one main entrance showing the state of the fire panel at the main entrance area.</li> <li>Communal system extends into all resident rooms providing the full cover.</li> </ul> <ul style="list-style-type: none"> <li>System to be linked to the ARC (Remote Monitoring) system and Cause and Effects written to alert site office/staff (pre-alert)</li> <li>System to have option of fire service control to aid with phased or full evacuation</li> </ul>
<p><b>F1.4</b></p>	<p><b>General Needs (Timber Frame and/or Externally Clad – Higher Risk)</b></p> <p><u>Dwellings *BS 5839-6:2019</u></p> <p><b>Grade D1 / Category LD1</b></p> <ul style="list-style-type: none"> <li>Smoke detector in dwelling lobby.</li> <li>Smoke detector in dwelling living room.</li> <li>Smoke detector in dwelling bedrooms.</li> <li>Smoke detector in store rooms and cupboards.</li> <li>Heat detector in kitchen.</li> <li>Multi sensor (Heat/Smoke) detector should be installed in living room at close proximity of the kitchen if the dwelling has an open plan kitchen/lounge instead of the heat alarm in the kitchen.</li> <li>All smoke and heat alarms need to be interlinked within the dwelling.</li> <li>Detectors to be linked to the Category L2 Grade A System.</li> <li>Low-level wall mounted test and hush switches connected to local automatic fire detection system.</li> <li>No detection installed to bathrooms or WC.</li> </ul>	<p><u>Communal *BS 5839-1:2017</u></p> <p><b>Category L1 Grade A</b></p> <ul style="list-style-type: none"> <li>Full Coverage including cupboards greater than 1m<sup>2</sup> and void spaces of 800mm and above.</li> <li>Smoke detectors must be installed to all communal areas: corridors, stairways, lounges.</li> <li>Additional detection added near window frames</li> <li>Smoke detectors must be installed to all offices, gyms, activity rooms, hair salons, games rooms. (if applicable)</li> <li>Smoke detectors must be installed to all lift shafts, electric meter cupboards, cleaners' cupboards.</li> <li>Heat detectors must be installed to all plant rooms.</li> <li>Heat detectors must be installed to all commercial / communal kitchens and kitchenettes.</li> <li>Multi-sensor (Heat/Smoke) must be installed to laundry room.</li> <li>No detection installed to any communal bathrooms or WC.</li> <li>Fire alarm control panels for the communal System should be addressable, giving an exact location description of the activation with an adequate and accurate zone plan fitted next to the control panel.</li> <li>Repeater panel should be installed to larger sites at an alternative entrance point, where there is more than one main entrance showing the state of the fire panel at the main entrance area.</li> <li>System to be linked to the ARC (Remote Monitoring) system and Cause and Effects written to alert site office/staff (pre-alert)</li> <li>System to have option of fire service control to aid with phased or full evacuation</li> </ul>
<p><b>F1.5</b></p>	<p><b>General Needs (Purpose Built Block of Flats)</b></p> <p><u>Dwellings *BS 5839-6:2019</u></p> <p><b>Grade D1, LD2 with upgrades</b></p> <ul style="list-style-type: none"> <li>Smoke detector in dwelling lobby.</li> <li>Smoke detector in dwelling living room.</li> <li>Smoke detector in all dwelling bedrooms.</li> <li>Heat detector in kitchen.</li> <li>Multi sensor (Heat/Smoke) detector should be installed in living room at close proximity of the kitchen if the dwelling has an open plan kitchen/lounge instead of the heat alarm in the kitchen.</li> <li>All smoke and heat alarms need to be interlinked within the dwelling.</li> <li>Low-level wall mounted test and hush switches connected to LD2 detection system.</li> <li>No detection installed to bathrooms or WC.</li> </ul>	<p><u>Communal *BS 5839-1:2017</u></p> <p><b>Category L2 Grade A</b></p> <ul style="list-style-type: none"> <li>Smoke detectors must be installed to all communal areas: corridors, stairways, and shared spaces</li> <li>Smoke detectors must be installed to all offices, gyms, activity rooms, hair salons, games rooms. (if applicable)</li> <li>Smoke detectors must be installed to all lift shafts, electric meter cupboards, cleaners' cupboards.</li> <li>Heat detectors must be installed to all plant rooms.</li> <li>Multi-sensor (Heat/Smoke) must be installed to laundry room.</li> <li>No detection installed to any communal bathrooms or WC.</li> <li>Communal system extends into all flat lobbies with a single multi -sensor (Heat/Smoke) detector.</li> <li>Communal system includes all leaseholder flats without exception.</li> <li>Fire alarm control panels for the communal System should be addressable, giving an exact location description of the activation with an adequate and accurate zone plan fitted next to the control panel.</li> <li>Repeater panel should be installed to larger sites at an alternative entrance point, where there is more than one main entrance showing the state of the fire panel at the main entrance area.</li> <li>System to be linked to the ARC (Remote Monitoring) system</li> <li>System to be silent with option of fire service control to aid with phased or full evacuation</li> </ul>

F1.6	<b>General Needs – Simultaneous Evacuation (Non-Purpose Built Block of Flats)</b>	
	<b>Dwellings *BS 5839-6:2019</b>	<b>Communal *BS 5839-1:2017</b>
	<p><b>Grade D1, LD2</b></p> <ul style="list-style-type: none"> <li>Smoke detector in dwelling lobby.</li> <li>Smoke detector in dwelling living room.</li> <li>Heat detector in kitchen.</li> <li>Multi sensor (Heat/Smoke) detector should be installed in living room at close proximity of the kitchen if the dwelling has an open plan kitchen/lounge instead of the heat alarm in the kitchen.</li> <li>All smoke and heat alarms need to be interlinked within the dwelling.</li> <li>Low-level wall mounted test and hush switches connected to LD2 detection system.</li> <li>No detection installed to bedrooms, bathrooms or WC.</li> </ul>	<p><b>Category L2</b></p> <ul style="list-style-type: none"> <li>Smoke detectors must be installed to all communal areas: corridors, stairways, and shared spaces</li> <li>Smoke detectors must be installed to all offices, gyms, activity rooms, hair salons, games rooms. (if applicable)</li> <li>Smoke detectors must be installed to all lift shafts, electric meter cupboards, cleaners' cupboards.</li> <li>Heat detectors must be installed to all plant rooms.</li> <li>Multi-sensor (Heat/Smoke) must be installed to laundry room.</li> <li>No detection installed to any communal bathrooms or WC.</li> <li>Communal system extends into all flat lobbies with a single multi-sensor (Heat/Smoke) detector and sounder.</li> <li>Communal system includes all leaseholder flats without exception.</li> <li>Fire alarm control panels for the communal System should be addressable, giving an exact location description of the activation with an adequate and accurate zone plan fitted next to the control panel.</li> <li>Repeater panel should be installed to larger sites at an alternative entrance point, where there is more than one main entrance showing the state of the fire panel at the main entrance area.</li> <li>System to be linked to the ARC (Remote Monitoring) system</li> </ul>
<b>F2</b>	<b>Equipment</b>	<p>All Grade A Category LD1 and LD2 systems should be based on a Protec 6500 Series Panel. The fire alarm system will be based on the Protec 6000plus protocol smoke detectors and field devices.</p> <p>All Grade D1 Category LD1 and LD2 systems should be based on the Aico 3000 series and in some cases will require the use of an Aico system interface.</p>
<b>F3</b>	<b>System Interfacing</b>	As with many purpose built blocks of flats, additional systems are installed that either operate as part of the fire protection system directly or are required to operate a specific way in the event of a fire to reduce fire spread and decrease risk of injury or fatalities.
<b>F4</b>	<b>Drawings</b>	On completion of every project. Great Places will require a physical zone chart placing alongside the fire panel. In addition we require the same in electronic format, and detailed 'as installed' drawings created for every installation. These drawings must be taken into account when pricing for these works.
<b>F5</b>	<b>System Definitions</b>	
<b>F5.1</b>	<b>Category LD1</b>	A system installed throughout the self-contained flat, incorporating detectors in all circulation areas that form part of the escape routes from the premises, and in all rooms and areas, other than those with negligible sources of ignition, such as toilets, bathrooms and shower rooms.
<b>F5.2</b>	<b>Category LD2</b>	A system installed throughout the self-contained flat, incorporating detectors in all circulation areas that form part of the escape routes from the premises.
<b>F5.3</b>	<b>Grade A Category L Systems</b>	<p>A fire detection and alarm system which incorporates control indicating equipment (CIE) in the form of a main control panel. It is expected that the following are included:</p> <p>A Grade A system can be installed with some very minor exceptions to the standards detailed in BS 5839-1:2017. These are the responsibility of the chosen designer/installer and any minor exceptions must be relayed to Great Places Housing Association for authorisation. With exceptions in place, the fundamental compliance with British Standards must remain.</p> <p>The following are expected to be included as part of all Grade A Category L System:</p> <p>Clause 20 identifies the need in certain circumstances, to provide the remote transmission of alarm signals beyond the property of origin. It identifies the 'tailored assistance' required for sheltered housing schemes.</p> <p>Additionally, transmission to the ARC from the individual flat systems should also be considered, resulting in a mixed system being installed.</p> <p>N.B. BS 7671:2018 18th Edition IET wiring regulations state that all cabling systems and conduits in escape routes must be adequately secured in accordance with Chapter 42 regulation 422.2.1 to ensure that they do not entangle persons in the event of a fire. In addition, the only accepted systems are those resisting mechanical damage likely to occur during evacuation for example.</p>
<b>F5.4</b>	<b>Category L1</b>	This is the most comprehensive fire alarm system, which features detectors in all areas of a building where a fire could feasibly start. Detectors are linked up to a centralised alarm system. This alerts the whole building should a fire break out.
<b>F5.5</b>	<b>Category L2</b>	Fire alarm systems that fall into this category feature smoke detectors in all rooms that form part of an escape route, including corridors. Detectors also need to be installed in all high-risk rooms, such as kitchens, boiler rooms and areas with heavy plant machinery.

## ER Version 18: ADDENDUM H: Electric Gates Specification

Addendum H		Affordable Rent and Shared Ownership
<b>H1.0</b>	<b>General Requirements</b>	Electric gates shall be of sliding type only, unless otherwise agreed with the Employer.
H1.1	Access	Access gates shall integrate into the KMS Door Entry System (see <a href="#">Addendum G: Door Entry System</a> ). This may be in the form of a KMS shark-tooth fob or via a KMS RF transmitter: Radio/Proximity Transmitter. Access gates/barriers shall have a suitable override key-switch matched to the Employer's system (euro cylinder type), the contractor shall liaise with the Employer's Lock contractor FLK (see details below), This cost shall be fully inclusive. Gates shall allow for emergency service access.
H1.2	Egress	Egress shall be provided via a ground induction loop allowing free-egress
H1.3	Signage	As a minimum all systems shall include safety signage to warn of automatic operation, Pedestrian routes & speed limit. Any pedestrian access shall have suitable & sufficient signage to clearly signify the pedestrian access route from both an entrance & egress perspective.
H1.4	Vandal Resistance	All equipment selected shall be of an antivandal design (e.g.: suitable anti vandal covers to be fitted to all 4 units (e.g. BFT AV30 covers).
H1.5	Finish/Paint	All components shall be suitably coloured & powder coated where suitable to an agreed RAL colour specified by the Employer.
<b>H2.0</b>	<b>Control &amp; Safety Measures</b>	The Contractor shall pay particular attention to the safety in use of electrically operated external gates. Reference shall be made to the Health and Safety Executive Safety Bulletin Number FOD WSW 1-2010 dated 26th February 2010. See HSE website: <a href="http://www.hse.gov.uk/safetybulletins/electricgates.htm">http://www.hse.gov.uk/safetybulletins/electricgates.htm</a>  In particular, the Contractor and designer shall undertake a suitable and sufficient risk assessment to identify any hazards and associated risks to persons using the gates. As a minimum the following control measures shall apply;
H2.1	Risk of Impact	Two pairs of photocells shall be fitted either side of the gate to prevent impact, dragging and crushing.  All photocells shall be suitably sited & sufficiently protected from vandalism, anti-vandal housing shall be fitted that allow safe operation. All photocells shall be suitably mounted on heavy duty anti-vandal posts. Bespoke anti-vandal covers are likely to be the viable option. Installation of a pressure edge shall be provided where appropriate. All safety edges shall cover the full width of the gate.  A suitable pulsing beacon shall be provided to further highlight movement, however in the terms of domestic gates this may need to be considered as not appropriate and an alternative method considered.
H2.2	Pedestrian Hazards	Segregated pedestrian access must be deemed suitable & sufficient with physical barriers & warnings to ensure it is clear, safe & adhered to.  The Contractor shall provide suitable & sufficient fencing, barriers or posts to segregate vehicles and pedestrians. The gate & housing shall be constructed so as not to allow any gap/area where a pedestrian could gain access through. Any areas that present hazards shall be suitably protected with fencing, barriers, bollards or other suitable guarding.  Where required by Secure by Design, Anti-climb 358 Mesh Fencing shall be installed with a minimum of 4mm wires resistance welded into 76.2mm (3") x 12.7mm (1/2") rectangles making a solid steel mesh panel. Finish shall be Galvanised to B.S EN ISO 1461 or Polyester Powder Coated to a colour agreed with the Employer.
H2.3	Fireman's Drop Key Switch	Gates shall allow for emergency service access.  Fireman's Drop Key Switch: A Fireman's drop key switch shall be provided at the controlled entrance. The fireman's switch shall be of the FS5 pattern to differentiate it from the lift switch of similar construction. FS4 type switches shall not be acceptable.

<b>H3.0 Road Markings</b>	<p>Suitable road markings shall be provided, indicating vehicle only access together with suitable &amp; sufficient yellow hatching to show cars not to stop in the footprint of the gate” in the form of yellow hatching with “no stopping” or “keep clear”.</p> <p>Suitable &amp; Sufficient road markings shall be clearly marked to indicate a safety area, including stop line for sliding gates. If applicable, alternative gate types shall be provided with yellow hatched areas as necessary.</p> <p>Any pedestrian access shall have suitable &amp; sufficient pavement markings clearly to signify that the route is suitable for pedestrian access.</p>
<b>H4.0 System Requirements</b>	<p>The Contractor shall supply and fit all components and installation materials necessary to complete and make the gate entry system work fully integrated with the Door Entry System.</p> <p>Equipment shall be as manufactured by BFT, or equal and approved by the Employer, with integrated KMS proximity access control and supplied &amp; installed as a complete working system.</p> <p>All barriers shall be fitted with an integrated pre-programmed KMS 10,000 capacity SimpleKey controller. The KMS controller shall be connected to the KMS Hosting Cloud via a KMS GPRS Modem connected to the controller for administration at: The Building Safety Department</p> <p>The KMS controller shall be connected to a GPRS modem and shall use a contract Vodafone data only SIM card (SIM card shall be provided by the Employer on request, the Contractor shall fit and connect on site). The KMS equipment shall be integrated within an appropriate enclosure. Where controllers are required as satellite boxes these shall be fitted in Sarel IP66 boxes with a Sarel hasp and staple and fitted with the KA1 IFAM lock. Cabinet shall also be fitted with a trifoliate label “fob Equipment”. All KMS controllers shall be supplied by the door entry equipment manufacturer.</p> <p>All system controllers shall have new Shark tooth tokens colour coded to the Employer's standard supplied via Entrotec pre-programmed into the controller and on the KMS SimpleKey Web System cloud.</p>
<b>H5.0 British Standards</b>	<p>Gates shall meet the relevant current standards, including:</p> <ul style="list-style-type: none"> <li>• BS EN 13241-1 the Product Standard for powered doors and gates (and most relevant to the CPR)</li> <li>• BS EN 12604 &amp; BS EN 12605 on mechanical requirements and tests</li> <li>• BS EN 12453 &amp; BS EN 12445 on requirements and test for powered gates</li> <li>• BS EN 12635 on installation and use</li> <li>• BS EN 12978 on safety devices for power operated doors and gates</li> <li>• BS EN 60335-2-103 on drives for household and similar gates</li> <li>• BS EN 60335-2-95 on drives for residential vertically moving garage doors</li> </ul>

## Revisions

Version	Date	Clause		Revision in <b>Principal Contractor (Affordable Rent)</b> specification	Revision in <b>Principal Contractor (Shared Ownership)</b> specification
Version 15	Nov-17	All		Complete update, see changes tracker document.	
Version 15.1	Mar-19	All		Addition of Shared Ownership & Sales specification to ER's, format changed from Word to Excel.	Addition of Shared Ownership & Sales specification to ER's, format changed from Word to Excel.
		12.1	External Doors	Clarification glazed uPVC patio doors are accepted.	Clarification glazed uPVC patio doors are accepted.
		13.3.5	Wall Tiling	Wall tiling to min. 760mm above cooker space.	N/A
		20.7	Boiler Programmer	Updated to meet boiler plus legislation. Neomitis RT7PLUS added.	Updated to meet boiler plus legislation. Neomitis RT7PLUS added.
		23.10	Turf	Clarity that trees, shrubs and turf that does not take during the DLP shall be replaced by the Contractor.	Clarity that trees, shrubs and turf that does not take during the DLP shall be replaced by the Contractor.
		2.3	Design	Clause added for wet rooms in ground floor apartments and bungalows. Note this includes variations on the spec for the following clauses:	Clause added for wet rooms in ground floor apartments and bungalows. Note this includes variations on the spec for the following clauses:
		7.1	Internal Walls	changes effect future fittings in wet rooms (grab rails etc.).	changes effect future fittings in wet rooms (grab rails etc.).
		13.0	Skirting	changes effect use of mdf at floor level in wet rooms (mdf skirting not accepted).	changes effect use of mdf at floor level in wet rooms (mdf skirting not accepted).
		14.0	Misc. Fittings	changes effect shower curtains in wet rooms.	changes effect shower curtains in wet rooms.
		15.3.2	Wall finishes	changes effect wall tiling in wet rooms.	changes effect wall tiling in wet rooms.
		16.2	Floor Coverings: Vinyl	changes effect vinyl floors in wet rooms.	changes effect vinyl floors in wet rooms.
21.4.2	Plumbing: Pipe Boxing	changes effect material/type of boxings in wet rooms.	changes effect material/type of boxings in wet rooms.		
21.7.4	Plumbing: Wet Rooms	changes effect design/layout of the sanitary ware & shower, including specification of level access showers.	changes effect design/layout of the sanitary ware & shower, including specification of level access showers.		
Version 16	Nov-19	All		Complete update, see changes tracker document.	Complete update, see changes tracker document.
Version 16.1	Jan-21	18.1	Kitchen Fittings	No changes	Update to shared ownership kitchen ranges. Moores removed.
		18.2	Hob splashback	No changes	Symphony Plaza range removed. Added 'Splashback shall be full width of the hob'.
Version 17	Nov-22	All		Complete update, see changes tracker document. Addition of full Apartments specification.	Complete update, see changes tracker document. Addition of full Apartments specification.
Version 18	Oct-23	All		Complete update, see changes tracker document.	Complete update, see changes tracker document.