

SECTION E – SPECIFICATION AND DECLARATIONS FOR PRODUCTS, SERVICES AND WORKS

E1 SPECIFICATION FOR PRODUCTS, SERVICES AND WORKS

E1.1 Introduction

You are invited to offer the provision of works for PVC-U Window and Door Products.

It is in your interest to read and consider the whole of this Offer Document (Volumes 1, 2 and 3) before preparing your offer

This Section E1 sets out the LHC technical and performance requirements for this framework arrangement.

In Section E2 you will be asked to confirm and verify conformity to requirements set out in this Section E1.

E1.2 Applications for which the framework arrangement will be used

The framework arrangement will be required for use in all types of housing and sheltered accommodation, and also for estates modernisations, conversions, rehabilitation and small replacement work. Although targeted at residential properties, it may also be required, where appropriate, in schools and other types of public sector buildings of a residential character.

E1.3 Scope of LHC requirements

The provision of PVC-U Window and Door Products which conform to the requirements listed within Section E1.

E1.4 Use of Measures or Actions provided by a Separate LHC Appointed Company or Companies.

In order to ensure that LHC is able to offer its members fully evaluated components and services and an effective validation service, where tenderers are invited to make proposals to deliver measures and actions to Call-off Projects for LHC Members under this framework arrangement that are included in a separate LHC framework arrangement or arrangements, this must be delivered by the Separate Appointed Company in strict accordance with the terms, conditions and specification of the related LHC framework arrangement, which has been procured in compliance with the public procurement legislation and directives.

Where an Appointed Company makes use of companies that have been appointed to the relevant related LHC framework arrangement, the procedure for forming a supply and or installation contract shall be as set out in Schedule 9.

E1.5 Regulation and Standards

The products and services offered shall be capable of complying, as a minimum, with all relevant British regulations and standards, or equal and approved European and International standards.

Unless specifically stated otherwise, any reference in this Offer Document to any Regulation or British or European Standard shall be read as referring to the most recent edition including all amendments current at the date of submission of offers.

For brevity, reference is generally made within this Offer Document to compliance with Building Regulations for use in England. However, it shall be deemed that all Building Regulations requirements, together with Building Regulations references – and all other regulatory conformity – shall be to that which is pertinent to the geographical area of application.

Attention is drawn to the following:

The Council of the European Communities:

Directive 2002/91/EC	Energy Performance of Buildings
Directive 2004/18/EC	Procedures for the award of public works contracts, public supply contracts and public service contracts
Directive 2006/32/EC	Energy end-use efficiency and energy services
Directive 2007/66/EC	Remedies
Reg No 305/2011	Construction Products Regulation 2011
Reg No 995/2010	EU Timber Regulation 2010

Building Regulations England and Wales:

Approved Document A	Structural safety
Approved Document B	Fire safety
Approved Document F	Ventilation
Approved Document J	Combustion appliances and fuel storage systems
Approved Document K	Protection from falling, collision and impact (will replace Part N: Glazing safety, in April 2013)
Approved Document L	Conservation of fuel and power
Approved Document M	Access to and use of buildings
Approved Document N	Glazing safety (Wales only from April 2013)
Approved Document Reg 7	Materials and workmanship

Building (Scotland) Regulations:

Technical Handbooks:

Section 0	General
Section 1	Structure
Section 2	Fire
Section 3	Environment
Section 4	Safety
Section 5	Noise
Section 6	Energy

Appendices A to C

Statutory Instruments:

SI 2006 No. 5	The Public Contracts Regulations 2006 Public Contracts (Scotland) Regulations 2012
SI 2007 No. 991	Energy Performance of Buildings (Certificates and Inspections) (England and Wales) Regulations 2007
SI 2009 No. 2992	The Public Contracts (Amendment) Regulations 2009 further amended by the Public Procurement (Miscellaneous Amendments) Regulations 2011.
SI 2011 No. 2053	Public Procurement (Miscellaneous Amendments) Regulations 2011
	The Construction (Design and Management) Regulations 2007 (CDM)
	The Equality Act 2010
	The Equality Act (Disability) Regulations 2010

International, European and British Standards:

Attention is drawn to the following, which is not exhaustive:

BS EN ISO 9000	Quality management systems. Fundamentals and vocabulary
BS EN ISO 9001	Quality management systems. Requirements
BS 952-1	Glass for glazing Part 1: Classification
BS 952-2	Glass for glazing Part 2: Terminology for work on glass
BS 4255-1	Rubber used in preformed gaskets for weather exclusion from buildings. Specification for non-cellular gaskets
BS 6100	Glossary of building and civil engineering terms
BS 6206	Specification for impact performance requirements for flat safety glass and safety plastics for use in buildings
BS 6262 (all parts)	Glazing for buildings
BS 6262-4	Glazing for buildings. Code of practice for safety related to human impact
BS 6375-1	Performance of windows and doors. Classification for weathertightness and guidance on selection and specification
BS 6375-2	Performance of windows. Specification for operation and strength characteristics and guidance on selection and specification
BS 6375-3	Performance of windows and doors. Classification for additional performance characteristics and guidance on selection and specification
BS 7412	Specification for windows and doorsets made from unplasticized polyvinyl chloride (PVC-U) extruded hollow profiles
BS 7950	Specification for enhanced security performance of windows for domestic applications (<i>replaced by PAS 24:2012</i>)
BS 8000-0	Workmanship on building sites – Introduction and general principles
BS 8000-7	Workmanship on building sites – Code of practice for glazing
BS 8000-16	Workmanship on building sites – Code of practice for sealing joints in buildings using sealants
BS 8213-1	Windows, doors and rooflights – Design for safety in use and during cleaning of windows, including door-height windows and roof windows – Code of practice

BS 8213-4	Windows, doors and rooflights – Code of practice for the survey and installation of windows and external doorsets
BS 8220-1	Guide for security of buildings against crime. Dwellings
BS EN 1026	Windows and doors. Air permeability. Test method
BS EN 1027	Windows and doors. Watertightness. Test method
BS EN 1096 (all parts)	Glass in building. Coated glass
BS EN 1279 (all parts)	Glass in buildings. Insulating glass units
BS EN 1627	Pedestrian doorsets, windows, curtain walling, grilles and shutters. Burglar resistance. Requirements and classification
BS EN 1628	Pedestrian doorsets, windows, curtain walling, grilles and shutters. Burglar resistance. Test method for the determination of resistance under static loading
BS EN 1629	Pedestrian doorsets, windows, curtain walling, grilles and shutters. Burglar resistance. Test method for the determination of resistance under dynamic loading
BS EN 1630	Pedestrian doorsets, windows, curtain walling, grilles and shutters. Burglar resistance. Test method for the determination of resistance to manual burglary attempts
BS EN 1670	Building hardware. Corrosion resistance. Requirements and test methods
BS EN 1863 Parts 1 and 2	Glass in buildings. Heat strengthened soda lime silicate glass
BS EN 1991-1-4	Eurocode 1. Actions on structures. General actions. Wind actions.
BS EN 12150 Parts 1 and 2	Glass in building. Thermally toughened soda lime silicate safety glass
BS EN 12207	Windows and doors. Air permeability. Classification
BS EN 12208	Windows and doors. Watertightness. Classification
BS EN 12209	Building hardware. Locks and latches. Mechanically operated locks, latches and locking plates. Requirements and test methods.
BS EN 12210	Windows and doors. Resistance to wind load. Classification
BS EN 12211	Windows and doors. Resistance to wind load. Test method
BS EN 12337 Parts 1 and 2	Glass in building. Chemically strengthened soda lime silicate glass
BS EN 12365 (all parts)	Building hardware – Gasket and weatherstripping for doors, windows, shutters and curtain walling.
BS EN 12519	Windows and pedestrian doorsets - Terminology
BS EN 12600	Glass in building. Pendulum test. Impact test method and classification for flat glass
BS EN 12608	Unplasticised polyvinylchloride (PVC-U) profiles for the fabrication of windows and doors. Classification, requirements and test methods (<i>under revision</i>)
BS EN 13024 Parts 1 and 2	Glass in building. Thermally toughened borosilicate safety glass.
BS EN 13126 (all parts)	Building hardware. Requirements and test methods for windows and doors height windows / balcony doors
BS EN 14178 Parts 1 and 2	Glass in building. Basic alkaline earth silicate glass. Float glass
BS EN 14179 Parts 1 and 2	Glass in building. Heat-soaked thermally-toughened soda lime silicate safety glass
BS EN 14321 Parts 1 and 2	Glass in building. Thermally toughened alkaline earth silicate safety glass

BS EN 14351-1	Windows and doors. Product standard, performance characteristics. Windows and external pedestrian doorsets without resistance to fire and/or smoke leakage characteristics
BS EN 14449	Glass in building. Laminated glass and laminated safety glass. Evaluation of conformity/product standard
BS EN ISO 9227	Corrosion tests in artificial atmospheres. Salt spray tests.
BS EN ISO 10077 Parts 1 and 2	Thermal performance of windows, doors and shutters. Calculation of thermal transmittance.
PAS 23-1	General performance requirements for door assemblies. Single leaf, external door assemblies to dwellings (<i>replaced by PAS 24:2012</i>)
PAS 24	Enhanced security performance requirements for doorsets and windows in the UK. External doorsets and windows intended to offer a level of security suitable for dwellings and other buildings exposed to comparable risk.

Other references and standards

BES 6001 (BRE)	Responsible Sourcing of Construction Products.
BS OHSAS 18001	Occupational Health and Safety Management Systems. Requirements.

E1.6 Evaluation of products and services offered

E1.6.1 Products

The evaluation of products will be carried out on the basis of responses given by tenderers in Sections E2 and E3 and the result of the inspection set out in E3.3.

The Sponsoring Officer may, at his discretion, reject any or all of the products offered by a company if evaluation and any subsequent testing of representative specimens of the products offered by the company shows that any product fails to conform to the requirements of Section E.

The Sponsoring Officer reserves the right to request the application of other evaluation procedures and the submission of other specimens, performance verification and third party accreditation, if necessary, to verify the requirements of any products and services offered in your submission.

E1.6.2 Services

The evaluation of services will be carried out on the basis of responses given by tenderers in Sections E2 and E3.

E1.7 Permitted modifications to meet LHC requirements

Tenderers are recommended to study carefully the requirements of this Section E1 and to decide whether any modifications to their products will be necessary in order for them to comply.

The selected company may be permitted to make minor modifications to any offered item in the light of the Sponsoring Officer's evaluation, if this is found to be necessary to ensure that the item will comply with LHC requirements and if the modification can be satisfactorily incorporated prior to the start of the framework arrangement period but such modification may be made only with the Sponsoring Officer's approval and without alteration to the price offered for that item in Section

F of this document.

E1.8 Maintaining the agreed specification

Throughout the operation of the framework, the framework arrangement components and services must satisfy the performance requirements set out in this Section E. The products must be consistent in quality and appearance must be obtained from reliable sources and must conform to the specification as agreed between the Sponsoring Officer and the appointed company. Deviations from this specification will be permitted only after written approval from the Sponsoring Officer, who at his sole discretion, may require additional testing; the cost of which is to be borne by the appointed company if a characteristic of major importance is likely to be affected.

In Section E2.4 you are required to give your formal acceptance of these terms and conditions.

E1.9 Consistency of project delivery

It is essential that you, the tenderer, fully recognize the importance of being able to provide and maintain a fully compliant (with this Section E1) project delivery service consistently throughout all areas you have applied to service.

Please note that any failure to maintain this required consistency whilst servicing the framework arrangement may result in your company's suspension or exclusion from it.

In Section E2.5, you will be asked to confirm your ability to undertake this requirement.

E1.10 Changes during the framework arrangement period

The appointed company will be required to give reasonable notice to the Sponsoring Officer of the introduction or withdrawal of any product, material or service. A reasonable period must also be allowed between the time when no further orders are accepted for a particular item and the time when that item ceases to be available, in order to give adequate continuity on projects for which that item has already been ordered.

In Section E2.7 you are required to give periods of notice of changes which may occur during the arrangement.

If, during the course of the framework arrangement, the appointed company requests a change of supplier for any component or product, which necessitates an exercise of due diligence to be repeated by LHC subsequent to the tender evaluation, LHC reserves the right to invoice the appointed company for additional expenses of travel, accommodation and time incurred as part of each additional assessment.

E1.11 Updating of product accreditation

During the course of this arrangement, it is likely there will be the publication of relevant new product, testing and specification standards together with the revision and withdrawal of existing, which will affect the range of products falling within the scope of this Section E1. These will comprise both national (BS) and European (EN)

standards. Likewise, existing third party accreditation schemes will be updated and new ones introduced.

It will be a condition of this arrangement that appointed companies shall undertake to update all conformity and third party accreditation within a reasonable period of time following implementation, as determined by the Sponsoring Officer.

E1.11.1 CE Marking to harmonized standards

From July 2013, products marketed within the UK, and covered by a European harmonized standard, must be CE marked in accordance with the Construction Products Regulation. BS EN 14351-1 is the harmonized standard for doors and windows and relates to performance characteristics.

BS 6375 is the National Application Document for the UK and gives performance requirements and guidance for the selection of appropriate classes of performance drawn from BS EN 14351-1.

All products offered, which are covered by a European harmonized standard, shall have the CE mark and accompanying information affixed in accordance with the Construction Products Regulation 2011 (CPR) – i.e. placed on the product itself, on a label attached to it, on its packaging, or on the accompanying commercial documents.

E1.11.2 Product standards for security

BS ENs 1627 to BS EN 1630 relating to burglar resistance are referenced within BS EN 14351-1. For enhanced security requirements, LHC references BS PAS 24: 2012, which replaces PAS 23 and BS 7950.

E1.11.3 Building Regulations

References are made within Sections E1 and E2 to Building Regulations conformity. Whilst these are mainly taken from requirements within the Building Regulations for England and Wales, companies tendering to service this arrangement in Scotland should ensure the equivalent conformity to the requirements within the Building (Scotland) Regulations and to any changes that may be introduced within the Building Regulations for Wales as a result of the transfer of functions.

It is also likely that revisions to the Building Regulations will be implemented during the life of this arrangement. Appointed companies shall be expected to have exercised sufficient preparations to enable full conformity when any revisions come into effect.

It is important to note that Building Regulations conformity must be to those which are applicable at the point of application.

E1.12 Product, performance and specification requirements

The provision of LHC evaluated PVC-U window and door products is a mandatory requirement for this proposed arrangement.

All window and door products offered, including their constituent materials and parts, shall satisfy the requirements set out in this Section E1 and shall have characteristics of mechanical strength, dimensional stability and durability appropriate for their intended use.

E1.12.1 Products shall be factory assembled, fully finished and inclusive of all hardware. Glazing units may be supplied fitted to, or accompanying, the product.

E1.12.2 If, during the period of this framework arrangement, the range of product types falling within the scope of standards mentioned within E1 should be extended, or applicable standards are updated or superseded, then it will be expected the appointed companies would ensure additional product conformity and third party accreditation within a reasonable period of time, as determined by the Sponsoring Officer.

E1.12.3 Third party (UKAS accredited) product and performance accreditation (e.g. BSI Kitemarking, BM TRADA Q Mark) certifying conformity to the standards as mentioned in Section E1 will be required where appropriate and full schedules are to be forwarded as part of your tender submission.

In Clause E2.2.3, you will be asked to confirm your acceptance of this requirement.

E1.13 Specification for product

E1.13.1 Product requirements and conformity

The PVC-U window and door products offered, including their constituent materials, parts and manufacture, shall specifically meet the requirements identified in E1.13.1.1 to E1.13.1.3 taking account of the updating conditions stated in E1.11.

E1.13.1.1 PVC-U windows and doors shall meet the performance requirements set out within BS EN 14351-1, and be CE marked to the appropriate characteristics listed within the harmonized standard to conform with the legal trading requirement of the Construction Products Regulation (see E1.11.1).

E1.13.1.2 PVC-U windows and doors that fall within the scope of BS 7412 shall be designed and manufactured to meet the requirements of this standard. The specifications for materials, components, requirements for design and requirements for workmanship for the manufacture of PVC-U windows and doors applicable to the UK, are given in BS 7412.

E1.13.1.3 Windows and doorsets providing enhanced security shall meet the requirements of BS PAS 24:2012 and be UKAS third party accredited for compliance to this Publically Available Specification. See also E1.13.4.

In Section E2.8, you will be asked to confirm conformity to the requirements within E1.13.1.

E1.13.2 Weather performance

Windows offered will need to meet a minimum 2000 Exposure Category as classified in BS 6375-1: 2009, Table 1, which is reproduced below.

Exposure Category			
	Air permeability	Water tightness	Resistance to wind load
800	Class 2	Class 3A	Class A2
1200	Class 2	Class 3A	Class A3
1600	Class 2	Class 5A	Class A4
2000	Class 2	Class 5A	Class A5
2000+	Class 2	Class 7A	Class AE

Doorsets offered will need to meet a minimum 800 Exposure Category:

Exposure Category			
	Air permeability	Water tightness	Resistance to wind
800 U	Class 0	Class 0	Class A2
*800 X	Class 1	Class 2A	Class A2
800	Class 2	Class 3A	Class A2
1200	Class 2	Class 3A	Class A3

*For door assemblies with accessible (low) thresholds

The exposure categories of windows and doors offered shall be declared where appropriate in Section E2. This declaration shall be supported by UKAS accredited third party certification.

The LHC U9 arrangement will allow users the opportunity of selecting higher levels of specification and performance when required. To meet the requirements of Part M of the Building Regulations and Section 4 of the Building (Scotland) Regulations, appointed companies are requested to consider the special exposure category for level threshold access at principal entrance doors, which may be generally as Category 800X.

E1.13.3 Energy efficiency

For applicable situations, as a minimum requirement, all window and door products shall be able to meet the energy efficiency provisions of the Building Regulations Part L / The Building (Scotland) Regulations Section 6 for both existing and new buildings.

U-value declarations shall be in accordance with BS 6375-3. Window Energy Ratings (WERs) should be certified by the British Fenestration Rating Council (BFRC).

FENSA registration, or an alternative approved form of Building Regulation compliance self-certification scheme, will be required of all appointed companies in

order to demonstrate their competence to manufacture and install window and door assemblies in compliance with the Building Regulations.

Note:

As a public sector specifier involved largely in housing stock refurbishment contracts, LHC has for a number of years favoured the BFRC Window Energy Ratings declaration form of Building Regulations compliance.

E1.13.4 Security

All windows offered shall comply with the **basic security requirements** for security given in BS 7412, Clause 10.1.

Some of the window and door products offered, or alternatively a modified version of the same products offered, will be required to achieve **enhanced security performance**. These shall be tested and classified in accordance with PAS 24:2012 by third party accreditation. See Note below

BS ENs 1627 to BS EN 1630 may also be referenced in conjunction with PAS 24.

Refer also to the recommendations of BS 8220, 'Guide for security against crime'.

Certification of conformity to Secured by Design is commonly required by LHC clients and is therefore considered preferential in the offer of this arrangement.

Note:

PAS 24:2012 was published by BSI in August 2012 and replaced PAS 24:2007, BS 7950 and PAS 23-1; all of which are now subsequently withdrawn.

You are asked in Section E2.8.4 to declare all PAS 24:2012 enhanced security third party accreditation for your products.

LHC recognizes there is a period of co-existence with the updating of third party accreditation to the PAS 24:2012 but would wish to be satisfied that certification for enhanced security products will be updated expediently, if not already in place.

In Section E2.8.4.3 you are asked to provide any details of your enhanced security certification and timetable to establishing PAS 24:2012 accreditation.

E1.14 Scope and requirements of products to be offered

E1.14.1 Products required and offered

The range of window and door types required for this framework arrangement is given at E1.14.2 and E1.14.3. Tenderers should note that the provision of windows and doors shown in E1.14.2 is considered as an Essential Requirement in qualifying for this framework arrangement, whilst it will be an advantage if the other window and door types listed in E1.14.3 are offered.

E1.14.2 Essential range of windows and doors required

PVC-U windows and doors will be required to meet the relevant Building Regulations / Building (Scotland) Regulations applicable for the location and purpose. Products presented below are considered as **Essential Requirements** to the arrangement.

- Sliding projecting casements
 - Side hung sliding projecting windows
 - Top hung sliding projecting windows
 - Fixed lights
 - Multi-light combinations of any of the above
- Tilt before turn range
 - Tilt before turn windows
 - Fixed lights
 - Multi light combination of both
- Top hung, fully reversible range
 - Top hung, fully reversible windows
 - Fixed lights
 - Multi-light combinations of any of the above
- Vertically sliding sashes
 - Fixed lights
 - Multi-light combinations of the above
- Single leaf hinged residential door range
 - Open-in residential doors
 - Open-out residential door

A comprehensive range of enhanced security options within all the above.

E1.14.3 Optional range of doors and windows

Products presented below are optional requirements to the arrangement. Tenderers not supplying these products will still be considered but may be disadvantaged in the pricing evaluation (within Section F2).

- Horizontal pivot range
 - Horizontal pivot windows
 - Fixed lights
 - Multi-light combinations of the above
- Patio door range
 - In-line
 - Tilt and slide
- Double leaf hinged external (French) door range
 - Open-in French doors
 - Open-out French doors

- Low rise curtain wall screening

A comprehensive range of enhanced security options within all the above.

E1.14.4 Product source

Windows and doors offered should be those currently manufactured by the tendering company or sourced from a manufacturer whose products are able to meet the requirements set out in this Section E1 (see also E1.10) and preferably with which the tenderer has at least 12 months trading experience.

Where a tenderer is unable to manufacture a particular range of window or door but would wish to offer the product type, then this may be sourced externally.

In Section E2.8.2 you are required to give full details of any product sourcing.

E1.14.5 Product accountability

Full details of the window and door products must be submitted with this tender and the appointed company will be ultimately responsible for the supply of the product. If the product is selected by the LHC, the manufacturer will be bound to the maximum agreed prices and level of specification. These may only be changed during the course of the arrangement with the prior approval of the Sponsoring Officer. If this requirement is not observed, LHC selection of the product will be deemed to have been automatically withdrawn.

You are required to declare the range and details of products you are offering in Section E2.

E1.14.6 Ancillary components

The system(s) offered shall also include a selection of ancillary components (couplers, sub-sills, extension profiles, etc) necessary for the installation of the units into new or existing openings.

E1.14.7 Additional products

A company appointed to this arrangement will be at liberty to offer to LHC clients additional window and door types and ancillary components which they currently market or intend to. It should be made clear that these will not form part of this tender selection criteria and will have no influence on the scoring process. Following appointment to the arrangement, LHC will subsequently evaluate nominated products and services for quality and best value, which will include the submission of prices and performance accreditation generally in accordance with the evaluation criteria used for such stand-alone LHC arrangements.

E1.15 Profile system supplier

E1.15.1 Accreditation

The system supplier should be accredited to BS EN ISO 9001 for manufacturing and management systems for profile production.

The system supplier should be supplying profiles conforming to the requirements of BS EN 12608 and third party accredited.

In this Section E there are also requirements of conformity with the following standards:

BS 7412 BS EN 14351-1 BS EN 6375-1 PAS 24

You, the windows and doors supplier, will be asked in E2 for proof of conformity with the above standards together with all relevant third party certification and test reports issued for the systems offered. The system supplier should provide copies of third party certification where appropriate (together with accompanying test reports) accredited to them for all window and door systems offered.

As referred to in Clause E1.11, it is probable that, during the period of this framework arrangement, changes will be implemented to the Building Regulations and relevant British / European standards. These will affect both you and your system supplier and an effective technical alliance with your system supplier in addressing such developments including providing the necessary technical support and advice for you and your customers will be expected.

As referred to in Clause E1.11.1, all products shall conform to the CE Marking requirements of the Construction Products Regulation 2011 (CPR) for which your system supplier shall provide full support including relevant conformity declarations.

E1.15.2 Environmental policy and sustainability

The effective implementation of an environmental policy is important to LHC and our customers. Interested companies' current approach to this was covered in some detail in the Pre-Qualification Questionnaire. It will be expected that the profile system supplier will have robust environmental policies and credentials in place including the commitment to have replaced lead and cadmium stabilisers within the PVC-U raw material, the recycling of post consumer PVC-U waste and the manufacture of profile using recycled material.

LHC will, during the operation of this U9 arrangement, give consideration to updating environmental and sustainability requirements being mindful of reference standards such as BES 6001 / OHSAS 18001.

You will be asked in Section E2.11.2, to submit your system supplier's sustainability policy, achievements and future agenda.

E1.15.3 System supplier's undertaking

In addition to the above requirements, written confirmation is required from your system supplier(s) at Clauses E2.11.3 and E2.11.4 –

- That each window and door system offered will remain available for at least two years from 1 June 2014.
- Whether the system supplier would or would not be prepared to underwrite the performance of the tendering company. This means that in the event of the tendering company going into receivership, the system supplier would undertake to honour any LHC contracts entered into by the tendering company, which were outstanding at the time it went into liquidation.
- These contracts are completed through another company at prices not exceeding the agreed LHC rates.

E1.16 Materials and components

E1.16.1 General

This offer shall be for PVC-U windows and doors as specified in Section E1. Similarly, all accessories and ancillary products shall be as specified in Section E1 although these may be of other materials provided they meet the general performance requirements given.

E1.16.2 Consistency of product

Throughout the framework arrangement period, all fabrications, materials and parts supplied by an appointed company shall be consistent in quality and appearance, shall be obtained from reliable sources, and shall conform with the product specification, as agreed between the Sponsoring Officer and the appointed company. Deviations from this specification will be permitted only after written approval from the Sponsoring Officer, who at his sole discretion, may require additional testing, the cost of which is to be borne by the appointed company and/or the manufacturer, if a characteristic of major importance is likely to be affected.

E1.16.3 Conformity

As a minimum requirement, conformity to the relevant British and European standards will be stipulated. Window and door tests for those essential product accreditation requirements set out in E1 will need to have been undertaken in accordance with the relevant British Standard or Product Assessment Scheme and by a UKAS (United Kingdom Accreditation Service) or similar approved testing body.

In Section E2, you will be asked to substantiate such conformity with supporting information such as third party accreditation (eg – BSI Kitemark, Q-mark etc) where applicable.

E1.16.4 Hygiene, health and the environment

The requirements of BS 7412, Section 15 shall be noted.

E1.17 Detailed product requirements

E1.17.1 Window and door profiles

Windows and doors shall be fabricated from white, or nearly white, profiles conforming to the requirements of BS EN 12608.

The colour and/or appearance of profiles used in an assembled window or door shall be uniform and consistent using the parameters in Section 6 of BS 7412.

Surface covered PVC-U profiles may also be offered as a supplement to the product range and must conform to the requirements of BS 7722.

An appointed company will be free to offer, as part of this arrangement, additional window and door types, profile combinations and ancillary profiles from the system they offer, but any such additional products do not form part of this tender and will be the subject of negotiation between the Sponsoring Officer and the appointed company.

E1.17.2 Glazing beads

Shall be consistent in colour and/or appearance with the profile as set out in E1.17.1 and cut accurately to length to fit neatly without excessive gaps at corners or buckling.

E1.17.3 Sills and sill nosings

Window and door sills shall be consistent in colour and/or appearance with the profile as set out in E1.17.1 and finished neatly at end with a capping piece where appropriate.

Sills and sill nosings shall be sized and formed so that when installed, water will be effectively shed away from the window or door installation and from the substrate immediately below the installation.

E1.17.4 Trims and other ancillary products

A comprehensive range of ancillary products such as trims, cover strips, extension profiles, couplings etc will be expected to be included as part of the product package. The appearance, performance and life expectancy shall be the same as the window or door product they form part of.

Any cellular PVC-U trims should conform to BS 7619.

E1.17.4 Level entry door thresholds

Level entry door thresholds must be provided to accessible entrances where appropriate to conform with the requirements of Building Regulations Part 'M' and The Equality Act 2010.

E1.17.5 Construction and fabrication

Windows, doors and curtain walling for this framework arrangement shall be manufactured strictly by a method capable of satisfying the performance requirements set out in this Section E1 and in accordance with the system manufacturer's fabrication manual and instructions. Subsequent deviations from this method will be permitted only after written approval by the Sponsoring Officer.

Assessment of product quality (including accuracy in manufacture), factory production systems and quality assurance procedures form part of this evaluation in Section E2.

E1.17.6 Weatherstrips and glazing gaskets

Weatherstrips and glazing gaskets shall be made from one of the following materials:

- ethylene propylene diene monomer (EPDM), complying with BS 4255-1
- plasticized PVC (PVC-P), complying with BS 4255-1
- polychloroprene (CR), complying with BS 4255-1
- polypropylene pile
- sheathed cellular elastomeric polymer
- silicone (Si)

- thermoplastic elastomer (TPE)

Where applicable, weatherstrips and gaskets shall be inserted into profiles in accordance with the system manufacturer's instructions, without tension and fitted with care to prevent gaps or buckling at corners due to shrinkage or expansion.

Weatherstrips should preferably be in one length around the perimeter of the opening light, with a single joint at the head.

All materials used in weatherstrips and gaskets shall be physically and chemically compatible with the contact surfaces of the product and be completely suited to the climactic and environmental conditions of use.

Weatherstrips and gaskets shall conform to the 'General requirements' set out in BS EN 12365-1.

Weatherstrips shall be capable of being renewed without disturbing the glazing system and without removing the outer frame from the structure.

E1.17.7 Glass and glazing

E1.17.7.1 General

Windows and doors shall be designed to be glazed in accordance with the relevant parts of BS 6262-4 and BS 8000-7.

The recommendations within BS 7412 should also be followed.

E1.17.7.2 Glass

This offer shall include for PVC-U windows and doors glazed with a wide choice of glass types, performance and thickness, constructed into an insulating glass unit (IGU). The choice of glass will be dependent on factors such as location, thermal requirements, security and safety.

'Low E' glass will be required to achieve the U value requirements contained in Part L of the Building Regulations / The Building (Scotland) Regulations Section 6 with the option of both soft and hard coat products. The coating should be applied to the cavity side of the inner pane, unless obscure glass is specified when it may be applied to the outer pane. All glazed units shall be clearly labelled so that they are installed in the correct position.

Specific glass types are covered in more detail within E1.17.7.4 to E1.17.7.6 below.

Other options such as Georgian wired and dummy glazing bars may also be required during the arrangement.

E1.17.7.3 Glazing

Notwithstanding Clause E1.17.6 above, glazing shall be carried out in all cases in accordance with the relevant requirements of BS 6262 and with the system manufacturer's glazing instructions. Distance and support blocks shall allow for drainage, shall be secured to the profiles or of such design as to prevent slippage and shall be used at the positions specified by the system manufacturer.

Glass adaptors, glazing and setting blocks and compounds shall be of materials that do not react with PVC-U extrusions.

Reference should also be made to BS 8213-4, Clause 8.9.2, when glazing is applied on site.

Glazing compounds may be non-setting compounds, preformed mastic tapes, gun grade solvent release type sealants, one or two part curing sealants and two part rubberising compounds, as set out in BS 8213-4, Clause 8.9.2. Gun grade sealants shall comply with BS EN ISO 11600.

As a default, windows should be internally glazed for ease of future maintenance and increased security, where appropriate. Certain window types may occasionally be required to be externally glazed.

All window and door types offered must be easily re-glazed on site, reasonably quickly and without the need for specialist labour or the use of complicated glazing techniques.

E1.17.7.4 Glazing units

This offer shall include for windows and doors glazed with hermetically sealed insulating glass units (IGUs) complying with the Construction Regulation requirements, BS EN 1279 and requirements of all relevant parts of BS 6262. A third party certification system shall also be in operation to ensure full conformity with the requirements of BS EN 1279, including where IGUs are gas filled.

Glazing units should be able to be replaced or maintained reasonable quickly without the need for complicated techniques.

Triple glazed units may also be offered as an option.

E1.17.7.5 Glass types

Glass in windows and doors shall meet the performance requirements for thermal insulation and impact safety, relevant to the location of the glass, set out in Approved Documents L and N of The Building Regulations. This will include the need for safety glass to be impact tested (see E1.17.7.6).

Each glass type used should be accompanied by its fully compliant relevant harmonised European Standard CE Marking identification.

Glazing providing enhanced security to PAS 24 and Secured by Design requirements should be available.

'Low E' glass will be required to achieve the U-value requirements contained in Part L of the Building Regulations / The Building (Scotland) Regulations Section 6 and may be of soft coat or hard coat application.

E1.17.7.6 Safety glass

To comply with the Building Regulations Part N regarding glazing in hazardous locations, all safety glass used shall conform, and be third party accredited, to the following:

- BS EN 12150 for toughened safety glass
- BS EN 14449 for laminated safety glass
- BS EN 12600 for the pendulum impact test method

Glass shall be indelibly marked with the details of the accredited conformity so that the marking is clearly visible after installation in accordance with BS 6262-4, Section 7. The CE Marking requirements of E1.11.1 shall also be noted.

E1.17.8 Hardware and associated fasteners

E1.17.8.1 General requirements

The choice of hardware is left to the fabricator's discretion but must conform to the requirements of this Section E1. Such conformity should be endorsed by the individual hardware component's supplier.

Clause E1.26 sets out the guarantee period stipulated for components supplied under this arrangement. The hardware supplied shall meet this requirement, subject to reasonable use and maintenance.

The method of fixing all items of hardware shall be in accordance with the manufacturer's specification and instructions so as to achieve optimum performance and durability.

Windows and doors shall be supplied with all necessary hardware to ensure they operate satisfactorily and in accordance with the performance requirements set out within this Section E1. Where such accessories are to be supplied loose for site fixing, fixing instructions shall be provided for each individual item supplied.

Hardware shall also be replaceable without removing the outer frame from the structure of the building.

Fixed hardware which will be exposed during site storage and installation shall be taped or shrink-wrapped for protection.

E1.17.8.2 Special needs

Appointed companies shall have the ability to provide a range of hardware to assist people with special needs.

Components such as handles, locking mechanisms and controls are to be capable of offering adaptations in accordance with The Equality Act (Disability) Regulations 2010.

E1.17.8.3 Performance classification

The classification for performance, operation and strength characteristics of the windows and doorsets shall be as set out in BS 6375-2. Each specified application should be assessed and the performance characteristics satisfy the categories of use for the UK as illustrated in Table 3 of the standard.

E1.17.8.4 Materials

The hardware and fasteners shall be manufactured from one of the following materials:

- Austenitic stainless steel complying with BS EN 10088-2
- Zinc die casting alloy A complying with BS EN 12844, nickel chromium plated in accordance with Service Condition No.3 or BS EN 12540
- Steel finished to Classification Zn12 of BS EN 12330 and chromate passivation

in accordance with Class 2C or 2D of BS EN 12329

Variable geometry friction stay hinges shall be held in place with fasteners manufactured from Grade 300 series stainless steel to BS EN 10263-2 (austenitic stainless steel).

Small plastics or nylon sub-components such as spacer shims serving only as packing, end caps, hinge covers, etc are acceptable.

Metals which are in contact with each other shall only be used in combinations which have ratings 0 or 1 for atmospheric environments given in PD 6484 or are otherwise protected to prevent electrolytic or any other bi-metallic reaction.

E1.17.8.5 Corrosion resistance

All hardware shall have at least the equivalent corrosion resistance of BS EN 1670 grade (class) 3 (96h) when subjected to a neutral salt spray test as specified in BS EN ISO 9227.

The period of guarantee requirements referred to in E1.26 should be noted.

E1.17.9 Fabrication and workmanship

E1.17.9.1 General requirements

All elements of fabrication and workmanship of PVC-U windows and doors shall conform to the requirements of this Section E and BS 7412, Section 7, including those for dimensional tolerances.

Assessment of product quality (including accuracy in manufacture), factory production systems and quality assurance procedures form part of this evaluation in Section E2.

E1.17.9.2 Section dimensions

LHC will, during evaluation of offers, take into careful consideration the cross sectional dimensions of all members (sashes, frames, glazing beads, surrounds and ancillary profiles). Designs where profile sections are clearly inadequate for the maximum overall window and door size offered for each window and door type and design, will not be accepted.

E1.17.9.3 Ranges of sizes

Windows and doors shall be required as single units, as multi-light units and also as coupled units.

Windows and doors shall be required of non-standard dimensions. The spaces that these components shall be required to fill may have any dimensions within upper and lower limits as stated by the system manufacturer.

The attention of manufacturers is drawn to the limitations on dimensions imposed by the necessity to comply with the requirements for safety in opening and cleaning from the inside within BS 8213-1. Building Regulations Part 'B' also applies to windows used for egress.

E1.17.9.3 Manufacturing tolerances

The work sizes for the overall length and height of the window / door shall be

documented.

The allowable manufacturing tolerances of an assembled frame shall be as set out in BS 7412, Clause 7.6.

E1.17.9.4 Drainage and pressure equalisation

All windows and doors (frames, sashes and transoms/mid-rails) shall be drained in accordance with the system manufacturer's recommendations. Front drainage or concealed drainage may be required. Drainage holes shall be free from any obstruction such as residue swarf. Any pressure equalisation details shall also be provided in accordance with the system manufacturer's recommendations.

E1.18 Security

As stated in E1.13.4, all windows offered shall comply with the **basic security requirements** for security given in BS 7412, Clause 10.1.

Some of the window and door products offered, or alternatively a modified version of the same products offered, will be required to achieve **enhanced security performance** involving the use of specifically designed hardware including multi-point locking, hinges and high security locking systems.

These shall have been tested and certified in accordance with PAS 24:2012 by third party accreditation and the note in E1.13.4 shall be specifically observed.

All enhanced security products shall be specified and supplied replicating the third party PAS 24 product accreditation schedule for that product type.

Certification of conformity to Secured by Design is commonly required by LHC clients and is therefore considered preferential in the offer of this arrangement. All enhanced security products shall be specified and supplied replicating the Secured by Design accreditation and clearly displaying the conformity logo.

E1.19 Safety

E1.19.1 General requirements

Windows, doors, their materials and component parts shall be inherently safe for the user. LHC will not accept window and door designs incorporating sharp edges or features which may be dangerous for the user.

All windows offered shall comply with the requirements for safety given in BS 7412 and BS 8213-1.

All areas of glazing design and application shall comply with the requirements of BS 6262 and its associated parts.

Compliance must also be achieved with the Building Regulations Part B: Fire safety and Part K: Protection from falling, collision and impact (which also replaces Part N: Glazing safety).

LHC reserves the right not to accept, or request the discontinuation of, hardware that may be considered difficult to operate by some users under certain circumstances including that of duress in the event of a fire.

E1.19.2 Safety in use and cleaning

Consideration to safety in use and during cleaning of windows is paramount. The recommendations given in BS 8213-1 must be followed and your attention is particularly drawn to the risk assessment guidance contained within the standard.

E1.19.3 Safety restrictors

Safety restrictors shall be specified and installed strictly in accordance with the manufacturer's advice and instructions, paying particular attention to window position, access, type of user and window use.

Safety restrictors shall operate so that they:

- limit the initial movement of an opening light so that a clear opening of not more than 100mm is achieved at any point
- are releasable only by manipulation not normally possible by a child under 5 years, where child-proof restrictors are deemed necessary
- are readily identifiable and capable of being released by an adult (without prior instruction) on windows suitable as a means of escape in case of fire
- re-engage automatically when an opening light is returned to the initial restricted opening position, or to a closed position (whether latched or not)
- are not lockable by a removable key or other device on window suitable as a means of escape in case of fire (Note - individual authorities' Fire Safety Officer may exercise a risk assessment on this item).

Clear written information on the operation of the fitted safety restrictors, and any potential risks or limitations in use, should be provided to owners and occupiers by window installers. This should include recommendations stating that where a window is opened beyond the initial restricted position for cleaning it should be returned, as soon as possible, to a position where the restrictor automatically re-engages.

Safety restrictors shall be designed specifically to operate on the types of window to which they are to be installed, and shall meet the requirements of BS EN 13126-1.

LHC reserves the right not to accept safety restrictors that he may consider difficult or impractical to operate by some users or under certain circumstances – in particular in cases of impaired mobility or hand manipulation.

Note:

Safety restrictors should never be considered as an added security option when the window is partially open (in its restricted position).

E1.19.4 Other safety devices

Safety devices offered shall conform to the requirements specified in BS 6375-2. Emergency exit and panic devices shall conform to the requirements of BS 6375-2.

E1.19.5 Safety in case fire

Windows and doors incorporating design features necessary to accommodate the requirements of Building Regulations Part B shall be offered as part of the product range.

The operation of windows and doors shall take account of, and be able to satisfy, the relevant parts of BS 9999 – ‘Code of practice for fire safety design, management and use of buildings’.

LHC reserves the right not to accept hardware that he may consider difficult to operate by some users under circumstances of duress in the event of a fire.

Other properties such as fire resistance and reaction to fire shall be declared, where necessary, in accordance with BS 6375-3.

E1.19.6 Safety glass

Refer to Clause E1.17.7.6

E1.20 Appearance

The appearance generally shall be as specified in BS 7412 and BS EN 12608.

The exposed surfaces of plastics shall be smooth, flat, and free from pitting, impurities, cavities and other surface defects.

Surface covered profiles shall be free from damage, particularly following installation, and any exposed edges finished to a matching colour.

The appearance shall be uniform between windows, batches of windows and between windows and ancillary components within the same project. The measurement of colour consistency shall be as stated in BS 7412 and BS EN 12608.

Visible hardware shall be of a consistent material and colour for windows and doors.

Corner welds shall be neatly tooled and finished. Butt welds shall be tooled smooth.

E1.21 Durability

The windows and doors offered shall have a minimum service life of 30 years as referred to in BS 7543 – ‘Guide to durability of buildings and building elements, products and components’.

LHC accepts that depending on the level of specification, use and exposure, some component parts may need to be replaced during the service life period (see also Clause E1.26, ‘Guarantees, warranties and maintenance’).

With regard to windows hardware, as a guide, ‘standard’ fittings should be capable of 15,000 operations in conditions simulating actual use without sign of excessive wear and those items offered as ‘higher performance’ should be capable of 30,000 cycles in conditions simulating actual use.

With regard to doors hardware, as a guide, ‘standard’ fittings should be capable of 30,000 operations in conditions simulating actual use without sign of excessive wear and those items offered as ‘higher performance’ should be capable of 50,000 cycles in conditions simulating actual use.

It is essential that all component parts, other than the window profile, can be easily and economically replaced.

E1.22 Marking

All windows shall be marked in accordance with the requirements of BS 7412.

Glass shall be indelibly marked with the details of the accredited conformity so that the marking is clearly visible after installation, in accordance with the requirements of BS 6262-4.

Enhanced security products shall be marked to the requirements of PAS 24 and (where applicable) Secured by Design.

All products offered, which are covered by a European harmonized standard, shall have the CE mark affixed in accordance with the Construction Products Regulation 2011 (CPR) – see E1.11.1.

E1.23 Design and measuring of fenestrations

E1.23.1 Requirements

The edge profile of the window, door and screen assemblies shall be so designed as to permit satisfactory installation into the structural opening. The windows and doors offered for this arrangement shall be able to cater for the wide variety of building forms likely to be encountered on projects making use of LHC components. Circumstances may arise where the offered components will require adaptations and where special trims and extension profiles will have to be used. Any adaptations to the windows/doors offered shall not affect the performance of the components and, if the performance is likely to be affected, the appointed company shall inform the specifier in writing at the time of submitting a project quotation. It should also be noted that windows may be required with rounded or shaped heads.

The appointed company may be required, on any projects, to submit to the specifier design proposals at budget stage and detail drawings for approval once an order has been placed, but the specifier must be ultimately responsible for the choice, position and size of windows and combinations of windows.

E1.23.2 Measuring for production purposes

With particular regard to replacement windows and doors installations, the responsibility for the taking of site measurements for production purposes shall be clearly defined on each project and will be identified in project quotations. Where this is applicable, the appointed company will be expected to take full responsibility for accurate site measurements and subsequent component suitability on the project.

Where the appointed company is responsible for the taking of site sizes, this shall be done as a separate operation from the taking of site measurements for estimating purposes.

E1.24 Transportation, handling and storage

E1.24.1 Statutory requirements

The appointed company will be expected to fulfil its requirements for full conformity to The Construction (Design and Management) Regulations 2007 (CDM) at all

relevant stages of its involvement and provision of services within the project.

E1.24.2 Transportation and handling

Windows, doorsets and surrounds shall be secured during transportation and adequately protected so as to ensure delivery to site free from damage. Units shall be carefully handled during unloading and distribution on site to avoid any racking or twisting of the frame and damage such as scraping caused by dragging along the ground.

E1.24.3 Storage

Units shall be kept secure and under cover, preferably in an enclosed area such as a storage container conforming to the CDM Regulations 2007. They shall be kept clean at all times avoiding excessive wetting and splashing with mud, plaster or cement. Frames shall not be left unattended for long periods of time (e.g. overnight) where they may be subjected to damage or theft.

E1.24.4 Instructions for handling, storage, installation, operation, cleaning and maintenance

Companies will be required to submit to users and main contractors, in a format suitable for use on building sites, detailed recommendations and instructions, covering the following points:

- Unloading
- Site handling
- Storage and protection
- Installation
- Operation
- Cleaning
- Maintenance

E1.25 Specification for site operations

E1.25.1 Introduction

This part of Section E1 sets out the requirements for the service which users will expect from an LHC appointed company and describes the LHC requirements for the measurement, installation and fixing of PVC-U windows and doors in those cases where the appointed company is employed as a sub-contractor or main contractor.

In Section E2.16, you will be asked to confirm conformity to the requirements within E1.25.

E1.25.2 General requirements

The survey and installation of windows and doorsets under this arrangement shall be carried out in accordance with the appropriate clauses of BS 8213-4, 'Code of practice for the survey and installation of windows and external doorsets'. The guidance contained within the code of practice shall be applicable in both new

build and replacement situations.

The LHC requirements for the installation and fixing of replacement windows and doors are, in a number of cases, in excess of, at variance with, or more precise than those in BS 8213-4. Such requirements are stated below. You should take careful note of these requirements since your prices in Section F are required to allow for full compliance, unless qualification is made in Section E2.

Notwithstanding BS 8213-4, the specifier may have assessed the condition of a structure which is to receive replacement or new windows and provide the appointed company with adequate details at the time of the enquiry. Where such assessment has not been carried out by the user, the appointed company shall indicate this fact in the project quotation.

Over and above conformity to BS 8213-4, additional preference will be given to companies who have achieved Kitemarking as an additional third party accreditation.

E1.25.3 Planning the work

The installation of replacement windows and doorsets is often undertaken when the property is occupied. For this reason it is important that the appointed company works closely with the specifier (or specifier's representative) to plan the work so that the occupants will be subjected to the minimum of disruption and inconvenience. This is particularly important with regard to the preparation of the property where the resident may, for example, have impaired mobility.

The guidance contained in BS 8213-4, Clause 7.1 should be followed.

E1.25.4 Safety on site

A significant proportion of replacement windows projects carried out under this LHC framework arrangement will involve dwellings occupied by elderly residents such as residential homes and sheltered accommodation, or schools and colleges occupied during term time by children and young people. It is therefore important that the appointed company pays particular attention to the safety aspects of site performance.

Installers must be sympathetic to any impaired mobility of residents and lack of awareness of children, and not obstruct walkways and access areas or present any possible hazards during work.

The appointed company shall demonstrate a planned approach, including full resident and client liaison. The company's representatives and operative shall also have visible means of identification.

Current health and safety at work legislation in respect of site practices shall be followed at all times. In particular, the appointed company will be legally responsible for conforming to the requirements of the Construction (Design and Management) Regulations 2007 including the notification of a project (F10 / F10R), where required. Your attention is also drawn to your responsibility on site in respect of risk assessments which might identify a need for increased levels of protection in certain situations.

Site operatives shall have the necessary training in the safe use of tools and have

the full complement of personal protective equipment at all times.

The guidance contained in BS 8213-4, Clause 7.2 should be followed.

E1.25.5 Supervision of work

Effective site supervision is considered to be a key factor in the execution of a successful project. The appointed company must ensure in every case that the components supplied are consistent with the product specification agreed with the Sponsoring Officer and that the installation is carried out in accordance with these LHC requirements and with the details agreed with the specifier. However, ultimately it is the specifier's responsibility to ensure that the windows and doors on a project and the methods of installation employed by the appointed company comply with the project specification and are satisfactory for their intended use.

Note:

LHC strongly recommends the completion of a 'pilot' unit to be fitted so that agreement can be obtained from the specifier as to the suitability of product (including all hardware) and the standard of installation.

All projects will require permanent attendance on site of a qualified, competent site supervisor employed by the appointed company. For larger programmes, and those requiring more specialist site management skills (eg residential care homes, schools or colleges), the site supervisor would need to have a proven competence in managing all aspects of the project management including programming, site performance and client liaison. On smaller projects this may be a nominated competent installer empowered to make prompt decisions on behalf of the company and inform the specifier of any difficulties arising which may require instructions to be issued. In such cases, the appointed company will be expected to employ a contracts (or sites liaison) manager in the form of a Sites Liaison Officer (SLO) or Tenant Liaison Officer (TLO) who shall have overall responsibility for the delivery and quality of installation on these sites. To do this effectively, regular visits by the contracts manager of at least once a week would be considered necessary as well as on-going progress updates.

E1.25.6 Survey and measurement

It is recognised that each company probably has its own evolved method of surveying and recording all necessary information required to produce fully design compliant and dimensionally accurate installations. BS 8213-4 gives guidance on the surveying and recording best practices for replacement installations within Section 5 and for new-build in Section 6. LHC will expect this guidance to form a minimum standard of survey and measurement procedure; including the risk assessment procedure and noting of structural suitability, adjacent services, component design and regulatory compliance.

E1.25.7 Preparation of property

On each project, unless the appointed company is instructed to remove furniture and fittings from areas where they might be damaged during installation, this will be arranged by the specifier. However, moving furniture within a room to prevent damage shall be deemed to be part of the general installation operation and the appointed company shall ensure that such moving is carried out carefully and to the

satisfaction of the occupant.

Sufficient protection using clean dust sheets or other protective covering should be used to avoid needless dirtying or damage to floor coverings and decorations. These should be taped down to prevent any trip hazard. In addition, all furniture, fittings, and curtains which remain in the work area shall be protected by the appointed company.

E1.25.8 Removal of existing windows and doors

This shall be in accordance with BS 8213-4, Clause 7. Every effort shall be made to minimize inconvenience to the resident or building user.

Old windows and doors shall be taken directly to the outside of the building, utilising a safe working platform as necessary. On no account should broken or damaged glass be allowed to cause a hazard to residents or the general public.

Materials should be prepared for responsible disposal and re-cycling.

E1.25.9 Preparation of structural opening

The structural opening shall be cleared of all dust and debris. If the removal of the window or door has damaged the damp proof membrane and loss of weathertightness is likely, the final detail shall be considered and, if necessary, appropriate remedial work carried out to ensure the resistance to the passage of moisture has not been compromised.

Any loose or damaged masonry should be repaired and made suitable to receive the replacement frame.

E1.25.10 Position of new window or door in structural opening

The position of the new units within the structural openings will be a matter of discussion for each project between the specifier and the appointed company. Generally, the frame should be positioned centrally within the aperture, plumb and square without twist, racking or distortion.

However, and notwithstanding the varied nature of the work likely to be undertaken, the guidelines contained in BS 8213-4, Clauses 8.7 and 8.8 shall be followed.

E1.25.11 Fixing the windows and doors

Fixing of windows and doors shall be in accordance with BS 8213-4, Clause 8. In particular, the following specific requirements should be noted:

- PVC-U windows and doors, when fixed directly into the structural openings, or when fitted into new surrounds, shall be secure against applied loadings. The fixings shall be of a material and diameter related to the loading. Wherever practicable, all four sides should be mechanically secured.
- Mechanical fixings shall not be more than 600mm apart and corner fixings shall be between 150mm and 250mm from the external corner. No fixings should be less than 150mm from the centre line of intermediate joints (transoms and mullions). There should be a minimum of two fixings on each jamb and cill.
- Head fixings shall be as the jamb and cill fixings but sometimes the presence of pre-cast concrete or steel lintels prove problematical. Here, the use of extended

brackets may be considered or polyurethane foam. However, foam fixings shall never be used as the sole method of fixing the entire frame into the reveal. The guidance given in BS 8213-4, Clause 8.3.2 should be followed.

- Installation packers that have been designed for the purpose shall be used adjacent to fixing positions to prevent distortion or splitting of the outer frame during installation. The packers should be left insitu and concealed as part of the completed installation. Guidance given in BS 8213-4, Clause 8.7.5 should be followed.
- Other fixing devices, such as lugs, may be used where appropriate but these must be fit for purpose and endorsed by the product supplier.
- Windows shall be secured with fixings which have a penetration of at least 40mm into sound material. Door frames or door-sized windows shall be secured with expanding bolts or other high grip devices which have a minimum penetration of 50mm into sound material.
- Fixings shall not be left protruding from the face of the frame member and shall be fully engaged within the substrate.
- To minimise possible distortion or damage to the frame, fixings shall not be over-tightened.
- Every care shall be taken during installation to ensure that building materials such as wet plaster do not foul any drainage holes or impair hardware or mechanism operations. In every case drainage holes shall be checked for efficiency.
- The drilling of service holes (e.g. telephone cables, television aerials, etc) through PVC-U profiles will not be allowed.

A selection of proprietary sleeved or direct mechanical through-frame fixing products and methods is available and assessment should be made as to suitability and size within the given application – preferably at survey stage or, if not possible, when the type and condition of substrate can be fully assessed. Additional guidance should be sought from the fixings manufacturer.

E1.25.12 Foam fixing and filling

Windows and doors shall always be fixed to openings by mechanical means. Where foam is used it shall be self-expanding polyurethane. Foam fixing of the head of windows must only be considered when there is absolutely no possibility of achieving a suitable mechanical fixing. If the use of foam is agreed by the Supervising Officer the installation shall be carried out in a manner identical in all respects with the requirements of the BS 8213-4 noting that foam fixing should under no circumstances be used as the sole method of fixing the entire frame into the reveal.

Foam fixing of doors will not be permitted.

Expanding polyurethane should be used as necessary to provide a suitable backing material for the perimeter sealant allowing the correct curing time before application of the sealant. Care should be taken to avoid distortion of the outer frame members

as described in BS 8213-4.

E1.25.13 Glazing

Further to E1.17.7, all glazing shall be in accordance with BS 6262, using the methods and materials specified in this Offer Document. See also BS 8213-4, (Clauses 8.9.1 and 8.9.2) and BS 8000-7.

Where factory glazing is undertaken, installers will be expected to check that setting blocks, which are essential for the long term function of the window, have not moved in transit. Glazing units should be toe and healed as required.

Manufacturers and installers need to be fully aware of the requirements of the Manual Handling Operations Regulations 1992 (as amended 2002) when offering factory glazed windows.

Attention is also drawn to the glazing safety recommendations of BS 6262-4, particularly the requirements for marking the glass.

E1.25.14 Making good

The removal of existing windows and doors and the installation of new ones shall be undertaken with sufficient care and attention to minimise the amount of internal and external making good required. If asked to advise, the LHC will not support claims for additional cost when it is apparent that sufficient care had not been taken.

Unless the specifier issues instructions requiring making good to be carried out by others, the appointed company shall make good structural openings and plaster and render disturbed by the work done, including immediately adjacent redecoration or the use of all necessary coverstrips.

Note:

Window and door installation base prices shall allow for a suitable external sealant, with backer material if necessary, and a suitable internal sealant in accordance with the guidance contained within BS 8213-4, Clause 8.10. Alternative methods of making good will be priced separately but the actual work required on each site shall be confirmed with the specifier before work commences and a price agreed based on tendered rates.

E1.25.15 Perimeter sealing to the structural opening

This shall be in accordance with BS 8213-4, Clause 8.10. Reference should also be made to BS 8000-16, 'Workmanship on building sites – Code of practice for sealing joints in buildings using sealants'.

For external finishing, the sealant to be used in conjunction with PVC-U windows, doors and surrounds shall be one-part, low modulus, neutral curing silicone to BS EN ISO 11600.

The sealant should be applied against a firm backing so that it is forced against the sides of the joint during application.

The internal finish shall be neat and tidy, preferably finished with a one-part water-based acrylic sealant or silicone where appropriate, used in accordance with the manufacturer's instructions. The use of decorator's caulk is not encouraged due to the risk of both impact and thermal movement of the frame.

Materials used for internal and external sealants shall be fully compatible with all elements of the window or door product (particularly the preservation or coatings) without affecting the appearance, performance and life expectancy of the product or sealant. Advice should be sought from the sealant manufacturer in cases of doubt.

Cover moulds and beads should also be used as necessary and fitted in accordance with the manufacturer's instructions.

E1.25.16 Installation check

Installations should immediately be cleaned, checked and adjusted as necessary to ensure proper and complete operation. All channels, rebates and drainage slots shall be free of detritus.

Particular attention should be afforded to the operation and performance of doors and windows where security needs to be maintained.

E1.25.17 Site clearance

The appointed company will be responsible for the clearance of all debris, both internally and externally, arising from the removal or installation processes. Checks should be made to ensure or confirm that no damage has been made to any internal fixtures, fittings or external features.

E1.25.18 Completion of works

The acceptable execution and completion of all works to the client's satisfaction is paramount to the service offered by LHC. In serving this arrangement, it is expected the appointed company will share that commitment and this will include completion of projects with minimal or zero snags and carrying out any necessary remedial works within a reasonable or pre-agreed defects liability period.

E1.25.19 Final inspection

In readiness for handover, the appointed company shall check and ensure that all products function correctly in accordance with BS 8213-4, Clause 8.11, making particular reference to Annex A of the standard.

E1.25.20 Operating and maintenance instructions

The appointed company shall provide operating instructions for the window or door hardware, preferably with the issue of an appropriate leaflet. This is particularly important in the case of security, egress windows and where child resistant restrictors are fitted.

E1.25.21 Maintenance instructions

The appointed company shall also advise on suitable materials for the cleaning and maintenance of the frames and hardware and the recommended frequency of cleaning.

It should be made clear to the client that regular maintenance is essential, particularly to the hardware items whose guarantee (see E1.26) may be affected by an absence of suitable regular maintenance.

E1.25.22 Keys for door and window locks

Keys to door locks and windows, including any lockable restrictors, shall accompany

the products. Special care should be taken with suited door locks to ensure the client has full and secure possession of the appropriate keys.

E1.26 Guarantees, warranties and maintenance

E1.26.1 Guarantees

LHC requires that an independent 10-year guarantee on all elements of the windows and doors be offered to users as follows:

- Framing – 10 years
- Insulating glass units – 10 years
- Hardware items – 10 years (subject to suitable maintenance and normal usage)

This is considered to be an Essential Requirement to the arrangement.

Note:

The cost of the guarantee should be included in the prices offered under Section F of this document.

Guarantees for longer periods may also be offered at the appointed company's discretion and insurance backing made available to the customer, if requested.

In Section E2.13, you will be asked to confirm conformity to these requirements.

E1.26.2 Performance warranties

Notwithstanding the guarantees offered, all items shall be covered by warranty effective for at least 12 months after the date of final signing-off or practical completion.

E1.26.3 Availability of parts

A guarantee of availability of parts for a period of at least 10 years shall be provided in respect of all items offered.

E1.26.4 Maintenance services

The availability of an ongoing maintenance service to LHC customers would be desirable. This could be operated in-house, via a third party company under the control of the appointed company.

E1.27 Building Regulations Self-Certification

The appointed company should be registered with one or more of the existing competent person's schemes for replacement windows and doors as approved by the Department for Communities and Local Government (DCLG) – e.g. FENSA, CERTASS, BSI, BM TRADA.

E1.28 Administration procedures and support services

Experience suggests that the smooth running of a project depends on good liaison between the specifier, the supplier's representative and the supplier's commercial department.

Effective and efficient procedures for all operations from project enquiry receipt through to the storage of records for guarantees and future maintenance will be

expected to be in established operation. These will include processes for:

- project registration and recording
- project tracking
- preparation of quotations
- client and Resident liaison
- manufacturing process including progress tracking
- programming including Resident and client communication
- dispatch procedures
- correcting delivery shortfalls or errors, including timescales
- keeping of project records including for guarantees and future maintenance

With the recognition that site performance is a key element to the operation of this arrangement, attention will also be paid during the assessment to the procedures in place for:

- Client and Resident liaison
- installation programming
- office to site communication and reporting including progress updates, project supervision and dealing with specific site issues
- signing off / handover inspections and procedures
- collection of KPIs and satisfaction feedback information

E1.29 Notice for deliveries / attending site

It is envisaged that users of this arrangement will require windows and doors to be delivered:

- in single consignments, if the site allows enough space for a compound, or more usually
- in split consignments, if the site is spread over a large area or for contractual or programming reasons, not less than one dwelling-lot.

The periods of notice in working days from the receipt of written order or agreement of final drawings and details, whichever is the later, required in relation to any project for:

- Preparation and return of quotation from initial enquiry: 10 days
- Return of final quotation based on manufacturing survey from receipt of instructions: 10 days
- Manufacture and delivery of goods to site from receipt of written order / agreement of final drawings and details: 30 days
- Any necessary replacement of components and items –
 - Hardware: 2 days
 - IGUs: 5 days
 - Window / door: 5 days

In Section E2.15, you will be asked to confirm conformity to these requirements.

E1.30 Sales and service

Quotations for projects shall be provided on request in accordance with the terms, conditions and pricing structure agreed between the appointed company and LHC as the basis of the framework arrangement. The period of time required to issue a quotation from receipt of initial enquiry shall be within 2 weeks provided that the user's brief adequately describes the work required and the appointed company is afforded all necessary facilities.

E1.31 Project support and technical design assistance

E1.31.1 Effective project support and design assistance from the LHC Appointed Companies are major considerations for most customers, particularly where they are not able to commit full services of their own. Successful Appointed Companies will be required to offer reasonable technical support and advice free of charge to all LHC customers and in E2.12 you are asked to confirm that you will offer such support on LHC projects.

E1.31.2 Project support

The following categories of service from Suppliers' representatives will be important:

- Establishing a brief and interpreting client requirements
- Presentation of alternative solutions
- Provision of alternative budget costings and assistance in 'Value Engineering' to achieve cost efficiencies
- Monitoring progress on production and site and reporting to Client in order to achieve agreed targets
- Representatives' skill and experience, quantity and quality of information provided and effectiveness of communication between representative, client and factory will be key criteria
- Provision of support for Residents' choice exercises
- Provision of samples, putting on presentations at tenants' meetings etc should be accepted as part of the LHC appointed company's service

E1.31.3 Technical design assistance

The Appointed Companies shall be able to provide supportive design and technical advice on issues such as:

- Planning and Resident / Leaseholder consultations
- The performance and operation of windows and doors (including thermal, sound transmittance, access for the disabled, glazing safety)
- Solutions on Building Regulations and other regulatory requirements
- Interpretation and conformity to statutory requirements
- Design advice and solutions on the use of windows and doors (including safety in use)

E1.32 Project quotations

E1.32.1 Project quotations issued to LHC customers under this arrangement will be expected to be informative, fulsome and without ambiguity.

In every instance, they will be identified with an LHC project reference number to enable full traceability, recording and verification.

E1.32.2 Quotation requirements

Project quotations issued to LHC customers under this arrangement will be expected to be informative, fulsome and without ambiguity.

The criteria expected of LHC appointed companies' tender responses within quotations would be:

- Accurate interpretation of the specification requirements
- Transparency in possible additional costs including whether inclusive of management charges, site logistics, CDM 2007, etc.
- Overall clarity of information without ambiguity or possible additional cost implications
- Fully itemised descriptions of all components including schedules and details of hardware options and glazing
- Illustrations showing window and door types including fenestration patterns and dimensions
- Informative as to technical options and solutions
- Informative as to regulatory requirements and proposals for conformity
- Accuracy in formulating and presenting the final total contract sum

In Section E2.18.1, you will be asked to confirm conformity to these requirements.

Note:

In Section F3, you are asked to provide quotations for two Contract Scenarios and this should reflect the quality and clarity of quotations you will offer under the U9 arrangement, taking the above requirements into account.

The accuracy of interpretation and quality of information contained within the quotation will be assessed and scored with equal weighting in Appendix B6.

E1.33 CDM Regulations requirements

You are reminded that quotations provided for supply and installation projects shall take account of duties and requirements set out in the CDM 2007 Regulations. They are applicable to all works over 30-days on-site duration or works involving over 500 man-hours in that there will be provision for site management, welfare facilities, traffic management and the appointment of a competent CDM Co-ordinator (CDM-C). The inclusion and pricing of these provisions should be clearly indicated within the quotation, where necessary.

END OF SECTION E1