Project:
809 Kidderpore Avenue

Work Section: External Windows and Doors

Incorporating the following work section sub-elements:
EDR: External Door Systems
LVR: External Louvre Systems
WIN: External Window Systems

Specification Status: Stage E (Technical Design)

Issue number:	Date:	Reviewed by:	Checked by:
T2- Stage E	15.08.14	NR	JC

Terms: Specification Types

Prescriptive Specification:
Where items are to be consultant designed, the specification is in prescriptive form. All paragraphs are prescribed requirements.

Descriptive Specification:
The contractor shall complete the design complying with the Functional, Visual and Performance Requirements recorded in this specification and the contract documents. Where a particular material, product or supplier is referenced, this shall be deemed to be indicatively representing the design intent only. The contractor remains fully responsible for the detailed design whether or not indicative products within the specification are incorporated into the detailed design.

Tag Ref.	External Door Systems – Scope Summary	Spec. Type
EDR-210	External metal louvered single leaf door	Descriptive
EDR-220	External metal louvered sub-station door system	Descriptive
EDR-221	Internal metal two leaf doorset	Descriptive
EDR-400	Timber faced metal entrance door	Descriptive
EDR-420	Plant Room Door – louvered double door set	Descriptive
EDR-421	Plant Room Door – double door set with louvered fixed side panel	Descriptive
EDR-430	Building Services Door – Leaf and half door with louvre panel above	Descriptive
Tag Ref.	**External Louvre Systems – Scope Summary**	**Spec. Type**
LVR-201	External metal louvers	Descriptive
LVR-202	Fire rated internal metal louvers	Descriptive
Tag Ref.	**External Window Systems – Scope Summary**	**Spec. Type**
WIN-110	New timber casement window in existing or existing adapted masonry brickwork opening	Descriptive
WIN-120	Timber sliding sash	Descriptive
WIN-130	Timber fixed light	Descriptive
WIN-140	Roof skylight	Descriptive
WIN-150	Bay window	Descriptive
WIN-160	Dormer window	Descriptive
WIN-170	External entrance door 'Traditional'	Descriptive
WIN-171	External entrance door 'Contemporary'	Descriptive
WIN-172	External utility door	Descriptive
WIN-180	French window	Descriptive
WIN-181	French window with side lights	Descriptive
WIN-182	French window with side lights and top lights	Descriptive
WIN-183	Bi-fold doors 'Traditional' style	Descriptive
WIN-200	Double sliding glazed door system with 2no. Fixed lights	Descriptive
WIN-201	Single leaf sliding glazed door system	Descriptive
WIN-202	Single leaf glazed door and side opening light	Descriptive
WIN-203	Single sliding glazed door system with 2no. Fixed lights	Descriptive
WIN-204	Casement window with opening and fixed light	Descriptive
WIN-205	Bespoke powered glazed entrance double doorset	Descriptive
WIN-206	Casement window with full height and low level fixed lights	Descriptive
WIN-207	Single full height casement window, inward opening	Descriptive
WIN-208	Single leaf sliding glazed door system with full height glass corner unit and fixed light	Descriptive
WIN-209	Single leaf sliding glazed door system with 2no. Coupling mullions, 1no. Fixed light	Descriptive
WIN-210	Full height fixed light	Descriptive
WIN-240	Rectangular fixed rooflight	Descriptive
WIN-400	Metal two bay window assembly with opening and fixed lights with overhead panel	Descriptive
WIN-401	Metal two bay window assembly with opening and fixed lights	Descriptive
WIN-402	Single leaf glazed door	Descriptive

WIN-403	Double leaf glazed door	Descriptive
WIN-404	Metal window four bay assembly with glazed doors and fixed lights with overhead panel	Descriptive
WIN-405	Metal single bay window assembly with opening and fixed lights with overhead panel	Descriptive
WIN-406	Metal single bay window assembly with opening and fixed lights	Descriptive
WIN-407	Metal window assembly with glazed door and fixed side light with overhead panel	Descriptive
WIN-408	Metal window assembly with glazed door and fixed side light	Descriptive
WIN-409	Metal two bay window assembly with opening light and fixed lights	Descriptive
WIN-410	Metal side hung dormer casement window	Descriptive
WIN-411	Metal two side hung casement window	Descriptive
WIN-412	Metal side hung casement window	Descriptive
WIN-413	Metal side hung casement window	Descriptive
WIN-420	Single leaf door and fixed side panel with overhead panel	Descriptive
WIN-421	Single leaf door and fixed side panel with overhead panel	Descriptive
WIN-422	Single leaf door and fixed side panel	Descriptive
WIN-440	Rectangular fixed rooflight	Descriptive
WIN-441	Rectangular fixed rooflight	Descriptive
WIN-450	Curtain walling screen with power assisted door	Descriptive
WIN-451	Curtain walling screen with power assisted door and automatic opening vents	Descriptive

EDR/LVR/WIN EXTERNAL DOOR, LOUVRE AND WINDOWS: SYSTEM GENERAL REQUIREMENTS

REQUIREMENTS FOR PERFORMANCE

General
- All systems to be square, true and accurately positioned in relation to adjacent elements.
- Systems shall be consistent from module to module and unit to unit, without variation in colour, gloss levels, texture or shade.
- Systems shall not fracture, peel, delaminate, corrode, rattle, deform, vibrate or generate noise in end use occupation (i.e. from door closure, or Design Load application).
- Systems shall be secure, free-draining and weather tight. The works shall be designed and installed such that cavity drainage, weathering and water shedding shall not cause unsightly stains on visible elements.
- Moveable systems, such as doors, windows and opening roof lights must operate smoothly and not drop, warp, fracture or foul linings or adjacent systems.
- Finishes shall not significantly change colour, tone, gloss level or pattern under anticipated environmental conditions during the design life of the works.
- Windows, doors, roof lights and elements within openings in adjacent construction shall form a seal to the adjacent construction equal to the performance of the window, door, roof light or element in question.
- The system and/or components within the system shall comply with the European Product Regulations in respect of testing, declaration and marking products applicable to the regulations.
- Unless stated otherwise in the Services Engineer's Report or the Project General Requirements section of this specification, the service temperatures assumed shall be as listed in CWCT Standard for Systemised Building Envelopes.
- Comply with the current issue of the NHBC Standards as a minimum standard. Where the specification requirements exceed those standards, the specification shall take precedence.

Definitions
- The performance requirements apply to composites in their composite form.
- Systemised elements are defined as those constructed from finished components and assemblies. These include windows, curtain walls, and doors.
- Sloped glazing shall include systems with a slope of less than 75º from the horizontal, in accordance with CWCT Standards.
- High usage doors are defined as external doors that are expected to experience large, high frequency traffic volumes, such as public entrance doors.

Security
- All applicable doors, windows, rooflights and easily accessible openings are to achieve the requirements of Secured by Design : New Homes 2014 : Section 2 : Security of Dwelling
Communal Doorsets:
- To: LPS 1175 Issue 7:2010: SR2 or STS 202 Issue 3:2011 BR2 or PAS 24: 2012 paragraph 4.4.3 i.e. via testing to BS EN 1627 Resistance Class RC3 (minimum)
- For door entry and access control systems refer to Services Engineer's information.
- All internal ground floor and accessible doors with glazed vision panels shall be fitted with laminated glass tested to BS EN 356 Class P1A. Glass shall remain intact after breakage
Flat Entrance Doorsets:
To: PAS 24
- Refer also to individual System Specific Requirement work sections

Structural and Mechanical
- The completed works shall accommodate loading requirements in accordance with the relevant European and national code requirements.
- The contractor shall assess the use class of the building as defined in BS EN 1991-1-1, and design the elements and guardings in compliance with the loading and structural requirements in BS EN 1991-1-1, guidance in PD 6688-1-1 and BS 6180.
- The works shall be capable of accommodating movement and tolerances associated with any element and adjacent elements without degradation of performance, tolerance limits, operability or aesthetics to either. Movements may include: Elastic deformation induced by dead/live loads and/or excessive temporary loads, axial shortening, ground movement/differential settlement, shrinkage, moisture movement, creep, thermal movement, movement due to chemical action and movement due to the expansion of absorbed or retained moisture caused by freezing. Movement in

this context includes both reversible and irreversible movement. The design and detailing of the works including fixings shall prevent degradation due to locked-in stresses.
- The contractor shall take full account of all the anticipated building movements including those arising with the supporting structure to the works as described in the Building Movement and Tolerances report, prepared by the Structural Engineer. The works shall perform without adverse effects under such movements.
- Where guarding is provided by windows or moveable panels on restrictors, they shall provide guarding performance in their open position.
- When a restraint system is incorporated on the cladding for building maintenance units (BMU) or temporary suspended platforms (TSP), for calculation purposes the minimum imposed load applied to the restraints shall be 1kN in accordance with BS EN 1808 paragraph 6.7.
- Wind loads: Particular attention shall be paid to areas subject to increased wind velocities and pressures arising from localised eddies and vortices such as at eaves, canopies, external corners, fins, shelves, signage, brise soleil, and other projections to ensure stability, freedom from vibration and security of fixture.
- Systemised elements:
    - In addition to the requirements above, the loading requirements of the CWCT Standard for Systemised Building Envelopes shall be met.
- Deflections:
- Systemised elements:
    - Allowable deflections for all components shall be as listed in Part 3 of CWCT Standard for Systemised Building Envelopes and shall ensure maintenance of visual criteria, support for related components and infill, performance of the envelope at interfaces and effectiveness of seals.

Robustness and Impact

- The contractor shall design the system to resist applied or transferred impacts that occur during normal use and maintenance of the system, without degradation.
- Opening elements shall be secure, operate smoothly and not drop, foul adjacent linings or finishes and operate without noise, rattle or vibration.
- Vertical building envelope systems shall resist the impact values in accordance with the CWCT Technical Note 75. Refer to Appendix A of TN75 to determine relevance of tests to particular components and materials. Table 3 of TN 75 shall be used to interpret the impact loading requirement of each area of facade. Particular care shall be made to ensure all facades within 1.5m of public accessible pedestrian levels shall resist loads of at least exposure category B. Locations for soft and hard body test impacts for glass shall be as EN 14019 for curtain wall glazing and EN 13049 for window glazing. Acceptable failure modes for serviceability: not worse than class 1 for all elements up to 5m above pedestrian level; not worse than class 2 for all elements over 5m above pedestrian level. No other failure modes shall be acceptable.
- Sloped glazing shall withstand impacts as Class 2 roofs CWCT Technical Note 66. The contractor shall use guidance in CWCT TN 68 when designing overhead glazing and may utilise the advice given in TN92 about achieving Class 2 safety and robustness.
- Special consideration shall be given to hail impact resistance on surfaces exposed to potential hail.
- Windows shall resist soft body impacts as in BS EN 13049 Class 4.
- Doors shall resist hard and soft body impacts as PAS 24
- Curtain walls shall resist soft body impacts as in BS EN 14019 Class E4.
- Accommodation of horizontally applied loads arising from maintenance equipment (e.g. ladder, maintenance cradle) to CWCT Standard for Systemised Building Envelopes requirements: Any part of the cladding surface of the works shall sustain safely and without permanent deformation to any component, a static 500N horizontally applied load through a square of 100mm sides on any part of the building envelope. Should maintenance cradles impart larger loads than the one stated herein, the contractor to liaise with cradle trade contractor and ensure the envelope shall sustain these impacts without any reduction in performance.
- The impact performance of transparent glass shall be as required by the Building Regulations plus additional performance as required under 'Security' in this specification.

Fire

- Refer to Fire Strategy Report by Fire Engineer.
- External surface reaction to fire shall be as the classifications in Approved Document B of the Building Regulations. The contractor shall ensure these provisions are met taking into account building class, building height above ground and proximity to the relevant boundary. The contractor shall also take note of any uplift in these requirements or guidance contained in the Fire Strategy Report and in system specific requirements within this specification.
- Fire rating of doors, windows, curtain walls, roof light and other glazed systems: See system

specific requirements in this specification, plus the fire strategy drawings and report.
- Fire and smoke stopping: To BS 476-22.
- Cavity barriers shall achieve minimum 30 minutes integrity and 15 minutes insulation, when exposed to fire from each side separately, and be installed at no greater intervals than the ones stipulated in Table 13 of Approved Document B, unless the system complies with paragraph 9.10. Cavity barriers shall also be installed at compartment interfaces with the facade and around openings as required in the Approved Document B. The final strategy shall meet the approval of the building control body.
- Cavity barriers around openings may be formed by the window or door frame so long as it is consistent with the requirements of section 9.13 of AD B Volume 2 of the Building Regulations.
- Fire stopping shall be installed around penetrations through any facade that has a fire rating for boundary purposes and shall be of equal performance to wall through which they are penetrating.
- Fire stopping and cavity barriers at compartment lines shall equal the resistance of the compartment separation as defined on the fire strategy drawings or report.
- Fire and smoke stops shall be positively supported. All fire and smoke stopping shall be capable of accommodating all structural, settlement, drying shrinkage, creep, thermal, and moisture movements of the building frame and/or the façade without dislodging.
- Composite components shall not delaminate while performing for specified fire resistance periods.
- The installation of fire and security doors, door sets, shutters and active smoke/fire barriers shall be certified by LPS registered contractors in accordance with LPS 1271 (Requirements for the LPCB Approval and Listing of Companies installing fire and security doors, door sets, shutters and active smoke/fire barriers).
- Provide certified evidence, in the form of a product conformity certificate. Such certification by an approved third party certification or testing body must cover all materials and their installation.
- For doors and door sets comply with the specified requirements for fire resistance tested to BS 476-22, BS EN 1634-1 or BS EN 1634-3. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.
- Ironmongery: All door furniture shall demonstrate its ability to be suitable for the intended purpose, by inclusion in satisfactory fire tests to BS476: Part 22 or EN1634-1, on a type of door set and configuration in which it is proposed to be used. This evidence shall be provided by an approved third party certification or testing body.
- Systems and components that perform fire or physical security within the works shall suit location and be certified by the Loss Prevention Certification Board (LPCB), and listed in the BRE Red Book.

Light and solar transmission
- Photometric performance of glazing as calculated in BS EN 410:
- Light transmittance (LT): see System Specific Requirements
- Solar factor (g value): see System Specific Requirements

Condensation
- The contractor is to ensure that surface condensation does not form on the works when used under temperature and humidity conditions referred to the Services Engineer's Report or the Project General Requirements of the architectural specification.
- No interstitial condensation shall form in non-breathing construction under the same environmental conditions as above.
- Interstitial condensation shall not build-up in breathing construction under the same environmental conditions as above. Short term accumulations of interstitial condensation shall not cause staining, rotting, corrosion or any detriment to performance or aesthetics of the works, as determined by BS EN ISO 13788.
- The contractor shall evaluate the risk of interstitial and surface condensation forming on the works by using acceptable risk analysis calculation methods stipulated under 'Post Contract Submittals 'in this specification.
- Special consideration shall be given to thermal bridges in the construction, in order to predict the risk of surface or interstitial condensation (see Thermal clauses herein). The contractor shall ensure that thermal bridging is eliminated, or where this is not possible thermal bridging shall be limited to ensure no degradation to performance or risk of condensation forming within or on the surface of the works.
- The guidance in BS 5250: Code of practice for control of condensation in buildings and 'Thermal Insulation: Avoiding the Risks', BRE 2002 shall be used to reduce condensation risks.

Water Ingress
- Any systemised building envelope, including curtain walling, sloped glazing, window walling, sealed composite cladding and rain screen cladding is meet the requirements of the CWCT Standard for Systematised Building Envelopes, i.e. no leakage onto the internal surfaces up to peak

pressure 600Pa
- Stand alone windows (punched windows) water tightness class to BS EN12208: see System Specific Requirements in this specification.
- Stand alone fully rebated doors (punched doors) water tightness class to BS EN12208: see System Specific Requirements in this specification.
- Any stand alone roof lights shall resist water ingress equal to sloped glazing.
- Any non rebated, high usage doors where not part of a systemised building envelope are not subject to water ingress test requirements; however the contractor is to ensure that the completed works resist water ingress when in the closed position. This should be equal to that achieved by the incorporation of perimeter gasket seals or brushes to the top and sides; brush type seals to the bottom of the door. Perimeter seals shall not create significant drag so which would unduly restrict the operation of the door.
- Weather performance louvres shall have test certification for prevention of water ingress through louvres at the worst case intake velocity stated in the Mechanical Services Specification by the services engineer or HEVAC class C, whichever has the latest water ingress.
- Movement and other fixed joints shall remain sound and accommodate all thermal, building structure or other movements and any applicable loads without compromising watertightness.

Ventilation
- Louvres shall be performance tested in accordance with BS EN 13030.
- Total physical free area when openable vents are fully open: see System Specific Requirements in this specification.
- Physical free area of weathered ventilation louvre system or air bricks: see System Specific Requirements in this specification.
- Visual free area of weathered ventilation louvre system: see System Specific Requirements in this specification.
- Equivalent free area of trickle vents: see System Specific Requirements in this specification.
- Discharge loss coefficient of weathered ventilation louvre systems: Refer to Mechanical Services Specification by the services engineer if not stated in System Specific Requirements in this specification.
- HEVAC rain exclusion rating of louvers: see water ingress above.
- Insect and vermin mesh to rain screen facades: mesh size to be sufficient to exclude infestation from nest building insects, and mesh size to ventilation louvers to exclude all airborne insects.

Earth bonding
- Any exposed metal components shall be earth bonded in accordance with BS EN 62305, BS 7430, and BS 7671.
- Refer to Mechanical Services Specification.

Infestation
- The works shall be constructed to prevent insect, bird and vermin infestation arising in inaccessible cavities using guidance contained in BRE Digest 415. See requirements for size of insect mesh under Ventilation.

Accessibility
- Doors on inclusive access routes shall be designed to allow access in accordance with BS 8300.
- Window and roof light controls shall meet the accessibility requirements of BS 8300 including type, location, opening and operating forces.

Health and Safety
- In completing the design, the contractor shall assess hazards associated with the construction, maintenance and demolition of the works and risk of such shall be eliminated, or where not possible minimised and communicated to the designated contact.
- The contractor shall ensure performance of the system whilst discharging designer's duties under the CDM Regulations 2007.
- In addition, the contractor shall assess the hazards to building users and the public arising from the works throughout the service life of the building and risk of such shall be eliminated, or where not possible minimised and communicated to the designated contact.
- Where doors, windows and moving parts are included in the system, risks of injury to fingers and limbs shall be prevented. This is particularly important with pivoting doors and power operated components. Guidance within EN 16005 and BS 7036 shall be incorporated in the design of automated doors.
- Windows shall be designed in accordance with the minimum requirements of BS 6375 Part 2.
- In the instance where the external face of the façade is to be cleaned by via an open window, the

contractor shall produce a risk assessment in accordance with BS 8213 Part 1 to assess the risk of somebody falling out of an open window when in use.
- For outward opening windows with opening gap restricted to prevent falling and where the base of the opening vent is below the minimum barrier height cited in the Building Regulations; the window in combination with the restrictors shall resist the required barrier loads.
- Window restrictors: where they are designed to be over-ridden for cleaning or maintenance reasons, they shall be released by security key, not a simple button.
- Glazed roof access: Loads and failure modes in accordance with CWCT TN 66 and TN 67 Class 2: Roofs where people are not intended to walk on the glass, but which are required to be non-fragile to protect people: when maintenance personnel walking adjacent to the glass could fall, trip or drop objects onto the glass surface; when maintenance personnel working on the glass roof could fall or drop objects onto the glass surface from crawler boards or other access equipment.
- Glazing is being utilised to act as a barrier and shall be designed to meet the requirements of BS 6180, BS 8200 and BS 6262 relevant parts and the Building Regulations. All safety glazing shall be marked in accordance with BS 6262 Part 4.
- The contractor shall mitigate against specific risks of nickel sulphide failure in toughened glass, thermal shock in annealed glass and delamination in laminated glass. The performance level of mitigation against thermal shock shall be equal to that provided by heat soak testing to BS EN 14179 Part 1.
- The contractor shall produce a glass risk assessment to justify the choice of glazing for each location. This shall include the possible failure modes, probability of failure and consequence of failure i.e. degree of containment and the risk of injury due to this consequence. It shall also consider non-safety related failure modes to justify commercial drivers in glass selection.
- The contractor shall take account of guidance given in CIRIA C632 Guidance on Glazing at Height, CWCT TN63, 65, 66, 67, 68, 69 and other current guidance from relevant industry bodies. See also requirements for mitigation of thermal shock under Thermal requirements.
- Manifestation of glazing to be applied in accordance with the Building Regulations.

Acoustic
- External sound insulation: refer to acoustic **report**
'EXTERNAL BUILDING FABRIC ASSESSMENT REPORT 6015/EBF'
- Horizontal flanking transmission: refer to acoustic specification.
- Vertical flanking transmission: refer to acoustic specification.
- Rainfall noise: The completed works are to incorporate damping on horizontal or sloping light metal surfaces. Where the performance target or prescriptive means of achieving rainfall reduction is not stated in the acoustic report, assume performance equal to resilient plasto-elastic material of 6kg/m² bonded to underside of any outer lightweight cladding, sills etc. Where the interior space is intended as a room for study, performance or sleeping, target to be equal to resilient plasto-elastic material of 10kg/m². Note resilient material and bond to be heat and freeze resistant with design life equal to that of the components to which it is attached.
- Noise arising from thermal movement of the works shall not be detectable from the interior.
- Where thin linear components are required on the facades, the contractor shall carry out a risk assessment for likelihood of wind generated noise and mitigate risks of drumming, humming and whistling within the completed works. Particular attention shall be paid to open ended tubes and hollow components.

Thermal
- Maximum U value target for windows and curtain walls, including brackets, framing and spandrel members: See System Specific Requirements.
- Glazing unit centre panel transmittance: See System Specific Requirements.
- Non repeating linear and point thermal bridges shall have equal or better thermal resistance than the equivalent Accredited Construction Detail for any interface, junction or corner.
- Thermal calculations are to be provided by the Contractor in accordance with BR 443 and all standards referred to therein. The Contractor shall take account of 1, 2 and 3 dimensional heat flow, including thermal bridges through the construction in accordance with EN ISO 6946, BR443, BS EN ISO 10211-1, BRE IP 1/06 and BR497. Window and door U value calculations shall be in accordance with BS EN ISO 10077-1 and BS EN ISO 10077-2.
- Curtain walling and metal window walling is to be calculated as one area including transparent and opaque areas together with framing members.
- For sloped or inclined glazing: The Contractor is to calculate the average weighted U-value of the glazed areas utilising glazing centre pane U-values as stated by the manufacturer in accordance with BS EN 673 for the vertical plane. This is in accordance with The Building Regulations Part L1A clause 36b and Part L2A table 4; note 2.
- Glass shall be designed, manufactured and installed to reduce the likelihood of thermal shock

arising in any pane. Guidance from CWCT TN 65 shall be taken into account. The glass risk assessment mentioned under requirements for Health and Safety shall take thermal shock into account.
- The contractor shall carry out a thermal risk assessment to identify any key areas of thermal bridging in the works and shall mitigate against risks of concentrated heat loss.

Air-tightness

- Refer to the Project General Requirements of the architectural specification for the whole building air tightness target and means of achieving it. The works are to be designed, fabricated and installed so as to contribute to the achievement of this target.
- Systems and interfaces with adjacent systems are to form continuous barrier against uncontrolled air leakage.
- Air infiltration rates for systemised building envelopes are to meet the requirements of the CWCT Standard for Systematised Building Envelopes and BS EN 12152 as follows: for curtain walling, sloped glazing, window walling, sealed composite cladding, rendered systemised backing walls, masonry in front of systemised backing walls and rain screen cladding on systemised backing walls: maximum 1.5$m^3/h/m^2$ at 600Pa infiltration and corresponding infiltration for lower pressures as per the standard. Any joints within opening vents, windows and doors (excluding high usage access doors with low or flush thresholds, or low exposure entrance doors) as part of a systemised walling system are to meet the requirements of the CWCT Standard for Systematised Building Envelopes, i.e. max 2.0$m^3/h/m$ at 600Pa infiltration and leakages for lower pressures as per the standard.
- Exfiltration shall be limited to values equivalent to infiltration at 100Pa as above.
- Any stand alone (punched) windows and fully rebated (punched) doors (excluding high usage access doors) are to meet Class 4 performance to BS EN 12207. At peak test pressure 600Pa the permissible air infiltration rate through the opening joints of punched windows and fully rebated doors shall not exceed 2.5$m^3/h/m$ in accordance with BS EN 12207.
- High usage doors are to meet Class 3 performance to BS EN 12207. In cases where this cannot be technically achieved without compromising safety, access, functionality and security the contractor shall use best endeavours to reduce air leakage without compromising the performance requirements.
- Any masonry, render or traditionally constructed system will not be subject to a CWCT test, but must be constructed with backing wall to equal the air tightness of an equivalent area of curtain walling.
- Doors on spring or motorised closers are to remain in the closed position in high winds, whilst meeting the opening force requirements of BS 8300.

Service life, Durability and Degradation

- Atmospheric conditions in accordance with:
  - BS EN ISO 12944-2: Paints and varnishes - Corrosion protection of steel structures by protective paint systems. Classification of environments.
  - BS EN ISO 14713: Zinc coatings - guidelines and recommendations for the protection against corrosion of iron and steel in structures
  - BS EN 10169: Continuously organic coated (coil coated) steel flat products.

External: C3 i.e. urban industrial, coastal low salinity.
Internal: C1 i.e. internal heated and C2 i.e. internal unheated.
- Building service life: Refer to Project General Requirements.
- System service life: Refer to table below
- Warranty shall be from date of practical completion and design life of system components as the flowing table:

System component	Service life	Warranty
Curtain walling	40 years	12 years
Door and window framing (excluding timber), panels and brackets	40 years	12 years
Door and shutter motors, closers, pivots, moving parts and control gear	25 years	12 years (or longer under a service contract)
Door ironmongery	25 years	5 years
Powder coating gloss retention and colour fastness	60 years	25 years (or less if including consequential loss

		clauses)
Powder coating adhesion	60 years	12 years
Paint coatings (except timber)	60 years	5 years
Anodizing	60 years	12 years
Gaskets and dry seals (except moving swipe seals and brushes)	40 years	12 years
Wet seals accessible for maintenance *	25 years	12 years
Insulation and fire stopping	60 years	12 years
AVCL/ VCL membranes, in accordance with BS 5250 requirements	60 years	12 years
Breather/ Weather Membranes	50 years	12 years
* For generic life expectancy of sealants refer to Table 2.2 of CIRIA, Sealant joints in the external envelope of buildings: a guide on design, specification and construction and Table 1 of CWCT TN19		

- The system and all parts thereof shall be serviceable for the design life required above. No parts shall suffer significant degradation or failure during the service life required above.
- The works shall be designed and installed to weather effectively. Water running off or within cavities in the system shall be managed and directed in such a way that waterborne pollutants are not leached out onto either adjacent cladding or surrounding structure in a manner likely to cause staining, long term dampness or algae growth.
- The completed works shall resist abrasion from cleaning methods specified in the works manufacturers' maintenance information without any discernible change in appearance.
- Resistance to repeated opening and closing for doors to BS 6375-2: See System Specific Requirements.
- Lever handles are to be in accordance with BS EN 1906 to achieve the performance requirements and test methods (i.e. durability, static strength, operating torque, corrosion, safety, etc.) for sprung and un-sprung lever handles and for doors on back plates or roses.
- All door hardware is to in accordance with BS EN 1670: 1998 Corrosion Resistance requirements and test methods (i.e. durability, static strength, operating torque, corrosion, safety, etc.)
- Unless specified otherwise, select ironmongery components to suit minimum use as defined in BS 7352.
- Where material or system performance reduces or erodes during the course of its service life, such as in the case of vacuum insulated products, the predicted performance at the end of the service life shall be used as the basis for the design.
- The contractor shall ensure that electrolytic corrosion between dissimilar metals does not occur under the environmental conditions expected to prevail during the life of the building. This shall include prevention of electrolytic corrosion due to the following:
    - direct contact of dissimilar metals
    - water runoff from electrolytically dissimilar metals
- The works shall be designed to prevent the occurrence of crevice corrosion by avoiding details and interfaces where water may be trapped over long periods of time. Narrow openings between metal components in contact with other metal or non metal components in locations prone to wetting shall be avoided. Particular attention shall be given to fasteners where crevices may be formed under bolt, screw or rivet heads or within the thread. Appropriate sealing shall be carried to avoid crevice corrosion.
- Corrosion resistance of items that have a structural or load bearing function, whether accessible or inaccessible for inspection and repair, shall have a life to first maintenance equal that the entire system service life stated in the Service Life and Durability section of this specification above.
- The Life to First Maintenance of ferrous metal items shall be Very High (VH) as defined in Table 2 of BS EN ISO 14713-1 Zinc coatings – Guidelines and recommendations for the protection against corrosion of iron and steel in structures, Part 1: General principles.
- All externally visible ferrous metal surfaces shall have corrosion resistance of equal performance to hot dipped galvanised steel with a minimum average coating thickness of 85 um to ISO 1461 or stainless steel grade 1.4401 to BS EN 10088-2 or, where not visible, develop natural patination to meet service life of the components, equal to steel grade 304. This also applies to components or parts of components within rain screen. All cavity fixings supporting or restraining masonry, stone any other porous material shall be stainless steel.
- Where fixings connect dissimilar metals, the fixings shall be made of a material which is at least as noble of the noblest material fixing being fixed. Ie. an aluminium to mild steel bracket should be fixed with stainless steel screws.
- The works shall be designed to prevent the risk of corrosion or staining by direct contact of metal components with timber.

- Water runoff:
  -The works shall be designed to prevent the risk of corrosion by water run-off from timber onto electrolytically dissimilar metal surfaces.
  -The works shall be designed to prevent the risk of acidic corrosion by water run-off from bitumen onto metal surfaces such as copper and zinc.
  -The completed works shall ensure that water runoff from metals, such as copper, bronze, brass etc, shall not result in staining of porous materials below.
  - Water runoff from concrete, stone or other materials containing lime shall not affect the performance or degrade the appearance of adjacent materials, such as metals particularly anodised aluminium, stone and glass surfaces/assemblies or finishes to components.
- Where wood preservatives are used, the contractor shall eliminate the risk of any adverse reaction with metals, polymers and other materials.
- Sealant systems shall not bleed, discolour or cause staining of any facing materials which they are likely to come into contact.
- Timber components shall not be used in areas where they cannot be readily inspected and replaced without disturbing the system.
- Durability of sealants:
  -Sealants selected to seal a joint shall be able to maintain their performance while accommodating variations in joint sizes due to manufacturing and erection deviations, and repeated building movements induced by mechanical and environmental stresses. They shall withstand climatic conditions and any specific environmental conditions to which they are subjected.
- Alkali damage:
  - Aluminium components shall not suffer alkali corrosion or staining from cement based materials.
  - Glass components shall not suffer visual or performance degradation arising from waterborne alkalis from components above.
- UV and IR resistance:
  - All materials that are sensitive to UV/ IR shall maintain their integrity, visual appearance and performance over the service life of the element of the works in which they are incorporated.

Maintainability

- The design of the works shall take account of the requirements for maintenance after completion of the works. Components which require cyclical maintenance shall be accessible, either directly, or indirectly following removal of associated components.

Environmental

- Insulation products are to be A or A+ rated by the BRE Green Guide to Specification or a manufacturer's independently certified Environmental Product Declaration and be sourced from manufacturers holding ISO 14001 or BS 8555 phase one to four audit certification (for small companies as defined by the Companies Act 2006) for both the insulation manufacturing plant and the raw material suppliers to the manufacturing plant.
- Insulation blowing agents shall have zero Ozone Depletion Potential (ODP), be CFC and HFC free and have a Global Warming Potential (GWP) of <5.
- All insulation products shall be 100% recyclable and manufacturers should be operating or participating in a recognized off-cut collection and/or recycling scheme.
- Materials shall be responsibly sourced, and to meet the project requirements under BREEAM, LEED, CfSH requirements (whichever assessment scheme is applicable to the project) as defined in the Project General Requirements of this specification.
- All timber shall to be FSC or PEFC certified. Chain of custody certification shall be provided (see submissions section of this specification)
- Materials shall be responsibly sourced and independently third party accredited from manufacturers holding ISO 14001 or BS 8555 phase one to four audit certification (for small companies as defined by the Companies Act 2006) as a minimum to meet the Project Environmental Assessment Method requirements (refer Project General Requirements) and shall have certified manufacturer's Environmental Product Declarations for:
  - Aluminium Framed Systems: Accreditations must cover the aluminium metal product manufacturing plant and the aluminium ingot production plant.
  - Steel Framed Systems: Accreditations must cover steel product production and electric arc furnace or basic oxygen furnace
  - Glass: Accreditations must cover the glass production and sand extraction or soda lime production or extraction.

- Plastics and rubbers (including EPDM): Accreditations must cover plastic/ rubber product manufacture and main polymer production.
- Products with 100% recycled content: Accreditations must cover product manufacture and recycled input by default
- Products with lower % of recycled content: Accreditations must cover product manufacture, supply chain process(es) for any virgin material and recycled input by default.

Additional Requirements for Performance: Sealant Joint Design

- The design of joints shall be in accordance with the requirements set out in BS 6093. For systemised elements, the contractor should follow the guidance in CWCT TN 16.
- All sealed joints shall be designed in consultation with the sealant manufacturer and shall comply with the requirements and guidance provided in:
    - BS 6093
    - BS 6213
    - CIRIA, Sealant joints in the external envelope of buildings: a guide on design, specification and construction
    - For systemised elements, the contractor should follow the guidance in CWCT TN 20.
- Sealant joints shall provide durable, weathertight seals, and shall be able to accommodate variations in joint sizes arising from induced deviations (tolerances) and inherent deviations (movement).
- Sealed joints shall allow the relative movement between the structure and the cladding to take place without overstressing cladding units and fixings.
- Sealed joints shall be capable of accommodating the accumulated tolerances of both the structure and cladding units, whilst maintaining the joint width within the acceptable deviation limits.
- Sealants between porous materials shall not migrate into or discolour adjacent materials.
- The design and installation of sealant joints is required to mitigate against mechanical and aesthetic failure of the sealed joints. Unacceptable failure modes are as follows:
- Mechanical failure:
    - Loss of adhesion
    - Loss of cohesion (splitting)
- Aesthetic failure:
    - Poor workmanship (mixing, masking, gunning, tooling, unevenness, discolouration)
    - Surface deterioration (cracking, discoloration, chemical attack)
    - Staining of adjacent surfaces

Additional Requirements for Performance: Windows and Doors

- General Standards:
    - NHBC Standards
    - Secured by Design New Homes 2014
    - PAS 24
    - BS 6375 (all parts)
    - BS 8213-1
    - BS EN 14351-1
- Aluminium windows and doors: To BS 4873
- Timber windows and doors: To BS 644

- Doorsets and windows shall be certificated to PAS 24, latest issue.
- Door and window impact resistance, as required under 'Robustness and Impact' in this specification.
- Operating forces of fully finished door assemblies: To comply with BS 6375-2 requirements, when tested to BS EN 12046-2, with the following exception:
    - Operating forces to comply with BS 8300 requirements

- Classification of additional performance characteristics: To BS 6375-3
- Safety in use requirements: To BS 8213-1
- Weatherseals performance requirements: To BS EN 12365-1
- All window weatherseals and gaskets shall be abrasion, UV/IR resistant and shall not be degradable by moisture, extreme temperatures, water vapour or frost. The plasticity, elasticity, shore hardness, colour and dimensional profile of gaskets shall remain within manufacturer's tolerance for

the service life of the assembly under the anticipated service conditions.
-Push–in or wedge gaskets shall not be stretched during installation. Gaskets shall not shrink or recede following the installation.
Gaskets shall be manufactured from extruded EPDM and comply with the requirements of BS 4255-1. PVC compound gaskets shall not be used.
- Glazing: Windows and doors shall be glazed in accordance with the recommendations given in BS 6262, BS 8000-7 and the NHBC standards relevant clauses.
- Notwithstanding BS 8000-7, timber setting blocks shall not be used in any window glazing.
- Insulating glass units (IGUs) shall conform to BS EN 1279, all parts.
-Movement accommodation: Where movement joints in surrounding construction are located along the masonry/mullion interface at the jambs, window or door frame fixing lugs shall accommodate movement of adjacent masonry without adversely affecting the visual, functional and performance requirements for the window or door and surrounding construction.
- The completed works shall ensure that all joints between window or door frames and their surrounds shall be fully weathertight, airtight and there shall be no thermal bridging.
- The works shall ensure that adequate clearance between window or door frame and surround is provided to allow for building tolerance, efficient airtight weathersealing and insertion of adequate insulation to prevent thermal bridging.

Aluminium windows:
- Windows shall be designed in accordance with the recommendations of the system supplier.
- The windows shall be manufactured from thermally broken sections, fully pressure equalised, aluminium alloy hollow box sections, sized and rebated profiles with no visible or other mechanical fixings on exposed surfaces of the window except where shown on the design intent drawings, all to specialist design.
- Aluminium window extrusions: To BS EN 755-1, BS EN 755-9, BS EN 12020-1 and BS EN 12020-2.
- Thermal barrier requirements: To BS EN 14024

Timber windows:
- Windows shall be designed in accordance with the recommendations of the system supplier and the guidance provided in TRADA publications.
- The window manufacturer shall be registered under a third party quality assurance scheme, such as BM Trada Q Mark High Performance Timber Window, or equivalent.
- The windows shall be manufactured from fully pressure equalised, suitably sized timber sections, sized and rebated profiles with no visible or other mechanical fixings on exposed surfaces of the window except where shown on the design intent drawings, all to specialist design.

Additional Requirements for Performance: Louvres

- Louvres shall be designed in accordance with the recommendations of the system supplier.
-Movement accommodation: Where movement joints in surrounding construction are located along the masonry/mullion interface at the jambs, louvre frame fixing lugs shall accommodate movement of adjacent masonry without adversely affecting the visual, functional and performance requirements for the louvres and surrounding construction.
- The completed works shall ensure that all joints between louvre frames and their surrounds shall be fully weathertight, airtight and there shall be no thermal bridging.
- The works shall ensure that adequate clearance between louvre frame and surround is provided to allow for building tolerance, efficient airtight weathersealing and insertion of adequate insulation to prevent thermal bridging.

Additional Requirements for Performance: Sloped Glazing

Sloped Glazing:
- Sloped glazing shall be designed in accordance with the recommendations of the system supplier.
- The sloped glazing shall be manufactured from thermally broken sections, fully pressure equalised, aluminium alloy hollow box sections, sized and rebated profiles with no visible or other mechanical fixings on exposed surfaces of the sloped glazing except where shown on the design intent drawings, all to specialist design.
- Sloped glazing systems shall incorporate pressure equalised cavities incorporating a minimum of two layers of defence against water leakage – an outer layer of seals to prevent water ingress and an inner layer of properly designed drainage channels to remove water that passes the first line of

defence.
- Glazing shall be incorporated into the frames in accordance with BS 6262 (drained cavity glazing systems)
- Glazing setting blocks shall have a minimum width of that equal to the thickness of the glazing unit to ensure that all panes within the unit are fully supported. Setting blocks shall be positioned no less than 30mm or a maximum of 50mm from the corner of the glazing unit or in accordance with the manufacturer's recommendations. Setting blocks shall not block drainage water paths or ventilation routes to the perimeter of the glazing.
- The glazing or infill panels shall be positioned centrally within the frames, a clearance gap of 6mm shall be accommodated between the frame and the glazing/ infill panel.
- All glazing rebates shall be designed in such a way that no residue water will be trapped anywhere within the glazing system. In particular, water shall not be able to remain in contact with the edge seals of the insulating glazing units.
- The sloped glazing is to include for external drainage. Water draining down the internal drainage channels of the mullion (via the transoms) must be discharged into a suitable and pre-designated gutter (consideration shall be given to any additional water run-off from adjacent constructions onto the said sloped roof area).
- Sloped glazing mullion/transom joints must be formed by over-lapping the transom onto the mullion sections and jointing with a compressed sealing material between the two sections.
- The minimum pitch of the sloped glazing shall be not less than 15 degrees or that recommended by the systems manufacturer (whichever is the lesser).
- Provision shall be made to drain condensation forming on the underside of the sloped roof glazing (due to extreme conditions caused by night-time radiation) into the main mullion bars via the transom bars. This condensation shall then be drained via the internal drainage channels of the mullion bars to the exterior of the façade, into a suitable and pre-designated gutter.
- The sloped glazing shall have moisture/vapour resistance secondary weather membranes mechanically fixed and sealed to the perimeter of the grid and to the structure to maintain the air tightness of the system and provide a second line of defence against water penetration. Where necessary, secondary weather membranes should be mechanically fixed to the structure by means of aluminium clamp angles and suitable fasteners.

Sloped Glazing Capless:
Type: Aluminium Stick, Fully Framed
- Sloped glazing shall be constructed with no external pressure plates or decorative caps. Externally all the glass to glass joint shall be silicone butt sealed. To achieve rear gasket compression along the edges of the infill panel the unit shall be fixed with concealed toggles at centres.
- IGU's shall be fixed to the mullion rafters with concealed toggle fixings. Either securing the IGU directly, or by securing an appropriately finished extruded aluminium carrier frame (which has been structurally silicone bonded to the unit) to the mullion.
- Glazing and infill panels shall be dry pressure glazed into suitably sized rebates to suit the glazing as dictated by the performance requirements outlined in this document, the rebate shall offer a minimum edge cover to the glass or panel of 15mm. The system shall incorporate gasket seals to the internal.
- The sloped glazing system shall be designed to avoid 'ponding' of water on the glass due to the back-fall created by dead load deflection of the glazing unit.

Punched Hole Rooflight, 4-Sided Capped:
Type: Punched Hole Rooflight, Fully Framed, Externally Capped
- Sloped glazing shall be constructed with an external pressure plate fixed at centres to achieve the performance requirements as outlined in this document.
- The system shall incorporate clip-on decorative extruded aluminium capping pieces. Longitudinal caps (running with the slope) shall be mechanically fixed to the pressure plate near the top of the profile to datum thermal expansion and prevent slippage of the cap.
- Glazing and infill panels shall be dry pressure glazed into suitably sized rebates to suit the glazing as dictated by the performance requirements outlined in this document, the rebate shall offer a minimum edge cover to the glass or panel of 15mm. The system shall incorporate gasket seals to the internal and external faces of the glazing and infill panels.
- The roof light shall be secured to a suitable insulated weathered kerb upstand within a flat roof construction.
- The sloped glazing system shall be designed to avoid 'ponding' of water either behind the transom pressure plate/ caps and on the glass due to the back-fall created by dead load deflection of the glazing unit.

Rooflight Within a Flat Roof Construction:

Type: Punched hole rooflight, fully framed, no external caps
- The stand alone glazed rooflight shall be constructed utilising a four sided perimeter extruded aluminium frame to which a glazing unit is structural silicone bonded. The rooflight shall be a 'face sealed' system. The rooflight shall not incorporate any external capping sections. The rooflight shall be positioned above a suitable weathered kerb upstand within a flat roof construction.
- No visible screws or other mechanical fixings shall be permitted on all exposed surfaces of the sloped glazing except where design intent allows, these areas shall be identified at the tender stage.
- The size of structural sections will be determined by the Contractor based on the specified dead and live loading requirements as outlined in this document.
- The minimum pitch of the sloped glazing shall be not less than 5 degrees or that recommended by the systems manufacturer (whichever is the lesser).
- The sloped glazing shall have moisture/vapour resistance secondary weather membranes mechanically fixed and sealed to the perimeter of the frame and to the structure to maintain the air tightness of the system and provide a second line of defence against water penetration. Where necessary, secondary weather membranes should be mechanically fixed to the structure by means of aluminium clamp angles and suitable fasteners.
- Indicative insulating glazing unit configurations (in accordance with CWCT recommendations) shall have an appropriate inner safety laminated pane and an outer heat soaked toughened pane all in accordance with Appendix Z25 Glass and Coatings.

REQUIREMENTS FOR SAMPLES, SUBMISSIONS, MOCK-UPS AND TESTING

Submissions Generally:
- Submit for approval in accordance with the protocol detailed in the Project General Requirements.

Pre-Contract Submittals:
- Provide manufacturer's product data for all materials in this specification, including manufacturer's installation instructions and maintenance data, components, assemblies, products that meet the requirements of the Design Intent.

Post-Contract Submittals:
- The following technical submittals are required:
    - Wind load /snow load calculations
    - Barrier calculations
    - Impact load calculations
    - Structural calculations, test data and technical literature for framing members, brackets, architectural feature connections, fixings, etc, to demonstrate compliance with Specification and BS EN standards.- Glass stress calculations
    - U Value calculations
    - Condensation risk analysis calculations:
        - Systemised and non breathing wall constructions, containing elements such as framing members that may form thermal bridges, shall be assessed using the methods described in BS 5250 and CWCT 'Standard for specifying and assessing for condensation risk',
    - G Value assessments
    - Manufacturing and installation tolerances document
    - Detailed installation checklists
    - CWCT testing certificates
    - Quality plan in accordance with BS 5750, BS EN ISO 9001
    - Written confirmation from sealant manufacturer that the seal design is in accordance with their recommendations to meet the service life requirements.

Post Contract Samples:
- In accordance with the Project General Requirements, submit post contract control and product samples that meet the requirements of the design intent and as defined in each work section.

Fabrication Drawings:
- In accordance with the Project General Requirements, submit fabrication drawings for comment to demonstrate compliance with the Functional, Visual and Performance requirements.

Samples:
- 1no of each type of ironmongery
- 300mm long samples of each profile used
- Range of compliant 200 x 200mm glazing samples for assessment and selection

- Any other samples listed in the System Specific Requirements

Mock Ups:
- In accordance with the Project General Requirements, submit full scale mock ups that meet the requirements of the design intent and as defined in each System Specific Requirement work section.

Quality Benchmarks:
- Provide notice of the first installed/ completed external door assembly/ doorset and walling installation of each type of door installation to form the Quality Benchmark in accordance with the protocol set out in the Project General Requirements.

Testing:

Systemised Building Envelope Testing:
- Including the following systems:
    - Curtain walls without ventilated cavities.
    - Curtain walls with decorative panels and ventilated cavities
- Where the contractor designs and installs proprietary pre-tested constructions systems to function within the performance envelope of their original type testing, the contractor shall supply copies of test results and proof that the installed elements are within the environmental, spatial and performance parameters of the type tests. Where the contractor designs and installs bespoke or untested solutions, or proprietary construction systems to function outside their original type testing parameters, the contractor shall undertake project specific testing, as follows:
- CWCT Standard for Systemised Building Envelopes laboratory test Sequence B as follows:
    - Air permeability – Infiltration & exfiltration: To CWCT Test Method Clause 5
    - Watertightness – static: To CWCT Test Method Clause 6
    - Wind resistance – serviceability: To CWCT Test Method Clause 11
    - Repeat air permeability – Infiltration & exfiltration: To CWCT Test Method Clause 5
    - Repeat watertightness – static: To CWCT Test Method Clause 6
    - Watertightness – dynamic: To CWCT Test Method Clause 7
    - Watertightness – hose: To CWCT Test Method Clause 9
    - Wind resistance – safety: To CWCT Test Method Clause 12
    - Impact tests: Refer to Appendix A of CWCT Technical Note 75 to determine required test methods to particular components and materials.
    - Rainscreen panels - wind load test: Open jointed rainscreen panels, which are not subjected to differential pressures of CWCT Test Methods 11 and 12, shall be tested to CWCT Test Method Clause 13

- Additional testing required:
    - Site hose test – In accordance with CWCT TN 41 and AAMA. Minimum 5% of critical joints within each system and interfaces between system shall be tested.
    - Equipotential testing: To CWCT Test Method Clause 20
    - Doors hard and soft body impact test: To PAS 24
    - Windows soft body impact test: To BS EN 13049
    - Windows mechanical load test, if within the scope of PAS 24 : To PAS 24
    - Security rating testing of doors and windows
    - Acoustic– laboratory testing: To BS EN ISO 10140, relevant parts. Test results reported in accordance with BS EN ISO 717.
    - Acoustic- site testing: Refer Acoustic Engineers information.
    - Safety anchor tests in accordance with the standard governing such anchors.
    - Off site and site testing of fixings: To CWCT Test Method Clause 19, BS 5080 Parts 1 and 2, and Construction Fixings Association guidance note 'Procedure for site testing construction fixings'.
    - Finishes: The window/ door contractor shall supply certificates together with the production sampling test reports, verifying the alloy and the coated finish complies with the specification and to the requirements of BS 6496 prior to work being transported and delivered to site.

External Punched Door and Window Testing:
- Where the contractor designs and installs proprietary pre-tested door and/or window systems, the contractor shall supply copies of test results and proof that the installed elements are within the environmental, spatial and performance parameters of the type tests. Where the contractor designs and installs bespoke or untested door and/ or window solutions, or proprietary door and/ or window systems to function outside their original type testing parameters, the contractor shall

undertake project specific testing sequence, as follows:
- Air permeability– infiltration & exfiltration: To BS EN 1026
- Watertightness: To BS EN 1027
- Wind resistance – serviceability (P1 and P2 test pressures: Classified in accordance with BS EN 12210 when tested to BS EN 12211
- Repeat air permeability: To BS EN 1026
- Repeat watertightness – static: To BS EN 1027
- Watertightness – hose: To CWCT Test Method Clause 9
- Wind resistance – safety (P3 test pressure): Classified in accordance with BS EN 12210 when tested to BS EN 12211

- Additional testing required:
  - External doors: Hard and soft body impact testing to PAS 24
  - External windows: Soft body impact testing to BS EN 13049
  - Windows mechanical load test, if within the scope of PAS 24 : To PAS 24
  - Security rating testing of doors and windows: To LPS 1175
  - Acoustic - Laboratory testing: To BS EN ISO 10140, relevant parts. Test results reported in accordance with BS EN ISO 717.
  - Acoustic - site testing: Refer Acoustic Engineers information.
  - Site hose test – In accordance with CWCT TN 41 and AAMA. Minimum 5% of critical joints within each system and interfaces between system shall be tested.
  - Finishes: The window/ door contractor shall supply certificates together with the production sampling test reports, verifying the alloy and the coated finish complies with the specification and to the requirements of BS 6496 prior to work being transported and delivered to site.

Materials Testing

Testing of Sealants:
- Stain testing on each type of stone/ precast concrete unit in contact with sealant.
- Quality control site adhesion testing: Non-destructive site adhesion test in accordance with guidance provided in paragraph 5.4 of CIRIA publication 'Sealant joints in the external envelope of buildings: a guide on design, specification and construction'.
- Properties of sealants to be measured using the test methods listed in BS EN ISO 11600
- Additional test procedures recommended by the sealant manufacturer shall be conducted in order to verify satisfactory sealant cure and / or adhesion to joint surfaces.

Certificates:
- Submit data substantiating manufacturer and installer qualifications and where requested, details of operative experience.
- Submit certified data attesting fire rated materials comply with specifications.
- Submit certificates of conformity and marking in accordance with the project environmental assessment method requirements.
- Fire resisting doors: Submit certified evidence, in the form of a product conformity certificate, directly relevant fire test report or engineering assessment, that each door/ doorset/ assembly supplied will comply with the specified requirements for fire resistance if tested to BS 476-22, BS EN 1634-1 or BS EN 1634-3. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.
- Non fire resisting doors: Submit certified evidence, in the form of a product conformity certificate or engineering assessment, that each door/ doorset/ assembly supplied will comply with the specified requirements to BS EN 14351-1. Such certification must cover door and frame materials, glass and glazing materials and their installation, essential and ancillary ironmongery, hinges and seals.

Operation and Maintenance Manual:
- Submit information in accordance with the Project General Requirements.

REQUIREMENTS FOR WORKMANSHIP AND MATERIALS

Fabrication Tolerances:

- Curtain walls, rain screens, rooflights, windows and doors – tolerances shall be limited to:
  - Length/ width: maximum allowed deviation +0/-1mm up to 3 metres; +0/-2mm over 3 metres.
  - Straightness/ flatness: Any surface or edge shall not deviate more than 2mm from a

straight edge of length 2 metres placed against it.
- Twist: No section shall twist more than ± 1° over the length of the section.

- Glass units under 2m²: tolerances shall within limits as follows:
  - Annealed glass: EN 572
  - Toughened glass: EN 12150
  - Heat strengthen glass: EN 1863
- Glass units over 2m² or within planar glazing or planar curtain walling or with highly reflective coating shall have tighter tolerances as follows:
  - Roller wave maximum 0.1mm at 300mm centres in panel middle and 0.15mm at edges.
  - Edge dip maximum 0.3mm.
  - Overall bow maximum 2mm/m or 0.2% of panel dimension.
  - Measurements in accordance with EN 12150; EN 1863 and BS EN 14179 Part 1.
  - Note that toughened glass shall be installed such that any discernible roller wave shall be horizontal.
- Normal flat glass:
  - Maximum bow: 0.2% of pane dimension.
  - Maximum roller wave:
    3 to 5 mm thick glass: 0.5 mm.
    6 to 10 mm thick glass: 0.3 mm.
    12 mm and thicker glass: 0.15 mm.
  - Maximum edge dip:
    3 to 5 mm thick glass: 0.8 mm
    6 to 10 mm thick glass: 0.5 mm.
    12 mm and thicker glass: 0.25 mm.
- Measurements shall be in accordance with EN 12150; EN 1863 and BS EN 14179 Part 1.
- Tolerances and quality of edge work shall be as required to mitigate the risk of thermal shock.

- Aluminium windows and door frames:
  - Framing tolerances in accordance with BS 4873:
    - Assembled frame size shall be within ±1.5mm of the documented work size in any dimension.
    - The difference between the diagonals of the assembled frame shall be not more than 4 mm.
  - Mitre frame joints:
    - Step in plane of face between profiles: ±0.3mm
    - Step in elevation: ±0.3mm
    - Distance between profiles: ±0.2mm
- Door Leaf Manufacturing Tolerances:
  - Manufacturing tolerances shall be in accordance with BS 5277, BS 5278 and BS EN 951.

Installation Tolerances:
- In order to ensure good fit and compliance with performance requirements, allowance shall be made for in-plane tolerance of preceding adjacent elements by others, eg. primary structure. The specified tolerance allowances of such elements shall be consulted to ascertain spatial zones required. In particular, the Structural Movement and Tolerance Report shall be consulted in respect of primary structural tolerance zones. In the case where insufficient data is available for primary structural tolerances, assume a zone of 25mm beyond the designed surface plane of the structural element, however, this shall be verified as sufficient by the structural engineer.
- All parts of any designed surface plane, cut-out, edge or feature shall be constructed and installed within ±2mm, and ± 5mm cumulative, of the designed setting out location in line, level, plumb and plane.
- Steps between adjacent panels or components designed to be in the same plane shall not exceed 2mm mm between any two adjacent sections.
- The bow of any flat surface shall not exceed more than ± 3mm from a 2000mm straightedge placed against it in any direction.
- Joint width: The width of an individual joint between components should not vary by more than 10% of nominal design width.
- Joint consistency: Within the length of any joint (including in-line continuations across transverse joints) the greatest width shall not exceed the least width by more than 5% plus 1mm. Any variation shall be evenly distributed with no sudden changes in width.
- Joints: The offset in elevation between nominally in-line edges across a transverse joint shall not be more than 5% of the width of the transverse joint plus 1mm.

- Joints: The offset in plan or section between flat surfaces of adjacent panels across any joint shall not be more than 5% of the width of the joint plus 1mm.

Materials

General:
- All materials shall be suitable for intended use.
- Materials used in the manufacture of the envelope, or its components, shall not be liable to reduction of their service life by infestation or attack by micro-organisms, fungi, insects or other vermin.
- The contractor shall take into account applicable UV/IR exposure limits, set by manufacturers, for all materials during construction.

Sealant Systems:
- Selection of construction sealants: To BS 6213.
- Classification and requirements for sealants: To BS EN ISO 11600
- The contractor should follow the guidance in:
    - BASA Industry Guide to the Professional Application of Construction Sealants on Site, prepared by the British Adhesives and Sealant Association.
    - CIRIA, Sealant joints in the external envelope of buildings: a guide on design, specification and construction
    - CWCT TN 19 and TN 20
- All sealants shall comply with the test procedures listed in BS EN ISO 11600 and BS 3712 Parts 1, 2, 3 and 4.
- Weatherproofing sealants shall be high performance grade, low modulus, neutral cure sealants suitable for the purpose intended and tested for special requirements.
- Where providing a primary line of defence, weatherproofing seals shall comprise a minimum of two sealant lines.
- Substrate compatibility: Sealants and primers shall be compatible with the materials with which they are likely to come into contact.
- Adhesion: Sealant systems shall achieve good adhesion to the substrates to which they are applied. The adhesion shall be sufficient to survive the mechanical and environmental stresses to which the sealed joint is likely to be exposed.
- When recommended by the sealant manufacturer, primers shall be used to :
    - enhance adhesion between sealant and substrate
    - strengthen or consolidate weak or friable materials
    - provide a barrier film between the substrate and the sealant to prevent staining of the sealant or the substrate.
- Where dissimilar surfaces form the joint, two different primers may be required.
- Sealant shall be applied against a compatible back up material that can provide sufficient resistance so that it is forced against the sides of the joint substrates during application and tooling.
- Sealants used in movement joints shall not adhere to the backup material and three sided adhesion shall be avoided.
- Back up materials, joint fillers and bond breakers shall be tested for sealant compatibility.

Weatherstripping of opening units:
- Material:
    - Non cellular rubber to BS 4255-1.
    - Cellular rubber to ASTM-C509.
    - Polypropylene woven pile, silicone treated.

Timber Door Cladding:
- Timber cladding shall comply with the following standards:
    - BS 1186-3
    - BS EN 942, with the following exceptions for uncoated cladding boards:
        - Arris, splay, margin and branched knots are not acceptable on visible faces.
        - Loose, dead or unsound knots shall not be present on any visible faces. Making good of loose, dead or unsound knots, as described in BS EN 942, shall not be acceptable on visible faces.
        .
    - Wood based panels conformity and marking: To BS EN 13986
    - Solid wood panelling and cladding conformity and marking: To BS EN 14915
- Sapwood: Not permitted
- Splits: Not permitted

- Wane: Not permitted
- Biological attack: Not permitted
- Reaction wood: Not permitted
- Finger jointing: Not permitted
- End jointing: Not permitted
- Edge jointing: Not permitted
- Use Class to BS EN 335 and BS 8417: the timber shall be utilised in 'Use Class 3 (UC 3)' – Exterior joinery that is not covered and not in contact with the ground and is subject to wetting.
- Moisture content of timber cladding and any supporting, trimming or associated timber components at the time of delivery and installation: To TRADA recommendations and BS 8000-5, Table 10:16% +/-2%. Check moisture content on delivery and confirm the readings to Lead Designer.
- Fasteners: All hardwood and softwood cladding panels shall be fixed with austenitic stainless steel fasteners. Refer also to particular requirements for metal fasteners.
- Coatings: Site applied coatings to be in accordance with BS EN 927-1
- Timber preservatives:
    - Preservative treatment shall be appropriate for the proposed timber species and adhesives, and shall be assessed in accordance with the requirements of BS EN 599-1 and BS 8417.
    - Treatment shall be in accordance with Table 4 of BS 8417, and shall be suitable for the specified design service life of the timber component/ system and Use Class.
    - Factory production and control shall be as required by BS EN 351.

Particular Requirements for Workmanship:

Requirements to be stated at later work stage

EDR-210 EXTERNAL METAL LOUVERED SINGLE LEAF DOORSET: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Single leaf, hinged metal doorset with fixed horizontal louvres in metal frame to provide ventilation. Single swing, outward opening operation. Door leaf with no face seams.

Refer Services Engineers information for details on entry system.
Refer to Access Strategy and M&E consultants' information for locking / access arrangements.

2. Detailed Description:

Metal Doorset:
Type: Proprietary metal external security rated doorset complete with weather-seals
Indicative Product: Requirements to be stated at later work stage
Finish: Polyester powder coated
Colour: Standard, to be confirmed at later work stage

Ironmongery (TBC)
Pull handles
Overhead closers
Floor mounted door stops
Flush bolt on slave leaf
All ironmongery to be brushed stainless steel.
Indicative manufacturer: D line

Accessories:
Anti slip threshold plate with weather seal
Refer to M&E engineer's specification for further details on entry system.

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Additional requirements to be stated at later work stage#

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

EDR-220 EXTERNAL LOUVERED SUBSTATION DOOR SYSTEM: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Double leaf, hinged metal door set with horizontal steel louvres in steel frame to provide ventilation to plant room. Single swing, outward opening operation consisting of:
-1 double door
-1 single door
Metal steel posts for robustness and Durbar threshold plate to level threshold.

2. Detailed Description:

Louvre door system:
Galvanized powdered coated steel frame. Fixed to substrate with fabricated cleats.
Louvre blades welded into steel angle section framing.
Anti-vermin mesh to rear.

Finish: Powder coated, colour to be confirmed at later work stage.

Indicative product:
Louvre door, steel louver system, on-flanged by Sunray Engineering Limited or acceptable equivalent to meet the functional, visual and performance requirements to Lead Designer acceptance.

Free area to be confirmed by M&E engineer.

Operation: Outward opening with concealed hinges.

Assembly to be to ventilation and increased security performance requirements.
Free area to be confirmed by M&E engineer.

Locking mechanism:
Security / swipe card access, minor leaf to have flush drop bolts top and bottom.
2no mag locks recessed and concealed into door stile, concealed wiring route.
Refer to Access Strategy and M&E consultants' information.

Material: Mild steel angles to form door stiles, rails and frame. RHS to form structural posts for fixings either side of door frames. Steel durbar plate welded to rear of doors as crash plate up to 1500mm high. Vermin guard to rear of door fixed into metal angles.

Finish:
To match window frame colour.
RAL colour to be advised at later work stage

Painted steel reveal plate: To act as soffit.
All welds to be continuous. Hit and miss welds if used are to appear continuous i.e. no gaps between. Posts and brackets to be coordinated with adjacent walls and fences.
Painted mild steel support brackets as shown on drawings / where required.

Durbar Threshold Plate:
Hot-rolled structural non-slip raised pattern floor plate along window and sliding door threshold. Z-shaped to allow for concealed fixings.
Self draining surface with raised diamond chequer pattern.

Steel posts:
Internal steel posts for edge protection of door frame / robustness either side of door, fixed top to bottom into RC slabs.

Steel plate to internal door face:
Durbar plate, nom. 3 mm thick to back of door for robustness /slam protection against bins, fixed back to metal frame of door leaf. To a height of approx. 1400mm from FFL.

Vermin guard: Stainless steel Metal mesh vermin guard to back of door.

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

General:
Finished element shall be free of movement, noise and reasonable deflection under load.
Doors to have smooth and quiet operation.
No finger traps.
Contractor/Fabricator to ensure gate is part M compliant in terms of opening forces and other criteria. Hinges to be suitable for ease of opening.

Door and component parts shall not sag/ warp/ twist or foul in any way.

Ventilation / Free area requirement:
Refer to M&E spec for free area requirements.
Contractor to provide free area calculations.

Thermal: N/A

Fire:
240mins
Refer to Fire Consultant FDS Consult Fire Report

Threshold: Must be compliant with Code for Sustainable Homes, e.g. level access etc.

Security / Compliance: To comply with BS 6375 and PAS 24.
Locking systems to comply with Secured by Design requirements.

Structural (Generally):
Specialist, Design Subcontractor or Manufacturer shall ensure structural and statutory requirements are met by the completion of the design and completion of the works.

Structural: In accordance with BS BS EN 1991-1-1 and BS EN 1991-1-7 and approved document K.
Prescriptive Specification: Refer to Structural Engineer's specification.
Descriptive Specification: Specialist, Design Subcontractor or Manufacturer shall ensure structural and statutory requirements are met by the completion of the design and completion of the works.

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

EDR-221 EXTERNAL METAL TWO LEAF DOORSET: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Two leaf, hinged metal doorset.
Operations: Single swing, 180 degree hinge, outward opening operation.
Door leaf with no face seams.

Refer to M&E engineer's specification for further details on entry system.
Refer to Access Strategy and M&E consultants' information for locking / access arrangements.

2. Detailed Description:

Metal doorset
- Proprietary metal external door assembly complete with weatherseals
Indicative Product: 451
Finish: Polyester powder coated

Ironmongery (TBC)
Pull handles
Overhead closers
Floor mounted door stops
Flush bolt on slave leaf
All ironmongery to be brushed stainless steel.
Indicative manufacturer: D line

Accessories:
Anti slip threshold plate with weather seal
Refer to M&E engineer's specification for further details on entry system.

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Fire:
30mins
Refer to Fire Consultant FDS Consult Fire Report

Ventilation / Free area requirement:
Refer to M&E spec for free area requirements.
Contractor to provide free area calculations.

Thermal: N/A

Additional requirements to be stated at later work stage#

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

EDR-400 SINGLE LEAF TIMBER FACED METAL ENTRANCE DOOR: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
External, thermally insulated, single leaf, hinged timber clad metal entrance door. Door to form visually seamless continuation of EWS-450 timber cladding. Single swing, outward opening operation. System complete with soffit and threshold plates.
Door leaf: Metal door leaf overclad with timber cladding
Timber overcladding: To match EWS-450 cladding
Door frame: Single rebated steel frame. Fully welded smooth finish.
Finish (metal components): Polyester Powder Coated
Timber finish: To match EWS-450 cladding

2. Detailed Description:

Timber cladding:
Consistent dimensioned timber profiled board overcladding to match EWS-450, secret fixed to door leaf without inhibiting opening operation.
Timber Species: Western Red Cedar, to match EWS-450
Appearance Class for visible timber cladding faces: J10 to BS EN 942, Table 1. Acceptable finish to be agreed by sample.
Joints: Overlapping boards on repeating module with 5mm wide recess joints, as shown on Design Drawings
Timber finish: : Osmo 420 UV-Protection-Oil Extra, satin-matt, clear finish for exterior application, with biocides Or acceptable equivalent, to match EWS-450

Metal doorset
Proprietary metal external door assembly complete with weatherseals. Door leaf and frame reinforced internally to accept all hardware penetrations.
Door leaf:
- Facings: Galvanised steel
- Core: Insulation core complete with stiffeners
- Nominal thickness: 54

Door frame:
- Profile: Single rebate
- Core: Insulation core complete with stiffeners

Indicative Product: ## To be advised at later work stage ##

Finish: Polyester powder coated.
Colour: To match WIN-400
Hardware: Factory fitted, stainless steel, brushed finish hardware

Soffit:
Pressed aluminium door soffit. Full piece pressing with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffit to be full length of door opening, and to include drip detail as indicated in design drawings.
Finish: Powder coated to match door frame finish.
Fixings: Recessed fixings in shadow gap detail.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300 with weather seal.
Finish: Brushed stainless steel
Threshold fixings: Recessed fixings, to match threshold finish.

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around door perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around door perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external door perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around door opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System:## To be advised at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Ironmongery:
Lever handle, locks, hinges, security viewer

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Refer to System General Requirements for Performance, except or in addition:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security

Water ingress:
Water tightness class to EN12208: Class 2

Air permeability:
Air permeability to EN 12207: 5a

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Thermal:
2.0 W/m2K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

EDR-420 EXTERNAL METAL LOUVERED DOUBLE DOORS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
External, single leaf, hinged metal entrance door, with fixed side panel. Single swing, outward opening operation. System complete with soffit and threshold plates.
Door leaf: Door leaf with no face seams.
Door frame: Single rebated steel frame. Fully welded smooth finish. Mitred fully welded and ground smooth connection between frame jambs and head.
Finish: Polyester Powder Coated

2. Detailed Description:

Same as WIN-220

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-220

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

EDR-421 EXTERNAL METAL DOUBLE DOORS WITH LOUVRED SIDE PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
External, double leaf, hinged metal doosr, with louvred side panel. Single swing, outward opening operation. System complete with soffit and threshold plates.
Door leaf: Door leaf with no face seams.

Door frame: Single rebated steel frame. Fully welded smooth finish. Mitred fully welded and ground smooth connection between frame jambs and head.
Finish: Polyester Powder Coated

2. Detailed Description:

Metal doorset
Proprietary metal external door assembly complete with weatherseals. Door leaf and frame reinforced internally to accept all hardware penetrations.
Door leaf:
- Facings: PPC
- Core: Insulation core complete with stiffeners
- Nominal thickness: ## To be advised at later work stage ##

Door frame:
- Profile: Single rebate
- Core: Insulation core complete with stiffeners

Indicative Product: ## To be advised at later work stage ##

Finish: Polyester powder coated.
Colour: To match WIN-400
Hardware: Factory fitted, stainless steel, brushed finish hardware

Soffit:
Pressed aluminium door soffit. Full piece pressing with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffit to be full length of door opening, and to include drip detail as indicated in design drawings.
Finish: Powder coated to match door frame finish.
Fixings: Recessed fixings in shadow gap detail.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300 with weather seal
Weatherproof threshold, draining water away from interior
Finish: Brushed stainless steel
Threshold fixings: Recessed fixings, to match threshold finish

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around door perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around door perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external door perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around door opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System:## To be advised at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Ironmongery:
Lever handle, locks, hinges

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Free area of louvre panel:
Refer to Service Engineer's Specification

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

EDR-430 EXTERNAL METAL LEAF AND HALF DOOR WITH LOUVRED OVER PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
External, leaf and half, hinged metal door, with louvred over panel. Single swing, outward opening operation. System complete with soffit and threshold plates.
Door leaf: Door leaf with no face seams.
Door frame: Single rebated steel frame. Fully welded smooth finish. Mitred fully welded and ground smooth connection between frame jambs and head.
Finish: Polyester Powder Coated

2. Detailed Description:

Metal doorset
Proprietary metal external door assembly complete with weatherseals. Door leaf and frame reinforced internally to accept all hardware penetrations.
Door leaf:
- Facings: PPC
- Core: Insulation core complete with stiffeners
- Nominal thickness: ## To be advised at later work stage ##

Door frame:
- Profile: Single rebate
- Core: Insulation core complete with stiffeners

Indicative Product: ## To be advised at later work stage ##

Finish: Polyester powder coated.
Colour: To match WIN-400
Hardware: Factory fitted, stainless steel, brushed finish hardware

Soffit:
Pressed aluminium door soffit. Full piece pressing with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffit to be full length of door opening, and to include drip detail as indicated in design drawings.
Finish: Powder coated to match door frame finish.
Fixings: Recessed fixings in shadow gap detail.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300 with weather seal

Weatherproof threshold, draining water away from interior
Finish: Brushed stainless steel
Threshold fixings: Recessed fixings, to match threshold finish

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around door perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around door perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external door perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around door opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System:## To be advised at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Ironmongery:
Lever handle, locks, hinges

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Free area of louvre over panel:
Refer to Service Engineer's Specification

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

LVR-200 EXTERNAL METAL LOUVRES: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
External fixed horizontal louvres in metal frame to provide ventilation to mechanical ventilation

plant.

Refer to M&E engineer's specification for further details on free area requirements.

2. Detailed Description:
Heavy duty extruded aluminium louvre panel for mechanical ventilation plant– refer to drawings for details and dimensions.

Reveals: Brick EWS-201
Frame: To match window frame profiles, refer to specification of WIN-201
Soffit: As window specification
Cill: PPC aluminium flashing, as window specification

Louvres: Renson wall louvre, built-in, heavy-duty series wall louvre Type 451 or acceptable equivalent.

Manufacturer: Renson Fabrication Ltd.
Contact: www.renson.eu

Product Construction: Profile: Extruded aluminium (EN 12020-2)
Material Aluminium Al Mg Si 0,5 in accordance with EN 12020-2

Finish: Powder coated to match window frames.
Polyester powder coating: aluminium profiles pre-treated to resist corrosion to guarantee. Standard RAL colour , 30% Gloss to acceptable sample
Fixings: No visible fixings or fasteners on the exposed surfaces.

Installation:
To louvre manufacturer standard details, to suit application.

Accessories
With anti-static and stainless steel insect screen fitted flush on the back of the louvre or frame by means of a nylon cord.

Additional requirements to be stated at later work stage#

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Free area requirement:
Refer to specialist M&E subcontractor's details and specification.
Contractor to provide free area calculations.

Acoustic requirements: N/A

Fire: N/A

Security: To comply with Secured by Design requirements.

Additional requirements to be stated at later work stage#

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

LVR-201 FIRE RATED INTERNAL METAL LOUVRES: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Fire rated fixed horizontal louvres in metal frame to provide ventilation to substation.

Refer to M&E engineer's specification for further details on free area requirements.

2. Detailed Description:

As LVR-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

As LVR-201 except:

Fire: 240mins
Refer to fire strategy report.

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-110 NEW TIMBER CASEMENT WINDOW IN EXISTING OR EXISTING ADAPTED MASONRY BRICKWORK OPENING: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
New double glazed timber framed casement window in existing or existing adapted masonry brickwork opening to comply with the Planning Requirements/Conditions

2. Detailed Description:

Item:
New double glazed timber framed casement window assembly to match typical existing comprising:
- Sash: Side hung, hinged, outward opening single pane timber sashes
- Toplight: Where required, top hung, hinged, outward opening, single pane timber sashes
- Frame: Matching, co-ordinated timber head, jamb, transom and mullion profiles
- Cill: To include hardwood weather bar mortised into cill section
- Transom: To include hardwood moulding drip to match typical existing
- Frame-head infill panel: New scribed to masonry brickwork arch over to match existing where required
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars or lead cames as required

Indicative Product: Conservation Casement window by Mumford & Wood www.mumfordwood.com
Material:
Frame, mullions, transoms and sashes: Treated softwood
Weathered cills: Hardwood
Beads/Bars: Hardwood
Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections

Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Casement and frame factory finished. Moldings primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 1: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without applied glazing bars and double glazing cavity blocks as required
Outer pane: 4mm toughened period glass
Cavity: 6mm
Inner pane: 4mm toughened glass
Type 2: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without adhesive applied lead cames to match existing where required.
Outer pane: 4mm toughened period glass period glass
Cavity: 4mm
Inner pane: 6mm laminated

Ironmongery:
Range: Allgood
Type: To suit casement, hinge, stay and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:
Type: Frame fitted trickle vents as design intent drawings
Material: Composite metal/timber
Finish: To match internal/external paint finishes

Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification, Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-120 TIMBER SLIDING SASH

Type of Specification: Descriptive

1. Functional and Visual Description:
New double-glazed traditional timber box sash window in existing or existing adapted masonry brickwork opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:
New double glazed timber box sash window to match typical existing comprising:
- Sash: Pair sliding, single pane timber sashes
- Frame: Traditional timber box with cords and weights
- Cill: To include hardwood weather bar mortised into cill section
- Frame-head infill panel: New scribed to masonry brickwork arch over to match existing where required
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where

required
- Decorative moldings: To match existing where required. Refer drawings and Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars as required
Indicative Product: Conservation Box Sash window by Mumford & Wood www.mumfordwood.com
Material:
Box jambs, head and sashes: Treated softwood
Weathered cills: Hardwood
Beads/Bars: Hardwood
Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Existing Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Box and sashes factory finished. Moldings primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 1: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without applied glazing bars and double glazing cavity blocks as required
Outer pane: 4mm toughened period glass
Cavity: 6mm
Inner pane: 4mm toughened glass
Ironmongery:
Range: Allgood
Type: To suit sash sliding and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:
Type: Frame fitted trickle vents as design intent drawings
Material: Composite metal/timber
Finish: To match internal/external paint finishes
Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification, Existing Window Schedule and Structural Engineers information where applicable

2. Detailed Description:
-

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-130 TIMBER FIXED LIGHT

Type of Specification: Descriptive

1. Functional and Visual Description:
New double glazed fixed timber framed window in existing or existing adapted masonry brickwork opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:

New double glazed fixed timber-framed window to match typical existing comprising:
- Sash: Fixed single pane timber sash
- Frame: Matching timber head and post profiles
- Cill: To include hardwood weather bar mortised into cill section
- Frame-head infill panel: New scribed to masonry brickwork arch over to match existing where required
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars as required

Material:
Frame and sash: Treated softwood
Weathered cills: Hardwood
Beads/Bars: Hardwood

Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Existing Window Schedule

Profile:
To match existing. Refer design intent drawings for indicative profiles and sections

Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type

Finish:
Frame and beads factory finished. Moldings primed for site applied paint finishes. Refer FIN-XX

Glazing:
Type 1: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without applied glazing bars and double glazing cavity blocks as required
Outer pane: 4mm toughened period glass
Cavity: 6mm
Inner pane: 4mm toughened glass
Type 2: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without adhesive applied lead cames to match existing where required.
Outer pane: 4mm toughened period glass
Cavity: 4mm
Inner pane: 6mm laminated

Ironmongery:
Range: Allgood
Type: To suit sash sliding and locking requirements
Finish: To be confirmed, to match internal door ironmongery.

Ventilation:
Type: Frame fitted trickle vents as design intent drawings
Material: Composite metal/timber
Finish: To match internal/external paint finishes

Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification, Existing Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-140 ROOF SKYLIGHT

Type of Specification: Descriptive

1. Functional and Visual Description:
Clear glazed 'Conservation' type rooflight, recessed installation into tiled roof slope, black finish exterior with centre bar. Centre pivot opening.

2. Detailed Description:
Item:
Clear glazed 'Conservation' type rooflight with centre glazing bar, complete with all flashings for recessed installation into tiled roof slope
Indicative product:
Velux GGL Conservation Roof window, centre pivot
Size:
Refer Window Schedule
Finish:
Exterior factory finished standard black. Interior factory finished standard white
Glazing:
Double glazed, laminated inner pane, toughened outer pane with Easy-to-clean coating
Ironmongery:
Range: Proprietary standard including barrel bolt
Ventilation:
Ventilation bar with dust and insect filter
Structural Opening:
Formed in new / or adapted timber roof structure.
Internal Blind:
Fabric blind tbc.

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-150 BAY

Type of Specification: Descriptive

1. Functional and Visual Description:
New bay window incorporating double-glazed timber framed casements as WIN-110, to be installed into a structural opening formed by steel posts and beams and brickwork spandrel, to comply with the Planning Requirements/Conditions

2. Detailed Description:

Item:
New double glazed timber framed casement window assembly to match typical existing comprising:
- Sash: Side hung, hinged, outward opening, casement single pane timber sashes
- Frame: Matching, co-ordinated timber head, jamb, transom and mullion profiles
- Cill: To include hardwood weather bar mortised into cill section
- Transom: To include hardwood moulding drip to match typical existing
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required
- Decorative moldings: To match existing where required, including cladding to corner posts. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars as

required
Indicative Product: Conservation Casement window by Mumford & Wood www.mumfordwood.com
Material:
Frame, mullions, transoms and sashes: Treated softwood
Moldings and cladding to corner posts: Treated softwood
Weathered cills: Treated hardwood
Beads/Bars: Treated hardwood
Size:
Varies, to match existing bay window. Refer Existing Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Casements and frame factory finished. Moldings primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 1: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without applied glazing bars and double glazing cavity blocks as required
Outer pane: 4mm toughened period glass
Cavity: 6mm
Inner pane: 4mm toughened glass
Type 2: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without adhesive applied lead cames to match existing where required.
Outer pane: 4mm toughened period glass
Cavity: 4mm
Inner pane: 6mm laminated
Ironmongery:
Range: Allgood
Type: To suit casement, hinge, stay and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:
Type: Frame fitted trickle vents as design intent drawings
Material: Composite metal/timber
Finish: To match internal/external paint finishes
Structural Opening:
Type: Formed in new steel corner posts and beams installed on existing/ rebuilt masonry spandrels. Refer REP and EWS sections of this specification, Existing Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials
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WIN-160 DORMER WINDOW

Type of Specification: Descriptive

1. Functional and Visual Description:
New dormer window incorporating double-glazed timber framed casements as WIN-110, to be installed into a structural opening formed within new dormer construction, to comply with the Planning Requirements/Conditions

2. Detailed Description:

Item:
New double glazed timber framed casement window assembly to match typical existing comprising:
- Sash: Side hung, hinged, outward opening, casement single pane timber sashes
- Frame: Matching, co-ordinated timber head, jamb and mullion profiles
- Cill: To include hardwood weather bar mortised into cill section
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars as required.

Indicative Product: Conservation Casement window by Mumford & Wood www.mumfordwood.com
Material:
Frame, mullions, and sashes: Treated softwood
Moldings: Treated softwood
Weathered cills: Treated hardwood
Beads/Bars: Treated hardwood
Size:
Varies, to match existing bay window. Refer Existing Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Casement and frame factory finished. Moldings primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 1: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without applied glazing bars and double glazing cavity blocks as required
Outer pane: 4mm toughened period glass
Cavity: 6mm
Inner pane: 4mm toughened glass
Ironmongery:
Range: Allgood
Type: To suit casement, hinge, stay and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:
Type: Frame fitted trickle vents as design intent drawings
Material: Composite metal/timber
Finish: To match internal/external paint finishes
Structural Opening:
Type: Formed in new steel corner posts and beams installed on existing/ rebuilt masonry spandrels. Refer REP and EWS sections of this specification, Existing Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-170 EXTERNAL ENTRANCE DOOR - TRADITIONAL

Type of Specification: Descriptive

1. Functional and Visual Description:
New panelled timber entrance door and double-glazed fanlight to match existing, to be installed into an existing masonry brickwork opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:
New double glazed timber entrance door assembly comprising:
- Door leaf: Hinged, inward opening, including raised and fielded panels, double-glazed upper panel to match existing
- Frame: Matching, co-ordinated timber head, jamb, transom profiles
- Fanlight: Double-glazed to match existing
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, with applied glazing bars.

Indicative Product: Conservation Entrance Doorset by Mumford & Wood www.mumfordwood.com
Material:
Door leaf: Timber faced, insulated, composite construction to achieve performance requirements
Frame: Treated softwood
Moldings: Treated softwood
Cills: hardwood
Beads/Bars: Treated hardwood
Size:
Varies, to suit existing structural opening. Refer Existing Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Door and frame factory finished. Moldings primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 2: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without adhesive applied lead cames to match existing where required.
Outer pane: 4mm toughened period glass
Cavity: 4mm
Inner pane: 6mm laminated
Ironmongery:
Range: Proprietary
Type: To suit hinge, locking requirements. Include door knocker, central knob.
Finish: To be confirmed.
Ventilation:
Not required
Structural Opening:
Type: Existing made good or existing adapted. Refer REP sections of this specification, Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

Type of Specification: Descriptive

1. Functional and Visual Description:
New 'plank effect' timber entrance door assembly including side panel, over panel and double-glazed sidelight, to be fitted to face of existing masonry brickwork wall incorporating existing brickwork openings.

2. Detailed Description:

Item:
New timber entrance door assembly comprising:
- Door leaf: Hinged, inward opening, insulated 'plank effect' timber faced door
- Frame: Timber head, jamb sections to door and sidelight, and framing to overall panel assembly
- Side and over panel: 'plank effect' timber to match door leaf
- Sidelight: Double-glazed
- Glazing type/pattern: Clear, double glazed, with applied glazing bars.
- Canopy: Measure and install assembly around steel canopy brackets by others fixed to brickwork

Indicative Product: Contemporary Entrance Doors by Mumford & Wood www.mumfordwood.com
Material:
Door leaf: Timber faced, insulated, composite construction to achieve performance requirements
Frame: Treated softwood
Side and over panels: Timber 'plank effect' to match door leaf
Cills: hardwood
Beads/Bars: Treated hardwood
Size:
As design intent drawings.
Canopy soffit:
Supply timber plank facing material for others to fit to soffit of new door canopy.
Finish:
Door, frame and panels all factory finished. Refer FIN-XX
Glazing:
Type 3: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples).
Outer pane: 4mm plain (toughened) glass
Cavity: 4mm
Inner pane: 6mm laminated
Ironmongery:
Range: Proprietary
Type: To suit hinge, locking requirements. Include door knocker, central knob.
Finish: To be confirmed.
Ventilation:
Not required
Structural Opening:
Type: Door and panel assembly to face fix onto brickwork wall and integrate with existing structural openings.

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-172 EXTERNAL UTILITY DOOR

Type of Specification: Descriptive

1. Functional and Visual Description:
New ledged framed and braced timber door and frame, including

fanlight with timber louvers, installed in existing masonry brickwork opening.

2. Detailed Description:

Item:
New timber utility door assembly comprising:
- Door leaf: Hinged, inward opening, timber ledged framed and braced door
- Frame: Timber head, jamb sections to door and fanlight
- Fanlight: Fixed timber ventilation louvers
.
- Canopy: Measure and install assembly around steel canopy brackets by others fixed to brickwork

Material:
Door leaf: Treated softwood
Frame: Treated softwood
Fanlight: Treated softwood
Cill: no cill allow ventilation gap beneath door

Size:
To suit existing adapted opening.

Finish:
Door, frame and panels all supplied primed for site painting to match other fenestration. Refer FIN-XX

Ironmongery:
Range: Allgood
Type: To suit hinge, locking requirements. Include door knocker, central knob.
Finish: To be confirmed.

Ventilation:
High level ventilation through timber louvers in fanlight. Provide low level ventilation via gap beneath door leaf.

Structural Opening:
Existing adapted opening in brickwork wall.

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-180 FRENCH WINDOW

Type of Specification: Descriptive

1. Functional and Visual Description:
New double-glazed timber framed door French doors, to be installed into an existing or existing adapted masonry brickwork opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:
New double glazed timber framed paired door assembly comprising:
- Door leaf: Hinged, outward opening, double-glazed single pane timber-framed leafs with solid timber raised and fielded lower panel. Door leaf framing to match profile style of timber casement WIN-110

- Frame: Matching, co-ordinated timber head and jamb profiles
- Cill: Hardwood
- Frame-head infill panel: New scribed to masonry brickwork arch over to match existing where required
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit

Indicative Product: Conservation Single and French Doors by Mumford & Wood
www.mumfordwood.com

Material:
Frame and leafs: Treated softwood
Cills: Hardwood
Beads/Bars: Hardwood

Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Window Schedule

Profile:
To match existing. Refer design intent drawings for indicative profiles and sections

Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type

Finish:
Leafs and frame factory finished. Moldings and fillets primed for site applied paint finishes. Refer FIN-XX

Glazing:
Type 3: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples).
Outer pane: 4mm plain (toughened) glass
Cavity: 4mm
Inner pane: 6mm laminated

Ironmongery:
Range: Proprietary
Type: To suit hinge and locking requirements
Finish: To be confirmed, to match internal door ironmongery.

Ventilation:
Type: Concealed trickle vents provided overhead similar to WIN-110 window head details
Material: Composite metal/timber
Finish: To match internal/external paint finishes

Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification, Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-181 FRENCH WINDOW WITH SIDE LIGHTS

Type of Specification: Descriptive

1. Functional and Visual Description:
New double-glazed timber framed French doors and fixed sidelights, to be installed into an existing or existing adapted masonry brickwork opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:
New double glazed timber framed door assembly comprising:
- Door leaf(s): Hinged, outward opening, double-glazed single pane timber-framed leaf with solid timber raised and fielded lower panel. Door leaf frame to match profile style of timber casement WIN-110
- Fixed sidelights: To match opening leaf but fixed
- Frame: Matching, co-ordinated timber head, jamb and mullion profiles
- Cill: Hardwood
- Frame-head infill panel: New scribed to masonry brickwork arch over to match existing where required
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit

Indicative Product: Conservation Single & French doors by Mumford & Wood
www.mumfordwood.com
Material:
Frame and leafs: Treated softwood
Cills: Hardwood
Beads/Bars: Hardwood
Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Leafs and frame factory finished. Moldings and fillets primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 3: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples).
Outer pane: 4mm plain (toughened) glass
Cavity: 4mm
Inner pane: 6mm laminated
Ironmongery:
Range: Proprietary
Type: To suit hinge and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:
Type: Concealed trickle vents provided overhead similar to WIN-110 window head details
Material: Composite metal/timber
Finish: To match internal/external paint finishes
Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification, Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-182 FRENCH WINDOW WITH SIDE LIGHTS AND TOP LIGHTS

Type of Specification: Descriptive

1. Functional and Visual Description:
New double-glazed timber framed French doors with fixed sidelights and fixed/ opening toplights,

to be installed into an existing adapted opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:
New double glazed timber framed door assembly comprising:
- Door leaf: Hinged, outward opening, double-glazed single pane timber-framed leaf with solid timber raised and fielded lower panel. Door leaf frame to match profile style of timber windows WIN-110
- Fixed sidelights: To match opening leaf but fixed
- Opening toplights: Hinged, outward opening, top-hung double-glazed single pane timber-framed sash. Frame to match that of timber windows WIN-110.
- Fixed toplights: double-glazed single pane timber-framed sash. Frame to match that of timber windows WIN-110.
- Frame: Matching, co-ordinated timber head, jamb, transom and mullion profiles
- Transom: To include hardwood moulding drip to match typical existing
- Cill: Hardwood
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars and double glazing cavity blocks as required
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required

Indicative Product: Conservation Single & French doors by Mumford & Wood
www.mumfordwood.com
Material:
Frame and leafs: Treated softwood
Cills: Hardwood
Beads/Bars: Hardwood
Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Leafs and frame factory finished. Moldings and fillets primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 1: (To toplights) Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without applied glazing bars and double glazing cavity blocks as required
Outer pane: 4mm period glass
Cavity: 6mm
Inner pane: 4mm
Type 3: (To door leafs and sidelights) Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples).
Outer pane: 4mm plain (toughened) glass
Cavity: 4mm
Inner pane: 6mm laminated
Ironmongery:
Range: Proprietary
Type: To suit hinge and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:
Type: Concealed trickle vents provided overhead similar to WIN-110 window head details
Material: Composite metal/timber
Finish: To match internal/external paint finishes
Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification, Window Schedule and Structural Engineers information where applicable

3. Performance:

Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-183 BI-FOLD DOORS 'TRADITIONAL' STYLE

Type of Specification: Descriptive

1. Functional and Visual Description:
New double-glazed timber framed door bi-fold doors, to be installed into an existing or existing adapted masonry brickwork opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:
New double glazed timber framed bi-fold door assembly comprising:
- Door leaf: Hinged, bi-fold, outward opening, single pane timber-framed leafs with solid timber raised and fielded lower panel. Door leaf framing to match profile style of timber casement WIN-110
- Door frame: incorporating head track, fixed to structural lintel
- Cill: Aluminium low threshold
- Frame-head infill panel: New scribed to masonry brickwork arch over to match existing where required
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars as required

Indicative Product: Conservation Bi-fold doors by Mumford & Wood www.mumfordwood.com
Material:
Frame, and leafs: Treated softwood
Cills: Aluminium
Beads/Bars: Hardwood
Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Leafs and frame factory finished. Moldings and fillets primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 3: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples).
Outer pane: 4mm plain (toughened) glass
Cavity: 4mm
Inner pane: 6mm laminated
Ironmongery:
Range: Proprietary
Type: To suit hinge, sliding and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:
Type: Trickle vents provided through packing above frame
Material: Composite metal/timber
Finish: To match internal/external paint finishes
Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification,

Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-184 BALCONY DOOR 'TRADITIONAL' STYLE

Type of Specification: Descriptive

1. Functional and Visual Description:
New double-glazed timber framed door with fixed toplight, to be installed into an existing adapted opening to comply with the Planning Requirements/Conditions.

2. Detailed Description:

Item:
New double glazed timber framed door assembly comprising:
- Door leaf: Hinged, outward opening, double-glazed single pane timber-framed leaf with solid timber raised and fielded lower panel. Door leaf frame to match profile style of timber windows WIN-110
- Fixed sidelights: To match opening leaf but fixed
- Frame: Matching, co-ordinated timber head, jamb, transom and mullion profiles
- Cill: Hardwood
- Decorative moldings: To match existing where required. Refer Window Schedule
- Glazing type/pattern: Clear, double glazed, single unit with or without applied glazing bars and double glazing cavity blocks as required
- Glazing bar: Nominal 22mm wide profiled glazing bar to similar profile as existing where required

Indicative Product: Conservation Single & French doors by Mumford & Wood
www.mumfordwood.com
Material:
Frame and leafs: Treated softwood
Cills: Hardwood
Beads/Bars: Hardwood
Size:
Varies, to suit existing or existing adapted masonry brickwork opening. Refer Window Schedule
Profile:
To match existing. Refer design intent drawings for indicative profiles and sections
Decorative Moldings:
To match existing where required. Refer drawings and Window Schedule for indicative profiles and type
Finish:
Leafs and frame factory finished. Moldings and fillets primed for site applied paint finishes. Refer FIN-XX
Glazing:
Type 1: Clear, 14mm overall double glazed with white, black or silver visible edge spacers (colour to be confirmed following samples) with or without applied glazing bars and double glazing cavity blocks as required
Outer pane: 4mm period glass
Cavity: 6mm
Inner pane: 4mm
Ironmongery:
Range: Proprietary
Type: To suit hinge and locking requirements
Finish: To be confirmed, to match internal door ironmongery.
Ventilation:

Type: Concealed trickle vents provided overhead similar to WIN-110 window head details
Material: Composite metal/timber
Finish: To match internal/external paint finishes
Structural Opening:
Type: Existing made good or existing adapted. Refer REP and EWS sections of this specification, Window Schedule and Structural Engineers information where applicable

3. Performance:
Refer to System General Requirements for Performance

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-200 DOUBLE SLIDING GLAZED DOOR SYSTEM WITH 2NO. FIXED LIGHTS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window and sliding door assembly with appearance comprising:
- 2no. sliding glazed doors
- 2no. fixed side lights
- Interlock junction between sliding doors
- Threshold and Soffit plates

Finish (aluminium components): Polyester powder coated

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
ASS 70.HI Type 1D door system by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
System frame depth:184mm
Frame Depth: 70mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:
- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges
Finish: Stainless steel, brushed finish

Ironmongery:
Lever handle, door lock / snib turn
Ironmongery to meet requirements of Lifetime Homes and Secure by Design BS PAS 24
Product: ## To be advised at later work stage ##
Finish: Stainless steel, brushed finish

Soffit:
Pressed aluminium door soffit. Full piece pressings with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffits to be full length of brick opening, to include drip detail as indicated in design drawings.
Finish: Powder coated to match window frame finish.
Soffit fixings: Recessed fixings in shadow gap detail, colour coated to match soffit finish.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300.
Finish: Stainless steel, brushed finish
Threshold fixings: Recessed fixings, to match threshold finish.

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around window perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around window perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external window perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around window opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Glazing:
Clear transparent, Double-glazing units with toughened inner and outer pane

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
To meet requirements of Secured By Design
PAS 24: Enhanced Security at ground floor level

Water ingress:
Water tightness class to EN12208: Class 9a

Air permeability:
Air permeability to EN 12207: Class 4

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
- Light transmittance (LT): 68%
- Solar factor (g value): 0.41

Thermal:
Uw:1.5 W/m²K
Ug: 1.1 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-201 SINGLE LEAF SLIDING GLAZED DOOR SYSTEM: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window and sliding door assembly with appearance comprising:
- Single leaf sliding glazed door
- 1 fixed side light
- Threshold and Soffit plates

Finish (aluminium components): Polyester powder coated

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
ASS 70.HI Type 1A.2 door system by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com
Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
System frame depth:184mm
Frame Depth: 70mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements. To be supported into masonry/metal framework. Refer EWS section the Specification.
Hardware:

- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges
  Finish: Stainless steel, brushed finish

Ironmongery:
As WIN-200

Soffit:
As WIN-200

Threshold:

As WIN-200

Weather, thermal and air tight seals:
As WIN-200

Mastic seals:
As WIN-200

Cavity barriers:
As WIN-200

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-200 except:

Thermal:
Uw:1.6 W/m²K
Ug: 1.1 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-202 SINGLE LEAF GLAZED DOOR AND SIDE OPENING LIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed door and window assembly with a mullion appearance comprising:
- Hinged, single swing, inward opening single leaf door.
- Turn inward opening light, side hung.
- Bespoke coupling mullion detail between the door and the window for interface with partition wall IWS-221 to manufacturer's requirements.
- Threshold and soffit plates

Finish (aluminium components): Polyester powder coated
Operation: Restricted opening lights are to be side-hung and open inwards

2. Detailed Description:

Window System:
Window assembly with thermally broken, anodised aluminium frame system.

Indicative Product:
AWS 75.SI+/ADS 75.SI and AWS 75 BS.SI+ window systems by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75mm
Coupling Mullion Frame Depth: 75mm
Finish: Polyester powder coated.

Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges

Finish: Stainless steel, brushed finish

Bespoke coupling mullion detail between the door and the window for interface with partition wall IWS-221 to manufacturer's requirements

Ironmongery:
As WIN-200

Soffit:
As WIN-200

Threshold:
As WIN-200

Weather, thermal and air tight seals:
As WIN-200

Mastic seals:
As WIN-200

Cavity barriers:
As WIN-200

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
Refer to System General Requirements for security
As WIN-200

Water ingress:
AWS 75.SI+/ADS 75.SI:
Water tightness class to EN12208: Class 5a
AWS 75 BS.SI+:
Water tightness class to EN12208: Class 9a

Air permeability:
AWS 75.SI+/ADS 75.SI:
Air permeability to EN 12207: Class 2
AWS 75 BS.SI+:
Air permeability to EN 12207: Class 4

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
- Light transmittance (LT): 68%

- Solar factor (g value): 0.41

Thermal:
Uw:1.3 W/m²K
Ug: 1.1 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-203 SINGLE SLIDING GLAZED DOOR SYSTEM WITH 2NO. FIXED LIGHTS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window and sliding door assembly with appearance comprising:
- 1 sliding glazed door
- 2 fixed side lights
- Threshold and Soffit plates

Finish (aluminium components): Polyester powder coated

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
ASS 70.HI Type 1C door system by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com
Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
System frame depth:184mm
Frame Depth: 70mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:
- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges
Finish: Stainless steel, brushed finish

Ironmongery:
As WIN-201

Soffit:
As WIN-200

Threshold:
As WIN-200

Weather, thermal and air tight seals:

As WIN-200

Mastic seals:
As WIN-200

Cavity barriers:
As WIN-200

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-201

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-204 CASEMENT WINDOW WITH OPENING AND FIXED LIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly mullion/ transom comprising:
- High level turn inward opening light
- Low level fixed light
- Sill and soffit plates

Finish (aluminium components): Polyester powder coated
Operation: Restricted opening lights are to be side-hung and open inwards

2. Detailed Description:

Window and Door System:
Window and door assembly with thermally broken, anodised aluminium frame system.

Indicative Product:
AWS 75 BS.SI+ window system by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com
Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75 mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges

Finish: Stainless steel, brushed finish

Ironmongery:
Lever handle window control
Ironmongery to meet requirements of Lifetime Homes
Product: ## To be advised at later workstage ##
Finish: Stainless steel, brushed finish

Soffit and Cill:
Pressed aluminium window soffit and cill. Full piece pressings with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved. Cills and soffits to be full length of brick opening, to include drip detail as indicated in design drawings.
Finish: Powder coated to match window frame finish.
Cill: Insulated, thermally broken aluminium cill, factory welded end caps to all cills, with no visible fixings.
Soffit fixings: Recessed fixings in shadow gap detail, colour coated to match soffit finish.

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around window perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around window perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external window perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around window opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
As WIN-200

Water ingress:
AWS 75 BS.SI+:
Water tightness class to EN12208: Class 9a

Air permeability:
AWS 75 BS.SI+:
Air permeability to EN 12207: Class 4

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
- Light transmittance (LT): 68%
- Solar factor (g value): 0.41

Thermal:
Uw:1.5 W/m²K
Ug: 1.1 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-205 BESPOKE POWERED GLAZED ENTRANCE DOUBLE DOORSET: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Bespoke powered external, thermally insulated, double leaf, hinged fully glazed entrance door. Double swing, inward opening operation, access controlled (refer to ME information). System complete with soffit and threshold plates.
Door leaf: Door leaf with no face seams.
Door frame: Single rebated steel frame. Fully welded smooth finish. Mitred fully welded and ground smooth connection between frame jambs and head.
Finish: Polyester Powder Coated
Colour: Standard RAL to be confirmed at later design stage

2. Detailed Description:

Door System:
Powered door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
AWS 75.SI+/ADS 75.SI door system by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Overhead concealed door closer and anti-finger trap style
Assisted opening: floorbox mounted powered with motion sensors and push release
Hardware: - Hinges, maglocks (as part of access control system)
Finish: Stainless steel, brushed finish

Ironmongery:
Lever handle, door lock / thumb turn
Automatic closer linked to access control system, floor concealed
Access control system – refer to building services engineer's specification
Ironmongery to meet requirements of Lifetime Homes and Secured by Design PAS 24

Product: ## To be advised at later workstage ##
Finish: Stainless steel, brushed finish

Control and locking system:
Fire escape route: Additional control, locking and monitoring devices to be confirmed by client at a later date

Soffit:
Pressed aluminium door soffit. Full piece pressing with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffit to be full length of brick opening, and to include drip detail as indicated in design drawings.
Finish: Powder coated to match door frame finish.
Fixings: Recessed fixings in shadow gap detail.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300.
Finish: Stainless steel, brushed finish
Threshold fixings: Recessed fixings, to match threshold finish.

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around door perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around door perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external door perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around door opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Glazing:
Clear transparent, Double-glazing units with toughened inner and outer pane
Manifestations: In accordance with Building Regulations Part K

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-200 except:

Thermal:
Uw:1.5 W/m²K
Ug: 1.0 W/m²K

Security:
Doorset including ironmongery to meet the requirements of Secured By Design PAS 24: Enhanced Security at ground floor level

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-206 CASEMENT WINDOW WITH FULL HEIGHT AND 1NO. LOW LEVEL FIXED LIGHTS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly mullion/ transom comprising:
- High level turn inward opening light
- Low level fixed light
- Full height fixed window adjacent to opening window
- Bespoke coupling mullion detail along full height fixed light to manufacturer's requirements
- Sill and soffit plates

Finish (aluminium components): Polyester powder coated
Operation: Restricted opening lights are to be side-hung and open inwards

2. Detailed Description:

Window System:
As WIN-204 except:

Bespoke coupling mullion detail along full height of fixed light to manufacturer's requirements. Appearance to match window system.

Indicative Product:
As WIN-204

Ironmongery:
As WIN-204

Soffit:
As WIN-204

Threshold:
As WIN-204

Weather, thermal and air tight seals:
As WIN-204

Mastic seals:
As WIN-204

Cavity barriers:
As WIN-204

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-204.

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-207 SINGLE FULL HEIGHT CASEMENT WINDOW, INWARD OPENING: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Full height, highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly with a appearance comprising:
- Tilt inward opening light
- Threshold and soffit plates

Finish (aluminium components): Polyester powder coated
Operation: Restricted opening lights are to be side-hung and open inwards

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
AWS 70 BS.HI door system by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com
Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
System frame depth:184mm
Frame Depth: 70mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges

Finish: Stainless steel, brushed finish

Ironmongery:
As WIN-200

Soffit:
As WIN-200

Threshold:
As WIN-200

Weather, thermal and air tight seals:
As WIN-200

Mastic seals:
As WIN-200

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
Refer to System General Requirements for security

Water ingress:
Water tightness class to EN12208: Class 5a

Air permeability:
Air permeability to EN 12207: Class 2

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
- Light transmittance (LT): 68%
- Solar factor (g value): 0.41

Thermal:
Uw:1.6 W/m²K
Ug: 1.1 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-208 SINGLE LEAF SLIDING GLAZED DOOR SYSTEM WITH FULL HEIGHT GLAZED CORNER UNIT AND FIXED LIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window and sliding door assembly with appearance comprising:
- Single leaf sliding glazed door
- 1no. full height glazed corner unit
- 1no. fixed light
- Bespoke glass to glass corner fixing to manufacturer's requirements.
- Threshold and Soffit plates

Finish (aluminium components): Polyester powder coated

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
ASS 70.HI Type1door system by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.

Contact details: www.schueco.com
Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
System frame depth:184mm
Frame Depth: 70mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges
  Finish: Stainless steel, brushed finish

Bespoke glass to glass corner fixing detail to manufacturer's requirements.

Ironmongery:
As WIN-201

Threshold:
Flush with adjoining floor and terrace levels.

Weather, thermal and air tight seals:
As WIN-201

Mastic seals:
As WIN-201

Cavity barriers:
As WIN-201

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

As WIN-201

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-209 SINGLE LEAF SLIDING GLAZED DOOR SYSTEM WITH 2NO. COUPLING MULLIONS, 1NO. OPENING AND 1NO. FIXED LIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window and sliding door assembly with mullion appearance comprising:
- Single leaf sliding glazed door
- 1no. tilt inward opening light
- 1no. fixed light
- Bespoke coupling mullion detail between sliding door and window for interface with partition wall

IWS-221 to manufacturer's requirements
- Bespoke coupling mullion detail between tilt light and fixed light to manufacturer's requirements
- Level threshold

Finish (aluminium components): Polyester powder coated
Operation: Restricted opening lights are to be bottom-hung and open inwards

2. Detailed Description:

Door and Window System:
Door and window system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
ASS 70.HI Type1door system, 1 x AWS 75 BS.SI fixed light and 1 x AWS 75 BS.SI tilt light by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com
Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
ASS 70.HI System frame depth:184mm
ASS 70.HI Frame Depth: 70mm
AWS 75 BS.SI Frame depth: 75mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges
  Finish: Stainless steel, brushed finish

Coupling mullions:
Bespoke coupling mullion detail between the sliding door and the window for interface with partition wall IWS-221 to manufacturer's requirements
Bespoke coupling mullion detail between turn light and full height fixed light to manufacturer's requirements
Appearance to match window systems.

Ironmongery:
As WIN-208

Soffit:
As WIN-208

Threshold:
As WIN-208

Weather, thermal and air tight seals:
As WIN-208

Mastic seals:
As WIN-208

Cavity barriers:
As WIN-208

Glazing:
As WIN-200

3. Performance:

Refer to System General Requirements for Performance, except or in addition:

For ASS 70.HI Type 1: as WIN-201

For AWS 70 BS.SI: as WIN-210

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-210 FULL HEIGHT FIXED LIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Full height, thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly with appearance comprising:
- 1no. fixed light

Finish (aluminium components): Polyester powder coated

2. Detailed Description:

Window System:
Window system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
AWS 75 BS.SI by Schuco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com
Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame depth: 75mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:
- Hinges
Finish: Stainless steel, brushed finish

Ironmongery:
As WIN-208

Soffit:
As WIN-208

Threshold:
As WIN-208

Weather, thermal and air tight seals:
As WIN-208

Mastic seals:
As WIN-208

Cavity barriers:

As WIN-208

Glazing:
As WIN-200

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
As WIN-200

Water ingress:
Water tightness class to EN12208: Class 9a

Air permeability:
Air permeability to EN 12207: Class 4

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
- Light transmittance (LT): 68%
- Solar factor (g value): 0.41

Thermal:
Uw:1.6 W/m²K
Ug: 1.1 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-240 RECTANGULAR FIXED ROOFLIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Purpose made, double glazed, PPC finished, metal framed rooflight with U-channel detail between two glazed elements and-upstand detail around the perimeter of the rooflight
Assembly to include insulated metal flashings forming upstand edge. No visible fixings or fasteners on the exposed surfaces.

2. Detailed Description:

Rooflight system:
Flat fixed rooflight with thermally broken, PPC aluminium frames system.

Indicative Product:
Bespoke Plateau Studio Designer rooflight by Rooflight Company or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
The Rooflight Company:
www.therooflightcompany.co.uk

Frame material: Aluminium

Standard: To BS EN 4873 manufactured to BS EN ISO 9001

Frame size:
Clear structural width: 2750mm x 1175mm
Clear well opening: 2600mm x 100mm
Frame width: To be advised at later work stage

Glazing:
Clear transparent, Double-glazing units with toughened inner and outer pane

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
As WIN-200

Water ingress:
Water tightness class to EN12208: Class 9a

Air permeability:
Air permeability to EN 12207: Class 4

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
To be confirmed at later design stage.

Thermal:
Uw:1.6 W/m^{2}K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-400 METAL TWO BAY WINDOW ASSEMBLY WITH OPENING AND FIXED LIGHTS WITH OVERHEAD PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly with a mullion/ transom appearance comprising:
- High level side-hung inward opening lights
- Low level fixed lights
- Fixed insulated head panel overclad with metal rainscreen
- Horizontal and vertical folded metal feature piece, as shown on design drawings and noted in Window Schedule
- Sill and soffit plates

Finish (aluminium components): Polyester powder coated

Operation: Restricted opening lights are to be side-hung and open inwards

2. Detailed Description:

Window System:
Window assembly with thermally broken, extruded aluminium window frame system.

Indicative Product:
AWS 75 WF.SI+ window system by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Safety Restrictors limiting the clear opening to a maximum of 100mm. Safety Restrictors to be internal, with a concealed key operated manual over-ride facility for maintenance and cleaning. All restrictors to meet BS 8213-1
- Hinges
  Finish: Stainless steel, brushed finish

Ironmongery:
Lever handle window control
Ironmongery to meet requirements of Lifetime Homes
Product: ## To be advised at later workstage ##
Finish: Stainless steel, brushed finish

Glazed-in insulated fixed overhead window panel:
Aluminium faced, insulated solid panel glazed into window system frame. Internal face of solid panel to be flush with the surrounding window frame. Finish to match inner and outer face finishes of window frame.

Metal rainscreen panel:
Aluminium rainscreen panel with no intermediate joints and no visible fixings.
Finish: Powder coated to match window frame finish

Soffit and Cill:
Pressed aluminium window soffit and cill. Full piece pressings with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved. Cills and soffits to be full length of brick opening, to include drip detail as indicated in design drawings.
Finish: Powder coated to match window frame finish.
Cill: Insulated, thermally broken aluminium cill, factory welded end caps to all cills, with no visible fixings.
Soffit fixings: Recessed fixings in shadow gap detail, colour coated to match soffit finish.

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around window perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around window perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external window perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints

to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around window opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
Refer to System General Requirements for security

Water ingress:
Water tightness class to EN12208: Class 9a

Air permeability:
Air permeability to EN 12207: Class 4

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
- Light transmittance (LT): 68%
- Solar factor (g value): 0.41%

Thermal:
Uw: 1.3 W/m2K
Ug: 1.0 W/m2K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-401 METAL TWO BAY WINDOW ASSEMBLY WITH OPENING AND FIXED LIGHTS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly with a mullion/ transom appearance comprising:
- High level side-hung inward opening lights
- Low level fixed lights

- Horizontal and vertical folded metal feature piece, as shown on design drawings and noted in Window Schedule
- Sill and soffit plates

Finish (aluminium components): Polyester powder coated

Operation: Restricted opening lights are to be side-hung and open inwards

2. Detailed Description:

Same as WIN-400, except with no overpanel

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-402 SINGLE LEAF GLAZED DOOR: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed external door with soffit and threshold plates. Hinged, single swing, outward opening single leaf door.

Finish (aluminium components): Polyester powder coated
Operation: Opening outward door action

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
AWS 75.SI+/ADS 75.SI door system by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Barrel hinges
- Finish: Stainless steel, brushed finish

Soffit:
Pressed aluminium door soffit. Full piece pressing with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffit to be full length of brick opening, and to include drip detail as indicated in design drawings.
Finish: Powder coated to match door frame finish.
Fixings: Recessed fixings in shadow gap detail.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300
Finish: Stainless steel, brushed finish
Threshold fixings: Recessed fixings, to match threshold finish

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around door perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around door perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external door perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around door opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Ironmongery:
Lever handle, door lock / snib turn
Ironmongery to meet requirements of Lifetime Homes and Secure by Design BS PAS 24
Product: ## To be advised at later work stage ##
Finish: Stainless steel, brushed finish

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Water ingress:
Water tightness class to EN12208: Class 5a

Air permeability:

Air permeability to EN 12207: Class 2

Light and solar transmission:
- Light transmittance (LT): 68%
- Solar factor (g value): 0.41

Thermal:
Uw:1.6 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-403 DOUBLE LEAF GLAZED DOOR: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed external doorset. Powder coated aluminium frame. Hinged, single swing, outward opening double leaf door.

Operation: Opening outward door action

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
As WIN-402

Soffit:
As WIN-401

Threshold:
As WIN-401

Weather, thermal and air tight seals:
As WIN-401

Mastic seals:
As WIN-401

Ironmongery:
As WIN-402

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Water ingress:
Water tightness class to EN12208: Class 5a

Air permeability:
Air permeability to EN 12207: Class 2

Thermal:
Uw:1.6 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-404 METAL WINDOW FOUR BAY ASSEMBLY WITH GLAZED DOORS AND FIXED LIGHTS WITH OVERHEAD PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed window assembly with intermediate mullions comprising:
- 2 no fixed lights
- 2 no hinged, single swing, outward opening single leaf glazed doors.
- Threshold and soffit plates
- Overhead panel overclad with metal rainscreen.

Finish (aluminium components): Polyester powder coated
Operation: Swing doors area side-hung and open outward

2. Detailed Description:

Window Assembly:
Window assembly with thermally broken, extruded aluminium window frame system.

Indicative Product:
AWS 75.SI+ window system with ADS 75.SI single leaf glazed doors by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75mm
Finish: Polyester powder coated.
Inner face colour: As WIN-400
Outer face colour: As WIN-400
Glazing: Clear transparent glass to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware: Stainless steel, brushed finish. Barrel hinges for doors.

Glazed-in insulated fixed overhead window panel:
As WIN-400

Metal rainscreen panel:
As WIN-400

Soffit:
As WIN-400

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300
Weatherproof threshold, draining water away from interior
Finish: Stainless steel, brushed finish
Threshold fixings: Recessed fixings, to match threshold finish

Weather, thermal and air tight seals:
As WIN-400

Mastic seals:
As WIN-400

Ironmongery:
Same as WIN-402

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Water ingress (doors):
Water tightness class to EN12208: Class 5a

Air permeability (doors):
Air permeability to EN 12207: Class 2

Thermal:
Uw:1.3 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-405 METAL SINGLE BAY WINDOW ASSEMBLY WITH OPENING AND FIXED LIGHTS WITH OVERHEAD PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly comprising:
- High level side-hung inward opening light
- Low level fixed light
- Fixed insulated head panel overclad with metal rainscreen
- Sill and soffit plates

Finish (aluminium components): Polyester powder coated

Operation: Side hung opening inwards

2. Detailed Description:

Window System:
As WIN-400

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-400 except:

Thermal:
Uw:1.4 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-406 METAL SINGLE BAY WINDOW ASSEMBLY WITH OPENING AND FIXED LIGHTS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly comprising:
- High level tilt and turn inward opening light
- Low level fixed light
- Sill and soffit plates

Finish (aluminium components): Polyester powder coated
Operation: Side hung opening inwards

2. Detailed Description:

Window System:
Same as WIN-405, except with no overhead panel.

3. Performance:
Same as WIN-405 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-407 METAL WINDOW ASSEMBLY WITH GLAZED DOOR AND FIXED SIDE LIGHT WITH OVERHEAD PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed window assembly comprising:
- Fixed side light
- Hinged, single swing, outward opening single leaf glazed door
- Threshold and soffit plates
- Overhead panel overclad with metal rainscreen

Finish (aluminium components): Polyester powder coated
Operation: Single swing, outward opening

2. Detailed Description:

Window Assembly:
Window assembly with thermally broken, extruded aluminium window frame system.

Indicative Product:
AWS 75.SI+ window system with ADS 75.SI single leaf glazed doors by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75mm
Finish: Polyester powder coated.
Inner face colour: As WIN-400
Outer face colour: As WIN-400
Glazing: As WIN-400
Support brackets and lugs: As WIN-400
Hardware: Stainless steel, brushed finish. Barrel hinges for doors.

Glazed-in insulated fixed overhead window panel:
Aluminium faced, insulated solid panel glazed into window system frame. Internal face of solid panel to be flush with the surrounding window frame. Finish to match inner and outer face finishes of window frame.

Metal rainscreen panel:
Aluminium rainscreen panel with no intermediate joints and no visible fixings.
Finish: Powder coated to match window frame finish

Soffit:
Pressed aluminium window assembly soffit. Full piece pressing with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved. Soffits to be full length of brick opening, to include drip detail as indicated in design drawings.
Finish: Powder coated to match window frame finish.
Fixings: Recessed fixings in shadow gap detail, colour to match soffit.

Threshold:
As WIN-402

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:

- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around window assembly perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around window assembly perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external window perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around window assembly opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Ironmongery:
As WIN-402

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Water ingress (doors):
Water tightness class to EN12208: Class 5a

Air permeability (doors):
Air permeability to EN 12207: Class 2

Thermal:
Uw:1.4 W/m^{2}K
Ug: 1.0 W/m^{2}K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-408 METAL WINDOW ASSEMBLY WITH GLAZED DOOR AND FIXED SIDE LIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed window assembly comprising:
- Fixed side light
- Hinged, single swing, outward opening single leaf glazed door.
- Threshold and soffit plates

Finish (aluminium components): Polyester powder coated
Operation: Side hung outward opening door

2. Detailed Description:

Same as WIN-407, except with no overpanel

3. Performance:

Same as WIN-407, except with no overpanel

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-409 METAL TWO BAY WINDOW ASSEMBLY WITH OPENING AND FIXED LIGHTS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed window assembly with a mullion/ transom appearance comprising:
- High level side-hung inward opening light
- Full height side fixed light
- Low level fixed light
- Sill and soffit plates

Finish (aluminium components): Polyester powder coated
Operation: Side hung opening inwards

2. Detailed Description:

Window System:
Window assembly with thermally broken, extruded aluminium window frame system.

Same as WIN-400

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-400, except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Thermal:
Uw: 1.4 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-410 METAL SIDE HUNG DORMER CASEMENT WINDOW: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed, inward opening dormer window. System including sill and soffit plates.

Finish (aluminium components): Polyester powder coated
Operation: Inward opening

2. Detailed Description:

Window System:
Window assembly with thermally broken, extruded aluminium window frame system.

As as WIN-400

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-400 except:

Thermal:
Uw: 1.4 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-411 METAL CASEMENT WINDOW WITH OPENING LIGHTS: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed window with side hung opening lights. System including sill/soffit plates and overhead panel overclad with metal rainscreen.

Finish (aluminium components): Polyester powder coated

Operation: Inward opening

2. Detailed Description:

Same as WIN-400, except with no low level fixed lights.

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Thermal:
Uw: 1.3 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-412 METAL TILT AND TURN CASEMENT WINDOW: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed tilt and turn opening window. System including sill/soffit plates and overhead panel overclad with metal rainscreen.

Finish (aluminium components): Polyester powder coated
Operation: Inward opening

2. Detailed Description:

Same as WIN-400, except with no low level fixed lights.

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Thermal:
Uw: 1.4 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:

Refer to System General Requirements for Workmanship and Materials

WIN-413 METAL TILT AND TURN CASEMENT WINDOW: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, clear glazed tilt and turn opening window. System including sill and soffit plates.

Finish (aluminium components): Polyester powder coated
Operation: Inward opening

2. Detailed Description:

Window Assembly:
Same as WIN-412, except with no overhead panel.

3. Performance:
Same as WIN-412

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-420 SINGLE LEAF DOOR AND FIXED SIDE PANEL WITH OVERHEAD PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, aluminium clad insulated external door with soffit and threshold plates, comprising:
- Hinged, single swing, outward opening single leaf door
- Fixed aluminium clad side panel
- Overhead panel overclad with metal rainscreen

Finish (aluminium components): Polyester powder coated
Operation: Opening outward door action

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
AWS 75.SI+/ADS 75.SI door system by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001

Frame Depth: 75mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Solid panel: PPC aluminium clad insulated panel glazed into frame
Support brackets and lugs: To meet manufacturer's requirements
Hardware:

- Barrel hinges
- Finish: Stainless steel, brushed finish

Soffit:
Pressed aluminium door soffit. Full piece pressing with no intermediate joints. All folds to be true 90 degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffit to be full length of brick opening, and to include drip detail as indicated in design drawings.
Finish: Powder coated to match door frame finish.
Fixings: Recessed fixings in shadow gap detail.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300
Finish: Stainless steel, brushed finish
Threshold fixings: Recessed fixings, to match threshold finish

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around door perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around door perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external door perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around door opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Ironmongery:
Lever handle, door lock
Ironmongery to meet requirements of Lifetime Homes and Secure by Design BS PAS 24
Product: ## To be advised at later work stage ##
Finish: Stainless steel, brushed finish

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-400 except:

Security:

To meet requirements of Secure By Design BS PAS 24: Enhanced Security when at ground floor level

Water ingress:
Water tightness class to EN12208: Class 5a

Air permeability:
Air permeability to EN 12207: Class 2

Thermal:
Uw:1.6 W/m²K
Ug: 1.0 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-421 SINGLE LEAF GLAZED DOOR AND FIXED GLAZED SIDE PANEL WITH OVERHEAD PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, glazed external door with soffit and threshold plates, comprising:
- Hinged, single swing, outward opening single leaf door
- Fixed glazed side panel
- Overhead panel overclad with metal rainscreen

Finish (aluminium components): Polyester powder coated
Operation: Opening outward door action

2. Detailed Description:

Door System:
Door system with insulated, thermally broken, extruded aluminium frame system.

Indicative Product:
AWS 75.SI+/ADS 75.SI door system by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: 75mm
Finish: Polyester powder coated.
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Support brackets and lugs: To meet manufacturer's requirements
Hardware:
- Barrel hinges
- Finish: Stainless steel, brushed finish

Soffit:
Pressed aluminium door soffit. Full piece pressing with no intermediate joints. All folds to be true 90

degree folds. Corners to be cut and folded such, that a continuous return is achieved.
Soffit to be full length of brick opening, and to include drip detail as indicated in design drawings.
Finish: Powder coated to match door frame finish.
Fixings: Recessed fixings in shadow gap detail.

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300
Finish: Stainless steel, brushed finish
Threshold fixings: Recessed fixings, to match threshold finish

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around door perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around door perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external door perimeter joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around door opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Ironmongery:
Lever handle, door lock
Ironmongery to meet requirements of Lifetime Homes and Secure by Design BS PAS 24
Product: ## To be advised at later work stage ##
Finish: Stainless steel, brushed finish

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-400 except:

Security:
To meet requirements of Secure By Design BS PAS 24: Enhanced Security

Water ingress:
Water tightness class to EN12208: Class 5a

Air permeability:
Air permeability to EN 12207: Class 2

Thermal:
Uw:1.6 W/m^{2}K
Ug: 1.0 W/m^{2}K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-422 SINGLE LEAF GLAZED DOOR AND FIXED GLAZED SIDE PANEL: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Highly thermally insulated, thermally broken, aluminium framed, glazed external door with soffit and threshold plates, comprising:
- Hinged, single swing, outward opening single leaf door
- Fixed glazed side panel

Finish (aluminium components): Polyester powder coated
Operation: Opening outward door action

2. Detailed Description:

Same as WIN-400, except with no overpanel

3. Performance:
Refer to System General Requirements for Performance, and in addition:

Same as WIN-400

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-440 RECTANGULAR FIXED ROOFLIGHT: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Purpose made, double glazed, PPC finished, metal framed rooflight and-upstand detail around the perimeter of the rooflight
Assembly to include insulated metal flashings forming upstand edge. No visible fixings or fasteners on the exposed surfaces.

2. Detailed Description:

Rooflight system:
Flat fixed rooflight with thermally broken, PPC aluminium frames system.

Indicative Product:
Bespoke Plateau Studio Designer rooflight by Rooflight Company or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
The Rooflight Company:
www.therooflightcompany.co.uk

Frame material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001

Frame size:
Clear structural width: 1500mm x 900mm
Clear well opening: 1442mm x 842mm
Frame width: To be advised at later work stage

Glazing:
Clear transparent, Double-glazing units with toughened inner and outer pane

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
As WIN-200

Water ingress:
Water tightness class to EN12208: Class 9a

Air permeability:
Air permeability to EN 12207: Class 4

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
Light transmittance: 0.70
Solar factor: 0.50

Thermal:
Uw:1.6 W/m²K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

WIN-450 CURTAIN WALLING SCREEN with POWER ASSISTED SWING DOOR: SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Thermally insulated, thermally broken, polyester powder coated, aluminium framed, clear glazed, capped, double glazed, fixed curtain walling system incorporating:
- Side hinged, outward opening power-assisted swing door
- Opaque fully ceramic fritted and opacifying backpainted glazing sections, as indicated on design drawings
- Accessible weatherproof entrance thresholds

Finish (aluminium components): Polyester powder coated
Operation: swing door to be power-assisted opening and access controlled.

2. Detailed Description:

Window System:
Curtain walling system with thermally broken, extruded aluminium members.

Indicative Product:
FW50+ curtain walling system by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance.
Contact details: www.schueco.com

The system shall be designed, manufactured and installed in accordance with the recommendations of the system supplier, with transom and mullion alignments as shown on the design drawings.

Material: Aluminium
Standard: To BS EN 4873 manufactured to BS EN ISO 9001
Frame Depth: The size of structural sections to be determined by the contractor
Finish: Polyester powder coated
Inner face colour: ## RAL colour to be advised at later work stage ##
Outer face colour: ## RAL colour to be advised at later work stage ##
Glazing: Clear transparent double glazing to accepted sample
Glazing type: ## To be confirmed at later work stage ##
Support brackets and lugs: To meet manufacturer's requirements

Door
AWS70.HI door system by Schuco incorporating:
Overhead concealed door closer and anti-finger trap style
Assisted opening: floorbox mounted powered with motion sensors and push release
Hardware: - Hinges, maglocks (as part of access control system)
Finish: Stainless steel, brushed finish

Covercap
Profile: ## To be advised at later work stage ##
Colour: RAL to match frame

Ironmongery:
Push bars to doors
Ironmongery to meet requirements of Lifetime Homes and Secure by Design
Access controls to services engineer specification
Product: ## To be advised at later work stage ##
Finish: Stainless steel, brushed finish

Opaque insulated panels
Opaque panels to be fully ceramic fritted with opacifying backpaint on Surface
Ceramic fritting: colour to match frame

Threshold:
Low profile, slip resistant, aluminium threshold conforming to BS 8300
Weatherproof threshold, draining water away from interior
Finish: Stainless steel, brushed finish
Threshold fixings: Recessed fixings, to match threshold finish

Weather, thermal and air tight seals:
Three layer weather, thermal/ acoustic and airtight seals comprising:
- External weather seal: Continuous, vapour permeable flexible membrane cloaking to provide continuous weather and air tight seal around window perimeter, fully sealed to the cavity weather line. This shall form part of external primary air tightness line.
- Middle thermal and acoustic seal: Thermal and acoustic insulation at perimeter joint gaps. Mineral wool or expanded foam insulation.
- Internal airtight seal: Continuous, vapour resistant internal flexible membrane cloaking to provide continuous air and vapour tight seal around window perimeter, fully sealed to the air/vapour control planes of adjoining elements. This shall form part of internal secondary repairable air tightness line.

Mastic seals:
Neat, continuous weather and air tight mastic seals around internal and external window perimeter

joints. External sealed joints to provide an effective weather and airtight seal, internal sealed joints to provide an effective airtight seal.
Sealant colour(s) to lead designer acceptance.

Cavity barriers:
Thermally insulated, fire resistant cavity barriers to provide an effective perimeter edge seal around window opening to meet the requirements of Approved Document B.
Product certification: Third party United Kingdom Accreditation Service (UKAS) approved cavity barrier.
System: ## To be confirmed at later work stage ##
Fire resistance: minimum performance of 30 minutes integrity and 15 minutes of insulation in accordance with BS 476-20
Thermal resistance: Minimum thermal resistance path through the cavity barrier to be equal or better than 0.45 m2 k/W.

Manifestation:
As required by Building Regulations to detail drawings

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Security:
Doorset required to achieve the requirements of Secure By Design BS PAS 24: Enhanced Security

Water ingress (curtain walling):
Weather tightness class to EN12154: RE_{1200}

Water ingress (door):
Water tightness class to EN12208: Class 5a

Air permeability (curtain walling):
Air permeability to EN 12152: AE

Air permeability (door):
Air permeability to EN 12207: Class 2

Fire:
Refer to Fire Consultant FDS Consult Fire Report

Acoustic:
Refer to RBA Acoustic Engineer's External Building Fabric Assessment Report for Acoustic requirements and window schedule

Light and solar transmission:
- Light transmittance (LT): ## To be advised at later work stage ##
- Solar factor (g value): ## To be advised at later work stage ##

Thermal:
Uw: 2.2 W/m2K
Ug: 1.0 W/m2K

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials

SYSTEM SPECIFIC REQUIREMENTS

Type of Specification: Descriptive

1. Functional and Visual Description:
Same as WIN-450 except in addition:
Incorporating Automatic Opening Vents as part of the fire strategy, as shown on the design drawings

Operation: top hung, opening outward

2. Detailed Description:
As WIN-450 except:

Automatic Opening Vent
2no. opening vents per floor to achieve 1.5m2 free area in aggregate, as specified by Fire Consultant
Vents to be linked to the fire alarm system, to Service Engineer's detail
Vents be used for environmental cooling, to Service Engineer's detail
Indicative product: AWS70.HI SHEVS vents by Schueco UK or acceptable equivalent to meet the Functional, Visual and Performance Requirements to Lead Designer acceptance
Contact details: www.schueco.com

3. Performance:
Refer to System General Requirements for Performance, except or in addition:

Same as WIN-450 except

Fire:
AOVs to achieve on aggregate 1.5m2 free area per floor, refer to Fire Consultant FDS Consult Fire Report

4. Samples, Submissions, Mock-ups and Testing:
Refer to System General Requirements for Samples, Submissions, Mock-ups and Testing

5. Workmanship and Materials:
Refer to System General Requirements for Workmanship and Materials