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"Spaceframe" Modular Buildings

Building Regulations Compliant

STRUCTURAL DESIGN

The structure is designed and constructed in accordance with the following standards and technical references:-

· ***BS 5268-2:2002*** *'Structural Use of Timber'*
· ***BS 5950-2:2001*** *'Structural use of steelwork in building. Specification for materials, fabrication and erection - Rolled and welded sections'*
· ***BS 5950-5:1998*** *'Structural use of steelwork in building. Code of practice for design of cold formed thin gauge sections'*
· ***BS 6399-1:1996*** *'Loading for buildings. Code of practice for dead and imposed loads '*
· ***BS 6399-2:1997*** *'Loading for buildings. Code of practice for wind loads '*
· ***BS 6399-3:1988*** *'Loading for buildings. Code of practice for imposed roof loads '*
· ***BS 648:1964*** *'Schedule of weights of building materials '*
· *Timber Designers Manual 'Ozelton & Baird'*

Imposed Loadings

Floor – 3.0kN/m2
Roof – 0.75 kN/m2

Design Wind Speed

Calculated in accordance with BS 6399: Part 2

Fire Rating

· External face of walls - Class 3 or Class 1 surface spread of flame (depending on finish)
· Internal face of walls and ceiling - Class 0 surface spread of flame.
· Minimum 30min Insulation, Integrity and Stability protection – from inside to out.

Insulation Values

Walls 'U'= 0.35w/m2k
Roof 'U'= 0.22w/m2k
Floor 'U'= 0.22w/m2k

Internal Ceiling height

24000mm, 2700mm, 3000mm or 3300mm.

FLOOR STRUCTURE – 'U' VALUE = 0.20 w/m2 K

Steel floor frame: 150 x 75 x 10mm C-Section Hot Rolled Steel Channel perimeter beams with
125 x 50 x 3mm PFC Galvanized steel floor joists at 406mm centres welded between.

Floor Deck: 18mm V313 Flooring grade moisture resistant T & G Chipboard glued and nailed to timber joist packing battens.

Insulation: Double layer of `floortherm' foil insulation membrane laid over galvanized Steel floor joists with airspace above to underside of Chipboard deck.

Floor Covering: 2.0mm thick 'Marley' pure sheet vinyl with heat welded seams to stores and boiler room. 2.0mm thick 'Marleysafe' pure sheet vinyl with heat welded seams to wet areas. Burmatex 5500 luxury carpet tiles Burmatex grimebuster barrier matting to entrance lobby

EXTERNAL WALLS – 'U' VALUE = 0.35w/m2K

Timber Framing: Ex 95 x 35mm top and bottom rails with ex 95 x 35mm vertical studding at 400mm centres, with horizontal cross mid rails.

Cladding: 9mm WBP Exterior grade plywood glued and nailed to studding timber to form a stressed skin construction.

Insulation: 90mm glassfibre min slab insulation quilt fitted in between vertical timber studding.

Vapour Barrier: Single layer of `Ecobrite' foil insulation membrane is fitted directly onto internal side of walls studs.

Packer Battens: 55mm timber packing battens are fitted on top of `Ecobrite' insulation to create air cap behind plasterboard internal lining.

Internal Lining: 12.7mm Cream 'plaster' vinyl faced plasterboard fixed onto timber packer battens, board joints finished with two part white PVC H-section. All skirting are 45 x 10mm half round timber finished in white gloss paint.

Wall Bay to Bay Joint Cover Strips: 12.5mm cream vinyl faced infill piece for internal flush finished walls.

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ROOF STRUCTURE – (COLD DECK) – 'U' VALUE = 0.25 w/m2 K

Steel Roof Beams and frame: Engineered steel lattice edge beams duo-pitch with steel angle tie bars. Roof beams connect to 80 x 80 x 4mm RHS cold formed full height corner posts, which are connected to the floor perimeter beams at the bottom, creating a rigid steel frame construction. Roof and ceiling are created separately with an air space in between promoting cross ventilation.

Roof Deck and Covering: Single layer rubberised roof blanket is bonded onto 12mm plywood which is nailed onto timber roof joists 100 x 38mm @ 400mm ctrs.

Ceiling Joists and Lining: 12.7mm foil backed plasterboard fixed onto 100 x 38mm timber ceiling joists @ 400mm ctrs.

Insulation: 2 layer's of 90mm glassfibre min slab quilt to roof space above ceiling joists.

Roof Ventilation: Warm Deck None required. Cold Deck, continuous strip soffit vents.

Rainwater Goods: Rainwater is discharged directly from the roof into full length PVC square line gutter along each end of the bays. The gutter discharges via PVC square fall pipes to ground levels.

Ceiling Bay to Bay Joint cover Strip: Joint concealed by 12mm thick twice rounded MDF strip finished with laminated white vinyl to match wallboards, mounted on timber laths.

Fascia detail: Fascia is built onto the ends of the steel columns, and clad with 9mm WBP plywood. The finish is as per the external wall finish.

EXTERNAL DOORS

Door Frames: Joinery grade softwood timber rebated frames with hardwood or duraflex cills (for Disabled access), treated with one coat each oil bound primer, undercoat and gloss.

Doors: Door type and pattern depends upon individual building.

INTERNAL DOORS

Door Frames: Joinery grade softwood timber frames with plant on stop laths (no cill), treated with one coat primer and finish coat to suit requirements.

Doors: Door type and pattern depends upon individual building, but are generally pre-finished `Blonde-oak' or Landscape `Sapele' to customers preference

WINDOWS U value 2.0 w/m2 K

Specification: Double glazed white UPVC framed, full opening vent, windows size 900W x 1000D glazed in K glass with neoprene glazing gaskets, trickle vents, and opening restrictors. Window linings are 9mm MDF window board complete with 45x10mm once round timber surround with a painted white gloss finish.

EXTERNAL FITTINGS

Walls: Co-polymer resin re-enforced textured coating or 0.5mm steel balance Sheet bonded to external 9mm plywood with further 0.75mm thick colour Coated steel (plastisol) sheet fixed on top of the steel balance sheet Cedar clad fixed to spacer latte with breather paper

Corner Trims: 9mm WPB plywood corner trims texture coated or Plastisol steel formed corner angle.

Bay Joint Trims: 9mm WPB plywood trims texture coated or Plastisol steel formed bay joint trim.

Plinth Trim: No plinth trim is supplied unless specifically required.

ELECTRICAL INSTALLATION

Distribution Boards: A T P & N distribution board is fitted in one bay of any modular complex to allow one connection to be made to the new building. All other bays are fitted with individual VE-COS consumer units, which connect back to the distribution board, by either:
(a) 32A plug and sockets, which are generally used on smaller complexes with low electrical Loading.
(b) Hard wiring each consumer unit back to the distribution board, which is used on larger complexes with higher electrical loading.

Installation: Each module is factory fitted with lighting, power and heating all protected by MCBs (miniature circuit breakers) within the consumer unit.

Certification: All modules are pre-tested to comply with current Regulations, and are fully certified accordingly.

Due to the company's policy of continuous improvement to its product range, we reserve the right to change and alter this specification without prior notice. Clients will of course be notified accordingly.