

CUSTOM HOUSE, THE TERRACE, GRAVESEND, DA12 2BW

FIRE PROTECTION, ACOUSTICS AND THERMAL INSULATION DETAILS

This statement formally sets out the methodology details of the construction of all floor, wall and roof junctions in relation to fire protection, acoustics and thermal insulation. All information to be read in conjunction with construction details provided alongside this method statement.

FIRE PROTECTION, ACOUSTICS AND THERMAL INSULATION

MAIN HOUSE

Walls

All new party walls across the main house to achieve a minimum 60minute fire rating. The party wall will consist of 89mm timber stud fully filled with acoustic mineral wool insulation, 9mm sheathing, fixed to 16mm resilient bars, fixed to 19mm Gyproc plank and 12.5mm SoundBloc on both sides.

All new internal flat walls to achieve a 30minute fire rating. The internal partitions will generally consist of 89mm timber stud fully filled with acoustic mineral wool insulation, with a layer of 12.5mm gypsum-based board either side.

Due to the listing of the main house works to the existing walls are limited regarding enhancing the fire, sound and thermal performance. From visual inspection and date of construction these walls are generally of a significant thickness and likely solid masonry. These walls will sensitively be made good throughout.

Floors

Existing floor construction is to be retained, therefore existing floorboards, solid timber joists, existing 'pugging' material and existing historic lathe and plaster ceiling will remain in place. A new suspended ceiling system with 100mm acoustic mineral wool to be fixed to existing timber joists. 15mm Gyproc SoundBloc F plasterboard will be applied to the suspended ceiling system to achieve a 60minute fire rating between floors. A new cementitious screed board acoustic flooring system, including a resilient layer laid on top of existing floorboards. YELOfon FS50 or similar flanking strip to be installed around perimeter of floor prior to installation of new screed board.

It is proposed that at new party wall / separating floor junctions, existing floorboards and lathe and plaster ceiling is to be sensitively removed to allow for the insertion of a fire resisting material to fill the void between the new party walls. The existing floorboards and ceiling will be locally removed where practicably suitable to enhance the fire resistance in these areas.

Roof

At party wall ceiling/ roof junctions, fire resisting material to be installed between existing joists either side of new party walls. Spandrel panels will be introduced over, consisting of 63mm timber stud built off noggins between existing joists. Studwork to be fixed with 2no. layers of gypsum-based board or 1no. layer of 15mm Fermacell board.

At head of spandrel panel, a fire barrier is to be installed between head of panel and underside of existing roof covering. Where possible existing tile battens to be cut back to enable the fire break installation.

OUTBUILDINGS

Walls

All new party walls across the outbuildings to achieve a minimum 30minute fire rating for buildings under 4.5m and a minimum of 60minute fire rating for buildings over 4.5m high. The new double leaf party wall consists to 2no. 63mm timber studs fully filled with acoustic party wall roll insulation, with 9mm sheathing board fixed to outer face. Sheathing to be set 25mm apart creating a 25mm continuous cavity, fully filled with mineral wool insulation. The inner face of wall consists of 19mm Gypsum based plank and 12.5mm gypsum-based wall lining.

Existing masonry walls forming new party walls to be upgraded by face fixing 19mm gypsum-based plank and 12.5mm gypsum-based wall lining.

All existing external masonry walls to be lined with 100mm timber studwork filled with 80mm PIR insulation and fixed with 12.5mm plasterboard inner face.

All new internal partition walls to achieve a 30minute fire rating. The internal partitions will generally consist of 89mm timber stud fully filled with acoustic mineral wool insulation, with a layer of 12.5mm gypsum-based wall lining either side.

Floors

Existing ground floor concrete slab to be retained, a new liquid DPM to be applied over existing floor slab prior to new thin coat levelling compound installed over existing slab. 25mm foil faced PIR insulation installed over levelling compound with new 18mm tongue and groove board to be installed over insulation.

Existing intermediate solid timber joists and floorboards to be retained with new 12.5mm gypsum-based ceiling board applied to underside of joists. 100mm acoustic mineral wool insulation to be installed within existing timber joist zone.

All new intermediate floors to consist of 253mm metal web joists with 100mm acoustic mineral wool installed within joist zone. 12.5mm gypsum-based board fixed to underside of joists and 22mm timber OSB or chipboard deck fixed to top of joists.

All new party wall and new intermediate floor junctions will have a 60minute fire rated cavity barrier installed at floor junction. Intumescent flexible mastic to be applied to all junctions between party wall linings and ceiling linings.

Roof

At party wall and ridge junctions a fire barrier is to be installed at head of party wall and underside of existing roof covering. Existing tile batten to be cut back to enable the fire break installation. 10mm intumescent flexible mastic to be applied to all junctions of party wall lining and ridge fire barrier.

BOATHOUSE

Walls

All new party walls across the boat house to achieve a minimum 30minute fire rating. The party wall will consist of 89mm timber stud fully filled with acoustic party wall roll insulation, 16mm resilient bars, fixed to 19mm gypsum-based plank and 12.5mm gypsum-based wall lining on both sides. 5mm intumescent flexible mastic to be applied to all junctions between party wall, wall linings and floor covering.

All new internal partitions will generally consist of 89mm timber stud fully filled with acoustic mineral wool insulation, with a layer of 12.5mm gypsum-based wall lining either side.

All existing external masonry walls to be lined with 100mm timber studwork filled with 80mm PIR insulation and fixed with 12.5mm plasterboard inner face.

Floors

Existing ground floor concrete slab to be retained, a new thin coat levelling compound installed over existing slab. 25mm foil faced PIR insulation installed over levelling compound with new 18mm tongue and groove board to be installed over insulation. Insulation installed on all floors except unit 21.

Existing intermediate solid timber joists and floorboards to be retained with new 12.5mm gypsum-based ceiling board applied to underside of joists. 100mm acoustic mineral wool insulation to be installed within existing timber joist zone.

All new party wall and new intermediate floor junctions will have a 60minute fire rated cavity barrier installed at floor junction. Intumescent flexible mastic to be applied to all junctions between party wall linings and ceiling linings.

Roof

At party wall and ridge junctions a fire barrier is to be installed at head of party wall and underside of existing roof covering. 60minute fire rated cavity barrier installed between existing timber battens at junction. 10mm intumescent flexible mastic to be applied to all junctions of party wall lining and ridge fire barrier.

300mm of new mineral wool insulation to be installed between and over existing rafters across the boathouse roof zone.

NEW BUILD

Walls

All party walls across the new build to achieve a minimum 60minute fire rating. The double leaf party wall consists of 2no. 89mm timber studs fully filled with acoustic party wall roll insulation, with 9mm sheathing board fixed to outer face. Sheathing to be set 50mm apart creating a 50mm continuous cavity, fully filled with mineral wool insulation. The inner face of wall consists of 19mm gypsum-based plank and 12.5mm gypsum-based wall lining.

All internal partitions will generally consist of 89mm timber stud with minimum 50mm acoustic mineral wool insulation between studs, with a layer of 12.5mm gypsum-based wall lining either side.

Brick external wall and party wall junctions to have a 60minute fire rated cavity barrier installed. Slate cladding external wall and party wall junctions to have a 60minute fire rated cavity barrier installed. 60minute fire barrier to be installed between slate batten rails with barrier width required to be a minimum of 150mm full coverage either side of the party wall junction.

Floors

Ground floor will be 75mm screed installed over 150mm PIR foil backed insulation boards. 500-gauge membrane laid over PIR. 1200-gauge polythene DPM to be installed over concrete slab below insulation.

Intermediate floors will be 253mm metal web joists with 100mm acoustic mineral wool installed within joist zone. 15mm plasterboard fixed to underside of joists and 22mm timber OSB or chipboard deck fixed over joists.

All party wall and intermediate floor junctions will have a 60minute fire rated cavity barrier installed at floor junction. At terrace floor junctions further to the 60minute cavity barrier installed between party wall and terrace floor, 18mm non combustible cementitious board will be laid a minimum 150mm both sides of party wall line over floor joists.

Roofs

At party wall and ridge junctions a 60minute fire cavity barrier is to be installed at head of party wall and underside of roof covering. Additional 60minute fire cavity barrier installed between timber counter battens at junction with roof and party wall.

150mm PIR insulation laid over solid timber roof battens.

WORKSHOP

Walls

All new internal partitions to be 89mm timber stud fully filled with acoustic mineral wool insulation between studs, with a layer of 12.5mm gypsum-based wall lining either side. Structural internal walls will have a 12mm ply pattern board installed between timber studs as necessary.

All existing external masonry walls to be lined with 100mm timber studwork filled with 80mm PIR insulation and fixed with 12.5mm plasterboard inner face.

Floors

Existing ground floor concrete slab to be retained, a new liquid DPM to be applied over existing floor slab prior to new thin coat levelling compound installed over existing slab.

All new intermediate floors to consist of 220mm timber joists with 100mm acoustic mineral wool installed within joist zone. 12.5mm gypsum-based board fixed to underside of joists and 22mm tongue and groove board fixed to top of joists.

Roofs

Existing roof construction to be retained. 100mm PIR to be fitted between existing timber rafters with 50mm PIR fixed to underside. 12.5mm plasterboard fixed to underside of PIR.