



CASE STUDY



Structural Insulated Panels



Hill Road - Essex

Architect:
Clear Architects

Main Contractor:
Self Build

Type:
Multi-generational Home

System:
SIPCO Bespoke SIP Panels

www.thesipcompany.com



Structural Insulated Panels



Hill Road - Essex

SIPCO worked with Clear Architects to create this three storey building that encapsulated the most amazing views of the London skyline from every available vantage point.

Creating an Award Winning Family Home

There are many compelling reasons to build your own home, however the motivation behind the self build development at Hill Road in Essex is somewhat unusual. A small building plot which housed a 1950s bungalow was transformed into a contemporary home for the Smith family. As their three grown up children live at home, the concept was to create a place where they could all live together, yet individually.

Achieving the Optimum Performance

The existing bungalow was situated on a plot of land of only 796m², which was remodelled into a stunning three-storey modern property, without impacting on the neighbours. The complexity of the building design combined with thermal efficiency targets made using traditional construction methods impracticable.

The open plan living requirements were facilitated using glulam beams and structural insulated panel technology. The extensive use of full height glazing was made possible via the thermal offset of using 175mm SIPS for both external walls and roof construction, delivering U-values as low as 0.09 W/m²k with additional insulation. SIPCO manufactured and supplied the structural insulated panels for the project in engineered kit form.

Utilising Building Information Modelling (BIM), SIPCO digitally constructed the structural system prior to manufacture and worked in close collaboration with the architects, floor joist and glulam designers to ensure that any potential interface errors would be eliminated prior to manufacture and onsite installation.

The high-performance building envelope was constructed on schedule and within budget. This high-end project demanded exacting standards – both the client and architect were delighted with the end results. But it was not only the clients and architect who were impressed – Hill Road, Essex picked up the trophy for the Best Use of SIPS at the Structural Timber Awards.

SIPS offered superior insulation, structural strength and airtightness to deliver a high-performance building envelope.

SIP Systems for Bespoke Homes

The use of SIP panel technology in house building comes with numerous benefits. By utilising SIPCO SIP systems, build times can be reduced allowing for less time on site and faster installation. Space-maximising design flexibility allows home builders to create a layout that is truly bespoke and adaptable to their needs and the available land space. With our expert team on hand to provide full technical support, SIPCO ensures the process is as straightforward as possible. SIPs offer durability, performance, and exceptional air tightness. Offering lightweight structural strength, SIPs have an expected 60-year lifespan with proper maintenance and management. Our wall panels are a sustainable choice and contribute positively to the environment by helping to lower CO₂ levels. The system also offers exceptionally low U-values for walls, ranging from 0.21 to 0.10 W/m²K depending on the building specifications. SIP roof designs can also deliver thermal performance benefits with U-values in the range of 0.21 to 0.10 W/m²K.

The objective was to maximise light within the property and to take advantage of the spectacular views.

SIPCO understand that clients may prefer to use their own contractors for installation and as such offers flexibility with Structural Insulated Panel House Kits. The kits contain all floor joists, support members, and ancillary items, and our technical team can provide advice and guidance to both clients and contractors. SIPCO also welcomes engineers, architects, and builders to visit our production facility to learn more about the benefits and performance of structural insulated panel technology.

SIPCO value engineered the structure to eliminate waste or inefficiency in the building design.





SIPCO SIP Technology

SIPs are fully engineered structural insulated panel systems. Created by joining high-performance rigid polyurethane foam insulation to oriented strandboard (OSB) to produce engineered building components that work together to produce a building product that is predictable, cost-effective, and designed to last. SIPs are environmentally friendly, and all SIPCO systems use timber materials verified during supply-chain to ensure compliance with the PEFC® International Chain of Custody Standard. All materials used in the manufacture and construction of SIPs are recyclable for a more sustainable property. Offsite manufacture allows for complete precision and mitigates wastage. SIPCO can custom-manufacture SIPs, offering a range of cladding options including; ceramic tiles, steel-faced composites, timber, and cementitious fibre boards to allow clients a truly personal finish to their home building projects.

SIPs are lightweight, structurally strong, and do not suffer from compression shrinkage and cold bridging associated with stud walls. SIPCO can also provide further benefits with SIP roof panels, increasing habitable living space and giving the interior of the building a more spacious feel with the option of enhanced natural light via skylights. No requirement for roof trusses allows for maximum space efficiency.

By purchasing from SIPCO, you can be confident in a bespoke, precision-engineered system (SIPs) that is fully BBA compliant for panel manufacture and fabrication and FSC®/PEFC® certified. Our technical team is on hand to provide expert knowledge and guidance at each stage of your self build project.

For more information on our award winning services:

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