



kirk  
natural stone  
developments



# Kirk ThermalWall Facing System

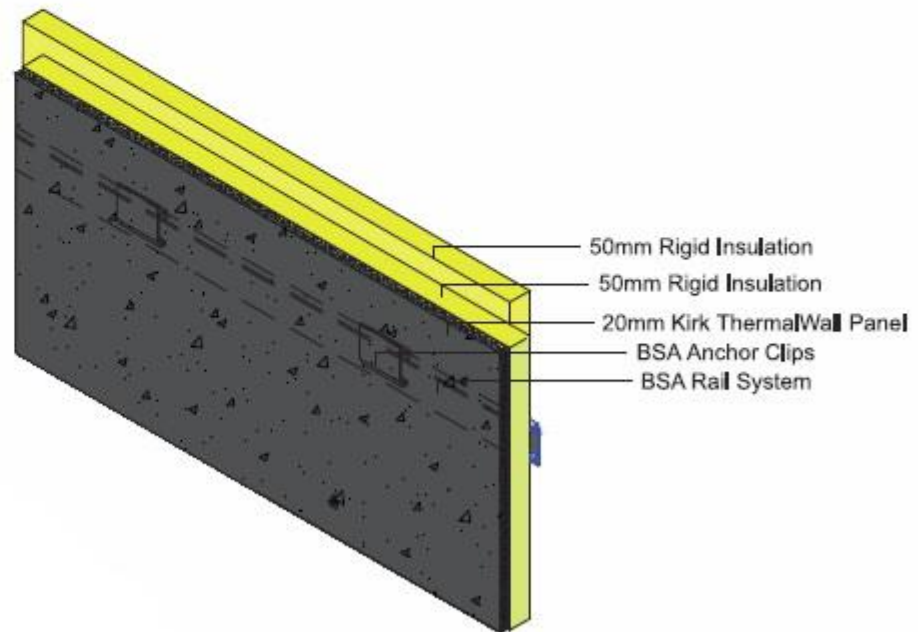
Insulated, Lightweight  
Building Facing System

## KIRK THERMALWALL

**Kirk ThermalWall is a revolutionary insulation backed walling system (UK patent application no: 1314022.3), suitable for installation onto a wide variety of building façade types, including both new build and retro-fit applications.**

Kirk ThermalWall is designed to significantly increase building energy performance and, if used with natural stone facing panels, will also substantially improve building appearance and lifespan.

The Kirk ThermalWall system is lightweight, easy to install and available in a wide range of material types, colours and textures, for residential, office, industrial, education, healthcare, leisure, public sector and tourism building projects.





## SUSTAINABILITY

**Sustainability is that which meets the needs of the present without compromising the ability of future generations to meet their own needs.**

Kirk ThermalWall, installed with natural stone facing panels, is arguably the most sustainable building facing system available. Recent research has shown, that natural stone is the most sustainable building material with the lowest embodied CO<sub>2</sub>, and the historical use of stone further confirms it's unrivalled longevity.

Combining a natural stone facing, with the highest performing rigid insulation materials available, to create a product which is demountable, upgradeable and re-usable, has brought Kirk ThermalWall to the forefront of sustainable building product development.

### Embodied Carbon of common construction materials

Material	Embodied Carbon - kgCO <sub>2</sub> /tonne
Granite	64
Sandstone	94
Concrete (high strength)	209
Bricks	220
Slate	259
Timber	450
General Building Cement	830
Steel	1710

Source: Heriot Watt University





## **BENEFITS OF USING KIRK THERMALWALL**

**The benefits of using Kirk ThermalWall are:**



- Improved building energy performance to specified levels
- Lightweight (<60kg/sq.m) and applicable to any building type
- Suitable for new build and retrofit on residential or commercial projects
- Factory assembled and quick to erect on site
- Demountable, upgradeable and reusable
- Provides a lifetime upgrade to building appearance
- Comfortably exceeds building standards and performance requirements
- Very wide choice of materials, panel sizes and finish types
- Highly sustainable with low embodied CO2

*Future proof traditional or contemporary  
façades are possible with Kirk ThermalWall*



## REFURBISH v REBUILD

**There has been a tendency in recent years to demolish and replace tired looking 1960's and 70's buildings, with new '21<sup>st</sup> century buildings', but unfortunately due to cost these buildings are all too often built using the same poorly weathering façade materials.**

Using natural stone facing panels with Kirk ThermalWall, offers a much more cost effective 21<sup>st</sup> century building solution, improving appearance and creating low maintenance buildings still likely to be in service during the 22<sup>nd</sup> and even 23<sup>rd</sup> centuries.

Refurbishment using Kirk ThermalWall is especially relevant to education, healthcare and other public sector building types, where budgets are often tight and the benefits of low whole life costs can be fully realised by long building service.



*... can be economically re-faced to look like this*



*Stone faced school built 1692 and still in service !*



## KIRK THERMALWALL SYSTEM DESCRIPTION

**Kirk ThermalWall comprises thin (10-30mm) facing panels, fixed mechanically using back site anchors to rigid insulation of varying thickness (mainly 100-200mm), depending upon the building façade substrate and required U value.**

The rigid insulation panels are rebated along all edges to provide rigidity and prevent inwards/outwards movements once in place, and are oversized relative to the facing panel to create the desired horizontal and vertical joint spacing. Overlap of the rebated edges on the insulation also helps prevent moisture ingress via the joints, which can either be left open or filled with a suitable pointing medium as required.

The system is fixed mechanically without the need for adhesives, cements or resins, except for pointing, and so within reason be installed independently of weather conditions. It is recommended that weep holes are installed at the base of wall sections, to allow any moisture which may penetrate the system, or condensation which may develop on the back of the insulation layer, to drain away.

Kirk ThermalWall is secured to building façades via a clip/horizontal rail system. Clips 100mm long are attached by nuts/washers onto the stems of back site anchors on the back of each panel. These clips in turn hook onto continuous horizontal rails, fixed accurately by laser profile onto the building façade.



*Back Site Anchors (BSA)*



*Rebated Insulation*



*Clip Connectors*





Oversized fixing holes in the clips allow small amounts (up to 6mm) of up/down and side to side movement, whilst shimming of the clips and horizontal rails can provide a similar amount of inwards/outwards movement. Additional security can be provided as required by installing tek screws through the top of the clips into the horizontal rails. For very uneven substrates requiring a greater degree of in/out adjustment, a bracket/vertical back rail system is available. Thermal bridging effects can be minimised by applying a thermal break against the face of the building, behind the continuous horizontal fixing rails.

Once fixed in place, the standard clip/horizontal rail system leaves a cavity of approximately 27mm width behind the back of the insulation panel, which can be increased using brackets or battens if required. The system can be supplied in a variety of panel sizes to suit the intended application, either with or without false joints. Special L shaped corner/ingo panels are also available, with thicker panel material (e.g. 30mm in the case of stone) and a consequently reduced insulation thickness in these areas. Similarly, cills, lintols, string and band courses can be supplied to any design profile, faced with material of suitable thickness.



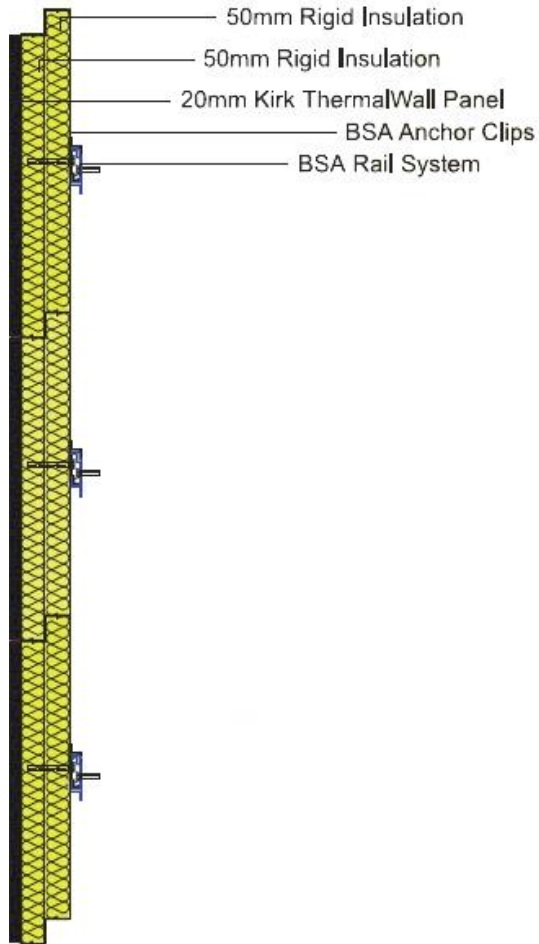
*Clip*



*Rail*

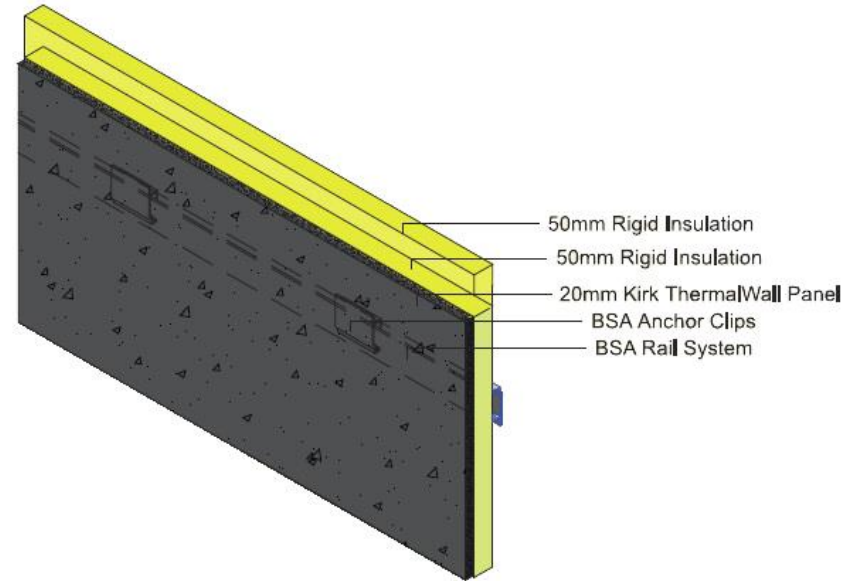


### Section View

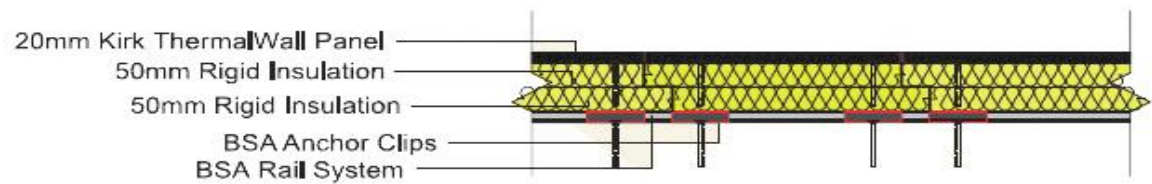


## KIRK THERMALWALL SYSTEM DRAWING

### Panel Overview



### Plan View

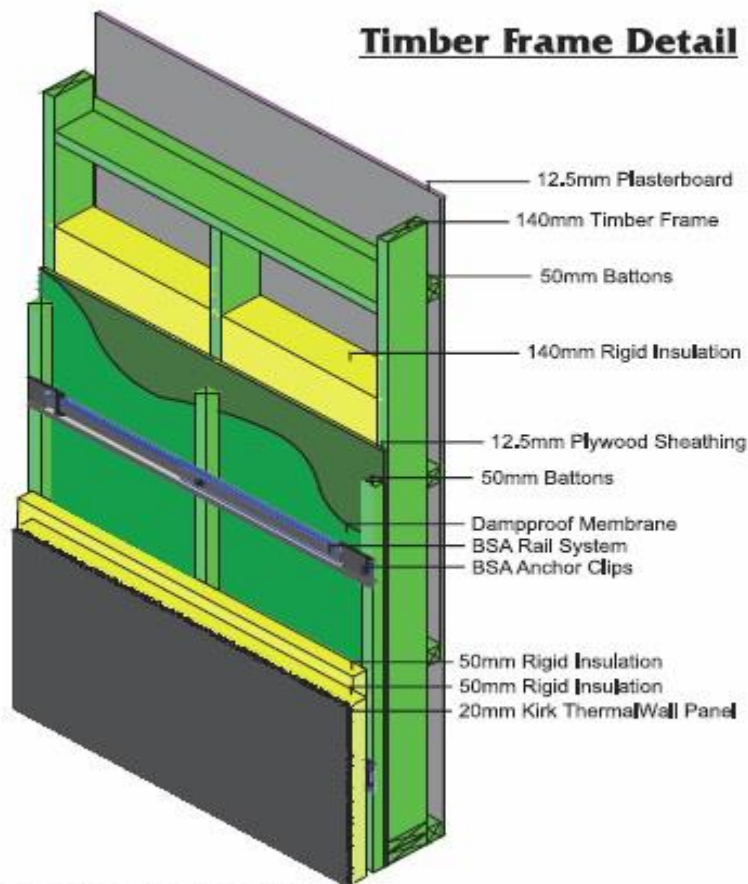




## ENERGY & FAÇADE PERFORMANCE

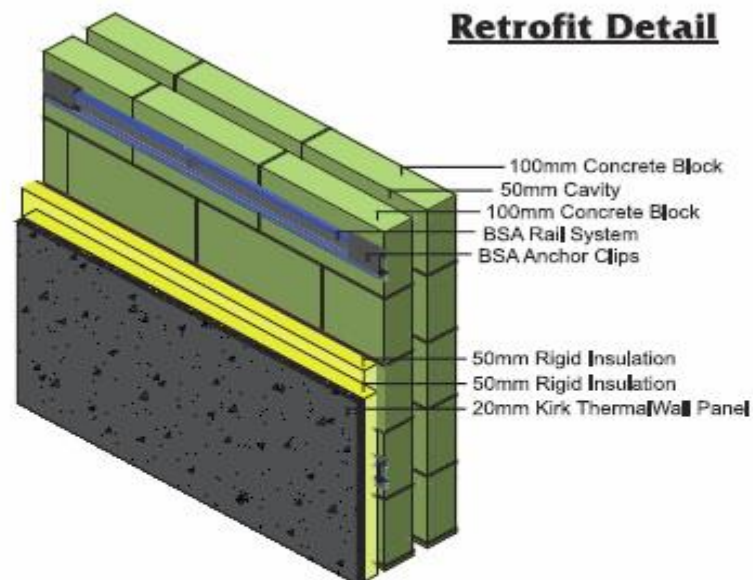
Kirk ThermalWall meets high energy performance standards and, if used with a natural stone facing, also provides exceptional building life with low maintenance.

### Timber Frame Detail



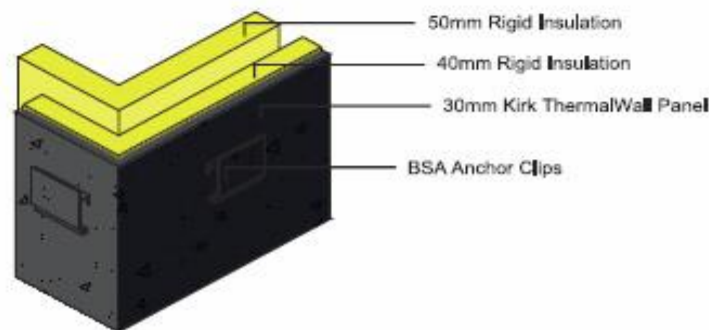
U values down to 0.9

### Retrofit Detail



U values down to 0.14

### External Corner Detail

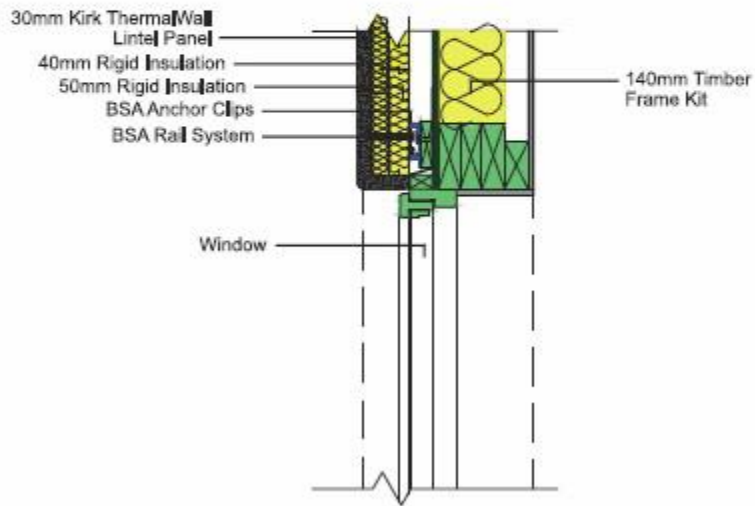




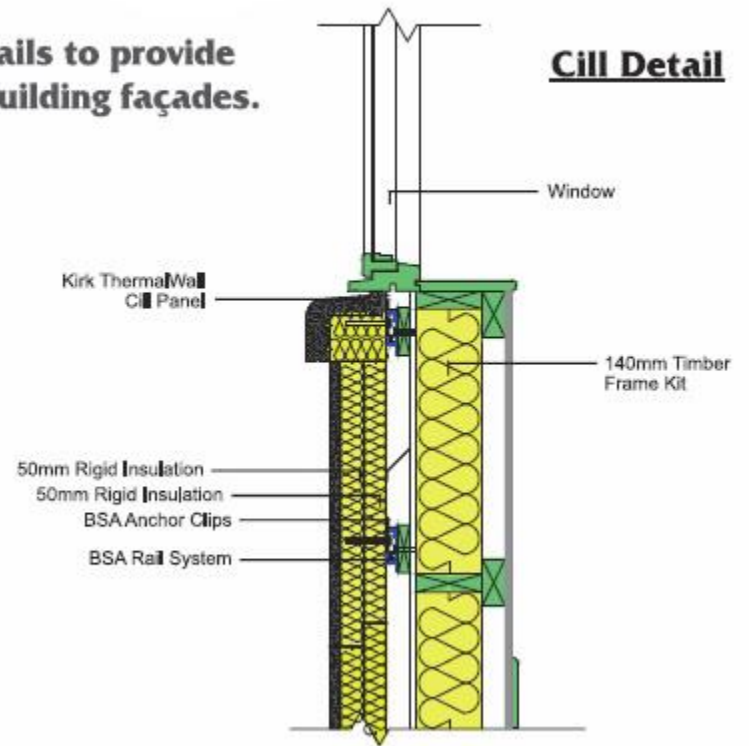
## SYSTEM DETAILS

Kirk ThermalWall is supplied with well designed details to provide a seamless high quality appearance to completed building façades.

### Lintol Detail



### Cill Detail



## TECHNICAL QUALITY

**Kirk ThermalWall is rigorously engineered to ensure lifetime performance.**

Back site anchors used to secure the system are very strong and offer a safety margin of up to 110:1, depending upon panel sizes and material type. Rebated insulation is highly water vapour resistant with a compressive strength of up to 120kN, to resist rain penetration and the strongest wind and dead loads.

Every system design is supported by test and calculation data to demonstrate durability, fitness for purpose and long service life.

## SITWORKS

**Kirk ThermalWall is factory assembled and delivered to site ready for installation.**

All Kirk ThermalWall systems are subject to a thorough design process, to simplify and ensure that siteworks are limited to:



- Accurate installation of continuous horizontal support rails, using shims or back rails as the design requires
- Clipping panels onto horizontal rails, securing with Tek screws if required
- Jointing if required using a resin based or mastic pointing mix

Special attention must be paid to the accuracy of fit for the horizontal support rails, because this will strongly influence the quality of the completed installation.





## SERVICES & SUPPORT

**High quality design and project planning determine the quality and ease of installation for Kirk ThermalWall Systems.**

Our Technical Advisory & Customer Support Service offers advice and assistance at all stages including:

- Initial feasibility and project appraisal
- Site survey requirements and materials selection
- Design detailing, system performance and production drawings
- Site installation and best practice



## FAÇADE QUALITY WITH THERMAL PERFORMANCE

**Kirk ThermalWall is a revolutionary new building facing system.**

When used with natural stone panels, it is possible to create or refurbish buildings which combine beauty, longevity and cost effectiveness, with the thermal performance offered by the latest rigid insulation types.

New build or refurbishment in stone has never been so easy!

### **Kirk ThermalWall**

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UK Patent No: 1314022.3



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**ThermalWall**  
**Facing System**

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