Techrete

The Future of High-Performance Building Envelopes



Precast Concrete
Sandwich Panel Systems

Techrete
Building Sustainable Futures

A COMPLETE BUILDING ENVELOPE SOLUTION







Techrete's precast concrete sandwich panel system combines structure, insulation and architectural finish within a single factory-manufactured element. Suitable for both load-bearing and non load-bearing applications, sandwich panels can form the complete wall construction, providing both the internal and external concrete leaves. The internal structural leaf can have a power-float finish to allow for direct painting, negating the need for plasterboard, or lining systems.

The two concrete layers are separated by insulation, with the insulation thickness tailored to achieve project-specific thermal performance requirements and U-values. The concrete leaves can be connected using low-conductivity composite connectors, which provide structural stability while allowing the outer leaf to accommodate normal thermal movement.

Thermal bridging through the connectors is minimal, supporting excellent building envelope performance and helping to reduce operational energy demand. For maximum efficiency, load-bearing sandwich panels can be designed to support floor structures directly, creating a highly integrated solution that reduces material use, simplifies construction and accelerates installation onsite with the building envelope progressing in tandem with the structure above.

Manufactured in controlled factory conditions, the system delivers high quality, improved programme certainty and reduced site activity, supporting more sustainable construction outcomes. This approach brings together thermal efficiency, structural performance, speed of installation and long-term durability within a single, engineered façade solution.

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THE VALUE OF SANDWICH PANEL FAÇADE SYSTEMS

Thermal Performance

- Excellent thermal performance with insulation tailored to project requirements
- Reduced thermal bridging through low-conductivity connector systems
- Enhanced airtightness & building envelope performance

Structural Efficiency

- Suitable for both load-bearing & non load-bearing applications
- Structure, insulation & architectural finish integrated into a single element
- Load-bearing panels can support floor structures, creating an efficient building frame

Construction & Programme Benefits

- Reduced site labour & construction activity
- Fewer trades required, with the potential to eliminate internal lining systems
- Improved programme certainty & reduced construction risk

Sustainability & Whole-Life Value

- Optimised use of materials through integrated design
- Reduced waste & site disruption
- Lower whole-life costs through durability, performance & reduced maintenance

Quality & Durability

- Manufactured in controlled factory conditions for consistent quality
- Durable, robust and low-maintenance façade solution
- Long design life with excellent in-service performance
- Reliable weather protection and building envelope integrity

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IN-HOUSE DESIGN CAPABILITIES

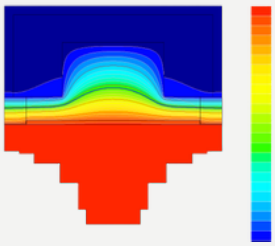
Building Physics & Performance Modelling

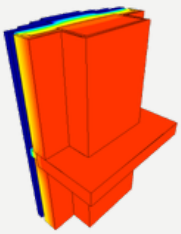
Beyond the manufacture of precast concrete sandwich panels, Techrete can provide in-house building physics capability, giving project teams confidence in performance from concept design to detailed design and beyond.

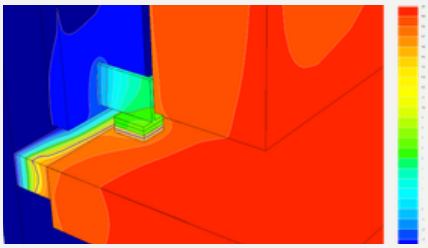
All modelling carried out in-house, aligned with manufacturing details which provides a faster turnaround and tighter design coordination than third-party assessment. These in-house design services include:

Thermal Modelling

- U-values, ψ-value and χ-value calculation for all typical and project-specific junctions
- Support Part L compliance and whole-building energy modelling
- Identifies and helps minimize thermal bridging at connections







Surface & Interstitial Condensation Assessment

- Temperature Factor (f_{Rsi}) assessment against BS 5250
- Mould growth and surface condensation risk checked at critical junctions
- Early identification of high-risk details such as balconies and window junctions
- Full 3D hydro-thermal simulation of moisture movement within the panel build-up

BRENT CROSS TOWN, LONDON

Project Details

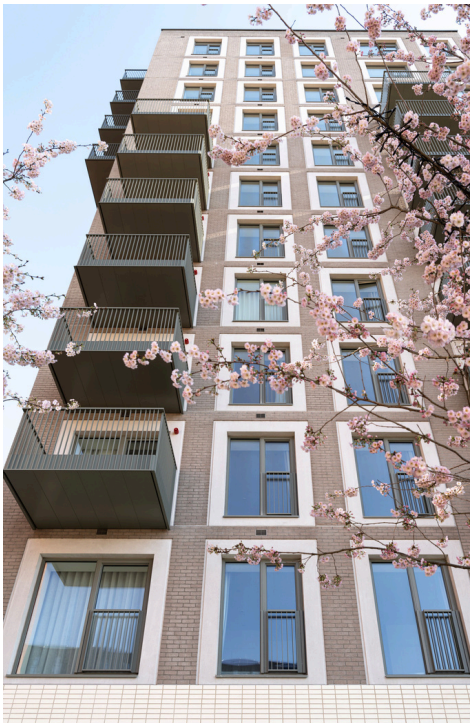
Contractor:
PCE / Galliford Try

Architect:
Allies & Morrison

Bricks: Covagonda Green Heathflower, Ebony, Gunsmoke

Details:
707 brick-facing & reconstructed stone panels with balconies.







FULTON & FIFTH, LONDON

Project Details

Contractor: Regal / PCE

Architect:
JTP / Ryder Architects

Bricks: Bellbrook Red Multi, Woodland Mixture, Perla White

Details:
1,968 brick-facing & reconstructed stone panels with balconies.







DAKOTA HOTEL, MANCHESTER

Project Details

Contractor:
McAleer Rushe

Architect:
Simpson Haugh

Bricks:
La Paloma

Details:
398 brick-facing &
reconstructed stone panels.







DURHAM UNIVERSITY STUDENT ACCOMMODATION, BLOCK D

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Project Details

Contractor:
PCE

Architect:
Willmore Iles Architects

Mix & Finish:
C155 B8000 LGB

Details:
626 reconstructed stone panels in a brick look-a-like finish.







COMMERCIAL ROAD, LONDON

Project Details

Contractor:
PCE

Architect:
Dexter Moren Associates

Mix & Finish:
C328 AE

Details:
223 reconstructed stone & brick-facing sandwich panels







LEEDS DISTRICT POLICE HQ

Project Details

Contractor:
Interserve

Architect:
Jacobs Architects

Mix & Finish:
C190 acid etched.

Details:
570 sandwich panels, covering 7,208 sqm.







HMP MILLSIKE, FULL SUTTON

Project Details

Contractor:
Kier / PCE

Architect:
Ministry of Justice

Mix & Finish:
C155 LAE & powerfloat.

Details:
417 reconstructed stone panels with windows.







