



# UNI HOUSE

TECHNICAL SPECIFICATIONS



# UNIHOUSE

BRITISH OFFSITE IS THE CREATOR OF UNIHOUSE, AN OPEN PANEL, LIGHT GAUGE STEEL FRAMING SYSTEM THAT'S BRINGING SPEED, FLEXIBILITY, RELIABILITY AND COST-COMPETITIVENESS TO THE HOUSE BUILDING MARKET, THROUGH THE PRE-MANUFACTURE OF PANELS AT OUR ADVANCED PRODUCTION FACILITY.

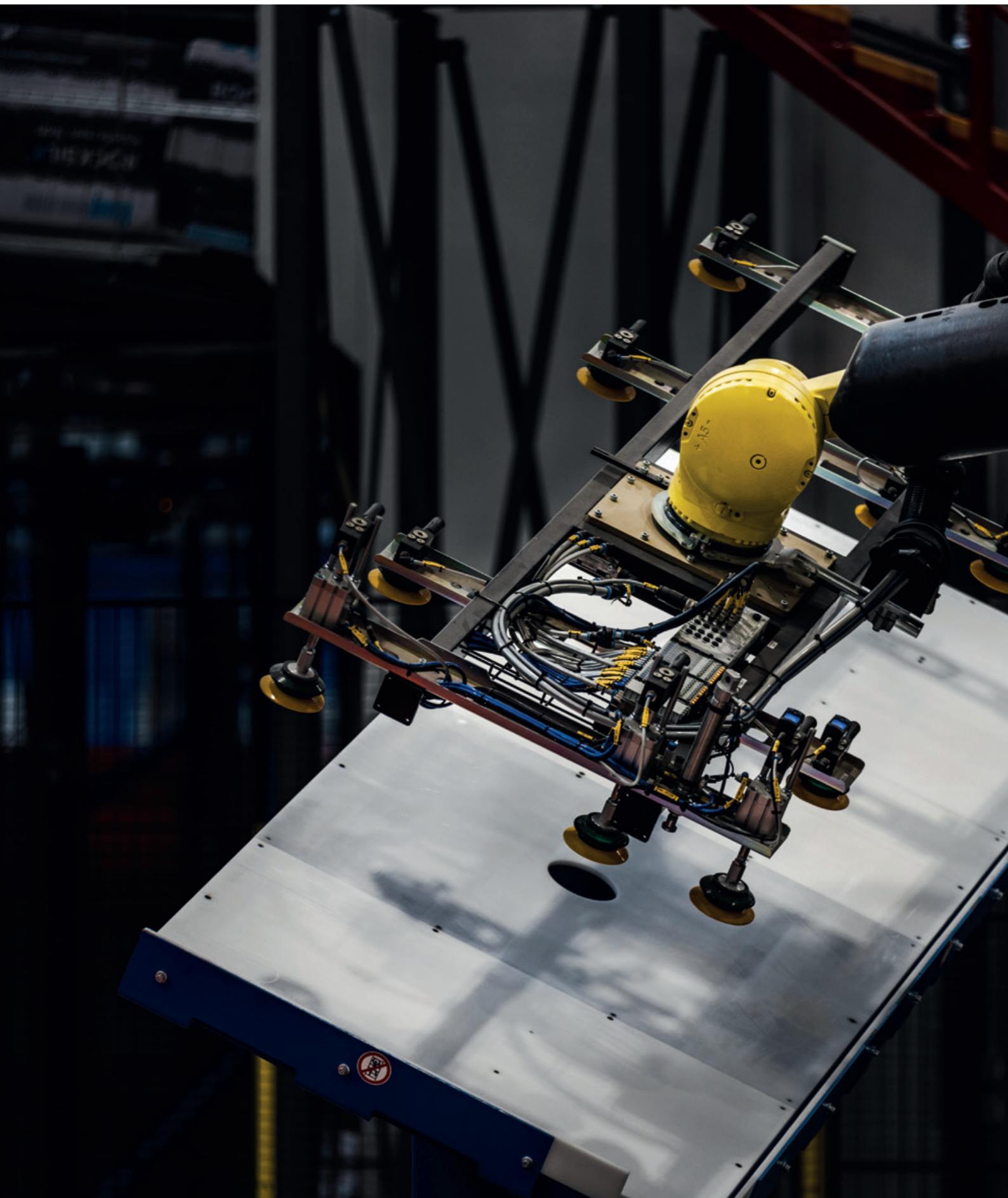
Adaptable to any design vision, UNihouse has been developed specifically for rapid deployment in the low-rise housebuilding market. It utilises standard building materials to create a solution that has all the benefits of steel frame construction with none of the issues of timber frame or traditional brick/block building.

UNihouse is manufactured at our Horizon factory in the heart of Essex, founded with investment from the Weston Group PLC. Using Randek's state-of-the-art Kuka robots we have substantially increased our production capacity from 700 homes to 6,000 homes per year. At 80% capacity, that's equal to 110000Lm of UNihouse coming off our line each year.

**FAST. FLEXIBLE. RELIABLE. COST-COMPETITIVE.**

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**UNIHOUSE IS A COST-COMPETITIVE, 2D PANELISED SYSTEM THAT SUPPORTS THE DELIVERY OF FUNCTIONING AND OCCUPIABLE SPACES FASTER. TECHNICALLY ADVANCED AND MEETING ALL NECESSARY BUILDING STANDARDS AND REGULATIONS, IT IS MANUFACTURED WITH EXACTING PRECISION TO FULLY ALIGN WITH YOUR DESIGN SPECIFICATIONS.**

In close collaboration with your design team, British Offsite will bring your vision to life, combining UNihouse loadbearing components to create self-supporting – low-rise dwellings of up to three floors – in any configuration from detached to terraced houses.

With light gauge steel at its core, UNihouse delivers strength and durability without any of the technical drawbacks of timber frame or the environmental impact of traditional brick/block construction.

At the same time it delivers major cost efficiencies, generated by our streamlined and semi-automated manufacturing processes.

Quality checked at each stage, UNihouse is manufactured to exacting standards subsuming the work of up to five trades into one panel. With multiple processes completed offsite, risks and delays typical of today's construction projects are minimised.

**UNihouse adds value to every project.**



# FAST MANUFACTURING AND CONSTRUCTION

## 120 DAYS

BRITISH OFFSITE CAN CONVERT A TRADITIONAL BRICK/BLOCK CONSTRUCTION PROJECT TO A HYBRID MANUFACTURING AND CONSTRUCTION PROJECT AND DELIVER TO SITE IN AS LITTLE AS 120 DAYS.

## 5

THE WORK OF UP TO FIVE TRADES ARE CONSOLIDATED IN THE MANUFACTURE OF ONE UNIHOUSE PANEL, SAVING TIME AND RESOURCES IN THE CONSTRUCTION PROCESS AS WELL AS SPACE ON SITE.

## 15 MINUTES

ONE UNIHOUSE COMPLETE WITH WINDOWS, DOORS & INSULATION CAN BE PRODUCED BY THE HORIZON FACTORY EVERY 15 MINUTES.

## 60 MINUTES

FOUR UNIHOUSE PANELS FOR A TYPICAL DWELLING CAN BE INSTALLED ON SITE IN ONE HOUR.

## 60%

CHOOSING TO MANUFACTURE YOUR PANELS WITH BRITISH OFFSITE CAN IMPROVE FIRST FORK IN THE GROUND TO FIRST KEYS HANDOVER TIME BY UP TO 60%.



### UNIhouse advantages compared to Timber Frame and Trad Block

	UNIHOUSE	TIMBER FRAME	TRAD BLOCK
Cost-competitive method of construction	✓	✓	✓
Design flexibility/adaptability	✓	✓	✓
Sustainable/environmentally friendly	✓	✓	✗
Contributes to Net Zero Carbon	✓	✓	✗
Uses renewable materials	✓	✓	✗
Thermal properties up to Passiv Haus	✓	✓	✗
Subject to factory made quality/consistency	✓	✓	✗
Reduced preliminaries	✓	✗	✗
'Dry box' envelope after installation	✓	✗	✗
No specific moisture management requirements	✓	✗	✓
Low maintenance	✓	✗	✓
Not subject to shrinkage/settlement	✓	✗	✓
Not Susceptible to rot & moisture	✓	✗	✓
Doesn't requires regular maintenance	✓	✗	✓
Lower insurance cost	✓	✗	✓
No fire suppression required during building	✓	✗	✓
Not susceptible to warping of frame	✓	✗	✓

### What's included with UNIhouse compared to traditional build.



















	UNIHOUSE	TIMBER FRAME
Light gauge SFS frame	✓	✓
External sheathing board	✓	✓
Breather membrane	✓	Optional
Breather membrane sealing tape	✓	Optional
Window/door	✓	Optional
Window/door weatherseal	✓	Optional
Window/door protection	✓	Optional
Service ducts (fire stopping by others)	✓	✗
Infill insulation	Optional	Optional
Vapour control layer	Optional	Optional
External wall insulation	Optional	Optional
Wall ties/timber battens/helping hand brackets	Optional	Optional
Cavity tray membrane	Optional	Optional
Fire cavity barriers	Optional	Optional
Floor cassette	Optional	Optional
Structural studwork	Optional	Optional
Stairs	Optional	Optional
Roof panel system (open or closed panel)	Optional	Optional



# CUSTOMISABLE SOLUTION

**UNIHOUSE IS BRITISH OFFSITE'S COST-COMPETITIVE OPEN PANEL ALTERNATIVE TO TIMBER FRAME CONSTRUCTION. FULLY CUSTOMISABLE TO OUR CLIENTS' NEEDS, THE SYSTEM CREATES DRY, SECURE ENVELOPES WITHIN A VERY SHORT TIME FRAME, OFFERING AFFORDABILITY WITHOUT THE TECHNICAL COMPLEXITIES INHERENT WITH TIMBER FRAME CONSTRUCTION.**

Suitable for dwellings up to three floors, UNihouse together with a suitable flooring system can provide the structural requirements of a building. It is lightweight, with excellent linear load transmission, meaning most dwellings can be built from a ground bearing slab or worst case, ground beams, allowing the rapid deployment of quality building fabrics in a fraction of the time required for timber frame or traditional brick/block construction.

			
<b>UNI PANEL<sup>UH</sup></b>			
<b>UNI WALL<sup>UH</sup></b>			
<b>UNI FLOOR</b>			
<b>UNI ROOF</b>			
<b>STAIRS</b>			

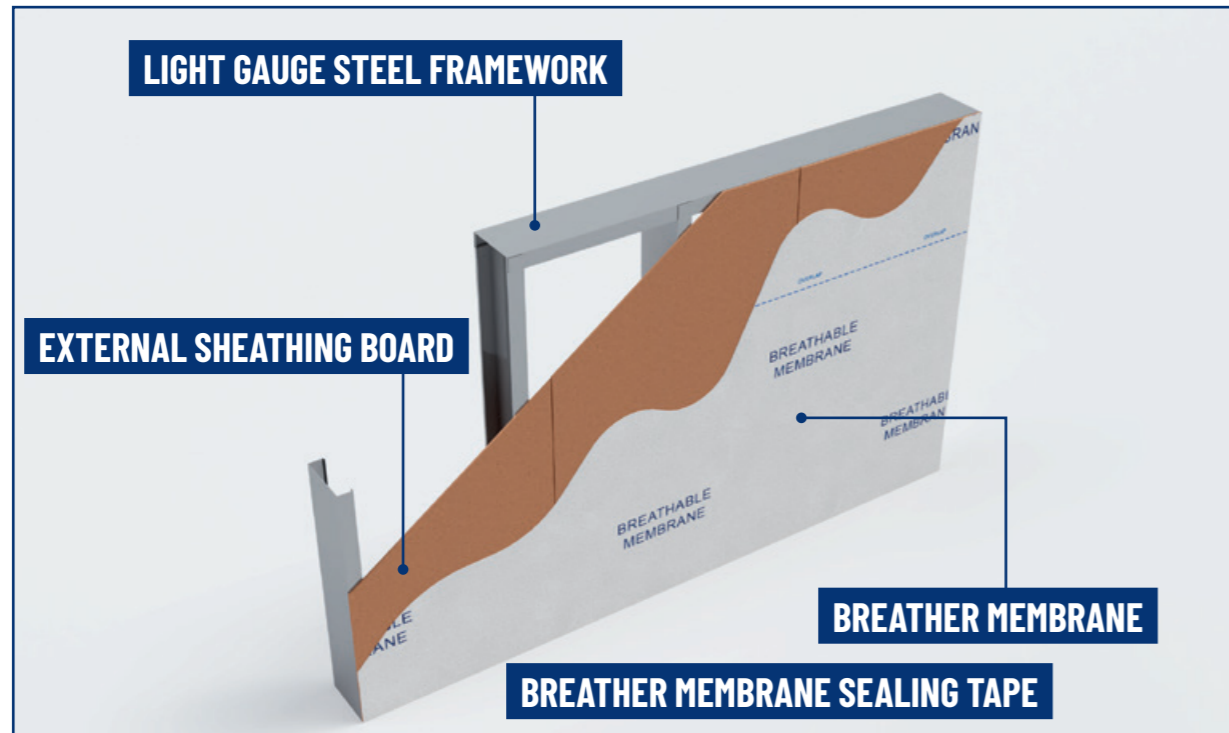
**Cost competitive:  
More built  
in Offsite**

UNihouse is cost-competitive when compared like-for-like with timber frame panels. All pre-installed components should be considered and compared with the cost of buying components separately and the labour needed for onsite installation for timber frame.

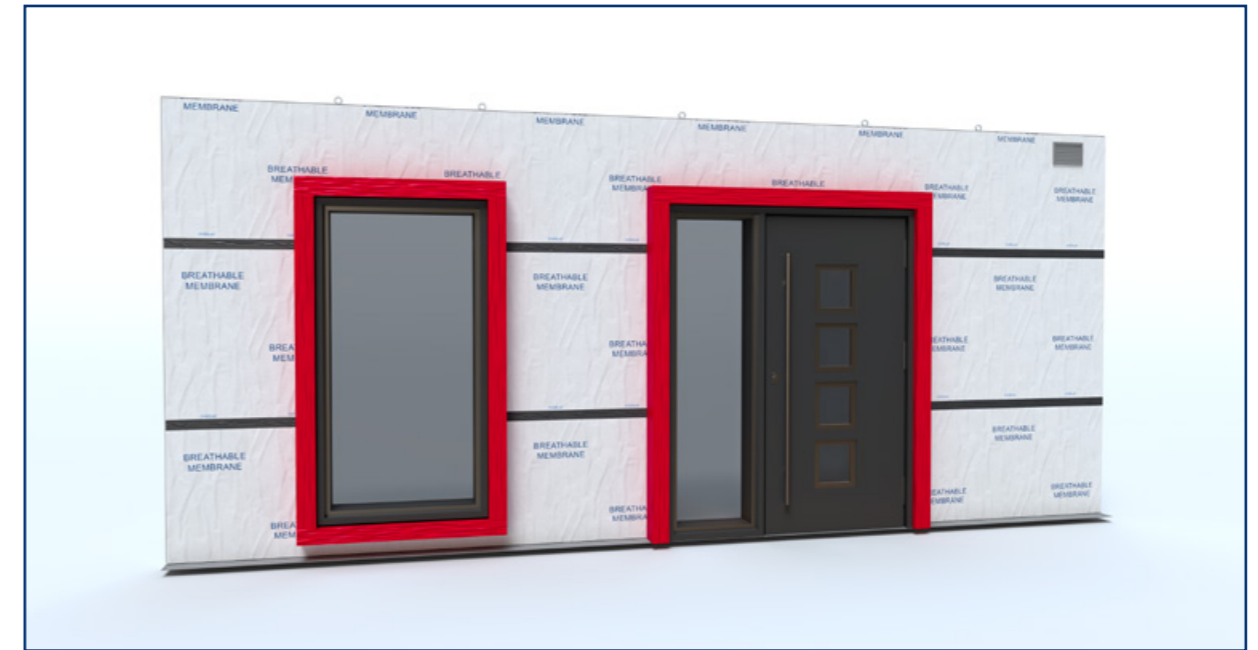




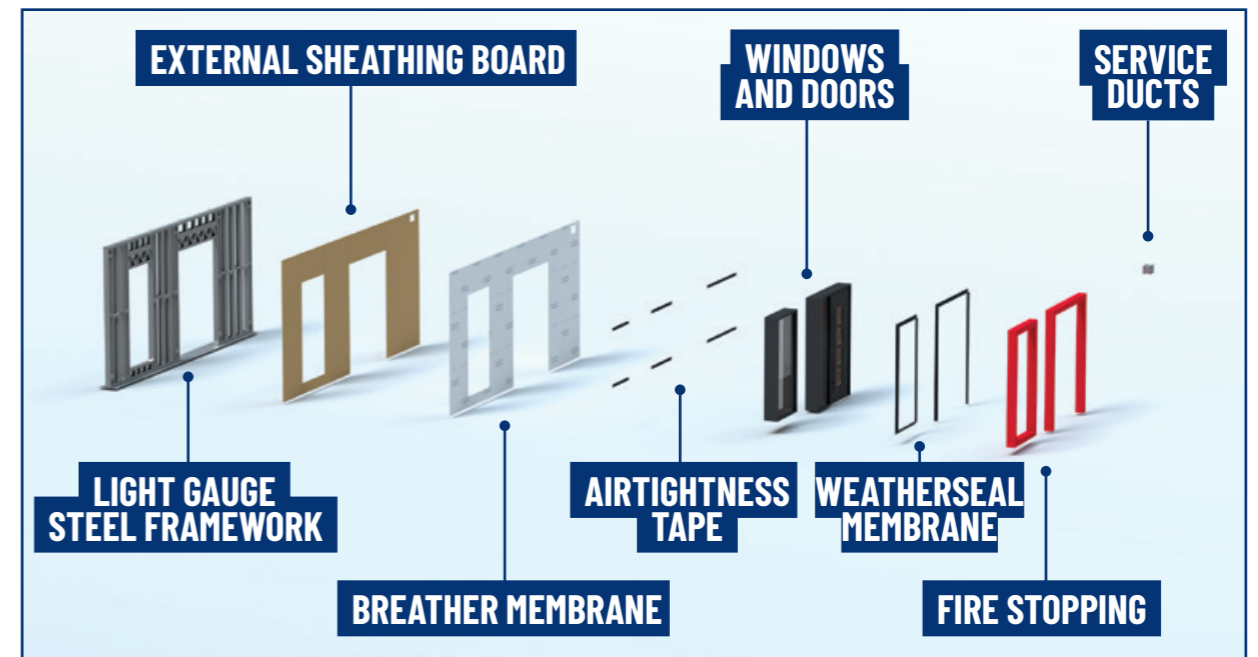
UNIPANEL<sup>UH</sup> IS AN OPEN PANEL, WEATHERPROOF AND AIRTIGHT EXTERNAL PANEL, DEVELOPED TO BE HIGHLY ADAPTABLE TO MEET YOUR CONSTRUCTION AND COST REQUIREMENTS.



## UNIPANEL<sup>UH</sup> IS PRE-INSTALLED WITH WINDOWS AND DOORS

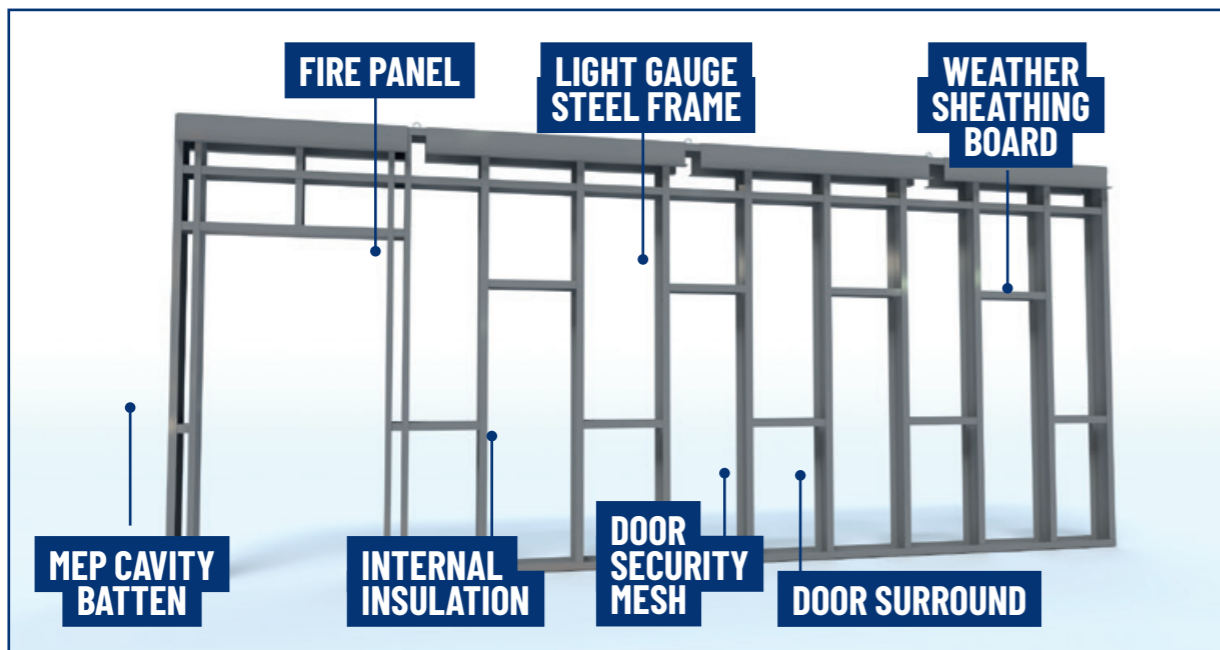
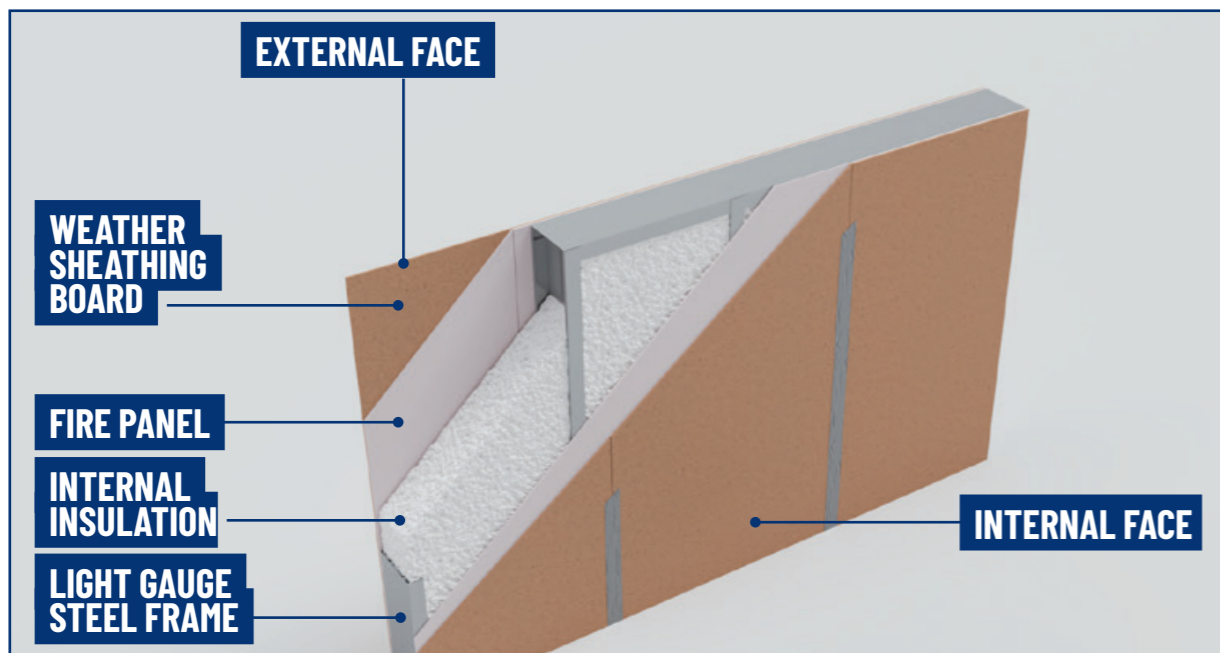


## UNIPANEL<sup>UH</sup> SYSTEM BREAKOUT



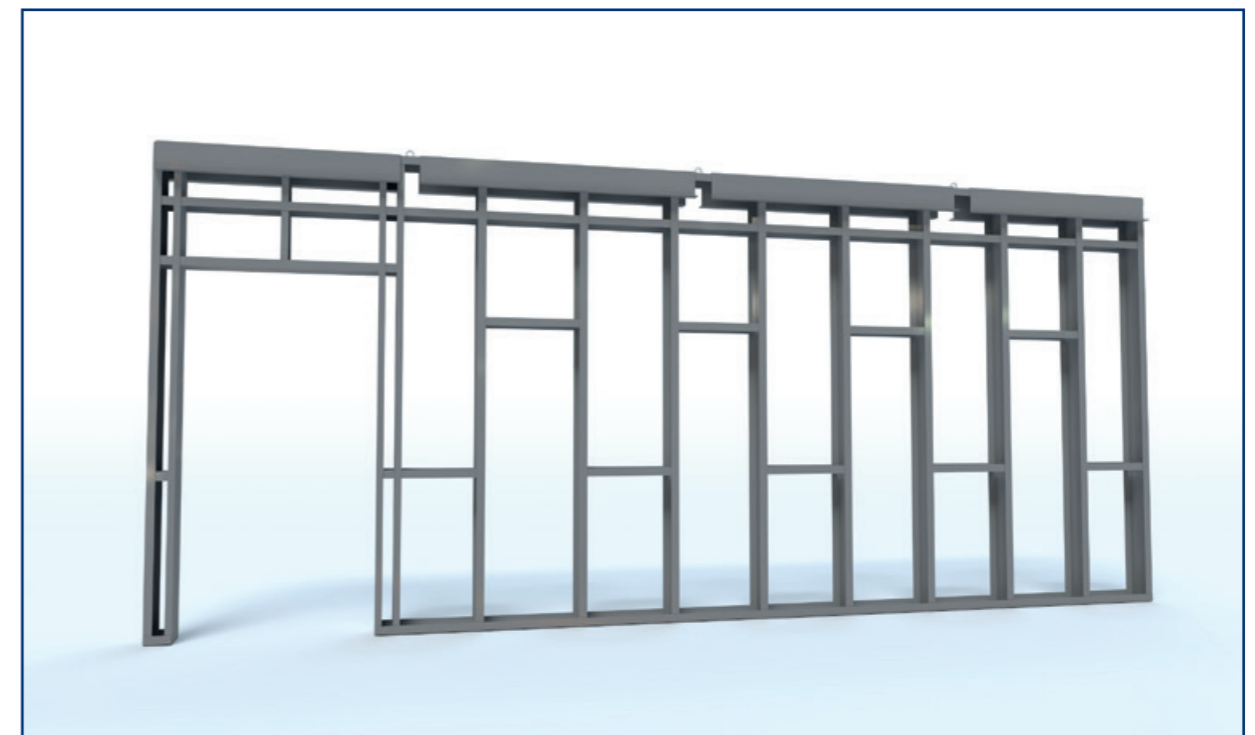


UNI WALL<sup>UH</sup> IS USED SOLELY IN UNIHOUSE FOR PARTY WALL AREAS, HELPING TO PRODUCE THE HIGHEST STANDARDS OF AIRTIGHTNESS AND ACOUSTICS.



## STRUCTURAL STUDWORK

STRUCTURAL STUDWORK WHERE REQUIRED. STRUCTURAL STUDWORK WILL BE USED TO PROVIDE EXTRA STABILITY AND SUPPORT FLOOR/ROOF LOADS FOR EXTRA COST-COMPETITIVENESS. THIS WILL BE POSITIONED AS PARTY WALL WHERE REQUIRED.



**8.4m**  
MAXIMUM WIDTH

**3.2m**  
MAXIMUM HEIGHT





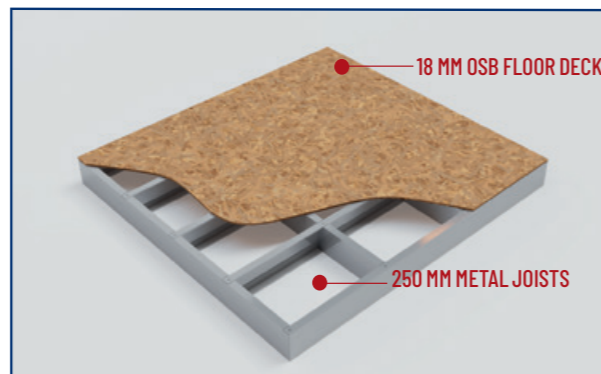
**UNIFLOOR IS A VERSATILE AND COST-EFFECTIVE FLOOR CASSETTE SYSTEM SPECIFICALLY DESIGNED TO SEAMLESSLY INTEGRATE WITH UNIHOUSE. IT IS ADAPTABLE TO ANY SCALE.**

It is manufactured from the same robust light gauge steel profiles as our UNihouse then covered in durable OSB. This allows it to be insulated from below before final fix. UNifloor can also be used as a roof cassette or roof panel system, providing a weatherproof building fabric ready to finish.

UNifloor utilises 200mm vertical studs at maximum 600mm centres, with closer centres as required for the design/ loading. It can span up to 5 metres at 200mm increasing to 5.5m with the use of Frameclad 250mm deep flange joist. It can be left in place as the attic floor and insulated from below before final fix.

Latticed joists help to increase the effective span up 5.4m, and where possible the use of structural studwork can be used to support the floor and increase the floor span further.

This reduces the requirement for costly steel beams. Steel beams may still be required but can often be value engineered out of a scheme during the design phase.



**COMPOSITE FLOOR PROFILES**

For low level flats or houses where floor compartmentalisation becomes a design factor. UNihouse can be integrated with Tata's Steel's Comflor® composite floor system, covered in concrete providing improved thermal mass, as well superior acoustic, fire and structural performance where required.



**UNIHOUSE CAN BE INTEGRATED WITH A NUMBER OF MODERN ROOFING SYSTEMS.**

For optimal results UNiroof should be used to complete UNihouse. Manufactured from the same robust light gauge steel frame then covered in durable OSB. UNiroof can be supplied as a cold (open panel) or as a semi-warm (closed panel) system as required.

**ROOF OPTIONS**

- UNiroof cold and semi-warm roof
- Standard Timber Trusses
- Modular 'Smart' Roofing system

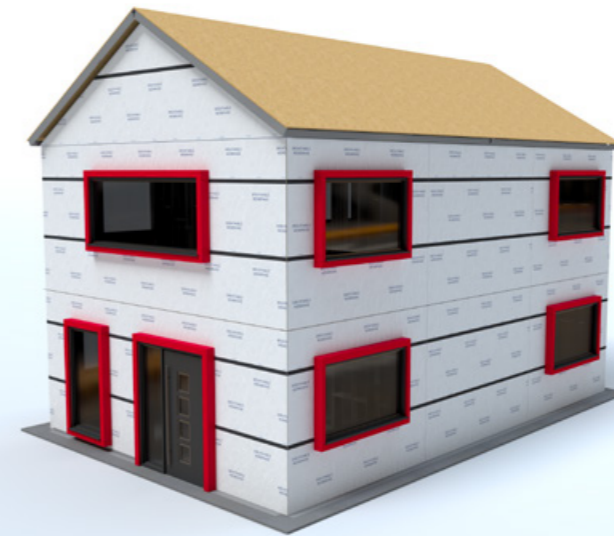


# STANDARD SEQUENCING

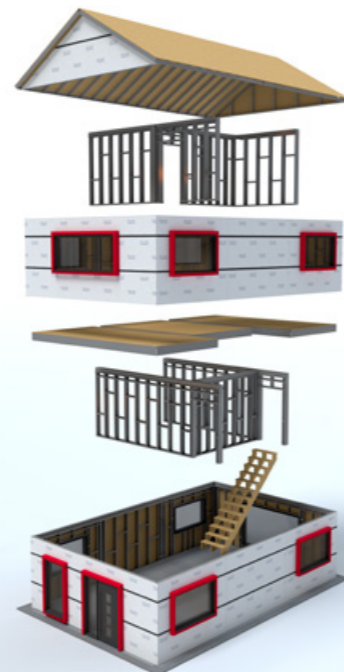
**STAGE 1:** UNIPANEL<sup>UH</sup> IS DELIVERED TO SITE READY FOR IMMEDIATE INSTALLATION.



**STAGE 3:** FIRST FLOOR, UNIPANEL<sup>UH</sup> STUDWORK/PARTY WALLS, GABLE ENDS AND ROOF FOLLOW NEXT, READY FOR FINISHING INSIDE AND OUT.



**STAGE 2:** STRUCTURAL STUDWORK, PARTY WALLS FOR SEMI-DETACHED AND TERRACED BUILDS WILL ALSO BE INSTALLED, FOLLOWING FLOORS AND STAIRS.



**STAGE 4:** DWELLING IS INSULATED AND EXTERNALLY FINISHED. UP TO 60% FASTER THAN TRADITIONAL TECHNIQUES.





# PRECISION INSTALLATION

**PRECISION INSTALLATION OF UNIHOUSE CAN BE UNDERTAKEN BY A THIRD PARTY CONTRACTOR OR BY BRITISH OFFSITE. PANELS ARE MANUFACTURED AHEAD OF SITE REQUIREMENTS AND STORED SECURELY PENDING DELIVERY TO SITE.**

Panels are lifted immediately into place from our purpose-made delivery vehicles and fixed into place via fixing brackets. These are screwed into the adjacent panel/structure with Ejoy LS 5.5x50mm Tek screws or M10 x 60mm Excalibur Bolts, as required.

Panels over 5 metres in length are temporarily propped, in line with guidelines in the British Offsite installation manual. British Offsite provides complete installation guidelines to facilitate the installation of all products as well as lifting plans and RAMS.

# MEMBERSHIPS AND ACCREDITATIONS

## COMMITTED TO THE HIGHEST STANDARDS

WE'RE AN ACTIVE MEMBER OF SEVERAL INDUSTRY BODIES AND WORK WITH OUR INDUSTRY PARTNERS TO DRIVE INNOVATION AND STANDARDS FURTHER. WE'RE ALSO VERY PROUD OF THE MANY THIRD PARTY ACCREDITATIONS OUR PRODUCTS AND QUALITY SYSTEM HAVE ACHIEVED.

### Members of



### Accreditations



Full Accreditation of UNisystem<sup>LB</sup> and UNisystem<sup>SFS</sup>. The scope of approval includes the assessment of the following, systems, processes and competencies: Design, manufacture construction (PM) and 60 year durability and maintenance



BRE certification in accordance with BS476 Part 22 (fire tests on building materials and structures), and EN 1364-1 (fire resistance tests for non-loadbearing elements – Part 1: Walls).



UKCA approved certification by SCCS of compliance with BS EN 1090-1:2009+A1:2011.



Stage 1 System Certification of UNisystem by the Steel Construction Institute, in accordance with NHBC standard Chapter 6.10 addressing durability, strength and stability.



UKAS approved certification by Approachable of British Offsite's Quality Management System.



Recognised for demonstrating exemplary levels of best practice in safety, efficiency and environmental protection across our fleet.



# SUSTAINABILITY

## TARGETING NET ZERO CARBON

ACROSS OUR VALUE CHAIN – FROM PRODUCT DEVELOPMENT TO THE FINAL OPERATION OF BUILDINGS – WE’RE REDUCING ENERGY CONSUMPTION AND WASTE AND INCREASING OUR USE OF RECYCLED MATERIALS. WE CALL THIS OUR “FABRIC FIRST” APPROACH. IT RESULTS IN ENERGY EFFICIENT BUILDINGS THAT ARE MORE COST EFFICIENT TO RUN AND HELP TO PROTECT THE PLANET.

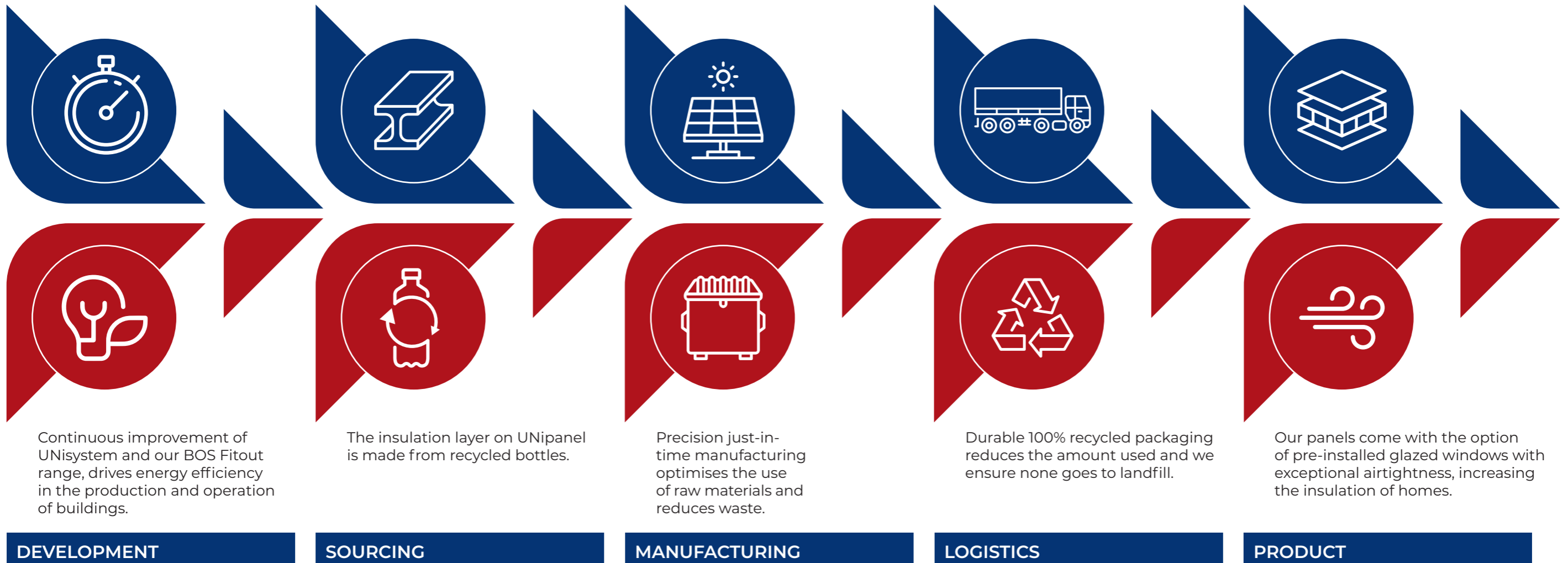
Design of the Horizon factory with Randek UK focused on precision and efficiency, utilising state-of-the-art machinery with energy control measures built in.

Responsibly sourced steel for UNisystem’s core contains 38% recycled steel.

Solar panels on our Horizon factory roof generate renewable energy.

Just-in-time manufacturing methods lead to fewer deliveries to site, and with the work of up to five trades combined in one panel, road miles and energy consumption is reduced on projects.

The superior airtightness of UNisystem, due to precision manufacturing, increases building insulation and reduces energy consumption.



# TAILORMADE LOGISTICS

BRITISH OFFSITE'S IN-HOUSE LOGISTICS SERVICE IS A FURTHER MAJOR BENEFIT OF UTILISING UNIHOUSE FOR YOUR HOUSEBUILDING PROJECT'S. WE HAVE COMPLETE CONTROL OVER THE SAFETY AND SECURITY OF PANELS AND MAINTAIN CLOSE CONTACT THROUGHOUT BUILD TO DELIVER PANELS TO YOUR SITE EXACTLY WHEN THEY'RE NEEDED.

With our own fleet of Fors Silver compliant vehicles which including HGVs of different sizes and technical capabilities, British Offsite can meet different site delivery needs. All vehicles are purpose-made to carry UNipanel, UNiwall and UNifloor safely and securely, whether to UK sites or overseas.

By managing our own fleet we have the flexibility to choose exactly the right HGV to carry specific lengths of panels, or a vehicle that is best suited for a particular site setting. For example, we have a rear-steering axle vehicle that's suitable for navigating constrained and busy urban settings, and a smaller, rigid vehicle that's appropriate for express deliveries.

All vehicles are fitted with real-time tracking, which enables our customer service team to provide accurate updates on progress, no matter where vehicles are in the UK or Europe, or even further afield. We offer one-to-one customer service, with our logistics team in direct conversation with programme and site managers long before build begins.



# WHERE TO FIND US



## British Offsite Head Office

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