

Insulated Panel Systems  
UK & Republic of Ireland

# Building a Better Future – #MoreWithQuadCore

Introducing the Complete QuadCore™ Envelope



POWERED BY  
**QuadCore™**  
TECHNOLOGY

  
**Kingspan®**



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It's time to design for the future. Buildings that deliver more in terms of yield, energy-efficiency, health, safety and environmental protection.

Gene M. Murtagh, CEO, Kingspan Group

01 |

# The QuadCore™ Envelope Performance Promise

Future-proofed buildings that help deliver higher yields and lower lifetime operating costs.

QuadCore™ insulation technology is now available across the Architectural Wall, Trapezoidal Roof & Wall and Topdek ranges, offering the complete QuadCore™ envelope solution.

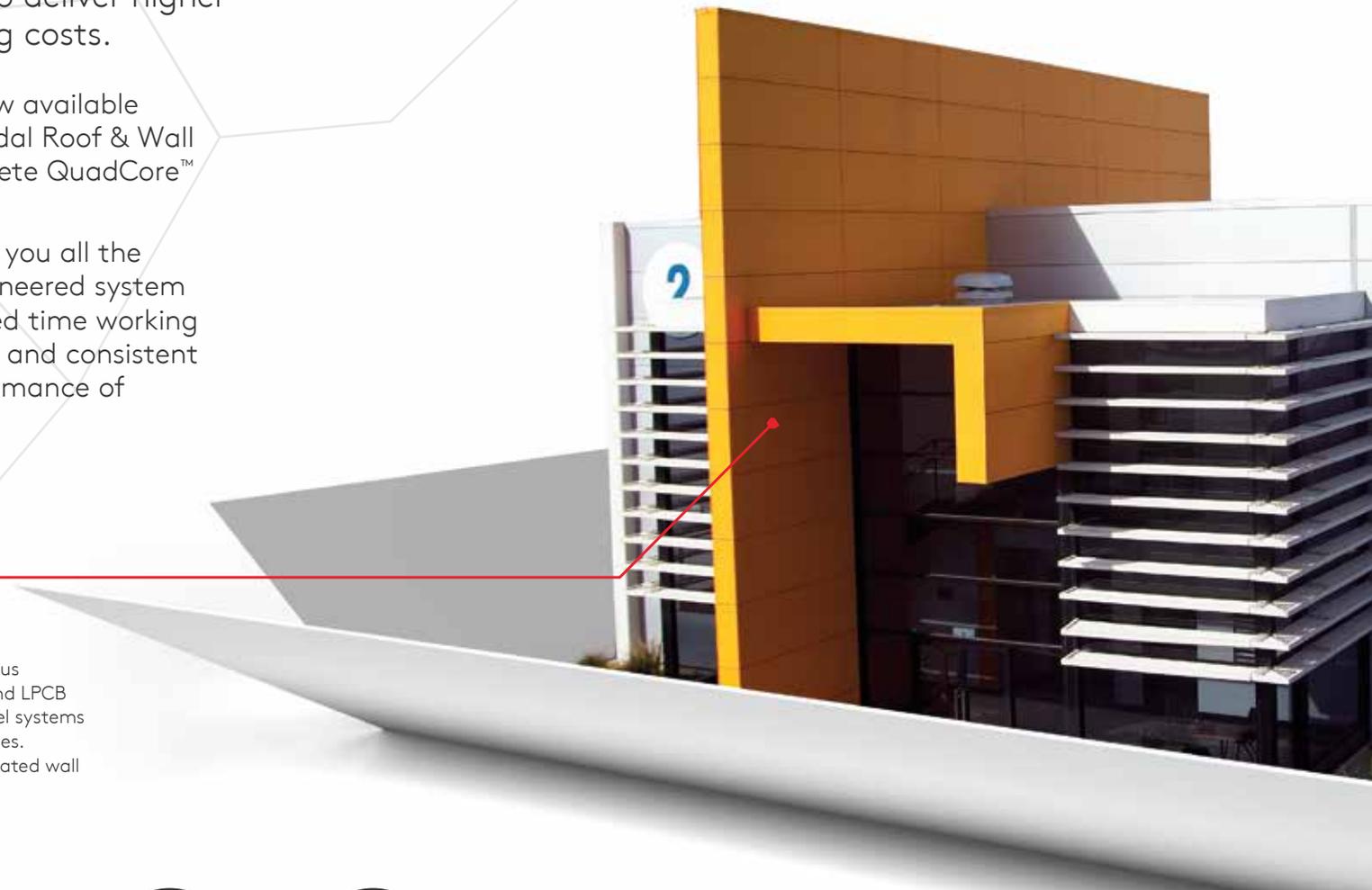
Kingspan's QuadCore™ envelope brings you all the advantages of a Kingspan factory engineered system (significantly faster build speed, reduced time working at height, lifetime insulation continuity and consistent build quality) plus the additional performance of QuadCore™ Technology.

## Superior Fire Performance

QuadCore™ insulated panels have been subjected to rigorous large-scale system tests and are insurer approved to FM and LPCB standards. Furthermore, certain QuadCore™ insulated panel systems have also achieved FM 4882 for smoke-sensitive occupancies. QuadCore™ protects against fire spread and offers an insulated wall panel solution that can achieve 4 hours fire integrity.



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TECHNOLOGY





### 40 Year Warranty for Thermal & Structural Performance

QuadCore™ closed cell insulation is unequivocally guaranteed to perform to its specified thermal performance for 40 years. Unlike some insulation materials, it is not subject to degradation of thermal performance over time due to moisture ingress caused by poor weather on site or indeed damage to the building structure during its lifetime.

### Enhanced Environmental Performance

QuadCore™ is a low Global Warming Potential solution which is also CFC and HCFC free. Its superior material efficiency and ease of disassembly can contribute towards credits in BREEAM 2018 and other green building rating systems. The slimmer structure of a QuadCore™ envelope can also allow more natural daylight to enter a building, enhancing its health and wellbeing properties. QuadCore™ is produced in a 100% renewable energy factory in the UK which has also achieved BES 6001 Responsible Sourcing certification. Third party verified EN 15804 Environmental Product Declarations for QuadCore™ systems are available on EcoPlatform and Greenbooklive.

### Unrivalled Lifetime Thermal Performance

QuadCore™ delivers leading thermal performance. It is almost twice as thermally efficient as mineral fibre, offering significant advantages in terms of thinner walls (resulting in more internal space and potentially higher yields). When combined with Kingspan's robust construction details and technical design support, a QuadCore™ envelope has the potential to increase air tightness while also optimising HVAC sizing and structural steel.

## 02 | More with QuadCore™

Insulated panels are single-component, factory-engineered systems that, when compared with traditional built-up systems, deliver very fast buildspeed while minimising risks associated with installation quality issues. QuadCore™ takes insulated panel technology to a superior level of performance.



QuadCore™ is guaranteed to retain its specified thermal performance for the stated period, even if exposed to water during construction.



QuadCore™ is a RedList Free core in an insulated panel with Low Global Warming Potential, with third-party verified EN 15804 EPDs on EcoPlatform and Greenbooklive.



QuadCore™ is insurer approved to FM and LPCB standards and protects against fire spread.



QuadCore™ is non-sensitising (does not cause skin irritation when handled) and non-hazardous.



QuadCore™ is manufactured in factories with 100% renewable energy including onsite-generated solar and wind energy.



“ ”

We have previously had a very good experience building with Kingspan products. This inspired us to also use a Kingspan QuadCore™ insulated panel envelope for our own house.

Ehepaar Martitz-Sudholz

## 03 | Wohnhaus Martitz

**Location:** Oldenburg, Germany

**Year:** 2018

**Building Type:** Residential

**Products:** KS1000 AWP QuadCore™ (100m<sup>2</sup>),  
KS1000 RW QuadCore™ (200m<sup>2</sup>)

**Contractor / Architect:** Ehepaar Martitz-Sudholz

### Overview

The design targeted very high energy standards, in order to deliver a super low energy house.

AWP QuadCore™ insulated wall panels at 100mm was easily able to fulfill these requirements due to its excellent lambda of 0.18W/m<sup>2</sup>K. The external wall therefore provides a very high performance exterior. RW QuadCore™ Trapezoidal Roof Panels completed the energy-saving envelope.



# 04 | Battery Storage Facility Chemnitz

**Location:** Chemnitz, Germany

**Year:** 2018

**Building Type:** Storage

**Product:** KS1000 AWP QuadCore™ (850 m<sup>2</sup>)

**Contractor:** Eins Energy, Sachsen and Thüga Renewable Energies (THEE)

**Architect:** ADOBE Architekten + Ingenieure GmbH, Erfurt

## Overview

This striking building in Chemnitz, Saxony houses the region's largest energy storage facility, providing energy systems connecting and stabilising renewable energy as it enters the grid. The architecture and construction of the building needed to match the sustainable nature of its operations. Therefore, energy-efficiency in building products and materials were of critical importance. In addition, the facility had significant climatic factors and stringent fire safety requirements to be met.



“ ”

With so few buildings of this type around, the planning and design was particularly demanding.

Matthias Schodlok, Architect,  
Adobe Architekten + Ingenieure GmbH

“”

Samcity is a great example of a project in which a fantastic design has been realised with a relatively small budget.

ME2 Architecten

## 05 | Samcity Activity Center

**Location:** Hoorn, NL

**Year:** 2018

**Building Type:** Leisure

**Product:** KS1000 AWP QuadCore™

**Contractor:** Samcity

**Architect:** ME2 Architecten

### Overview

In Samcity, both old and young let off steam. The building hosts many activities such as a trampoline park, a BMX and skate park and various Escape Rooms.

The simple, striking design is not only iconic, but also affordable. Given the use of the building, including many young people, there were high performance demands on the design for fire safety as well as energy efficiency.



# 06 | Canal Dock Boathouse

**Location:** New Haven, USA

**Year:** 2018

**Building Type:** Public Building

**Product:** Architectural Wall Panel, Karrier Panel

**Contractor:** City of New Haven, Connecticut

**Architect:** Gregg Wies & Gardner Architects,  
New Haven, CT



## Overview

The Canal Dock Boathouse in New Haven, Connecticut, is a new building, but closely connected with the past. It replaces the historic George Adee Memorial Boathouse.

It was built in 1911 and then demolished in 2007. This iconic building has been the home of crew teams from Yale University over its years.



“““

Kingspan insulated panels are not only easy to work with, they also offer lots of design flexibility.

Gregg Wies & Gardner Architects,  
New Haven, CT

## 07 | VGP PARK Shades of Grey

Functional efficiency and aesthetics combined play a key role in this design.

**Location:** Usti nad Labem, Czech Republic

**Year:** 2017

**Building Type:** Storage Facility

**Product:** KS1000 NF 120 mm, QuadCore™

**Size:** 5,000 m<sup>2</sup>

**Colour:** RAL 9002, 7035, 9006, 9007, 7035, 7016

**Contractor:** P3

### Overview

Usti nad Labem is located on the border with Germany, where the main trans-European transport route connects Prague and Dresden. Large warehouses play an important role in this important location for the logistics industry. At 5,000m<sup>2</sup> in size, this is one of the larger buildings and due to its playful but sophisticated use of colour is an eye-catching addition to the area.



# 08 | Our QuadCore™ Systems



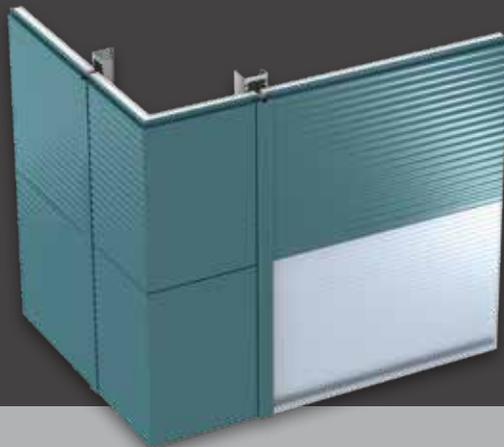
THERMALSafe

## KS1000 AWP QuadCore™

Architectural Wall Panels (AWP) are secret-fix wall panel systems with complementary daylighting and 11 mix and match profiles suitable for either vertical or horizontal applications.

QuadCore™ Technology brings specific additional performance benefits to the AWP system including:

- Superior fire resistance of 4 hours integrity
- FM 4882 low smoke certification
- Longer spans and thinner panels in certain applications



LPS 1181 : Part 1 : Issue 1.2  
Cert No: 260a, 186a



THERMALSafe

## KS1000/2000 RW QuadCore™ Wall

Trapezoidal Wall is a through-fix, trapezoidal profiled insulated wall panel with complementary daylighting. It is available in 1000 mm and 2000 mm widths and in lengths of up to 29 m (depending on width), for fast track and cost effective installation.

QuadCore™ Technology brings specific additional performance benefits to the RW wall system including:

- Up to 118 minutes fire resistance
- FM 4882 low smoke certification



LPS 1181 : Part 1 : Issue 1.2  
Cert No: 260a, 186a



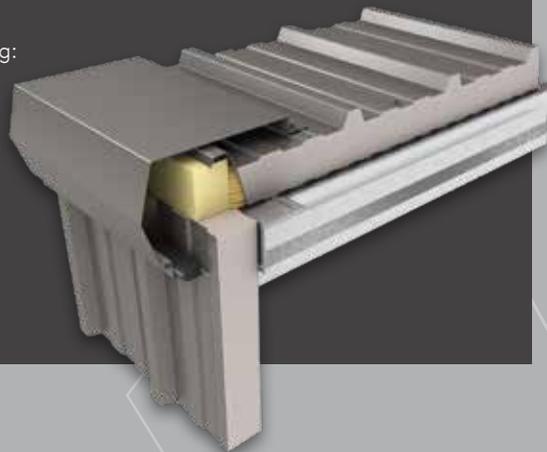
## KS1000/2000 RW QuadCore™ Roof

Trapezoidal Roof is a through-fix, trapezoidal profiled insulated roof panel system with complementary daylighting, insulated gutters, fabrications and rooftop solar PV.

It can be used for building applications with roof pitches of 4° or more after deflection, available in widths of 1000 mm and 2000 mm. The new QuadCore™ RW Roof system features a Class A endlap detail for superior air tightness.

QuadCore™ Technology brings specific additional performance benefits including:

- Same U-value at a reduced panel thickness with potential savings in fixings, flashings and transport
- FM 4882 low smoke certification



LPS 1181 : Part 1 : Issue 1.2  
Cert No: 260a, 186a



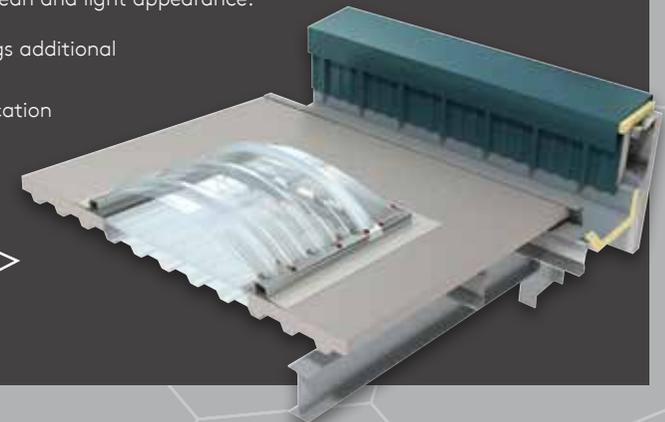
## KS1000 TD QuadCore™

Kingspan QuadCore™ Topdek is a prefabricated lightweight flat roof membrane panel system with complementary daylighting, fabrications and rooftop solar PV.

With Topdek, considerable time savings are achieved and the low weight makes it possible to save on the underlying structure and foundation. The inside of the panels are finished with a white coating for a clean and light appearance.

QuadCore™ Technology brings additional performance benefits:

- FM 4882 low smoke certification



LPS 1181 : Part 1 : Issue 1.2  
Cert No: 260a, 186a

09 |

Take Architectural Design to the next level

### QuadCore™ Evolution

A super smooth unprofiled secret fix insulated panel that can be laid vertically or horizontally, the perfect solution for a minimalist facade.

Evolution has the aesthetic appeal of a super-smooth aluminium rainscreen facade with the added performance benefits of an insulated panel powered by QuadCore™ Technology.

Our team will support with bespoke details and specialist fabrications.





# 10 | 1

## Thinner, Lighter, Better

The superior thermal performance of QuadCore™ means a thinner envelope, leading to more internal space, efficiencies in construction and a lower environmental impact.

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TECHNOLOGY



For illustrative purposes only please refer to relevant Product Data Sheets to make accurate performance comparisons.



Better transport utilisation



Reduced fixings and fabrications in many applications



More internal space potentially delivering higher rental yields



More resource-efficient manufacturing

# Sustainable Technology from a Sustainable Business

We're 75% of the way to Net-Zero by 2020. But we're not stopping there...

## 19m

### Cars off the Road

In 2017 our insulated systems saved the equivalent energy of taking 19m cars off the road.

## 1.6Gb

### Wind Energy per Annum

Our largest manufacturing site at Holywell has a wind turbine, generating an estimated 1,600,000kWh of energy p.a.

## 100%

### Renewable Energy

Our products are made in UK and Ireland factories powered by 100% renewable energy.

## Zero

### Waste to Landfill

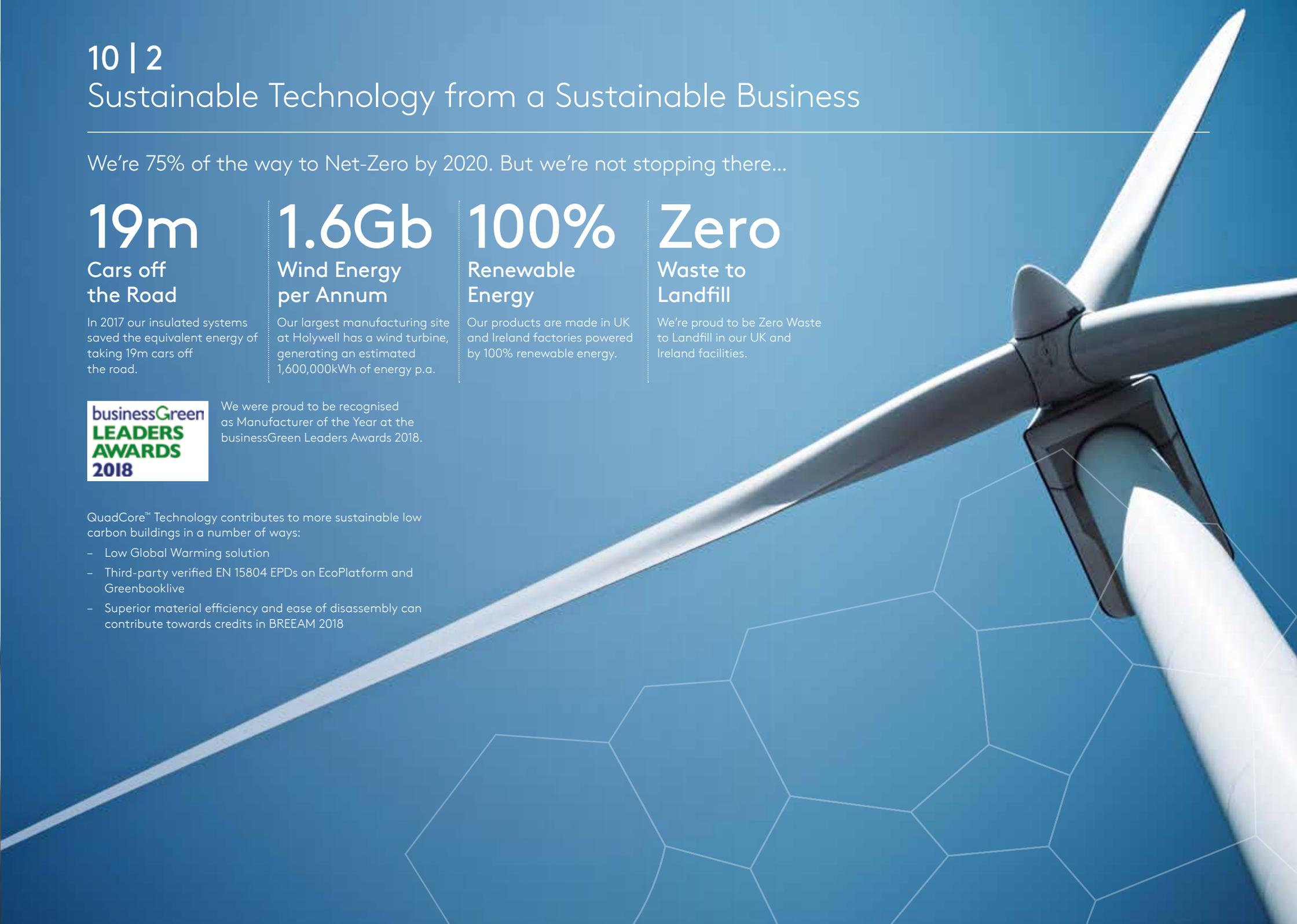
We're proud to be Zero Waste to Landfill in our UK and Ireland facilities.



We were proud to be recognised as Manufacturer of the Year at the businessGreen Leaders Awards 2018.

QuadCore™ Technology contributes to more sustainable low carbon buildings in a number of ways:

- Low Global Warming solution
- Third-party verified EN 15804 EPDs on EcoPlatform and Greenbooklive
- Superior material efficiency and ease of disassembly can contribute towards credits in BREEAM 2018



# 10 | 3

## Service and Support

### We're Here to Help!

Our services help save you time and ensure an optimised design with potential savings in HVAC sizing, structural steel and installation times.

### Contact us for Planning and Specification Support



Product selection



Detailed specification of accessories



Robust Kingspan construction details



Individual design of non-standard construction details



Technical specification packs



BIM objects and support



Specialist installation training



Technical design optimisation of your project



For Technical Support with Insulated Panel Systems contact:  
+44 (0) 800 5870090  
technical@kingspanpanels.com

For Technical Support with Kingspan Structural Products & Systems contact:  
+44 (0) 1944 712000  
technical3@kingspan.com

### Contact us for Fastrack Technical Calculations

- Project specific fastener requirements calculations
- Wind and snow load calculations – insulated panel structural spanning performance calculations
- U-Value / condensation risk calculations
- Acoustic performance calculations
- Gutter design calculations
- Cold rolled purlin, rail and floor deck structural design calculations
- SBEM / energy calculations
- Psi value and F factor calculations

10 | 4

## Harness the Natural Power of Sunlight!

The sustainability benefits of QuadCore™ are further enhanced by Kingspan's renewable energy solution including rooftop solar PV and battery storage, together with our prismatic daylighting solutions. All covered by our iQ System Warranty for your peace of mind.

Protected by



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03/2019

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