



Bio-SIP™

Building Tomorrow

Why Bio-SIP™ for Datacentres

A **Bio-SIP™ panel** (Bio-based Structural Insulated Panel) is a cutting-edge construction material that combines sustainability with high performance. These panels are crafted from bio-resin and fast-growing natural fibres like hemp and flax, which are bonded to an insulating core made from 100% recycled PET plastic bottles. This innovative design makes Bio-SIP panels not only lightweight and durable but also highly energy-efficient, providing superior insulation and airtightness.

For data centres, Bio-SIP panels are particularly advantageous due to their excellent thermal performance, which helps maintain consistent temperatures critical for data centre operations. Moreover, their airtight construction minimizes energy loss, reducing the need for extensive HVAC systems and ultimately lowering operational costs. Additionally, the use of sustainable materials aligns with the growing emphasis on eco-friendly construction practices in the tech industry, making Bio-SIP panels an ideal choice for modern data centre builds.





Thermal Insulation: Superior Performance

1

Unparalleled Efficiency

Bio-SIP™ panels provide exceptional thermal insulation, reducing energy consumption and operational costs for datacentres.

2

Temperature Regulation

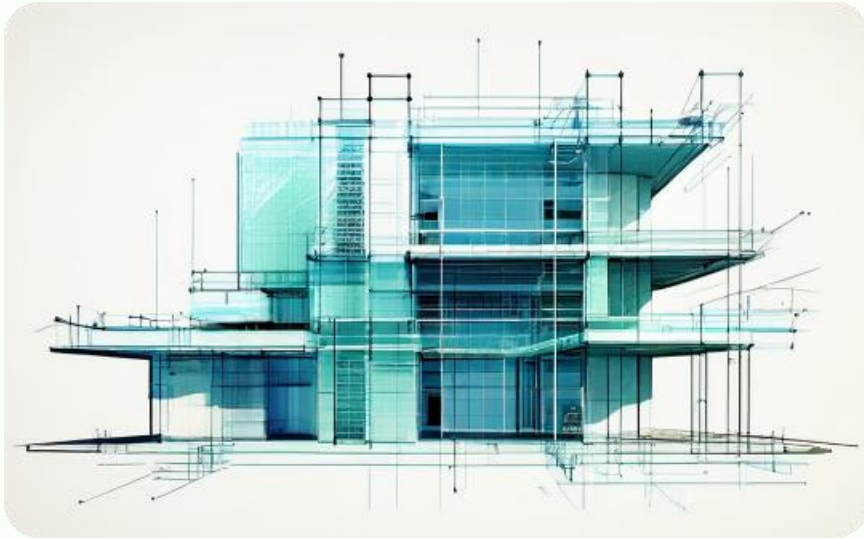
The panels maintain optimal internal temperatures, ensuring consistent performance and reliability of critical IT infrastructure.

3

Passive Cooling

The superior insulation reduces the need for energy-intensive cooling systems, further enhancing the sustainability of the datacentre.

Structural Integrity: Robust and Durable



Structural Strength

Bio-SIP™ panels are engineered to provide uncompromising structural support, ensuring the resilience and longevity of the datacentre building.



Disaster Resistance

The panels are designed to withstand natural disasters, such as earthquakes and severe weather, protecting the critical infrastructure within.



Long-Lasting Performance

The durability of Bio-SIP™ panels guarantees a long service life, minimising the need for costly maintenance and repairs over time.

Sustainable by design



2000

bottles per panel



Plastic Bottle Recycling

We repurpose post-consumer plastic bottles into strong and resilient construction materials, leading the way in sustainable building practices. This innovative approach helps reduce plastic waste and supports a circular economy.

300mm x 1200mm x 2400mm panel

87%

reduction in Co2 vs
traditional panels



Natural Fibre Materials

Our Natural Fibre materials are durable, lightweight, and environmentally friendly. They offer a versatile solution for construction projects, contributing to a reduction in carbon footprint by embedding Carbon into the structure.

13.4kg embedded Co2 per panel

88%

Of Bio-SIP™ is made
from waste material



Waste materials

The Bio-SIP™ modular building system is a necessary step towards re-purposing eco-damaging waste. By transforming several waste products into high performing building material, Bio-SIP™ offers practical and sustainable use that has a significant impact on our planet.



Air Tightness and Energy Efficiency

Airtight Design

Bio-SIP™ panels are engineered to create a highly airtight building envelope, minimising air leaks and drafts.

1

2

3

Energy-Saving Benefits

The combination of airtight construction and superior insulation results in significant energy savings, reducing operating costs for the datacentre.

Thermal Bridging Reduction

The panels' continuous insulation and seamless construction eliminate thermal bridging, further enhancing energy efficiency.



Acoustic Control: Noise Reduction

Sound Insulation

Bio-SIP™ panels provide excellent sound insulation, effectively reducing noise levels within the datacentre and creating a more comfortable working environment.

Vibration Dampening

The panels' structural integrity and advanced design help to absorb and dampen vibrations, further enhancing the acoustic performance of the datacentre.

Noise Mitigation

By minimising the transmission of sound and vibrations, Bio-SIP™ panels contribute to the overall noise reduction within the datacentre, improving employee well-being and productivity.

Compliance with Regulations

The acoustic properties of Bio-SIP™ panels ensure the datacentre meets or exceeds the required noise regulations, providing a safer and more comfortable environment.

Modularity and Flexibility

1

Modular Design

Bio-SIP™ panels feature a modular construction, allowing for easy and efficient assembly, expansion, and reconfiguration of the datacentre as needed.

2

Customisable Layouts

The flexible design of Bio-SIP™ panels enables the creation of customised floor plans and layouts, accommodating the unique requirements of each datacentre project.

3

Adaptable to Changes

As the needs of the datacentre evolve, the modular and adaptable nature of Bio-SIP™ panels ensures the building can be easily modified to meet new demands.



Cost and Time Efficiency

Construction Time	Reduced by up to 50%
Material Costs	Lower than traditional building building methods
Installation Costs	Streamlined and more efficient efficient
Maintenance Expenses	Minimised due to durability

The use of Bio-SIP™ panels in datacentre construction results in significant time and cost savings, from faster assembly to reduced maintenance requirements, making it a highly practical and economical choice.





Embracing the Future of Sustainable Datacentre Datacentre Design

Bio-SIP™ panels represent a transformative solution for the datacentre industry, offering a unique combination of thermal efficiency, structural integrity, fire safety, and environmental responsibility. By embracing this innovative technology, datacentre operators can ensure their facilities are positioned for long-term success, meeting the demands of the future while prioritising sustainability and energy efficiency.

Connect with Our Bio-SIP™ Experts



Email Us

Our Bio-SIP™ experts are ready to assist you in leveraging our insulation panels for your datacentre. Share your needs, and we'll provide tailored solutions.

paul@bio-sip.co.uk



Schedule a Consultation

Meet our knowledgeable team to explore how Bio-SIP™ can enhance your datacentre's performance, sustainability, and cost-efficiency.



Explore Our Bio-SIP Solutions

Discover our innovative Bio-SIP™ product line and services, designed to help you build a more energy-efficient and adaptable datacentre.

www.bio-sip.co.uk