

GREEN PAPER

Unlocking the Adoption
of **Glass Reinforced
Concrete (GRC)**
Cladding Systems for
High-Rise Buildings in
the United Kingdom



In collaboration with:



Contents

	PAGE
Executive Summary	03
Sections:	
01. Context: Why Now?	04
02. The Strategic Opportunity for GRC	04
03. Regulatory Drivers	05
04. Industrialised Construction, DfMA & Manufacturing-Led Delivery	05
05. Current Barriers to Adoption	05
06. Competence, Design Responsibility and Quality Assurance	06
07. Design Considerations for Fully Non-Combustible GRC Façades	06
08. Sustainability and Circularity	06
09. UK Manufacturing Capacity and Supply Chain Development	07
10. Technology Development and Future Trends	07
11. Proposed Strategic Objectives	07
Conclusion	07

Unlocking the Adoption of Glass Reinforced Concrete (GRC) Cladding Systems for High-Rise Buildings in the United Kingdom

Green Paper - V1

Published by Tall Buildings Media Ltd in collaboration with Link GRC, Socap Betsinor and DAKO.

Disclaimer

The content of this green paper does not necessarily reflect the views of the editor or publisher and are the views of its contributors and advertisers. The digital edition of this paper may include hyperlinks to third-party content, advertising or websites, provided for the sake of convenience and interest. The publisher accepts no legal responsibility for loss arising from information in this publication and do not endorse any advertising or products available from external sources. Content including images and illustrations supplied by third parties are accepted in good faith and the publishers expect third parties to have obtained appropriate permissions, consents, licences or otherwise. The publisher does not accept any liability or any loss arising in the absence of these permissions for material used in both physical and digital editions. No part of this green paper may be reproduced or stored in a retrieval system without the written consent of the publisher. All rights reserved.

© Tall Buildings Media Ltd

In collaboration with:

Consultation Draft

Prepared for industry consultation on the future development, regulation, competency, manufacture and adoption of GRC façade systems within the UK built environment.



LINK GRC

Link GRC is a commercial platform for architects, designers and manufactures, committed to supporting the use of GRC on projects across the UK. **More info:** www.link-grc.co.uk



DAKO

DAKO is a family-owned business with a more than twenty year history of operating in the field of production of concrete prefabricated components. **More info:** www.dakogrc.com



Betsinor

For over 30 years, Betsinor has produced glass fibre reinforced concrete panels for outstanding projects. **More info:** www.betsinor.com/en

Executive Summary

The UK façade sector is undergoing fundamental transformation driven by the Building Safety Act, the Building Safety Regulator, net-zero objectives, and increasing demand for high-quality non-combustible building envelopes. This Green Paper explores the opportunity for Glass Reinforced Concrete (GRC) to become a mainstream façade solution for high-rise residential, commercial, healthcare and public buildings.

The Purpose of this Green Paper

Drawing upon industry roundtable discussions, current regulatory drivers, industrialised construction principles and emerging guidance, this paper identifies the barriers, opportunities and policy interventions required to support wider GRC adoption in the UK.

The purpose of this Green Paper is to stimulate debate, gather stakeholder feedback and establish a roadmap for developing a resilient, competent and manufacturing-led GRC ecosystem in the UK and across Europe.



^ Image: Pandora, Oxford Street London - Manufactured by BB Fiberbeton
Front Cover: DAKO - International Way

Consultation Questions

Stakeholders are invited to provide feedback on:

- ▶ What are the greatest barriers to wider GRC adoption?
- ▶ How should competency be assessed and maintained?
- ▶ What investment is required to strengthen UK manufacturing capacity?
- ▶ How can DfMA accelerate adoption?
- ▶ What role should government play in supporting non-combustible façade systems?
- ▶ How can insurers, regulators and warranty providers be better aligned?
- ▶ What additional guidance and standards are required?
- ▶ How should sustainability performance be measured?

To take part in this consultation, please visit: www.tallbuildingsmedia.co.uk/grcconsult

Section 1

Context: Why Now?

The post-Grenfell regulatory landscape has fundamentally altered façade procurement, specification and delivery. Approved Document B requirements, the Building Safety Act and the Building Safety Regulator have intensified scrutiny on external wall systems, particularly on buildings above 11 metres.

The market is increasingly prioritising Euroclass A1 and A2-s1,d0 materials, robust evidence of performance, competence throughout the supply chain and traceable design responsibility. Simultaneously, the UK faces housing delivery pressures, labour shortages, decarbonisation targets and a need for greater productivity through industrialised construction.

GRC aligns with these drivers through its lightweight construction, design flexibility, durability, offsite manufacturing potential, speed of installation and non-combustible performance - requiring low to no maintenance for the life of the product.



Image: Paris Tour De Lyon – GRC Manufacturer Betsinor

Section 2

The Strategic Opportunity for GRC

GRC offers a unique combination of architectural freedom and performance. It can support both highly bespoke façades and repeatable productised systems suitable for Design for Manufacture and Assembly (DfMA).

Key opportunities include:

- ▶ **Fully non-combustible façade systems**
- ▶ **Reduced structural loading compared with traditional precast solutions**
- ▶ **Enhanced programme certainty through offsite manufacture**
- ▶ **Reduced maintenance requirements**
- ▶ **Integration into industrialised construction platforms**
- ▶ **Support for façade remediation and recladding programmes**
- ▶ **Potential integration into unitised façade systems**

The UK's growing recladding market presents a particularly significant opportunity for GRC as legacy combustible systems are replaced with compliant alternatives.



Image: International Way - Manufactured by DAKO, Image by hkskyline / globalphotos.org

Section 3

Regulatory Drivers

The regulatory environment is increasingly requiring non-combustible façade solutions in high risk buildings.

Key drivers include:

- ▶ **Building Safety Act 2022**
- ▶ **Building Safety Regulator oversight**
- ▶ **Approved Document B requirements**
- ▶ **Euroclass A1 and A2-s1,d0 material requirements**
- ▶ **Golden Thread information requirements**
- ▶ **Competence frameworks across design, manufacture and installation**
- ▶ **Increasing scrutiny from insurers, funders and warranty providers**

Façade systems must demonstrate traceability, performance evidence, quality assurance and clearly defined responsibilities across the supply chain, and GRC solutions meet these requirements.

Section 4

Industrialised Construction, DfMA and Manufacturing-Led Delivery

GRC is well positioned to support the UK transition towards industrialised construction.

DfMA principles encourage early design integration, standardisation, productisation and offsite manufacturing. GRC systems can be manufactured under controlled factory conditions, improving quality, reducing waste and enhancing installation safety.

The adoption of digital design workflows, BIM integration, digital product libraries and manufacturing-led design processes will be critical enablers for future growth.

A manufacturing-led approach also supports the Golden Thread by providing improved traceability and product data throughout the asset lifecycle.

Section 5

Current Barriers to Adoption

Industry consultation identified several barriers:

Knowledge and Awareness:

- ▶ Limited understanding among architects, contractors and clients
- ▶ Fragmented access to technical guidance
- ▶ Historic perceptions influenced by early industry failures

Supply Chain Capacity:

- ▶ Limited UK manufacturing capacity
- ▶ Reliance on overseas suppliers for growth
- ▶ Concerns regarding long-term supply continuity

Commercial Challenges:

- ▶ Perceived cost premiums
- ▶ Lack of whole-life cost evaluation
- ▶ Insufficient recognition of programme and logistics savings

Design Integration:

- ▶ Late engagement of specialist manufacturers
- ▶ Fragmented consultant structures
- ▶ Extended design coordination periods

Competency and Liability:

- ▶ Increased responsibilities under the Building Safety Act
- ▶ Unclear allocation of design responsibility
- ▶ Limited recognised competency pathways



Image: EXCEL London - Specialist contractor - McCormick Construction Consultancy

Section 6

Competence, Design Responsibility and Quality Assurance

Design competence must become a foundational principle for GRC adoption and GRC manufacturers can underpin this requirement.

Future competency frameworks should address:

- ▶ **Architectural specification**
- ▶ **Façade engineering**
- ▶ **Structural design**
- ▶ **Fire engineering integration**
- ▶ **Manufacturing quality assurance**
- ▶ **Installation and inspection**
- ▶ **Building safety compliance**

Manufacturers contributing to design are considered designers under UK CDM legislation. Clear responsibility matrices and competency frameworks are therefore essential.

The role of GRCA standards, in conjunction with BS/EN standards, testing regimes, technical notes and future accreditation schemes should be strengthened to support market confidence.

Section 7

Design Considerations for Fully Non-Combustible GRC Façades

Achieving compliance requires consideration of the entire façade system rather than individual components.

Critical considerations include:

- ▶ **Fixings and Brackets:**
Support systems, subframes and rainscreen brackets must also achieve appropriate A1 or A2 performance classifications.
 - ▶ **Cavity Barriers:**
Correctly designed and installed cavity barriers remain essential for preventing fire and smoke spread.
 - ▶ **Interfaces:**
System interfaces with glazing, insulation, waterproofing and structural elements must be coordinated from the earliest design stages.
 - ▶ **Installation Tolerances:**
Sequencing, access, lifting strategies and installation methodologies must be integrated into the design process.
 - ▶ **Testing and Verification:**
System testing and evidence-based performance validation remain critical for market confidence and regulatory approval.
- The GRC sector has a range of Association guidance and manufacturer standard details to ensure a systemised approach to the facade design, enabling design freedom.

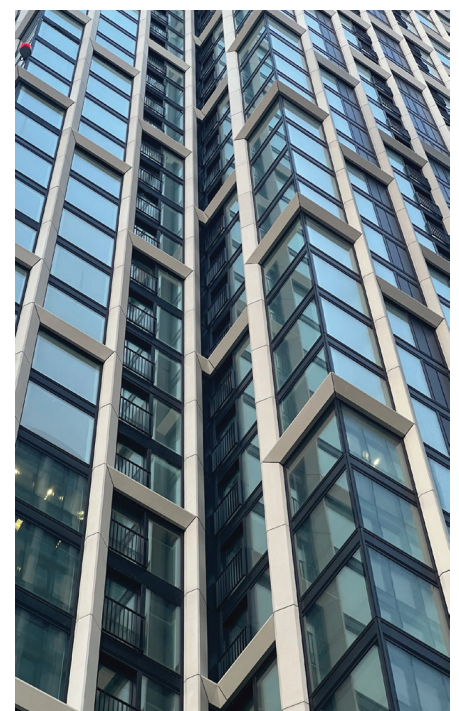
Section 8

Sustainability and Circularity

GRC supports several sustainability objectives:

- ▶ **Reduced material consumption through lightweight construction**
- ▶ **Lower transport impacts**
- ▶ **Embodied carbon reductions compared with heavier alternatives such as precast concrete and traditional brick/stonework**
- ▶ **Long service life and durability**
- ▶ **Reduced maintenance interventions**
- ▶ **Compatibility with circular economy principles**

Future work should establish consistent embodied carbon benchmarks and lifecycle assessment methodologies specific to GRC systems, alongside opportunities to maximise material circularity and design for deconstruction.



▶ Image: Bankside Yards - Manufactured by DAKO

Section 9

UK Manufacturing Capacity and Supply Chain Development

The UK currently lacks sufficient manufacturing capacity to fully support widespread GRC adoption at scale.

Stakeholders have identified opportunities to:

- ▶ **Expand domestic manufacturing capability**
- ▶ **Establish regional façade manufacturing hubs**
- ▶ **Encourage inward investment**
- ▶ **Develop integrated unitised façade production**
- ▶ **Improve logistics resilience**

Government, industry and investors should explore mechanisms to de-risk investment in advanced GRC manufacturing facilities.

Section 10

Technology Development and Future Trends

Emerging opportunities include:

- ▶ **Advanced digital design integration**
- ▶ **Parametric façade optimisation**
- ▶ **Automated manufacturing processes**
- ▶ **Smart manufacturing and robotics**
- ▶ **Photocatalytic and self-cleaning GRC technologies**
- ▶ **Enhanced sustainability performance measurement**
- ▶ **Product platforms supporting repeatable building typologies**

International examples demonstrate how productisation and detail standardisation can increase adoption while maintaining architectural flexibility, and exploring mass-customisation opportunities in modern mould design, advanced technologies and production mechanisation.

Section 11

Proposed Strategic Objectives

Here are the proposed Top 10 priorities and strategic objectives for the increase in the adoption and use of GRC façade solutions in the UK:

- 1 Continue Stakeholder collaboration to ensure widespread GRC knowledge is available**
- 2 Update and Modernise GRC Design Guidance**
- 3 Develop UK Competency Frameworks**
- 4 Expand Manufacturing Capacity**
- 5 Support DfMA and Industrialised Construction Adoption**
- 6 Improve Stakeholder Confidence Through Evidence**
- 7 Create Standardised Cost and Value Models**
- 8 Strengthen Regulatory Engagement**
- 9 Develop Sustainability Metrics**
- 10 Promote UK Innovation and Export Growth**

Conclusion

The UK façade sector stands at a pivotal moment and one of great opportunity. The convergence of building safety reform, industrialised construction, net-zero ambitions and the demand for non-combustible façades creates a significant opportunity for GRC technology and to develop a more robust supply-chain that embraces modern design and manufacturing techniques.

The challenge is no longer proving the technical capability of GRC. The challenge is creating the confidence, competence, manufacturing capacity and collaborative ecosystem required to deliver it at scale.

This Green Paper seeks to begin that conversation and through sector-wide engagement, establish a pathway towards making GRC a mainstream solution for the next generation of safe, sustainable and industrialised buildings in the United Kingdom.

Stakeholders are invited to provide feedback on this green paper, please visit:



to take part in this consultation.

Contact

Editorial Enquiries:

Hannah Woodger

E: hannah.woodger@radar-media.co.uk

T: 01743 290026

Business Development Manager:

David Smith

E: david.smith@tallbuildingsmedia.co.uk

T: 01743 290021

M: 07932 188881

Tall Buildings Media Ltd

Hermes House

Oxon Business Park

Shrewsbury SY3 5HJ

T: 01743 290001

Visit **WWW.TALLBUILDINGSMEDIA.CO.UK** to:

- ▶ Access the latest industry news
- ▶ Browse finished tall building projects
- ▶ View the digital magazine and archive
- ▶ Track upcoming industry events
- ▶ Submit your entries for the Tall Buildings Awards 2026

