SKONTO
CONCRETE CLADDING

Manufacturer of glass reinforced concrete products

GRCA
INTERNATIONAL
FULL MEMBER

SKONTO
GROUP

ISO 14001 BUREAU VERITAS Certification

ISO 9001 BUREAU VERITAS Certification

OHSAS 18001 BUREAU VERITAS Certification

SKONTO GROUP

SKONTO BŪVE

SKONTO PLAN

SKONTO CONCRETE CLADDING

SKONTO PREFAB

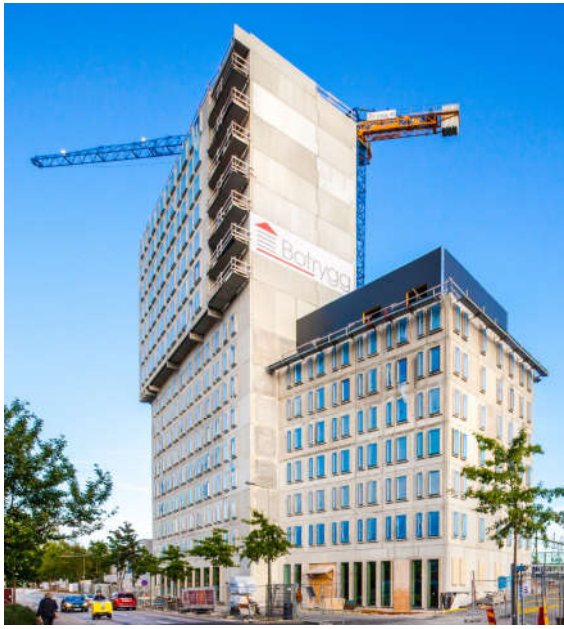
LEC

SKONTO CROSS TIMBER SYSTEMS

FORTA PRO
WE BUILD MODULAR

Skonto Group

- Skonto Concrete Cladding is part of the Skonto Group – a group of Latvia based export oriented construction companies with a global turnover of 300M EUR of which the UK market represents 50M EUR


Balvyga

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Glass Reinforced Concrete

- First buildings in 70s
- Wide choice in form and texture
- Lightweight, durable & customizable
- Non-combustible
- Long service life
- Easy on-site handling

30 Cannon Street, London
Completed in 1977

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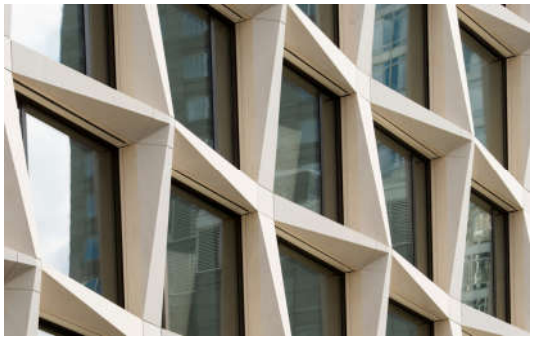
Value engineering

- Efficient alternative for precast concete
- Economic option for natural and cast stone
- Cost effective substitute for terracotta



Natural stone

Precast concrete

Terracota tiles

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Design & production
of
GRC panels and backing systems

Key Features:

- GRCA Grade 18 direct spray
- 12mm thickness (27kg/m2)
- BIM ready 3D in house design
- Single mould size up to 2x7m
- 5-sided panels
- Custom backing systems in stainless steel/ aluminium/galvanized steel, adjustable in all axes
- Non-combustible EN 13501 A.1

Lightweight, durable & customisable = architectural freedom

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Factory at a glance

- 3700 m ² production space
- 300 m² office space
- In-house laboratory
- 25-50 production staff

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Manufacturing capacity

- 25,000 m² annual production capacity

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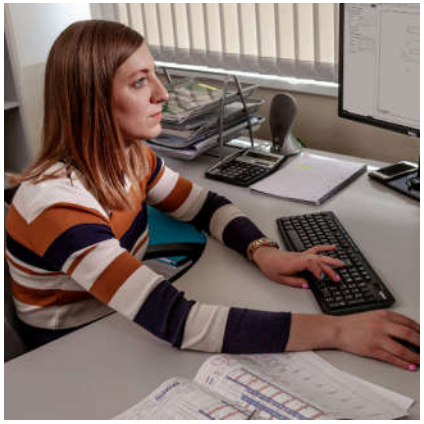
GRC Production process



engineering

pre-mix preparation

spraying

installing fixing system

finishing

testing

packaging

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Technical Specification

Spray-up glass fibre reinforced concrete, manufactured to GRCA Grade 18P. Formed from a Portland cement (EN 197-1), silica sand (maximum grain size 1,2 mm) mix with acrylic polymers, superplasticizers, alkali resistant glass fibre and inorganic colouring pigments

Limit of Proportionality (LOP) N/mm^2	8
Modulus of Rupture (MOR) N/mm^2	21
Shear strengths; In Plane Shear (N/mm^2)	10
Total ultimate shrinkage	<0.2%
Impact test (CWCT note 75)	Class 1
Surface water absorption at wet weather conditions (%)	8

Full Specification available as separate PDF

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ISO Certified production

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GTC

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Non-combustible class A1 to EN 13501

Committed & certified to delivering the best

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Internal testing

- Bending test BS EN1170-5:1998
  Fixing pull out and shear tests
- Plasticity of the mortar.
  "Slump test" method BS EN1170-1:1998
- Fiber content in fresh GRC.
  "Wash-out test" BS EN1170-2:1998
- Fiber content of sprayed GRC.
  "Bag and bucket test" BS EN1170-3:1998
- Absorption of water by immersion
  and dry density. BS EN1170-6:1998

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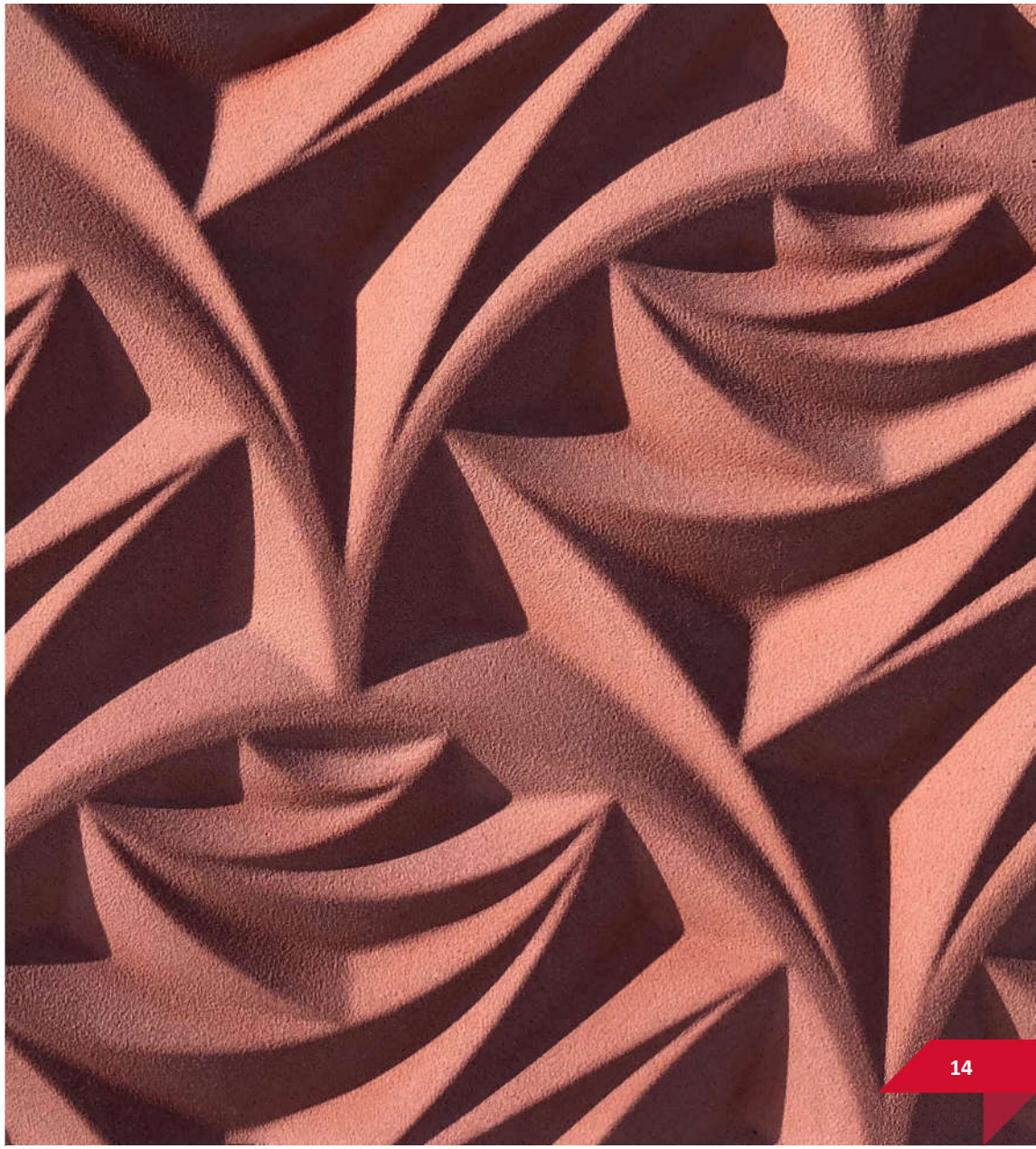
External testing

- Non-combustible class A1 to EN 13501. Testing performed at Fire Research Centre of Fire and Rescue Department under the Ministry of the Interior of Lithuania
- Fire spreading Class 1 according to Class 0 according to BS 476-7:1997 (2016) performed at BTTG testing centre
- Impact test in accordance with CWCT N76. Performed at VINCI Technology Centre UK
- Weathering test according to EN ISO 4892-3 for 1 year and 5 years. Performed in Polymer Material Institute of Riga Technical University in Latvia

Finishes

- Smooth or textured surface
- Wide choice of colours
  - Through coloured
  - Inorganic pigments
- Products are weatherproof and lightfast
- Decorative aggregates
  - Visible stones
  - Enhanced colors



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Rough surface

- Wide choice of colours
- Through coloured
- Decorative aggregate options
- Panel thickness 12mm + texture

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Smooth surface

- Wide choice of colours
- Through coloured
- Weatherproof

Patterns

- High quality and precision in house mould production
- Experience with RECKLI formliners
- Graphic concrete

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Complex shapes

Built-in support frame for mounting & superior durability

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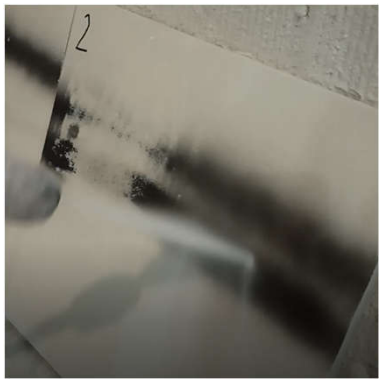
Additives

- Can slightly affect panel colour – can be avoided by adjusting necessary surface colour in advance

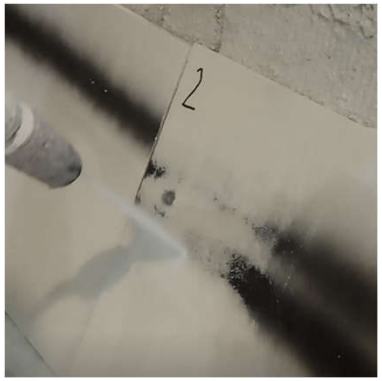
- Hydrophobic
  - embedded or surface applied
  - re-applied every 10 years

- Anti Graffiti
  - water repellent
  - re-applied every 7 years

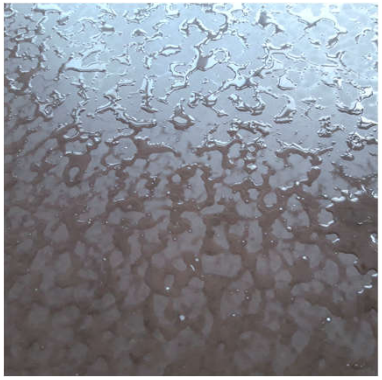
Panel without anti graffiti coating



Panel with anti graffiti coating



Hydrophobic coating



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Brick Faced GRC

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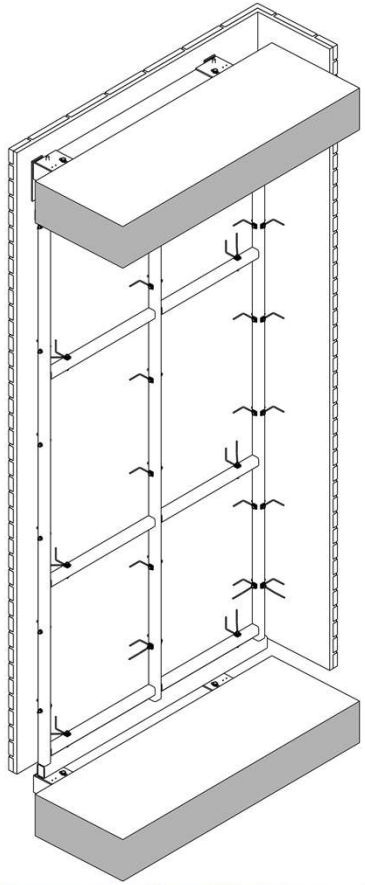
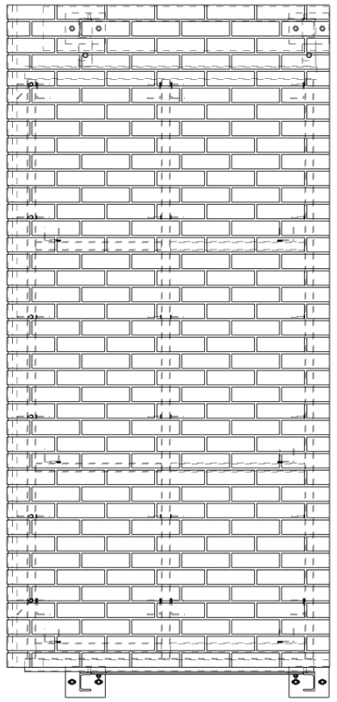
Skonto Concrete Cladding brick slip on GRC system provides safety, looks and efficiency unmatched by any other system on the market. Natural brick slips, combined with our innovative fixing methods, offer solutions for substituting traditional brick laying without compromising safety or appearance.

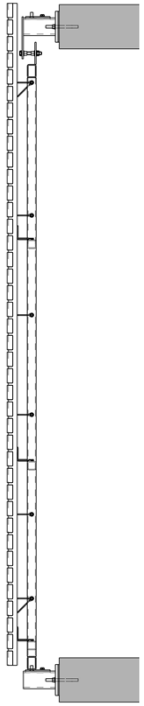
- Mechanically fixed brick slips with stainless steel anchors
- No adhesives used in the system
- Unlimited panel sizes (only limited by transportation)
- Non combustible A.1 to EN 13501
- Freeze-thaw resistance tested according to EN 12467
- CWCT TN76 impact testing carried out at VINCI Technology Centre
- Any brick slip on the market can be used
- No metred corners, corner brick slips used
- Manually pointed in any desired colour and style
- According to pull-out tests, bricks disintegrate before delaminating from GRC
- System being reviewed by ARUP

Backing system

- GRC brick slip panel fixed to aluminium ladder frame backing system
- Panels can be lifted by the backing frame
- Backing system bottom loaded onto brackets that are fixed to slabs
- All static calculations done in-house and approved by a 3rd party if required
- Large panel sizes minimise work on site

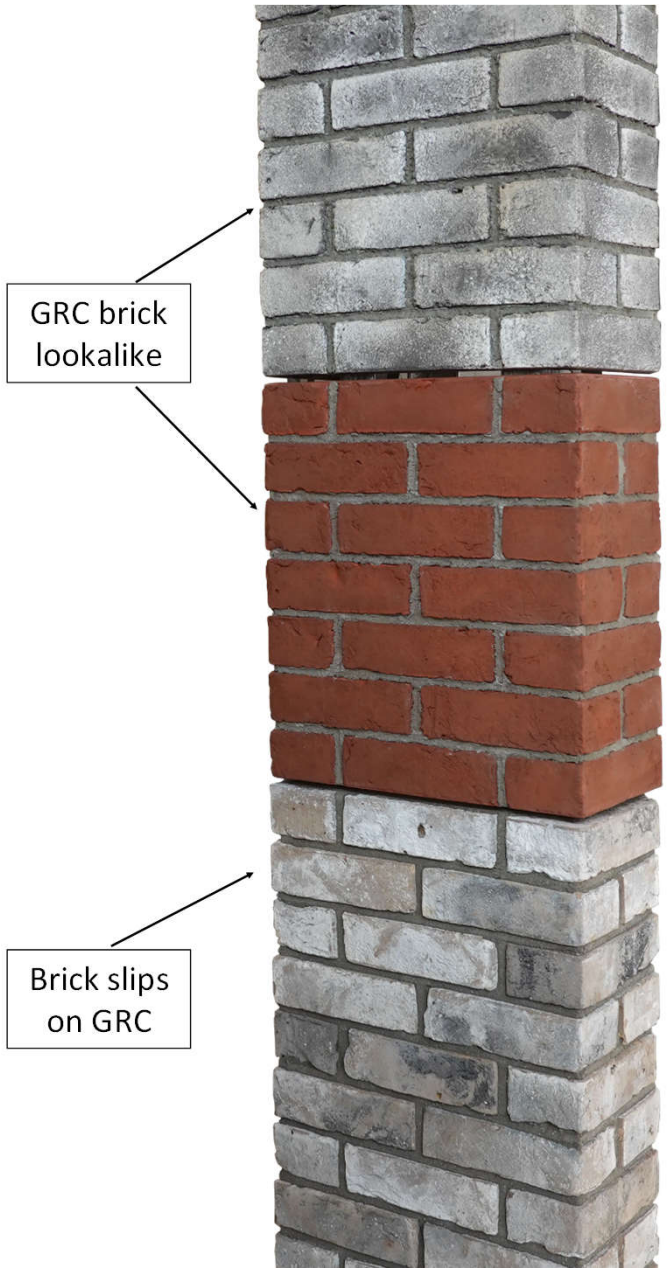


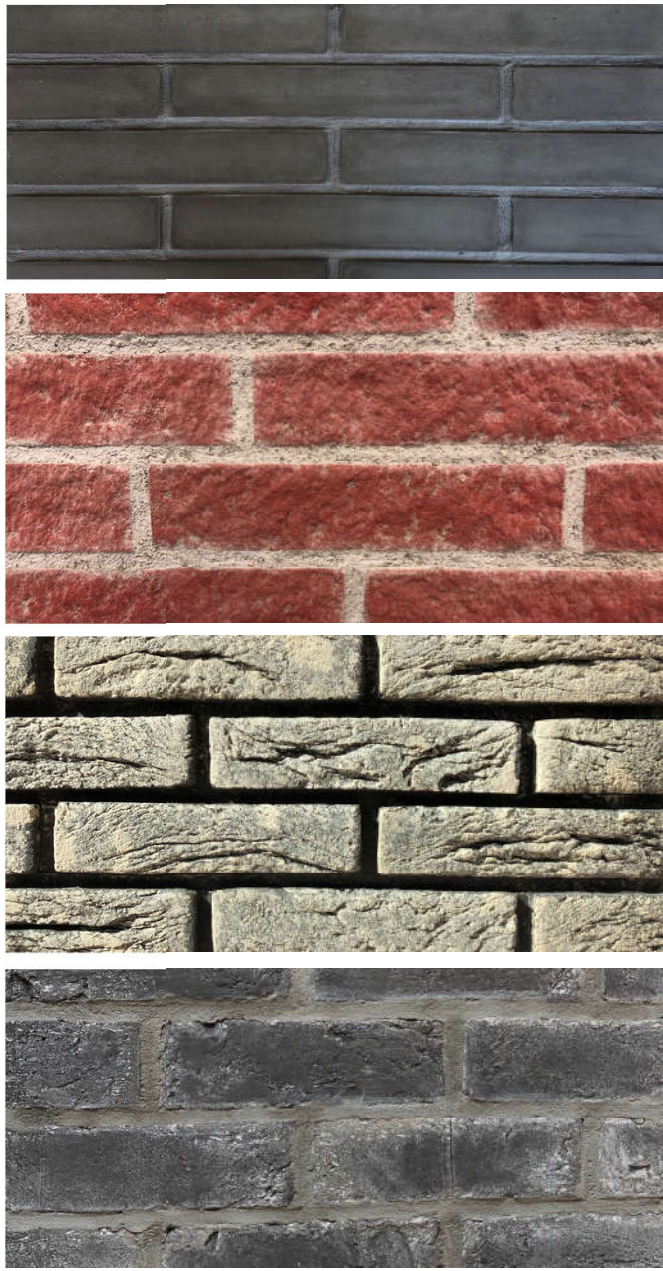




GRC brick lookalike

- GRC panels that are produced in the texture and colour of bricks
- Manually pointed in the factory
- Large panel sizes and complex panel configurations can be achieved
- Curved panels are achievable
- A cost effective alternative to brick or brick slip systems
- Non-combustible A.1 to EN 13501



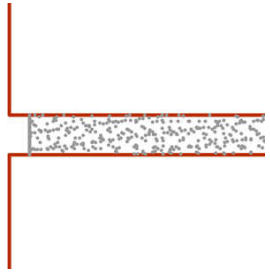


Mortar design

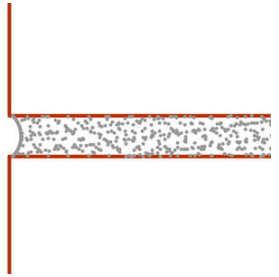
- Manually pointed
- Wide range of mortar colour
- Wide range of mortar pointing types

flush pointing

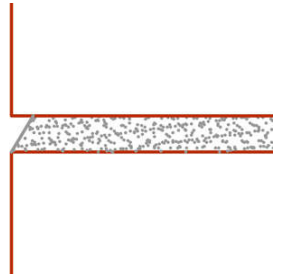
recessed pointing



keyed pointing

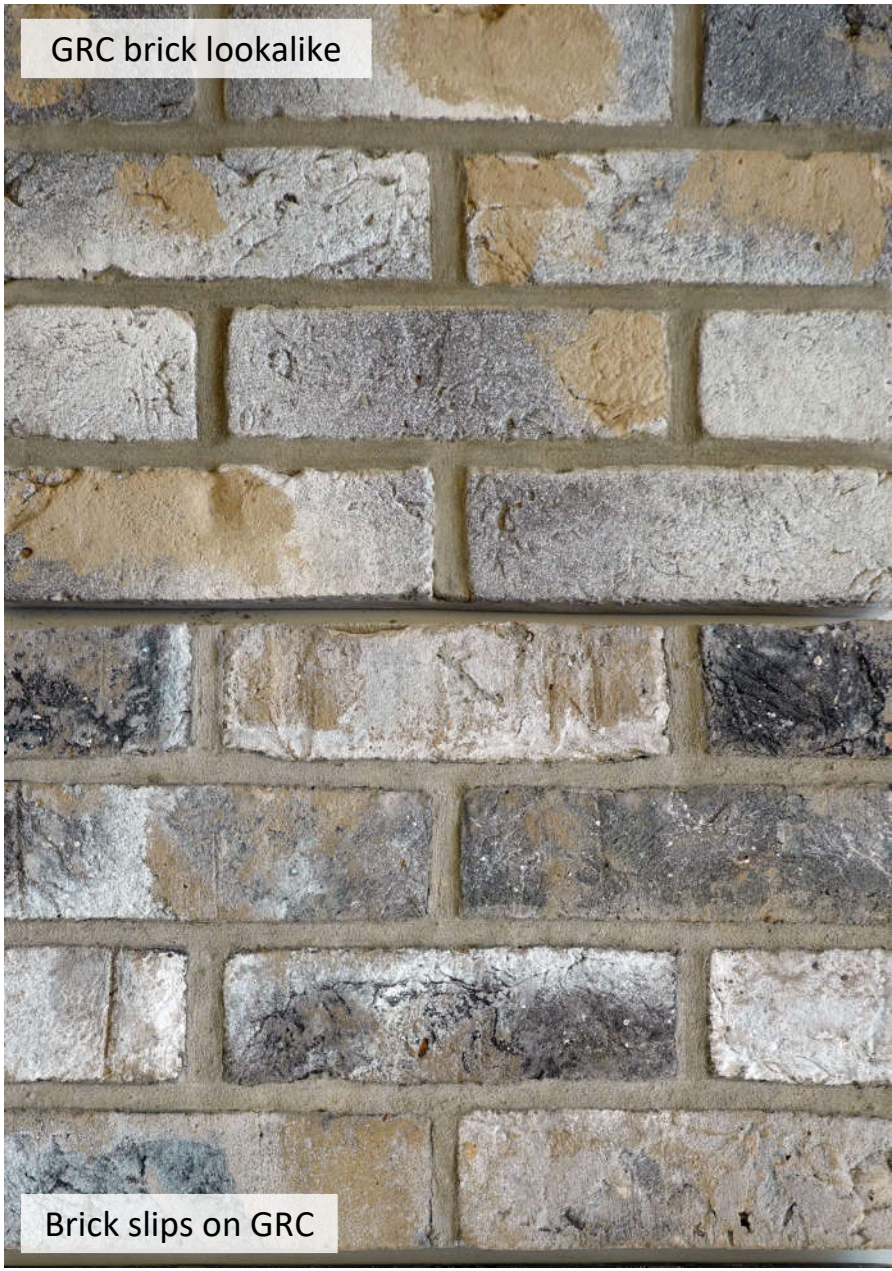


weathered pointing



Design of GRC brick look-alike system

- Throughout coloured using inorganic pigments (EN ISO 787)
- Individually hand-made panels with one-of-a-kind colour combinations
- Unique manufacturing technology – no surface repetitiveness
- Wide variety of mortar colours and finishes
- A cost effective alternative to brick or brick slip systems
- Non-combustible A.1 to EN 13501
- Challenging to achieve as sharp colour variation as in brick slips, especially with 3 and more colour variations within the design



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Soft Body impact test CWCT TN75

- Carried out at VINCI Technology Centre UK
- Result: Class 1 negligible risk

Location	Impact energy (Nm)	Observations	Classification
1	120 x 3 350 500	No damage observed No damage observed No damage observed	Class 1 Negligible risk Negligible risk
2	120 x 3 350 500	No damage observed No damage observed No damage observed	Class 1 Negligible risk Negligible risk
3	120 x 3 350 500	No damage observed No damage observed No damage observed	Class 1 Negligible risk Negligible risk
4	120 x 1 350 500	No damage observed No damage observed No damage observed	Class 1 Negligible risk Negligible risk

Hard Body impact test CWCT TN75

- Carried out at VINCI Technology Centre UK
- Results: Class 1 negligible risk

Location	Impact energy (Nm)	Observations	Classification
1	3 6 10	No damage observed No damage observed No damage observed	Class 1 Class 1 Class 1
2	3 6 10	No damage observed No damage observed No damage observed	Class 1 Class 1 Class 1
3	3 6 10	No damage observed No damage observed No damage observed	Class 1 Class 1 Class 1

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Non-combustible Class A1 according to EN 13501

Skonto Concrete Cladding system consists of:

- brick slips (for brick slip on GRC system)
- stainless steel anchors (for brick slip on GRC system)
- concrete with glass fibre reinforcement
- Galvanized steel or aluminium backing system
- No adhesives are used in the system.

Freeze-thaw resistance according to EN 12467+A2:2018

- average bending strength value (MORfci) remains classified as Class 5 (the highest level for Category A) in accordance with Practical Design Guide for GRC by GRCA
- slight increase in water absorption is detected (from 2.8 % to 5.3 %), which is still below the typical values shown at Practical Design Guide for GRC by GRCA
- no delamination of brick slips is observed, surface quality is not affected

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Brick slip pull-out test according to GRCA guidelines

Carried out using Testometric M350-5 CT 5kN

Sample	Brick slip thickness	Brick slip	Fixing	Pull-out force	Observations
Sample 1	10 mm	Extruded Lode 'Janka'	2xM8 BigHead anchors	0.51 kN	Half of a brick slip disconnected from the GRC panel
Sample 2	20 mm	Hand-made BEAP 'Majestic'	2xM8 BigHead anchors	1.18 kN	Slight cracking visible in the centre of brick slip. BigHead anchor pulled out.

L type fixing anchor pull-out test according to GRCA guidelines

Carried out using Testometric M350-5 CT 5kN

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Accelerated weathering test according to EN ISO 4892-2:2016

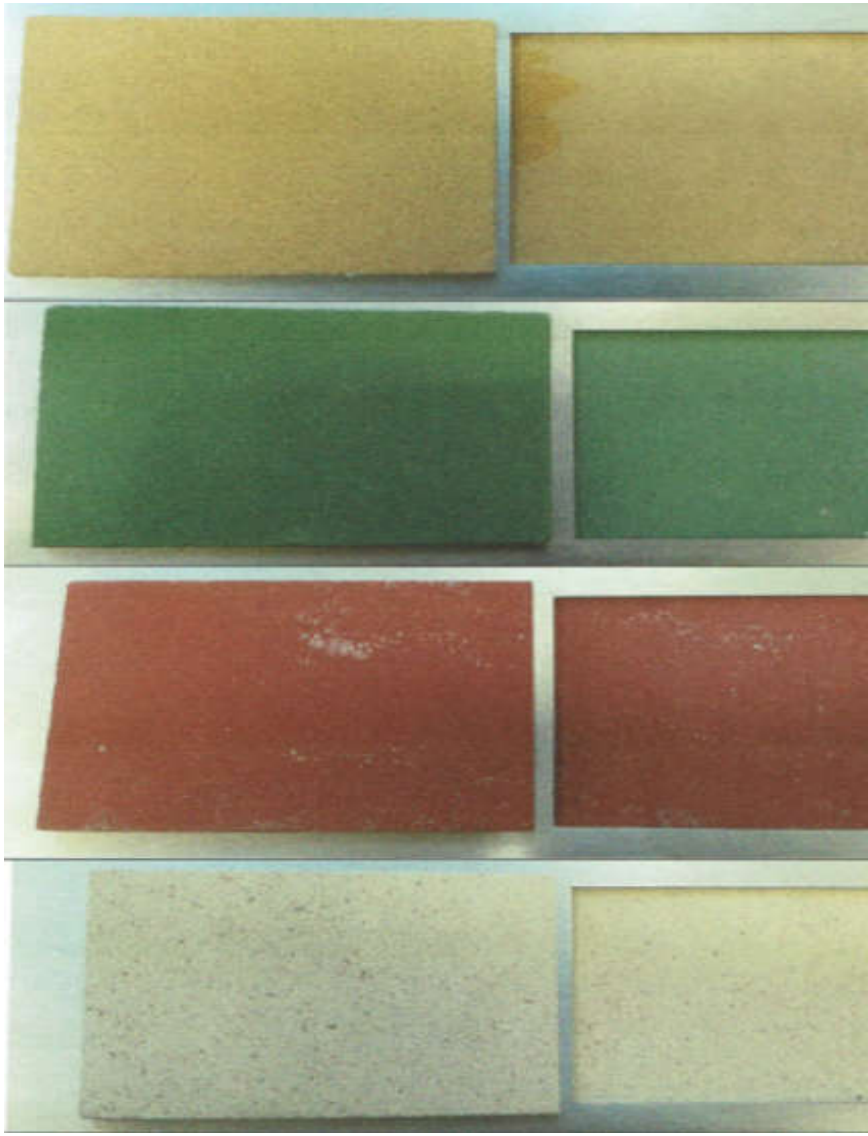
1000h and 5000h tests have been performed – equivalent for approximately 2 year and 10 years

After aging for 5000h:

- crazing on the test specimen surfaces was not observed
- change in the surface colour was not observed

Surface of the reference test specimen

Surface of the test specimen after 5000h of accelerated ageing



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Packaging

- Packaging is constructed exclusively from FSC timber
- Strict packaging design safety guidelines
- Efficient use of materials leads to reduced waste
- Efficient use of space leads to lower pollution and costs

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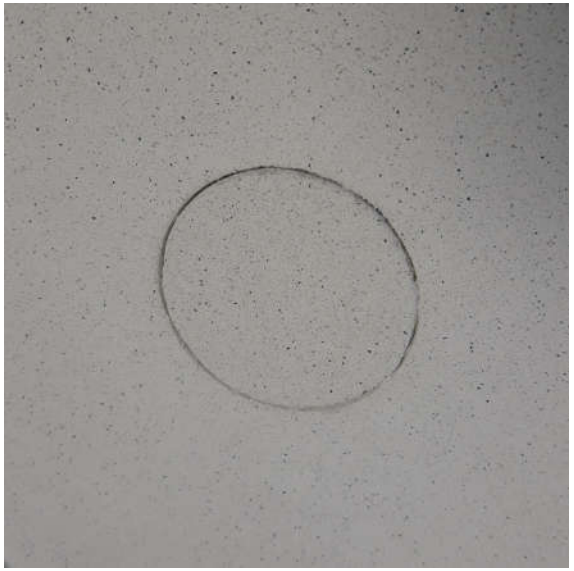
Technical options



Cast or post-drilled

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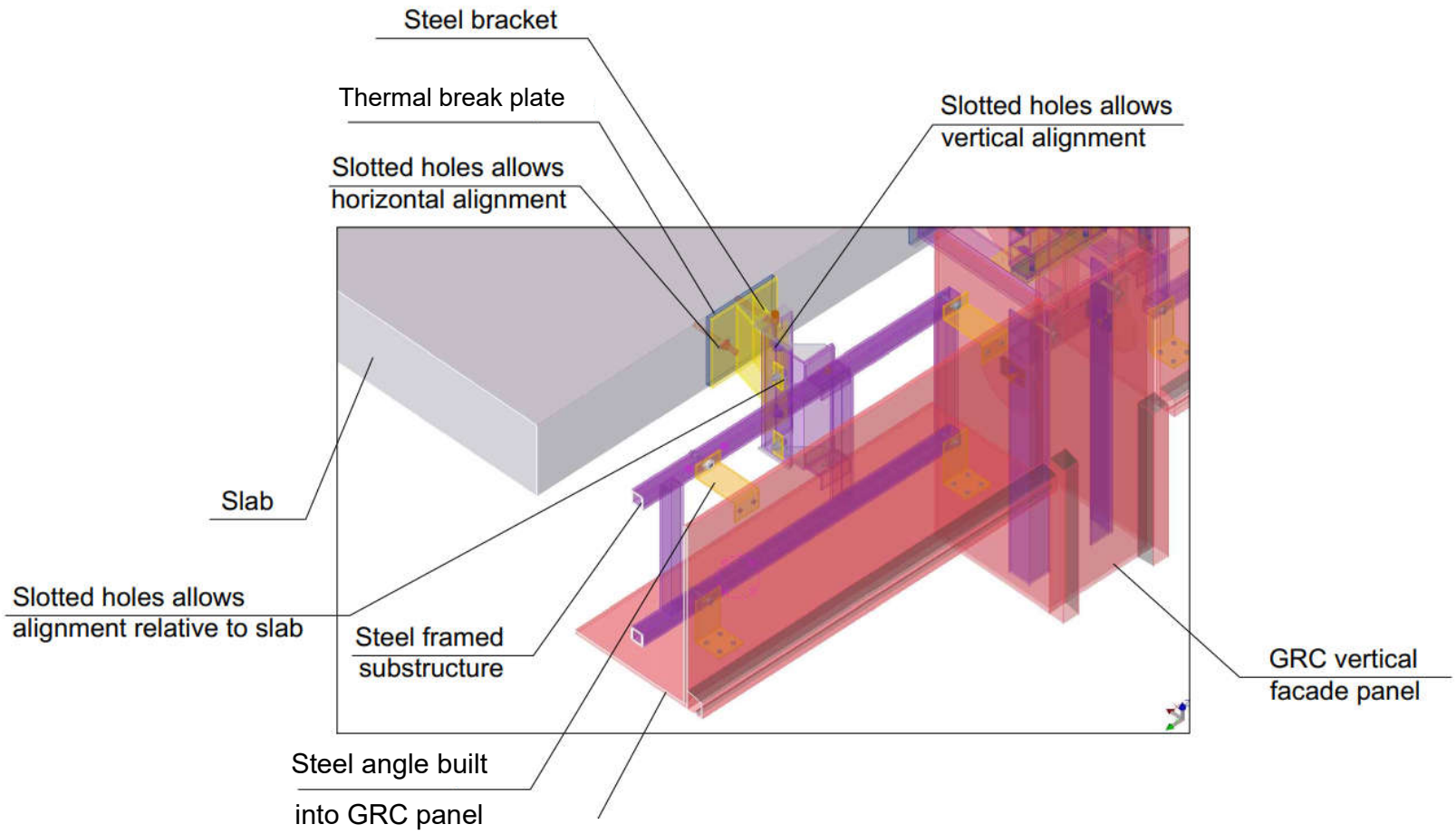
Fixings
Anchor plates



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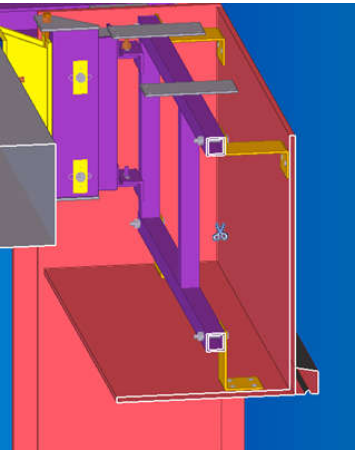
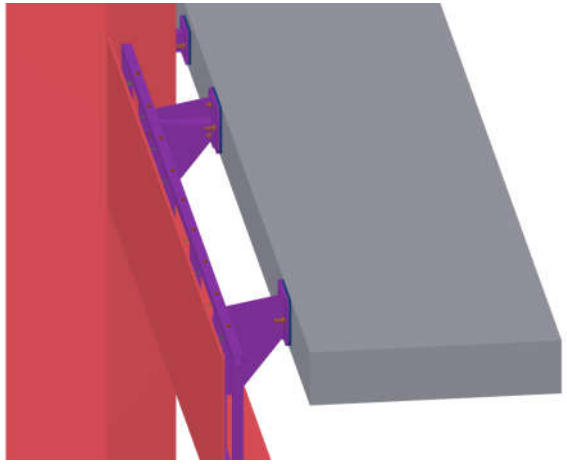
Bonded Fixing –
Z & L Anchor plates





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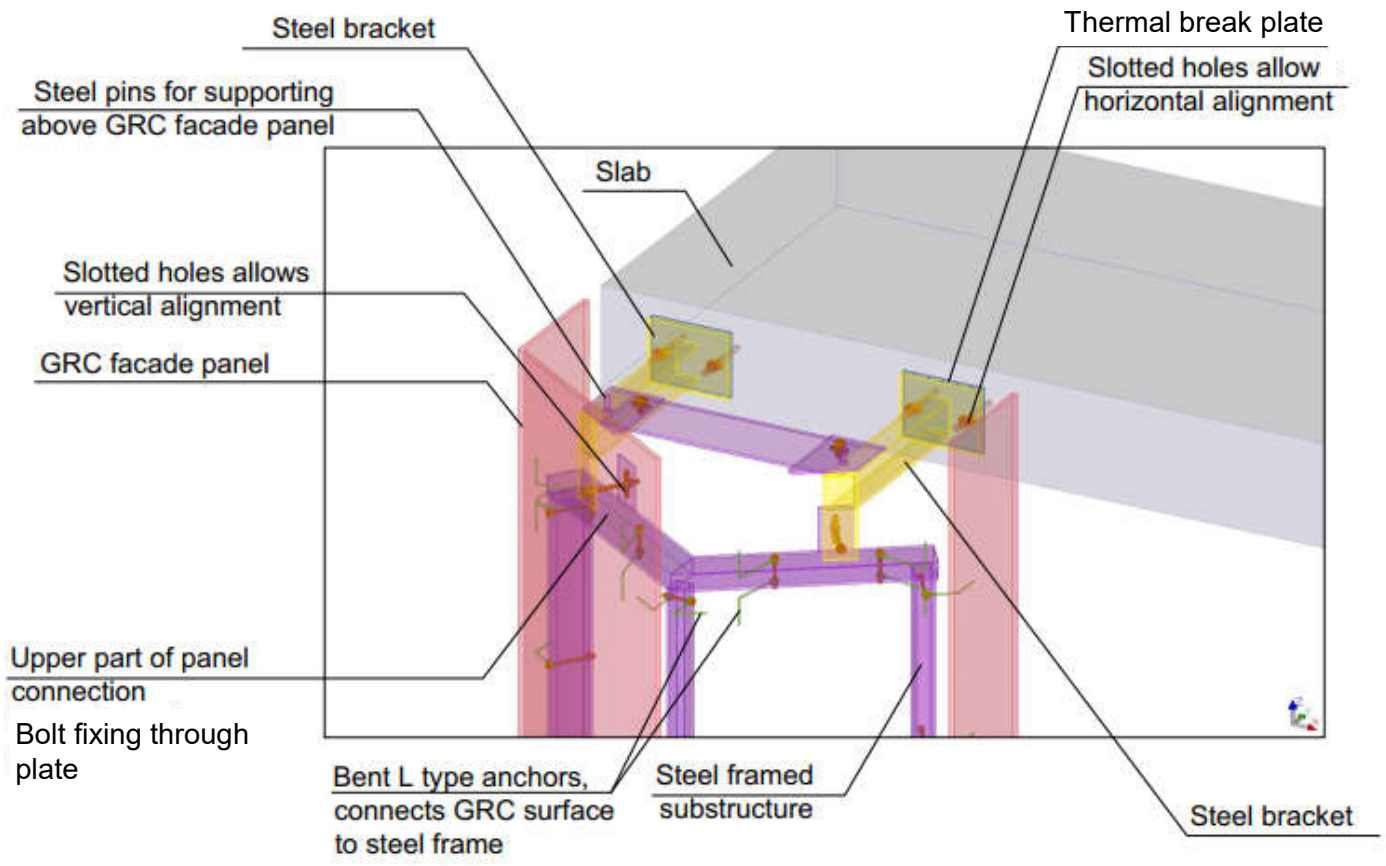
Fixings
Subframe and studs



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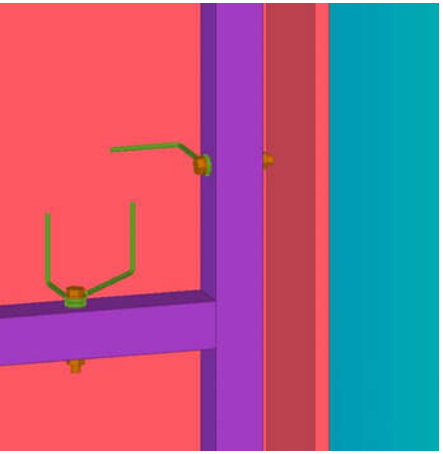
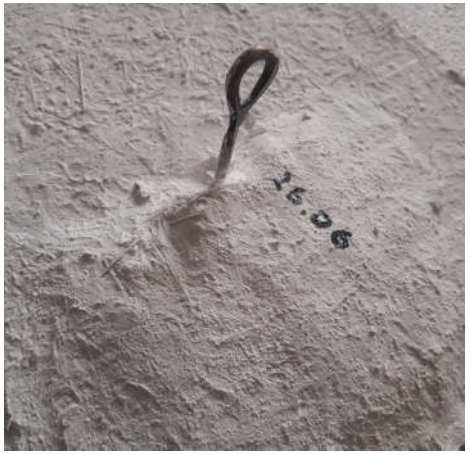
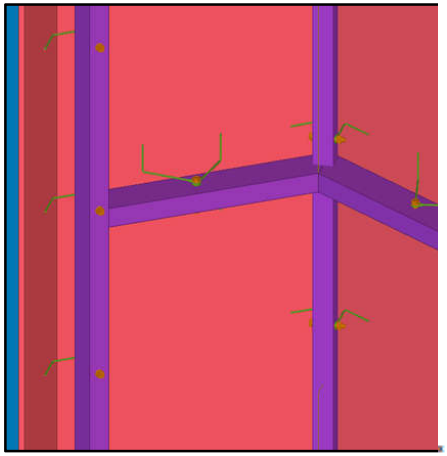
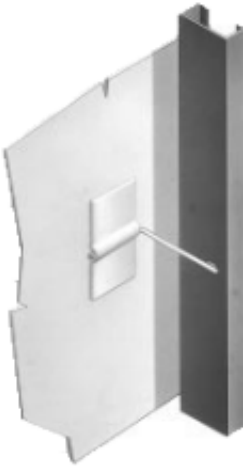
Tubular subframe





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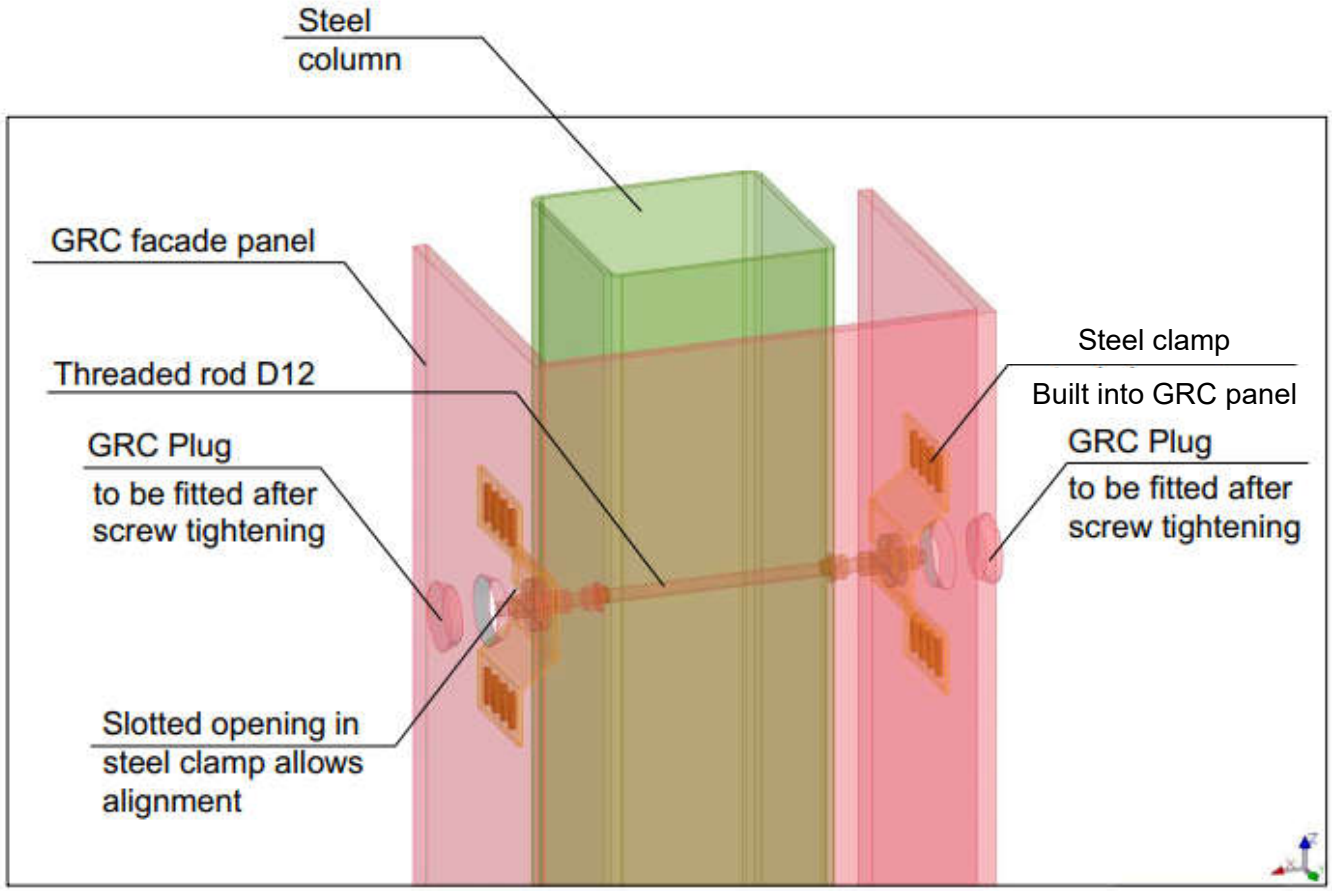
Fixings

Bonded fixing – Bent plate anchor



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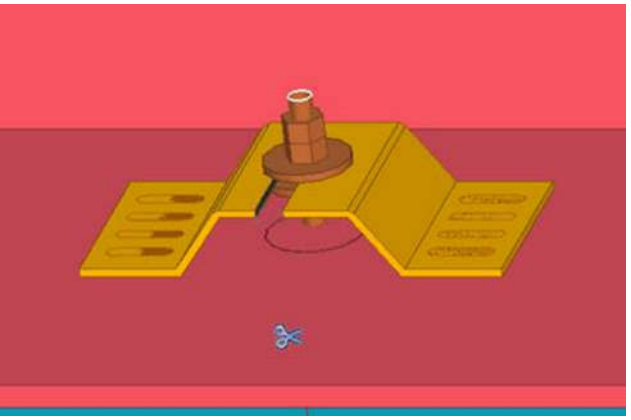
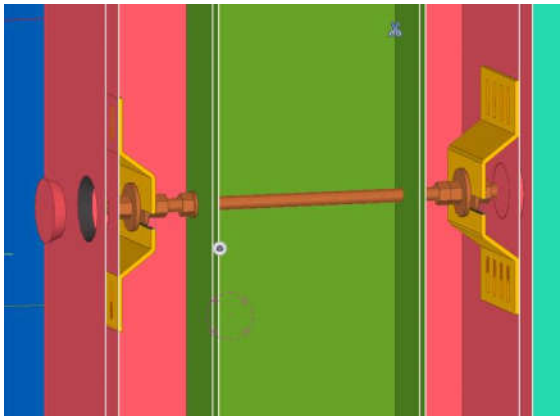
Bonded fixing
Bent plate anchor





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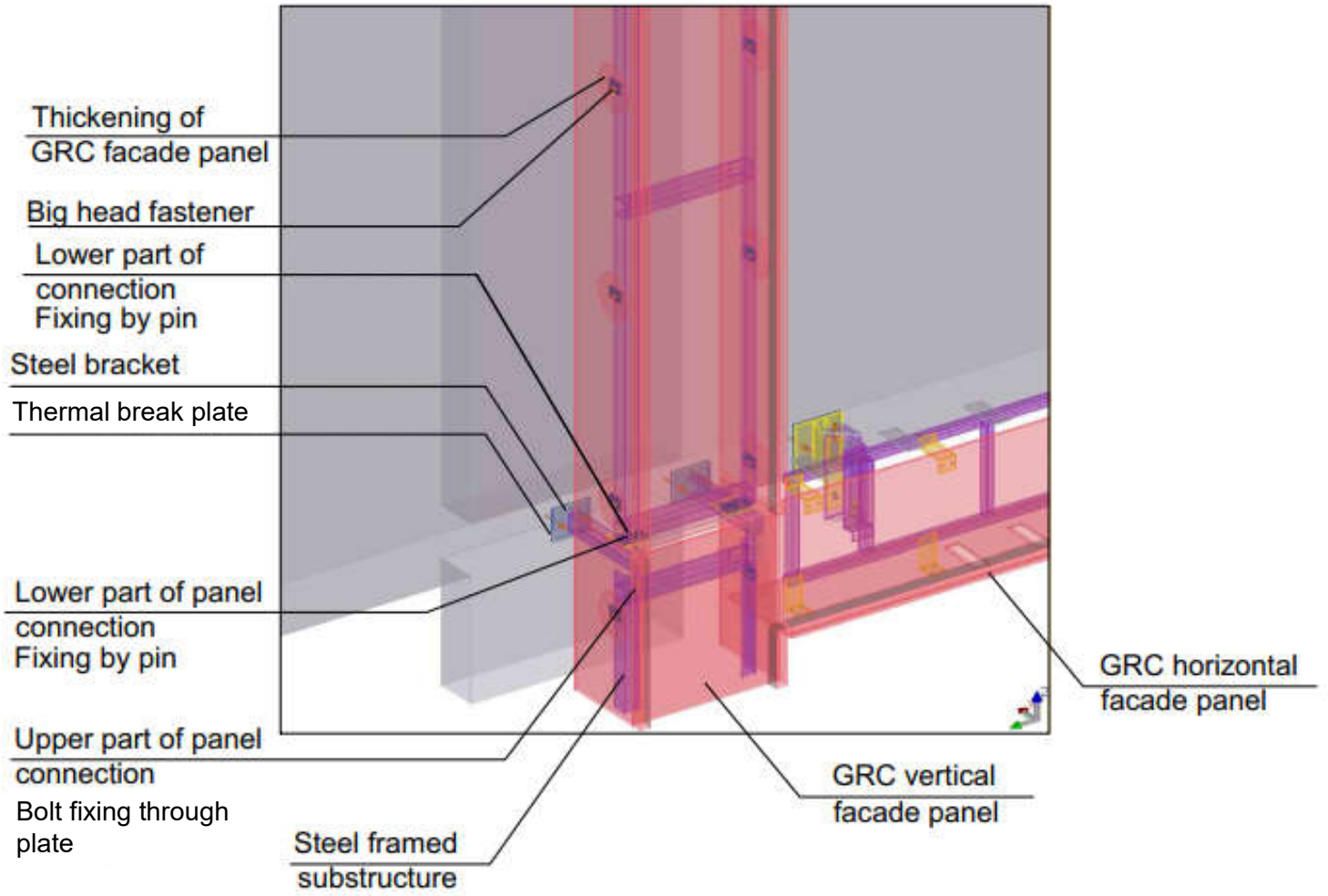
Fixings

Bonded fixing – Big-Head anchor



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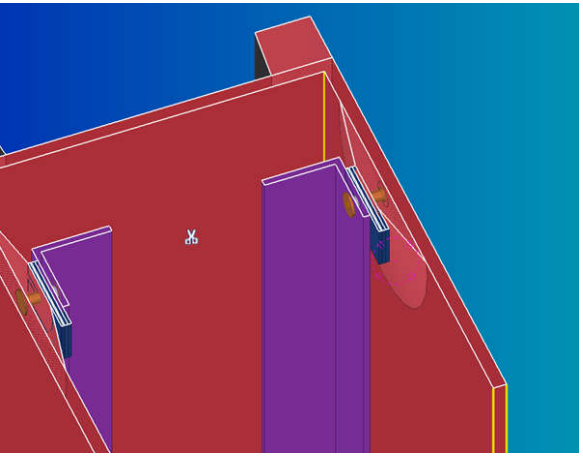
Bonded fixing
Bent plate anchor



Pull-out strength 2,5 kN

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Design and manufacture of GRC panels and backing systems

- Complex geometries and endless surface finish options
- Reliable partner with experience in construction and manufacturing
- GRCA full member with necessary accreditations for UK market

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