
INVISIO

A THERMALLY BROKEN FRAMELESS
GLAZING SYSTEM

PRODUCT DATA



IQ[®]GLASS

INVISIO

Technical Product Overview

Developed in house by IQ Glass using our years of experience in structural glazing. The Invisio system is a structural glass system with thermally broken fixing details. It is suitable for all structural glazing applications and offers unparalleled thermal insulation whilst maintaining the key frameless glass design of structural glazing.

Sizes

	Invisio	Invisio+	Invisio Curve	Invisio Custom
Profile Depth	63mm	72mm	63mm	on application
Max Glass Thickness	41.5mm	4000mm	41.5mm	unlimited
Expected Uw	1.1 W/m ² K	0.9 W/m ² K	1.1 W/m ² K	on application

Glass Specification

Typical Spec TXD glass in double glazed unit with low e coating used as standard. See tables on pages 8 onwards for typical glass specifications for your application.

Glass Options Any coated or laminated glass solution including solar control, low maintenance, privacy glass, heated glass and more.

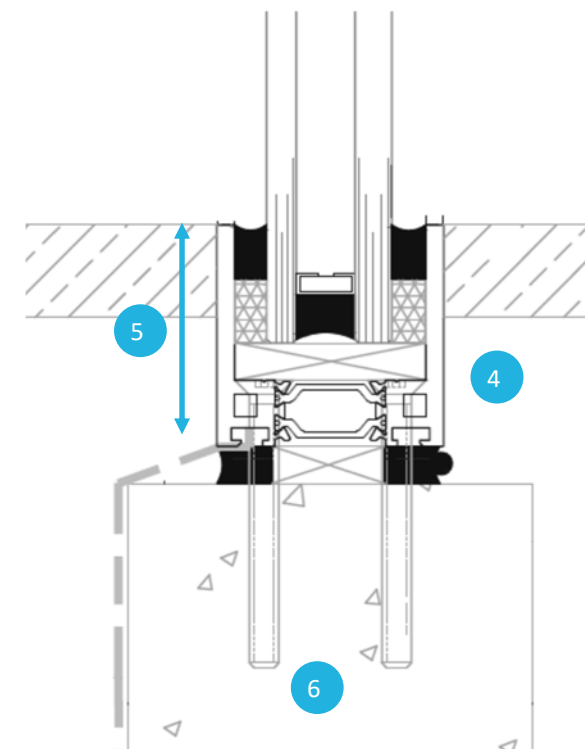
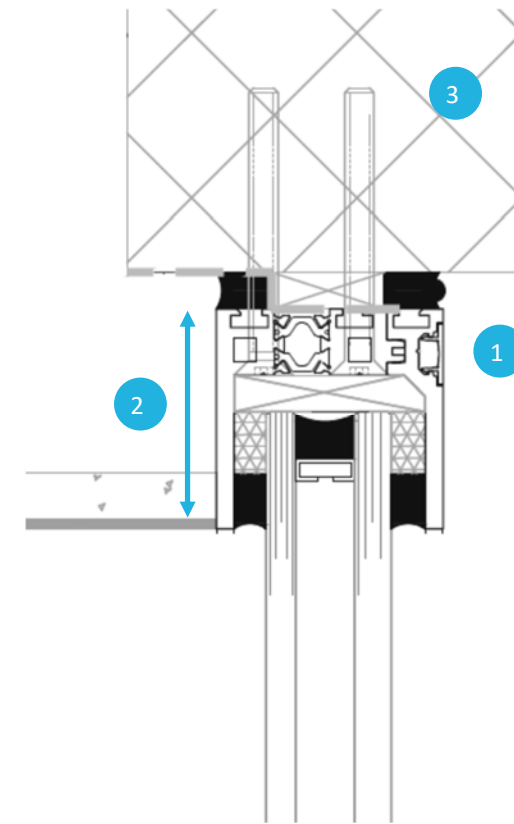
Frame Specification

Insulation Frame is fully thermally broken with polyamide thermal breaks set within extruded aluminium. Ensures proper insulation not possible with alternative systems. No condensation on internal frame like other systems.

Finishes PPC in RAL colours 7016/7021/7024/9005 as standard, additional RAL colours incur additional costs and increased lead times.

INVISIO

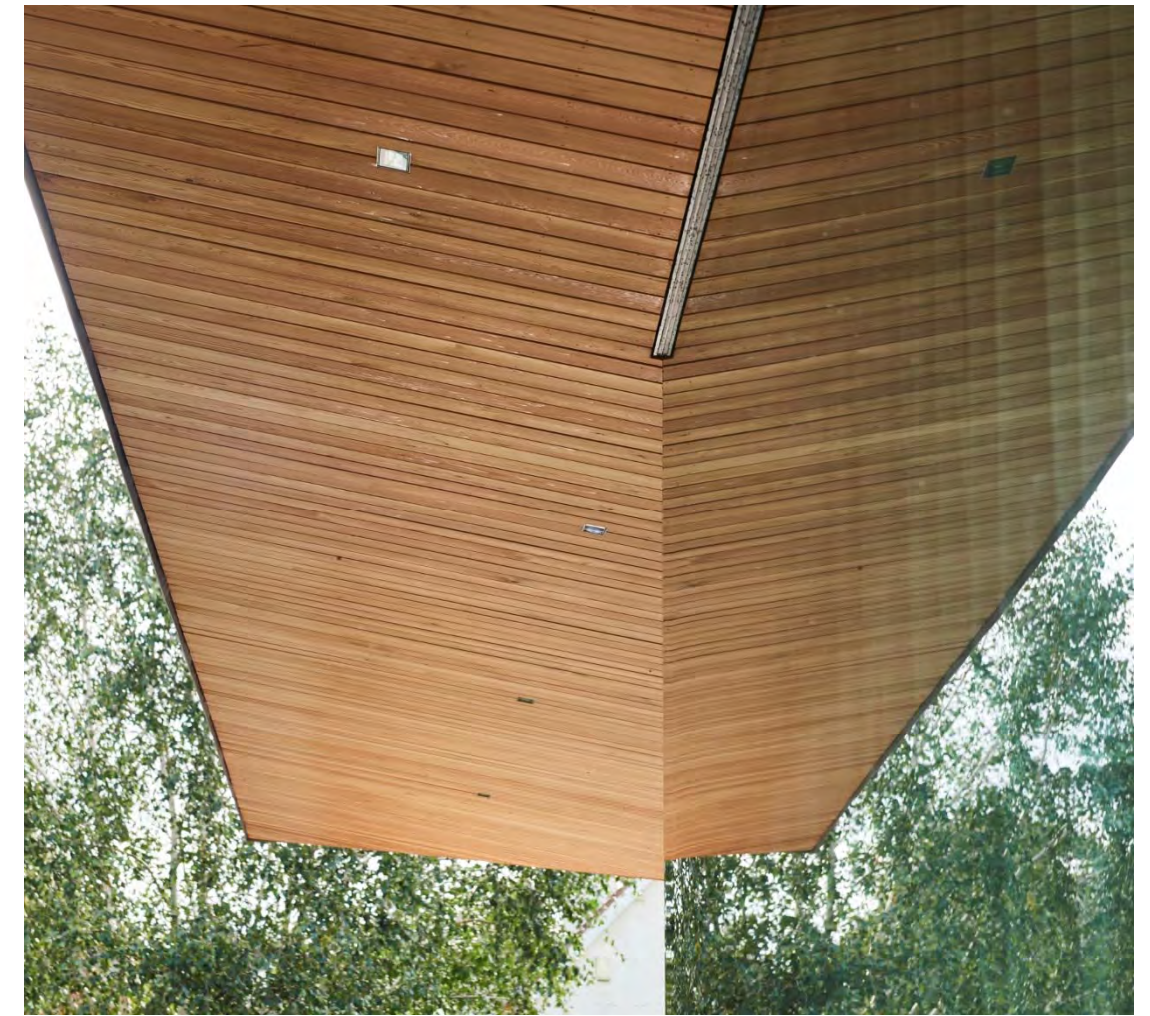
Vertical Section



- 1 INV1 section
- 2 profile height 60mm
- 3 solid structure by others. max deflection 5mm
- 4 INV3 section
- 5 profile height 60mm
- 6 solid structure by others. Solid cast concrete / steel / 7N high density concrete block upstand max deflection 5mm

INV1 Section This section has a removeable cover to allow for ease of replacement. The removeable section can be designed to face inside or out depending on whether glazing is to be installed from outside or inside.

Set Back Location The Invisio Structural Glazing system is 'set back' to the distance requested by the architect or indicated on the architectural drawings. The minimum fixing distance from edge of slab to the centre of the profile is 55mm. If the glazing is to be located closer to the edge of the slab fixing straps will be used.



Sanctuary House

SC2 structural glass walls to a high wind load, coastal facing contemporary house

Architect Barc Architects

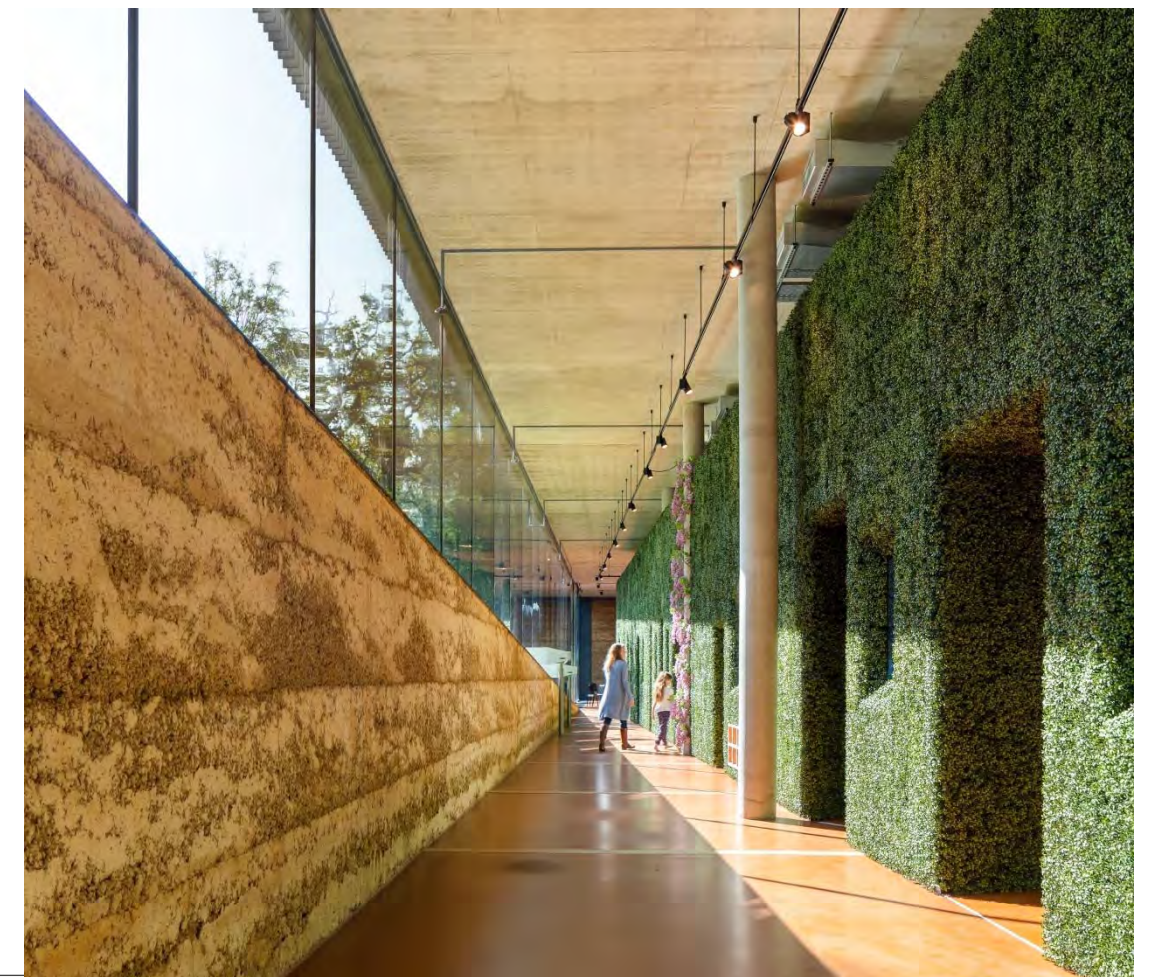
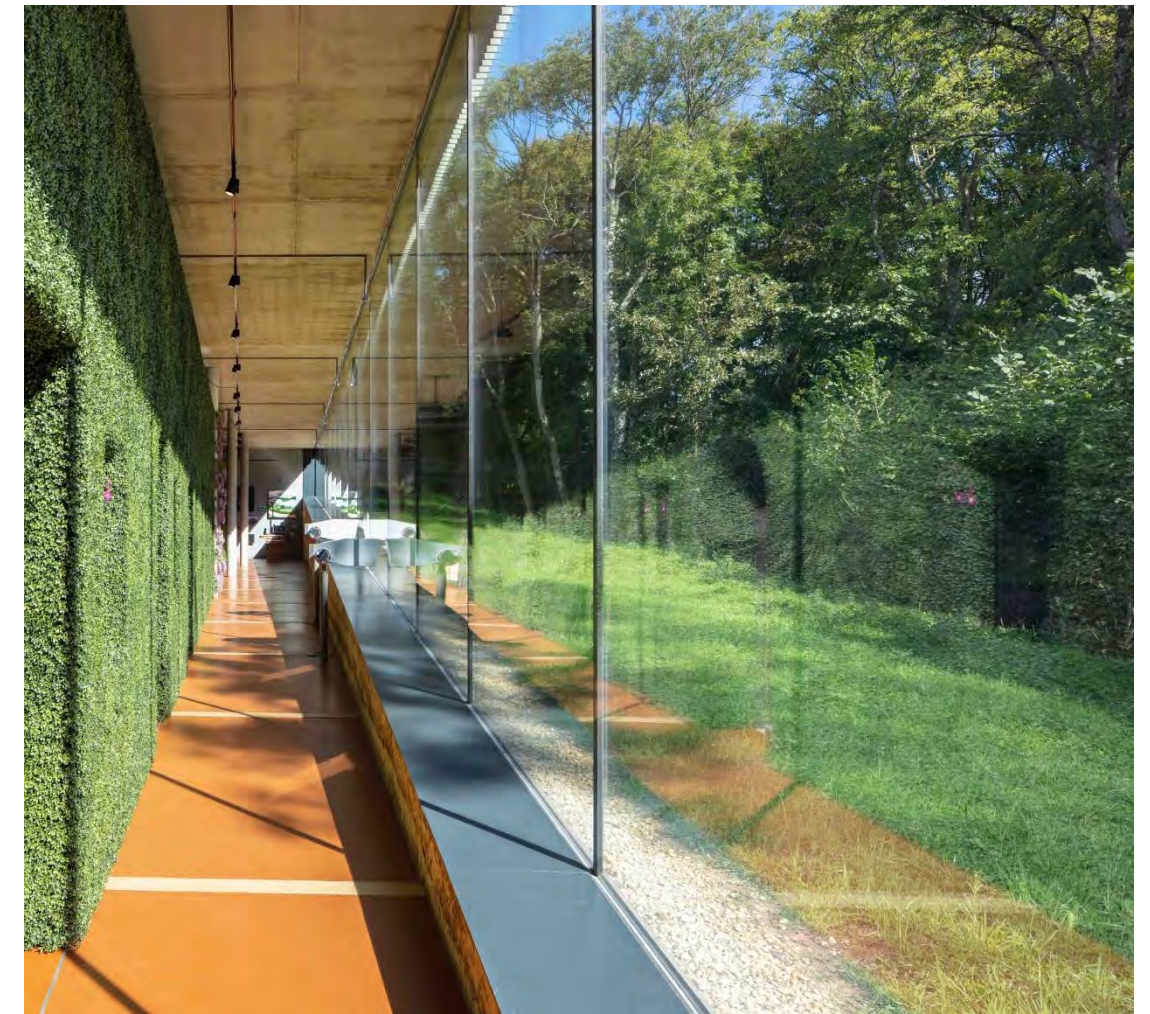
Topsham, UK

The Story of Gardening Museum

SC2 structural glass walls at 6m high to underground museum

Architect Stonewood Design

Hadspen House, Somerset, UK



INVISIO

Max Tested Sizes

The Invisio System has been fully tested to provide a solution for structural glazing on architectural projects with proven performance. The below tables indicate the tested glass sizes and recommended specifications. If your glass installation is larger than these sizes shown we can provide a bespoke solution.

Tables show the recommended glass specification for each total opening width and opening height. All tested scenarios take into account a max. glass deflection of H1/175 (ie if the height is 1m the silicone joint maximum deflection is 1.75mm).

Much larger frameless installations are available on request.

Tested Scenarios

SC1	4 edge supported single pane. Perfect for frameless / picture windows	SC2	4 edge supported multiple panes with silicone joints. Perfect for frameless glass walls and bespoke shaped glazing.
SC3	1 edge supported single panes with silicone joints/alternative fixing at head and sides. Perfect for frameless Oriel Windows.	SC4	2 edge supported single pane with silicone joints/alternative fixing at sides. Perfect for frameless glass boxes or bay windows.
SC5	2 edge supported multiple panes with silicone joints between panes and silicone joints /alternative fixing at sides. Perfect for larger glass boxes or glass walls around a corner.	SC6	2 edge supported 2nr panes with silicone joints between panes and silicone joints /alternative fixing at sides. Perfect for larger glass boxes or glass walls around a corner.
RL	Specific thermally broken fixing section for rooflights.	FL	Specific thermally broken fixing section for floorlights.

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SC1 Max Tested Sizes

Wind Pressure up to 0.8 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					5.78	5.77	5.76	5.89	6.05	6.43	6.80	6.85	6.90
8-18-6			2.92	2.98	3.03	3.01	3.02	2.98	2.85				
6-18-6	2.18	2.14	2.1	2.08	2.05	2.01	1.99						

Wind Pressure up to 1.6 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					2.48	2.50	2.70	2.88	2.91	3.04	3.17	3.3	3.45
8-18-6			2.14	2.16	2.18	2.12	2.10	2.09	2.08				
6-18-6	1.92	1.86	1.78	1.70	1.62								

Application Examples



INVISIO

SC2 Max Tested Sizes

Wind Pressure up to 0.8 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					12.71	12.2	12.07	11.5	11.09	10.5	9.98	9.60	9.18
8-18-6			8.87	7.98	7.59	7.4	7.3	7.28	7.25				
6-18-6	5.71	5.72	5.74	5.73	5.71	5.74	5.75						

Wind Pressure up to 1.6 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					6.35	6.48	6.8	6.84	6.88	6.74	6.6	6.46	6.32
8-18-6			5.99	5.85	5.72	5.7	5.65	5.98	6.44				
6-18-6	4.89	4.9	4.94	4.92	4.91	4.92	4.93						

Application Examples



INVISIO

SC3 Max Tested Sizes

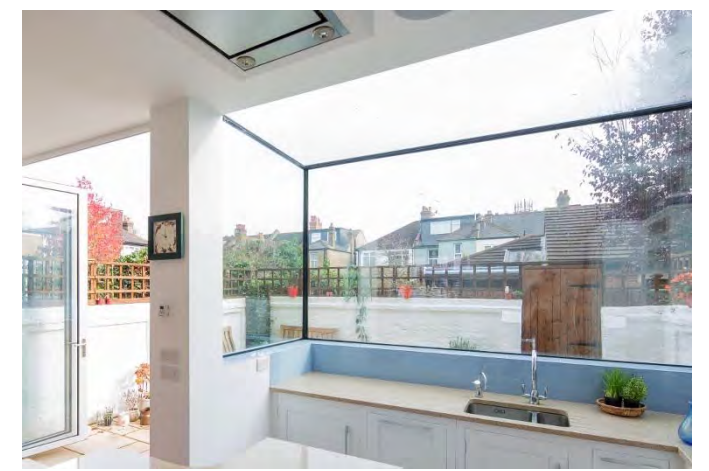
Wind Pressure up to 0.8 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					4.86	4.80	4.87	4.86	4.95	5.17	5.36	5.55	5.74
8-18-6			2.58	2.60	2.55	2.48	2.46	2.44					
6-18-6	1.95	1.91	1.87	1.83	1.78	1.74	1.69						

Wind Pressure up to 1.6 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					2.51	2.50	2.49	2.47	2.48	2.57	2.67	2.77	2.87
8-18-6			1.98	1.99	2.00	2.02	2.04	1.96	1.99				
6-18-6	1.58	1.61	1.64	1.56	1.95								

Application Examples



INVISIO

SC4 Max Tested Sizes

Wind Pressure up to 0.8 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					4.85	4.79	4.77	4.85	4.94	5.15	5.33	5.55	5.73
8-18-6			2.59	2.61	2.62	2.55	2.47	2.46	2.44				
6-18-6	1.94	1.9	1.86	1.81	1.77	1.73	1.68						

Wind Pressure up to 1.6 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					2.49	2.48	2.46	2.47	2.48	2.52	2.57	2.82	2.86
8-18-6			1.98	2	2.02	2.04	2.06	1.98	1.97				
6-18-6	1.59	1.62	1.65	1.57	1.6								

Application Examples



INVISIO

SC5 Max Tested Sizes

Wind Pressure up to 0.8 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					11.79	11.19	10.59	10.14	9.69	9.46	9.24	8.54	7.83
8-18-6			7.62	7.51	7.11	7	6.89	6.76	6.66				
6-18-6	5.7	5.61	5.52	5.43	5.34	5.25	5.25						

Wind Pressure up to 1.6 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					5.97	6.21	6.45	6.3	6.15	5.89	5.64	5.38	5.12
8-18-6			5.79	5.72	5.64	5.7	5.55	5.51	5.48				
6-18-6	4.53	4.51	4.89	4.87	4.86								

Application Examples



INVISIO

SC6 Max Tested Sizes

Wind Pressure up to 0.8 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					10.71	10.23	9.75	9.45	9.15	8.87	8.86	8.7	8.54
8-18-6			5.96	5.24	4.51	4.72	4.92	4.89	4.87				
6-18-6	3.84	3.81	3.78	3.76	3.75	3.73	3.7						

Wind Pressure up to 1.6 kN/m²

Opening height (m)	2	2.25	2.50	2.75	3	3.25	3.50	3.75	4	4.25	4.50	4.75	5
10-14-8					5.35	4.99	4.63	4.55	4.46	4.42	4.38	4.34	4.27
8-18-6			3.99	3.97	3.95	3.93	3.91	3.88	3.86				
6-18-6	3.34	3.32	3.29	3.28	3.25								

Application Examples



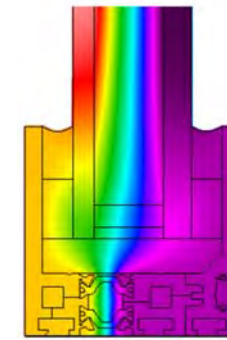
INVISIO

Thermal Performance

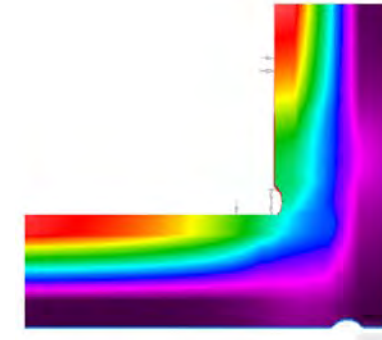
Invisio is the UK's first and only fully thermally broken structural glazing system. The integration of a thermal break within the glass fixing system enables high levels of thermal insulation and no cold bridging. The Invisio system has been professionally tested in accordance with the highest industry standards, and has been proven to be an excellent product in terms of Thermal Transmittance with a tested U_w value of 1.1 W/m²K using double glazing.

Thermal performance calculation in accordance with BS EN ISO 10077-1:2017

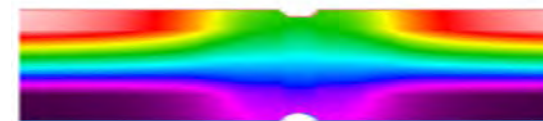
Head and Jamb



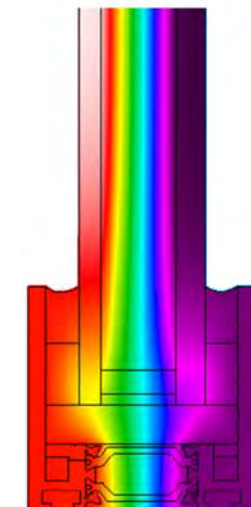
Corner Meeting



Linear glass Meeting



Sill





Stone Haven

SC1 structural glass windows to a high wind load, coastal contemporary house

Architect Woodford Architecture & Design

Cornwall, UK

St John Street

A rooftop commercial office extension with frameless structural glazing, supported by minimal steel T sections.

Architect AWW

Islington, London, UK



INVISIO

Rooflight + Floorlight

This specialist section of the Invisio range allows for the creation of frameless glass roofs, rooflights and floors. The thermally broken T section has been designed to be adapted to many installation types, offering a minimal design with exceptional performance for all projects.

Glass Specification

Typical Spec	8mm TXD / 16mm argon gas cavity with warm edge spacers / 13.5mm TXD-SGP-LAM with low e coating. Laminated inner pane essential for safety in any roof glazing. All overhead glazing should include a laminated inner pane. Glass structurally bonded into frame for increased security and minimal aesthetics.
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Glass Options	Any coated or laminated glass solution including solar control, low maintenance, privacy glass, heated glass and more.
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Glass Edge	Flush / Stepped
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Glass Thickness	Up to 37.5mm
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Typical Ug Value	1.1 W/m ² K
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Frame Specification

Insulation	Frame is fully thermally broken with an integrated polyamide thermal break. Ensures proper insulation not possible with alternative systems. No condensation on internal frame like other systems.
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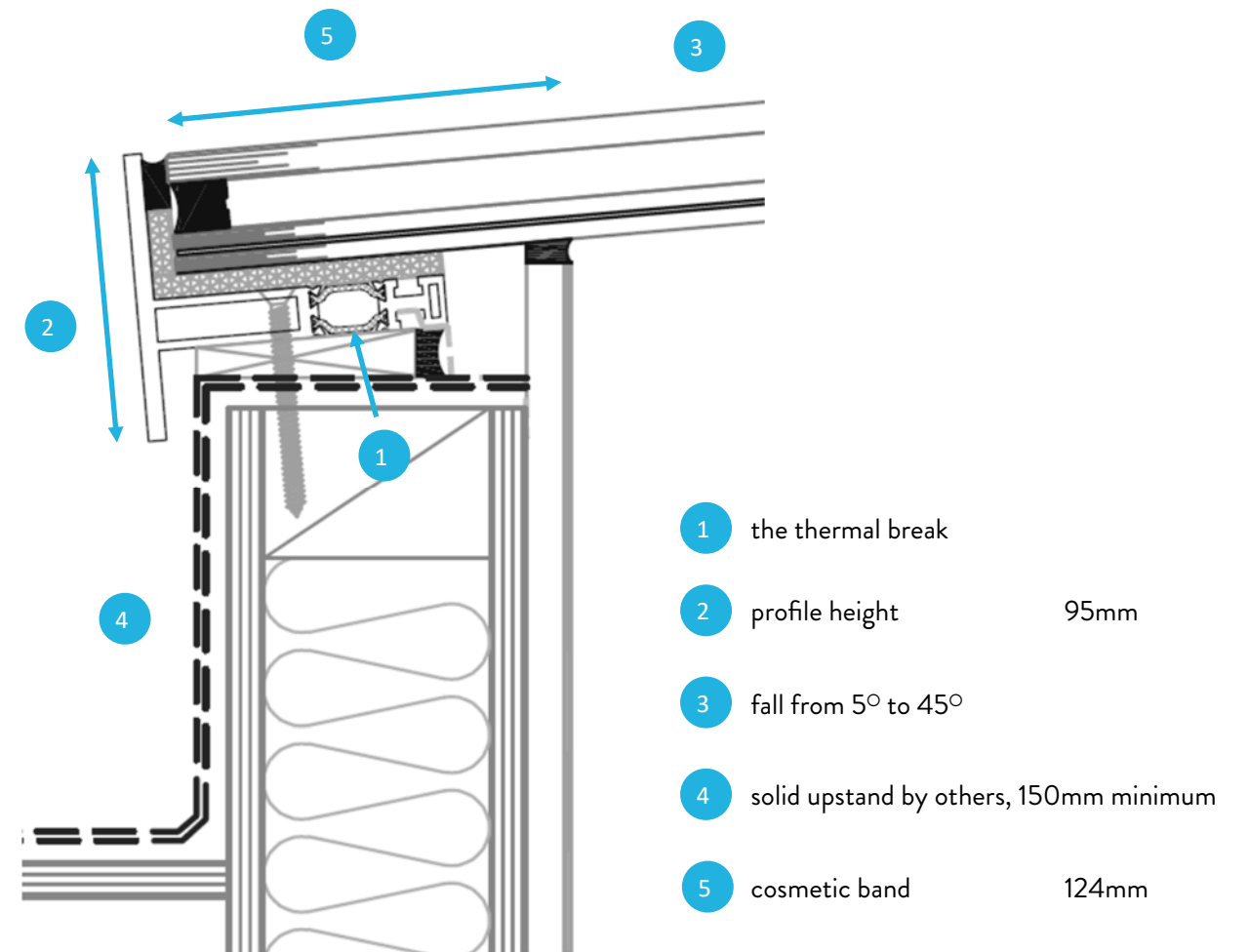
Finishes	PPC in RAL colours 7016 / 9005 as standard, additional RAL colours incur additional costs and increased lead times. Dual Colour with PPC 9016 internal finish available on request.
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Configurations	Single Roof / Floors Lights / Multi pane glass roofs. Square or rectangular, other shapes available on request.
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Max Sizes	no max size. Recommended max size for single RL 1.5m x 3m, larger multi pane glass roofs dependant on weights. Silicone joints over 1.2m may require additional internal supports such as glass beams of steel sections.
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INVISIO

Rooflight Horizontal Section



Performance

Recommended Max Snow Load	1.26 KN/m ² (for flat rooflight) 2.02 KN/m ² (for 45° fall rooflight)
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Thermal Performance	Uw 1.2 W/m ² K example Uw based on reference test on rooflight 1.23m x 1.48m with Ug value 1.141 W/m ² K
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INVISIO

Glass Roofs Internal Support

Invisio structural glass roofs can be made to any size by combining multiple units of structural glazing to form a larger glass roof. Structural glass units are sealed together using structural silicone. If silicone joints exceed 1.2m additional internal supports below the silicone joints may be recommended.

Spans Under 1.2m—Strip Rooflights



Spans over 1.2m with Steel Sections



Spans over 1.2m with Glass Beam Support

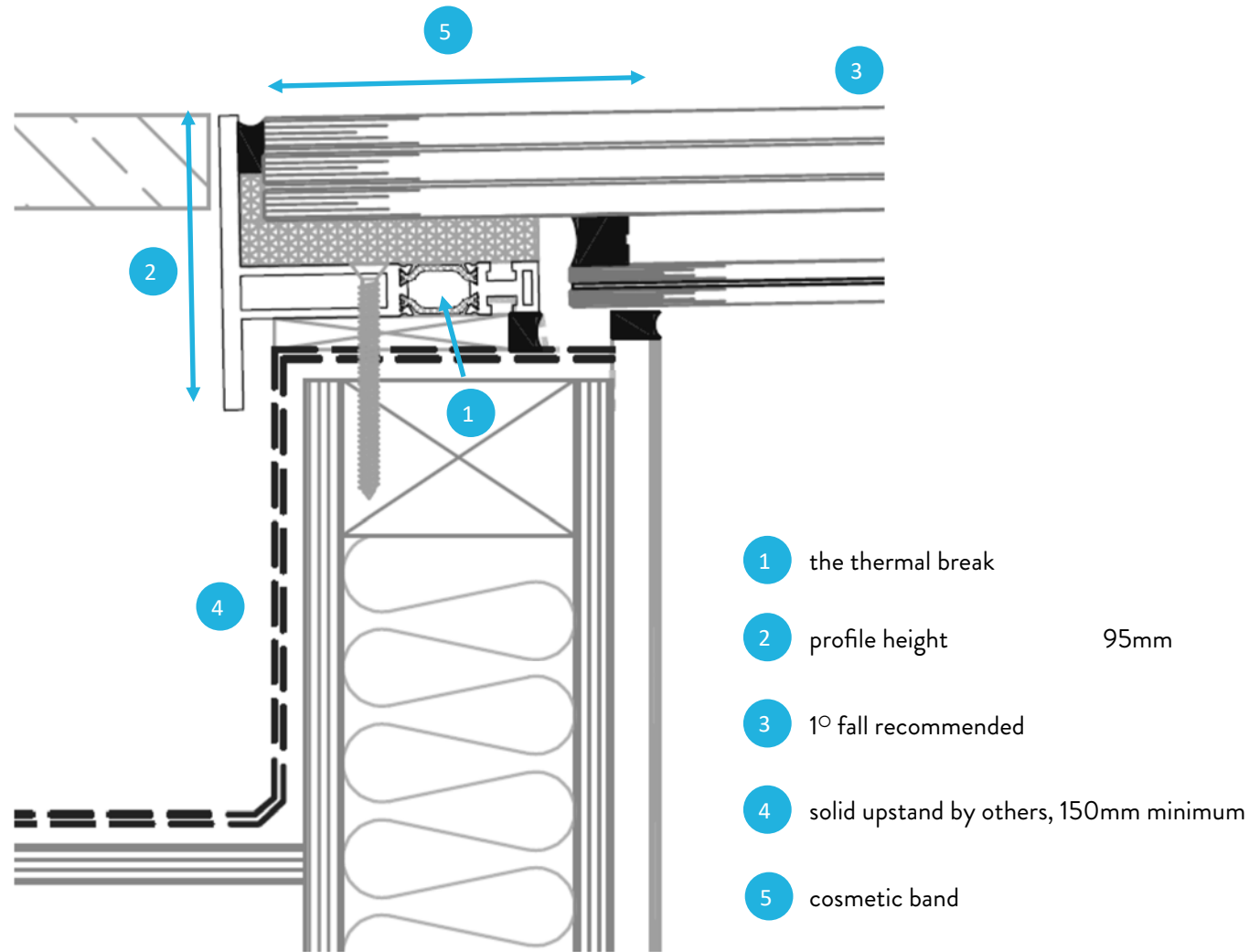


Glass Beam Specification

Glass Spec	44.5mm TXD-LAM Low Iron Glass
Depth	10mm for every 1m span le if the beam is 4m long the depth is 40mm
Fixing	Detailed to suit the building design and architectural specification. Brackets, exposed fixings, pig nose joints and more possible.

INVISIO

Floorlight Horizontal Section



Glass Specification

Typical Spec	67.5mm TXD-LAM / 14mm argon gas cavity with warm edge spacers / 13.5mm TXD-SGP-LAM with low e coating. Laminated inner pane essential for safety in any roof glazing. All overhead glazing should include a laminated inner pane. Glass structurally bonded into frame for increased security and minimal aesthetics.	Slip Resistance	Slip resistant finish recommended. Sandblasted 100% (PTV 50 in wet conditions) Ceramic Frit Pattern (PTV dependant on % coverage) Specialist Anti Slip Glass (size limitations apply)
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INVISIO

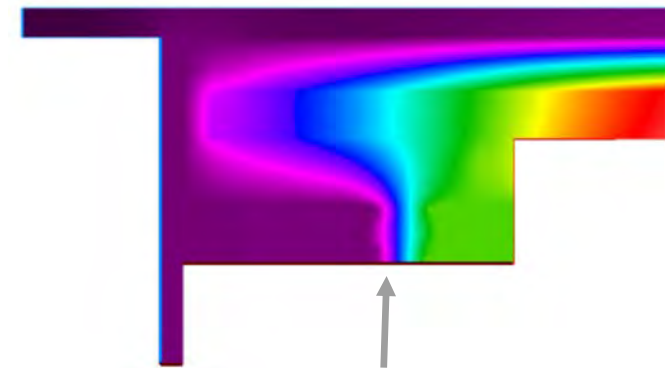
Thermal Performance

The specialist Invisio T section for glass roofs and floors has been tested in accordance with BS EN ISO 10077-1:2017 to demonstrate its thermal insulation. By looking at the resulting thermal models you can see the difference the integrated thermal break makes, providing a typical U_w value of 1.2 W/m²K.

Thermal performance calculation in accordance with BS EN ISO 10077-1:2017

Invisio Thermally Broken Roof Profile

Based on Invisio Rooflight Profile with Stepped DGU, U_g 1.1 W/m²K

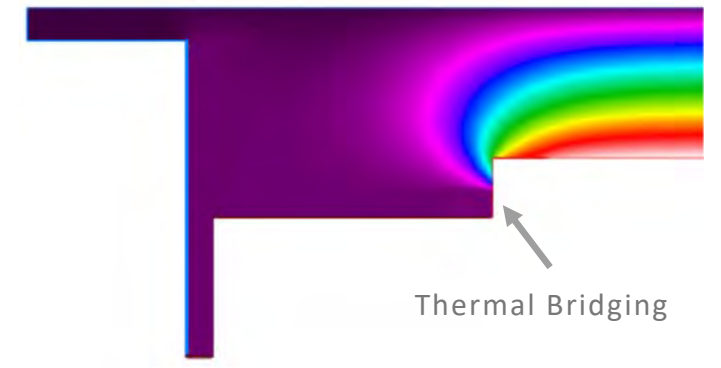


The thermal break stops any cold bridging

The thermal model highlights the performance of the thermal break, fully thermally separating the internal and external elements of the building

Non-Thermally Broken Profile

Based on typical structural glass fixing angle with Stepped DGU, U_g 1.1 W/m²K



Thermal Bridging

The thermal model shows significant thermal bridging resulting in cold internal surfaces and a reduction in thermal insulation.

Warwick Hall

RIBA award winning renovation to listed church, 'Up and Over' structural glass link between listed church and new community hall with strip RL to new community space.

Architect Acanthus Clews

Burford, UK

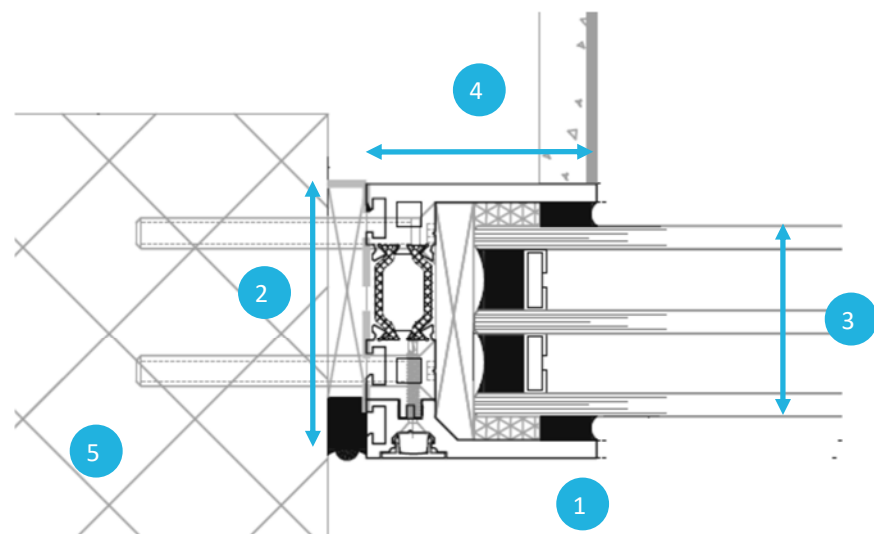


INVISIO

Invisio+

The Invisio+ profile allows you to push the boundaries of structural glazing. The deeper fixing profile allows for the use of triple glazed units and insulated glass units up to 62mm deep. Maximum glass sizes and wind resistance expectations remain unchanged but the deeper channel and improved performance of the glass unit provide an improvement in the U_w thermal insulation.

Typical Horizontal Section



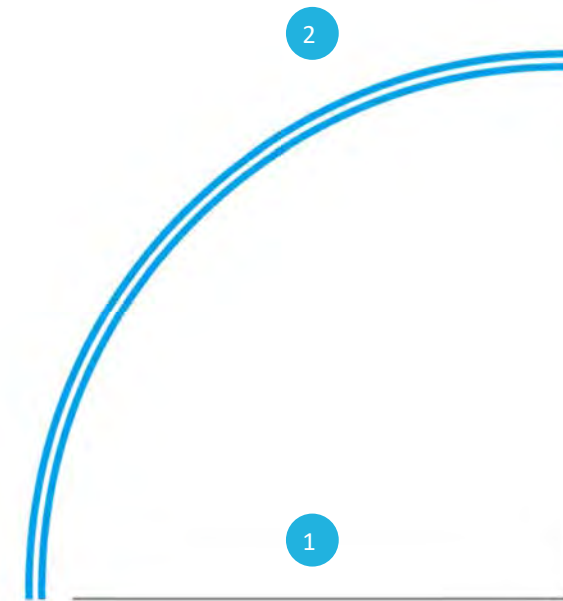
- 1 INV1+ section
- 2 profile depth 72mm
- 3 max glass unit 62mm
- 4 profile width 60mm
- 5 solid structure by others. Solid cast concrete / steel / 7N high density concrete block upstand max deflection 5mm

INVISIO

Invisio Curve

Curved structural glazing offers a feeling of fluidity and shape to modern building projects. The juxtaposition of clean minimal lines with gentle curves creates a new dimension to these architectural designs. All glass within the Invisio system is toughened as standard and it is the same with any curved unit.

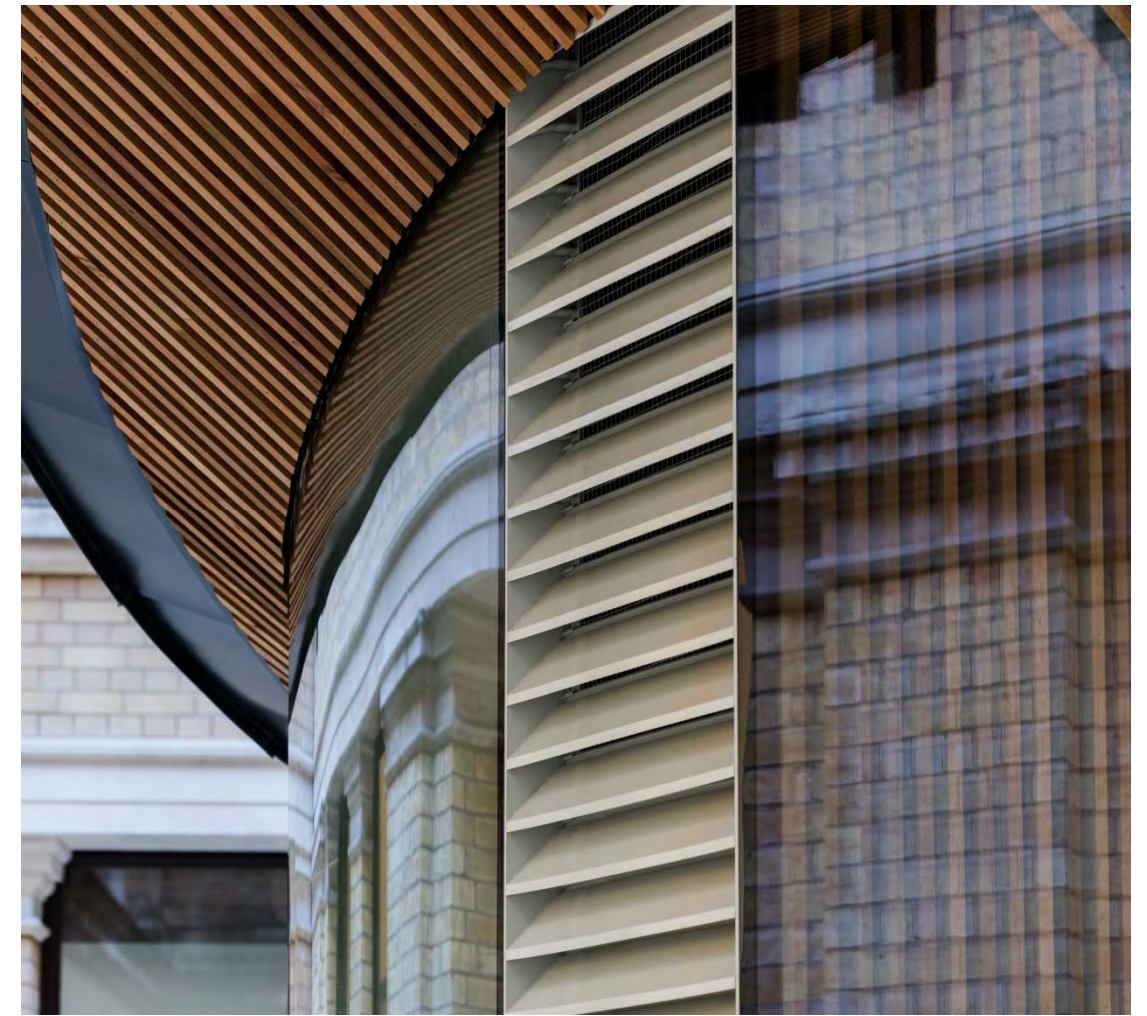
Technical Parameters



- 1 min radius 880mm (TXD glass DGU)
- 2 max glass depth 41.5mm

Specification

Glass Specification	Calculated on application depending on size, wind load and curve.
Tighter Curves	Tighter curves of down to 500mm radius may be possible depending on the glass specification. Contact us for further details.



King Charles Street

Invisio Curve structural glass walls to a new state of the art learning facility for the Foreign and Commonwealth Office

Architect Capita

London, UK

Gym and Pool House

A stand alone luxury garden gym and pool house to private home using SC2 Invisio structural glazing with Invisio Curve.



INVISIO

How to Specify

- UK Manufacture for Guaranteed Supply
- Efficient Lead Times
- No Limitation on Size
- Fully tested for wind loading
- Fully Thermally Broken Frame
- Flexible designs for structural glazing

The Invisio structural glazing system is available exclusively from IQ.

The easiest way to incorporate this specialist structural glazing system on your project is to speak to the team at IQ. Full example CAD details and costing are available on request.

Speak to the team at IQ

The team at IQ are the experts in our product range. If you are considering using our products on your project speak to the team at IQ who will be able to start our in house cost and specification engineering service. We can also advise you on the best solution for your intended design, ensure that all specification criteria are met and advise the feasibility to areas of the installation you may not have considered.

Get a Quotation

As part of our engineering service we will create a quotation for the works in question. This allows us all to ensure that the proposed design is within budget. If it is not we can help you adjust the specification to reach all performance, design and budgetary requirements.

Add us to your NBS Specification

To assist you in specification we have created individual NBS Specification sheets for our systems. These, easy to navigate, documents contain all the vital information needed for specification. They are available for you to complete on your own, alternatively ask your sales representative at IQ to complete this on your behalf

Place the Order

When ready you (or your client or the builder) can then place the order for your architectural glazing with us. A full in-house handover will take place and your project will be passed to the contracts and design team. Once your



- Frameless glazing design
- Designed for effective installation
- Curved and triple glazing possible
- High performance glass specification
- A range of additional glass finishes possible
- Fully realised solution

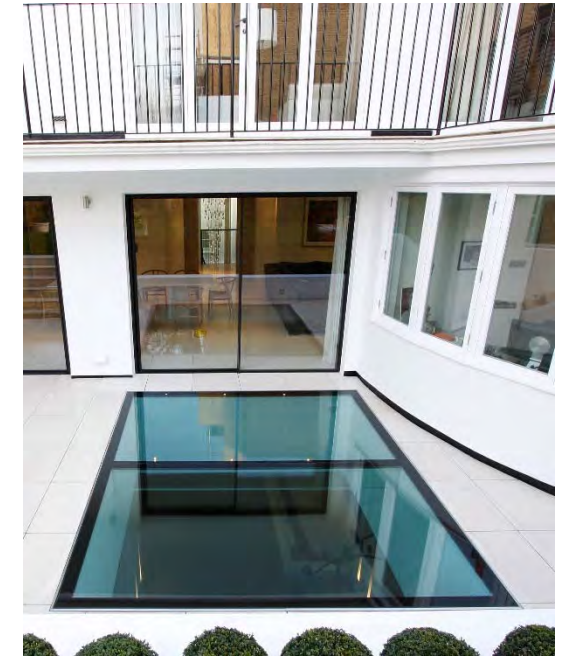
project deposit is placed we will then undertake full detailed design drawings for the installation and any other additional glazing works. Please allow at least 20 working days for the design process.

The project will be appointed a dedicated contracts manager who will oversee the installation process.

Where can I see the system before order?

We have several installations of structural glazing available to view at our showroom in Amersham.

If you or your clients would like to arrange a virtual or in person visit to the showroom just contact us and arrange an appointment at the showroom.



INVISIO

Why to Specify

● Frameless Glass Design

Structural glazing is designed to be a frameless glass structure. All fixings are designed to be hidden within the building finishes for a frameless aesthetic. This all glass design creates a clear and impactful installation of glazing, offering a minimal design and clear views both out through the glazing and internally.

● No Limitation on Size

The Invisio system has been modelled showing the performance characteristics at various sizes. But these are by no means the limits! We can create structural glass installations of any size and design, in keeping with the architectural intent.

● Fully Thermally Broken Frame

Invisio is the next generation of structural glazing systems. The purpose designed glazing channel includes a full thermal break. This offers outstanding levels of thermal insulation from the frameless glazing as well as no cold bridging. Improved performance can be achieved through the use of the Invisio+ system which can hold a deeper triple glazed unit.

● Fully Tested for Wind and Thermal

Most of the most common applications of structural glazing have been pre-tested for wind resistance and thermal insulation. This provides architects and specifiers with peace of mind before specification that the system can withstand the harsh environments of the build. All wind load models were undertaken with strict requirements for deflection, ensuring that they surpass the requirements of building regulations.

● Ease of Installation

The Invisio system was designed in house by our glazing experts who have years of experience in the specification and install of structural glazing. The fixing channel has been expertly designed to ensure that installation and replacement is as easy as possible.

● Flexible Designs

The beauty of structural glazing is its ability to be adapted to suit the project design and required performance. The Invisio system is no different. Our expert detailing team can adapt and detail the Invisio system to suit any type of structural glazing installation required. We work with the architects and designers to get the required finish and performance.

● High Performance Glass Spec

When specifying structural glazing you must ensure that only the highest specification of glass is used. The Invisio system has been pre-tested to provide a range of high performance glass templates to work with. Our team will then work with the project team to ensure that the correct high performance glass is used. Additional glass options such as solar control coatings, laminated glazing, triple glazing, curved glazing and electrical glass (like heated glass) can all be included with an Invisio glass installation.

● UK Manufacture for Guaranteed Supply

The Invisio structural glazing system is fabricated by the IQ Glass Group's factory based in the UK. This provides specifiers with peace of mind regarding lead times and supply.



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