

Innovation case study - G2S
(Grid2Shell) and IoF (Internet of
Facades)



Alastair Common

Technical Director
Schüco



Co-located with:



Introducing:



18 – 21 FEBRUARY 2023

RIYADH FRONT EXHIBITION AND
CONFERENCE CENTER (RFECC)

SCHÜCO Presents: FACADES THAT MEET THE CHALLENGES OF CHANGE

Alastair Common
Technical Director

www.thebig5saudi.com



PRE-CONSTRUCTION SERVICES FOR BUILDING ENVELOPES (PCS)



Content

- 1. Schüco, the offerings we make**
- 2. Schüco | PCS : The Pre-Construction Services**
- 3. G2S**
 - 3.1 Gridshell: AL comparing to ST
- 4. PCS applied on G2S structures**
- 5. G2S – References we built**

THE FOUNDER OF OUR INDUSTRY

The logo features the number '70' in a stylized, multi-line green font. The '7' is composed of several parallel lines that curve at the top and bottom. The '0' is also composed of several parallel lines, forming a rounded, open-bottom shape. To the right of the '0', the text 'Years of Schüco' is written in a black, sans-serif font. 'Years of' is in a regular weight, while 'Schüco' is in a bold weight.

Years of
Schüco

THE OFFERINGS WE MAKE

OUR RANGE OF SOLUTIONS

BUILDING SKIN

DOORS,
WINDOWS,
FAÇADE
SOLUTIONS:
Curtain Wall
Stick and
Modular Unitized



MATERIALS

Aluminium
Steel
Fabric
PVC-U

THE OFFERINGS WE MAKE

OUR RANGE OF SOLUTIONS

BUILDING ENVELOPE

wrapping our skin around your building



MATERIALS

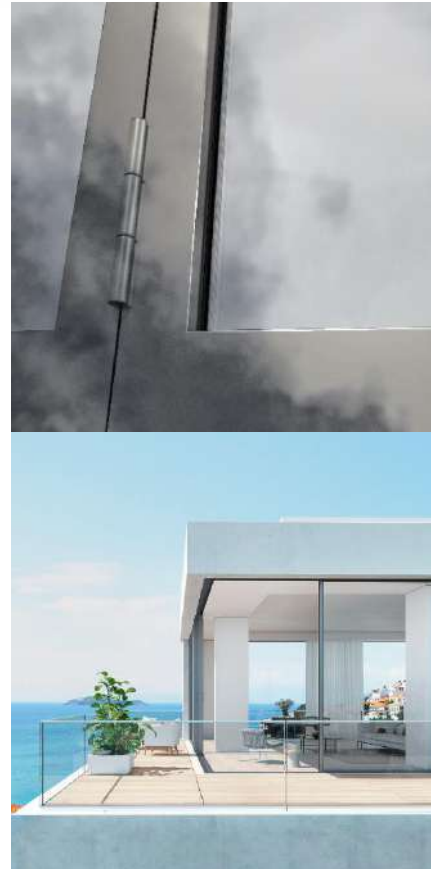
Aluminium

THE OFFERINGS WE MAKE

OUR RANGE OF SOLUTIONS

SAFETY

- Smoke Sealing
- Fire Rated
- Glass Balustrade



SECURITY

- Burglar Resistant
- Bullet Proof
- Blast Resistant

+ + + and products integrating combinations of Safety & Security features + + +

Roles and responsibilities





What the client asked for



Architectural Interpretation



Budget



What the client got

Without technical support



STARBUCKS

STOP

PCS Services

WHAT TO EXPECT

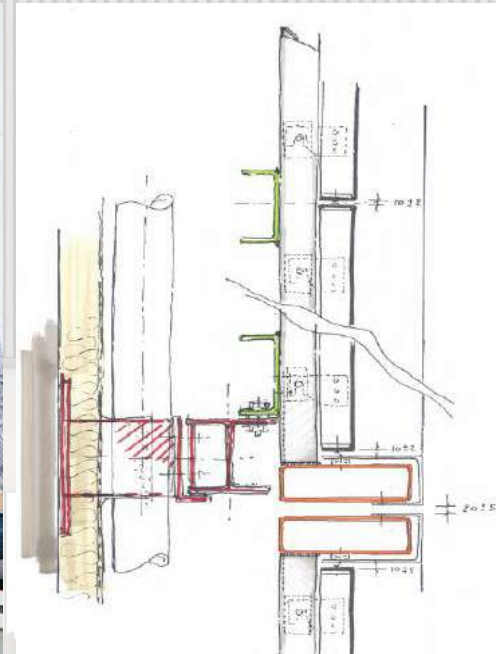
YOUR
INFORMED
DECISIONS
ARE OUR
PRIORITY



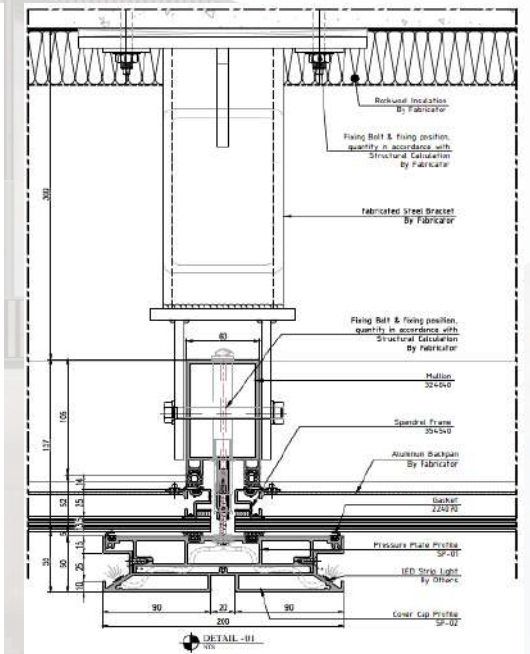
Listen & Connect



Understand the Intent



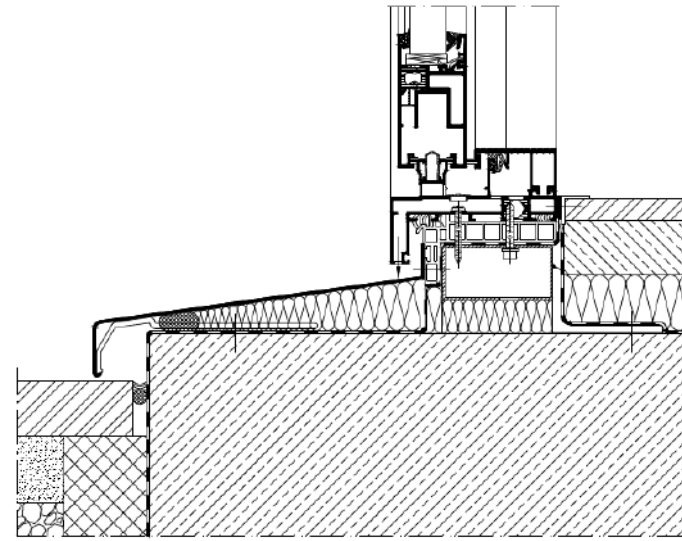
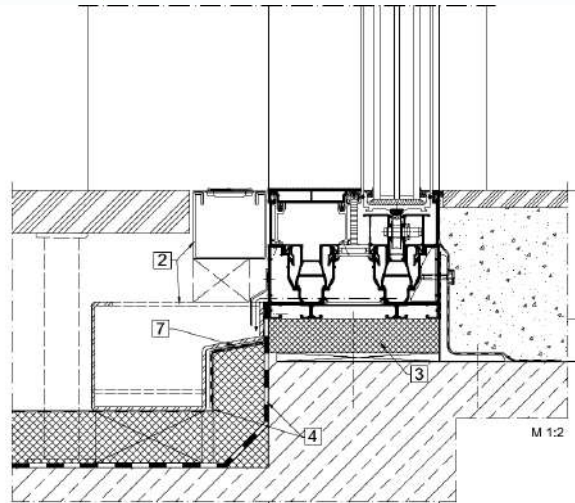
See Where Has Been Reached



Provide Solutions

PCS Services

WHAT NOT TO EXPECT



100 %

DO YOU HAVE A
SLIDER FOR 600PA
?



G2S™ - PCS Applied

Task: 1,400sqm canopy courtyard with shading feature



G2S™ - PCS Applied

. . . A SYSTEM THAT IS . . .

G2S™ - PCS Applied


✓ Parametric




G2S™ - PCS Applied

- ✓ Parametric
 - ✓ Versatile
- 


G2S™ - PCS Applied

- ✓ Parametric
 - ✓ Versatile
 - ✓ Aluminium: light, re-circled
- 


G2S™ - PCS Applied

- ✓ Parametric
 - ✓ Versatile
 - ✓ Aluminium: light, re-circled
 - ✓ Freedom of Design
- 

G2S™ - PCS Applied

- ✓ Parametric
 - ✓ Versatile
 - ✓ Aluminium: light, re-circled
 - ✓ Freedom of Design
 - ✓ Easy Fabrication
- 

G2S™ - PCS Applied

- ✓ Parametric
 - ✓ Versatile
 - ✓ Aluminium: light, re-circled
 - ✓ Freedom of Design
 - ✓ Easy Fabrication
 - ✓ Easy Installation: pre assembled modules
- 

G2S™ - PCS Applied

- ✓ Parametric
- ✓ Versatile
- ✓ Aluminium: light, re-circled
- ✓ Freedom of Design
- ✓ Easy Fabrication
- ✓ Easy Installation: pre assembled modules
- ✓ Cost Effective

G2S™ - PCS Applied

. . .from the **G**ridlines of the designer **to** the
geodesic structural **S**hell for the Engineers . . .

G2S™ - PCS Applied

. . .from the **G**ridlines of the designer **to** the
geodesic structural **S**hell for the Engineers . . .

. . . from **G**rid **to** **S**hell . . .

G2S™ - PCS Applied

. . .from the **G**ridlines of the designer **to** the
geodesic structural **S**hell for the Engineers . . .

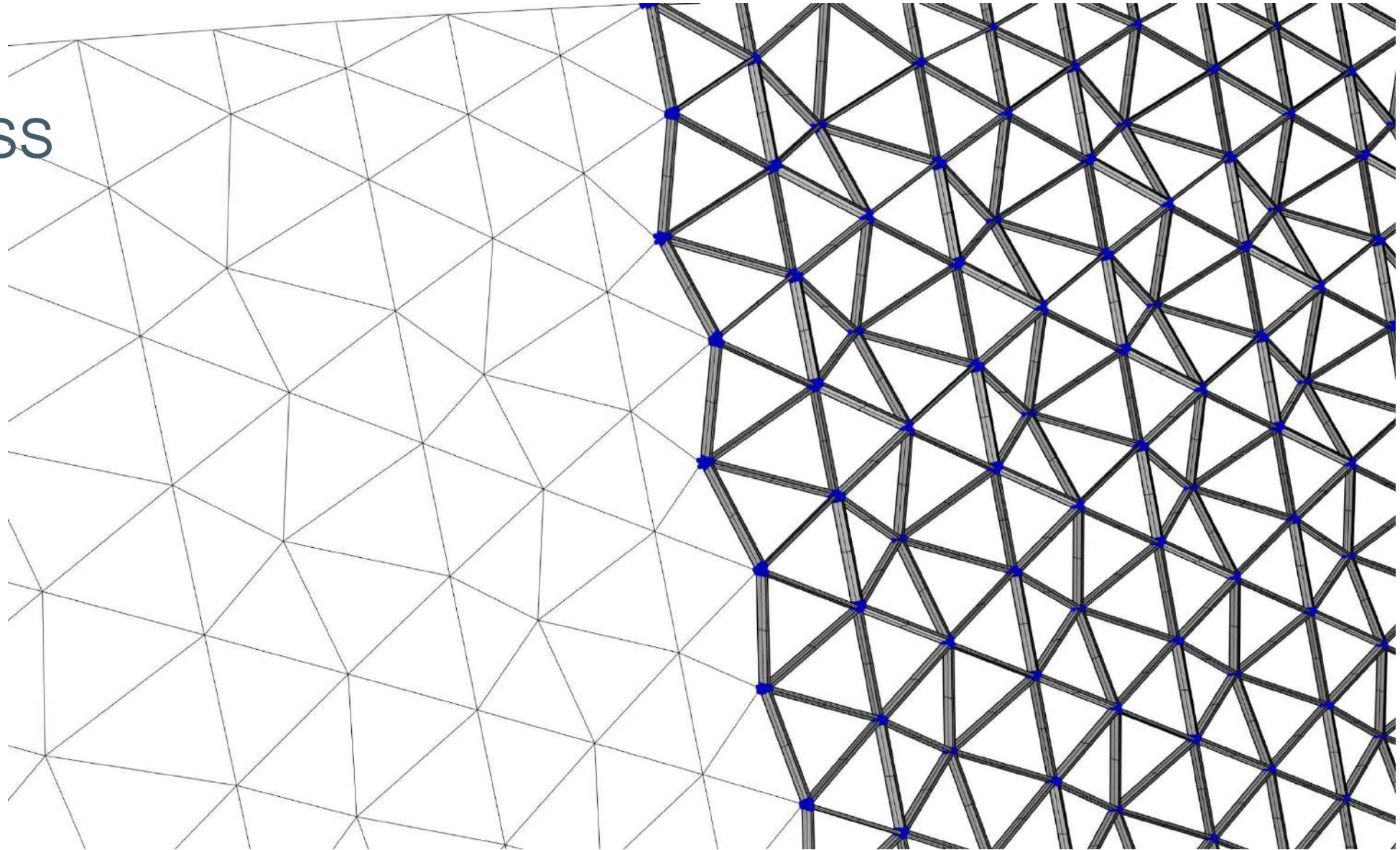
. . . from **G**rid **to** **S**hell . . .

G2S

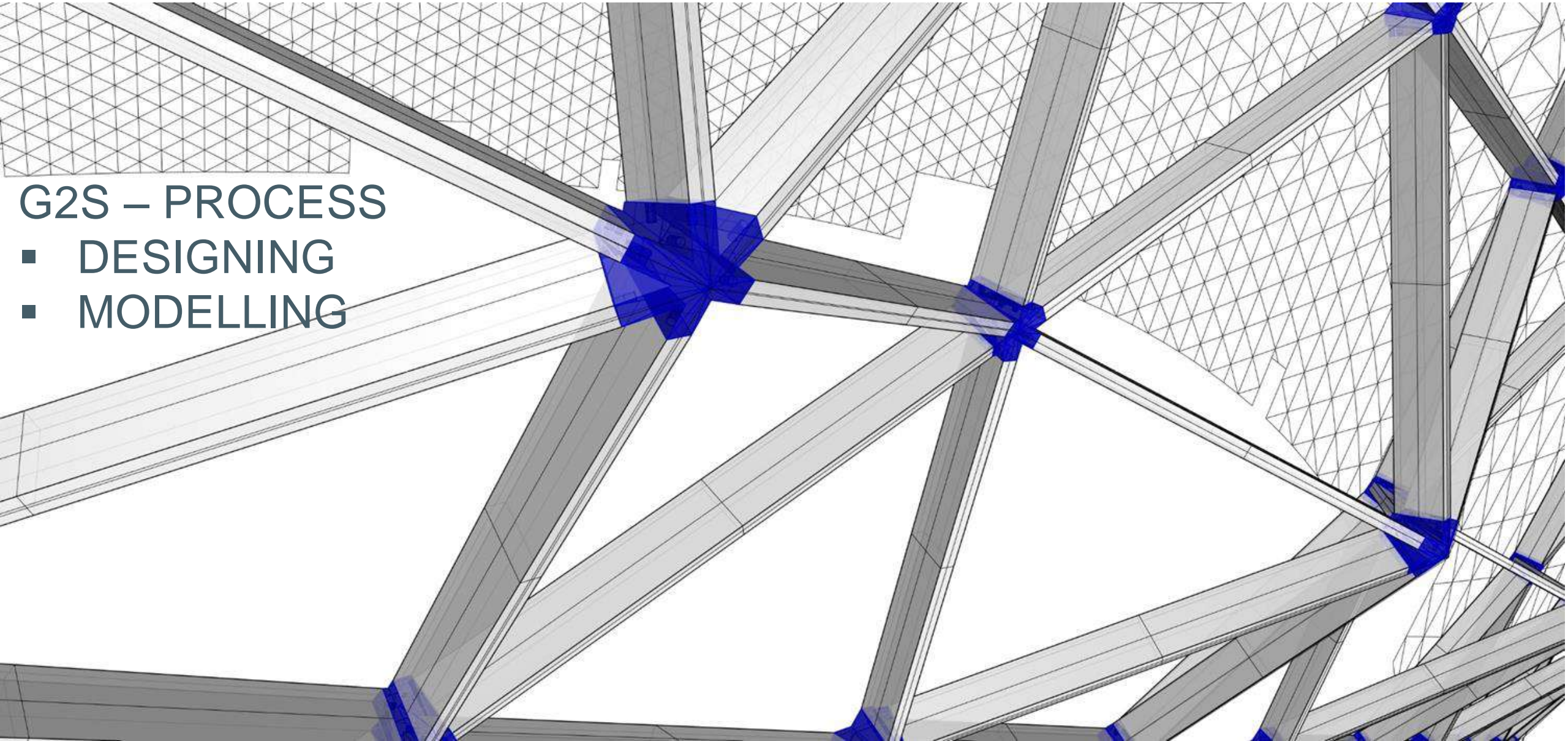
G2S™ - The System

G2S – PROCESS

- DESIGNING



G2S™ - The System



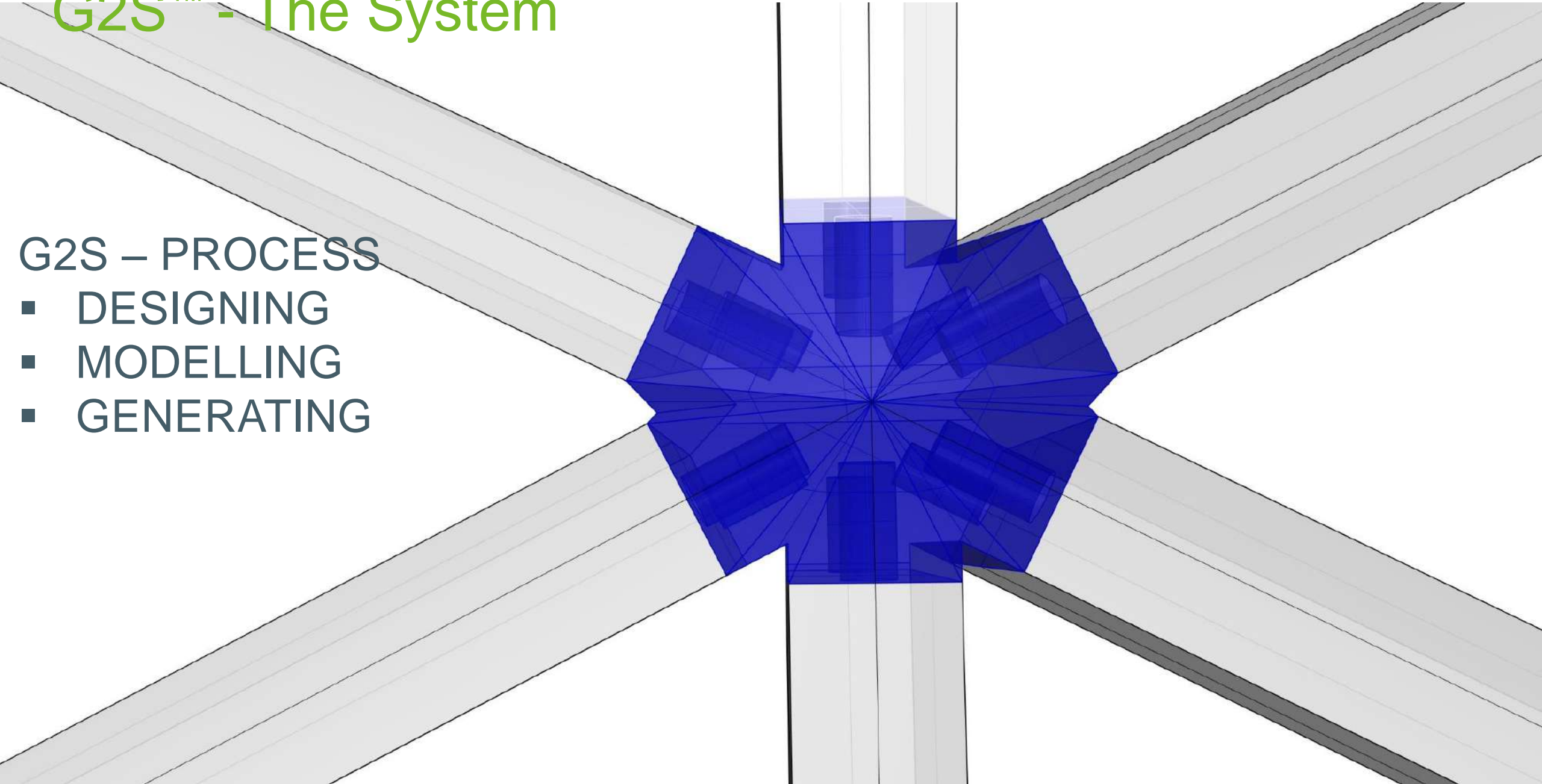
G2S – PROCESS

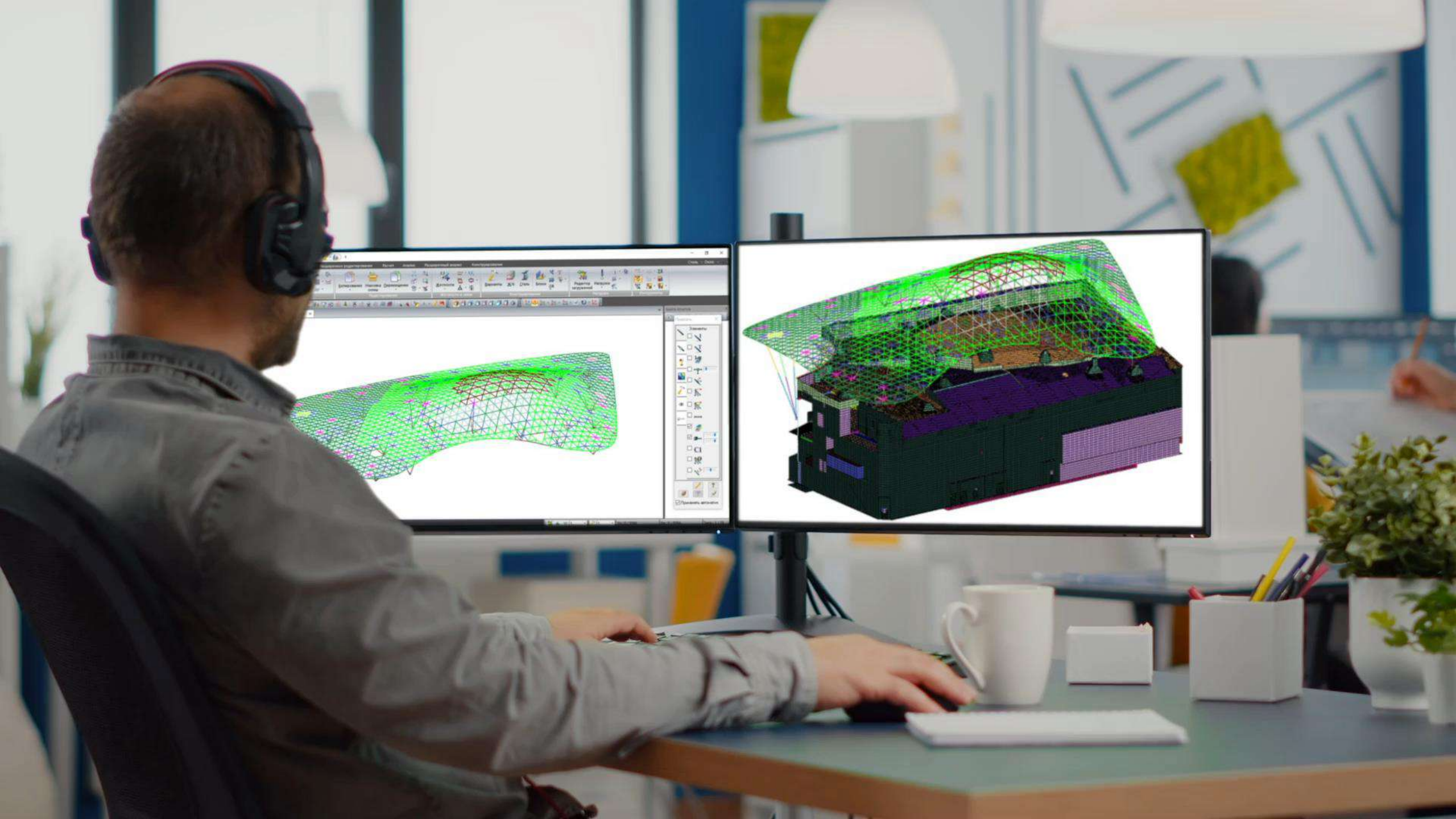
- DESIGNING
- MODELLING

G2S™ - The System

G2S – PROCESS

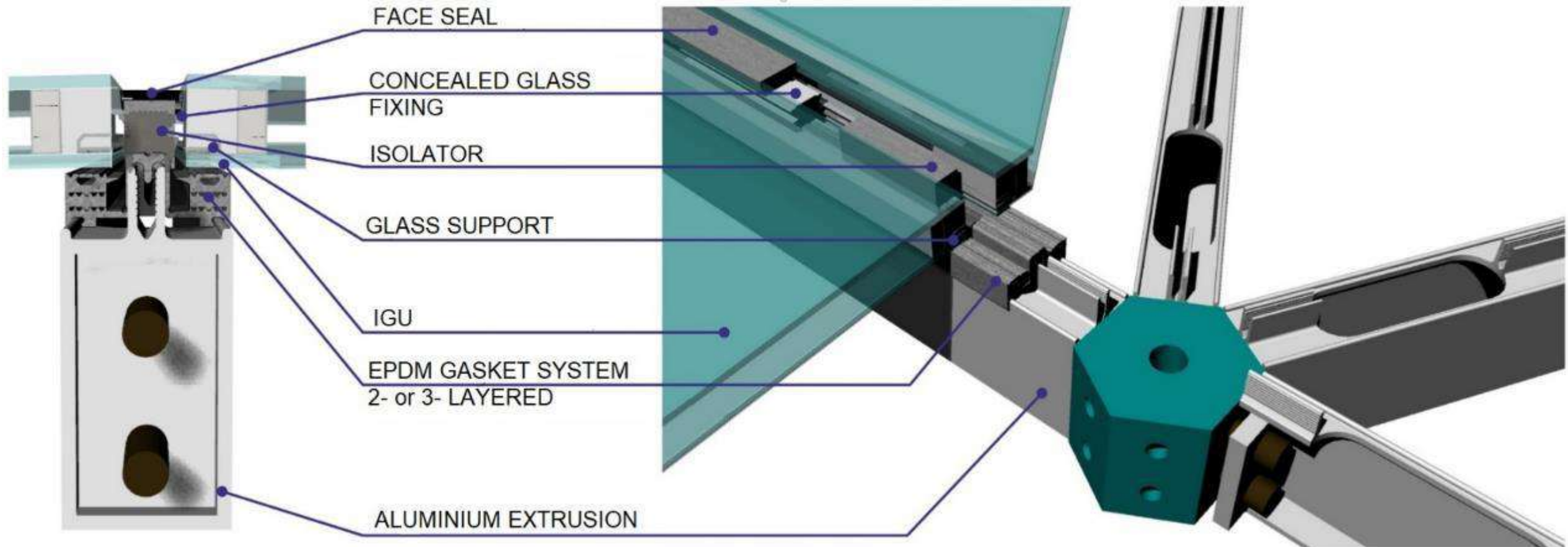
- DESIGNING
- MODELLING
- GENERATING





G2S™ - The System

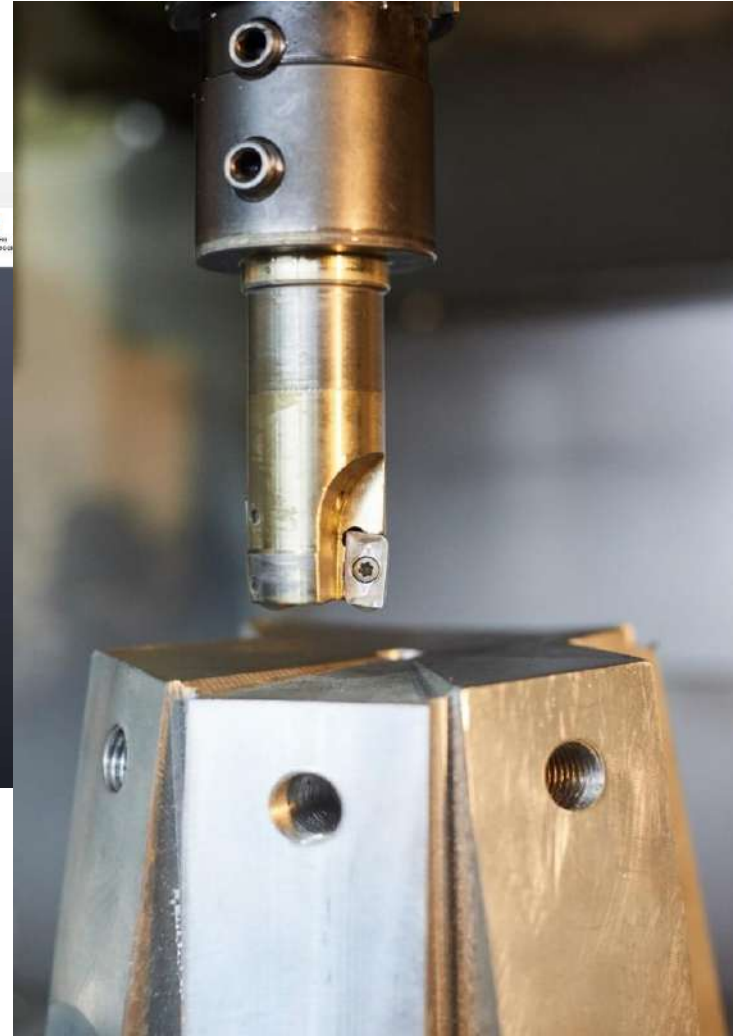
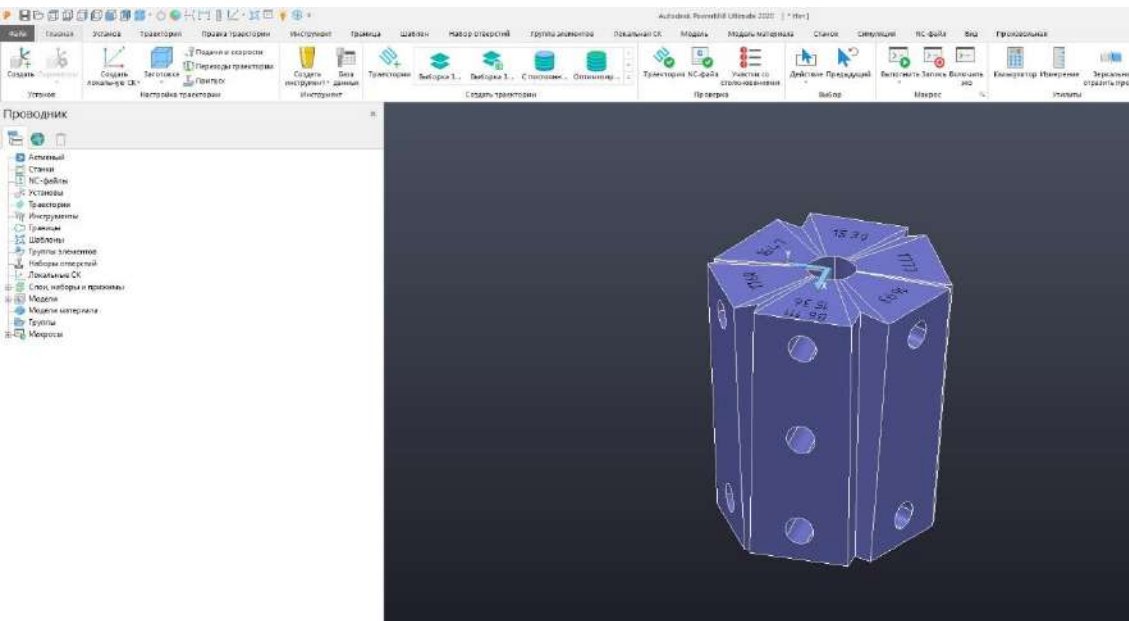
Solution presented: G2S



G2S™ - The System

Aesthetics - unprecedented

NODES ...designed and milled to **PERFECTION**

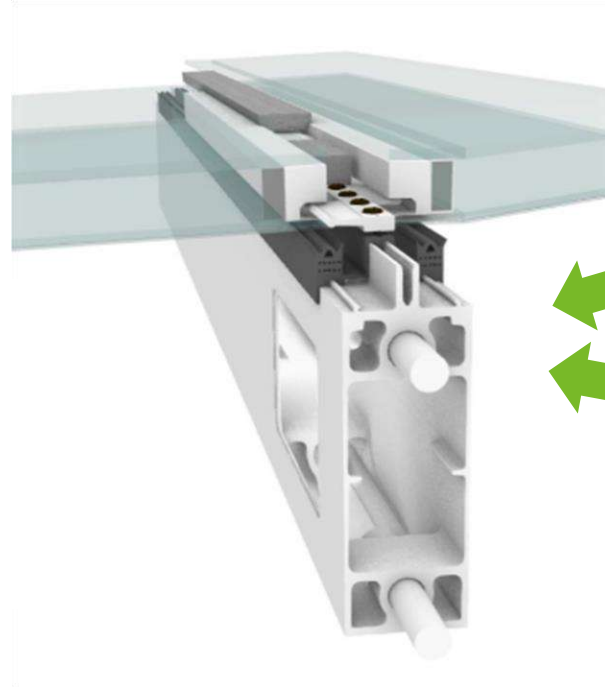


G2S™ - The System

Aesthetics - unprecedented

ALuminum

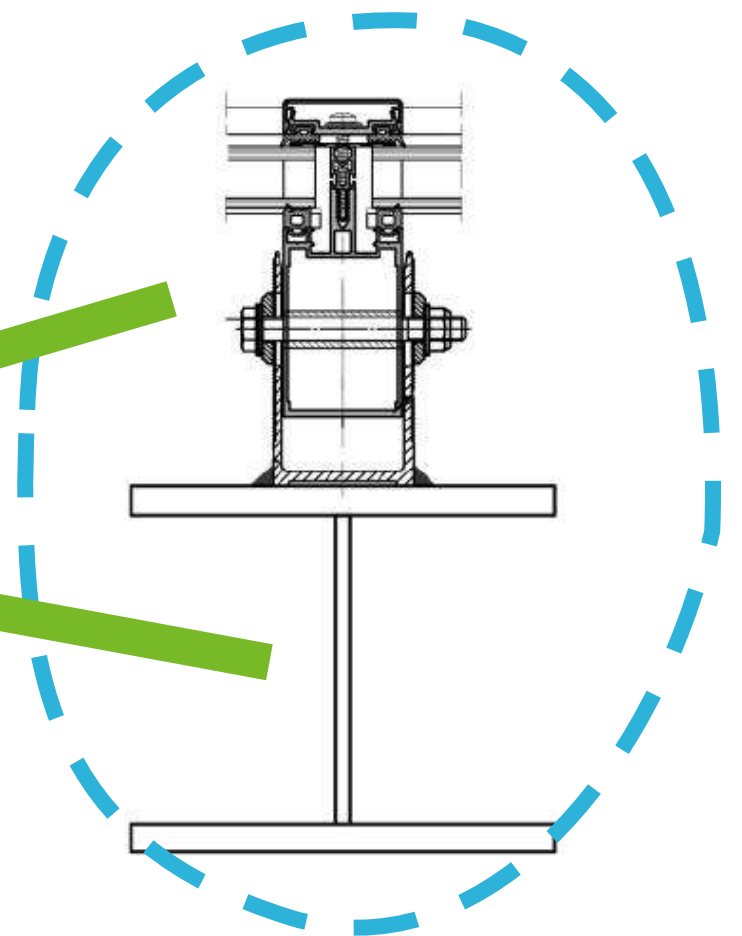
- G2S structure doesn't need any primary substructure
- G2S is the closure and structural part in one



High-strength
Aluminium alloy

Extruded Precisely

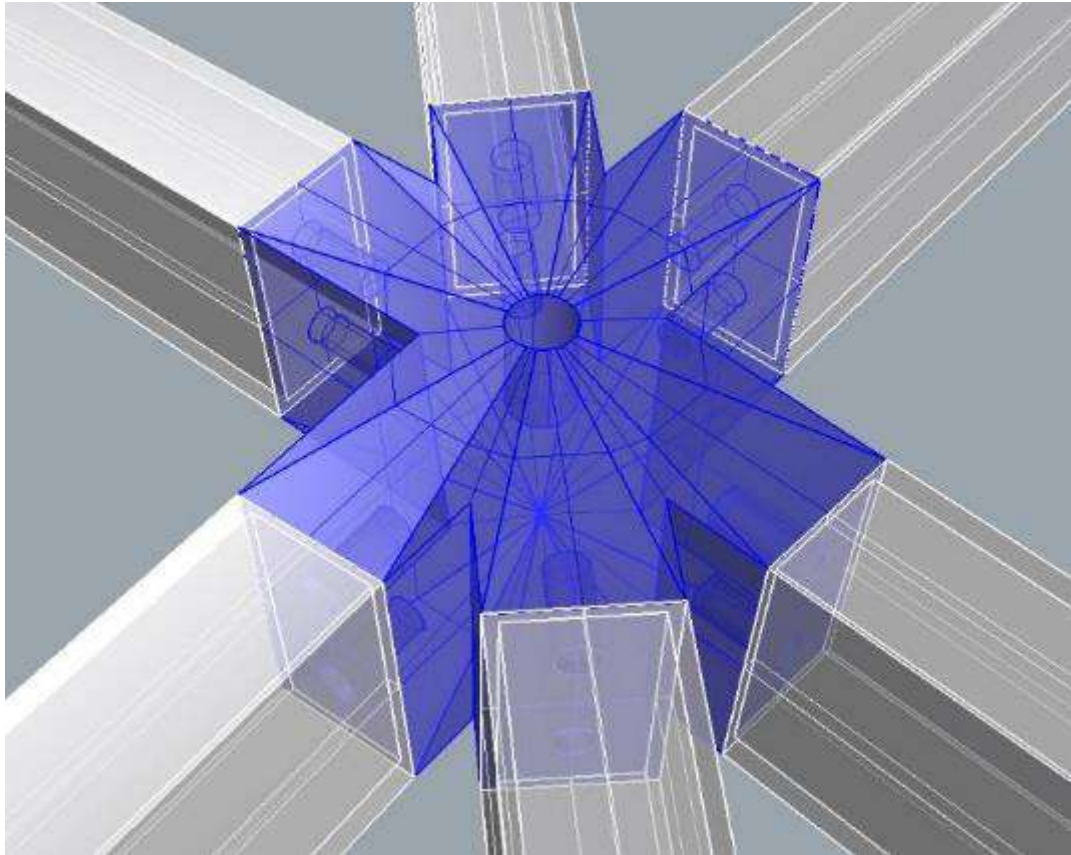
STeel



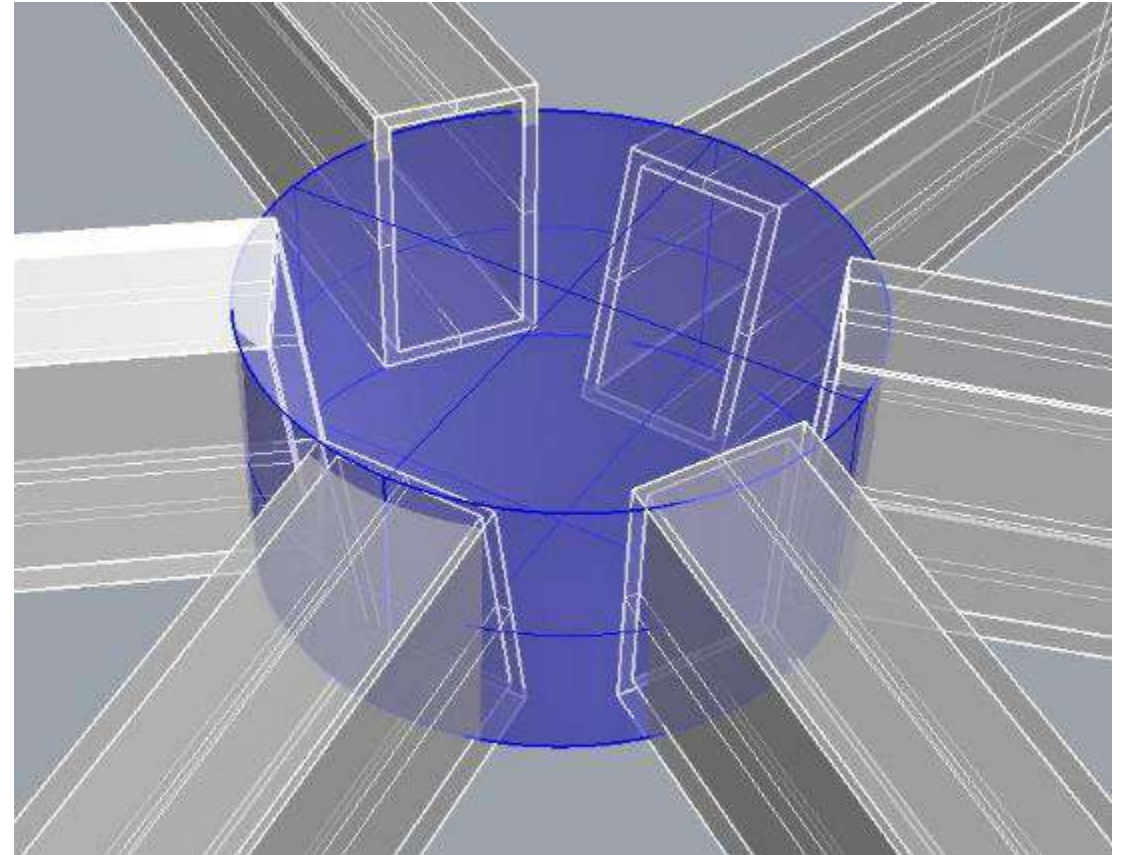
G2S™ - The System

Aesthetics - unprecedented

ALuminum



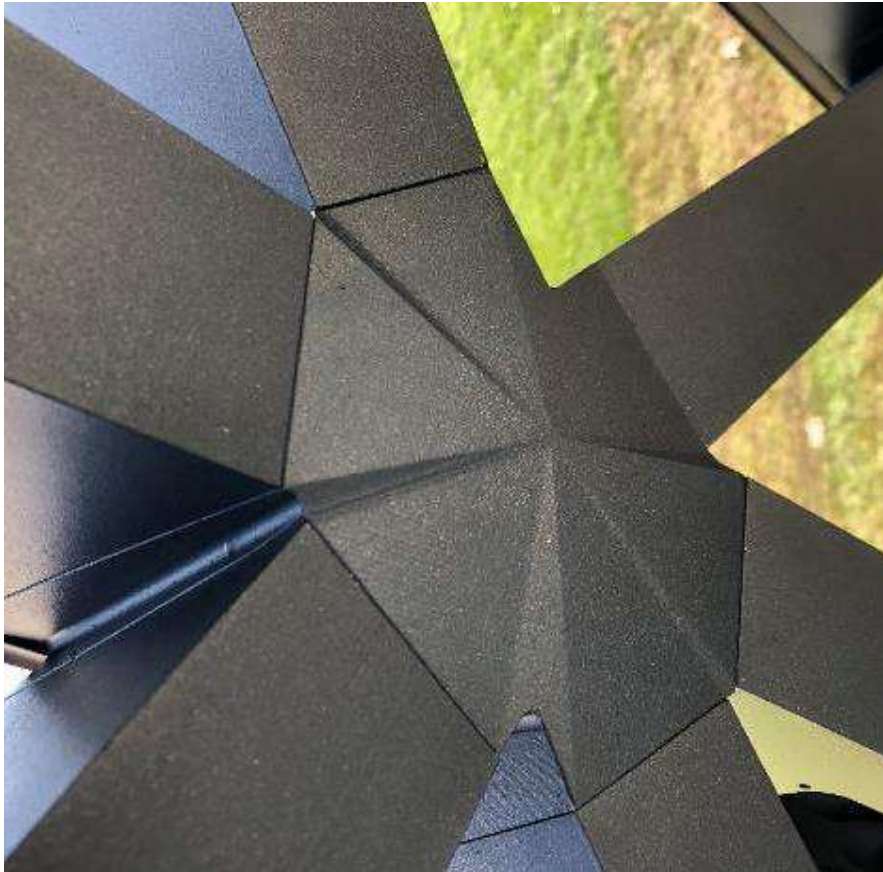
STeel



G2S™ - The System

Aesthetics - unprecedented

ALuminum



ST_{eel}



G2S™ - The System

Aesthetics - unprecedented

ALuminum



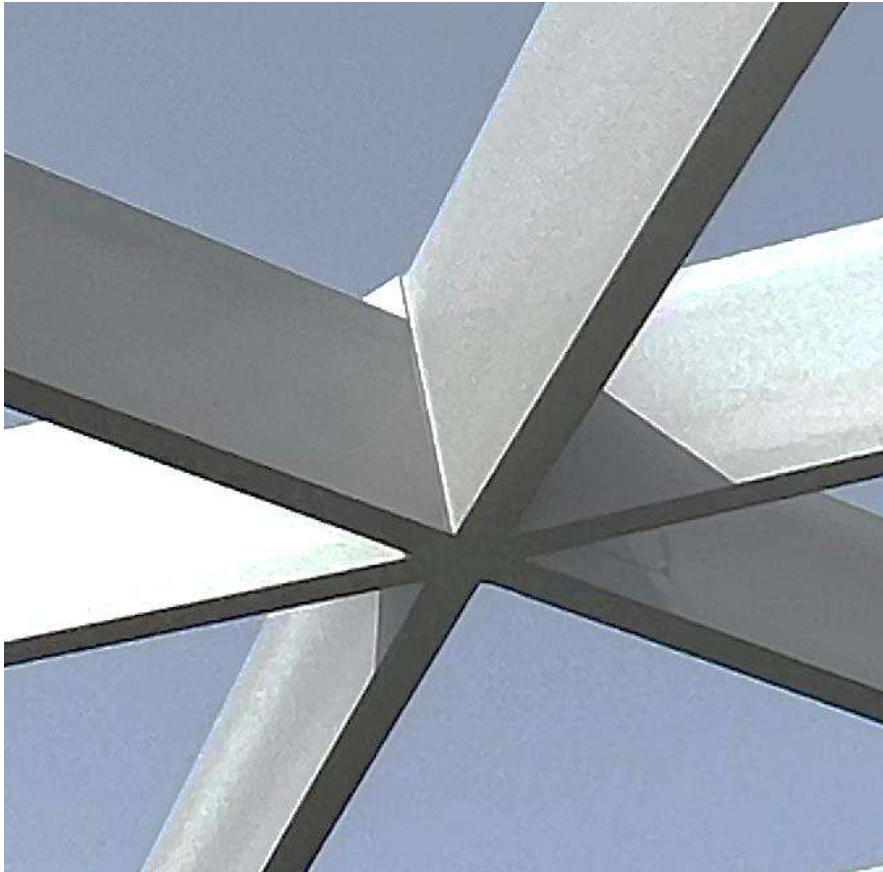
STeel



G2S™ - The System

Aesthetics - unprecedented

ALuminum



STeel

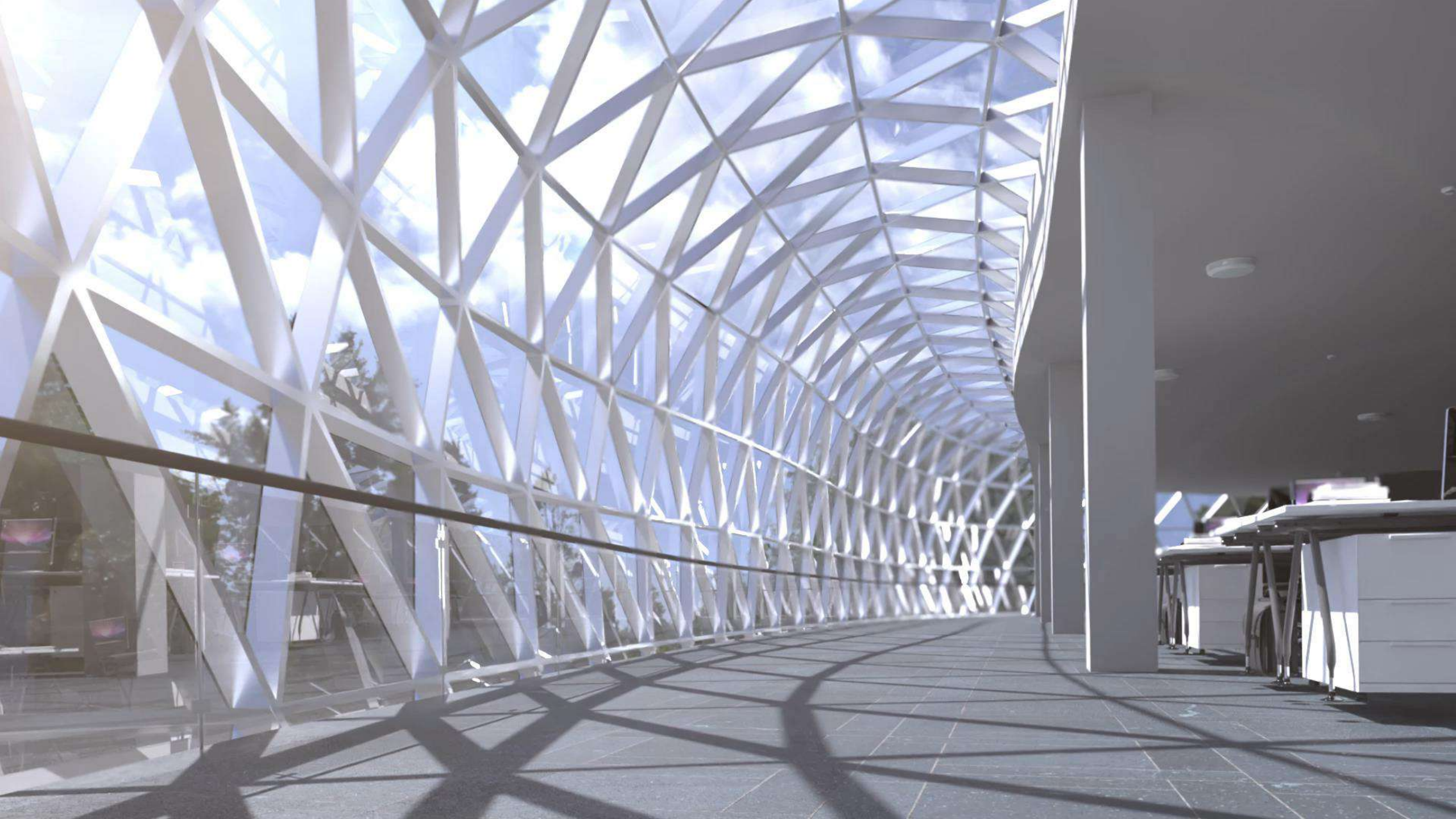


G2S™ - The System

Tested Extensively

ift-Nachweis		ift ROSENHEIM
Number	22-001124-PR03 (NW-B01-02-en-01)	
Owner	SCHÜCO International KG Karolinenstr. 1-15 33609 Bielefeld Germany	
Product	Curtain wall Stick construction	
Designation	System designation: Schüco Grid2Shell	
Details	Manufacturer: SCHÜCO International KG ; Material: Aluminium ; Overall dimensions (W x H): 6000 mm x 3800 mm	
Special features		
Result ¹⁾	<p>Air permeability according to EN 12152:2002-02  Class: A E</p> <p>Water-tightness according to EN 12154:1999-12  Class: RE 4500</p> <p>Resistance to wind load according to EN 13116:2001-07  Design load: + 4.5 kN/m² / - 4.5 kN/m² Safety load: + 6.75 kN/m² / - 6.75 kN/m²</p> <p>Impact resistance according to EN 14019:2016-06  Class: I5 / E5</p>	
<p>ift Rosenheim 30.09.2022</p> <p> Thomas Stefan, Dipl.-Ing. (FH) Head of Testing Department Building Component Testing</p> <p> Thomas Krichbaum Operating Testing Officer Building Component Testing</p>		
<p><small>1) EN 12152:2002-02 (12.2017)</small></p> <p><small>Notes on publication The IFT-Guidance Sheet "Advertising using IFT test documents" applies.</small></p> <p><small>Identity-Check</small>  www.ift-rosenheim.de/ift-openurl/ ID: 062-F283F</p>		
<p><small>ift Rosenheim GmbH Theodor-Götte-Str. 7-9 D-63028 Rosenheim</small></p> <p><small>Contact Phone: +49 8031 261-0 Fax: +49 8031 261-290 www.ift-rosenheim.de</small></p> <p><small>Testing and Calibration - EN ISO/IEC 17025 Inspection - EN ISO/IEC 17020 Product Certification - EN ISO/IEC 17065 Certification of Management Systems - EN ISO/IEC 17021</small></p> <p><small>Notified Body 0757 DIN EN ISO 9001:2015 DIN EN ISO 14001:2015</small></p> <p><small>DNV GL DAMK</small></p>		





G2S™ - Structures

SUCCESSFULLY
INSTALLED
EXTENSIVELY
ALREADY



G2S™ - PCS Applied

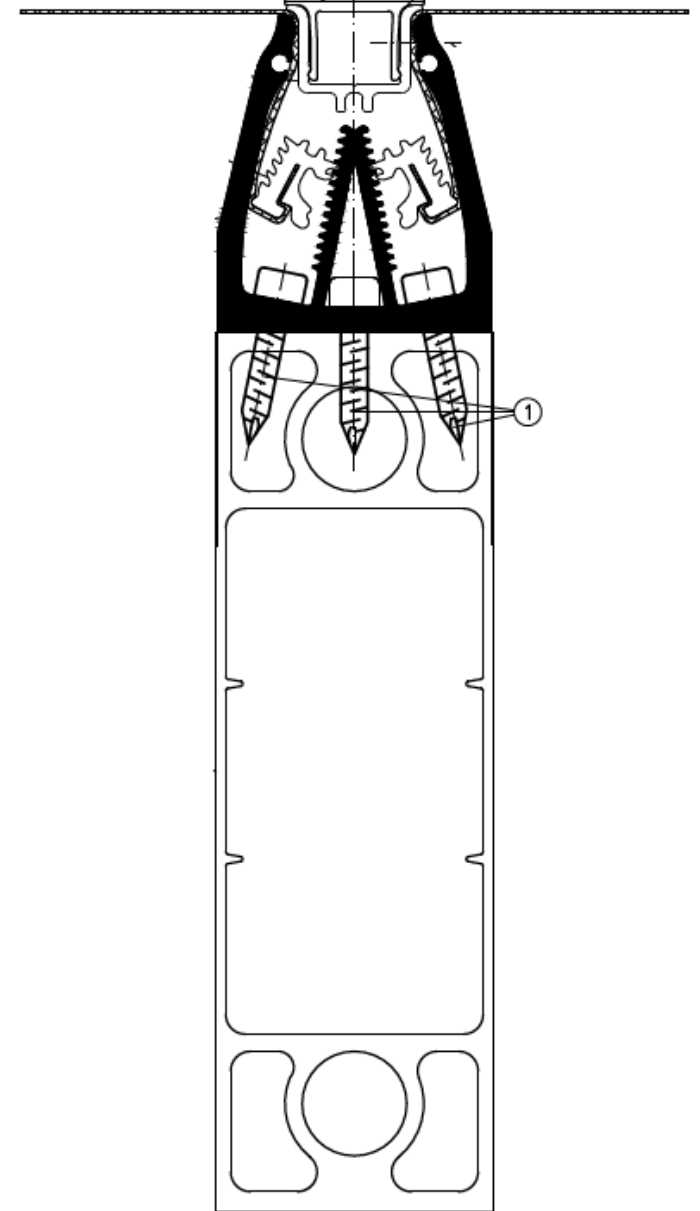
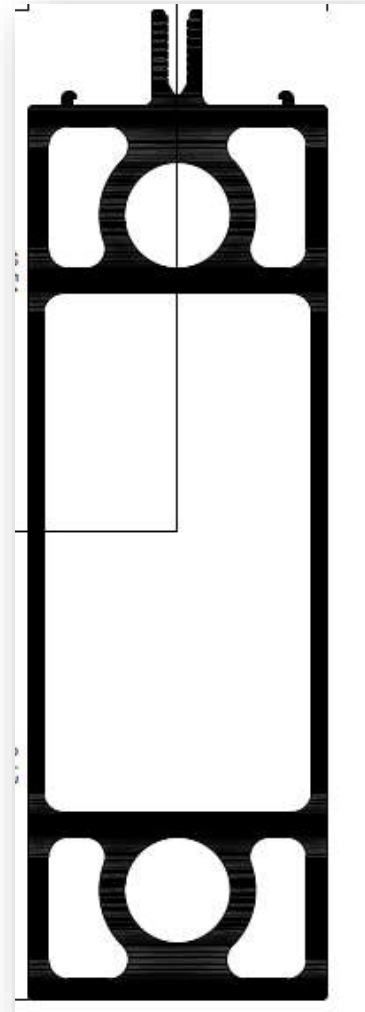
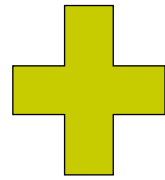
Task: 1,400sqm canopy courtyard with shading feature

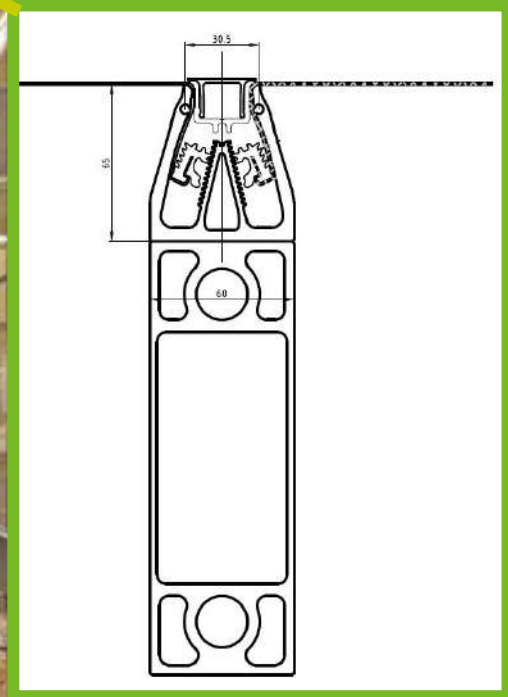






G2S™ + FACID = Iconic shading







G2S™ - PCS APPLIED

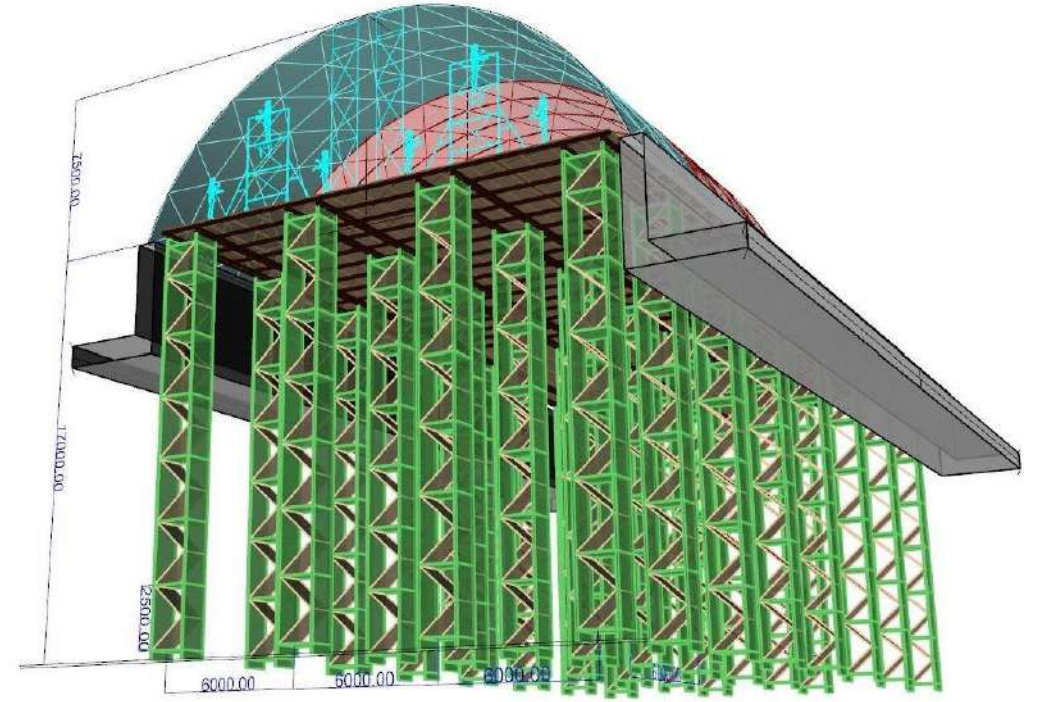
Installation hurdle of primary steel structure vs easy G2S assembly

ALuminum

- G2S structure doesn't need platforms or scaffoldings

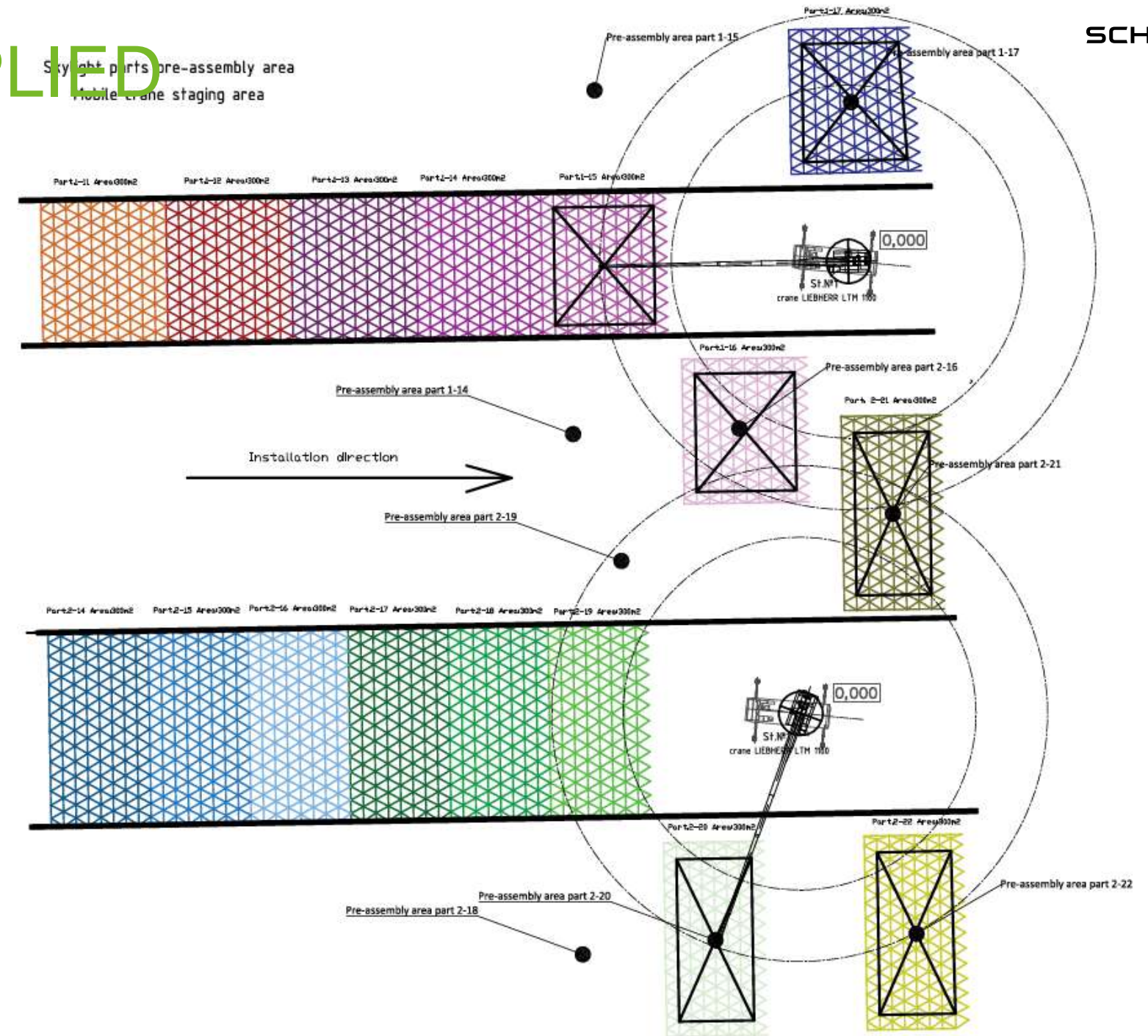
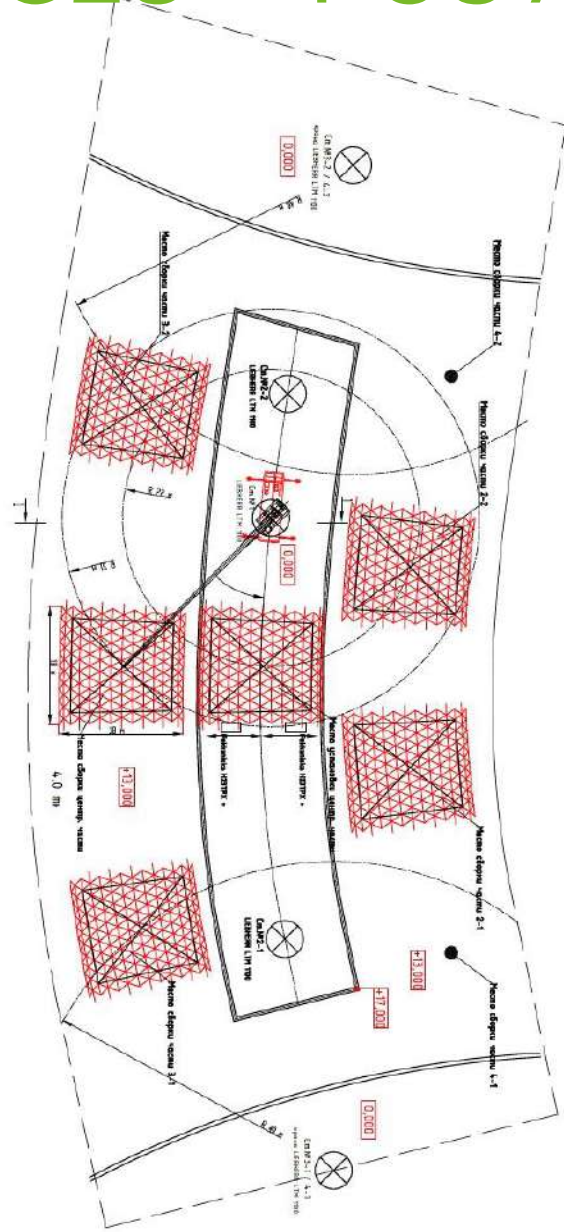


STeel



G2S™ - PCS APPLIED

Sky light parts pre-assembly area
Mobile crane staging area







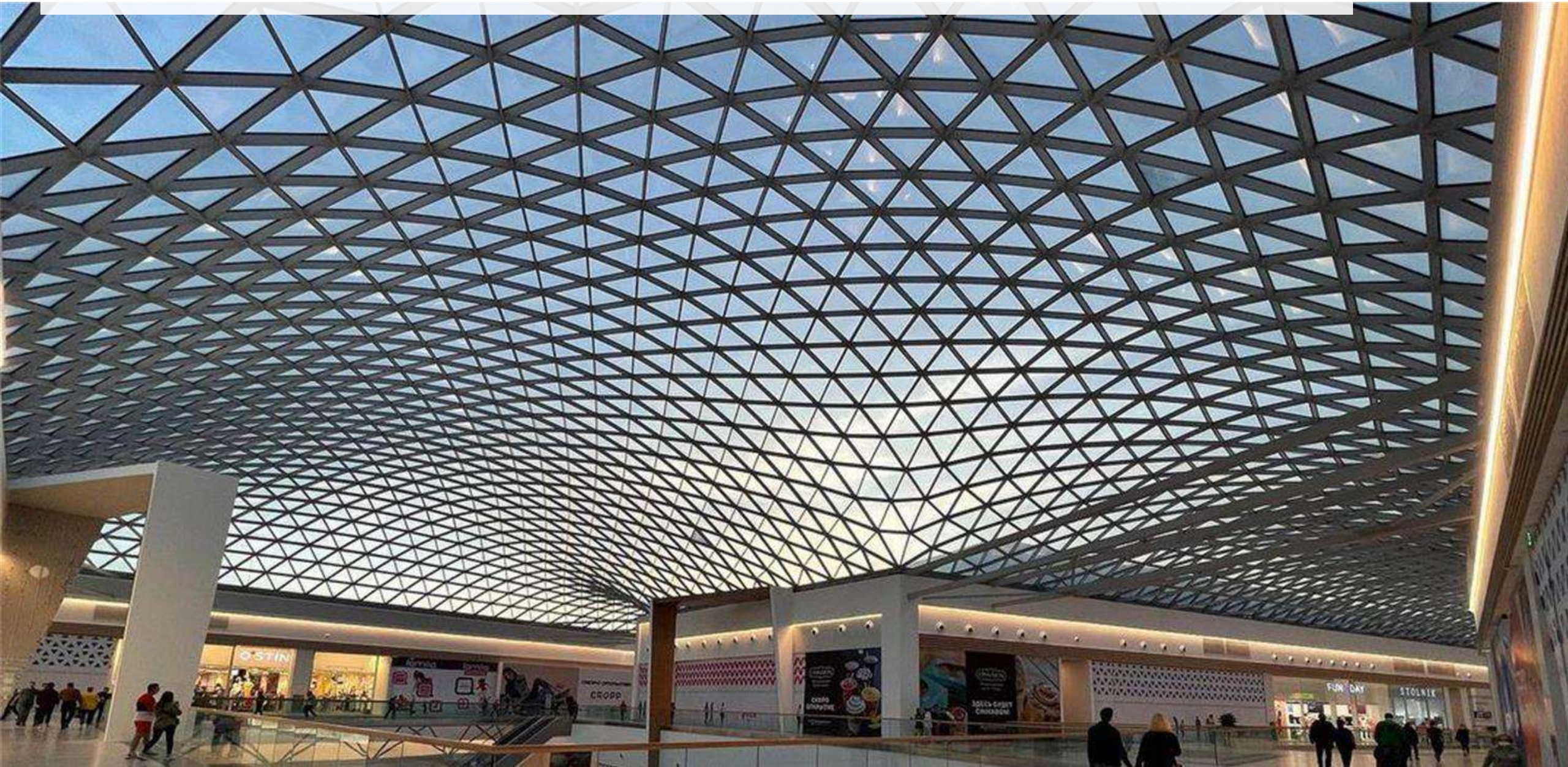


G2S™ – WHAT DO YOU WANT ME TO BE?

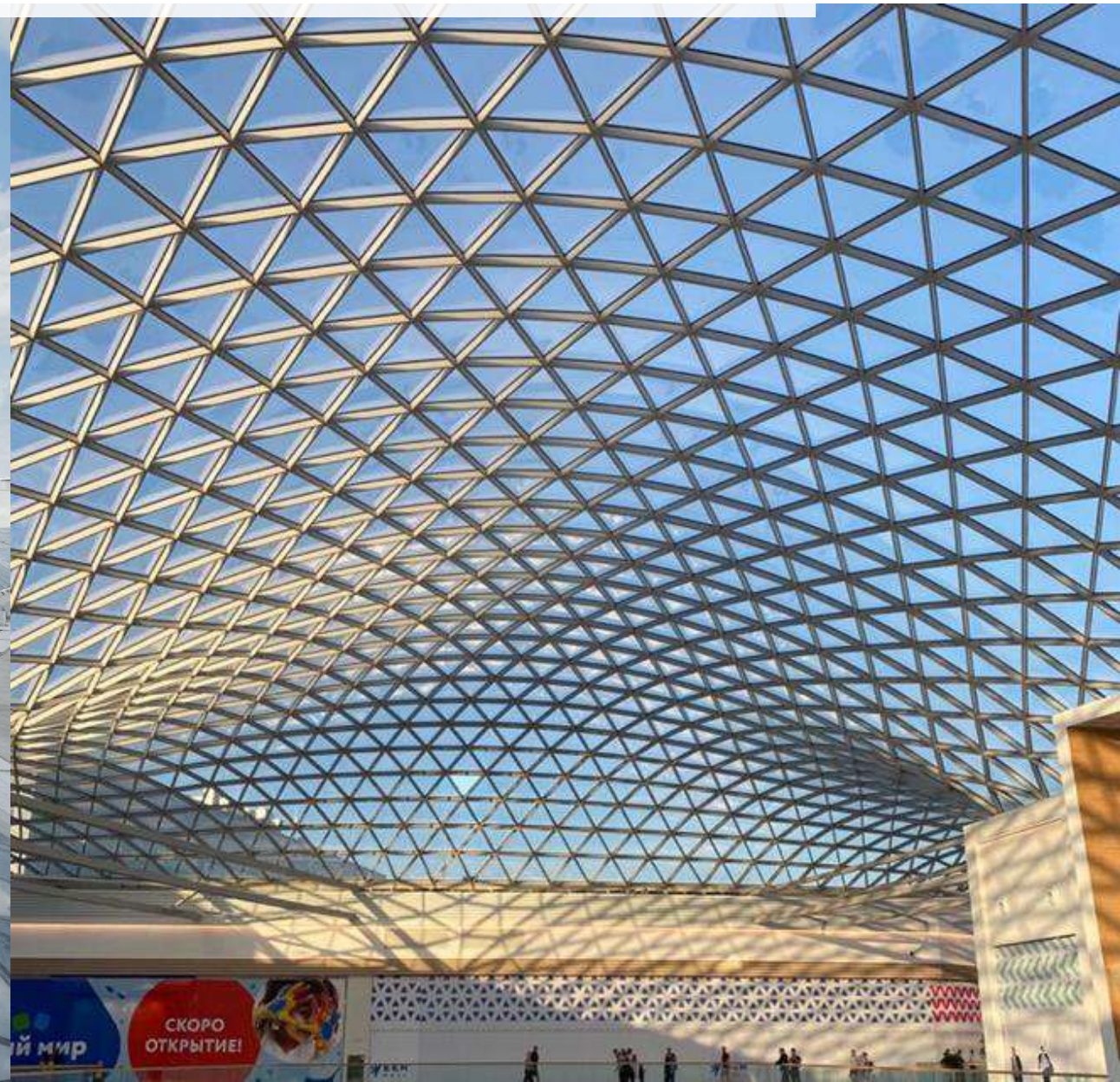


Schüco - G2S™ → I am SKYLIGHT ←

Schüco - G2S™ → I am SKYLIGHT ←



Schüco - G2S™ → I am SKYLIGHT ←



Schüco - G2S™ → I am SKYLIGHT ←





Schüco - G2S™ → I am FACADE ←

Schüco - G2S™ → I am WHAT YOU WANT ME TO BE ←



Schüco - G2S™ → I am WHAT YOU WANT ME TO BE←





Schüco - G2S™ → I am SHADING FEATURE ←



Schüco - G2S™

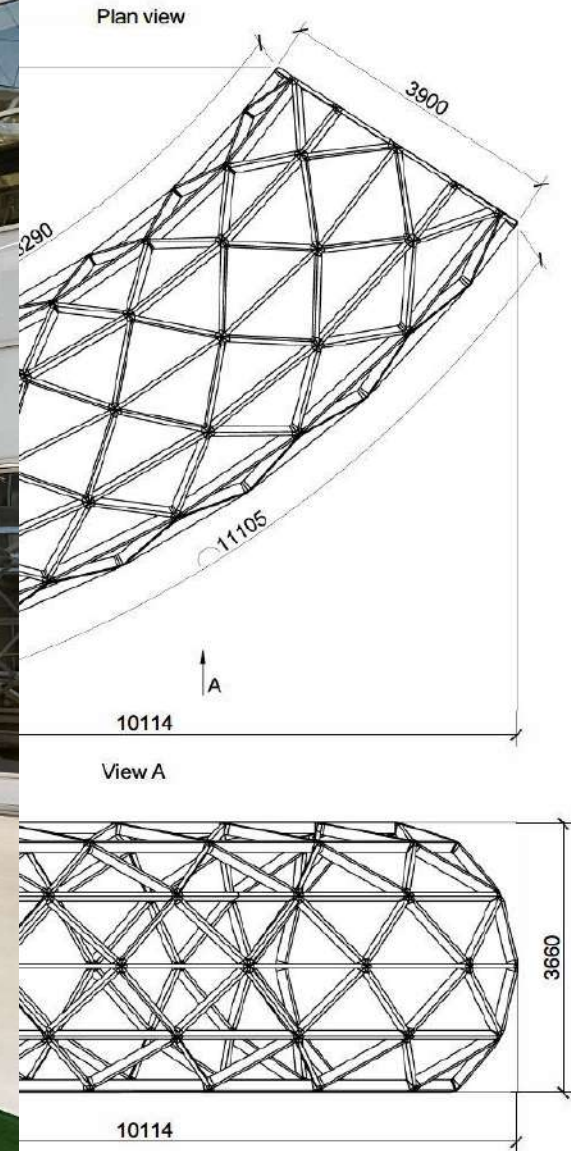
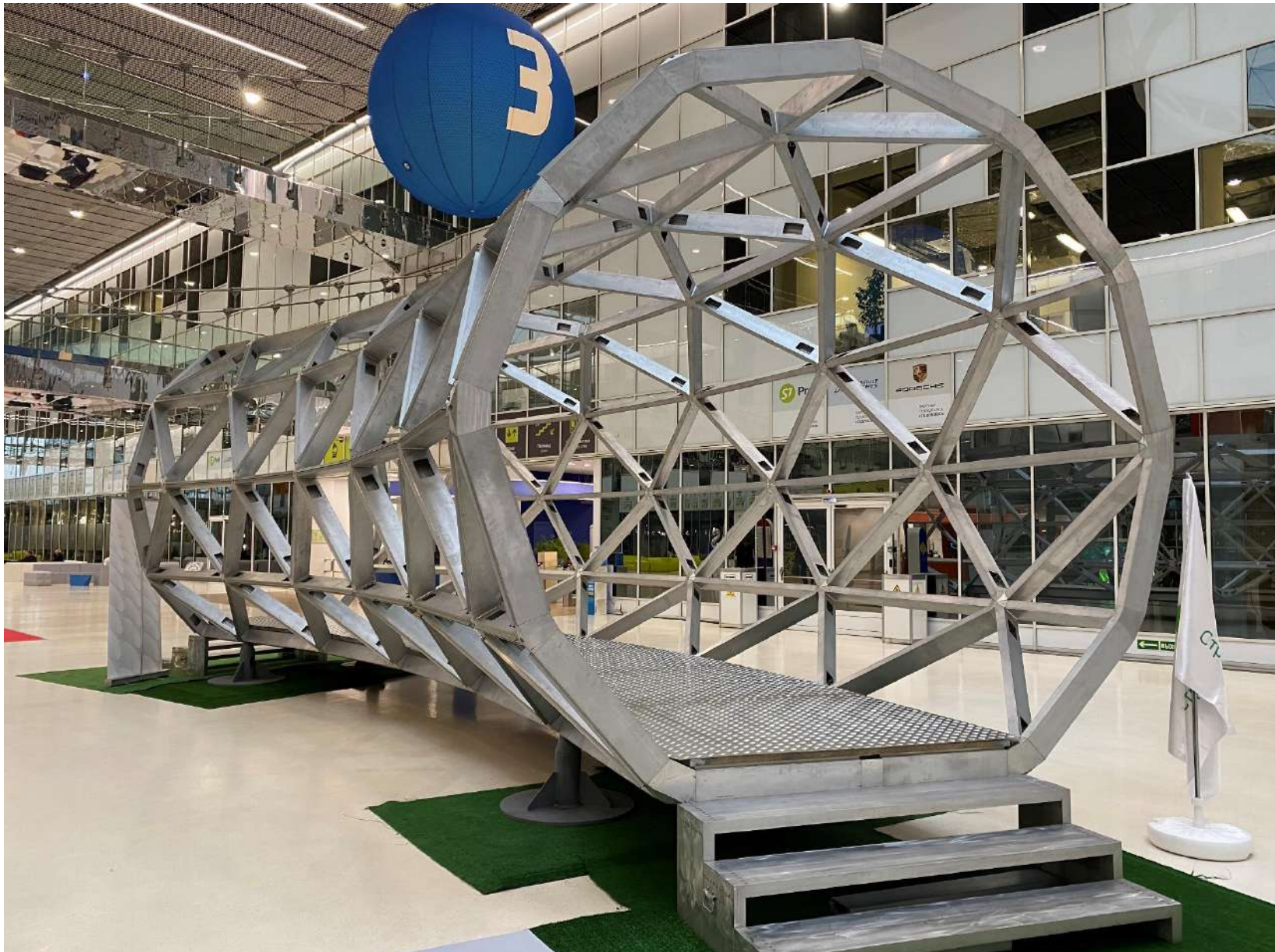


I am SHADING FEATURE

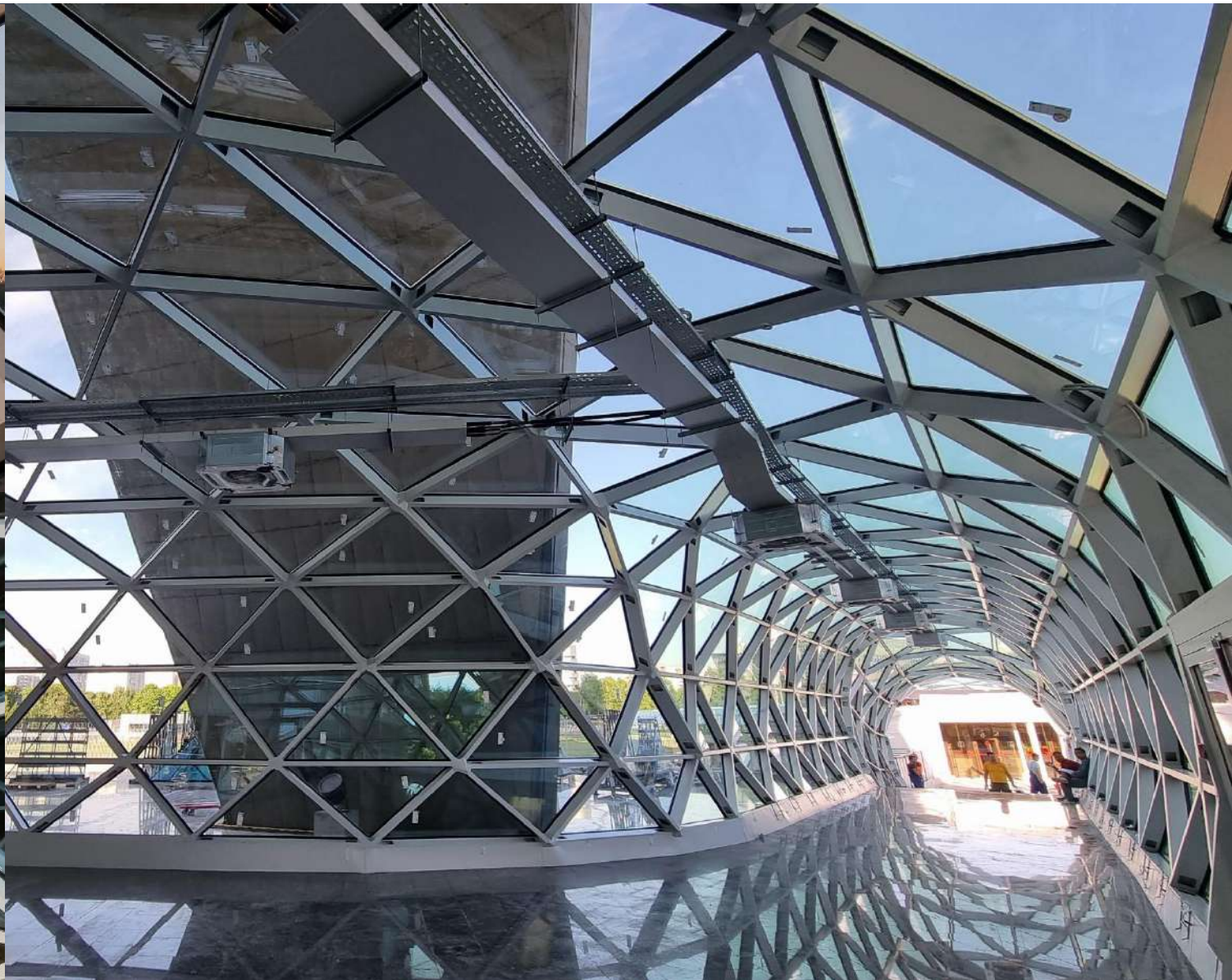
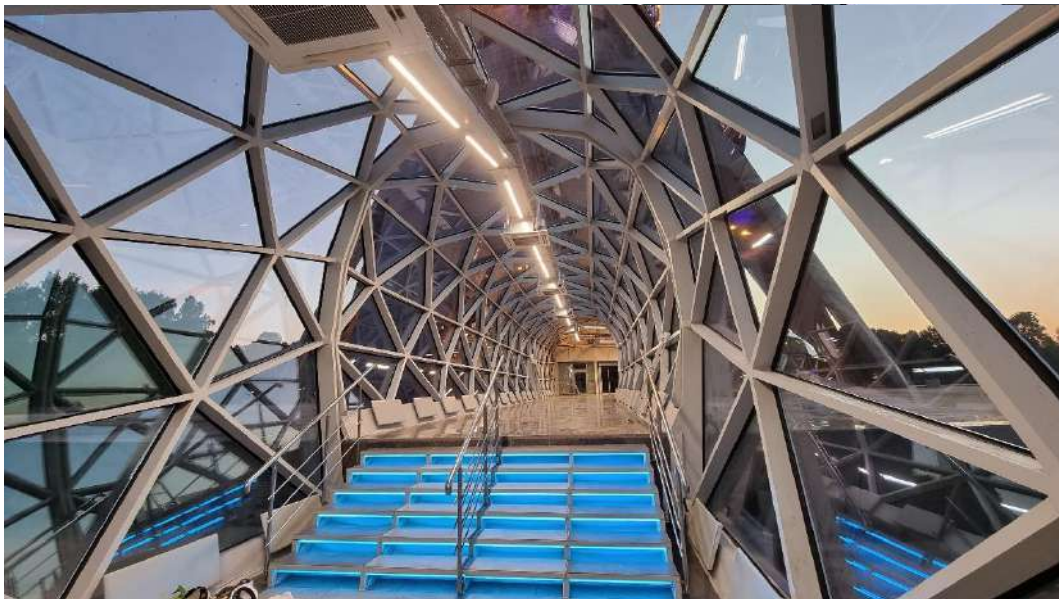




Schüco - G2S™ → I am ICONIC & SHADING FEATURE ←



Schüco - G2S™ → I am SKYWALK – LINK BRIDGE – CROSSING ←



Schüco - G2S™ → I am SKYWALK – LINK BRIDGE – CROSSING ←

SCHÜCO - G2S™

FULLY PARAMETRIC **AND** FULLY SYSTEMIZED

BLURRING THE BOUNDARIES VERTICAL **EQUALS** HORIZONTAL

A SYSTEM APPROACH **DEFYING** SYSTEM CONVENTIONS

SEAMLESS FREEFORM **MORPHING** FROM FACADE INTO SKYLIGHT



- Internet Of Façades.-

WITHOUT IOF



WITH
IOF



UNIKIT INFORMATION

Schüco AWS 75
PD.SI.
Installation Sept. 2018
Acceptance Oct. 2018

DOCUMENTS

CE certificate
Material list
Acceptance photos

SERVICE

Handle change in
2020
→ New handle 247
009
0 active notifications

Next maintenance
July 2022



SEEING  IS BELIEVING:
PLEASE VISIT OUR EXHIBITION BOOTH OUTSIDE

THANK YOU !

Alastair Common
Technical Director

