

## Facade Report

Boutique Hotel  
48 Rothschild Avenue  
Tel Aviv



### Client

AUNT MARTHA'S CHOCOLATE CHIP COOKIE COMPANY INC.

### Project Team

Facade Consultant: FRONT Inc.

Architect: AN+

Project Manager: EYAL SARIG Ltd.

General Contractor: SHAGRAWI-LEIBOVICH Ltd

Facade Contractor: GLASSCON GmbH

### Basic Parameters

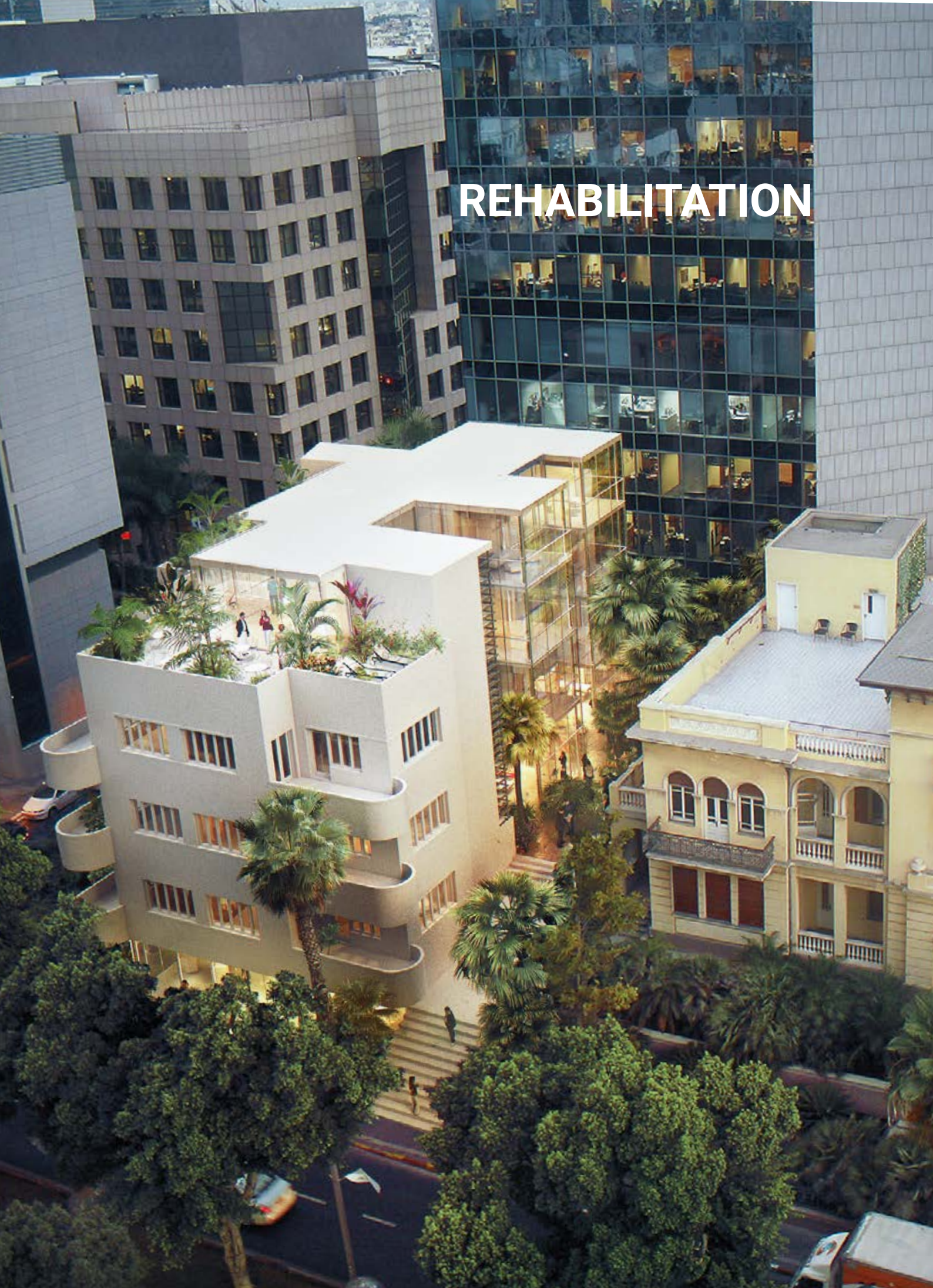
Project Location: TEL AVIV, ISRAEL

Project Period: 2018/2020

### Facade Works Highlight

Bespoke custom made all glass frameless façade with oversized (3.5 m x 7.2 m) laminated low iron glass units.

# REHABILITATION





**The scope  
of facade works**

The historical building located at 48 Rothschild St. Tel Aviv, Israel was completely renovated. The facade works undertaken by GLASSCON included the following:

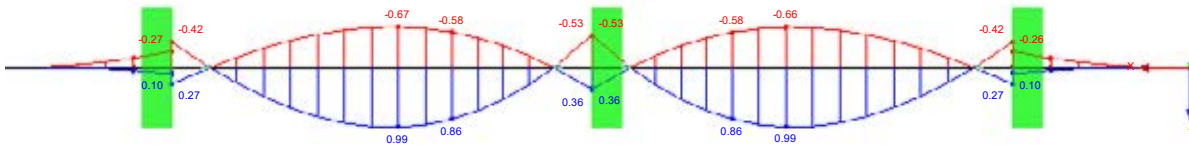
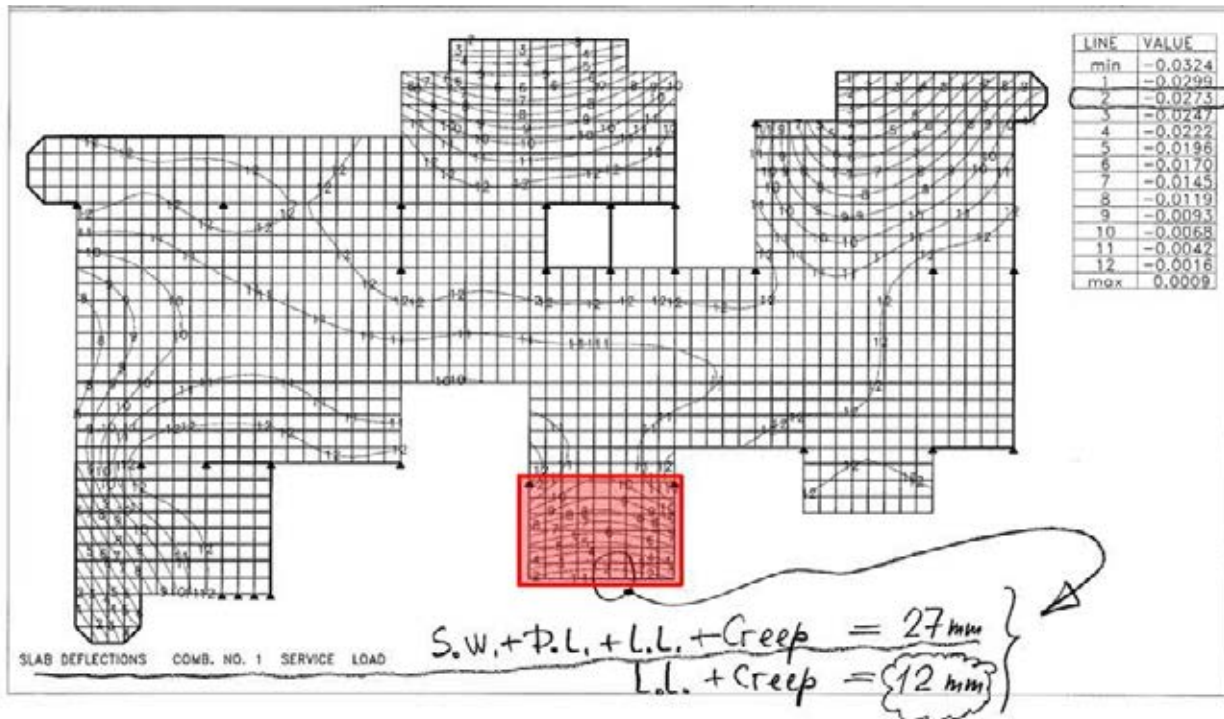
all glass frameless custom facade with oversized low iron glass  
motorized sliding windows with minimal frames Skylights with smoke exhaust  
system double-leaf custom glass doors provided by GLASSCON with aluminum  
frame & door closer Interior glass elevator enclosure Interior & exterior custom glass  
parapets without handrail.

The bespoke façade design was verified structurally and aesthetically by executing a Visual Mock-up (VMU) and Performance Mock-up (PMU).



**Facade  
development**

Development of the architectural concept and finalization of the system design, detailing and material finishes was done after research and sample production. GLASSCON used different methods in order to optimize the design. Among others, samples in 3D printer were produced to study the supporting Aluminium volume. Small hand samples (max 300mm) were produced to verify the material finishes.



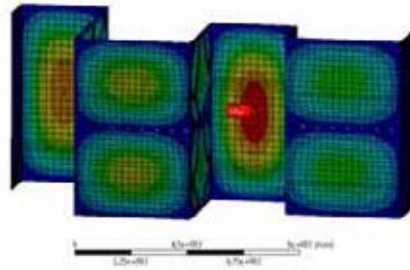
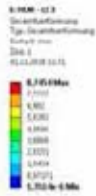
**System design  
structural &  
performance  
verification**

The facade systems are designed and developed in order to accommodate all visual, structural and performance requirements that are requested in accordance with the project specifications. GLASSCON has the expertise of modern facade engineering and a long proven track record.

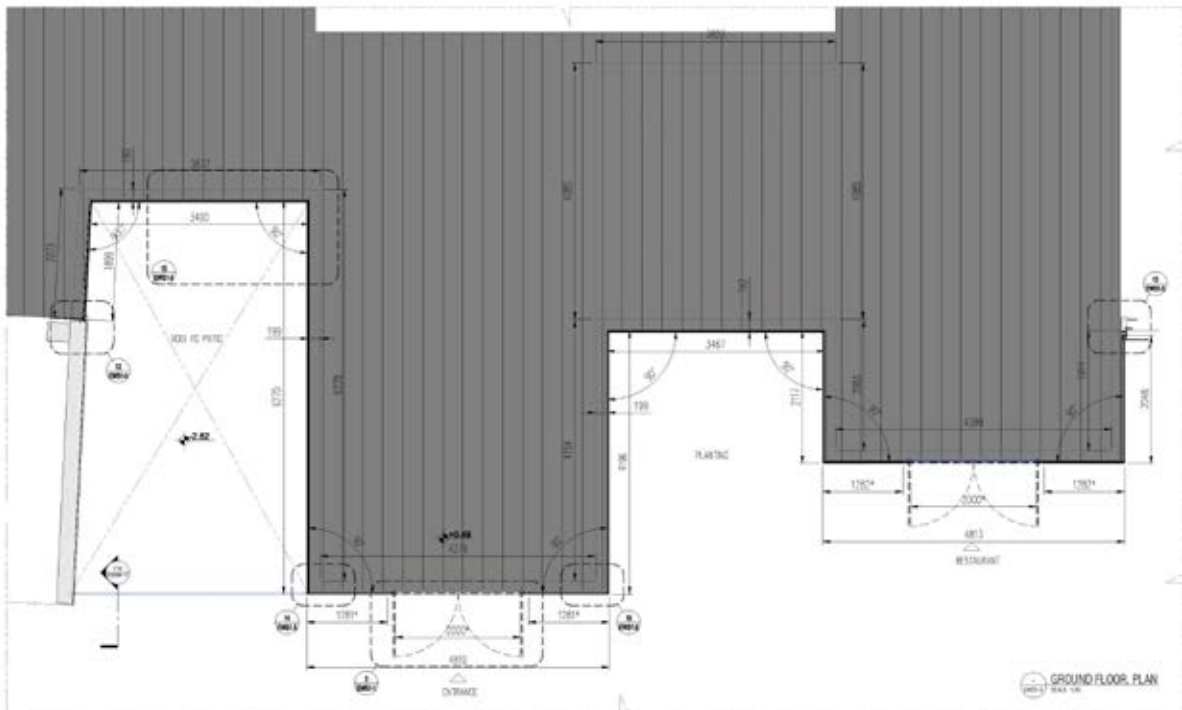
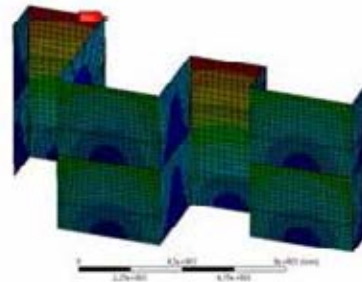
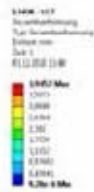
**Structural  
Analysis**

The main objective of the structural analysis was to determine the effects of loads on building envelopes and its components and guarantee adequate support. Structural analysis is a key part of the engineering design of such structures as it examines the displacements, stresses, strains and forces in structures caused by loads. For this project, GLASSCON worked on modelling a wide array of loading conditions and computed the structure's deformations, internal forces, support reactions, accelerations, and stability. All structural calculations performed according to international and local design standards and norms by using the appropriate software tools and when needed proceeded with Finite Element Analysis.

3 w [mm] 8.7



7 w [mm] 3.9

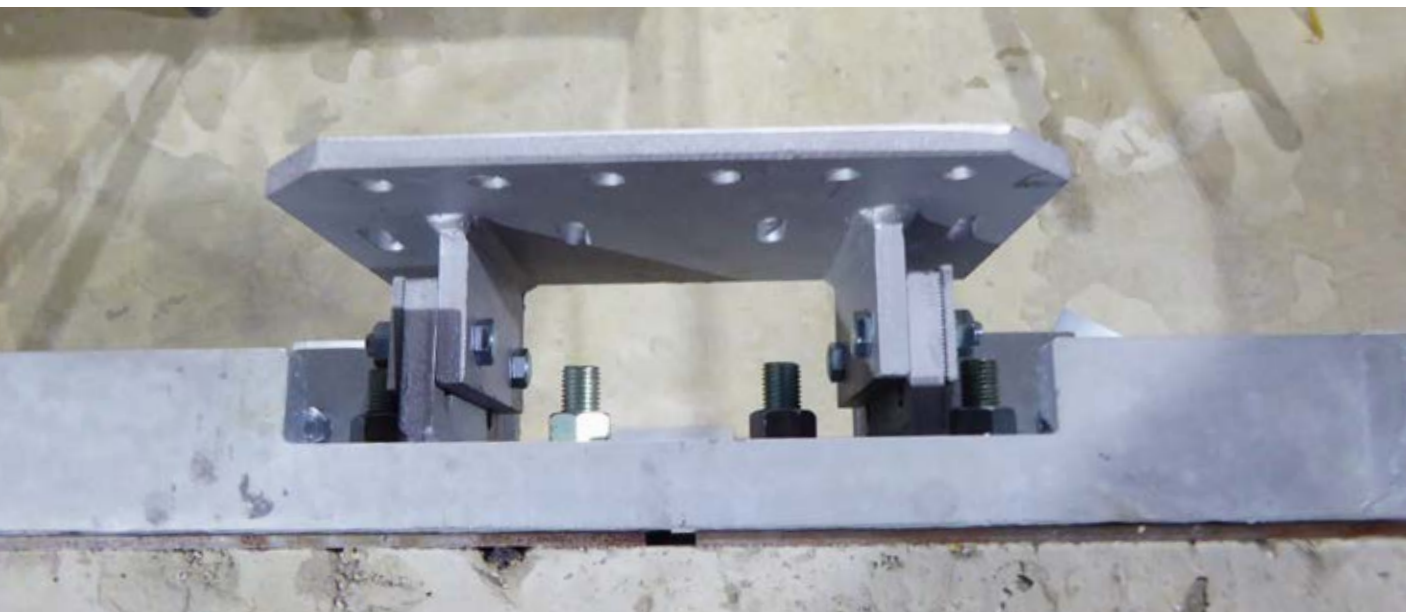
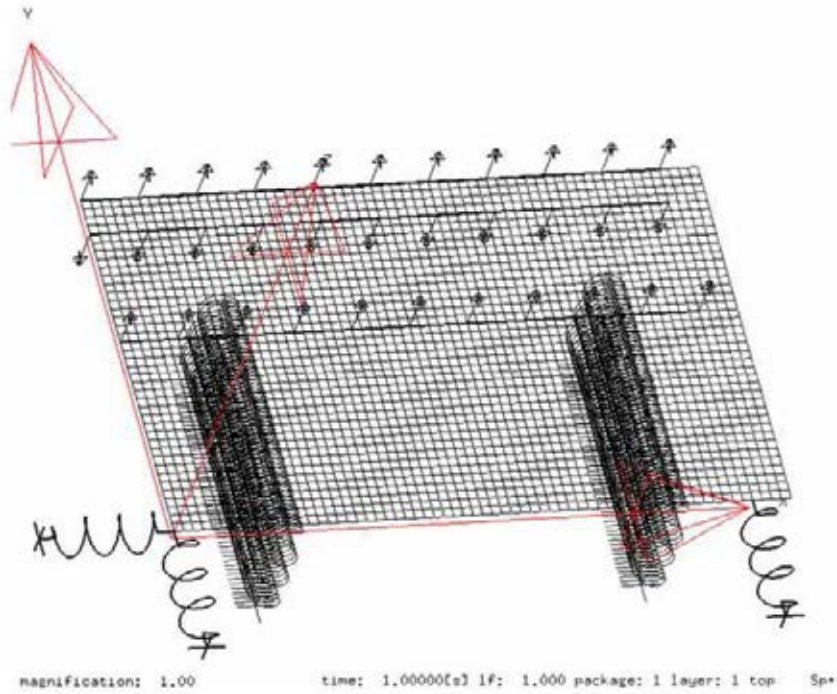


**Finite Element Calculation**

Material properties:

t = 12 mm  
E = 210.000 N/mm<sup>2</sup>  
M = 0.3

Finite element model:

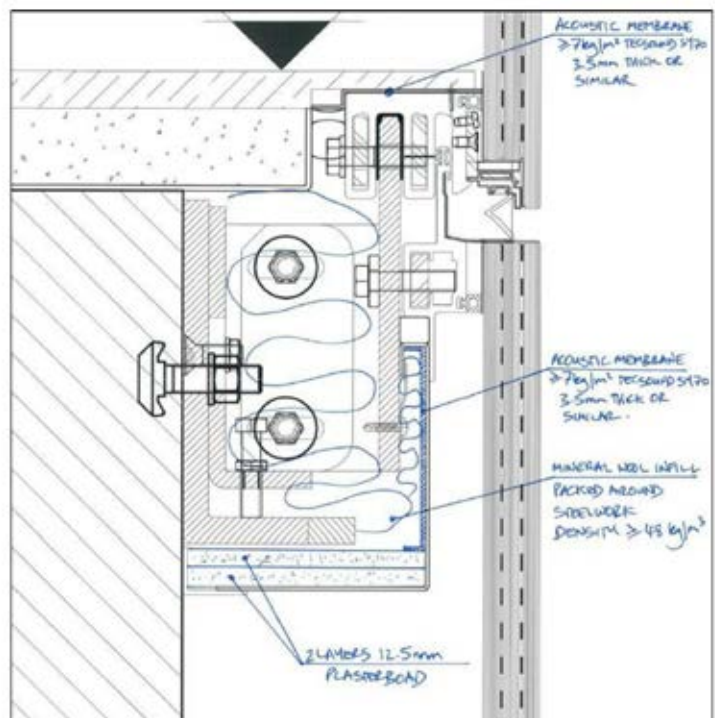
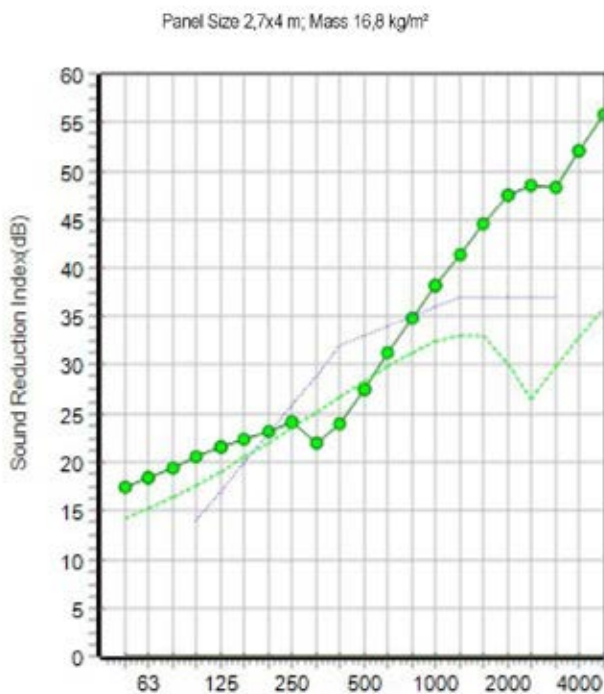






**Element 1: Single laminated glazing (10/1.52SGP/10/1.52SGP/10: Rw 42 dB)**

Octave band centre frequency (Hz)		63	125	250	500	1000	2000	4000	dBA
Lp external, SPL assumed at 2 m from the facade (dB)		80	75	72	68	64	61	57	70
C, Correction for on-site glazing size (dB)		5	5	5	5	5	5	5	
SRI, Sound reduction Index (dB)		24	31	34	39	43	43	48	
S, Element area (sq. m)	21,7								
Lw, Sound Power Level (dB) (Lw = Lp-SRI+C+10logS-6)		68	57	50	41	33	30	21	47
V, Room volume (cubic metres)	96,0								
Reference Reverberation Time (seconds)	0,50								
<b>Internal Sound Pressure Level = Lp1 (Lp1 = Lw + 10logRT-10logV+14)</b>		<b>60</b>	<b>48</b>	<b>41</b>	<b>32</b>	<b>24</b>	<b>21</b>	<b>13</b>	<b>38</b>



**Acoustic Analysis**

Conducting an acoustic design review of the custom system involves the assessment of the sound insulation performance as executed by GLASSCON. The scope of the acoustic analysis is to predict the theoretical level of sound insulation attainable with the proposed system and to demonstrate compliance with the project performance criteria.

GLASSCON executed various calculations to determine the sound performance of the facade by taking into account direct and in-direct sound transmission including outdoor-indoor and indoor-indoor sound transmission, as well as same floor or vertical flanking noise transmission.

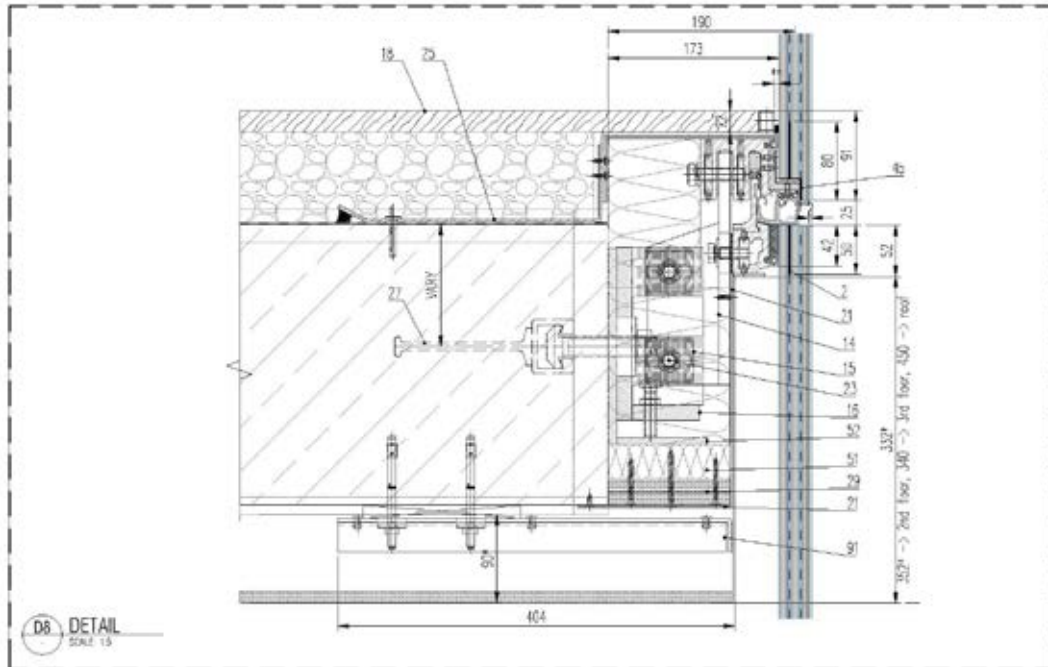
**VMU / PMU  
EVALUATING & TESTING  
CE - CERTIFICATION**

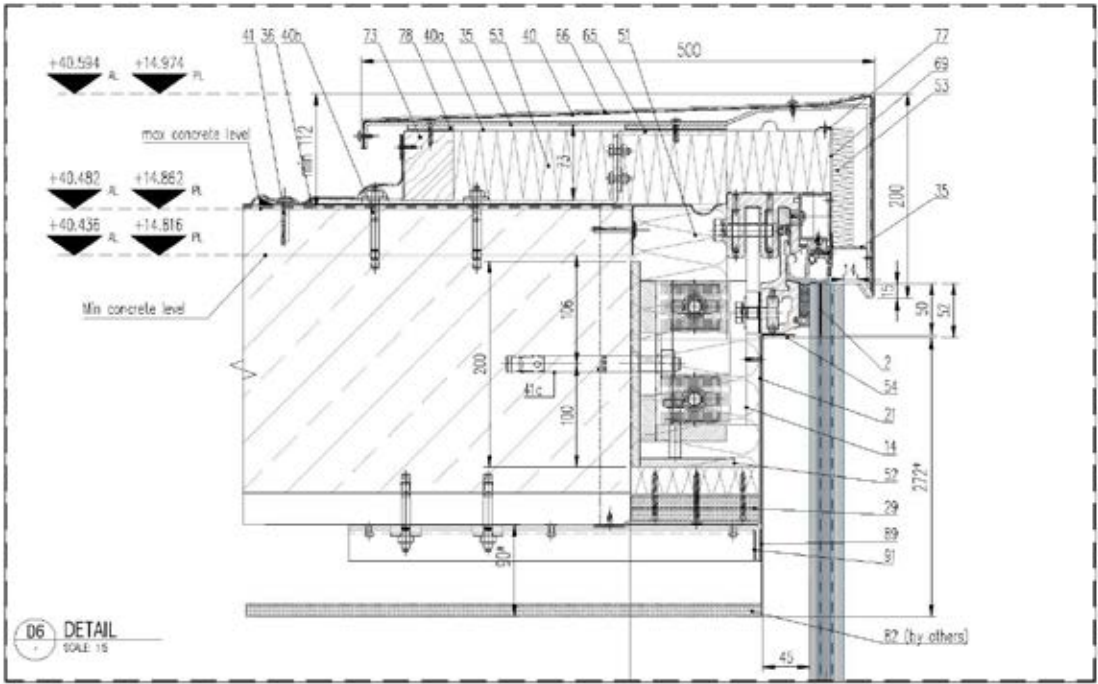


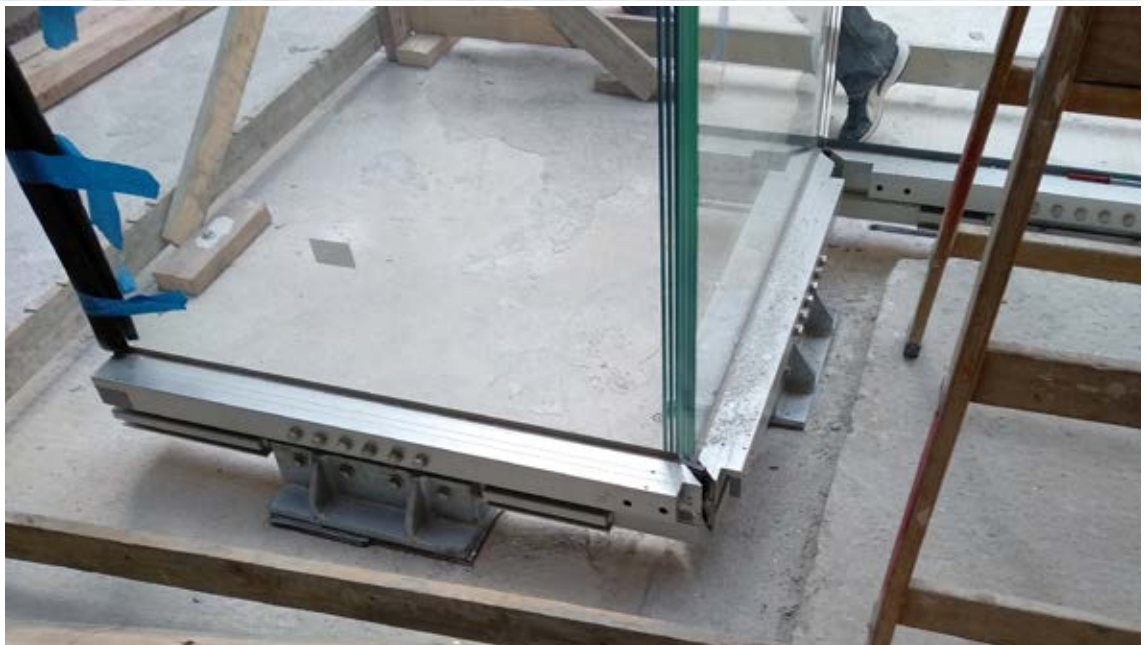


**Visual mock-ups  
& design optimization**

A full scale Visual Mock-up (VMU) constructed on site by GLASSCON's certified operators and used as benchmark for the final design and help visualize the completed facade defining textures, materials, colours and finishes as well as verify constructability and reveal all aspects of the facade installation.



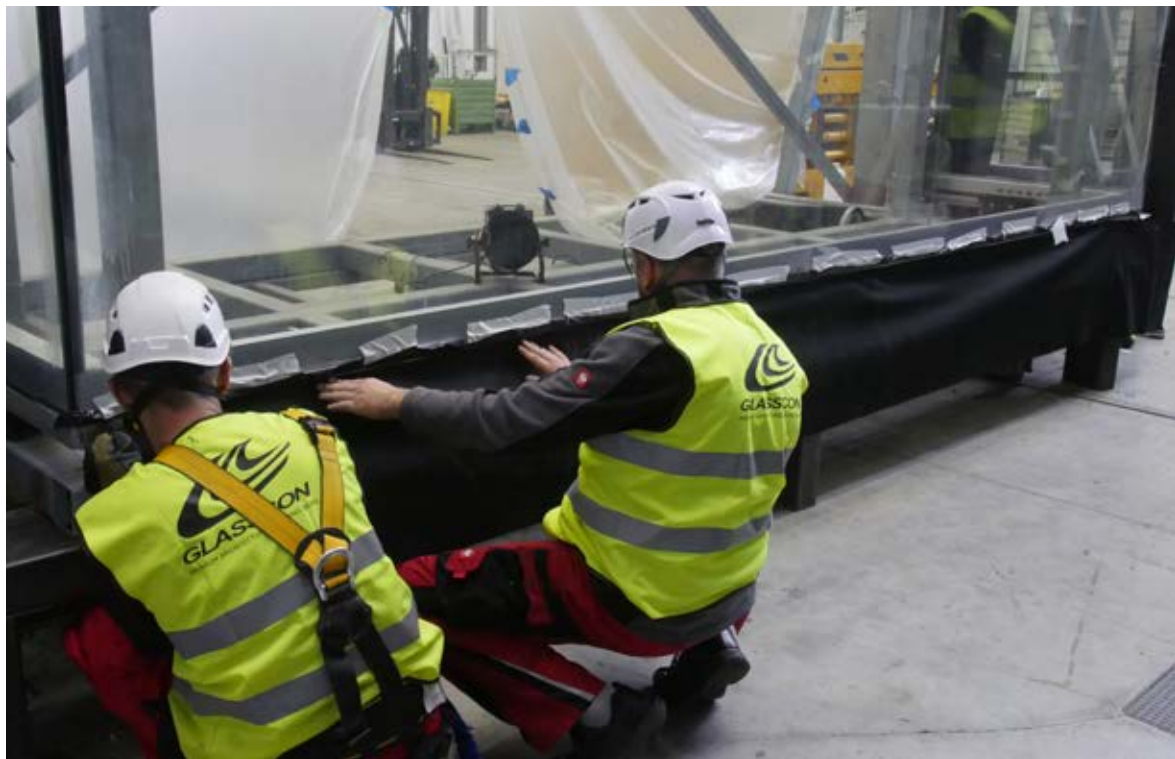






**Performance mock-up  
(PMU) & testing**

Performance tests were carried out by GLASSCON to ensure compliance with applied building codes and project criteria. The testing methods include air permeability, water tightness, resistance to wind and impact loads.



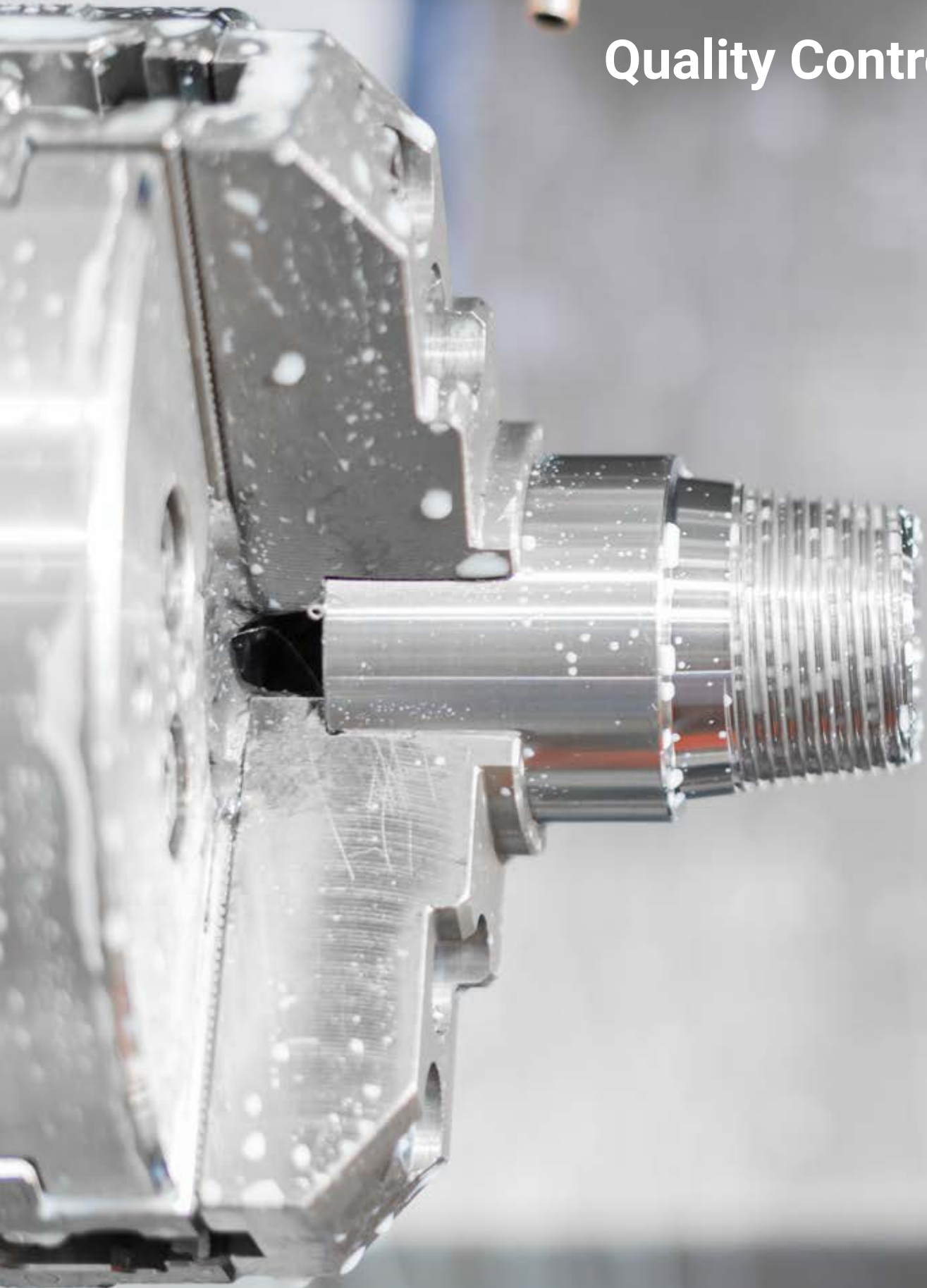
The VMU was dismantled by GLASSCON's team from the site and re-installed at an accredited European testing institute (NANDO certified members) for testing. The same installation team was used at all related works to guarantee the highest quality of installation work at the project final facade.







FABRICATION  
Quality Control





For the current project, GLASSCON delivers custom fabricating services. The quality standards were high and the products bespoke (i.e. oversized glass, aluminium dies and custom made extrusions).



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Installation is the bedrock of every construction project. GLASSCON organize strategically the sequence of the façade works to minimize the installation risks while at the same time minimizing the installation time. Incorrect installation and poor workmanship on the building envelope can increase the risk of safety hazards, lead to structural failures and reduce the lifespan of its components, while raising maintenance costs considerably.











GLASSCON used a team of European Certified facade installers to execute the site works of this 4-storey historical building. All operators were trained and certified by TÜV Nord in accordance with the strictest European regulations and working at height requirements.







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“Coming together is a beginning,  
Staying together is progress,  
And working together is success.”

Henry Ford





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Certified / Approved by:

