



**REALIZING CHALLENGING ARCHITECTURE**

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*Michael van Telgen, MSc.*

*Constructeur bij **Octatube***

*o.a. Van Gogh museum, Gemeentemuseum,  
Stadskantoor Utrecht, London Business  
School*

*Voorzitter **YouCon***

*Vereniging voor jonge constructeurs*

*Afgestudeerd in 2012*

*Eindhoven University of Technology*

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Octatube is een combinatie van een technisch ontwerp bureau en een productiebedrijf en levert bijdrage aan bouwprocessen als gespecialiseerde (onder)aannemer.

Projecten worden vaak vanaf ontwerp tot realisatie uitgevoerd.



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Het samenbundelen van ontwerpen, engineering, produceren en monteren in het zogenoemde 'Design & Build' concept, levert één verantwoordelijke en aanspreekbare partij.

Dit werpt zeker bij onderdelen die zeer specialistisch, nieuw of experimenteel zijn, haar vruchten af voor de klant.



DESIGN



ENGINEERING



PRODUCTION



INSTALLATION



SERVICES





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Van Gogh Museum Amsterdam



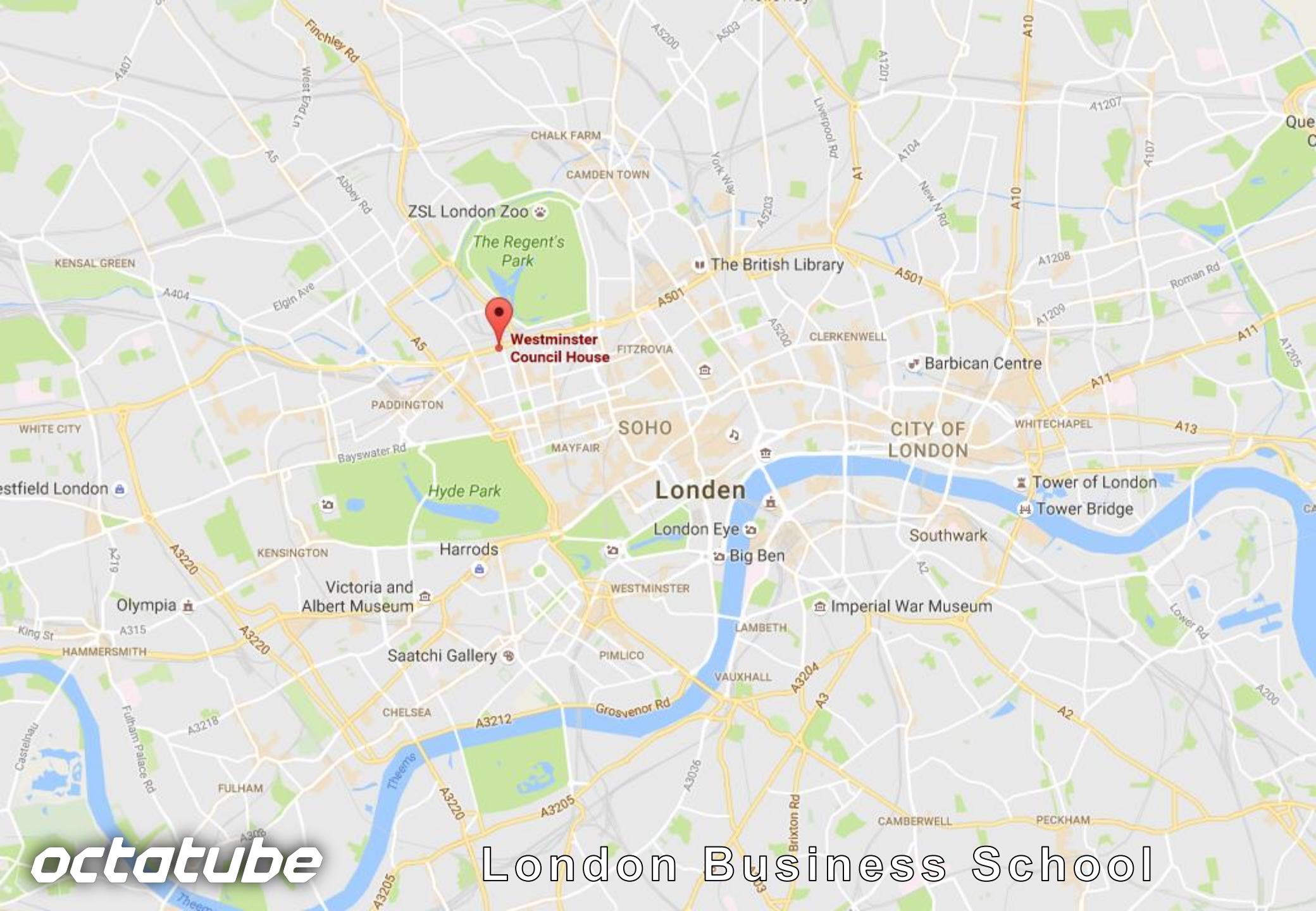
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Gemeentemuseum Den Haag



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London Business School



**Westminster Council House**

**London**

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**London Business School**





J Moriyama Hair Design

Marylebone Inn

Springetts Brand Design Consultants

RBS

The Old Marylebone Town Hall

Salisbury Pl

Upper Montagu

Salisbury Pl

A41

Bickenhall St

Westminster Council House

A501

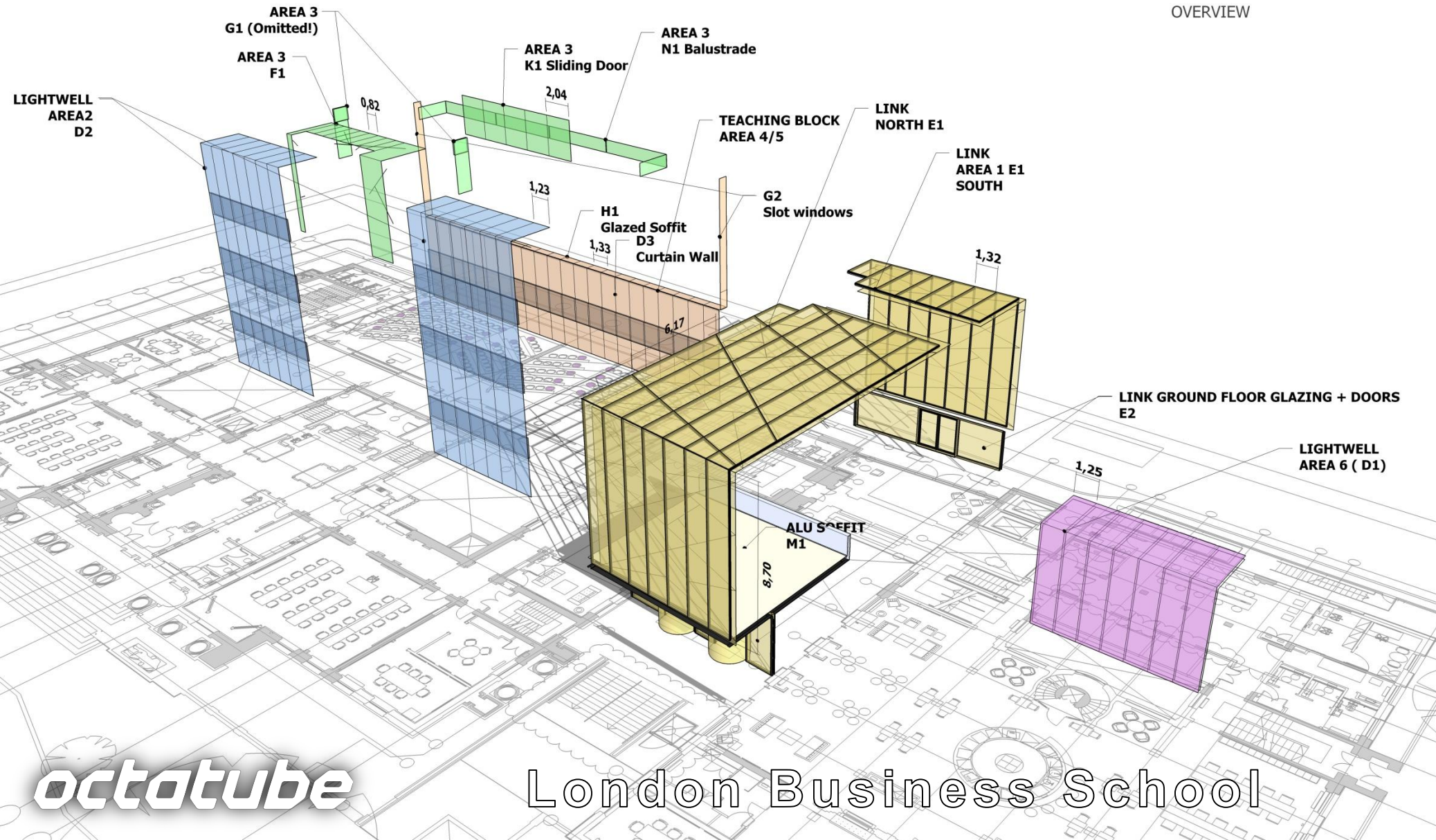
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THE SAMMY OFER CENTRE



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CLIENT



Drawing is concept only -  
Refer to Murphy Facade  
Performance Specification  
and Ramboll Performance  
Specification for minimum  
technical requirements

NOTES

TITLE  
**LINK\_ROOF MAIN STRUCTURE  
3D TYPICAL CONCEPT DETAIL**

REV.	DATE	AMENDMENT
-	28/02/2014	Issued for Tender

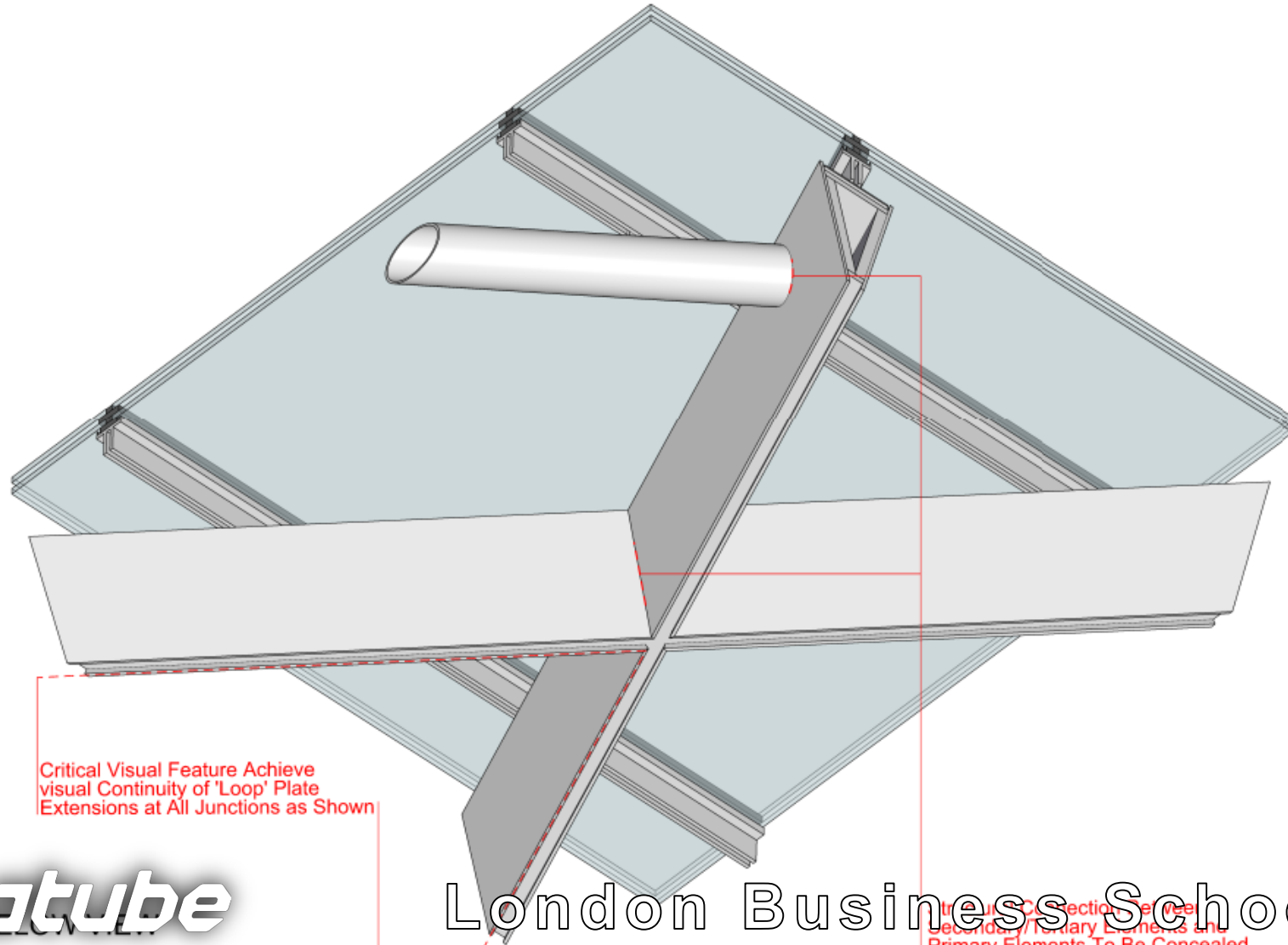
PROJECT  
**THE SAMMY OFER CENTRE**

SCALE@A3	DATE	ORIGINATOR	CHECKED	AUTHORISED
1: NTS	18.06.2013	PL	GR	LB

STATUS  
**TENDER**

DRAWING NO.  
**4422 - 21 - 902**

REV.  
-



Critical Visual Feature Achieve  
visual Continuity of 'Loop' Plate  
Extensions at All Junctions as Shown

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Structure Section See (see  
Secondary/Tertiary Elements and  
Primary Elements To Be Concealed.

8mm dikke  
sierbeplating  
'loop plates'



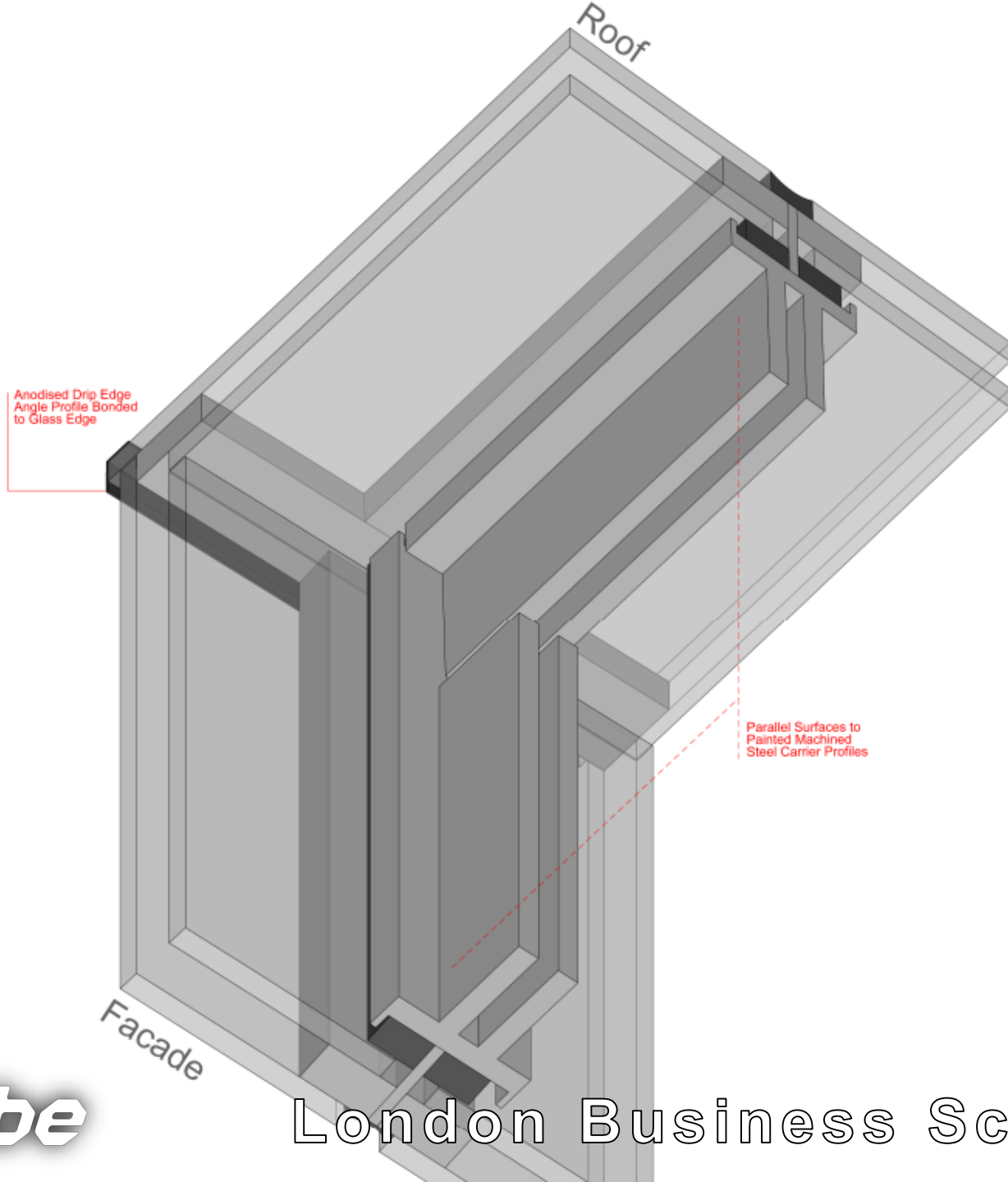
Structural Connection Between  
Secondary/Tertiary Elements and  
Primary Elements To Be Concealed.



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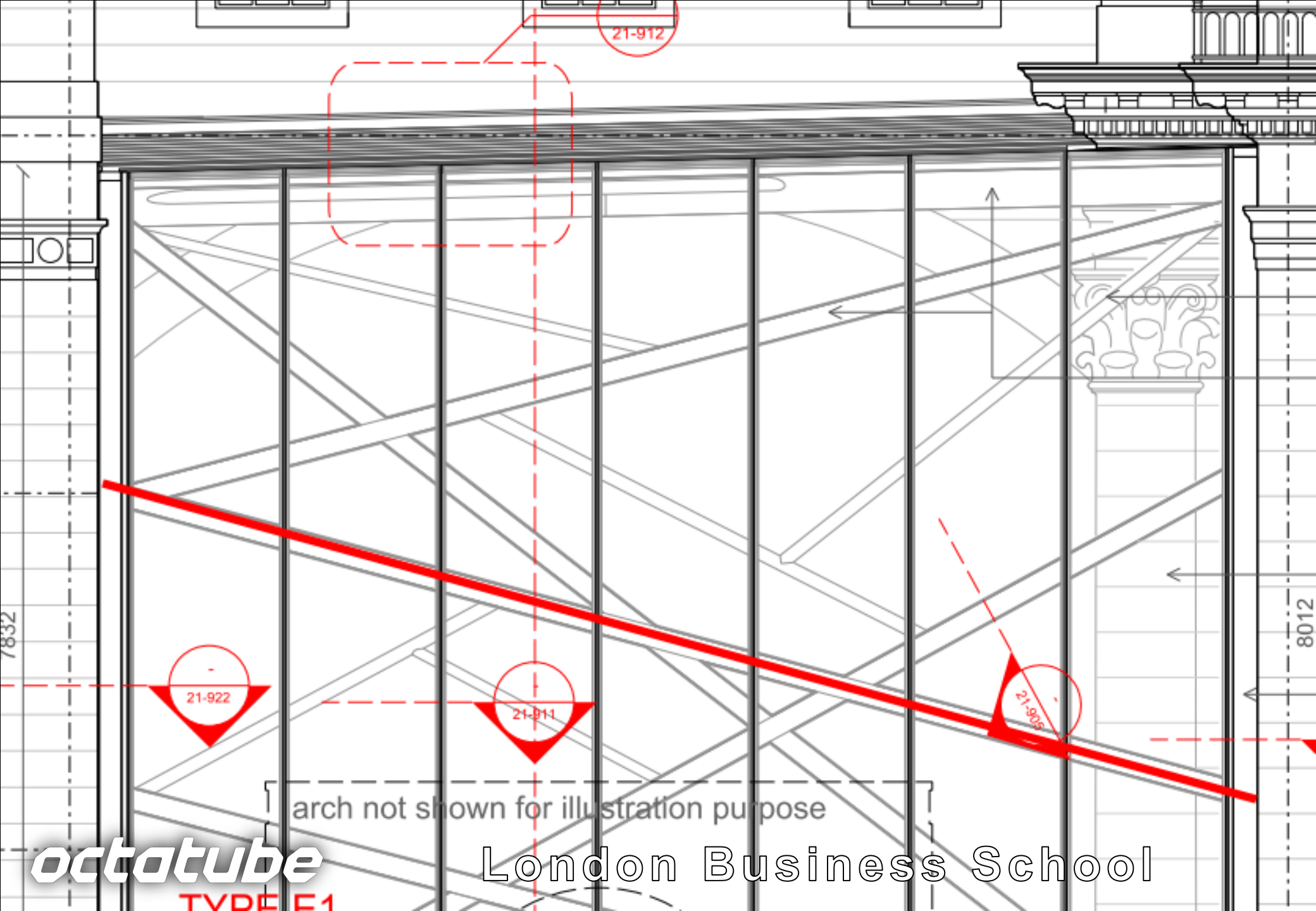
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21-912

21-922

21-911

21-905

arch not shown for illustration purpose

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**TYPE E1**

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7832

8012

# Hoe?

Naast:

- Krappe bouwplaats in druk London
- Strakke planning ivm academische kalender

Vooral:

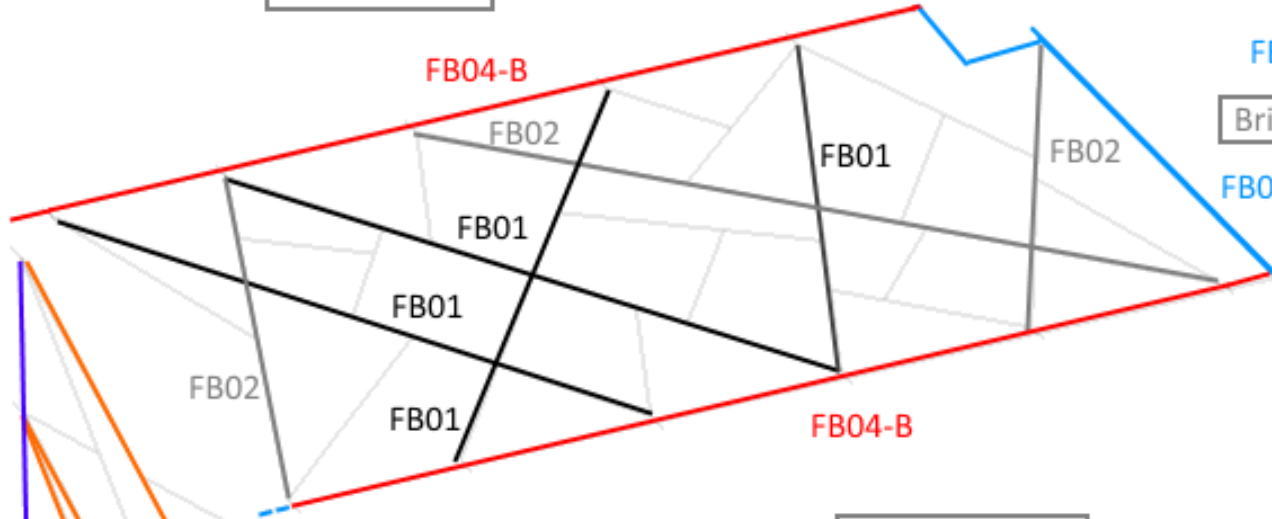
- Hoge vereiste visuele en technische kwaliteit
- Aansluiten op historisch gebouw

(twee van de)

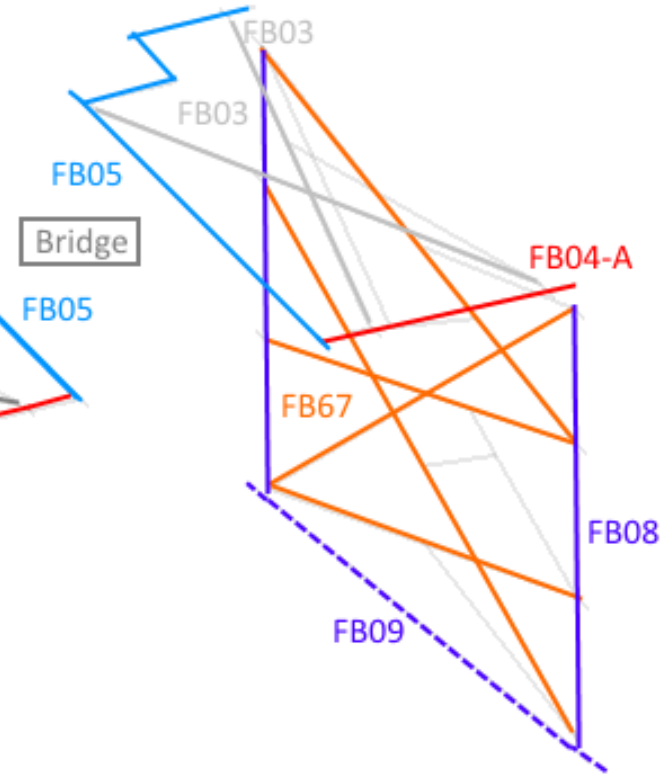
# Belangrijkste uitdagingen:

- Ranke (dak) profielen --> grote vervormingen
- Beperkt dakafschot: 'water ponding'

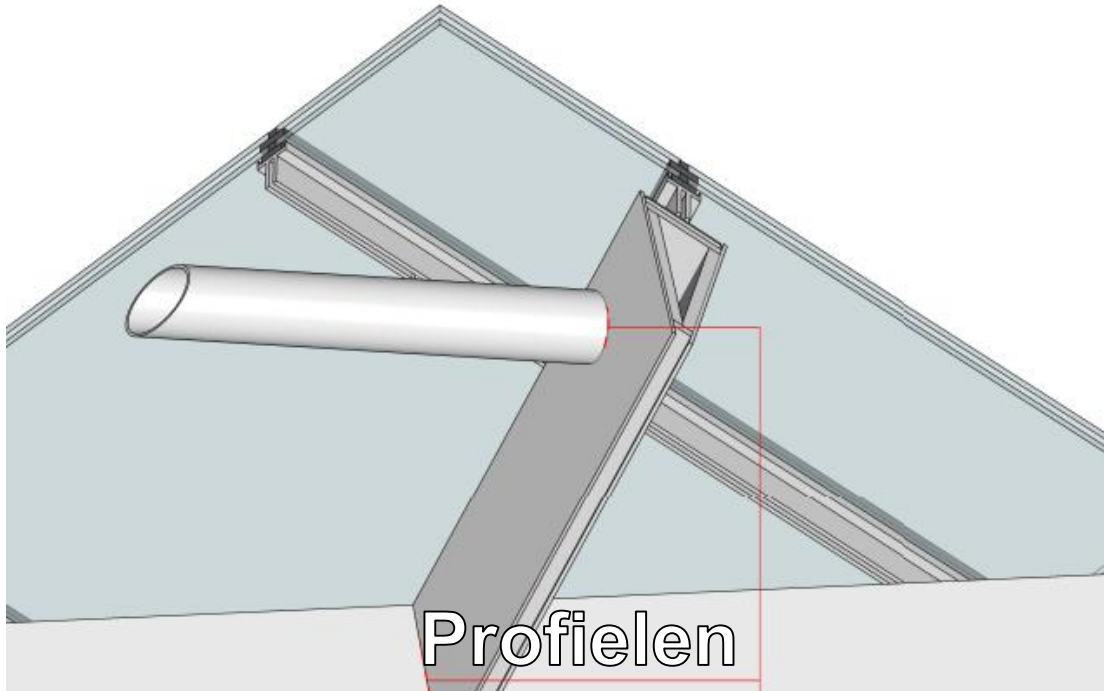
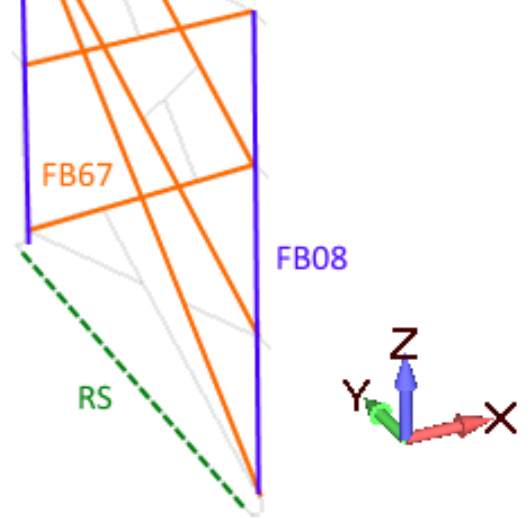
Council House



Bridge

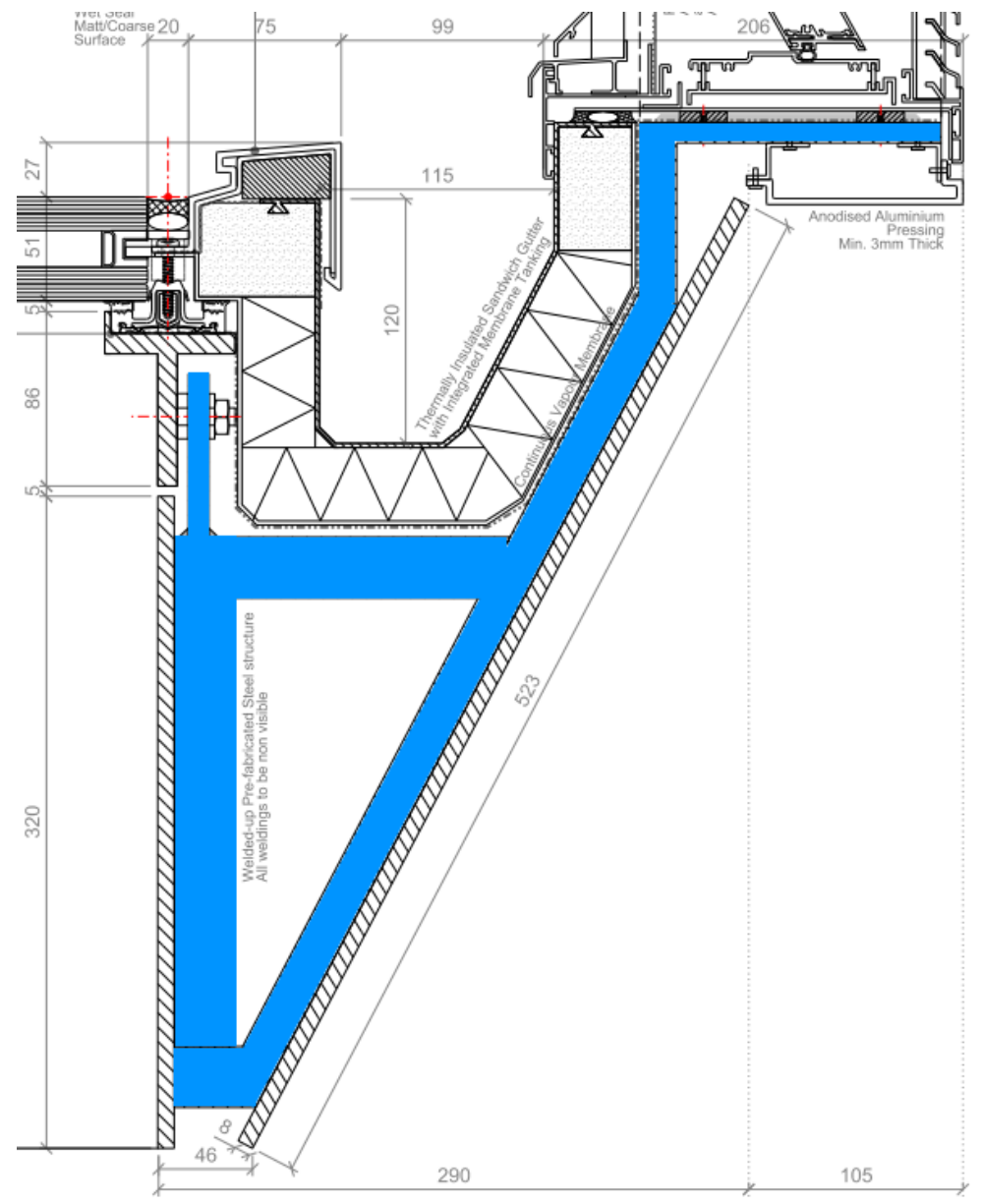
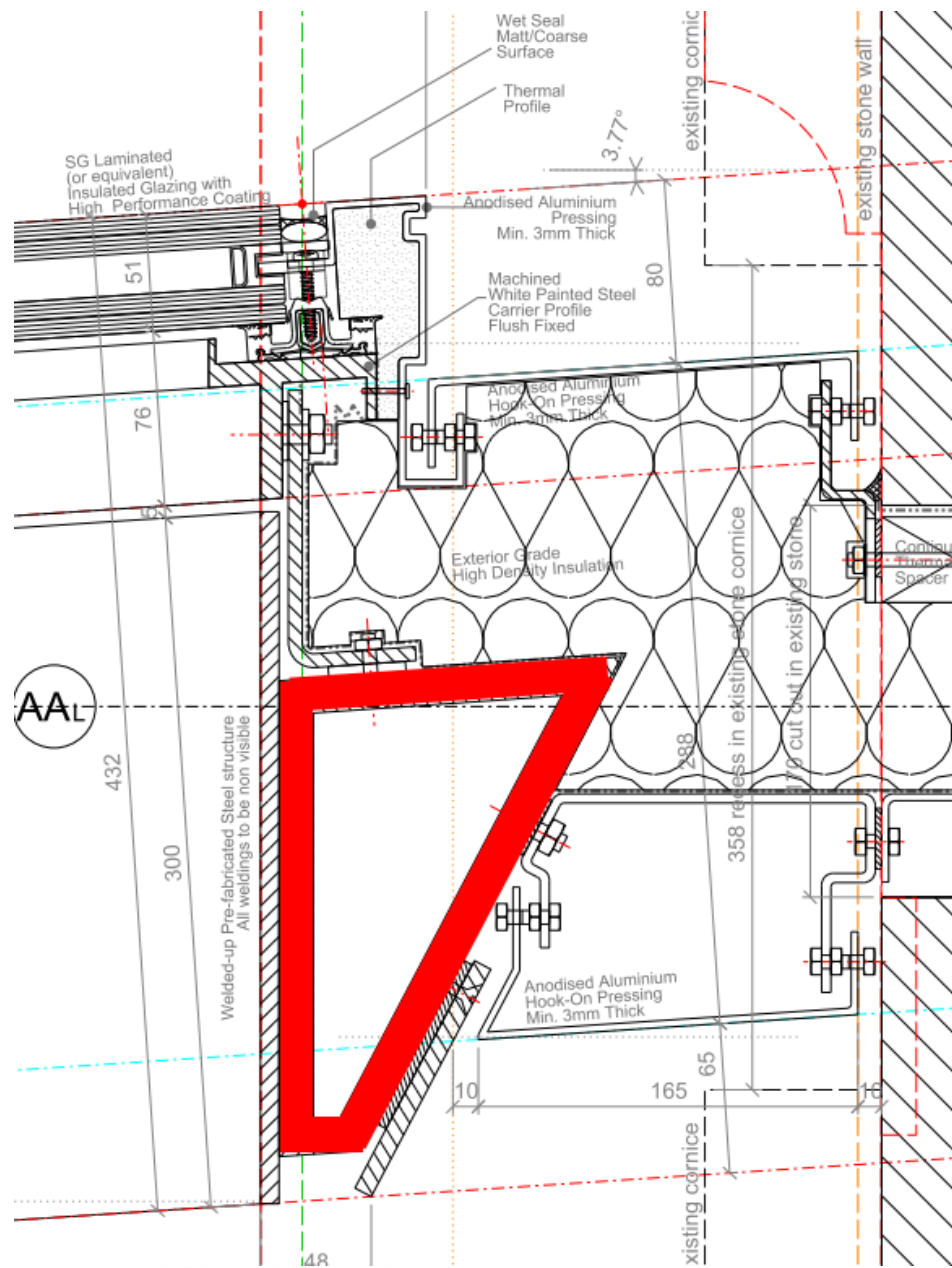


Annexe Building



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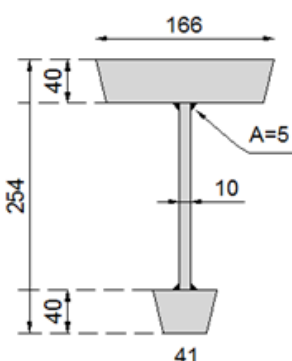
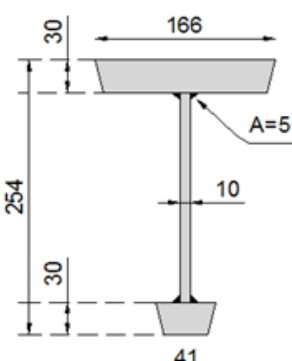
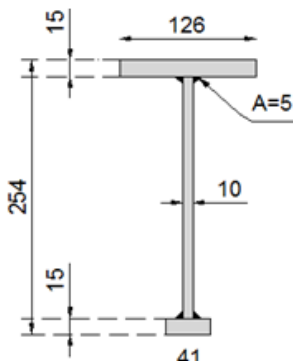
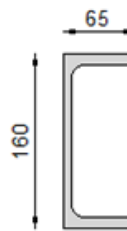
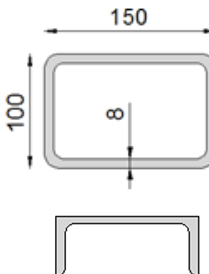
Profielen



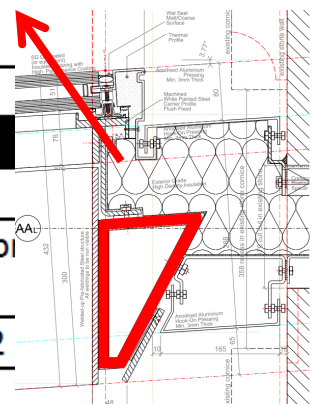
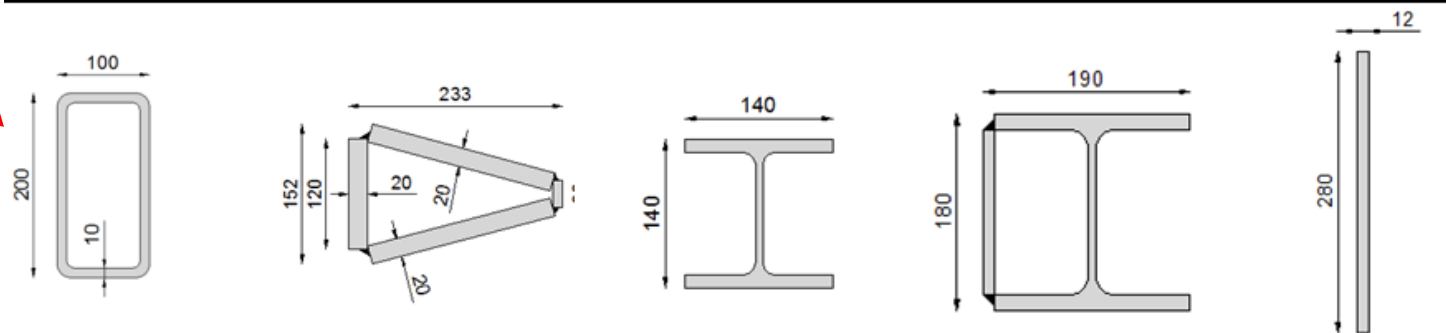
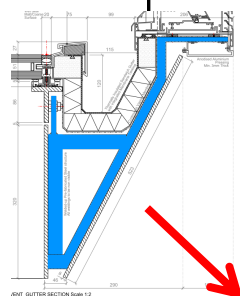
WENT\_GUTTER SECTION Scale 1:2

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Profielen

Roof				
FB01	FB02	FB03	FB04-A	FB04-B
Roof beam	Roof beam	Roof beam	Edge beam	Edge beam
Welded plates	Welded plates	Welded plates	UNP160	RHS150x100x8 HF
				

Façade				
FB05	FB67	FB08	FB09	RS
Edge beam	Facade beam	Edge beam	Facade rear bottom	Tie beam for facade
100x100x10 HF	Welded plates	HEB140	HEB180	RS280x12

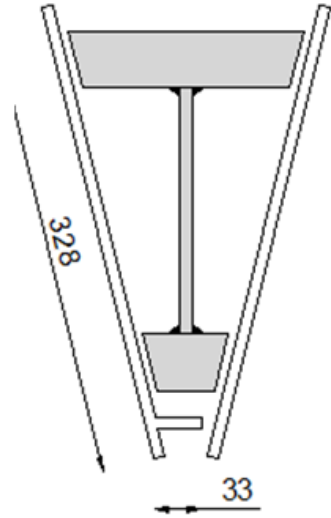


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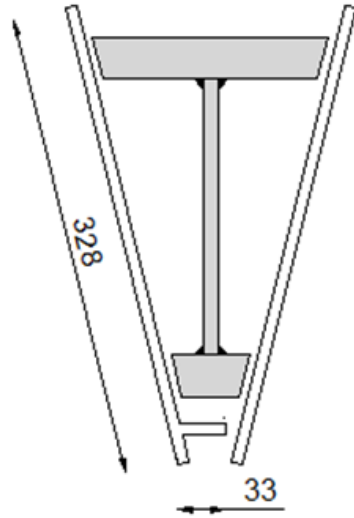
Profielen



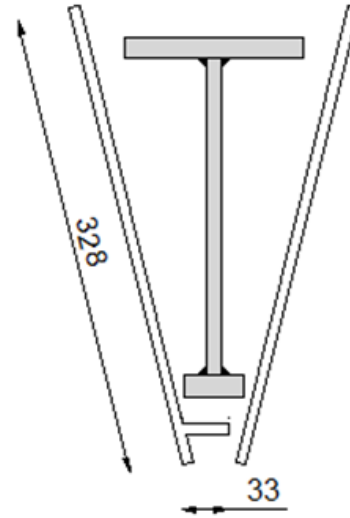
FB01



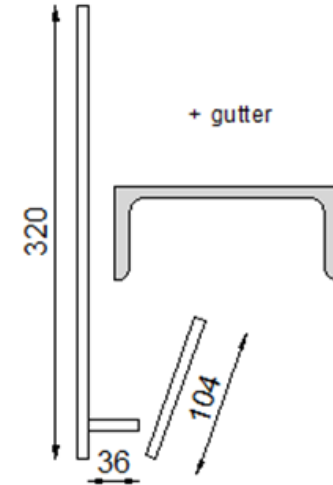
FB02



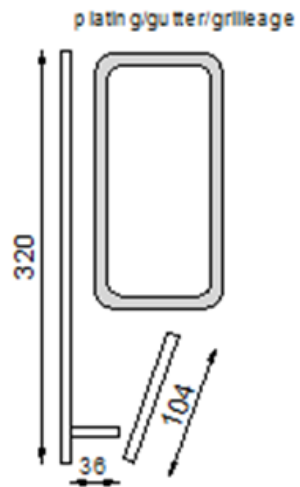
FB03



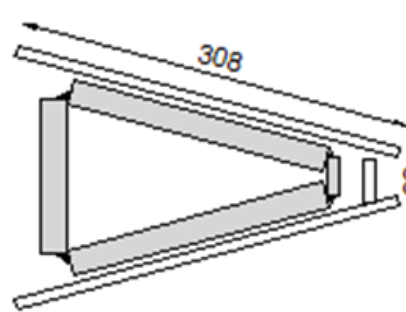
FB04-B



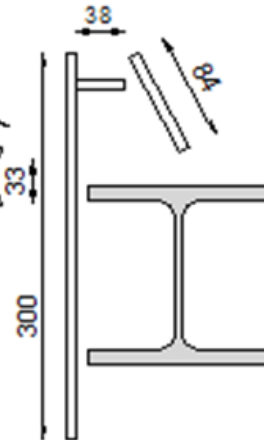
FB05



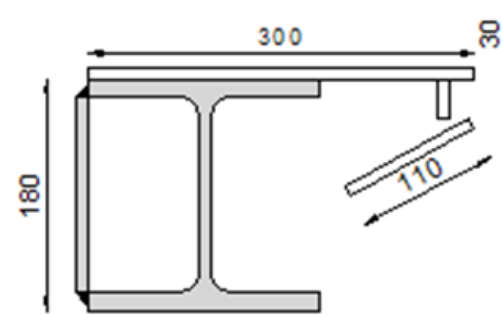
FB67



FB08



FB09



# Structural beams

$$\delta_{z,allowed} = 15\text{mm}$$

(FB01 to FB05)

V.  
L902  
C1  
G101

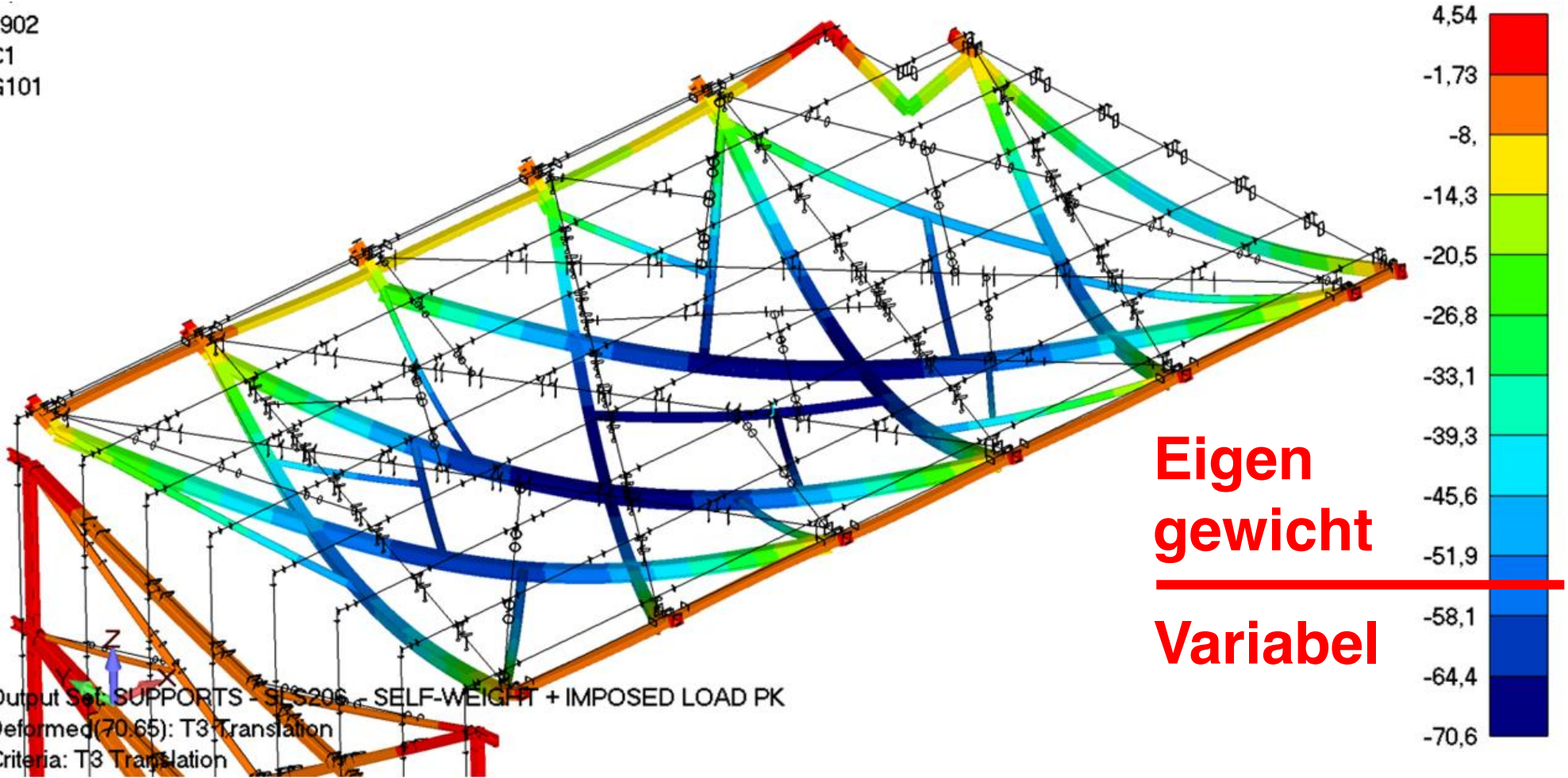


Figure 45: SLS206 - Self-weight + Imposed load - Vertical (TZ / T3) deflections of steel elements [mm]

# Checklist vervormingen:

- Vervorming door variabele belasting geen probleem voor de detaillering
- Vervorming door eigen gewicht is 'weg te togen'
- **Beperkt dakafschot: 'water ponding'**

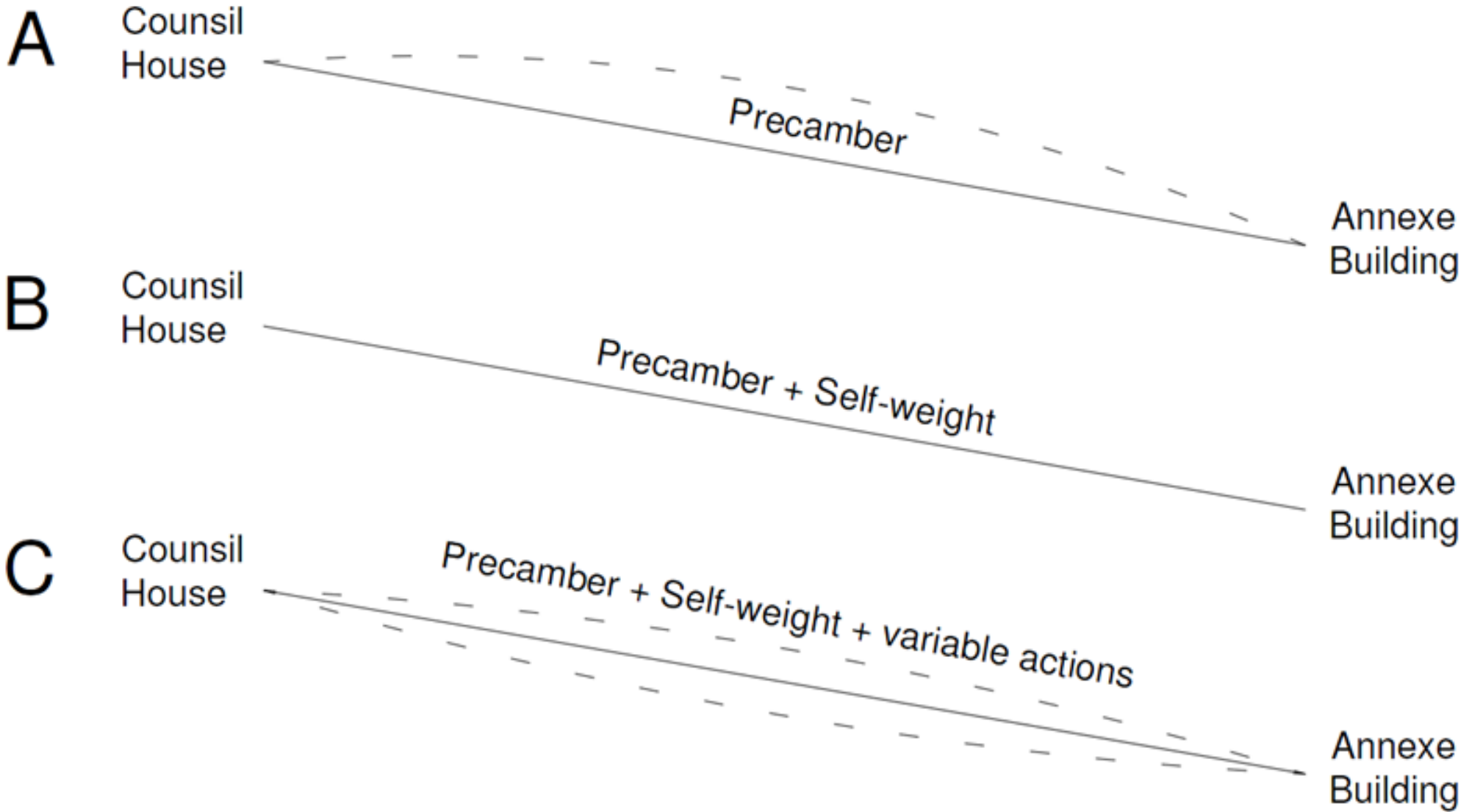


Figure 43: Precamber and deflections of roof beam

V1  
L902  
C1

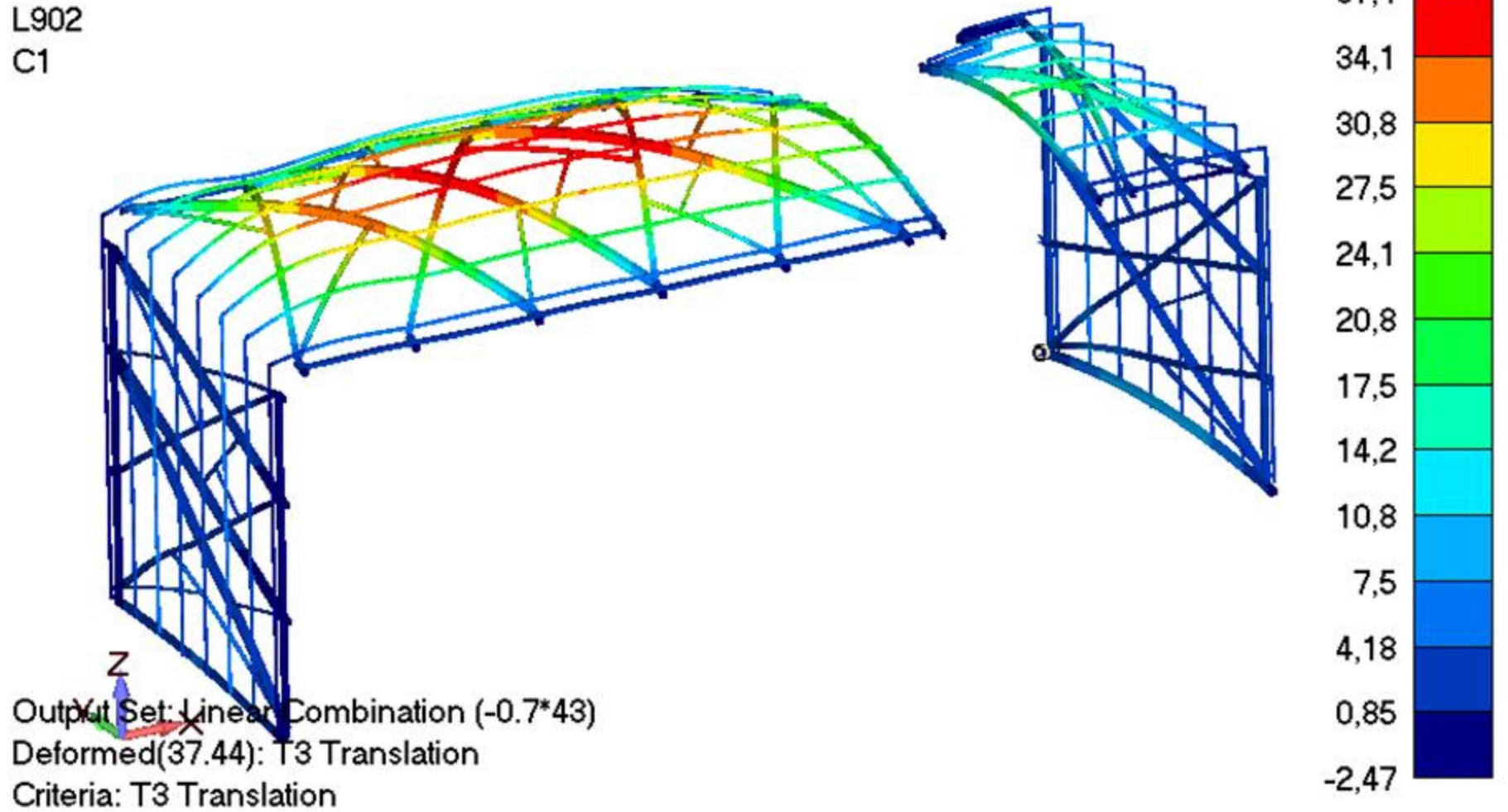
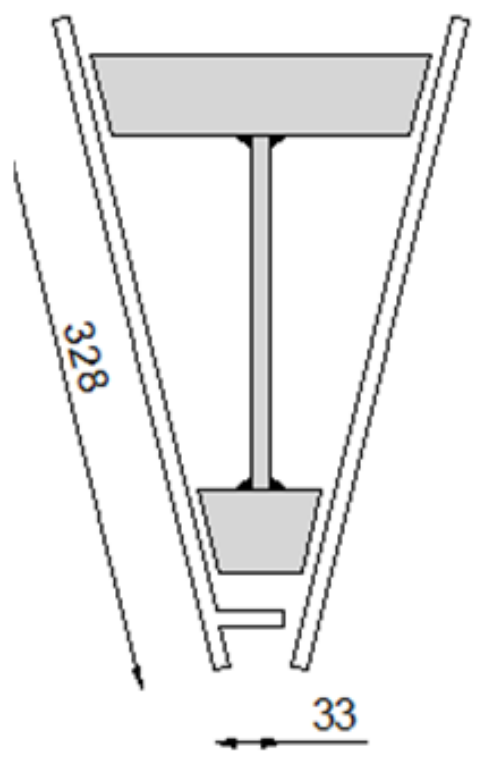


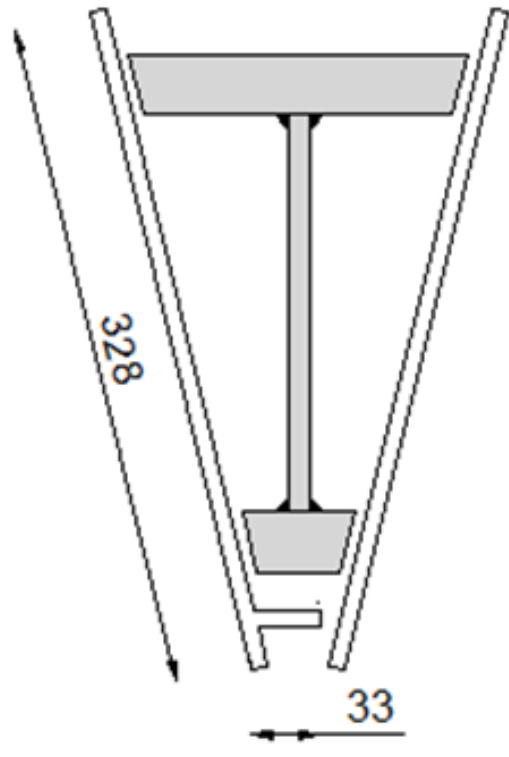
Figure 48: 70% precamber of SLS201



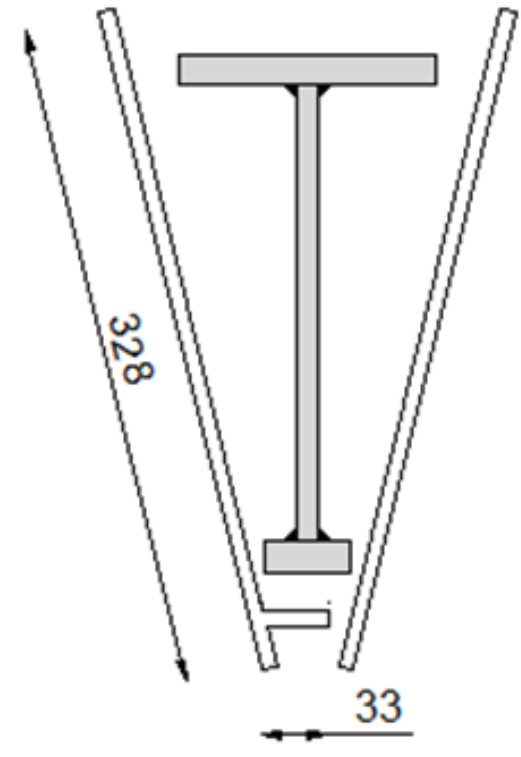
FB01



FB02



FB03



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Water ponding

# Theorie

# Praktijk

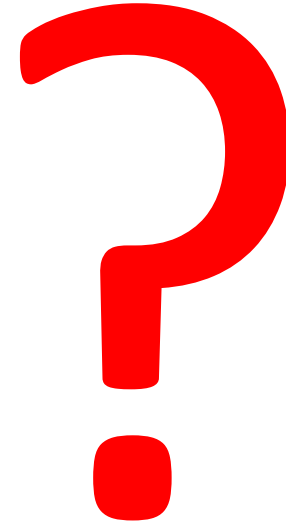
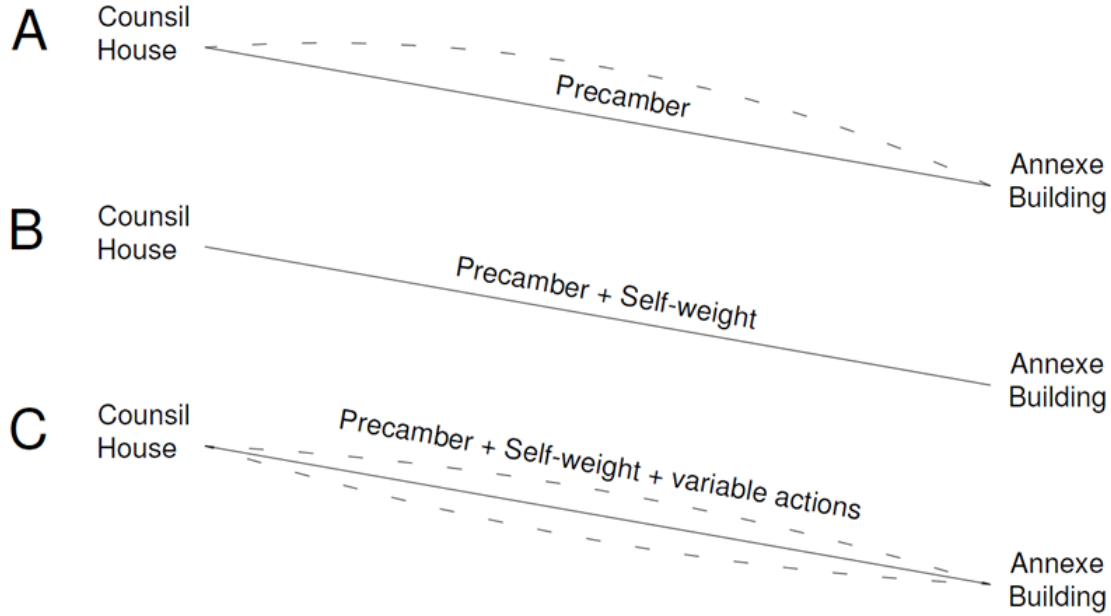


Figure 43: Precamber and deflections of roof beam

# Testen!



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Water ponding





Testen!

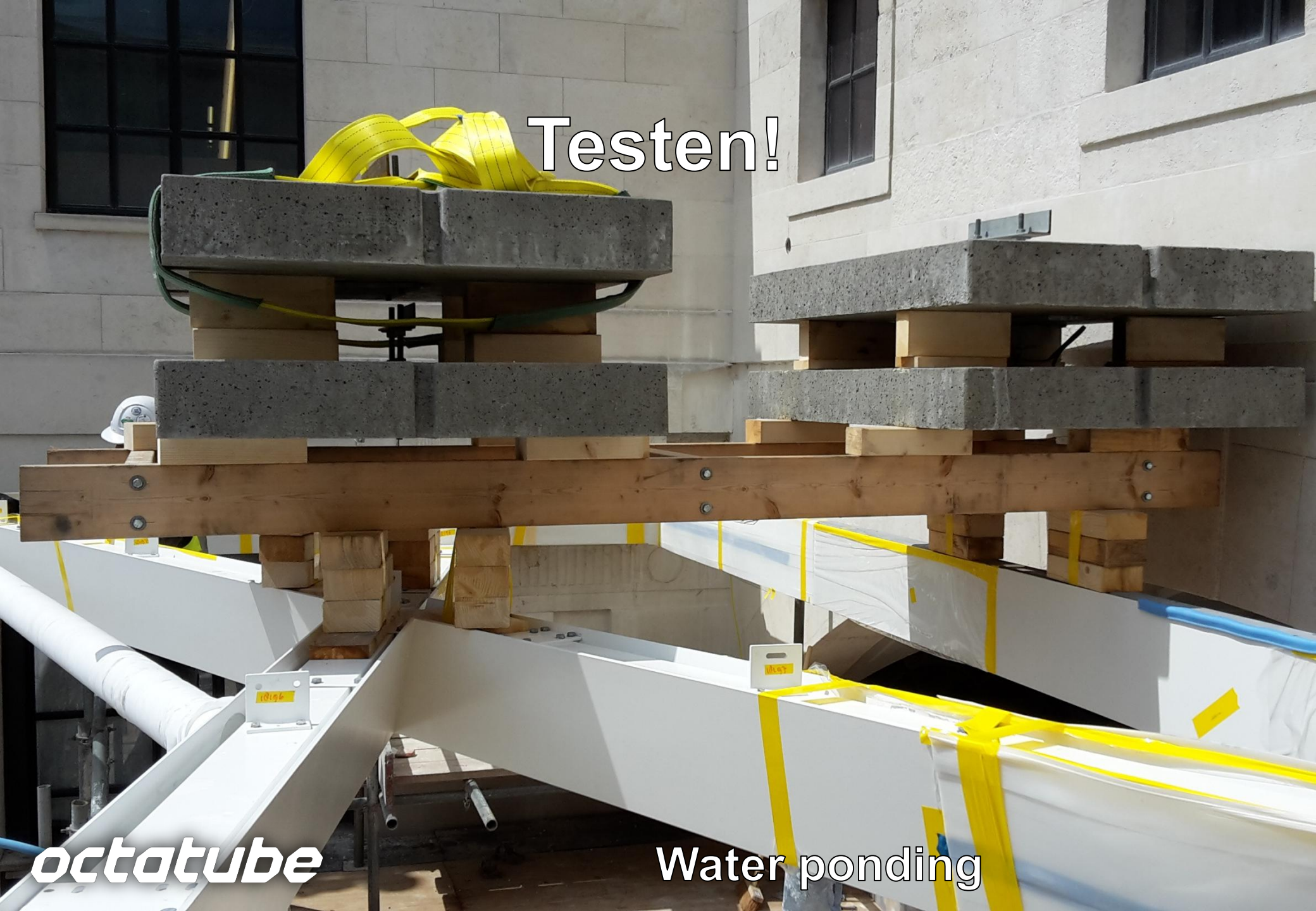
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Water ponding

Testen!

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Water ponding

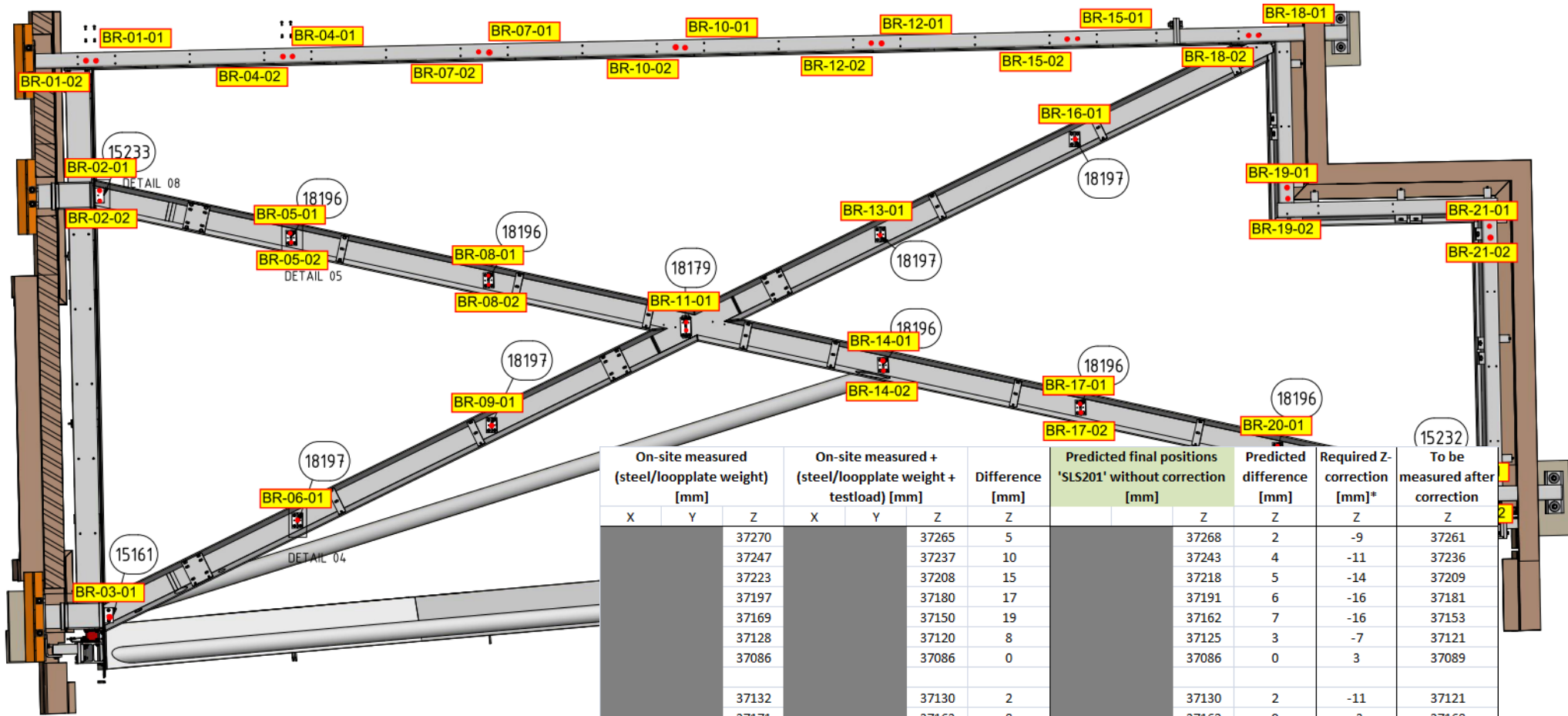


# Testen!

	<b>Geen belasting</b>	<b>Proefbelasting</b>	<b>Verdeelde belasting</b>
	Alleen E.G. en voortoog	Betonplaten	Dakdragers en Glas
Theorie	bekend	bekend	bekend
Praktijk	bekend	bekend	voorspelling

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Water ponding

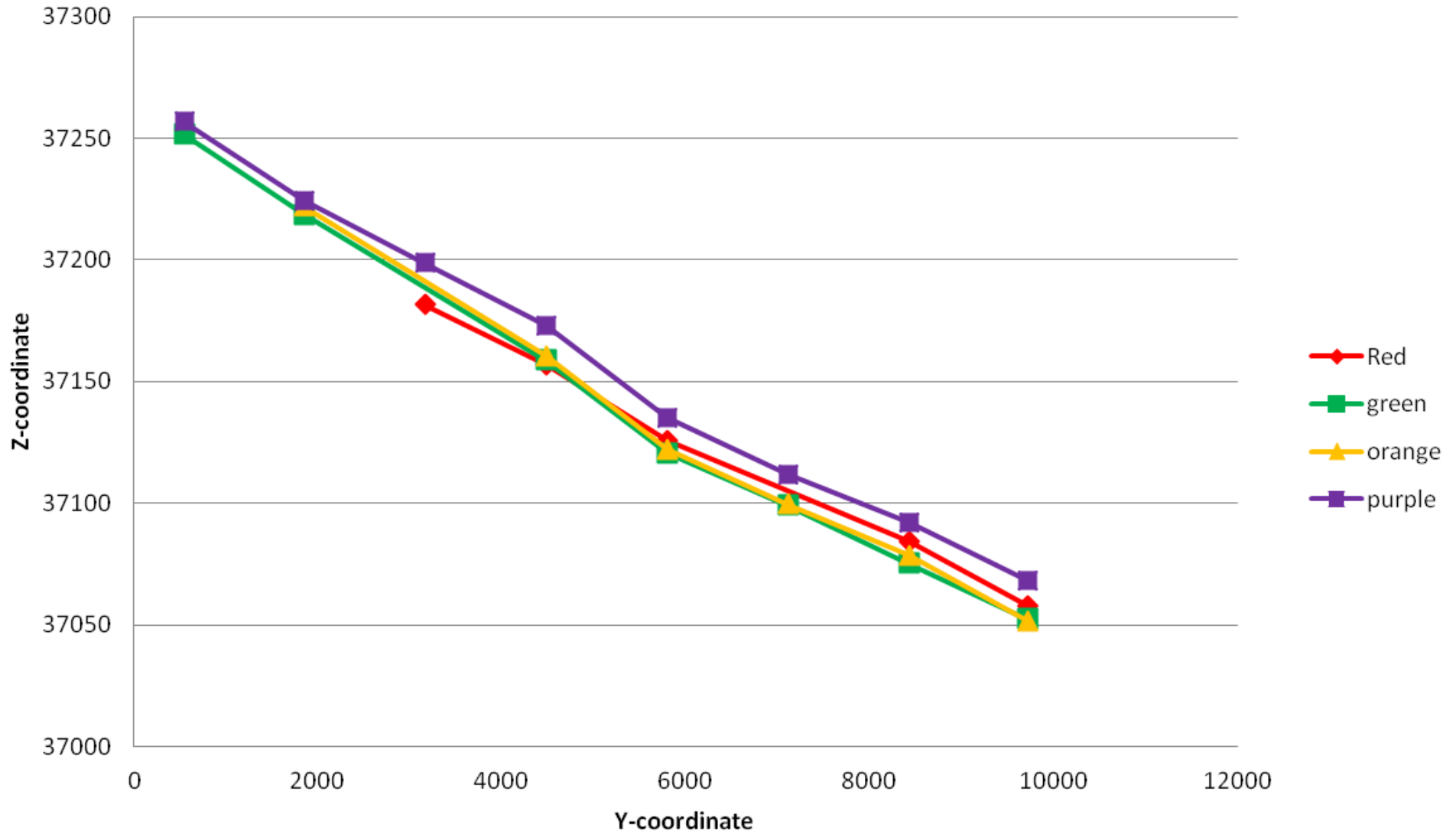


On-site measured (steel/loopplate weight) [mm]			On-site measured + (steel/loopplate weight + testload) [mm]			Difference [mm]	Predicted final positions 'SLS201' without correction [mm]	Predicted difference [mm]	Required Z- correction [mm]*	To be measured after correction	
X	Y	Z	X	Y	Z	Z	Z	Z	Z		
		37270			37265	5		37268	2	-9	37261
		37247			37237	10		37243	4	-11	37236
		37223			37208	15		37218	5	-14	37209
		37197			37180	17		37191	6	-16	37181
		37169			37150	19		37162	7	-16	37153
		37128			37120	8		37125	3	-7	37121
		37086			37086	0		37086	0	3	37089
		37132			37130	2		37130	2	-11	37121
		37171			37163	8		37162	9	-3	37168
		37198			37189	9		37189	9	-1	37197
		<b>37228</b>			<b>37216</b>	<b>12</b>		<b>37218</b>	<b>10</b>	<b>-1</b>	<b>37227</b>
		37256			37246	10		37248	8	-3	37253
		37285			37276	9		37279	6	-5	37280
		37312			37309	3		37310	2	-7	37305
		37326			37326	0		37326	0	-5	37321
		37126			37126	0		37126	0	-7	37119
		37165			37160	5		37161	4	-2	37163
		37196			37187	9		37189	7	-1	37195
		37259			37248	11		37249	10	-4	37255
		37288			37279	9		37279	9	-5	37283
		37272			37268	4		37272	0	-9	37263
		37298			37298	0		37298	0	-5	37293

\* + is upwards, - is downwards correction



# Expected final positions without correction



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Water ponding

# Productie - gevel

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# Productie - gevel

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# Productie - gevel

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# Productie - gevel



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# Productie - gevel



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Transport - gevel

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# Transport - gevel



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# Montage - gevel



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# Montage - gevel

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# Montage - gevel



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# Montage - gevel

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# Montage - dakglas

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Er gaat ook wel eens wat fout...



# Montage - gevel

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An aerial view of a large glass skylight being installed on the roof of a building. The skylight is composed of several rectangular glass panels held together by a black metal frame. A complex network of silver metal scaffolding surrounds the skylight, providing access for workers. The building's exterior is made of light-colored stone blocks and features several windows with dark frames. The overall scene is one of active construction.

Resultaat

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# Resultaat

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Resultaat

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# Resultaat

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A photograph taken from a modern glass balcony with a white railing. The view looks out over a city street with several brick buildings. The sky is overcast. The word "Resultaat" is overlaid in white text at the top center.

Resultaat

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A photograph of a classical building interior, likely a library or study area. The scene is dominated by a large, multi-paned glass skylight that allows natural light to filter in. Below the skylight, there are several stone columns with intricate carvings, including acanthus leaves and scrolls. The architecture is classical, with clean lines and detailed stonework. The overall atmosphere is one of a well-lit, historic space.

**Resultaat**

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A photograph of a window with condensation on the glass, looking out onto a rainy day. The window is partially open, and the rain is visible on the glass. The text "Resultaat" is overlaid on the image.

# Resultaat

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# Resultaat

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Resultaat

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Resultaat

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Vragen?

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