

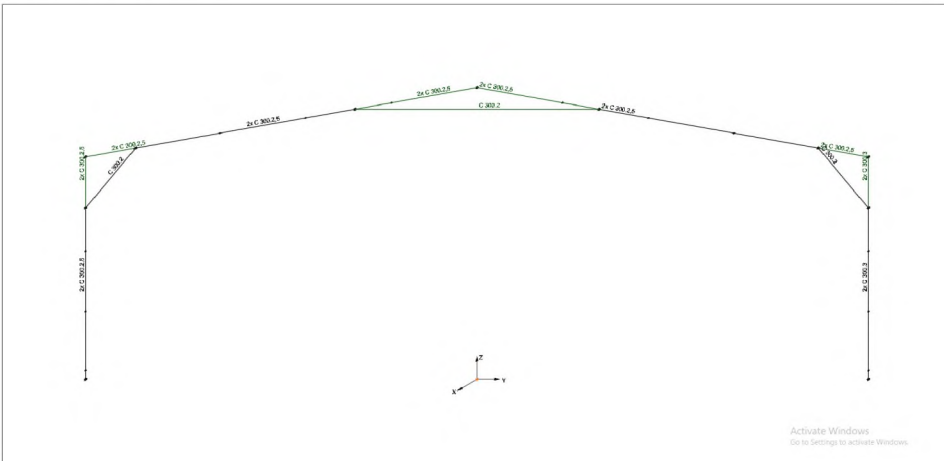
## Reaction forces

### Petanque Club Dordrecht Netherlands

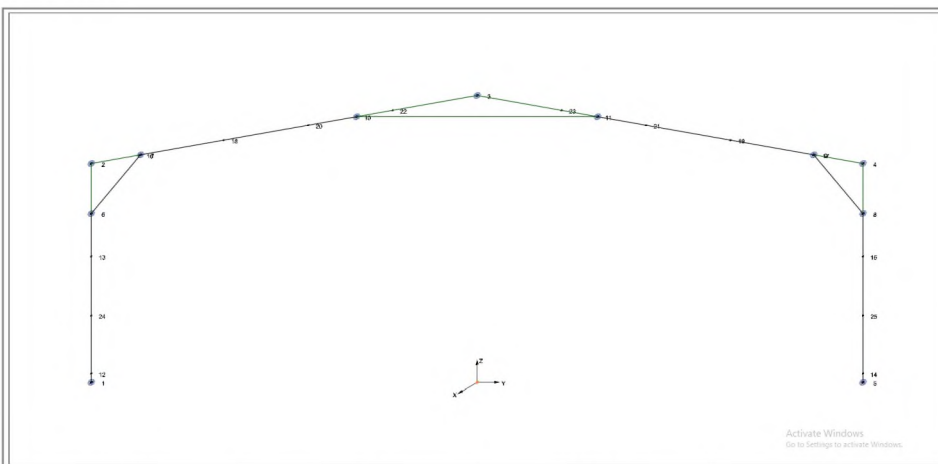
WIDTH	14.000 m
LENGTH	28.000 m
HEIGHT	4.000 m
Roof inclination	10.00 deg
Frame distance	4.000 m
Wall cladding	Wall girts + EPS panels 80.00 mm (0.15 kN/m <sup>2</sup> )
Roof cladding	Roof purlins + EPS panels 80.00 mm (0.16 kN/m <sup>2</sup> )
Maintenance load	10.00 kN
Snow Load	0.70 kN/m <sup>2</sup>
Wind zone	II
Wind speed	27.000 m/s
Wind exposure	II
Importance class	2
Reference period	50
Project ID	ax2300057
Date	30.01.2023

<b>PROJECT</b>	
Project ID	ax2300057
Client	Petanque Club Dordrecht
Location	Netherlands
Date	30.01.2023
StrEngS version	StrEngS 22.12 (#64)
<b>FRAME DATA</b>	
Hangar type	Frisohall Delta+ EU
Shape	Duopitch roof
Width	14.000 m
Height	4.000 m
Length	28.000 m
Frame distance	4.000 m
Roof inclination	10.00 deg
<b>LOAD DATA</b>	
Wall cladding	Wall girts + EPS panels 80.00 mm (0.15 kN/m <sup>2</sup> )
Roof cladding	Roof purlins + EPS panels 80.00 mm (0.16 kN/m <sup>2</sup> )
Maintenance load	10.00 kN
Snow	0.70 kN/m <sup>2</sup>
Wind	27.000 m/s (Wind zone: II; Wind exposure: II)
<b>FOUNDATION DATA</b>	
Foundation level	0.000 m
<b>DESIGN PARAMETERS</b>	
H/Delta_max	150
L/Delta_max	250
Gamma_M0	1.000
Gamma_M1	1.000

## 1. Overview

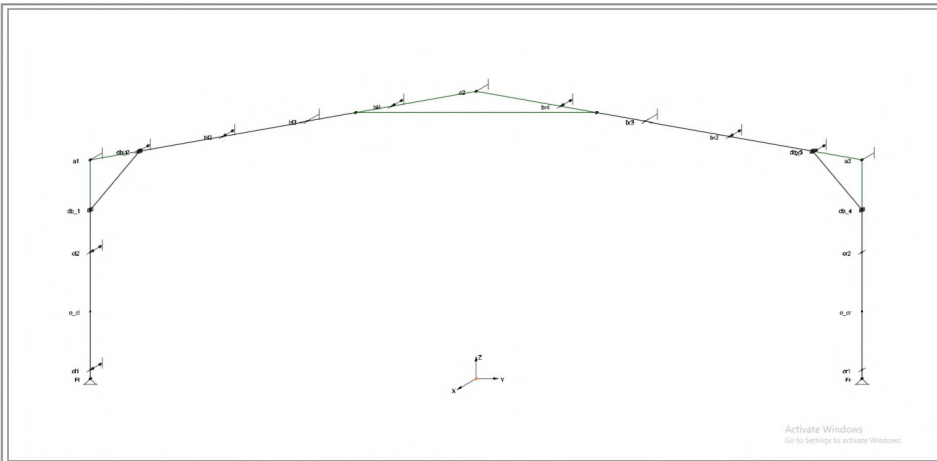


## 2. Joints



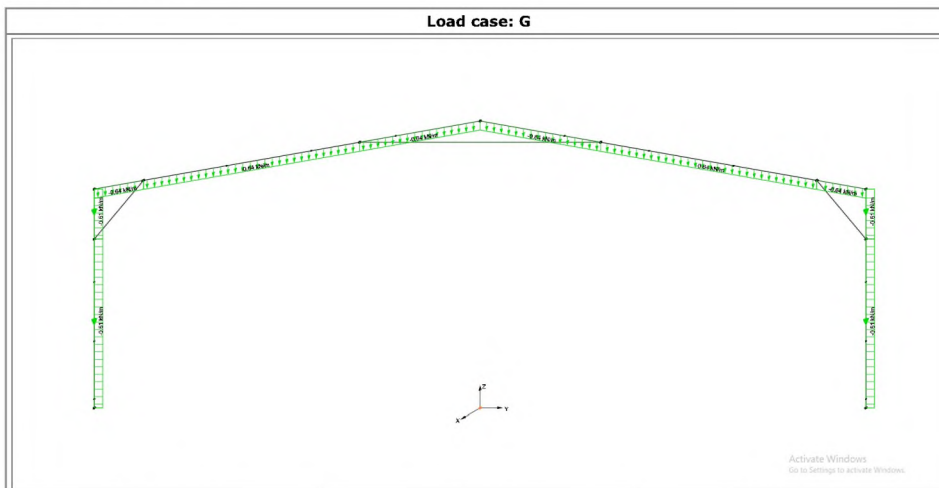
ID	X, m	Y, m	Z, m
1	0.000	-6.850	0.000
2	0.000	-6.850	3.874
3	0.000	0.000	5.082
4	0.000	6.850	3.874
5	0.000	6.850	0.000
6	0.000	-6.850	2.986
7	0.000	-5.976	4.028
8	0.000	6.850	2.986
9	0.000	5.976	4.028
10	0.000	-2.139	4.705
11	0.000	2.139	4.705
12	0.000	-6.850	0.155
13	0.000	-6.850	2.235
14	0.000	6.850	0.155
15	0.000	6.850	2.235
16	0.000	-6.000	4.024
17	0.000	6.000	4.024
18	0.000	-4.500	4.289
19	0.000	4.500	4.289
20	0.000	-3.000	4.553
21	0.000	3.000	4.553
22	0.000	-1.500	4.817
23	0.000	1.500	4.817
24	0.000	-6.850	1.185
25	0.000	6.850	1.185

### 3. Supports



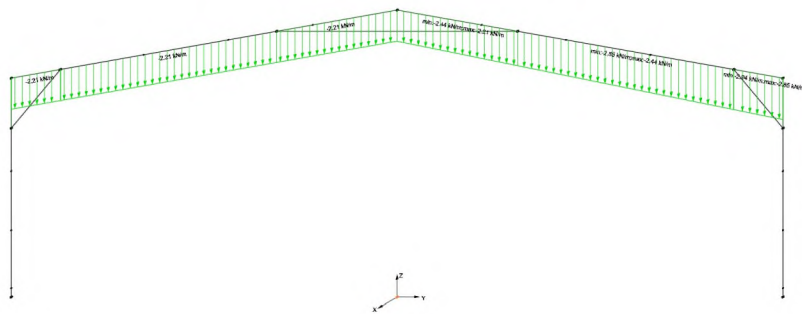
Name	Joint	Displacement			Rotation		
		X	Y	Z	X	Y	Z
Fr	1	Fixed	Fixed	Fixed			
a1	2	Fixed				Fixed	Fixed
a2	3	Fixed				Fixed	Fixed
a3	4	Fixed				Fixed	Fixed
Fr	5	Fixed	Fixed	Fixed		Fixed	
cl1	12	Fixed					
cl2	13	Fixed					
cr1	14						
cr2	15						
bl1	16	Fixed					
br1	17	Fixed					
bl2	18	Fixed					
br2	19	Fixed					
bl3	20	Fixed				Fixed	Fixed
br3	21	Fixed				Fixed	Fixed
bl4	22	Fixed					
br4	23	Fixed					
o_cl	24						
o_cr	25						
db_1	6					Fixed	Fixed
db_2	7					Fixed	Fixed
db_3	9					Fixed	Fixed
db_4	8					Fixed	Fixed

## 4. Girder loads



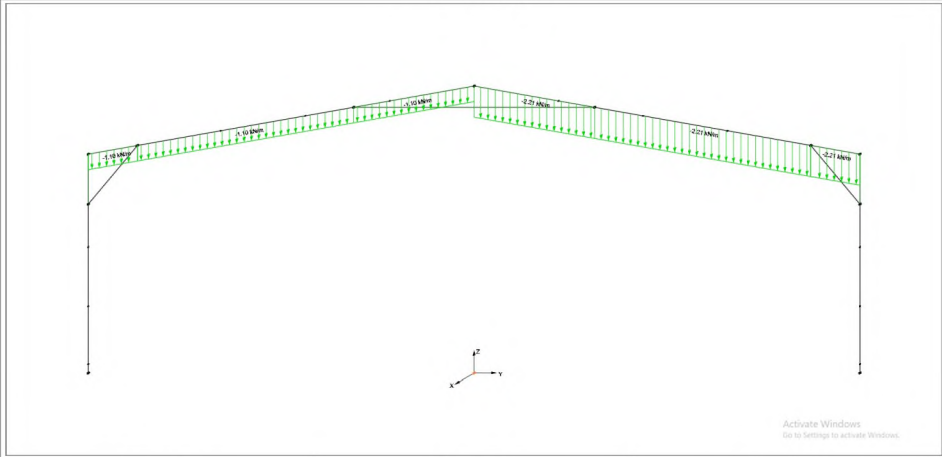
Component	Direction	Value, kN/m
CL	Z	-0.61
CLG	Z	-0.61
CR	Z	-0.61
CRG	Z	-0.61
BLG	Z	-0.64
BL1	Z	-0.64
BLR	Z	-0.64
BRG	Z	-0.64
BR1	Z	-0.64
BRR	Z	-0.64

**Load case: Ssym**



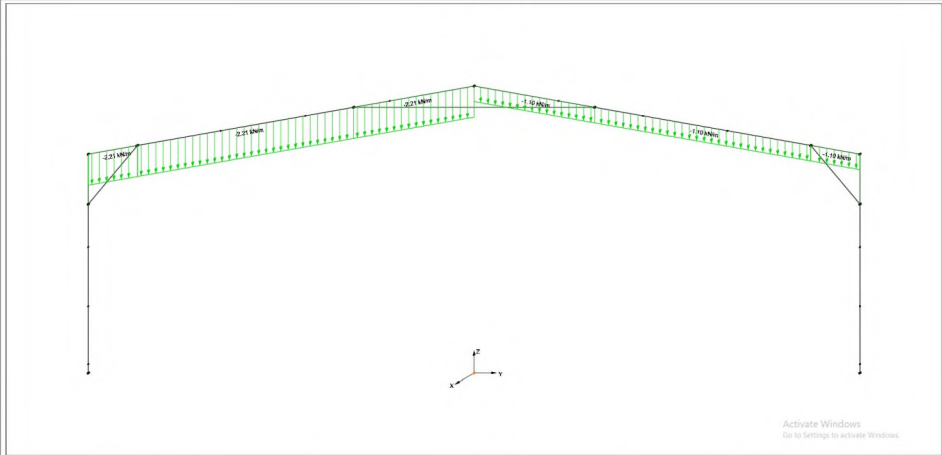
Component	Direction	Value, kN/m
BLG	Z	-2.21
BL1	Z	-2.21
BLR	Z	-2.21
BRG	Z	[-2.94; -2.85]
BR1	Z	[-2.85; -2.44]
BRR	Z	[-2.44; -2.21]

**Load case: Sasym1**



Component	Direction	Value, kN/m
BLG	Z	-1.10
BL1	Z	-1.10
BLR	Z	-1.10
BRG	Z	-2.21
BR1	Z	-2.21
BRR	Z	-2.21

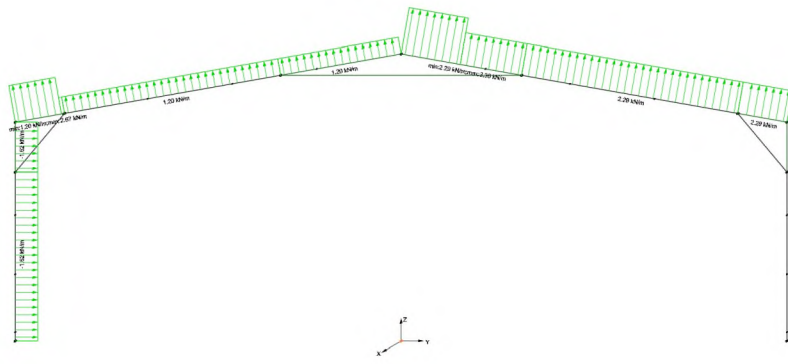
**Load case: Sasym2**



Component	Direction	Value, kN/m
BLG	Z	-2.21
BL1	Z	-2.21
BLR	Z	-2.21
BRG	Z	-1.10
BR1	Z	-1.10
BRR	Z	-1.10

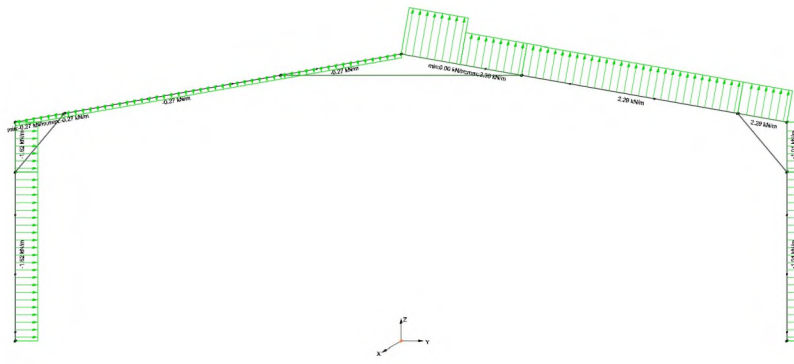


**Load case: W11**



Component	Direction	Value, kN/m
CL	z	-1.62
CLG	z	-1.62
BLG	z	[1.20; 2.67]
BL1	z	1.20
BLR	z	1.20
BRG	z	2.29
BR1	z	2.29
BRR	z	[2.29; 3.36]

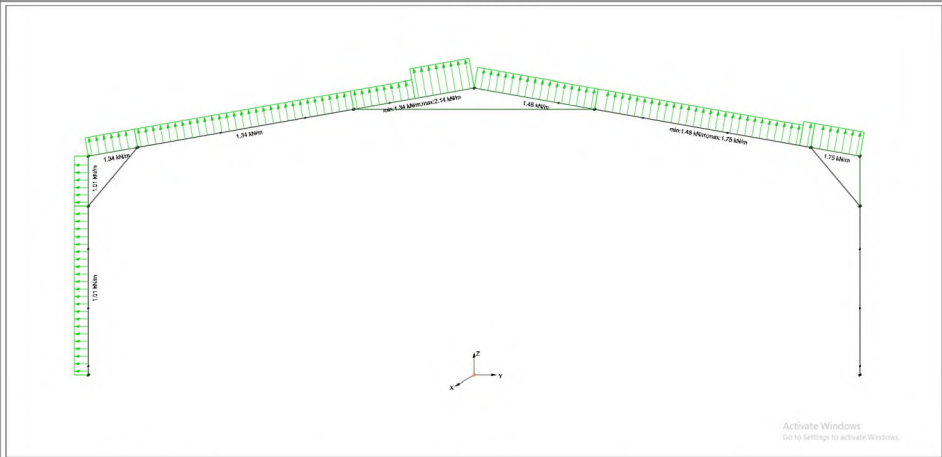
**Load case: W12**



Activate Windows  
Go to Settings to activate Windows.

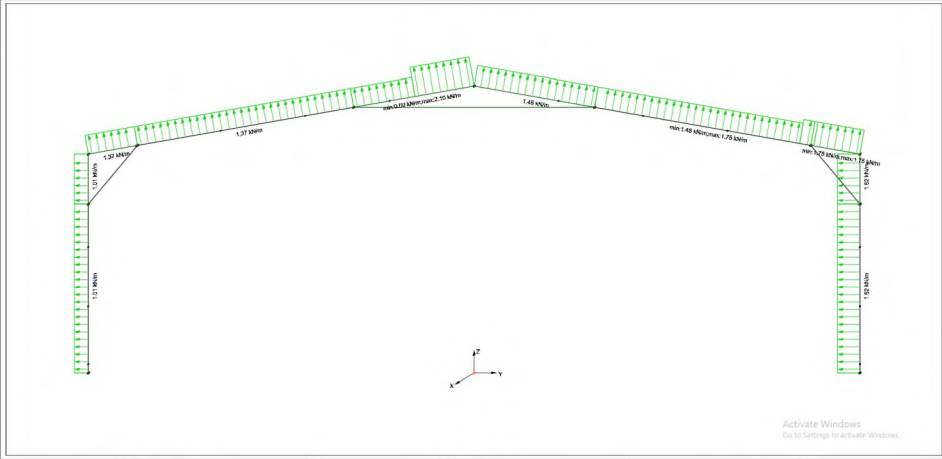
Component	Direction	Value, kN/m
CL	z	-1.62
CLG	z	-1.62
CR	z	-1.01
CRG	z	-1.01
BLG	z	-0.27
BL1	z	-0.27
BLR	z	-0.27
BRG	z	2.29
BR1	z	2.29
BRR	z	[0.00; 3.36]

Load case: Wr1



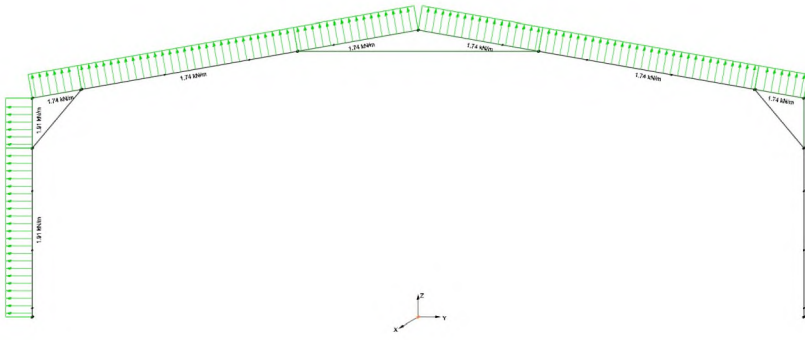
Component	Direction	Value, kN/m
CL	z	1.01
CLG	z	1.01
BLG	z	1.34
BL1	z	1.34
BLR	z	[1.34; 2.14]
BRG	z	1.75
BR1	z	[1.48; 1.75]
BRR	z	1.48

Load case: Wr2



Component	Direction	Value, kN/m
CL	z	1.01
CLG	z	1.01
CR	z	1.62
CRG	z	1.62
BLG	z	1.37
BL1	z	1.37
BLR	z	[0.00; 2.10]
BRG	z	1.75
BR1	z	[1.48; 1.75]
BRR	z	1.48

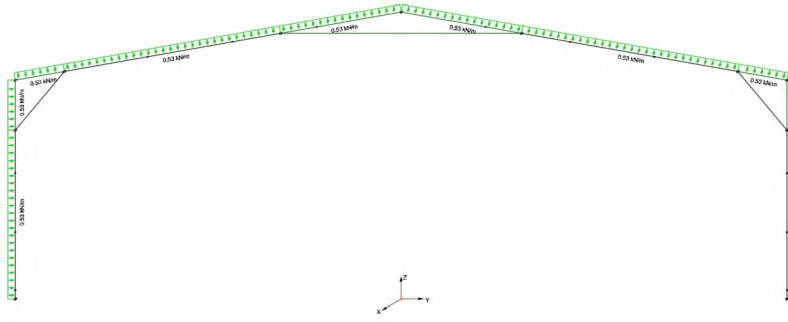
**Load case: Wf**



Activate Windows  
Go to Settings to activate Windows.

Component	Direction	Value, kN/m
CL	z	1.91
CLG	z	1.91
BLG	z	1.74
BL1	z	1.74
BLR	z	1.74
BRG	z	1.74
BR1	z	1.74
BRR	z	1.74

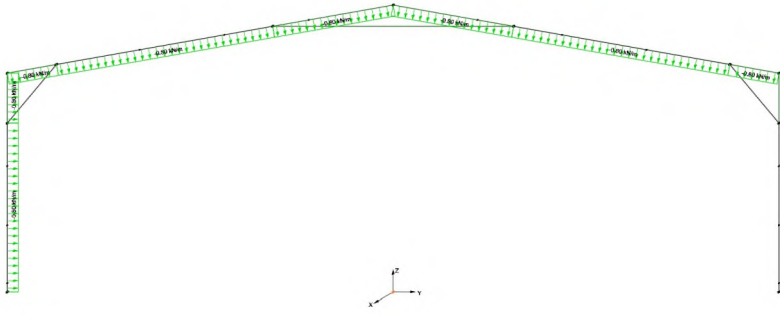
**Load case: W01**



Activate Windows  
Go to Settings to activate Windows.

Component	Direction	Value, kN/m
CL	z	0.53
CLG	z	0.53
BLG	z	0.53
BL1	z	0.53
BLR	z	0.53
BRG	z	0.53
BR1	z	0.53
BRR	z	0.53

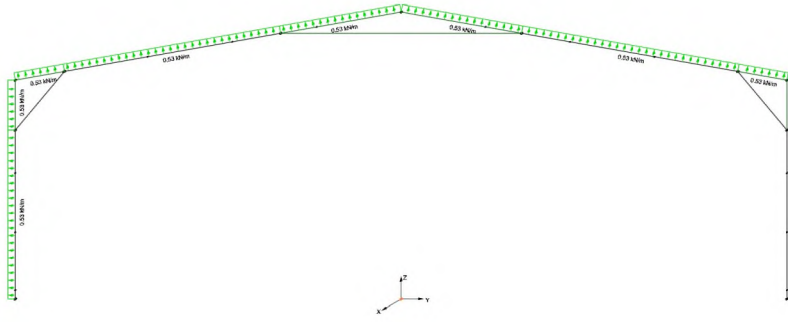
Load case: Wul



Activate Windows  
Go to Settings to activate Windows.

Component	Direction	Value, kN/m
CL	z	-0.80
CLG	z	-0.80
BLG	z	-0.80
BL1	z	-0.80
BLR	z	-0.80
BRG	z	-0.80
BR1	z	-0.80
BRR	z	-0.80

**Load case: Wor**

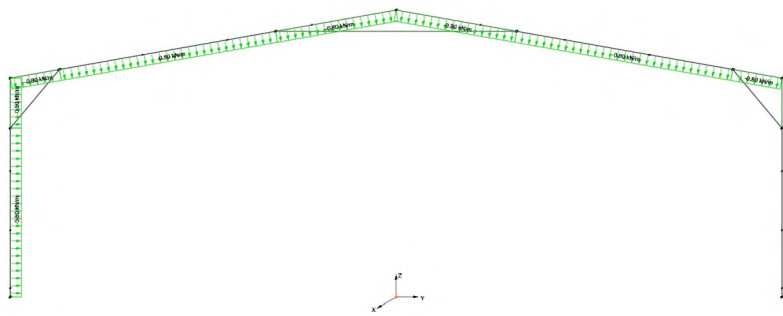


Activate Windows  
Go to Settings to activate Windows.

Component	Direction	Value, kN/m
CL	z	0.53
CLG	z	0.53
BLG	z	0.53
BL1	z	0.53
BLR	z	0.53
BRG	z	0.53
BR1	z	0.53
BRR	z	0.53



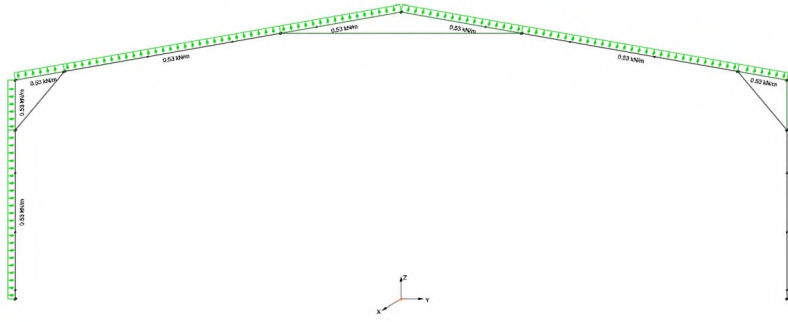
Load case: Wur



Activate Windows  
Go to Settings to activate Windows.

Component	Direction	Value, kN/m
CL	z	-0.80
CLG	z	-0.80
BLG	z	-0.80
BL1	z	-0.80
BLR	z	-0.80
BRG	z	-0.80
BR1	z	-0.80
BRR	z	-0.80

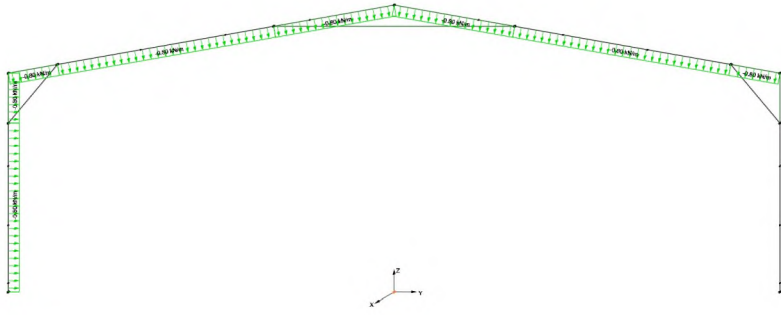
**Load case: Wof**



Activate Windows  
Go to Settings to activate Windows.

Component	Direction	Value, kN/m
CL	z	0.53
CLG	z	0.53
BLG	z	0.53
BL1	z	0.53
BLR	z	0.53
BRG	z	0.53
BR1	z	0.53
BRR	z	0.53

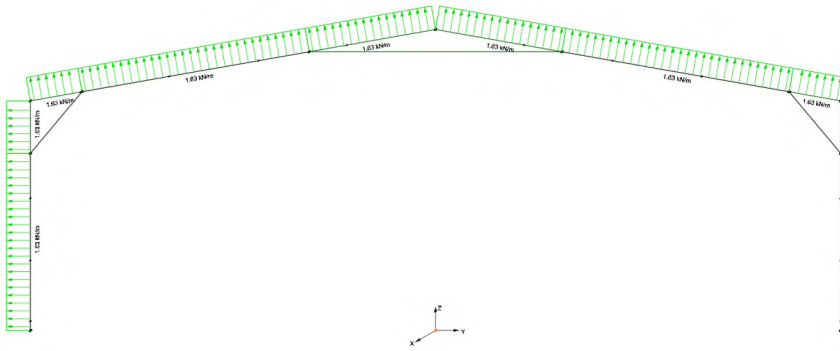
Load case: Wuf



Activate Windows  
Go to Settings to activate Windows.

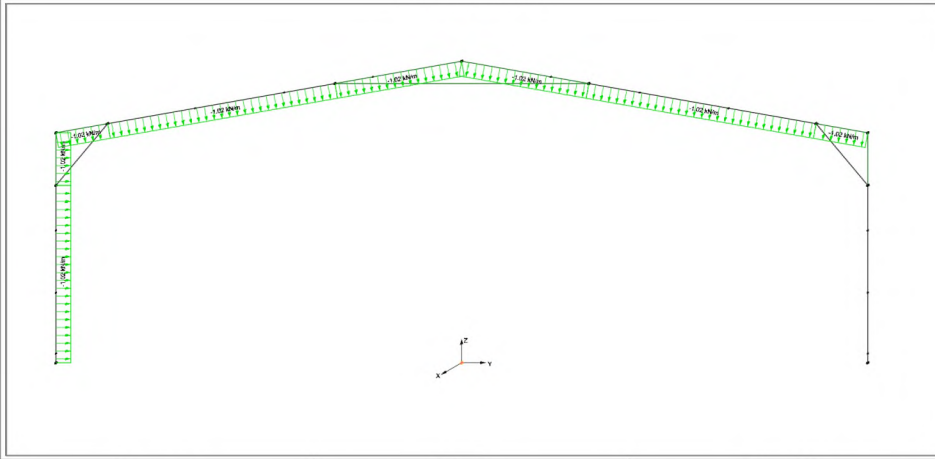
Component	Direction	Value, kN/m
CL	z	-0.80
CLG	z	-0.80
BLG	z	-0.80
BL1	z	-0.80
BLR	z	-0.80
BRG	z	-0.80
BR1	z	-0.80
BRR	z	-0.80

Load case: Wolacc



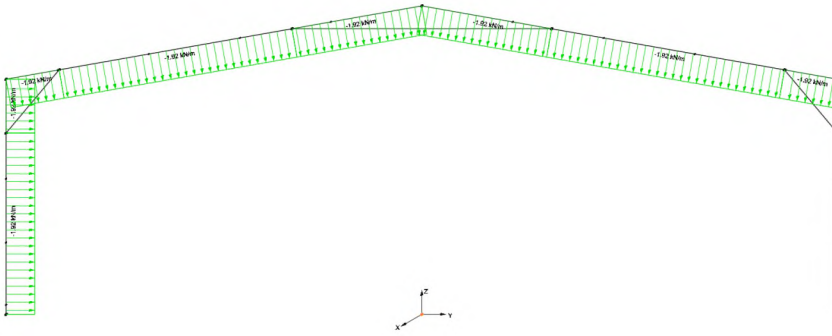
Component	Direction	Value, kN/m
CL	z	1.63
CLG	z	1.63
BLG	z	1.63
BL1	z	1.63
BLR	z	1.63
BRG	z	1.63
BR1	z	1.63
BRR	z	1.63

Load case: Wuracc



Component	Direction	Value, kN/m
CL	z	-1.02
CLG	z	-1.02
BLG	z	-1.02
BL1	z	-1.02
BLR	z	-1.02
BRG	z	-1.02
BR1	z	-1.02
BRR	z	-1.02

Load case: Wfacc



Component	Direction	Value, kN/m
CL	z	-1.92
CLG	z	-1.92
BLG	z	-1.92
BL1	z	-1.92
BLR	z	-1.92
BRG	z	-1.92
BR1	z	-1.92
BRR	z	-1.92

## 5. Load cases

Name	Description
G	Dead load
Q	Maintenance load
Ssym	Snow load, symmetric
Sasym1	Snow load, asymmetric, variant 1
Sasym2	Snow load, asymmetric, variant 2
Wl1	Side wind on left wall, variant 1
Wl2	Side wind on left wall, variant 2
Wr1	Side wind on right wall, variant 1
Wr2	Side wind on right wall, variant 2
Wf	Front wind
Wol	Overpressure due to left wind
Wul	Underpressure due to left wind
Wor	Overpressure due to right wind
Wur	Underpressure due to right wind
Wof	Overpressure due to front wind
Wuf	Underpressure due to front wind
Wolacc	Overpressure due to left wind, accidental
Wuracc	Underpressure due to right wind, accidental
Wufacc	Underpressure due to front wind, accidental





## 7. Support reactions

Load case/combination	Rx, kN	Ry, kN	Rz, kN	Mx, kN.m	My, kN.m	Mz, kN.m
<b>Support: Fl (Joint: 1)</b>						
G	0.0000	2.8464	9.0851	0.0000	0.0000	0.0000
Ssym	0.0000	7.7796	15.7741	0.0000	0.0000	0.0000
Sasym1	0.0000	5.4853	9.5900	0.0000	0.0000	0.0000
Sasym2	0.0000	5.4856	13.4260	0.0000	0.0000	0.0000
Wl1	0.0000	-11.5249	-13.1109	0.0000	0.0000	0.0000
Wl2	0.0000	-10.9890	-5.5893	0.0000	0.0000	0.0000
Wr1	0.0000	-1.8565	-9.3217	0.0000	0.0000	0.0000
Wr2	0.0000	-0.4567	-8.5627	0.0000	0.0000	0.0000
Wf	0.0000	0.0926	-10.8464	0.0000	0.0000	0.0000
Wol	0.0000	-0.1284	-3.3662	0.0000	0.0000	0.0000
Wul	0.0000	0.1927	5.0493	0.0000	0.0000	0.0000
Wor	0.0000	-0.1284	-3.3662	0.0000	0.0000	0.0000
Wur	0.0000	0.1927	5.0493	0.0000	0.0000	0.0000
Wof	0.0000	-0.1284	-3.3662	0.0000	0.0000	0.0000
Wuf	0.0000	0.1927	5.0493	0.0000	0.0000	0.0000
Wolacc	0.0000	-0.3931	-10.3006	0.0000	0.0000	0.0000
Wuracc	0.0000	0.2457	6.4379	0.0000	0.0000	0.0000
Wufacc	0.0000	0.4624	12.1183	0.0000	0.0000	0.0000
[1.2-G+1.5-Q]d	0.0000	3.4157	10.9021	0.0000	0.0000	0.0000
<b>[1.2-G+1.5-Ssym]d</b>	0.0000	<b>15.0851</b>	<b>34.5633</b>	0.0000	0.0000	0.0000
[1.2-G+1.5-Sasym1]d	0.0000	11.6437	25.2871	0.0000	0.0000	0.0000
[1.2-G+1.5-Sasym2]d	0.0000	11.6441	31.0411	0.0000	0.0000	0.0000
<b>[0.9-G+1.5-Wl1+1.5-Wol]d</b>	0.0000	<b>-14.9182</b>	<b>-16.5390</b>	0.0000	0.0000	0.0000
[0.9-G+1.5-Wl1+1.5-Wul]d	0.0000	-14.4365	-3.9158	0.0000	0.0000	0.0000
[0.9-G+1.5-Wl2+1.5-Wol]d	0.0000	-14.1144	-5.2567	0.0000	0.0000	0.0000
[0.9-G+1.5-Wl2+1.5-Wul]d	0.0000	-13.6327	7.3665	0.0000	0.0000	0.0000
[0.9-G+1.5-Wr1+1.5-Wor]d	0.0000	-0.4157	-10.8552	0.0000	0.0000	0.0000
[0.9-G+1.5-Wr1+1.5-Wur]d	0.0000	0.0660	1.7680	0.0000	0.0000	0.0000
[0.9-G+1.5-Wr2+1.5-Wor]d	0.0000	1.6841	-9.7167	0.0000	0.0000	0.0000
[0.9-G+1.5-Wr2+1.5-Wur]d	0.0000	2.1658	2.9065	0.0000	0.0000	0.0000
[0.9-G+1.5-Wf+1.5-Wof]d	0.0000	2.5079	-13.1423	0.0000	0.0000	0.0000
[0.9-G+1.5-Wf+1.5-Wuf]d	0.0000	2.9896	-0.5191	0.0000	0.0000	0.0000
[G+Wl1+Wolacc]d	0.0000	-9.0721	-14.3276	0.0000	0.0000	0.0000
[G+Wl2+Wolacc]d	0.0000	-8.5362	-6.8057	0.0000	0.0000	0.0000
[G+0.2-Ssym+Wr1+Wuracc]d	0.0000	2.7910	9.3551	0.0000	0.0000	0.0000
[G+0.2-Ssym+Wr2+Wuracc]d	0.0000	4.1909	10.1141	0.0000	0.0000	0.0000
[G+0.2-Sasym1+Wr1+Wuracc]d	0.0000	2.3322	8.1186	0.0000	0.0000	0.0000
[G+0.2-Sasym1+Wr2+Wuracc]d	0.0000	3.7322	8.8776	0.0000	0.0000	0.0000
[G+0.2-Sasym2+Wr1+Wuracc]d	0.0000	2.3323	8.8856	0.0000	0.0000	0.0000
[G+0.2-Sasym2+Wr2+Wuracc]d	0.0000	3.7322	9.6446	0.0000	0.0000	0.0000
<b>Support: Fr (Joint: 5)</b>						
G	0.0000	-2.8464	9.2257	0.0000	0.0000	0.0000
Ssym	0.0000	-7.7796	17.4807	0.0000	0.0000	0.0000
Sasym1	0.0000	-5.4853	13.4260	0.0000	0.0000	0.0000
Sasym2	0.0000	-5.4856	9.5900	0.0000	0.0000	0.0000
Wl1	0.0000	3.9447	-13.1350	0.0000	0.0000	0.0000
Wl2	0.0000	-2.5037	-9.3844	0.0000	0.0000	0.0000
Wr1	0.0000	5.7041	-11.0935	0.0000	0.0000	0.0000
Wr2	0.0000	10.6129	-12.0151	0.0000	0.0000	0.0000
Wf	0.0000	7.2957	-12.9357	0.0000	0.0000	0.0000
Wol	0.0000	2.1977	-3.9514	0.0000	0.0000	0.0000
Wul	0.0000	-3.2966	5.9270	0.0000	0.0000	0.0000
Wor	0.0000	2.1977	-3.9514	0.0000	0.0000	0.0000
Wur	0.0000	-3.2966	5.9270	0.0000	0.0000	0.0000
Wof	0.0000	2.1977	-3.9514	0.0000	0.0000	0.0000
Wuf	0.0000	-3.2966	5.9270	0.0000	0.0000	0.0000
Wolacc	0.0000	6.7251	-12.0912	0.0000	0.0000	0.0000
Wuracc	0.0000	-4.2032	7.5570	0.0000	0.0000	0.0000
Wufacc	0.0000	-7.9119	14.2249	0.0000	0.0000	0.0000
[1.2-G+1.5-Q]d	0.0000	-3.4157	11.0708	0.0000	0.0000	0.0000
<b>[1.2-G+1.5-Ssym]d</b>	0.0000	<b>-15.0851</b>	<b>37.2919</b>	0.0000	0.0000	0.0000
[1.2-G+1.5-Sasym1]d	0.0000	-11.6437	31.2098	0.0000	0.0000	0.0000
[1.2-G+1.5-Sasym2]d	0.0000	-11.6441	25.4558	0.0000	0.0000	0.0000
<b>[0.9-G+1.5-Wl1+1.5-Wol]d</b>	0.0000	<b>6.6519</b>	<b>-17.3264</b>	0.0000	0.0000	0.0000
[0.9-G+1.5-Wl1+1.5-Wul]d	0.0000	-1.5896	-2.5088	0.0000	0.0000	0.0000
[0.9-G+1.5-Wl2+1.5-Wol]d	0.0000	-3.0207	-11.7005	0.0000	0.0000	0.0000
[0.9-G+1.5-Wl2+1.5-Wul]d	0.0000	-11.2622	3.1171	0.0000	0.0000	0.0000
[0.9-G+1.5-Wr1+1.5-Wor]d	0.0000	9.2910	-14.2642	0.0000	0.0000	0.0000
[0.9-G+1.5-Wr1+1.5-Wur]d	0.0000	1.0494	0.5534	0.0000	0.0000	0.0000
<b>[0.9-G+1.5-Wr2+1.5-Wor]d</b>	0.0000	<b>16.6542</b>	<b>-15.6466</b>	0.0000	0.0000	0.0000
[0.9-G+1.5-Wr2+1.5-Wur]d	0.0000	8.4127	-0.8290	0.0000	0.0000	0.0000
[0.9-G+1.5-Wf+1.5-Wof]d	0.0000	11.6784	-17.0274	0.0000	0.0000	0.0000
[0.9-G+1.5-Wf+1.5-Wuf]d	0.0000	3.4369	-2.2098	0.0000	0.0000	0.0000
[G+Wl1+Wolacc]d	0.0000	7.8239	-16.0018	0.0000	0.0000	0.0000
[G+Wl2+Wolacc]d	0.0000	1.3752	-12.2510	0.0000	0.0000	0.0000
[G+0.2-Ssym+Wr1+Wuracc]d	0.0000	-2.9009	9.1842	0.0000	0.0000	0.0000

Load case/combination	Rx, kN	Ry, kN	Rz, kN	Mx, kN.m	My, kN.m	Mz, kN.m
[G+0.2-Ssym+Wr2+Wuracc]d	0.0000	2.0082	8.2625	0.0000	0.0000	0.0000
[G+0.2-Sasym1+Wr1+Wuracc]d	0.0000	-2.4422	8.3734	0.0000	0.0000	0.0000
[G+0.2-Sasym1+Wr2+Wuracc]d	0.0000	2.4669	7.4517	0.0000	0.0000	0.0000
[G+0.2-Sasym2+Wr1+Wuracc]d	0.0000	-2.4422	7.6064	0.0000	0.0000	0.0000
[G+0.2-Sasym2+Wr2+Wuracc]d	0.0000	2.4668	6.6847	0.0000	0.0000	0.0000