

ASSEMBLING OF FRAME - TECHNOLOGICAL CARD

1. GENERAL

This technological card consists of the construction of steel frame and roof. The length of the building is 60m and width 14,80m. We are going to use metal sections type HEB 260 and prefabricated reinforced concrete columns 30x30cm for the columns and warren type inverted struts for roof in the transverse direction and metal sections type RHS 100x100x5 in the longitudinal direction. The truss is to only a water and upon it rests the roof. The roof drains water to only one side with a slope of 2.5%. I choose this type of material for the realization of frame for it's quick and easy installation.

2. DESCRIPTION AND CONSTRUCTION SEQUENCE

The basics components of our frame are metal sections:

- HEB 260
 - HEA 260
 - HEA 180
 - RHS 100x100x5
 - RHS 120x120x5
- and prefabricated reinforced concrete columns 30x30cm

The truss measured 14,80m and height is variable. Truss come already assembled and is composed of:

- RHS 60x5
- RHS 60x4
- RHS 80x80x5
- RHS 100x100x5

Roof will be mounted on works and is composed of:

- Two layers roll roofing
- Heat insulation of solid rock wool compressive strength of 80 kPa, thickness 30mm
- Heat insulation of solid rock wool compressive strength of 30 kPa, thickness 30mm
- Vapor barrier stabilized PE film (thickness 200MKM)
- Heat insulation of solid rock wool compressive strength of 80 kPa, thickness 30mm
- Profiled steel sheets

CONSTRUCTION SEQUENCE:

1. Pillars staking
2. Follow the instructions of the details A and B
3. Follow the instructions of the details C and D
4. Raise trusses and beams that need assembling with the crane
5. Do assembly work uploded to a stable structure (scaffold)
6. Connect the trusses with diagonal stabilizing
7. Leave holes in the roof for skylights
8. Put the different layers of the roof

4. QUALITY CONTROL AND ACCEPTANCE OF WORK

Tolerances FITTING Trusses (mm)

1. Trusses up to 18m: length	+10
section width of	+5
section thickness or height	+5
2. Truss deviations from marking axes	+5
3. Trusses supporting nodes altitudes	+5

5. HUMAN SAFETY

The work will be carried out in accordance "with health and safety rules in construction request".

1. Workers are allowed to work only with the knowledge of safety equipment.
2. Each worker must use protective equipment (special clothing, footwear, gloves and respirators)
3. For welds, workers should wear gloves and goggles.
4. Unnecessary collection of materials and debris from the workplace.
5. Must be grounded electrical equipment.
6. Must be all electrical devices absolutely clean
7. All cables must be in perfect condition.

3. ORGANIZATION OF WORKS OF FRAME

Id	Name of work	Duration	M1														M2																
			28	01	04	07	10	13	16	19	22	25	28	31	03	06	09	12	15	1													
1	PILLARS STAKING	1 day																															
2	CONNECT THE PORCH COLUMNS WITH SHOE	10 days																															
3	DO THE CHANGE OF COLUMN FOR CONNECTION TO THE TRUSS	14 days																															
4	CONNECT BEAMS WITH COLUMNS	12 days																															
5	CONNECT TRUSS WITH COLUMNS	8 days																															
6	CONNECT TRUSSES WITH DIAGONAL STABILIZING	21 days																															
7																																	
8																																	
9	total works of this kind of structure	35 days																															

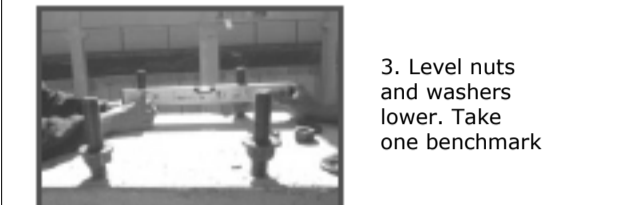
7. TECHNICAL - ECONOMICS INDICATORS

1. Quantity of works: 888 m²
2. Installation costs: 74,98 €/m² x 888 = 66.582,24 € or 229.708,72 Lit
3. Duration of works: 35 days
4. Wage: Official: 888m² x 12,11€/m² = 10.753,68 € or 37.100,19 Lit
Specialist Steel: 888m² x 5,79€/h = 5.141,52 € or 17.738,24 Lit

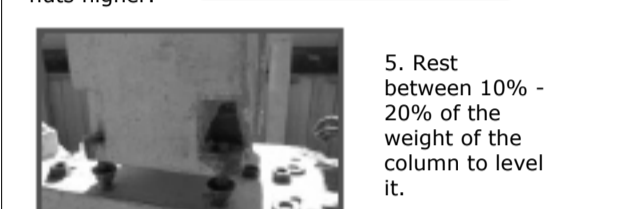
DETAIL A

Details of assembling a prefabricated reinforced concrete column with the plinth using anchor bolts and column shoes of Peikko

1. Weld bolts to armor foundation
2. Concreting the shoe covering with plastic thread



3. Level nuts and washers lower. Take one benchmark
4. Put the column in the vertical of the bolts with the help of a crane and place washers and nuts higher.



5. Rest between 10% - 20% of the weight of the column to level it.
6. Plumb the column and all connections tight butt proceed to rest the weight of the column

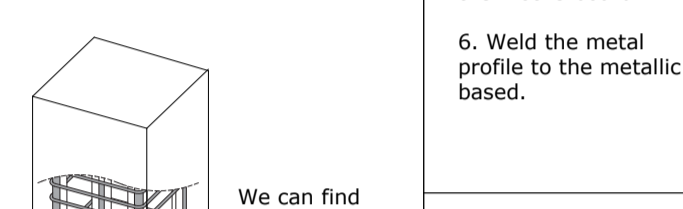


www.peikko.com

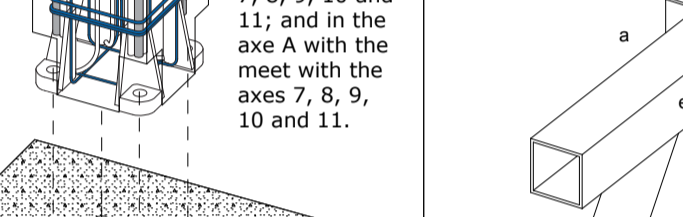
DETAIL B

Details of assembling a steel column (HEB 260) using anchor bolts and column shoes of Peikko

1. Weld bolts to armor foundation
2. Concreting the shoe covering with plastic thread
3. Level nuts and washers lower. Take one benchmark
4. Put the motherboard and screw the upper nuts
5. To concrete through the hole of the motherboard.
6. Weld the metal profile to the metallic based.



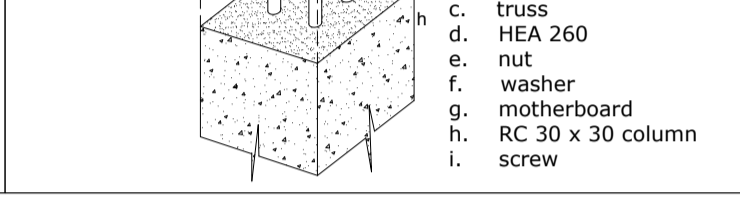
We can find this kind of column in the axes C with the meet with the axes 1, 2, 3, and 4; in the axis D with the meet with the axes 1, 2, 3, 4, 7, 8, 9, 10 and 11; and in the axis A with the meet with the axes 7, 8, 9, 10 and 11.



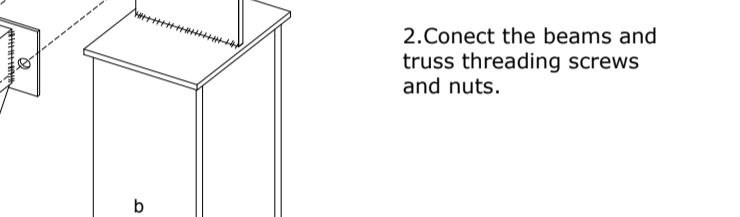
DETAIL C

Detail change of column for connection to the truss

1. Follow the same process that detail B.
2. Connect the beams and truss threading screws and nuts.



1. Raise trusses and beams that need assembling with the crane
2. Connect the beams and truss threading screws and nuts.



Legend
a. truss
b. HEB 260
c. 1/2 HEB 240
d. screw
e. nut

DETAIL D

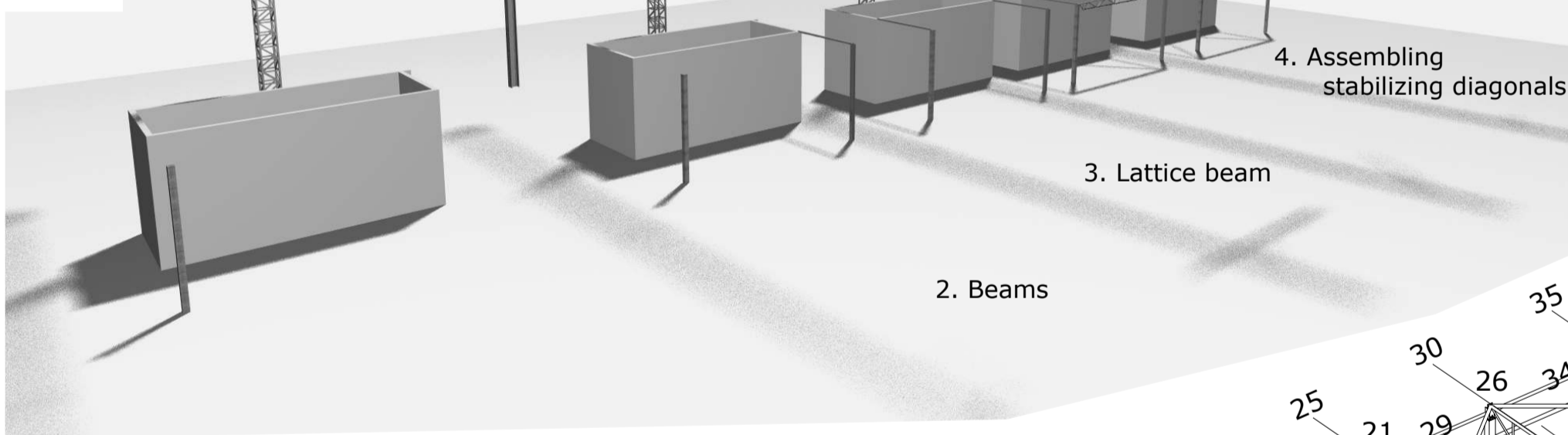
1. Raise trusses and beams that need assembling with the crane
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Legend
a. truss
b. HEB 260
c. 1/2 HEB 240
d. screw
e. nut

6. MECHANICS, MATERIALS AND TOOLS

num.	name	quantity
1	TOOLS:	
1.1	Metal Roulette 2PK	2
1.2	Ladder platform with 10m	2
1.3	Hammer ST-1	3
1.4	The electrodes 42A	1
1.5	Levels H-10KL	2
1.6	Crowbar LM-24	2
1.7	Building level 700mm	1
1.8	Theodolite 2T30	2
1.9	Guying weight 13.3 kg	2
1.10	The visor welding	2
1.11	Helmet	12
1.12	Security belts	2
1.13	Metal brushes	2
1.14	Chemical cleaning detail and found	2
1.15	Chalk axes marked	2
1.16	Wrench	2
2	MECHANISMS	
2.1	Electric welding machine for Tc-500 Q = 1.2 kW	1
2.2	Crane KS-5363 1st = 25m	1
2.3	Traverse TS-12, 5 weight 242kg	1
2.4	Hook and versatile sling	4
3	Structures and Materials bored piles installed	
NAME	Construction	
3.1	Trusses	7
3.2	Materials	
3.3	Anchor bolts	128
3.4		

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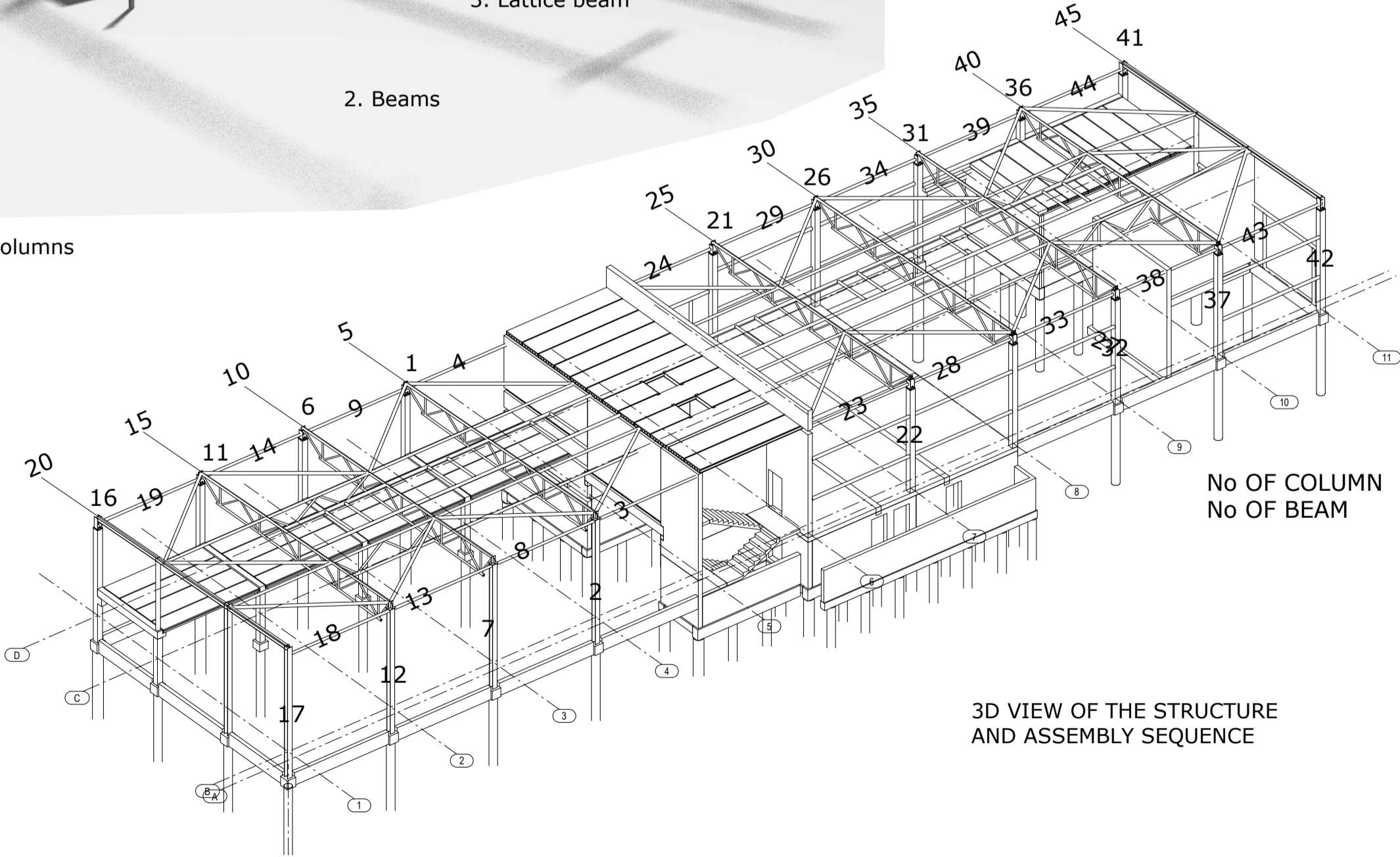


1. Columns

2. Beams

3. Lattice beam

4. Assembling stabilizing diagonals



No OF COLUMN
No OF BEAM

3D VIEW OF THE STRUCTURE
AND ASSEMBLY SEQUENCE

	Name and Surname	Signature	Date	VILNIUS GEDIMINAS TECHNICAL UNIVERSITY	
Student	Francisco Marco López			Automobilių prekybos salono Turgelių g. 1 Vilniuje statybos projektavimas	
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Consultant				Department of Contruction Technology and Management	
Head of department	Edmundas Kazimieras Zavadskas			Page 2/7	
Reviewer				TECHNOLOGICAL CARD	