

Test Project - Carpentry

WSC2011_TP26_AT_Pre_EN

Submitted by:

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Member Country: Austria

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INTRODUCTION

The Carpentry project is a small format garden Gazebo.

It has four modules: floor, uprights and framing, roof and a dormer with complex rafters.
The proposal is also viable / usable without the dormer module.

The Balustrade in Module B.2 may also be provided as a finished component so that the competitors have to cut the ends of the top and bottom rails to the drawing specifications.

Other finished components can be added following the competition to satisfy the requirements of the eventual owners of the Gazebo (e.g. shingle tiles (or a similar product) on the roof or a gate at one or both openings).

This proposal was arrived at by reference to the Technical Description and design considerations including; aesthetic, in-use, reusability etc. The level of difficulty in each module can be adjusted to establish an agreed WorldSkills standard. This project is intended as a child's play structure and requires smaller sections of material than for a full scale adult sized structure. Material profiles have been simplified as far as possible. From a practical point of view, it would not be possible to alter the material sections as part of the 30% changes. Changes to the individual modules should be the goal when modifying the proposal at the competition (with all experts being present and within the limits of the available materials).

DESCRIPTION OF PROJECT AND TASKS

The proposal consists of four modules:

- Floor
This is framed and finished with a plywood floor (Other materials such as decking may be more appropriate for this component).
- Uprights and framing
This has four vertical posts which carry two wall-plates for supporting the roof. The joints between the posts and wall-plates are braced for stability. There are also frames sidings on two sides of the hexagonal layout and between the posts. These sidings form a balustrade.
- Roof
This is sloping and is hexagonal in plan.
- Dormer
This is of standard outline. It also contains complex rafters which test the competency of the candidates at a very high level. The dormer is usable without these complex rafters as they can be substituted with a standard rafter layout.

INSTRUCTIONS TO THE COMPETITOR

A period of **one hour** will be allowed at the beginning of the competition to inspect the drawing and have any queries discussed.

General Instructions to Candidates

- 1). Modules A & B: Draw on the board provided as necessary only.
Modules C & D: The development of rafters in modules C & D should be made on the board.
- 2). Draw, mark out and process each module in sequence. When module one is completed, work may commence on module two, and so on.
- 3). When each module has the complete “**marking onto timber**” (before processing\cutting), **submit for marking.**
- 4). **Before assembly** (after all cuts are made) of each module, **submit for marking.**
- 5). Assemble module A & B before processing (cutting) the module C pieces.
- 6). Each cut must be either by machine **or** hand and cannot be reworked thereafter.
Marks will be deducted when a cut has been re-worked following the initial cut. (An exception to this rule arises when a machine cut cannot be made to the full depth). Exceptions will be agreed by the Experts.
- 7). Joints may be fitted but not assembled until the module is marked.
- 8). When each module is assembled, **submit for marking.**
- 9). The use of any tools or devices for adjustments is not permitted during assembly unless agreed on and recorded by two Experts. (see 5.4.F of T.D. No 24)

Note: The dimensions on the drawings are in centimetres (cm.). The use of a calculator is allowed.

Marking Scheme

Section	Criterion	Marks		
		Subjective (if applicable)	Objective	Total
A	Interior joints	10	0	10
B	Dimensions	0	50	50
C	Exterior joints	0	25	25
D	Neatness of finish, cleanness	10	0	10
E	Deductions	0	5	5
Total:		20	80	100

Subjective marking

Scores are awarded on a scale of 1 to 10

Skill assessment specification

The skill assessment criteria are clear, concise aspect specifications which explain exactly how and why a particular mark is awarded.

A - Interior joints

- Form cuts using saw only
- Cut accurately to lines
- Form joints neatly
- Produce clean, accurate cuts
- Avoid re-cutting or touching up with plane or chisel

B – Dimensions

- Cut and assemble members to a high degree of accuracy.

C - Exterior joints

- Form joints with no gaps

D - Neatness of finish, cleanness and general impression

- Flat faces
- Tight joints
- No missing pieces
- Neat fixings
- Minimum pencil marks and stains

E - Deductions

- Complete the project using only the material provided

Skill assessment procedures

The Chief Expert divides the Experts into marking teams taking into consideration WorldSkills experience, language and culture.

All Experts assess a similar percentage of the overall marks.

Each Expert marking team is allocated an aspect or aspects of the project to assess for all Competitors.

A – Interior joints

The Experts assess accuracy of cuts to lines and cleanness of joints and cuts.

B - Dimensions

The Experts will decide which dimensions will be measured. Dimensions are measured by two groups of three Experts, one primary group and one control group.

+/- 0 – 1 mm	10 points
+/- 1.1 – 2 mm	9 points
+/- 2.1 – 3 mm	8 points
+/- 3.1 – 4 mm	7 points
+/- 4.1 – 5 mm	6 points
+/- 5.1 – 6 mm	5 points
+/- 6.1 – 7 mm	4 points
+/- 7.1 – 8 mm	3 points
+/- 8.1 – 9 mm	2 points
+/- 9.1 – 10 mm	1 points

C - Exterior joints

Experts decide which groups of joints to assess and identify on drawing.

The biggest gap in each cluster of joints is measured.

Less than < 0.5	10 points
Less than < 1.0	8 points
Less than < 1.5	6 points
Less than < 2.0	5 points
Less than < 2.5	4 points
Less than < 3.0	3 points
More than > 3.5	2 points

D – Neatness of finish, cleanness and general impression

All Experts judge the overall finished project on a scale of 1-10 for neatness of finish, cleanness and general impression.

E - Deductions

Up to their deduction credit, Competitors may request

- Permission to re-cut (maximum 4 re-cuts)
- A new piece of wood (maximum 2 pieces)
- This is to be recorded by the signature of at least two Experts.

The following deductions apply:

- Recuts - 1.25 point
- New pieces - 2.50 points

SKILL-SPECIFIC SAFETY REQUIREMENTS

Refer to Host Country Health & Safety documentation for Host Country regulations.

In addition to Host Country Health & Safety requirements the following is also necessary:

- All Competitors must use safety glasses when using any hand, power or machine tools or equipment likely to cause or create chips or fragments that may injure the eyes.
- A first-aid kit must be available throughout the Competition.
- Experts will use the appropriate personal safety equipment when inspecting, checking or working with a Competitor's project.
- No loose clothing or jewellery is to be worn during the Competition; long hair is to be tied back.

MATERIAL:

Please note:

To all pieces of wood 5 cm have been added in length. Then all measures have been rounded up to the next full 10 cm.

WOOD LIST:

MODUL :A

	Item	Width	Thickness	Length	Quantity		Description	Notes
in cm	A 3 :	6,8	9,0	110,0	1		European Redwood	
	A 12 :	6,8	9,0	110,0	1		Pinewood	
	A 14 :	6,8	9,0	110,0	1			
	A 16 :	6,8	9,0	130,0	1			
	A 18 :	6,8	9,0	130,0	1			
	A 19 :	6,8	9,0	110,0	1			
	A 20 :	6,8	9,0	110,0	1			

MODUL :B.1

	Item	Width	Thickness	Length	Quantity		Description	Notes
in cm	B1 402:	9,0	9,0	160,0	1		European Redwood	
	B1 403:	9,0	9,0	160,0	1		Pinewood	
	B1 407:	9,0	9,0	160,0	1			
	B1 408:	9,0	9,0	160,0	1			
	B1 200:	7,8	9,0	125,0	1			
	B1 201:	7,8	9,0	125,0	1			
	B1 202:	7,8	9,0	110,0	1			

MODUL: B.2> 3X

	Item:	Width	Thickness	Length	Quantity	Total	Description	Notes
in cm	B2 101:	3,2	3,2	60,0	5	15	European Redwood	
	B2 103:	3,2	3,2	60,0	1	3	Pinewood	
	B2 104:	3,2	3,2	60,0	1	3		
	B2 107:	3,2	6,8	90,0	1	3		

MODUL: C

	Item	Width	Thickness	Length	Quantity		Description	Notes
in cm	C 213:	4,4	6,8	80,0	1		European Redwood	
	C 206:	4,4	6,8	80,0	1		Pinewood	
	C 207:	4,4	6,8	150,0	1			
	C 212:	4,4	6,8	150,0	1			
	C 208:	4,4	6,8	120,0	1			
	C 211:	4,4	6,8	120,0	1			
	C 209:	4,4	6,8	100,0	1			
	C 210:	4,4	6,8	100,0	1			
	C 400:	4,4	6,8	180,0	1			
	C 401:	4,4	6,8	180,0	1			
	C 406:	6,8	6,8	80,0	1			
	C 405:	6,8	6,8	70,0	1			
	C 404:	6,8	6,8	60,0	1			
	C 204:	6,8	9,0	140,0	1			
	C 203:	6,8	9,0	130,0	1			
	C 205:	6,8	9,0	130,0	1			

	B2 108:	4,4	4,4	90,0	1	3	
	B2 109:	4,4	4,4	90,0	1	3	

MODUL: D

	Item	Width	Thickness	Length	Quantity		Description	Notes
in cm	D 214:	4,4	6,8	115,0	1		European Redwood	
	D 215:	4,4	6,8	115,0	1		Pinewood	
	D 216:	4,4	6,8	50,0	1			
	D 219:	4,4	6,8	50,0	1			
	D 217:	4,4	6,8	80,0	1			
	D 218:	4,4	6,8	80,0	1			

MODUL: E

	Item	Width	Thickness	Length	Quantity		Description	Notes
in cm	E 7 :	5,5	3,2	140,0	1		European Redwood	
							Pinewood	
	E 1 :	12,0	3,2	170,0	1			
	E 2 :	12,0	3,2	170,0	1			
	E 4 :	12,0	3,2	160,0	1			
	E 5 :	12,0	3,2	150,0	1			
	E 6 :	12,0	3,2	140,0	1			
	E 8 :	12,0	3,2	140,0	1			
	E 9 :	12,0	3,2	130,0	1			
	E 10 :	12,0	3,2	120,0	1			

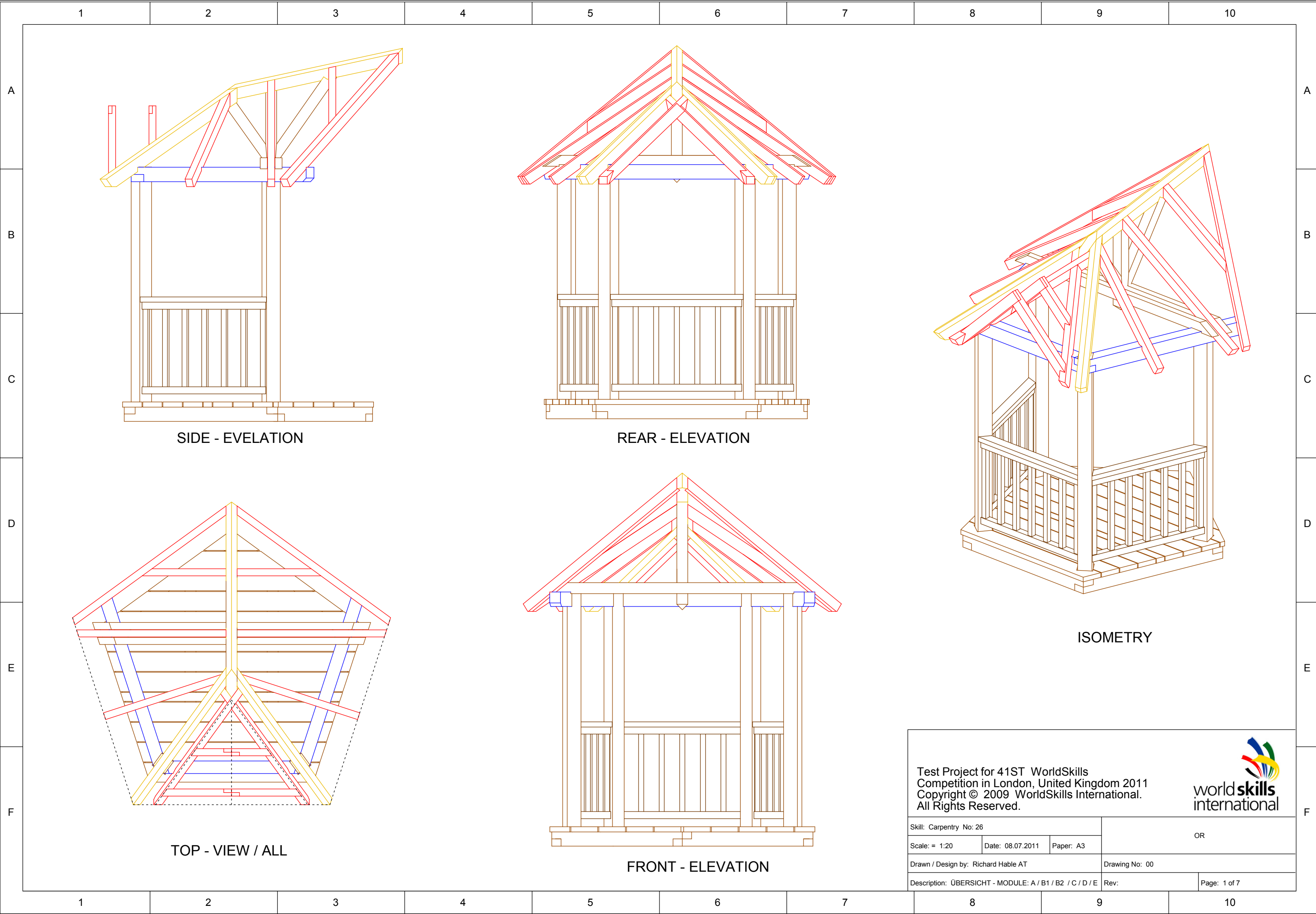
	E 11 :	12,0	3,2	120,0	1		
	E 13 :	12,0	3,2	110,0	1		
	E 15 :	12,0	3,2	80,0	1		
	E 17 :	12,0	3,2	40,0	1		

Central connection

SPAX Exterior Screws 	Coach Screws 
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MODULE: A	number required	screw / bolt / size	length / mm	description	purpose
	20	4,0	80	Spax / Torx	frame corners
	8	5,0	180	woodscrew	beam connection
MODULE: B.1	number required	screw / bolt / size	length / mm	description	purpose
	16	5,0	140	woodscrew	connection below
	4	5,0	180	woodscrew	connection above
	16	4,0	120	woodscrew	connection above
MODULE: B.2	number required	screw / bolt / size	length / mm	description	purpose
	42	4,0	70	Spax / Torx	baluster
	9	4,0	70	Spax / Torx	covering shelf
	18	4,0	70	Spax / Torx	supports
MODULE: C	number required	screw / bolt / size	length / mm	description	purpose
	6	4,0	120	Spax / Torx	rafter spar
	2	4,0	140	Spax / Torx	hip rafter
	1	4,0	140	Spax / Torx	supports hip rafter
	20	4,0	60	Spax / Torx	jack rafter connection
	8	4,0	70	Spax / Torx	breaking strut

	12	4,0	70	Spax / Torx	double tie
MODULE: D	number required	screw / bolt / size	length / mm	description	purpose
	8	3,5	50	Spax / Torx	jack rafter
	2	3,5	50	Spax / Torx	First leaf, valley (rafter)
	8	3,0	40	Spax / Torx	First leaf,
	2	4,0	120	Spax / Torx	valley rafter
MODULE: E	number required	screw / bolt / size	length / mm	description	purpose
	100	3,5	70	Spax / Torx	flooring



SIDE - EVELATION

REAR - ELEVATION

ISOMETRY

TOP - VIEW / ALL

FRONT - ELEVATION

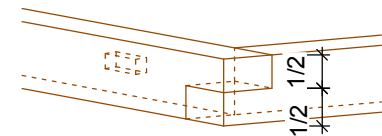
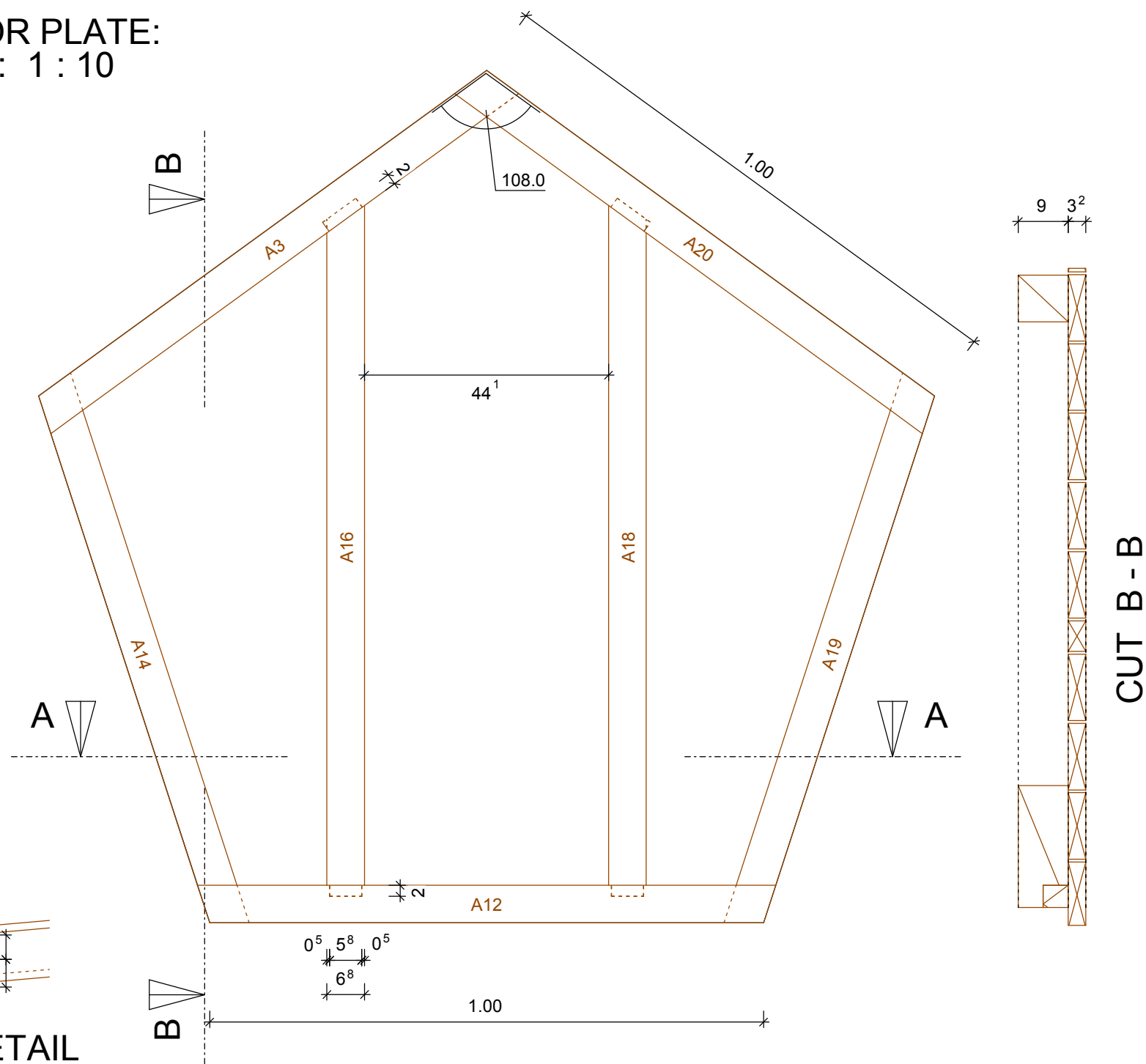
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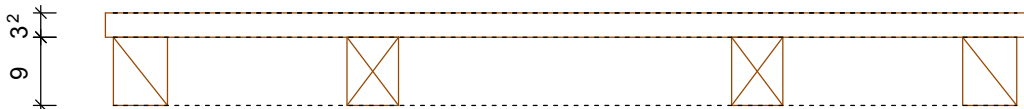
worldskills
international

Skill: Carpentry No: 26			OR	
Scale: = 1:20	Date: 08.07.2011	Paper: A3		
Drawn / Design by: Richard Hable AT			Drawing No: 00	
Description: ÜBERSICHT - MODULE: A / B1 / B2 / C / D / E			Rev:	Page: 1 of 7

FLOOR PLATE:
Scale: 1 : 10



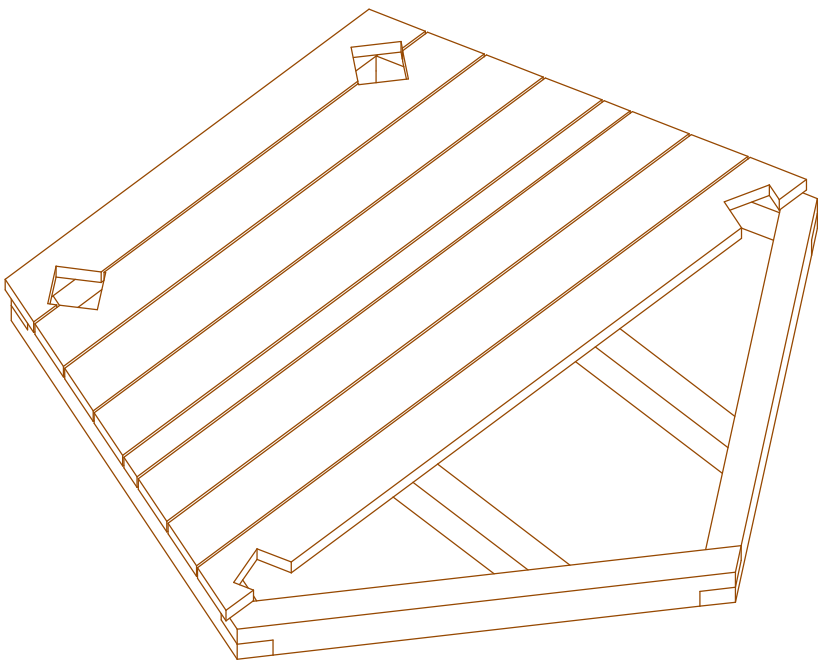
CORNER - DETAIL



CUT A - A

WOOD LIST: in cm

Profile:	6.8 x 9.0
A 3 :	110.0 1x
A 12 :	110.0 1x
A 14 :	110.0 1x
A 16 :	130.0 1x
A 18 :	130.0 1x
A 19 :	110.0 1x
A 20 :	110.0 1x

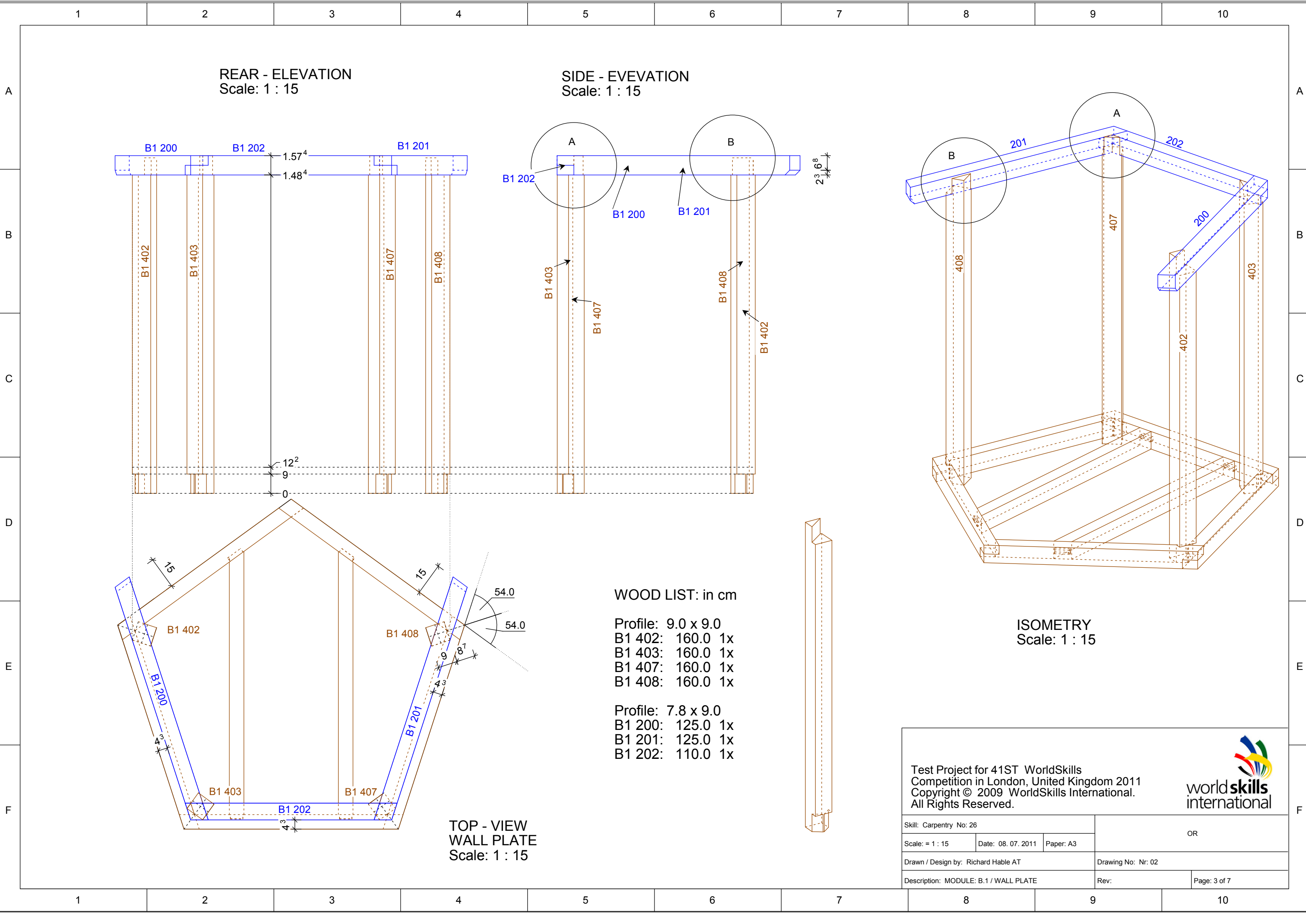


ISOMETRY
Scale: 1 : 15

Skill: Carpentry No: 26			OR	
Scale: = 1 : 10 / 15	Date: 08. 07. 2011	Paper: A3		
Drawn / Design by: Richard Hable AT			Drawing No: Nr: 01	
Description: MODULE: A / FLOOR PLATE			Rev:	Page: 2 of 7



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Competition in London, United Kingdom 2011
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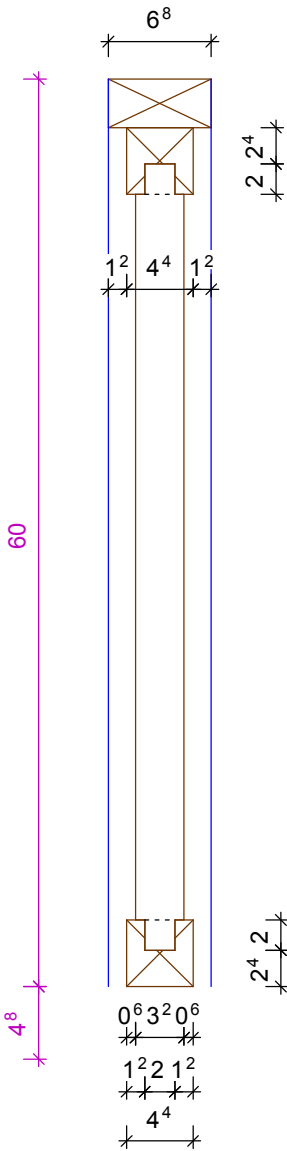


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Skill: Carpentry No: 26			OR	
Scale: = 1 : 15	Date: 08. 07. 2011	Paper: A3		
Drawn / Design by: Richard Hable AT			Drawing No: Nr: 02	
Description: MODULE: B.1 / WALL PLATE			Rev:	Page: 3 of 7

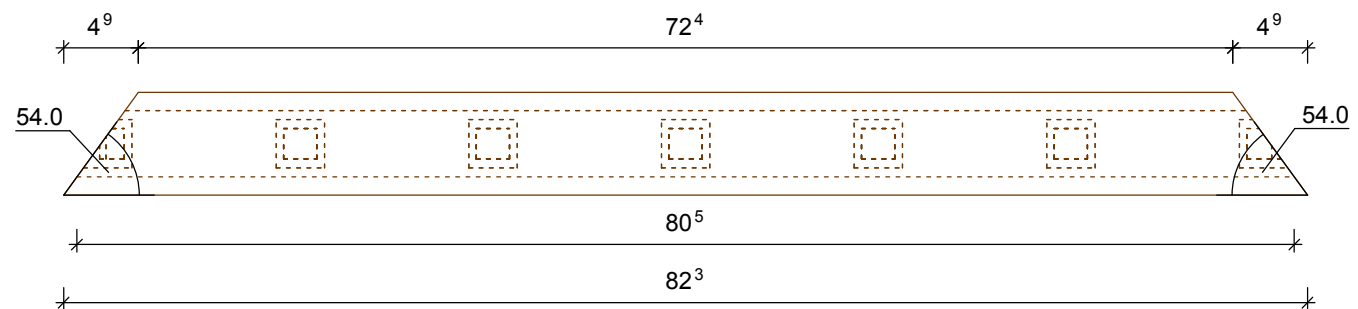
A

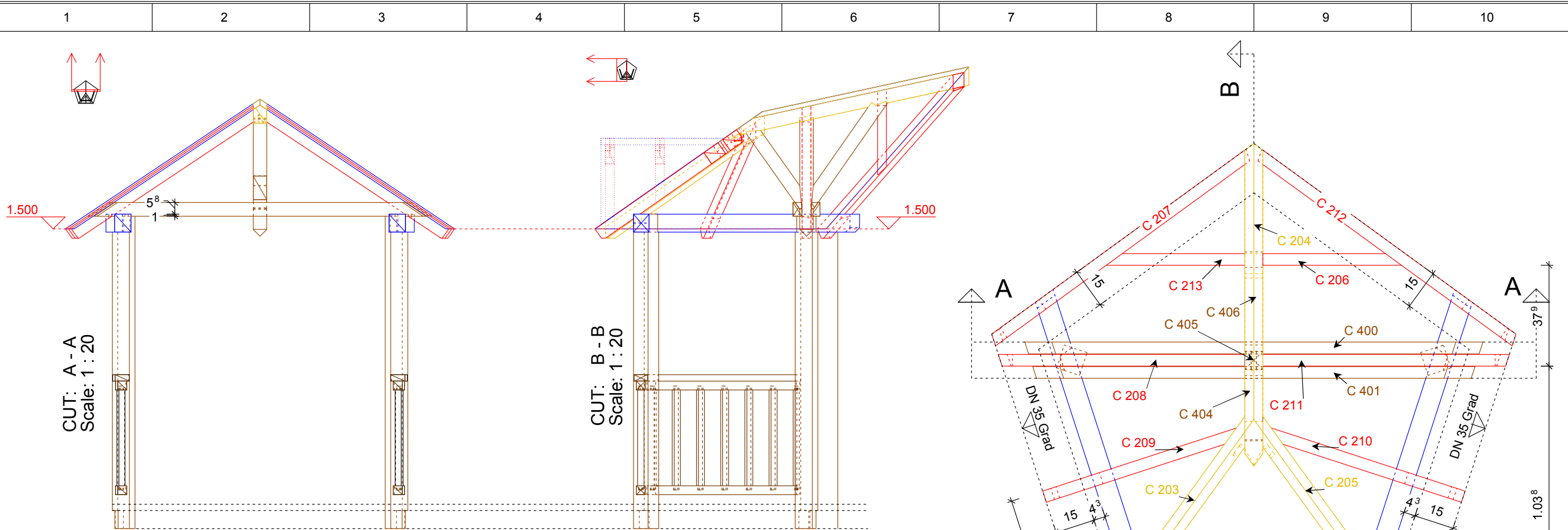


A diagram of a balance scale. The fulcrum is a red triangle in the center. On the left pan, there is a single weight labeled $6g$. On the right pan, there are three identical weights, each labeled X . The scale is balanced.

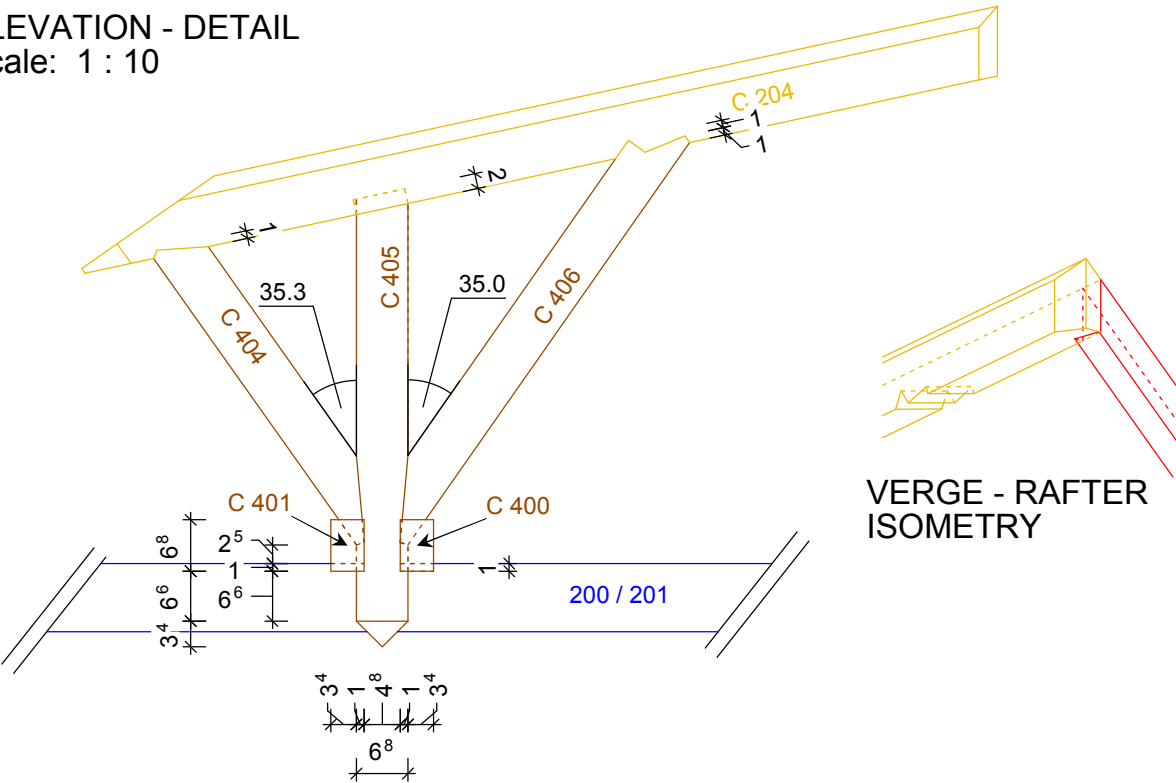
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Scale: 1 : 12

A





ELEVATION - DETAIL
Scale: 1 : 10



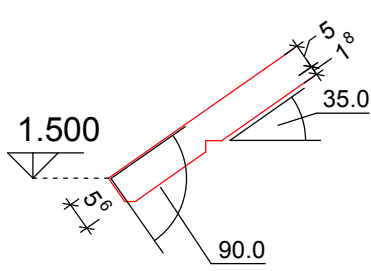
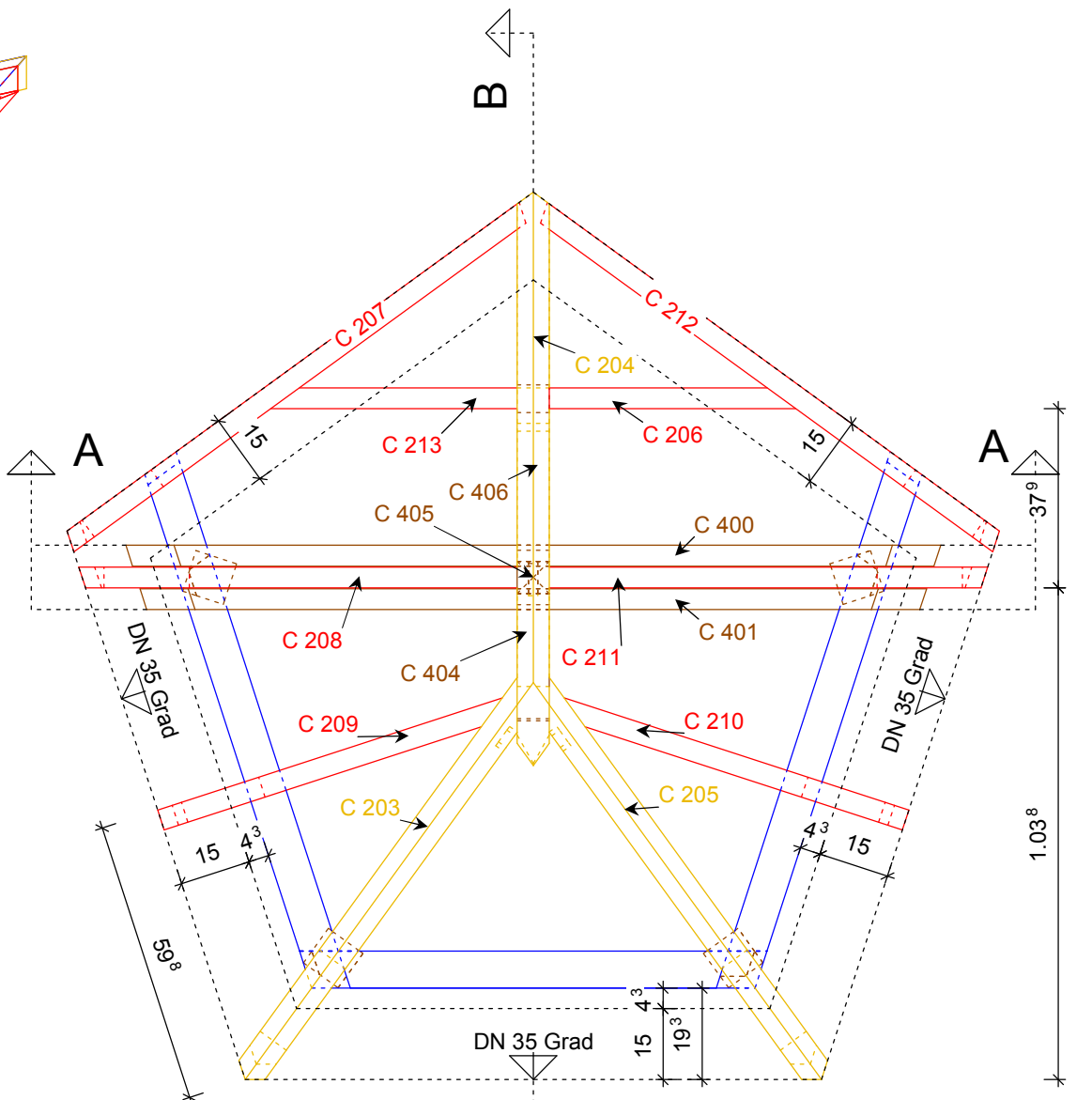
VERGE - RAFTER
ISOMETRY

WOOD LIST: in cm

Profile: 4,4 x 6,8	
C 213: 80,0	1x
C 206: 80,0	1x
C 207: 150,0	1x
C 212: 150,0	1x
C 208: 120,0	1x
C 211: 120,0	1x
C 209: 100,0	1x
C 210: 100,0	1x
C 400: 180,0	1x
C 401: 180,0	1x

Profile: 6,8 x 6,8	
C 406: 80,0	1x
C 405: 70,0	1x
C 404: 60,0	1x

Profile: 6,8 x 9,0	
C 204: 140,0	1x
C 203: 130,0	1x
C 205: 130,0	1x

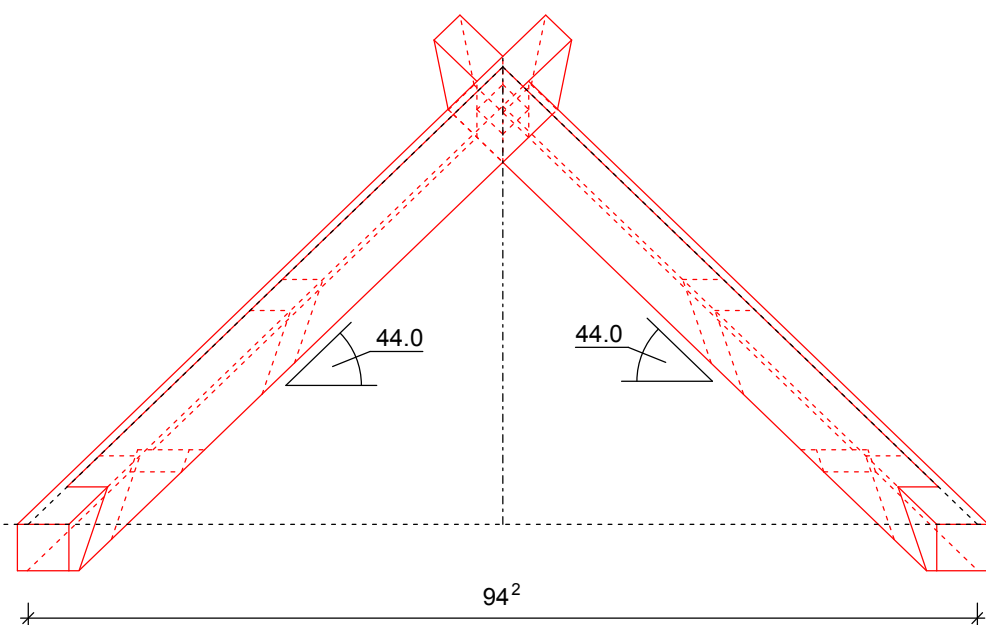


NORMAL-PROFILE:

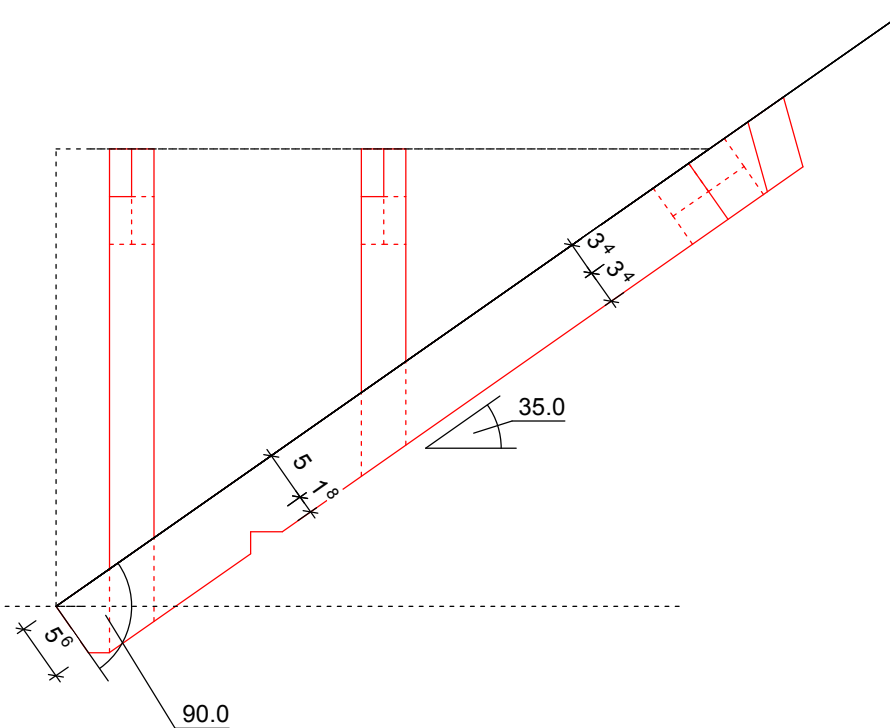
TOP - VIEW / ROOF
Scale: 1 : 15

DN: 35 GRAD
EAVES HEIGHT: 1.50 m
Rectangular Obholz: 5 cm

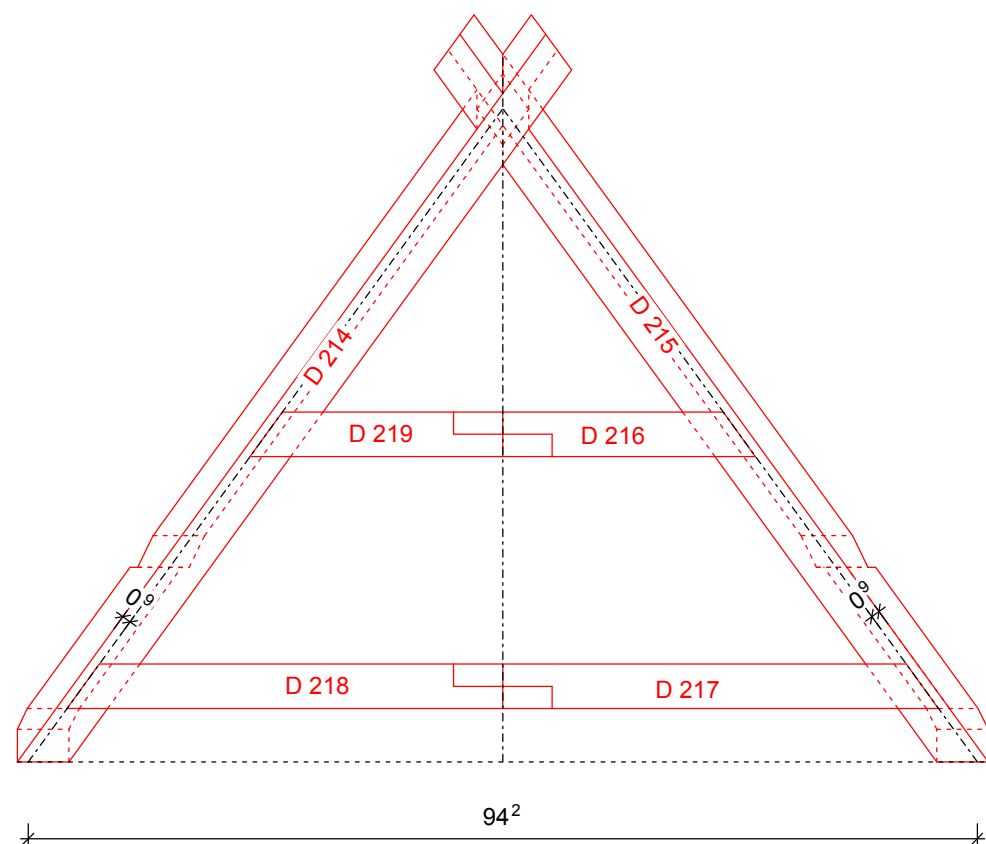
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Skill: Carpentry No: 26			OR	
Scale: = 1 : 20	Date: 08. 07. 2011	Paper: A3		
Drawn / Design by: Richard Hable AT			Drawing No: Nr: 04	
Description: MODULE: C / ROOF			Rev:	Page: 5 of 7



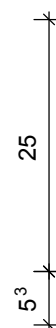
FRONT - ELEVATION: DORMER



SIDE - ELEVATION: DORMER

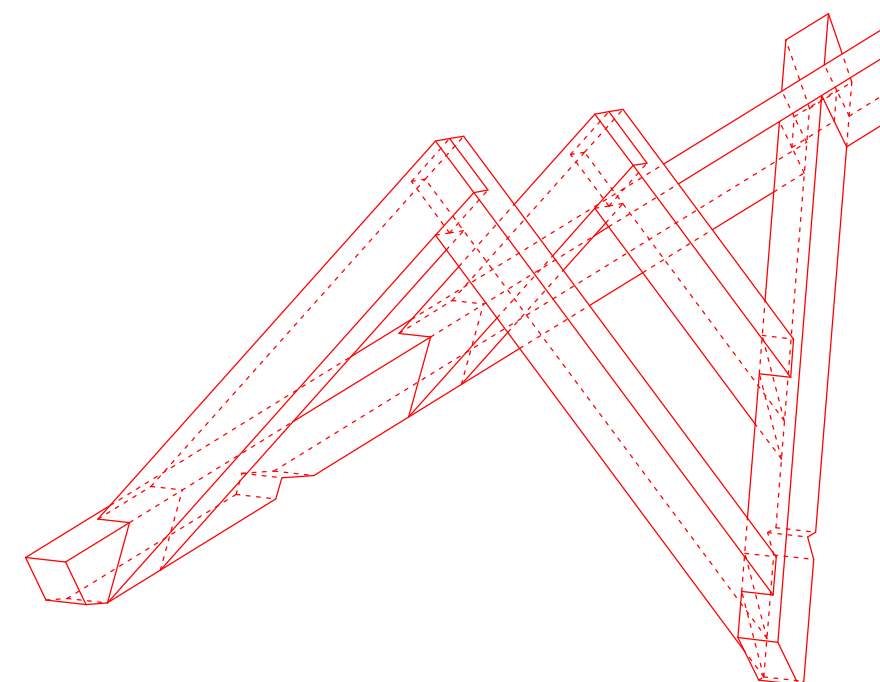


TOP - VIEW / DORMER



WOOD LIST: in cm

Profile:	4.4 x 6.8
D 214:	115.0 1x
D 215:	115.0 1x
D 216:	50.0 1x
D 219:	50.0 1x
D 217:	80.0 1x
D 218:	80.0 1x



ISOMETRY

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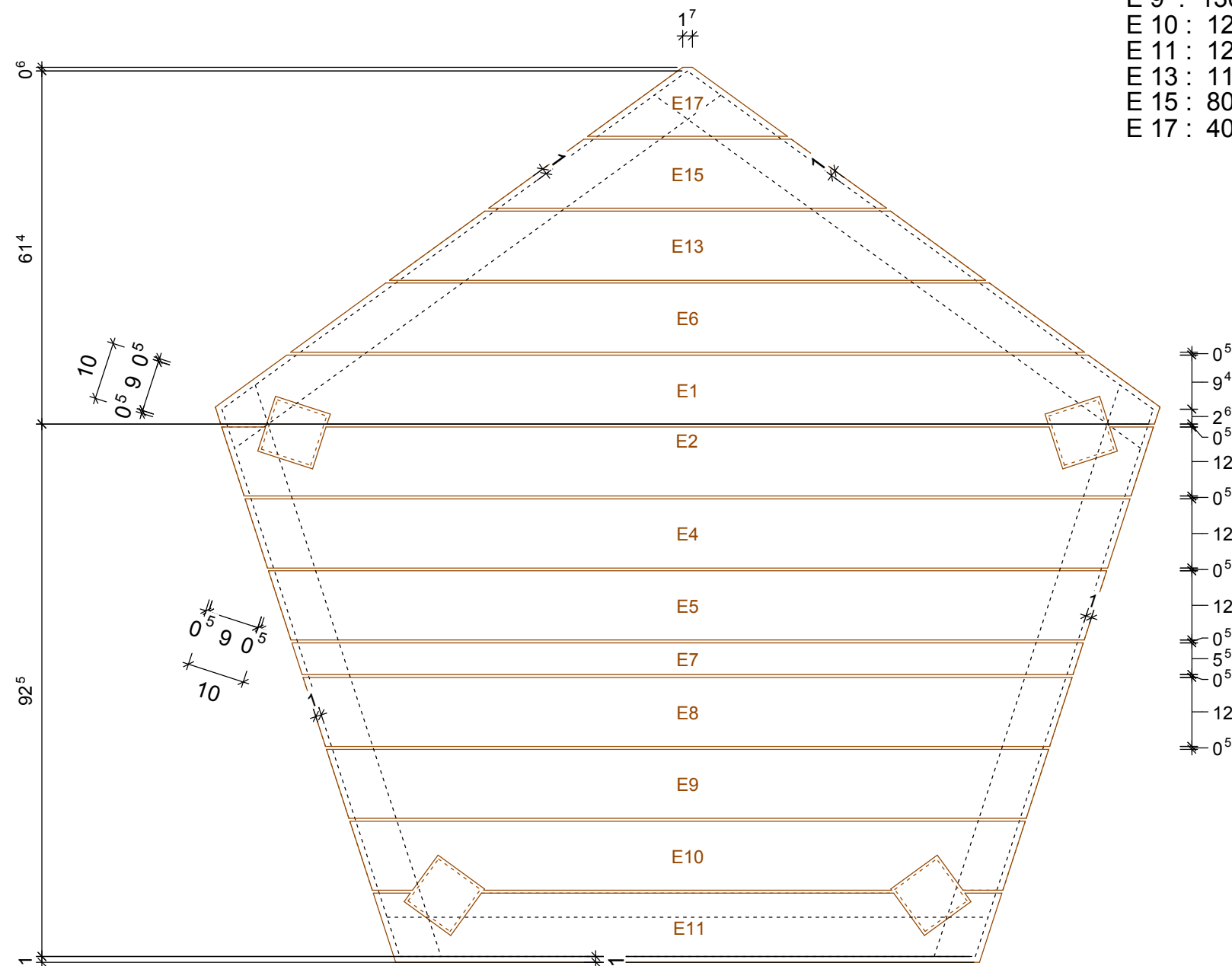


Skill: Carpentry No: 26			OR	
Scale: = 1 : 7.5	Date: 08. 07. 2011	Paper: A3		
Drawn / Design by: Richard Hable AT			Drawing No: Nr: 05	
Description: MODULE: D / DORMER			Rev:	Page: 6 of 7

1 2 3 4 5 6 7 8 9 10

A
B
C
D
E
F

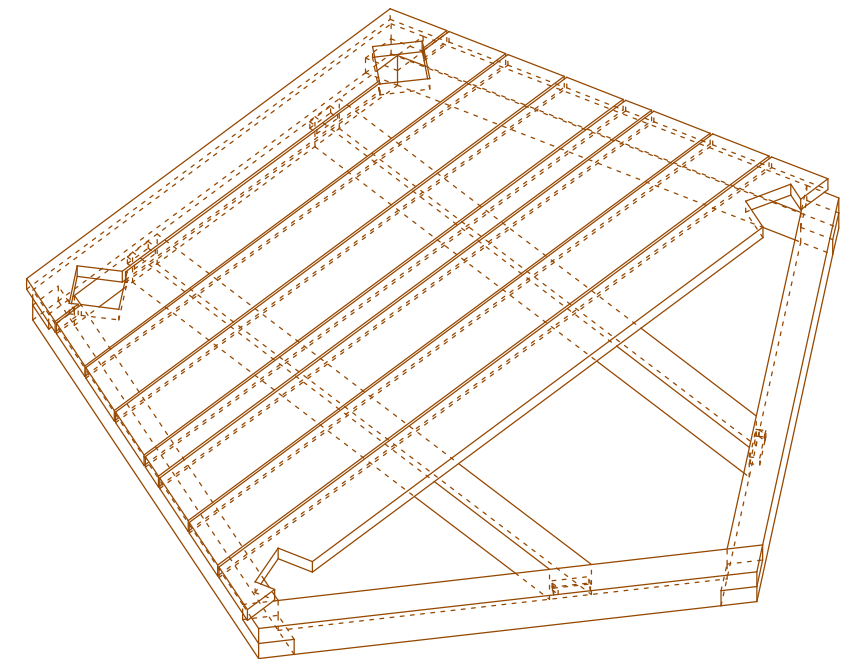
TOP - VIEW / FLOOR PLATE:
BALCONY DECKING
Scale: 1 : 10



WOOD LIST: in cm

Profile: 5.5 x 3.2
E 7 : 140.0 1x

Profile: 12.0 x 3.2
E 1 : 170.0 1x
E 2 : 170.0 1x
E 4 : 160.0 1x
E 5 : 150.0 1x
E 6 : 140.0 1x
E 8 : 140.0 1x
E 9 : 130.0 1x
E 10 : 120.0 1x
E 11 : 120.0 1x
E 13 : 110.0 1x
E 15 : 80.0 1x
E 17 : 40.0 1x



ISOMETRY
Scale: 1 : 15

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Competition in London, United Kingdom 2011
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Skill: Carpentry No: 26			OR	
Scale: = 1 : 10 / 15	Date: 08. 07. 2011	Paper: A3		
Drawn / Design by: Richard Hable AT			Drawing No: Nr: 06	
Description: MODULE: E (A2) / BALCONY DECKING			Rev:	Page: 7 of 7

1 2 3 4 5 6 7 8 9 10