TOPIC SCHEDULE

Architectural projection methods,
Architectural drawings and documentations

A) Administrative issues:

1. Reference Materials:

Repeated: all mandatory course materials and references are uploaded onto the website of the department at

http://www.epszerk.bme.hu /// Courses in English /// Basic Tools

Other elective english language building construction books are available in limited quantities at the University Bookstore.

2. Semester project cover sheet format: see below (please adhere)

B) Today's Lecture:

1. General topics on architectural drawings and documentations:
   Architects, as other engineers, communicate with other professionals (authorities, other engineers, interior designers, landscape arcitects etc.) through technical drawings, written technical descriptions and verbal communication (consultation, on-site architectural technical consultation). The means of this communication is regulated, unified and – in many countries, such as Hungary standardized by law. There is an international standard of technical drawings that will be understood by most engineers.

2. Architectural projection methods:
   The backbone of any technical drawing representation is the projection techniqe that communicates the subject of the drawing in a clearly and specifically defined manner that will show detail in necessary depth. In architecture, we use standard orthogonal projections (floor plans, cross-sections and elevations) as well as free 3D projection techniques (isometric, axonometric, perspective). Other representation methods may be used, such as movies, virtual reality images, panoramic pictures etc.

3. Architectural drawings and documentations:
   Architectural documentations are composed of drawings, written technical documentations. The written information will explain and further specify details that are not readily available form the drawings. Technical consultations will be held by the designer if required (further explanation of detail questions). The detailing of the plans and the precise explanation specifications is the architect's primary interest, as he/she is legally responsible for adequate/accurate communication. The artistic nature of the representations will vary greatly in the 3D visualization, while the obligatory 2D images should adhere to traditional technical drawing rules.

   Mandatory information:
   1:5000, 1:2000, 1:1000 layout and concept plans
   1:500, 1:200 concept and jury plans
   1:100 permit plans
   1:50 realization or construction plans
   1:25, 1:10, 1:5, 1:1 etc. construction detail plans
   technical descriptions: written part of the above
   visualizations: 3d information of the above

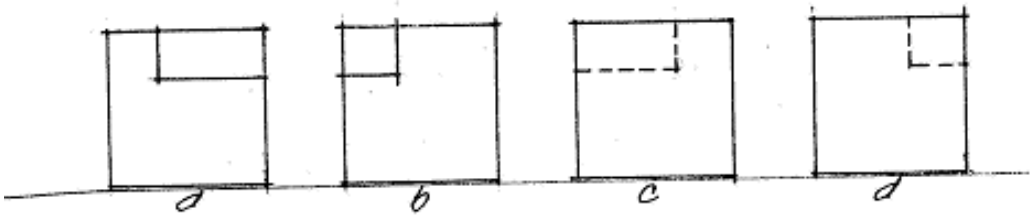
C) Controll questions:

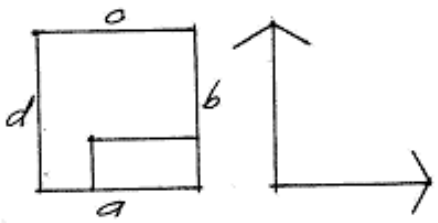
Questions given by lecturer on the basis of this course material at the beginning of next class!

Bring: 1 blank A4 sheet, permanent pen, ruler

REFERENCE MATERIALS:

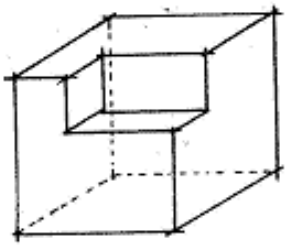
1. Projection methods:



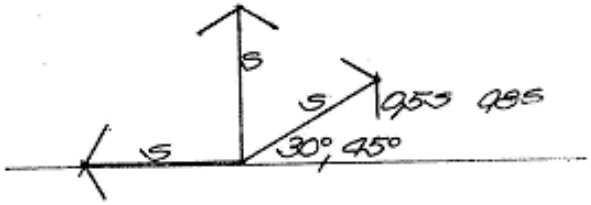


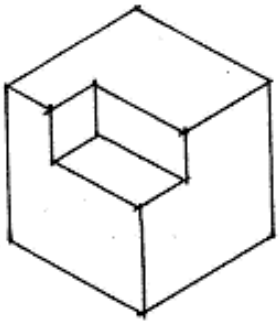
A1 ORTHOGONAL

S= IN ORTHOGONAL SCALE.

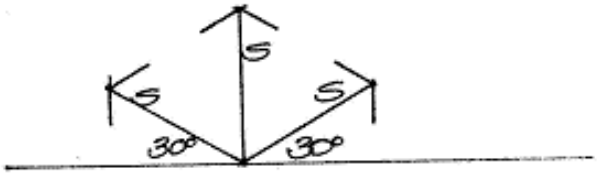


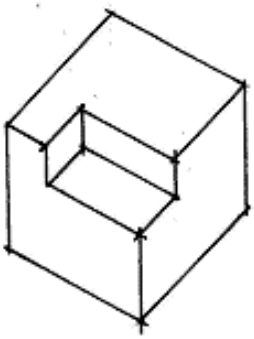
A2 OBLIQUE



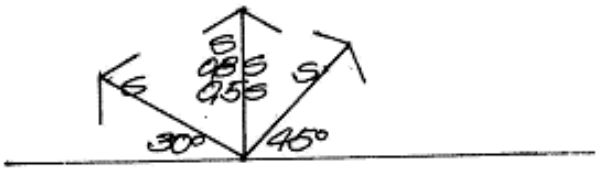


A3 ISOMETRIC

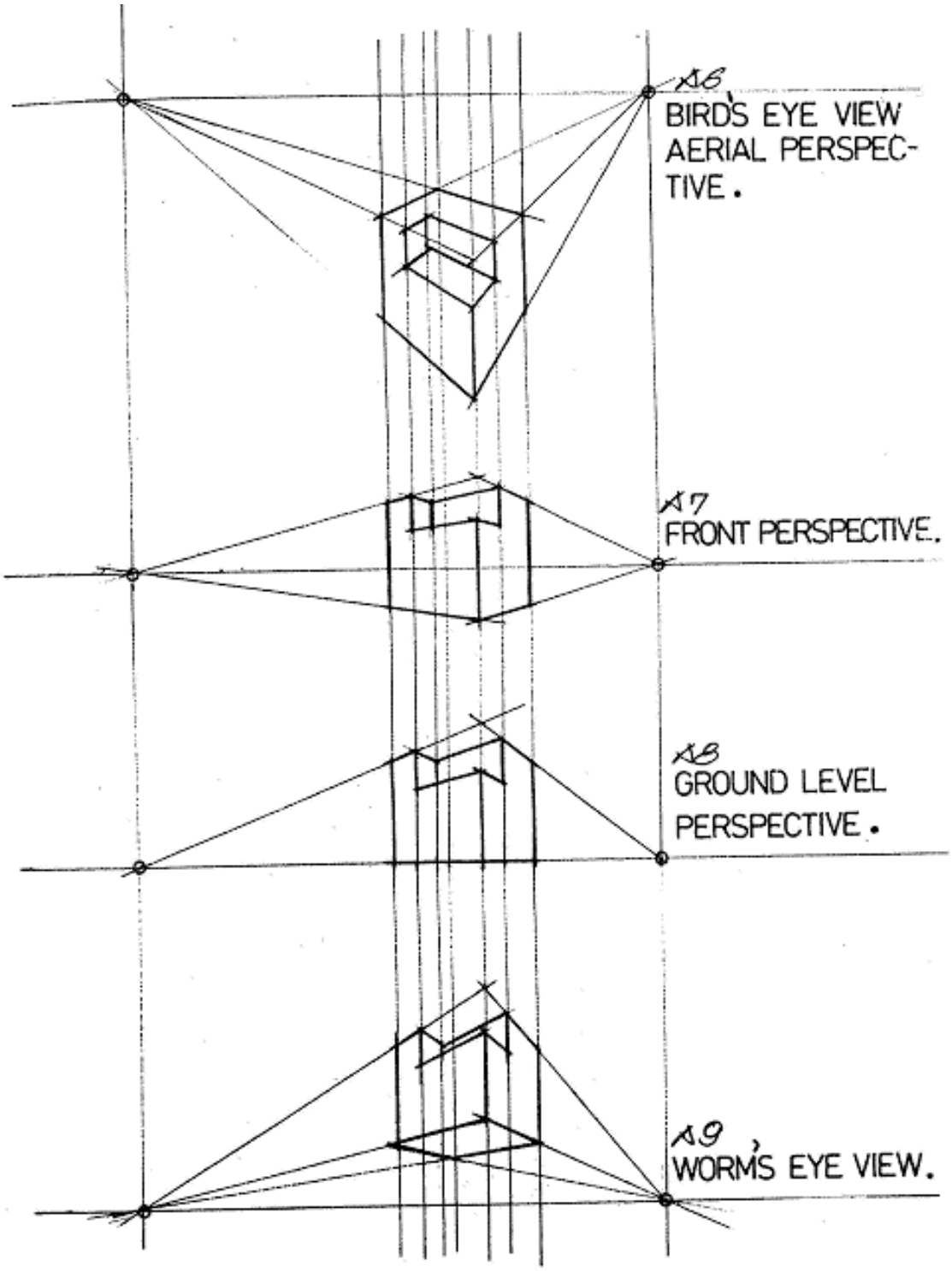




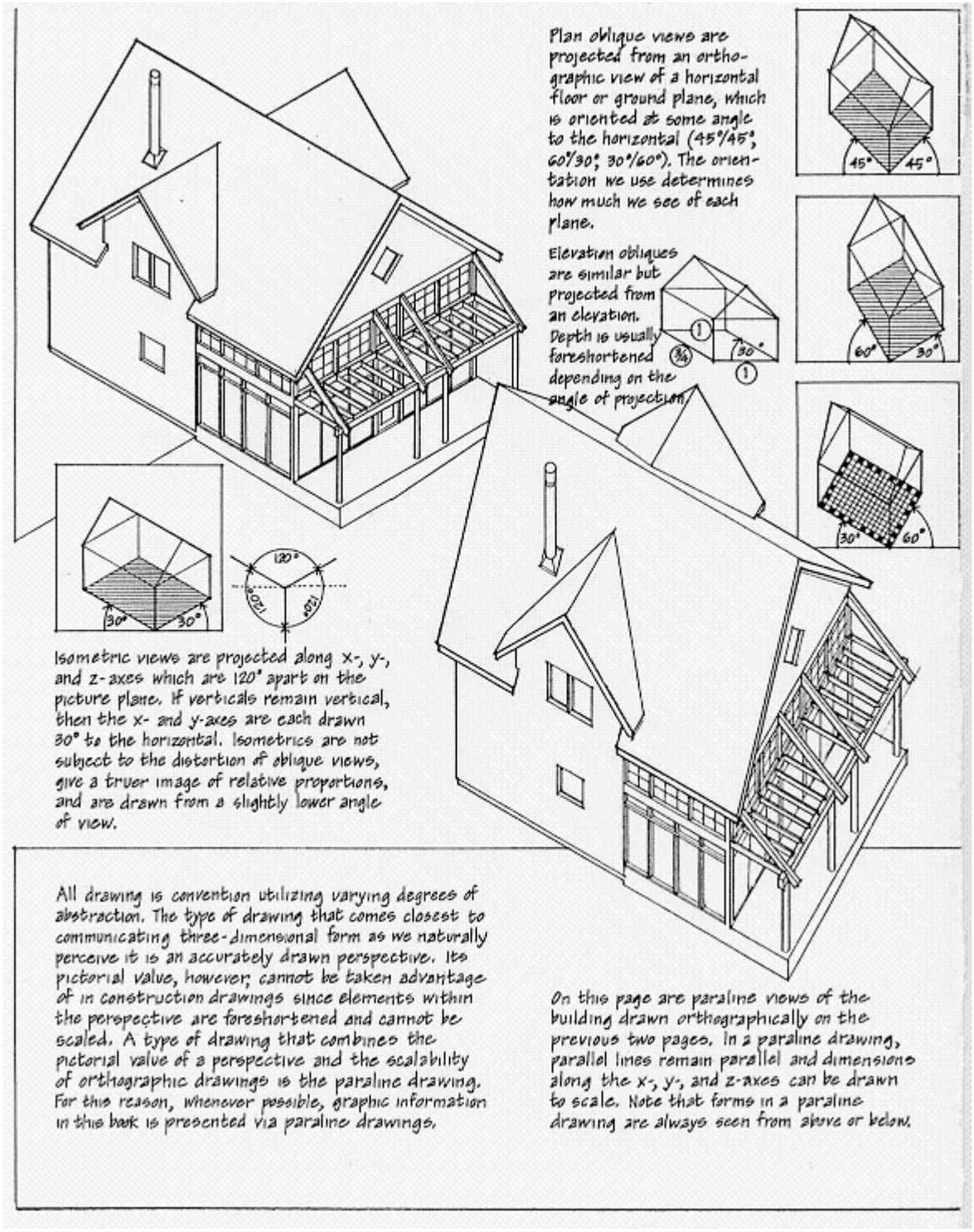
A4 AXONOMETRIC



Perspective projections (3D):



Isometric projections (3D):

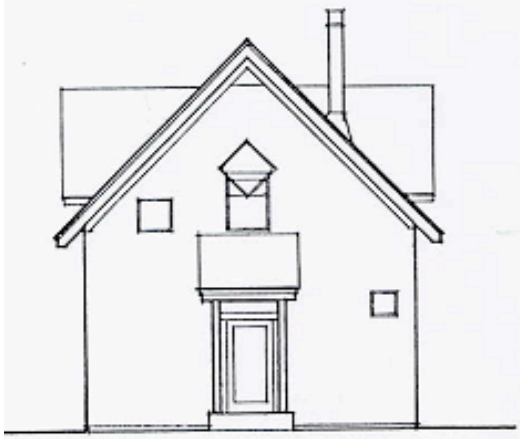


Drawings:

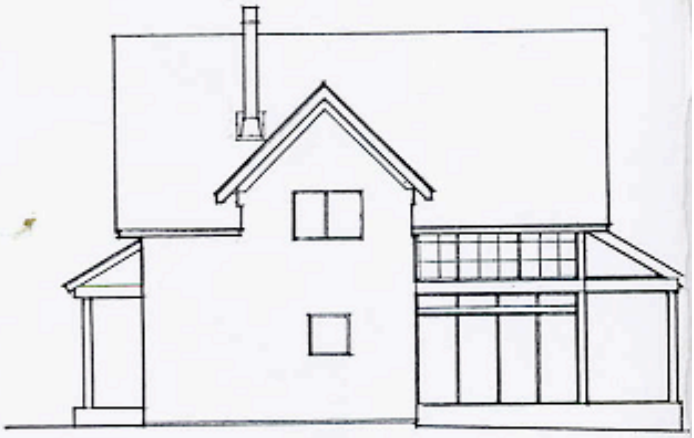
Architectural drawings make up the graphic language of building design and construction. In the design process, drawings are used to visualize possibilities, study alternatives, and present design ideas about the form and spaces of a building. For the execution of a design, construction or "working" drawings are necessary to accurately describe the constituent parts of a building, articulate their relationships, and reveal how they go together.

Construction drawings consist primarily of plan, section, and elevation views, which are orthographic projections onto a perpendicular drawing surface. These are also called multiview drawings since a series of related views is required to understand the three-dimensional form of a design and its constituent parts. The main advantage of this type of drawing, and the reason why it is used in building construction, is that building elements are seen in true size (to scale), shape, and orientation when viewed from a perpendicular aspect. Orthographic drawing's main disadvantage is its inherent ambiguity in the definition of depth or the third dimension. For this reason, reliance on conventions and symbols is necessary for the description and understanding of what is drawn.

Orthographic plans, sections, and elevations are used not only to portray whole building forms but also to describe the form and construction of a building's components, such as in wall sections, window details, and cabinet drawings. see 2.5.



NORTH ELEVATION

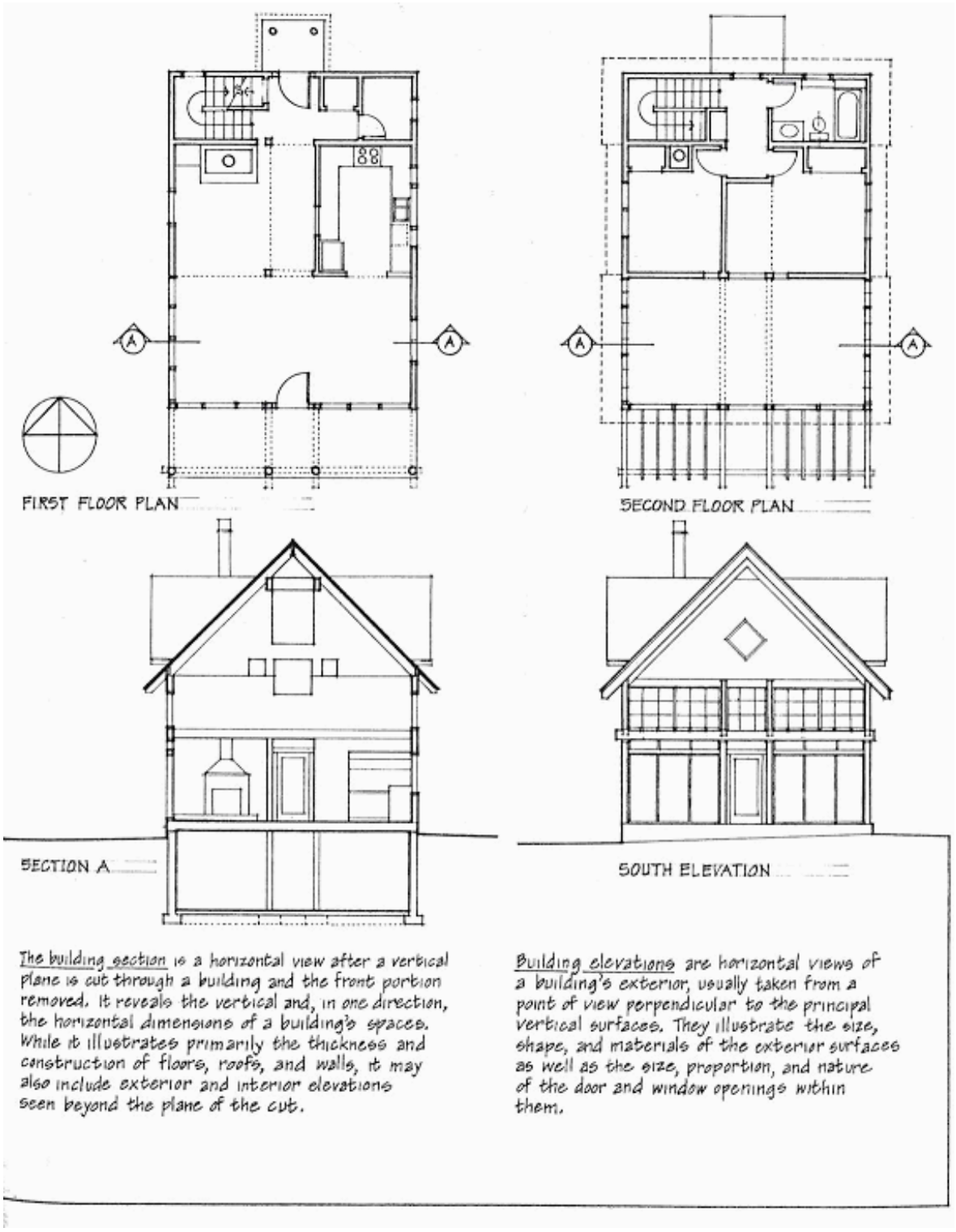


WEST ELEVATION

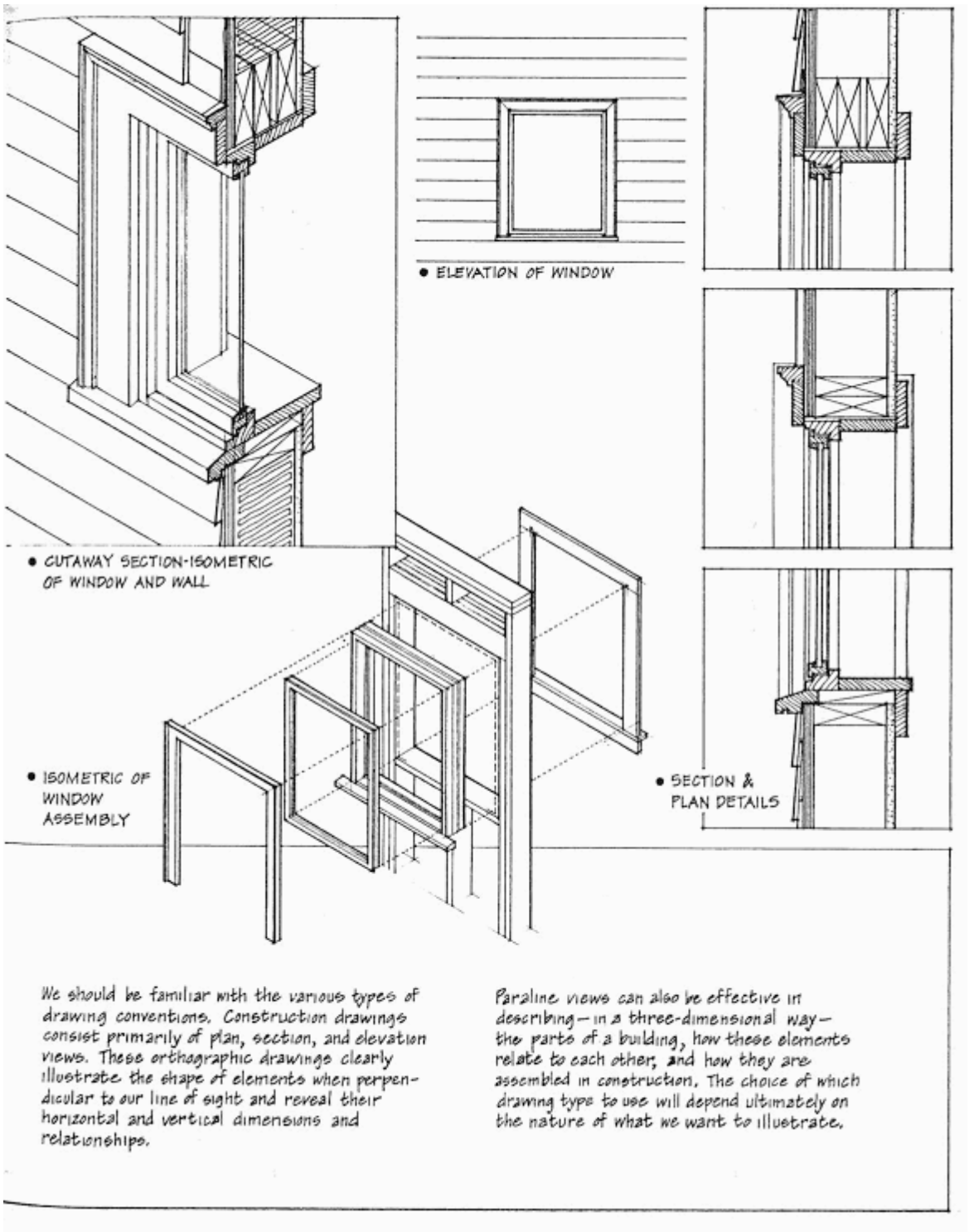
The site plan is a view looking down at a building from above, illustrating its location and orientation on a plot of land and providing information about the site's topography, landscaping, utilities, and sitework. see 1.26.

The floor plan is also a view looking down, but after a horizontal plane is cut through a building about 4 feet above the floor plane and the top section removed. It illustrates the horizontal dimensions of a building's spaces, as well as the thickness and construction of the vertical walls and columns that define these spaces.

2D projections:



Details (2D, 3D):



2. The blueprint

- main drawings in a documentation

scales 1:1000, 1:500	site plans
scales 1:200, 1:100, 1:50	floor plans, elevations (longitudinal, cross)
scales 1:50, 1:20, 1:25, 1:10	sections
scales 1:10, 1:5, 1:2,5, 1:2, 1:1	details

- projection methods in use

For floor plans, the building is cut with a horizontal plane in a height of 1,00 meter. Except for windows located higher on the wall, which are also cut.

For sections, the building is cut with a vertical plane through its structures, from the foundations to the roof.

For elevations, the building is cut with a vertical plane outside the building. You can see a view of the façade and a thick line indicating the ground. You cannot see the foundations.

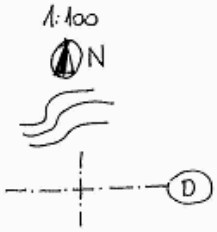
- signs

Scale

North-sign

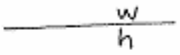
Grades (indicating slopes; site plan, sometimes floor plan)

Column centerline + column designation bubble



Dimension line (continuous string with slash or dot) (size and type is not critical, although once a size or a type have been selected, it should be held consistent)
- Overall dimension

Centerline of openings



Finished floor elevations should be labeled with a bullet.

Cross-referencing cuts (with arrow symbols and reference letters or reference numbers) (refers to a section that is usually located on another sheet)

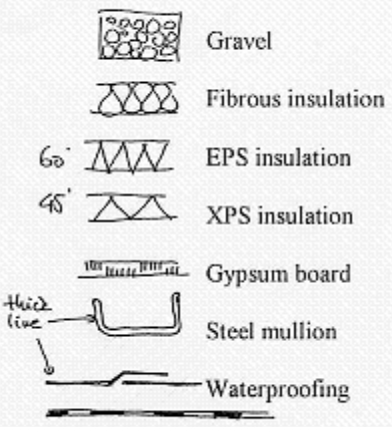
Room number, room name, room size, type of floor finish

14. Master bedroom
18 m²
carpet

Sheet title block:
- project name, location
- client name
- architect name
- consultant names
- date
- sheet title, number
- scale

Key to materials (material indications):

Reinforced concrete
Concrete
Brick
Soil
Compacted soil filling
Wood
Stucco, plaster, grout
Crushed stone



Gravel
Fibrous insulation
EPS insulation
XPS insulation
Gypsum board
Steel mullion
Waterproofing

Technical drawing symbols:

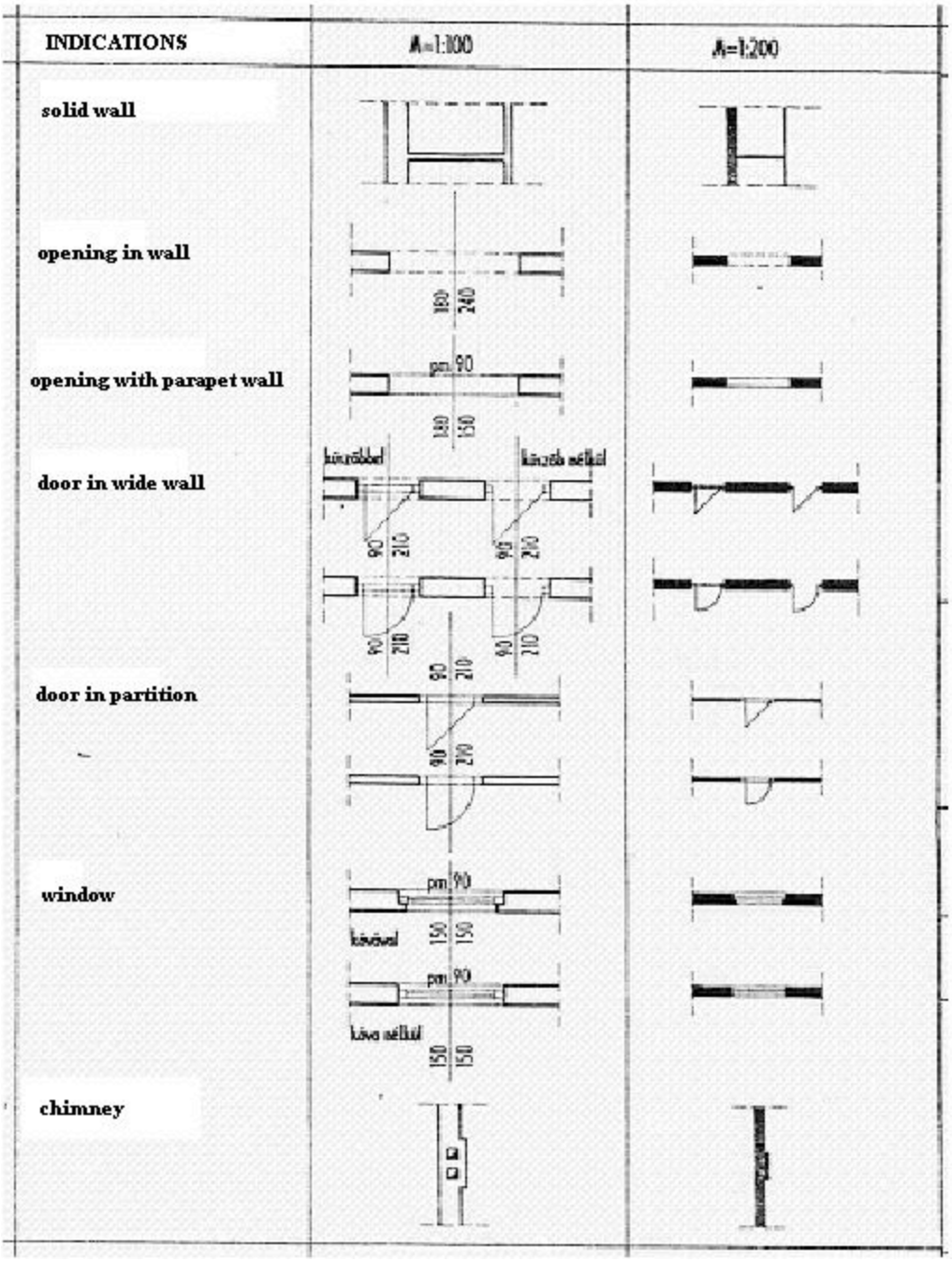
3. Details, materials

- detail drawings

Reference numbers or note leaders

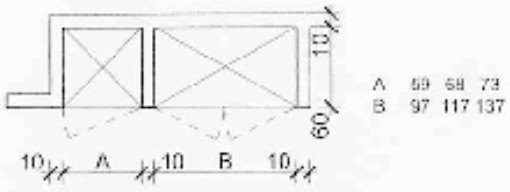
- material indications

Material indications should be taken from standards that are generally recognized in the profession, avoid creating your own symbols.

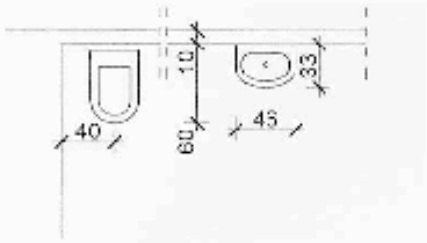


FURNITURE MINIMAL SPACES AND SYMBOLS II.

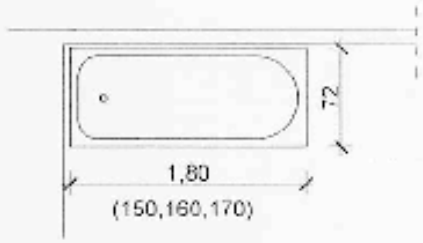
Built-in closet



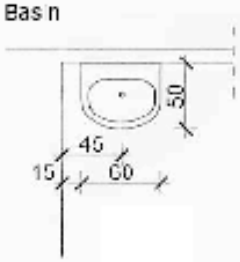
Toilet



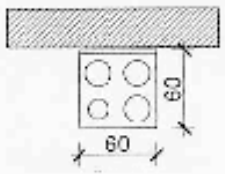
Bathroom



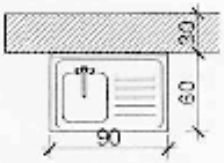
Basin

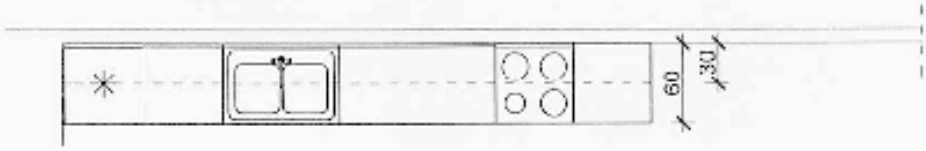


Stove



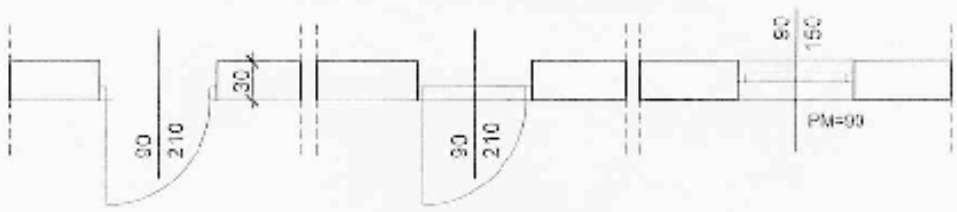
Sink

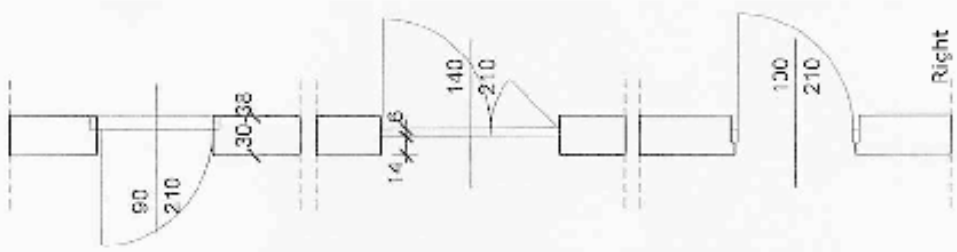


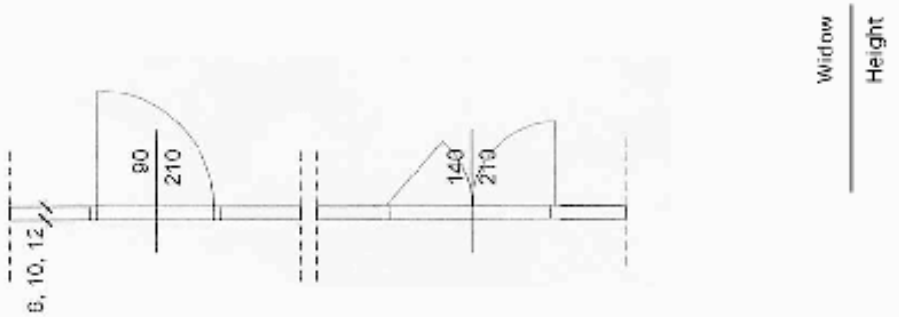


Fridge - Sink - n x 60 - Stove
Combination

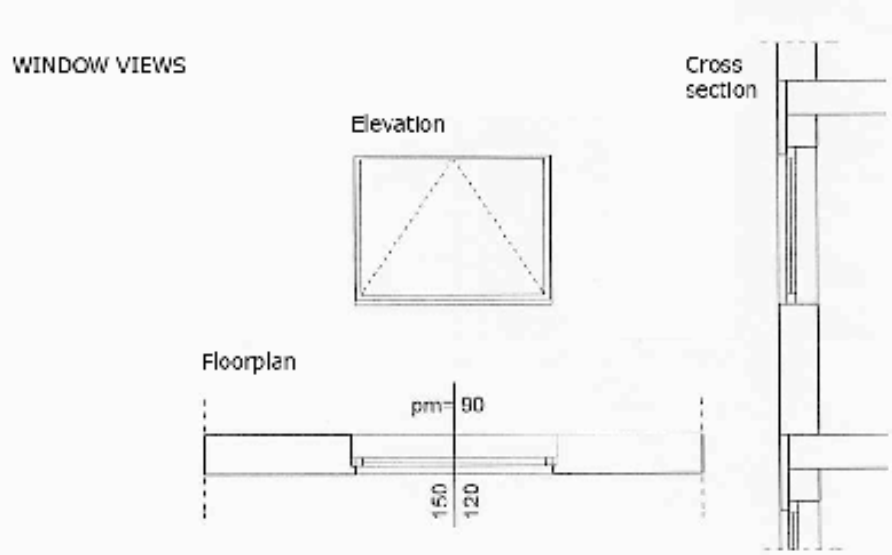
DOORS



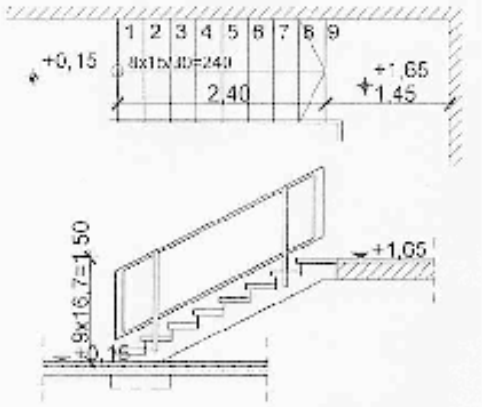




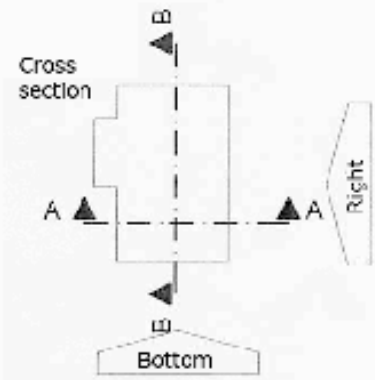
WINDOW VIEWS

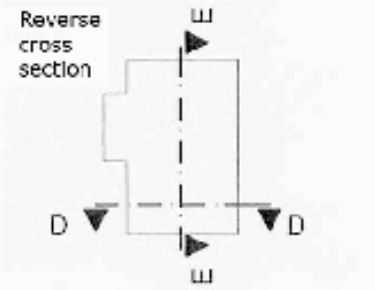


Stair

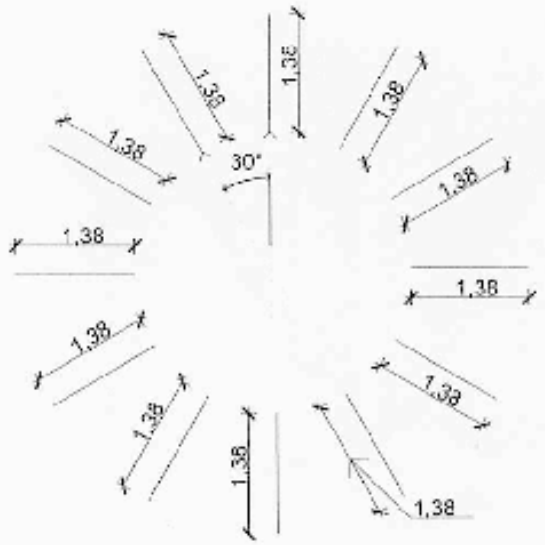


General orientation rules



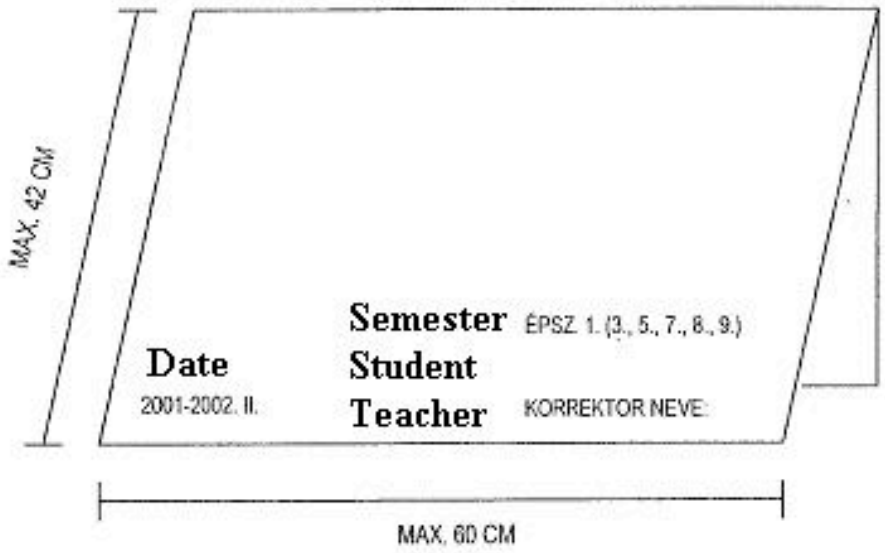


Dimensioning (directions)



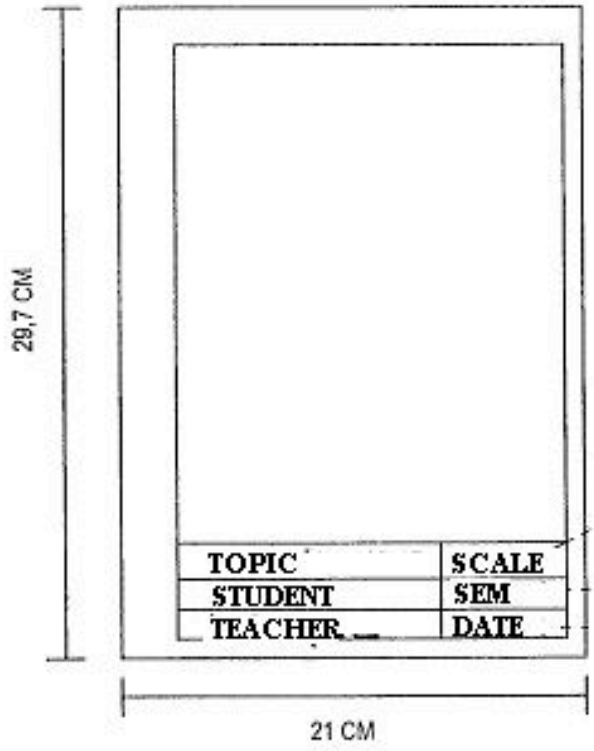
FORMAL REQUIREMENTS

1. Covering Paper of Semester Project



A/2

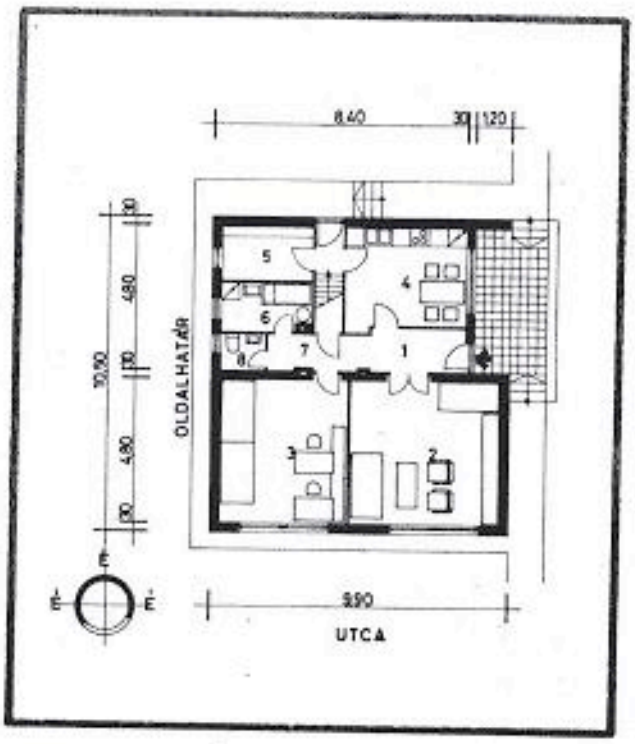
2. Design Paper Sheet



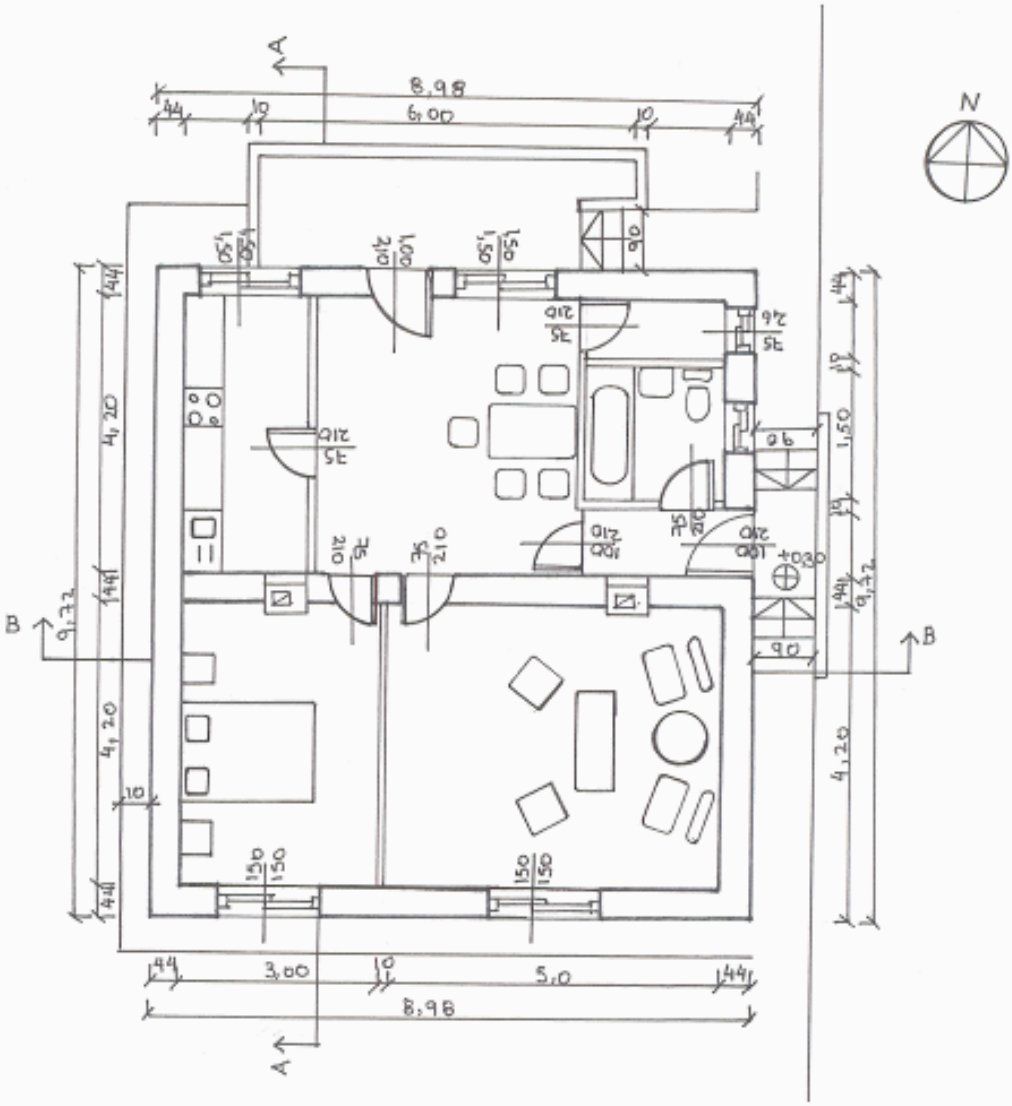
A/4

Semester Project Task

Basic Tools of Building Contructions



1.	**entrance room**	1,50×3,15	4,05 m²
2.	**room**	4,80×5,00	24,00 m²
3.	**room**	4,80×4,20	20,16 m²
4.	**kitchen**	3,24×3,95	13,23 m²
		0,34×0,74	
5.	**warderobe**	1,79×3,05	5,46 m²
6.	**bathroom**	1,65×3,05	5,10 m²
7.	**garderobe**	1,16×3,37	4,40 m²
8.	W. C.	1,16×1,46	1,70 m²
		78,10	**m²**
terrace	(11,52 m²)	5,76	2,88 m²



Name :	Semester: Fall Semester 2007
Scale: 1:100	Layout
Date: 17/12/2007	Teacher: Susanna Fulop