LU7: Architectural Drawings

Introduction of Architectural Drawings

An architecture drawing is a technical drawing of building (a house, a building or any kind of structure)

Architectural drawing are made according to a set of convention, which includes particular views like floor plan, section, sheet sizes, units.

Architectural drawing are use by architect to develop their design ideas to clients and also to communicate ideas and concepts.

It also used to assist a building contractor to construct it based on design intent, as a record of the design and planned development, or to make a record of a building that already exists.

(Image 1)
They may use them to indicate the overall appearance, inside or outside the building.

(Image 2)
Or they may be used to highlight the precise measurements for construction. These drawings are usually issued as a set, with different sheets indicating different types of construction such as electrical, mechanical, and plumbing.

Image 1

Image 2

(Image 1)
Historically, drawings were made in ink on paper or a similar material, and any copies required had to be laboriously made by hand. The twentieth century saw a shift to drawing on tracing paper, so that mechanical copies could be run off efficiently.

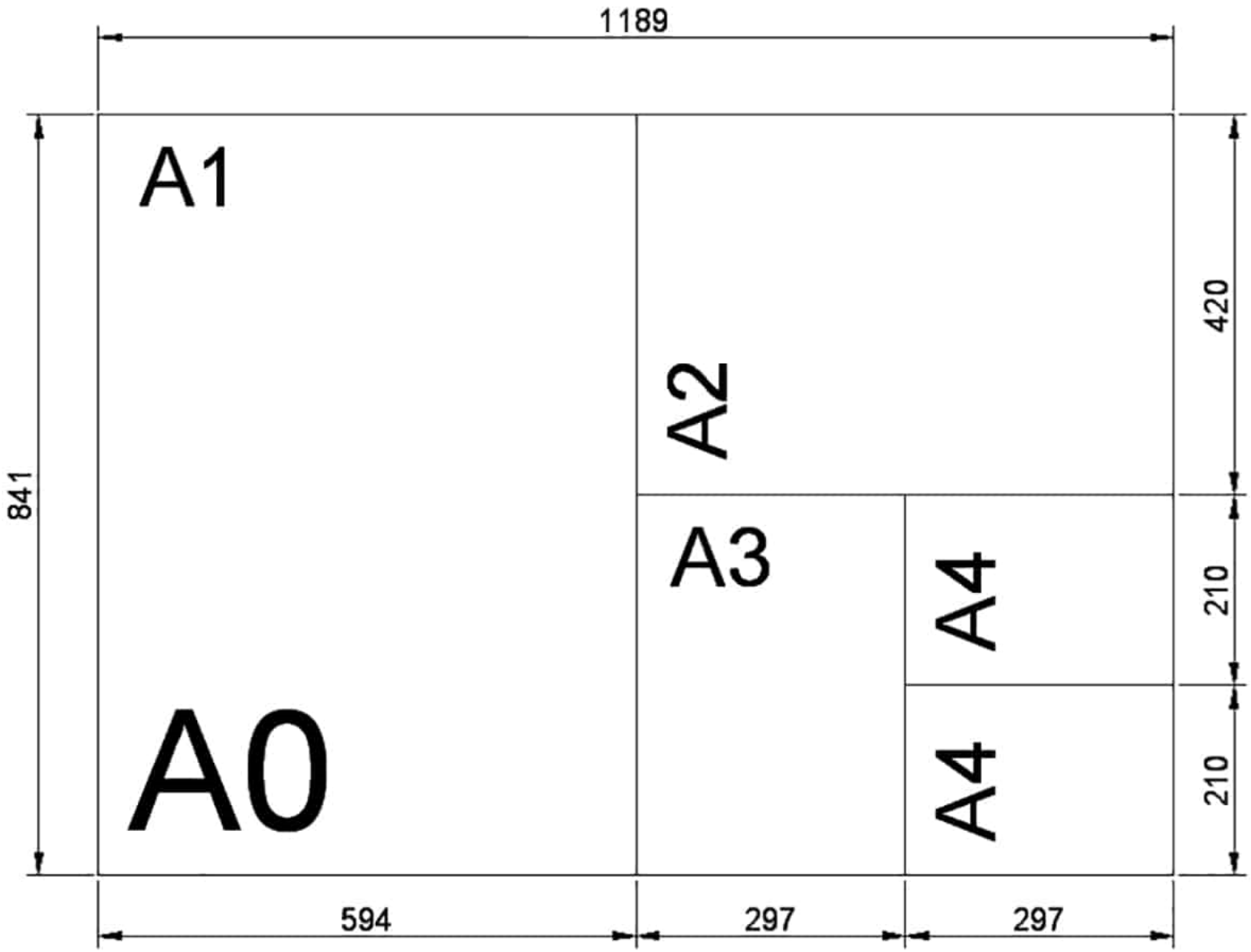
(Image 2)
The development of the computer had a major impact on the methods used to design and create technical drawings, making manual drawing almost obsolete, and opening up new possibilities of form using organic shapes and complex geometry. Today the vast majority of drawings are created using CAD software.

Image 1

Image 2

Conventionally, drawings were manually drafted on drawing boards using ink pens on various types of paper that allowed for ease of reproduction. The sheet size was determined by the size of the drawing to be illustrated, and drafting conventions that typically defined the scale of the particular drawing content that was best suited for the legibility of the drawing.

The A0 size of paper is the largest in the A series, defined as having an area of $1m^2$ and a fixed height to width ratio. Successive paper sizes in the series (A1, A2, A3 etc) are defined by halving the preceding paper size across the larger dimension. This also effectively halves the area of each sheet.



Size and Scale

Architecture drawing are drawn to scale for the correctly represented.

Scale drawing enabled dimension to be understand by others.

There are three (3) stages of Architecture Drawings which are;

- Initial Sketch Plans
- Developed Designs
- Final Plans And Specification

INITIAL SKETCH PLANS

DEVELOPED DESIGNS

FINAL PLANS AND SPECIFICATION

Initial Sketch Plans

- The early design process is typically referred to as sketch design, and as the name implies, the drawings used are generally hand drawn sketches illustrating indicative building layouts and building forms.

- These can vary from fairly “loose” rudimentary concepts, to more accurate scale-able drawings used to present the design intent to the Client.

- Concept drawings can be used to explore more technical aspects of a design, providing an initial response and possible solutions to problems, constraints and opportunities such as services layout, structure, method of construction, solar paths and shading, prevailing wind, patterns of circulation, relationships between aspects of the site and so on.

- Preliminary sketches capture and communicate the essence of an idea, focusing on its driving features, and in the same way that an artist sketch is often more evocative than a finished painting, concept drawings can sometimes capture the sense of an idea more clearly than later drawings or even the completed building.

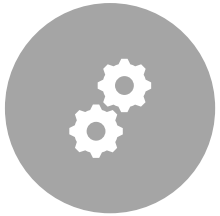
- Building a home is a very emotional thing for most of us. Not only because it’s going to be our own most private, sacred space, but also because for most, it’s probably going to be the biggest investment we’ve ever made.

- At this point, it is often a good idea to take stock of exactly how committed we are to the things we want and need - and understand that a very significant part of an architect or building designer’s job is to apply their own creative vision and technical know-how to our brief.

Followings are the things that we can consider when we are discussing our design direction with the Architect or building designer;

- Sort out what you like and what you want to change
- Consider some of the technical limits
- Discuss with designer about environmental conditions
- Look at your budget
- Ask about future maintenance issues
- Decide if you feel comfortable

Sort out what you like and what you want to change



Consider some of the technical limits

Discuss with designer about environmental conditions

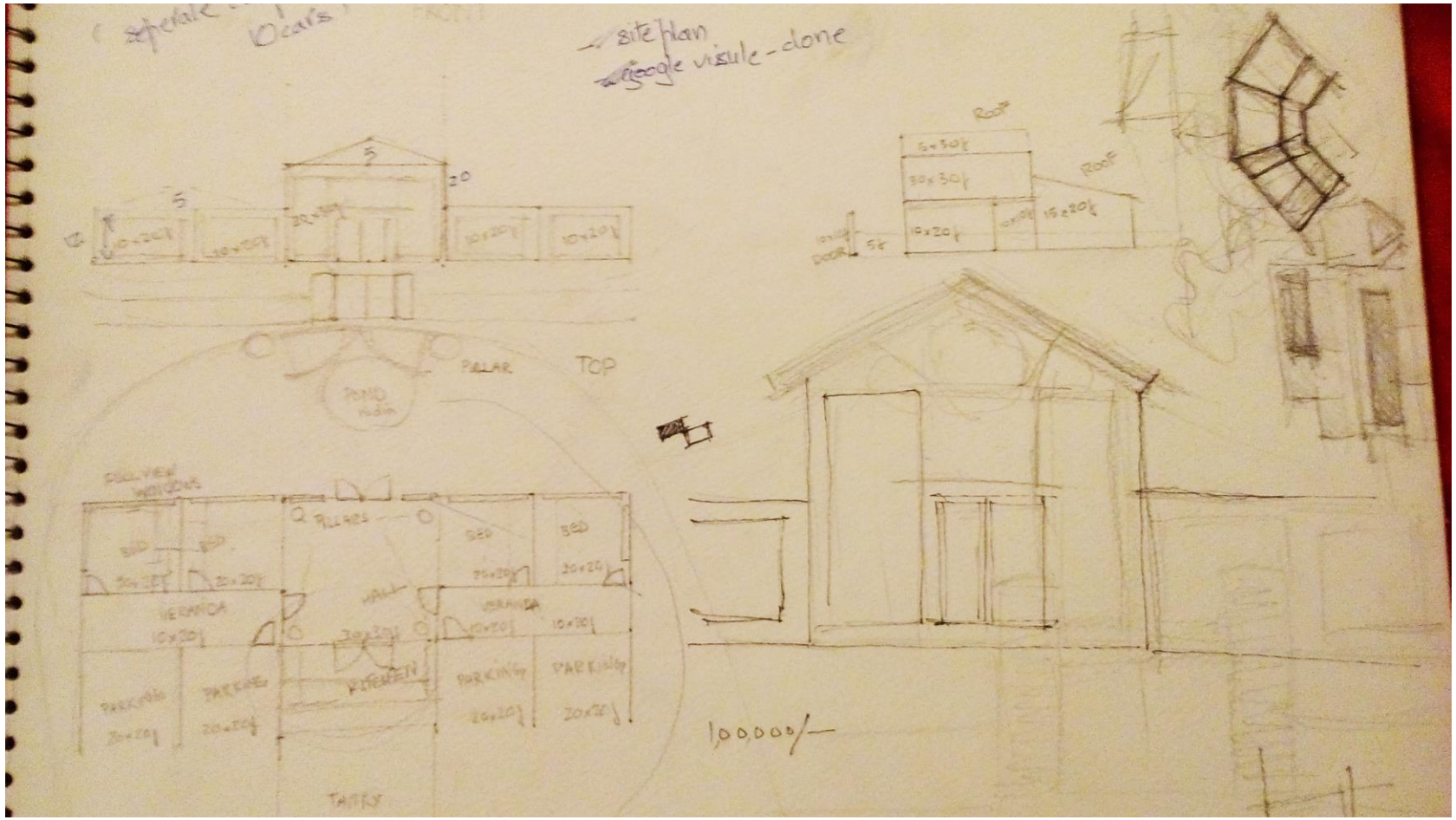
Look at your budget

Ask about future maintenance issues

Decide if you feel comfortable

Initial sketch plan

This is the example of Initial sketch plan of a house by architect that shows the initial ideas of the house's design before proceeds to more complex drawing.



Developed Designs

These can be further developed into presentation drawings, a more graphic representation of the design incorporating colour, texture, shadows, extraneous figures and furnishings, often complemented by perspective views.

Design Designs usually yields a more detailed site plan as well as floor plans, elevations and section drawings with full dimensions.

During this time, the architect will discuss the materials use with client such as cladding, flooring, roofting, windows, doors.

The discussion also about the selection and detailing of materials and finishes to make sure the concept will work.

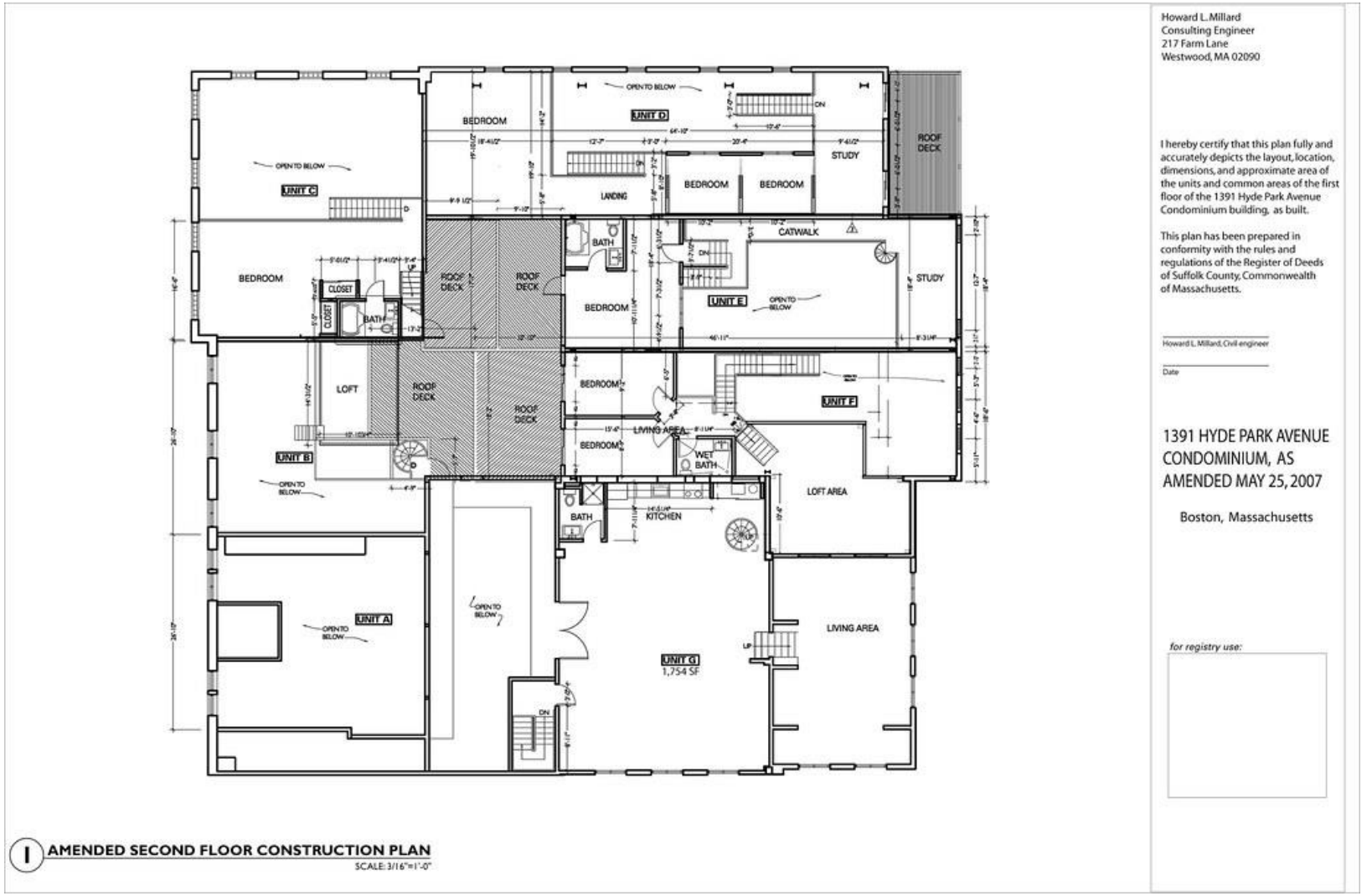
Final Plans and Specification

•These large pieces of paper are, finally, what we are paying your architect for.

•The drawings should be fully dimensioned—they are the map the contractor will follow in executing the work.

•Second elements of the plans are the specifications or spec sheets. These are detailed descriptions of the materials to be used.

•Construction methods may also be specified.

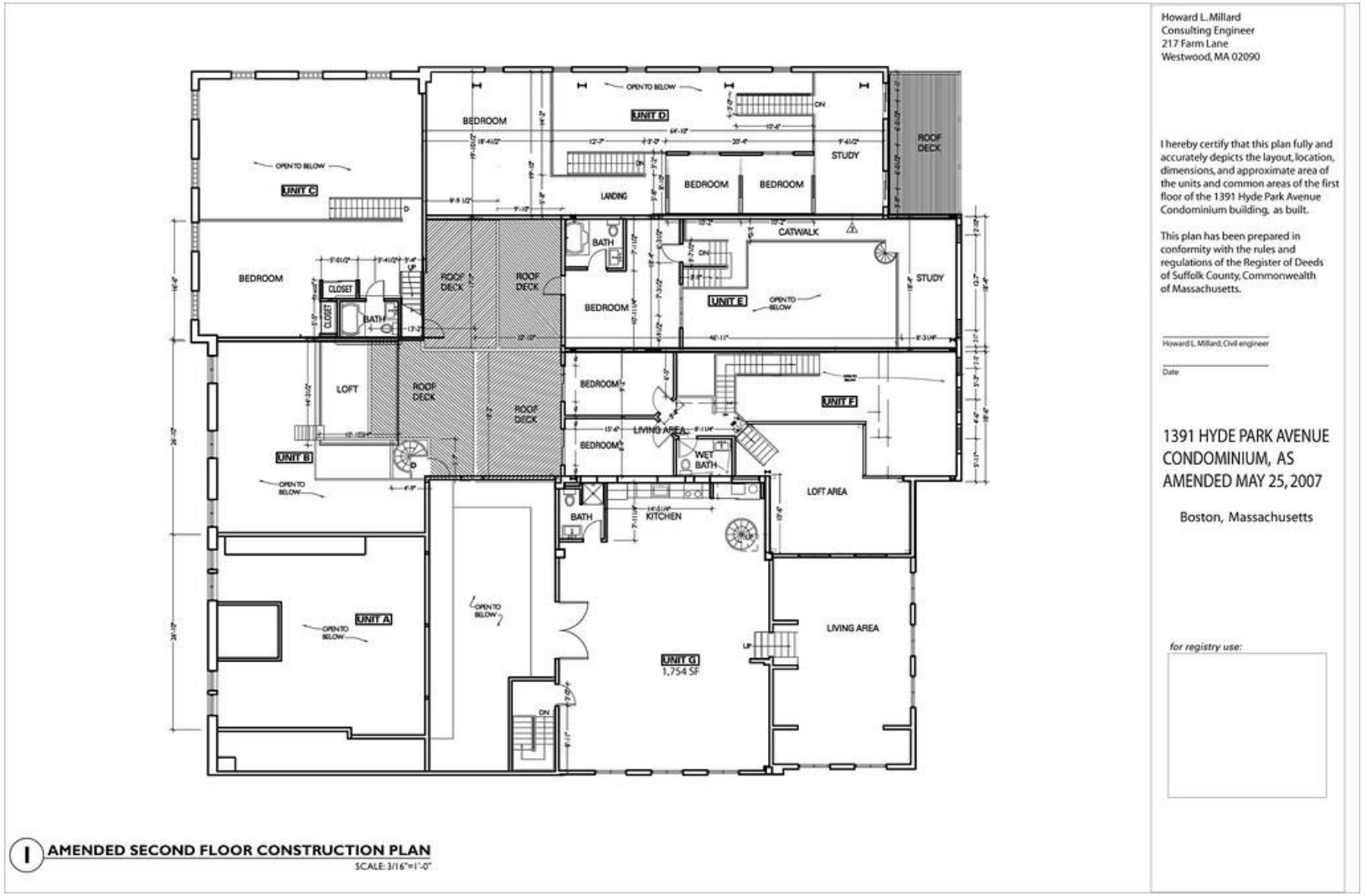


•Taken together, the plans and specifications will enable your contractors first to estimate accurately what it all will cost and then to construct what has been so laboriously planned.

•In construction, tendering is a process for getting a contractor and agreeing on a price.

•Tendering is the process by which the client or employer invites contractors to place a bid for work on a construction project.

•Builder and contractors contacted to build house as blueprint for the construction.



•There are many types of architectural drawings that are required during the process of designing, developing, and constructing a building, some are used at specific times and stages, and others such as the floor and site plans are continuously evolved and adapted as the project develops.

•At their simplest level, architectural drawings ideally comprise of floor plans, sections, sizes and units of measurements, together with references and annotations, however there many additional drawings required depending the scope and complexity of the building

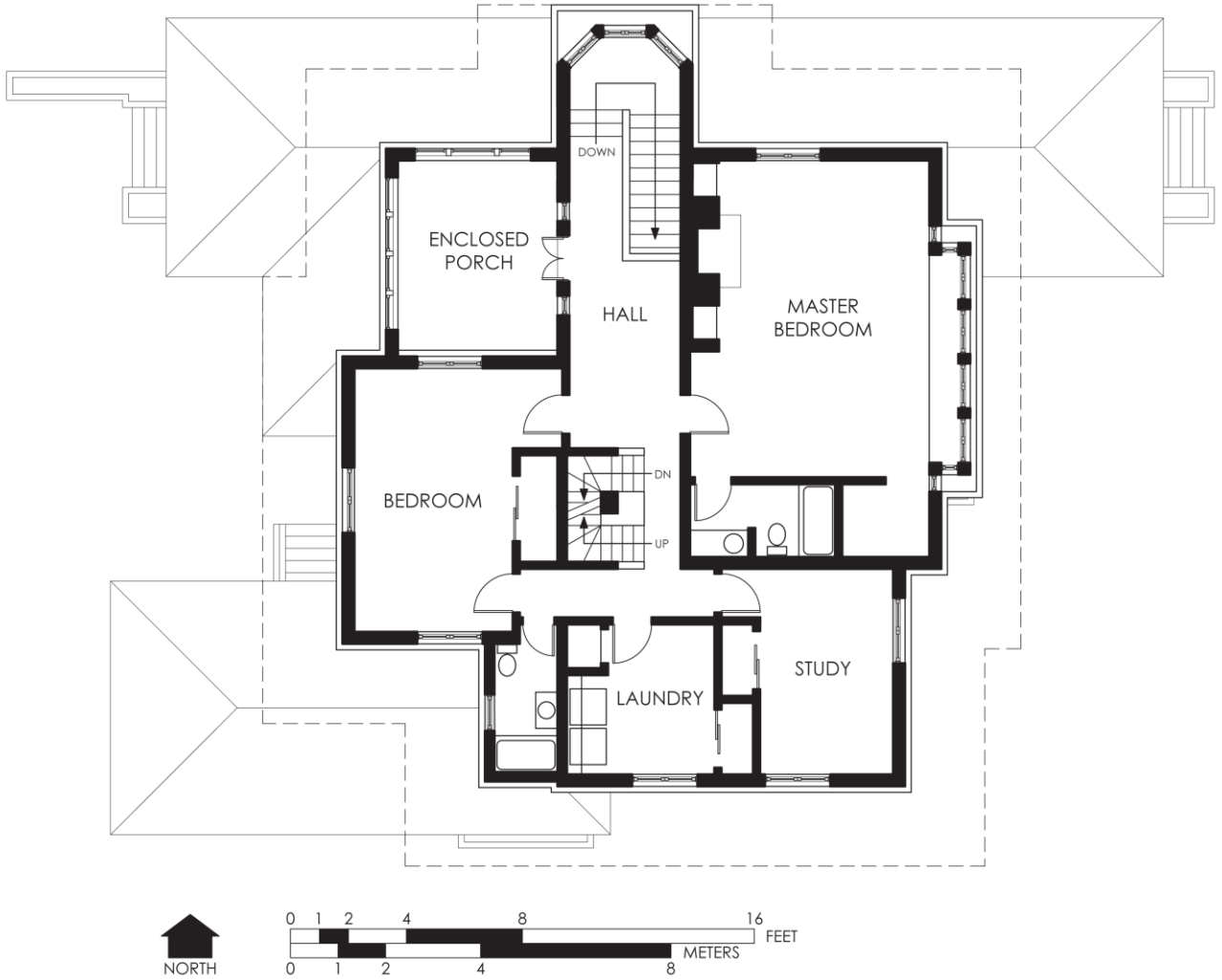
- Floor Plan
- Site Plan
- Elevation
- Cross Section
- Isometric and axonometric projections
- Detail drawings

Floor Plan

•A floor plan is the most fundamental architectural diagram, a view from above showing the arrangement of spaces in building in the same way as a map, but showing the arrangement at a particular level of a building.

•Technically it is a horizontal section cut through a building (conventionally at four feet / one metre and twenty centimetres above floor level), showing walls, windows and door openings and other features at that level.

•The plan view includes anything that could be seen below that level: the floor, stairs (but only up to the plan level), fittings and sometimes furniture. Objects above the plan level (e.g. beams overhead) can be indicated as dotted lines.



Site plan

A site plan is a specific type of plan, showing the whole context of a building or group of buildings. A site plan shows property boundaries and means of access to the site, and nearby structures if they are relevant to the design.

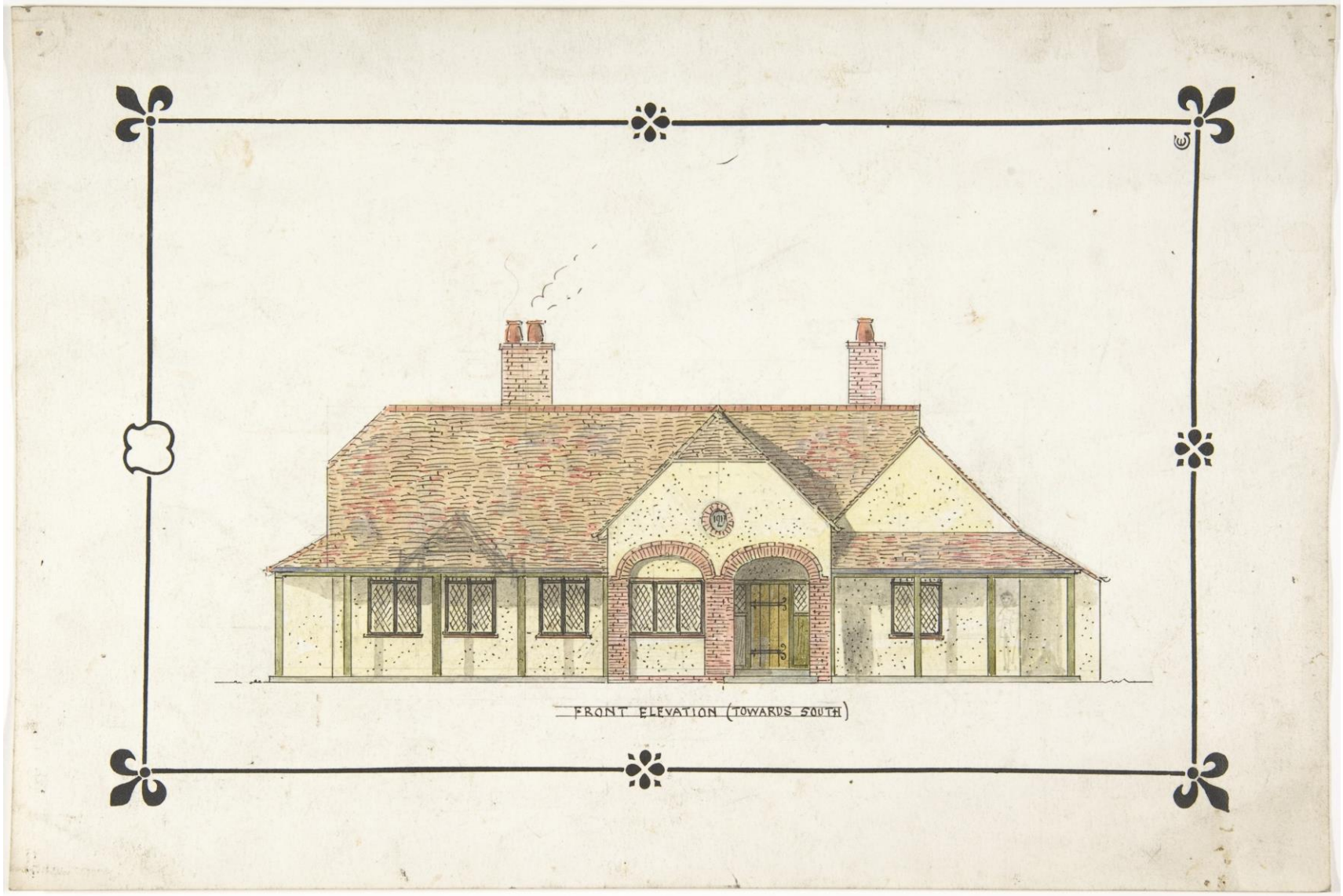
A site plan usually shows a building footprint, travel ways, parking, drainage facilities, sanitary sewer lines, water lines, trails, lighting, and landscaping and garden elements.

Elevation

Elevation drawing that shows the front, rear or side of a building

An elevation drawing is an orthographic
projection drawing that shows one side of the house. The purpose of an elevation drawing is to show the finished appearance of a given side of the house and furnish vertical height dimensions. Four elevations are customarily drawn, one for each side of the building.

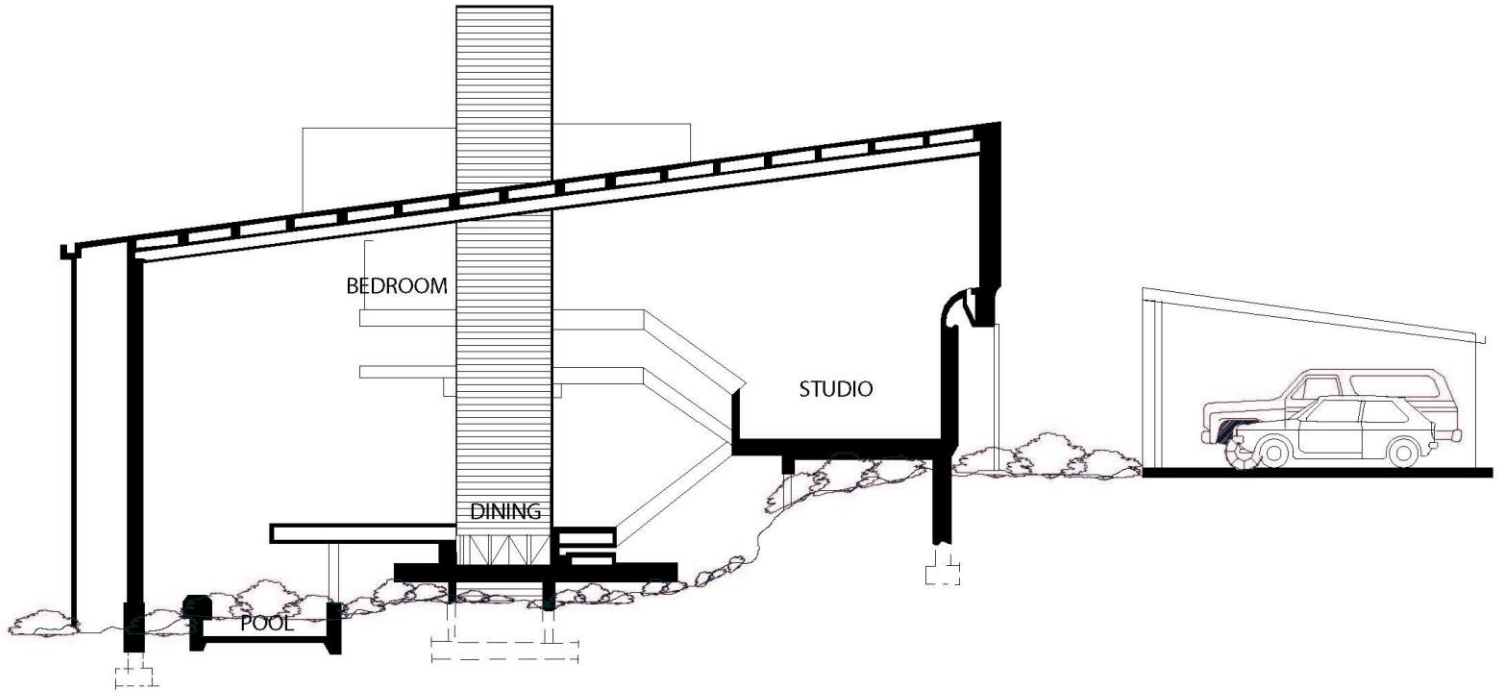
Elevations can reveal a range of information, from dimensions and materials to assemblies and structure.



Cross Section

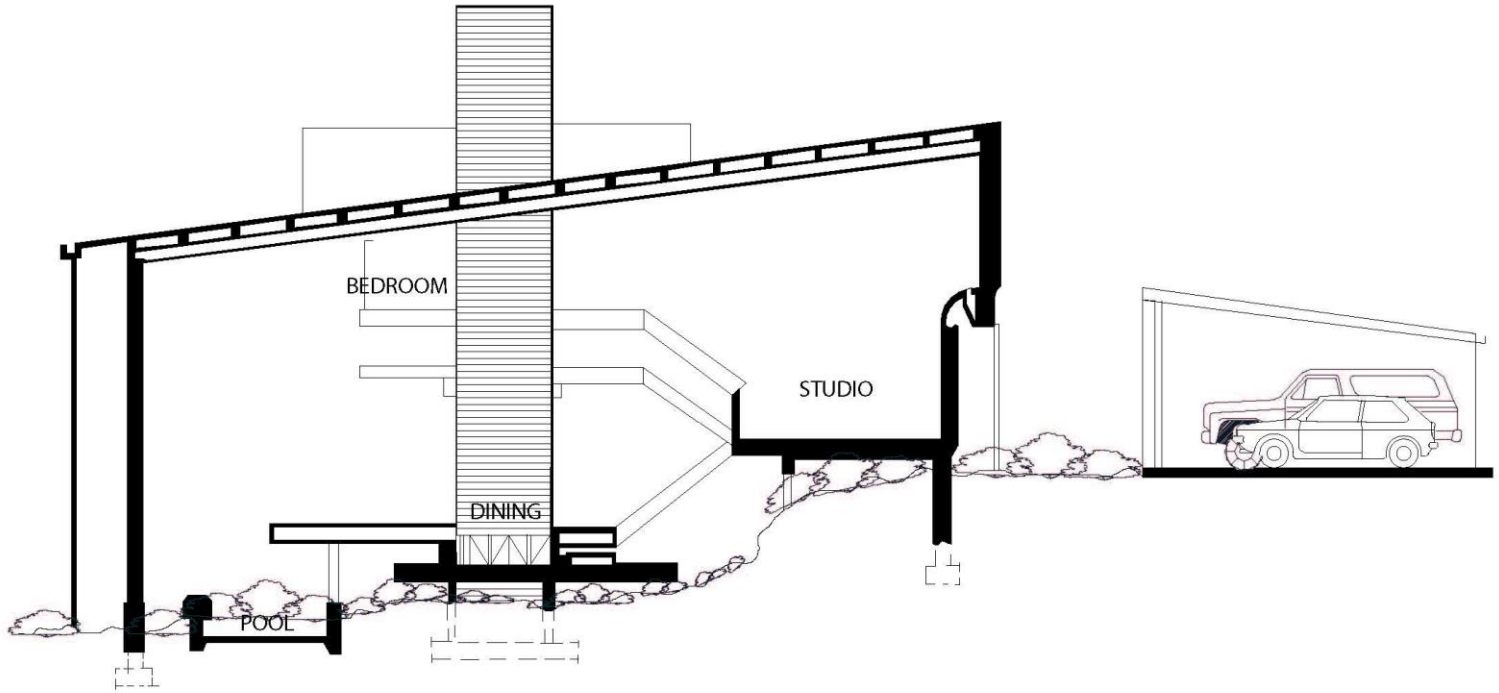
A cross section , also simply called a section, represents a vertical plane cut through the object, in the same way as a floor plan is a horizontal section viewed from the top.

Everything cut by the section plane is shown as a bold line, often with a solid fill to show objects that are cut through, and anything seen beyond generally shown in a thinner line.



Sections are primarily used to illustrate the relationship between different levels of a building and identify details that may be concealed or difficult to interpret from plans and elevations alone.

Sections are typically produced at the same scale as the floor plans and elevations, with the location of the section cut identified by a dashed line and directional symbol on the plans, and elevations.

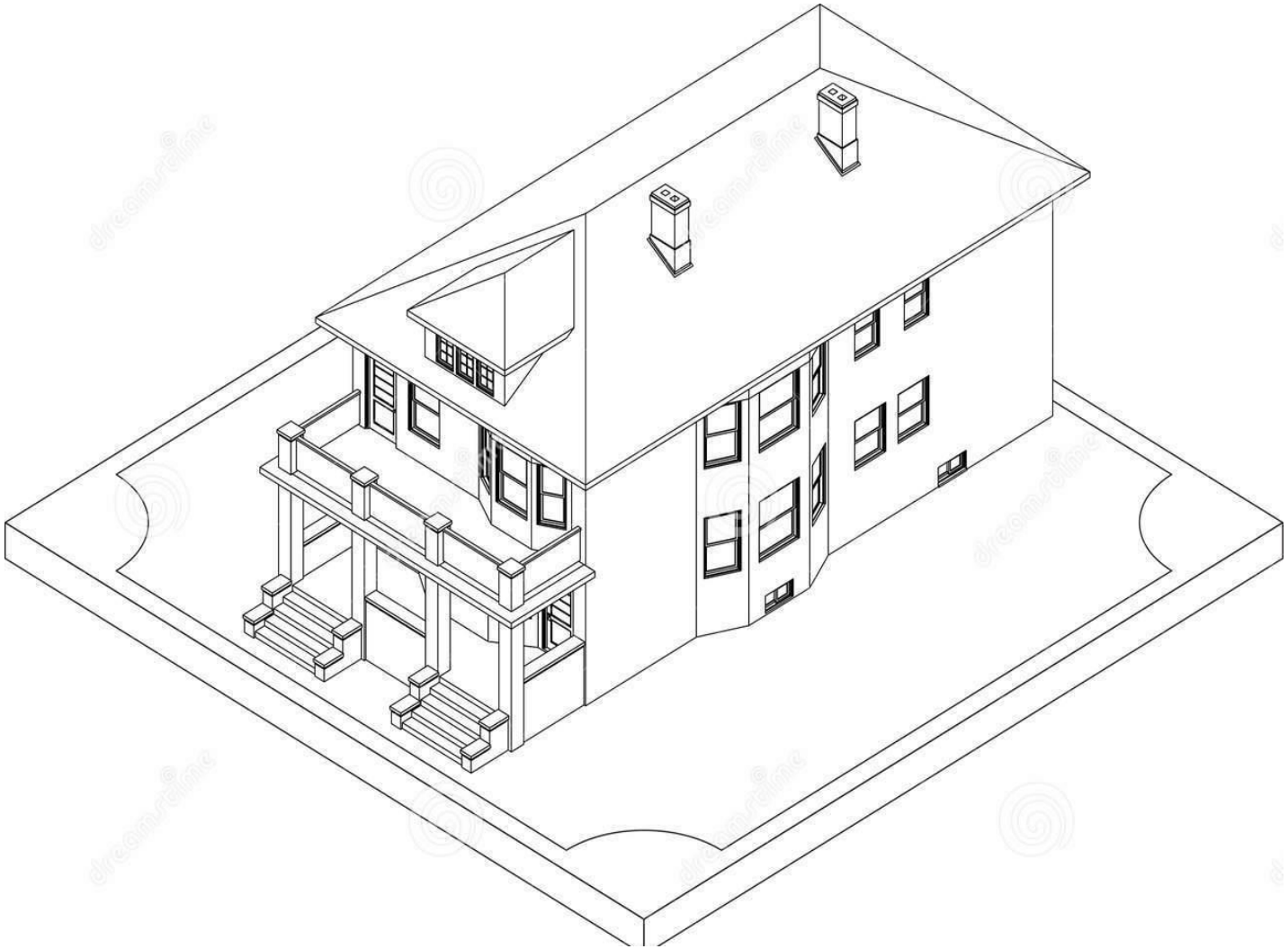


Isometric and axonometric projections

A simple way of representing a three dimensional object, keeping the elements to scale and showing the relationship between several sides of the same object, so that the complexities of a shape can be clearly understood.

An isometric uses a plan grid at 30 degrees from the horizontal in both directions, which distorts the plan shape

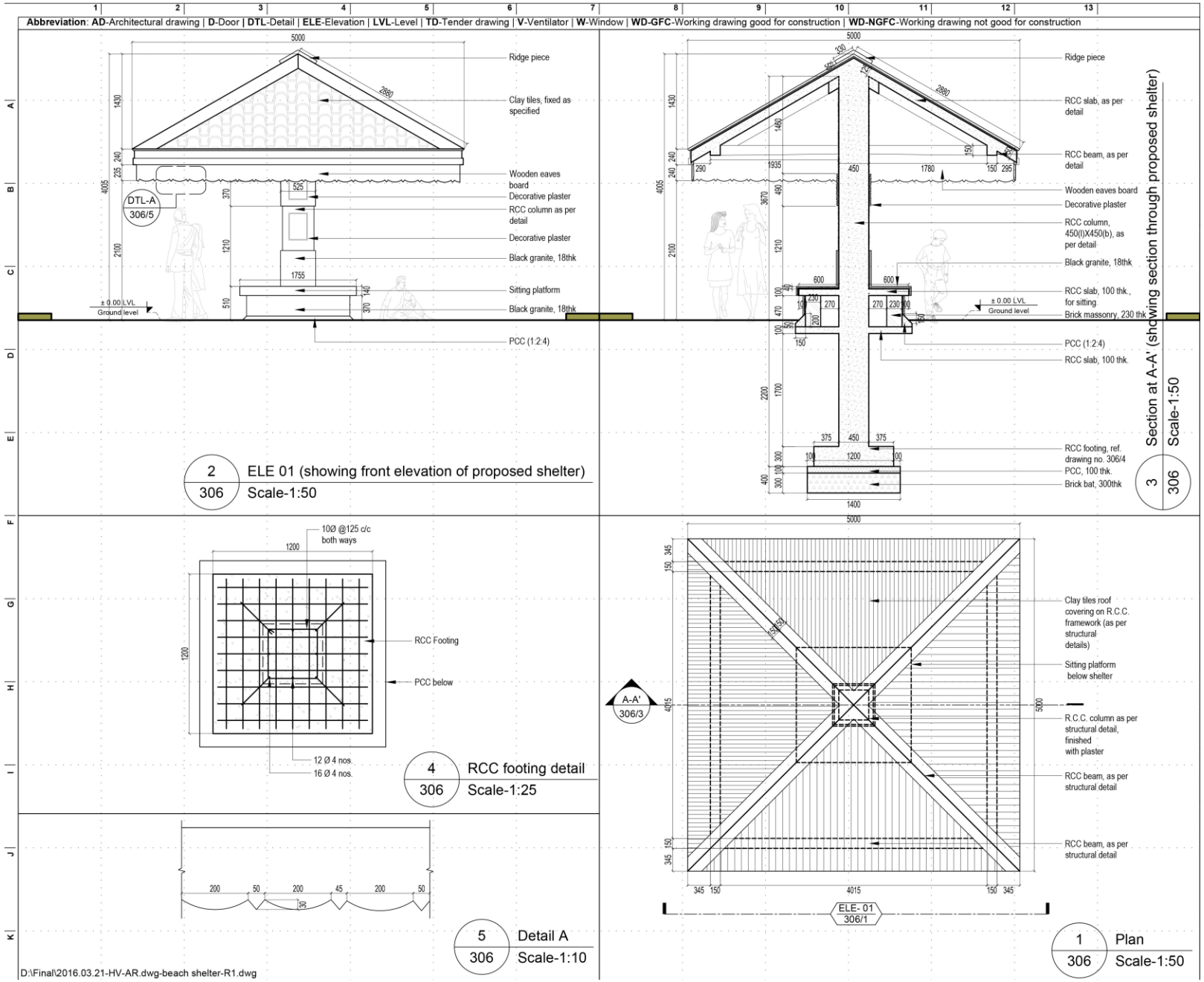
An axonometric uses a 45 degree plan grid, which keeps the original orthogonal geometry of the plan.



Detail Drawings

Detail drawings show a small part of the construction at a larger scale, to show how the component parts fit together.

Detail drawings may be used to demonstrate compliance with regulations and other requirements, to provide information about assembly and the junctions between components, to show construction details, detailed form, and so on, that would not be possible to include on more general drawings.



Additional Drawing:3D visualisation

In the field of architecture, visualization refers to the practice of representing a new structure in a way that can be easily digested. Thought of as the language between the client and the designer, visualization generally takes place before the building process begins.

3D visualization is the most recent development in architectural visualization and refers to creating three-dimensional models of a structure using computer software. Clients can walk around a 3D model and view it from any angle. Elements such as carpets, furniture, paintings and lights can also be added and their effects can be observed.

The 3D models of today are detailed and highly accurate. They contain real-life elements like sunlight effects and shadows, making them look almost like photographs.

- In summary, drawing is a narrative, developmental and methodical technique. Architectural Drawing is the backbone of the building design and plays a critical role in translating a design to feasible structure. It demands accurate rendering of the structure, traditionally on a paper. To execute any building project, a set of architectural drawings are required on the construction site, drawn by the architects, to define the production details into tender documentation such as the materials to be used, highly accurate dimensions and etc.

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