DRAWING EQUIPMENT GUIDE FOR ARCHITECTS

From FIRST IN ARCHITECTURE

Tools of the Trade

Drawing is such a key part of an architectural process, people say that drawing is thinking out loud. It is a skill we hone and develop as we work through our studies and on into our careers - there is always room for improvement. Although hand drafting is being replaced by computer aided drafting, there is still, and in my opinion will always be a place for the skill and technique of a hand drafted drawing.

In this article we will look at all aspects of the architects drawing tools, what they are, what they do, and so forth.

Equipment:

Drawing Board

A drawing board is sized according to the output of a standard paper size, generally being A0 - which provides a working area of 1270mmx 920mm or A1 which provides a working area of 920mm x 650mm. There are also desktop drawing boards available at the size of A3. The drawing boards are generally made out of MDF, plastic and melamine. The drawing board comes with a horizontal bar for drawing horizontal lines, referred to as either a T-square or a parallel bar or parallel motion. A parallel motion is preferable to a T-square and are more common.

Paper

Different types of paper are used for architectural drawing depending on the required outcome and stage of design. Paper is graded according to its weight which is measured by grams per metre square. As a point of reference, average office photocopy paper is about 80gsm (grams m2),

Sketch Paper

Sketch paper and butter paper available in sheets and rolls, are a staple in the studio. They are lightweight, around 25-50gsm, and generally used for freehand sketching, overlays, and trying out different ideas over hard line drawings.

Tracing paper

Tracing paper is sold in rolls, pads or sheets, in a variety of sizes, and quality. Tracing paper is used for overlays, sketch layouts and the like, but due to its increased thickness over sketch paper, it can be copied well and therefore used for some working drawings. Weights range from about 60gsm all the way to 112gsm, which is a better quality, and is easier to work with and gives a smoother finish than the thinner lighter trace. I really enjoy working on about 90gsm trace, it gives a good feel for drawing, but not too thick that you feel you are using a paper that is too high quality for sketch and development work. A great medium for practicing and developing your skills.

Layout paper

Layout paper (sometimes referred to as detail paper) is similar to trace but does not have quite the same level of transparency. It is usually white, and used for overlays, sometimes in conjunction with a lightbox to improve transparency. It is a very light paper at about 45gsm.

Presentation papers

Drawing paper is available in a variety of weights, textures and colours in both sheets and rolls. If working with pencils it is better to use a more textured paper, while pens are more suited to a smoother surface. Cartridge paper comes in the usual standard sizes, and a range of weights varying from about 110gsm to 200gsm. Cartridge paper is used for presentation work. It is not really suitable for overlays as it does not really have transparency. Watercolour paper is a lovely thick and textured paper, that is available in varying colours, textures and weights. Beautifully hand rendered drawings can look stunning on the right watercolour paper.

The standard sizes (according to European methods) of drawing papers is shown below, known as the ISO system. The ISO system allows a paper size to be scaled without compromising the aspect ratio of the paper.

Set Squares

Adjustable set squares are used to draw lines at any angle. The square can be set according to the angle you want to draw and fixed into position.

Templates and Curves

A french curve is made from clear plastic and is used for drawing irregular or complex curved lines, which cannot be made from arcs of circles.

Templates are also available for circles, ellipses, along with other standard shapes and even furniture, people and fittings at varying scales.

Compass

The compass is used to describe precise circles or arcs. One side of the compass has a needle point, while the other carries the lead. Some have a joint so that when drawing wider arcs or circles the needle is able to be kept perpendicular to the paper. Attachments can also be used for pens or felt tips.

Pencils

Pencil leads are available in a range of grades, according to the degree of softness or hardness of the lead. 9H is the hardest and 6B is the softest. The extremes are used less so, and the most common grades are HB or F. Technical pencils and clutch pencils are a popular choice for architects. The technical pencil holds small lead shafts which can be released as required. The technical pencil is refillable. The clutch pencil is slightly different in that it is possible to sharpen the lead, and the pencil itself is heavier and balanced, as such it tends to be preferred by many architects.

If you want to learn more about the clutch pencil read this: https://www.jacksonsart.com/blog/2015/10/02/why-use-a-clutch-pencil/

Drawing Pens

Technical ink pens are the standard architectural drawing office pen. They are not used so much these days although some university courses still do a module or two teaching the

techniques of using this type of drawing. These pens are very accurate at achieving a precise line width, and require refilling with ink manually when they run out. These pens take some getting used to but I love to work with them. They are more suited to hard line presentation drawings rather than sketching.

Fine Pens

For sketching, sketch details and more development work there are a multitude of pens available to suit different functions and preferences. Fine pens come in a variety of thicknesses, 0.1mm to 0.5mm are the most common ones. There are also good quality felt tip pens that some architects prefer. It is all about testing types of pens and finding your own preference and style. If you want to learn a bit more about the different types of fine pens available I would highly recommend you read this article from Jerry Teo.

https://www.parkablogs.com/picture/fine-liner-pen-shootout-–-comparison-of-fine-liner-pens-market

Scale Rule

A scale refers to the relationship between an original object and the drawing or model of that object. The original, life size scale is 1:1, that is 1 unit is equal to 1 unit. A scale rule allows you to measure a drawing and ascertain the actual measurement at a scale of 1:1 or actual size.

The standard scales on a metric rule are:
1:1
1:100
1:20
1:200
1:5
1:50
1:1250
1:2500

The rules are available as both flat or triangular, I think the flat version is easier to use.

Sketchbook

Your sketchbook is a vital tool for practicing your skills, developing ideas, observing the world around you and collecting information. It is good to get into the practice of taking your sketchbook with you everywhere and using any free moment as an opportunity to carry out a quick sketch, whether it is a two minute observation sketch, or a half hour study. This kind of practice will help you build your technique and confidence and make your sketching ability a natural extension of your thought process as you work on your designs.

My favourite sketch book range is the Moleskine brand which come with good quality pages allowing you to draw with different mediums whether it be pencil, ink or even a light watercolour. You can pick up a Moleskine sketchbook in a range of sizes and with a variety of paper types, be it plain, lined or graph paper.

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