

Graphic Skills Portal

Introduction Handout

2

VISUALISING



URBAN
GRAPHICS
SKILLS

BSP Graphic Skills Portal

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1. What is a 'concept' in design?

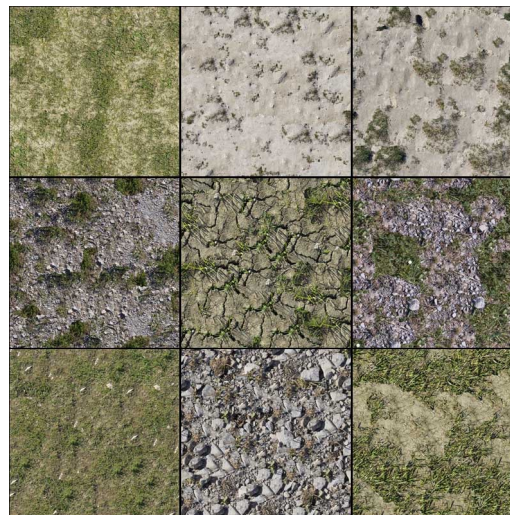
"an abstract idea, a plan or intention, an idea or invention to help sell or publicise a commodity, idea, notion, theory, conviction, opinion".

A concept is an **idea**, a **theory** or **notion**, but in architecture [and in any design field in general] we could also describe a concept as '**an approach**' to the design.

When we think of architectural concepts, we think of an **abstract idea**, one that is unchanging throughout the design process. This is not necessarily the case, a concept can be linked to many factors, and **can evolve as the design grows.**

There are several areas the designer may focus on at the early stages of design that will begin to inform the concept and direction. These areas may be drawn upon throughout the project, weaved into one another, as the project develops. The approaches can be categorised as:

1. MATERIAL:



2. CONCEPTUAL:

THE URBAN VOID



IN THE JAPANESE TECHNIQUE OF SUIKO THE WHITE VOID IS THE MOST IMPORTANT PART, IT IS THE VOID THAT MAKES UP THE ESSENCE OF THE PAINTING

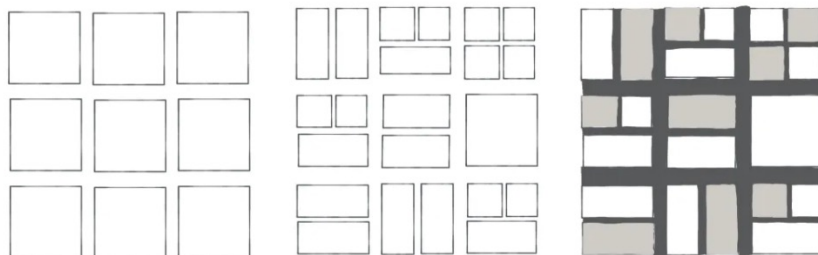
3. CONTEXTUAL:



5. COLLABORATIVE/BRAINSTORMING:



4. FORMAL:



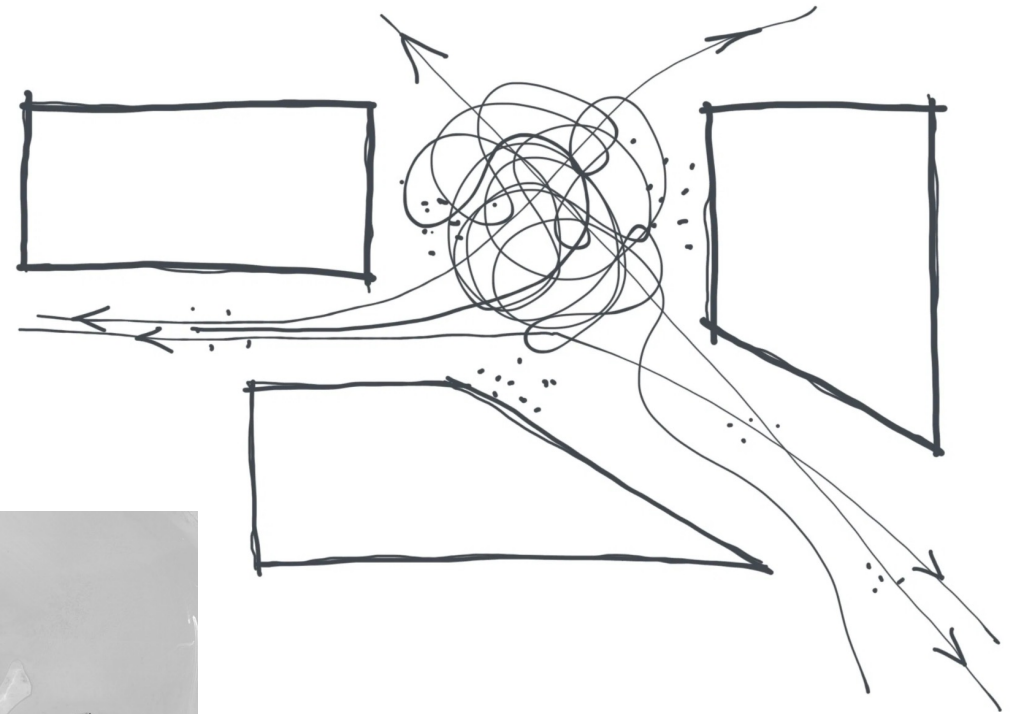
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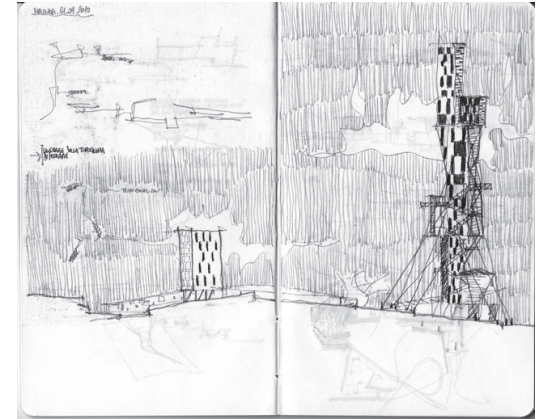
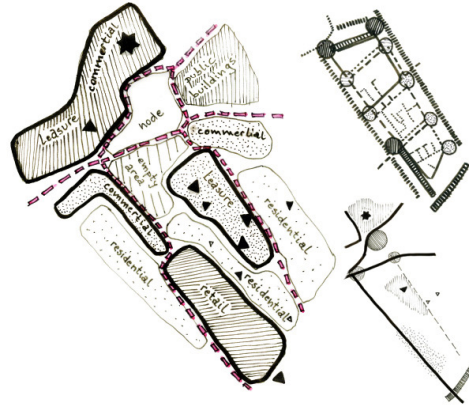
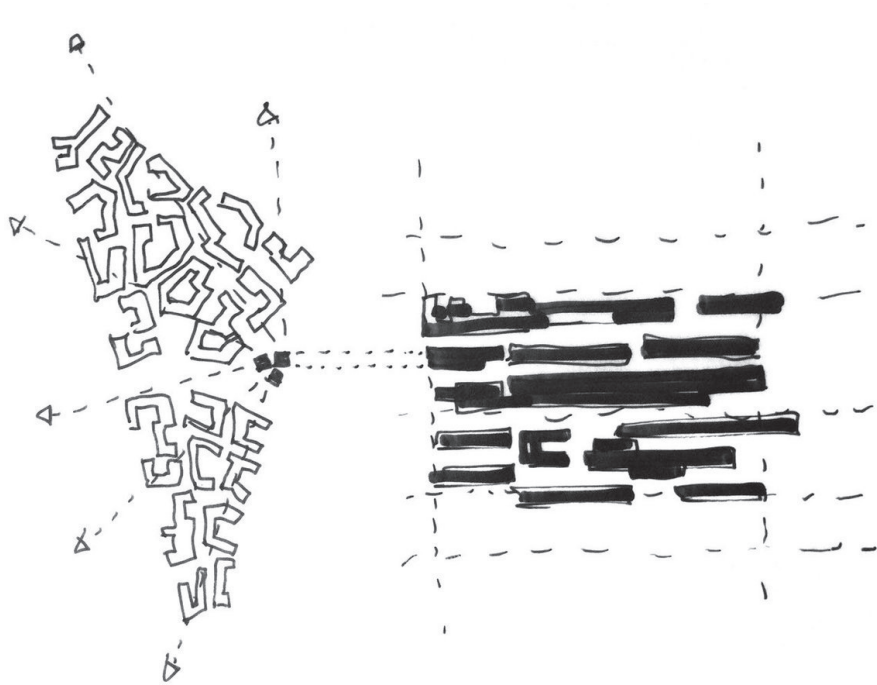
Anyway, **SKETCHING** is always a good **idea**, to produce a concept.

Firstly, put a bit of order in your mind. Then to communicate your ideas with others.

Lastly, to have something to start with!

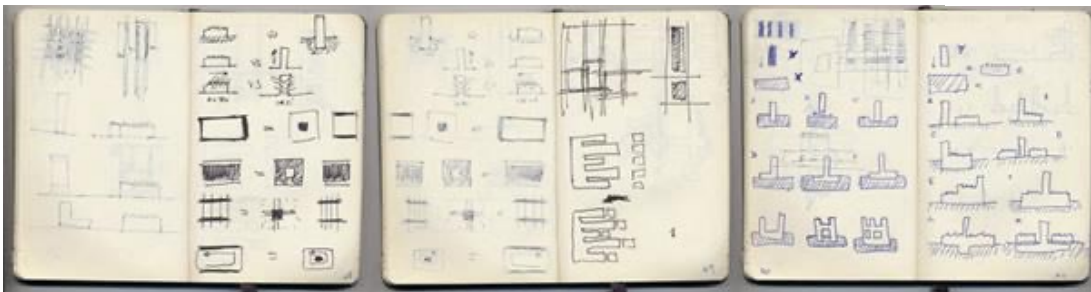


.... And, **any sketch is good**, no matter how good you are in drawing!



Franky
anyway that is all

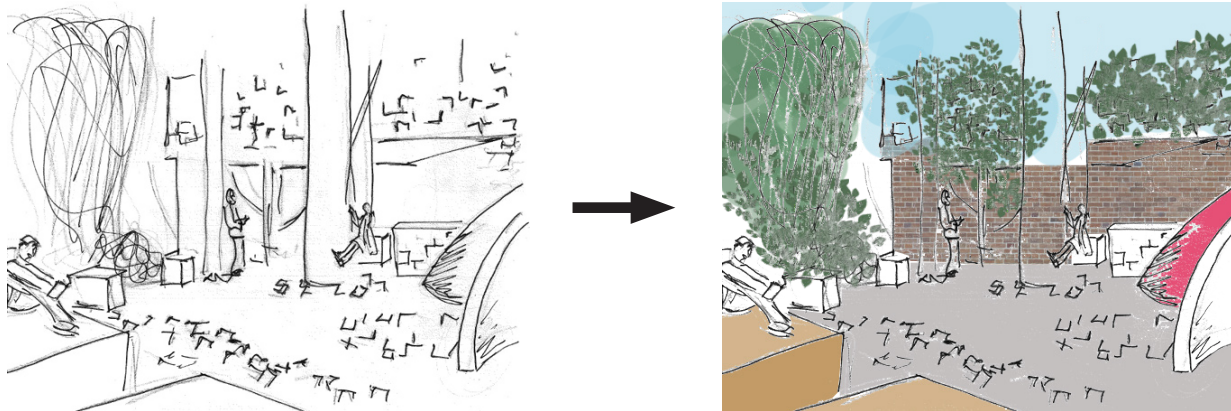
Concept Sketch - Frank Gehry



2. How to combine hand sketching and software?

There are several ways to mix hand sketches and software:

1. Most of the time hand sketches come first. Then, they are scanned and imported into Adobe Photoshop or Illustrator to be edited.



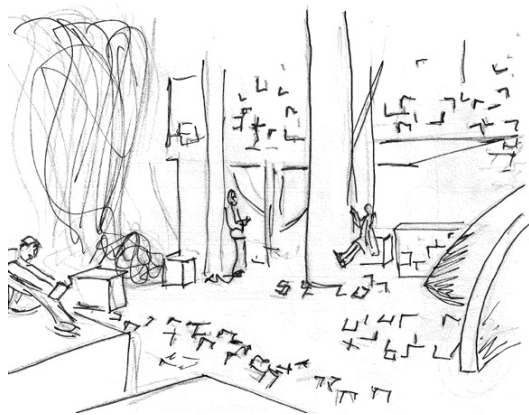
2. Combine hand drawing sketches with existing images. You can trace over existing images to bring a hand drawn quality/appeal to the image.

How to combine hand drawing sketches with existing images using Adobe Photoshop?

Loosely trace over an existing image, here is your chance to add your own personal style. Don't try and make it look perfect.

The goal here is to add a sketchy quality to an image so keep loose and enjoy the imperfections. Look for areas of the drawing that look too pristine and sketch over them. You should focus on what the important characteristics of the building are and use this as an opportunity to emphasize certain elements while adding texture and style.

So, once you are satisfied with your drawing you will need to scan it to take it back into the digital realm (300 Dpi is high quality). Once you have your rough sketch on the computer, drag and drop in Photoshop. Don't open it directly into your existing rendering as it will need to be edited on its own first. You

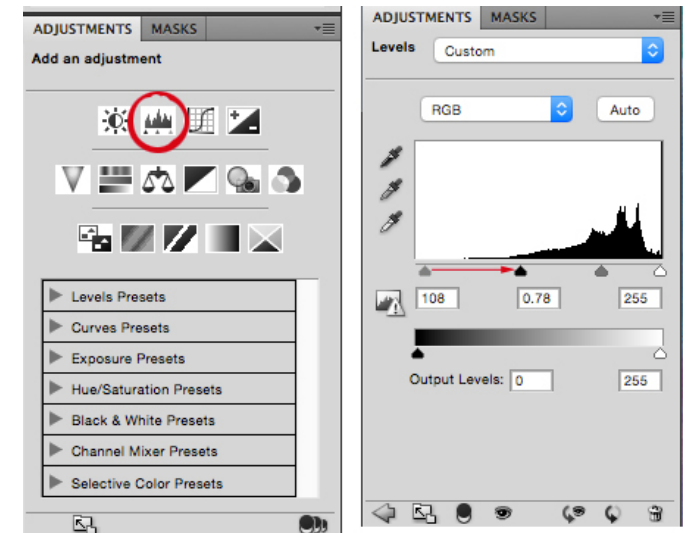
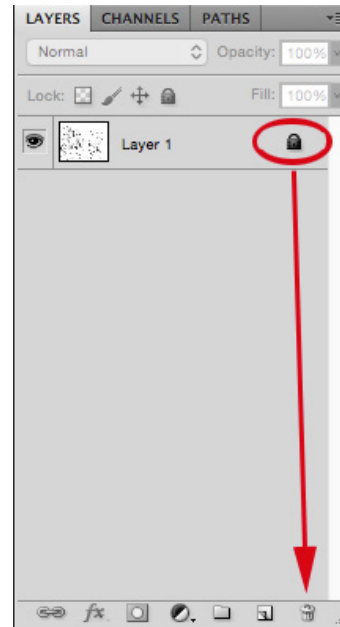
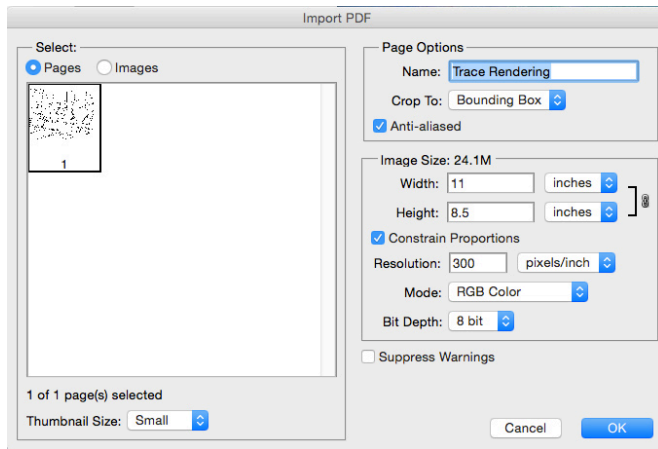


can do this several ways but the easiest is to locate your file on your computer, right click on it select open with and then click Photoshop. Click OK on the dialogue box.

Once you have your sketch open you will need to unlock the existing layer it is on. You can do this by dragging the lock located next to the layer to the garbage symbol below it.

Adjust the levels of the hand sketch

You will want to adjust your levels so that there is the maximum contrast between your trace and pencil. This will make it easier for the magic wand select the areas you want to get rid of. You will do this by going to the right hand portion of your screen under adjustments. Then select levels now drag your left cursor that affects the lightest tones in your photo over to the right until it is at the edge of the curve above. This will turn your pencil



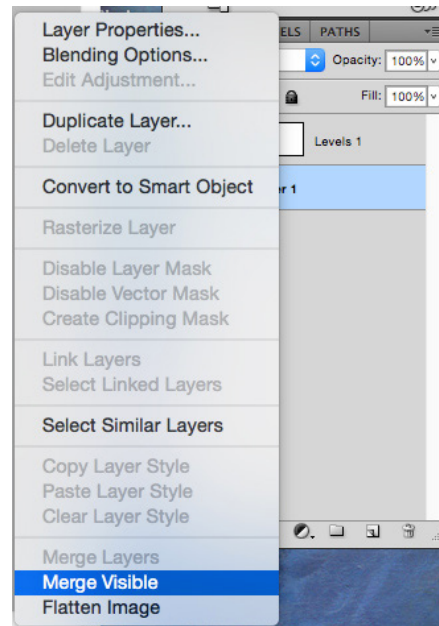
lines as dark as possible without making the trace too dark so that the computer can still distinguish them.

Merging the layers of your illustration

Once you have adjusted the levels on your drawing it will have created a new layer, it is important to flatten these two layers before we continue. You can do this by going to the layer tab on your screen right clicking on any of the layers you have and select merge visible.

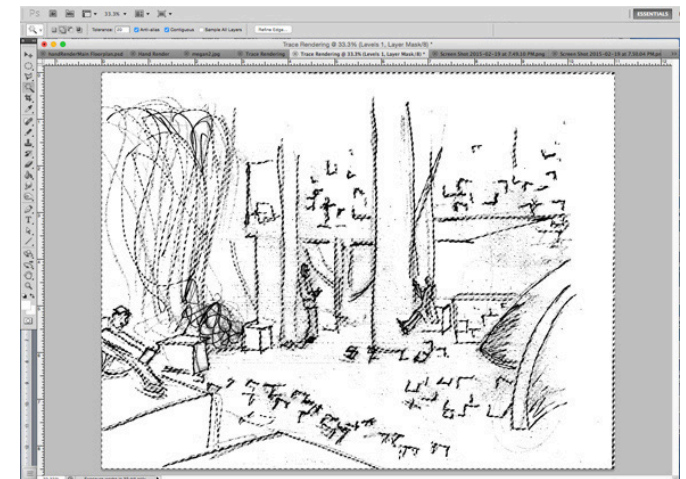
Like the name says this command will flatten any visible layers, since you only have two layers in this drawing and you would like to merge them together, go ahead and press the button. However, be careful if you are to use this feature in the future and you do not wish to merge

all of your layers. Make sure that you click the eye button next to any layers you do not wish to merge, making them invisible, before continuing.



Delete the trace

Now we must get rid of all of the background trace texture before we can bring the sketch over top of our rendering. Make sure your layer is still unlocked, if isn't then when we delete the trace paper Photoshop will replace it with a white background and we will still not be able to add it to our rendering.



Click on the magic wand tool and then click anywhere on the trace paper in your drawing, finally press delete. You should begin to see a grey-checked background behind your pencil sketch. You may also want to change the tolerance of your magic wand (approx. at 20).

Raising the tolerance tells Photoshop that you want to pick a wider range of

tones, so it will collect darker areas of trace. Continue to use the magic wand by clicking on all of the trace paper colored areas of your drawing until you only see your sketched lines.

Bring it ovetop of an existing image

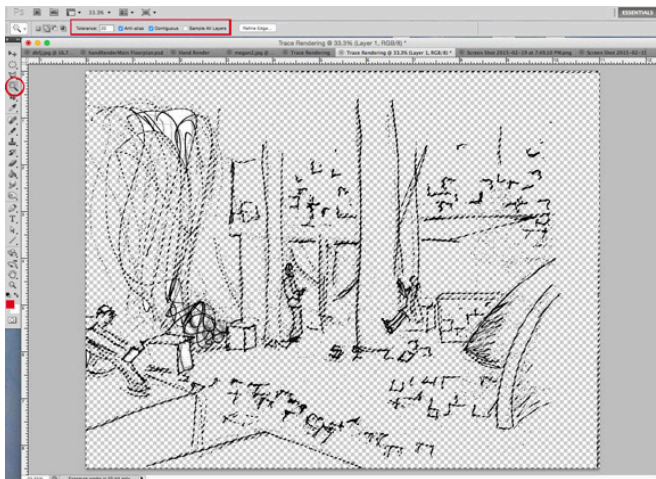
Once you have deleted all of the trace it is time to bring your sketch into the existing image. You can do this in two different ways.

1. You can highlight your entire sketched image with the rectangular marquee tool and press **command c** to copy your image, then open up the file you want to place it in and press **command v** to paste it into that file.
2. You can click the move tool grabbing your image and drag it into the new file

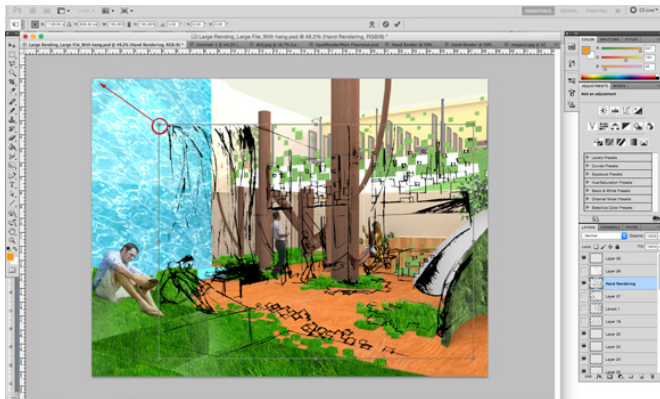
by moving the arrow up to the top of the screen then hovering over the tab you would like to bring it into. This will then open up that file taking the hand sketch with it.

Scale your sketch

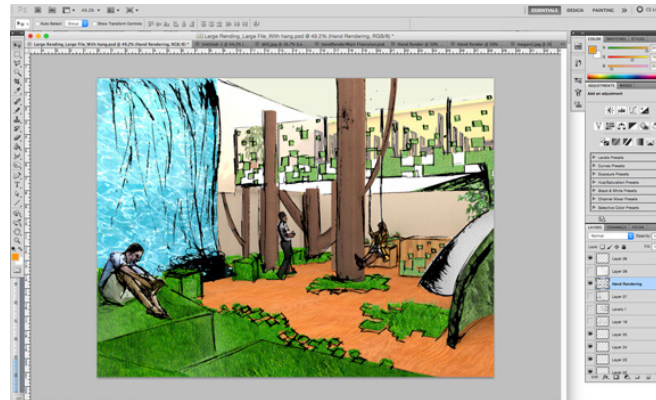
You may need to scale the image now, as scanning it will likely have altered the size of your sketch compared to the original rendering. Make sure that you are on the correct layer; you may want to name it to keep things straight. You can rename your layer by double clicking on the layers name, for example layer 25 a text box should appear and then you can simply type in the desired name. To resize the image press **command T** allowing you to transform the layer. You should only need



to scale the image, as everything should already be proportionate. Grab one of the rectangular corner toggles, pressing shift to ensure that everything stays proportionate.

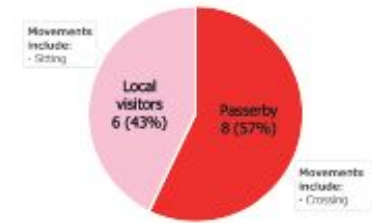
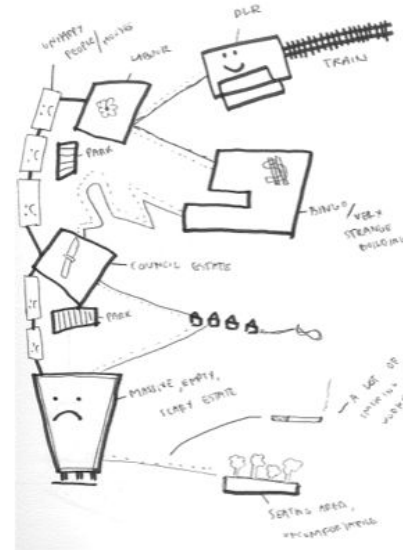
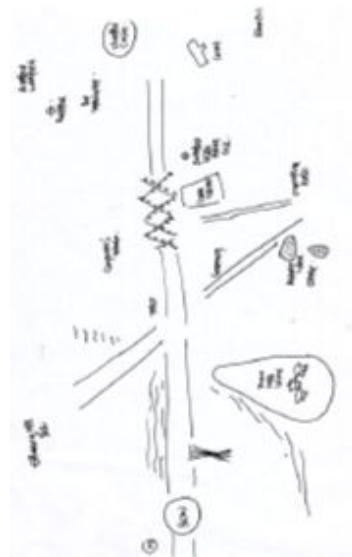
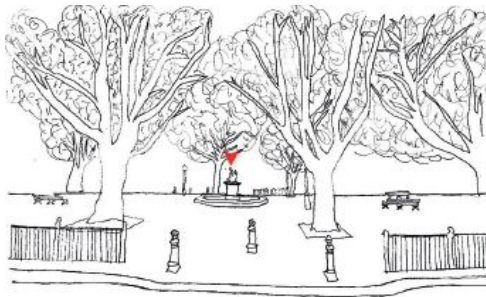


Once you have the drawing appropriately sized and the sketch lines up with the rendering underneath then apply the transformation. If something is not perfectly overlapping where you thought it would don't worry, this may even add to the appeal of the hand drawn layer.



The dark pencil lines are probably looking a little harsh on your drawing right now, but that's an easy fix all you need to do is turn down the opacity. Go back to your layers and select the layer with your sketch on it, if it is selected it should appear blue. Above your layers there should be an opacity button; turn down the opacity until you have the desired effect.

There are several other combination you can try



Between hand drawing and software:

- print basemap > sketch by hand > scan > add annotations > place in layout
- sketch > scan (> add elements) > place in layout
- print photo > trace over (particular aspects) > scan (> add elements) > place in layout
- work out layout by hand > scan all individual elements > remake in powerpoint / indesign



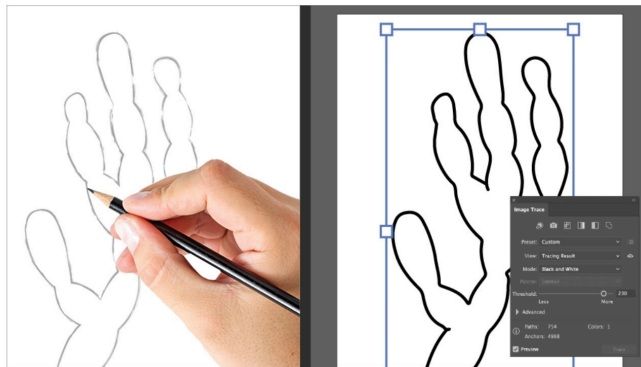
Using Adobe Illustrator to re-create hand drawings

Figuring out where to begin and what to draw can be challenging. First, get yourself a sketchbook, take it with you wherever you go, and sketch your immediate surroundings whenever you can. Emulating the work of other illustrators is also a great way to practice and learn. Above all, remember, the more you practice, the closer you are to finding your style—or something that sets you apart.

Honing your drawing skills is an ongoing process that requires a lot of practice. From tracing a hand-drawn sketch to drawing from scratch in **Illustrator**, let's look at some of the most common tools and workflows for illustrating.

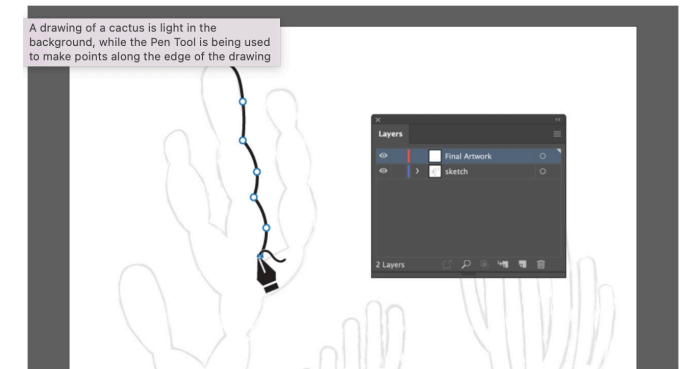
Start by tracing:

You can easily base a new drawing on an existing piece of artwork by tracing it. If you sketch on paper, use **Image Trace** in Illustrator, which lets you convert raster images (.JPEG, .PNG, .PSD, etc.) to vector artwork (shapes and paths).



Optimize creative freedom and control with drawing tools:

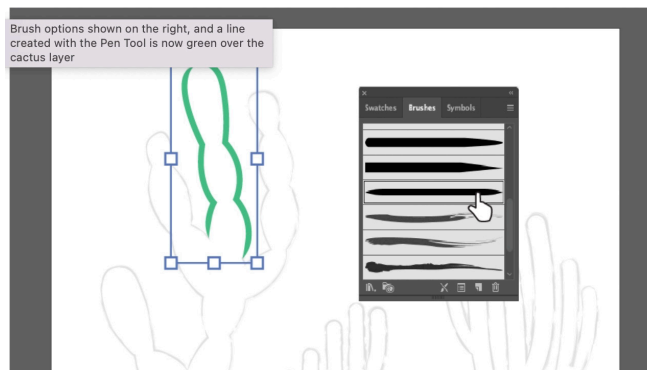
If you prefer to jump right into digital illustration, the **Curvature**, **Pen**, or **Pencil tools** are great tools for illustration. The Pen tool in Illustrator is powerful, offering the most precision for creating curves and



straight lines. Other tools, like the Pencil tool or **Paintbrush tool**, are ideal for expressive, free-form lines. You can use layers in the Layers panel to lock and dim the image and draw over the top of the image using any of the drawing tools.

Stylize your artwork by adding texture:

By applying a brush to new and existing paths created with the Brushes panel, you can add textures that add style and uniqueness to your artwork. After applying a brush, you can change the stroke of the path and other properties in the **Properties panel**.



3. Design to scale

In very general terms, '**scale**' refers to '*an item's size in relationship to something else*'.

For example, different parts of a building (entrance, courtyard, doors, etc.) may be designed so they are at a human scale and therefore are comfortable and functional to use.

Typically, in architecture and urban design three main types of scales are recognised:

1. **Human scale:** The human interaction with environments based on physical dimensions, capabilities and limits To design a space with a certain degree of human scale is fundamental for a successful use of that space, whether it is indoor or outdoor.
2. **Monumental scale:** This is much larger than human scale and is intended to be impressive, e.g. public buildings, memorials, religious buildings, and so on. The term is also related to places and buildings with specific representative meaning, such as landmarks.
3. **Proportion:** This refers to the relative size of parts of a whole, the relationship between two things of different size.

The term '**scale**' is also used to describe the relationship between a depiction (typically drawings or physical model) of a building, object, area of land etc compared to its actual size. In fact, a map cannot be of the same size as the area it represents. So, the measurements *are scaled down* to make the map of a size that can be conveniently used by people.

Drawing (and designing!) accurately to scale, and being able to shift between scales, is a fundamental skill in urban and spatial design.

Scale drawings are used to illustrate items that it is not useful or convenient to draw at their actual size. A scale drawing of a building/map has the same shape as the real building/map that it represents but a different size.

A range of scales are generally used depending on the nature of the drawing. For example:

- A location plan at 1:1000
- A site plan at 1:200
- A floor plan at 1:100
- A room plan at 1:50
- A component drawing at 1:5
- An assembly drawing at 1:1

N.B. The first number refers to the size of the depiction (such as a drawing or model), and the second number refers to the relative size of the actual item being depicted. So that on a scale of 1:5, the actual item is 5 times bigger than the depiction, whereas on a scale of 5:1, the item is 5 times smaller.
(the next slides will show the ratio clearly)

The ratio is used in scale drawings of maps and buildings is:

The scale of drawing= Drawing length : Actual length

Likewise, we have:

Map scale= Map distance : Actual distance

A scale is usually expressed in one of the below ways:

- using units as in 1 cm to 1 km
- without explicitly mentioning units as in 1:100 000 (most common)

(A scale of 1 : 100 000 means that the real distance is 100 000 times the length of 1 unit on the map or drawing.)

- using a **scale bar**

A useful website to calculate scale:

https://www.mathsteacher.com.au/year8/ch06_ratios/06_scale/draw.htm

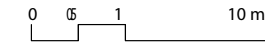
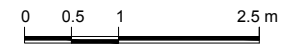
N.B. If you don't know the scale of a map, it is important to write **NTS** (not in scale) at the bottom of it.



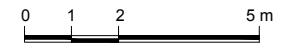
How to represent the scale in your drawing using the **scale bar**:



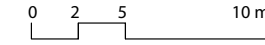
scale 1:50



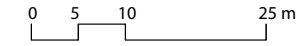
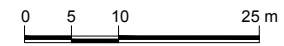
scale 1:100



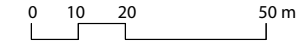
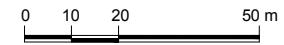
scale 1:200



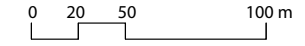
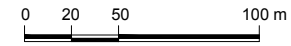
scale 1:500



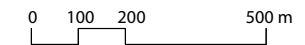
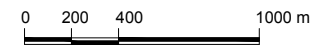
scale 1:1000



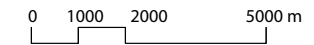
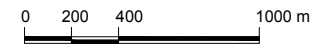
scale 1:2000



scale 1:10'000



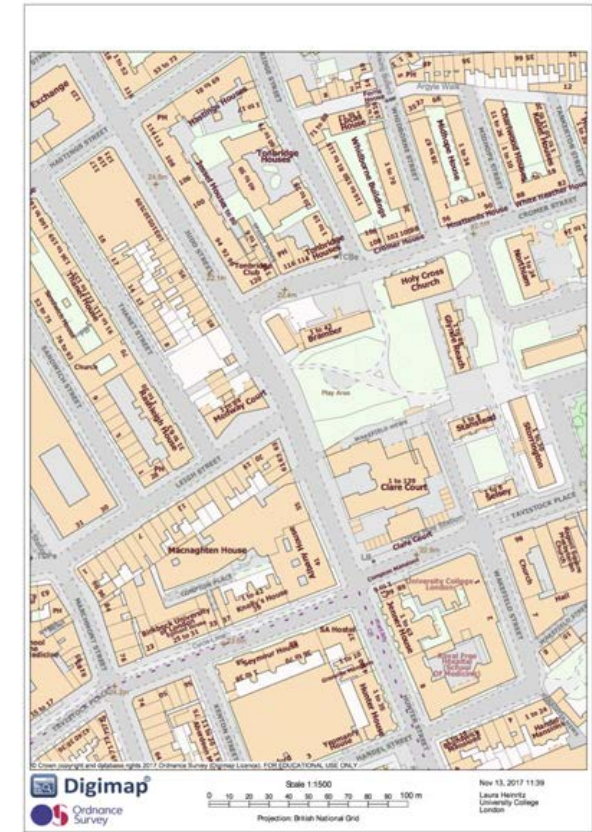
scale 1:100'000



1. Gauge what size the drawing will be printed or viewed and draw at that scale (A4 vs. A0 will produce very different drawings).
2. Consider the **level of detail** that you want your drawing to show. More detail = smaller scale.



1:5000 on A4



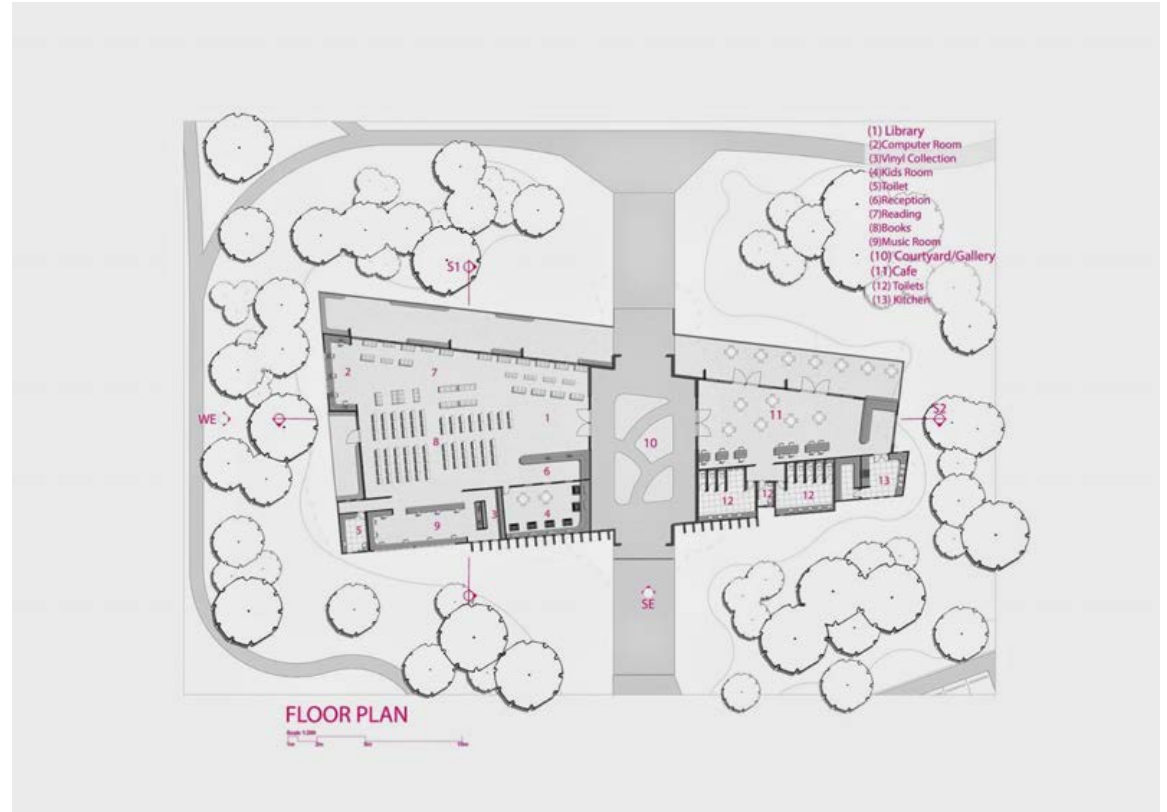
1:1500 on A4



Site Plan 1:5000



Floor Plan 1:200



4. Difference between raster and vector images

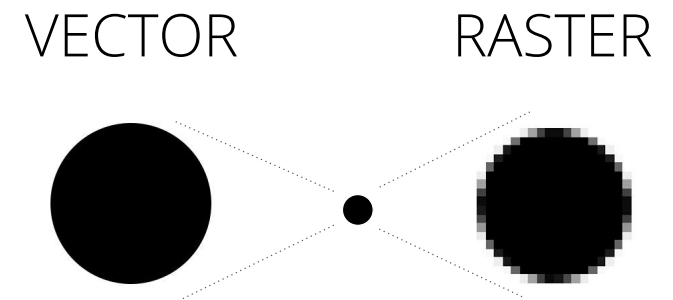
Vector graphics are digital image that is rendered by a computer using a mathematical formula. **Raster** images are made up of tiny pixels, making them resolution dependent and best used for creating photos. This means that if you scale a vector image, it will maintain a smooth, un-pixelated appearance, whereas a raster image will become pixelated.

Vector graphics are also known as *scalable vector graphics (SVG)*. These graphics consist of anchored dots and connected by lines and curves. Because these graphics are not based on pixels, they are known as **resolution independent**, which makes them infinitely scalable. **Their lines are sharp, without any loss in quality or detail, no matter what**

their size. These graphics are also device-independent, which means their quality doesn't depend on the number of dots available on a printer or the number of pixels on a screen. Because they consist of lines and anchor points, **the size of the files are relatively small.**

Raster images are made of pixels, or tiny dots that use color and tone to produce the image. Pixels appear like little squares on graph paper when the image is zoomed in or enlarged. These images are created by digital cameras, by scanning images into a computer or with raster-based software. Each image can only contain a fixed number of pixels; **the**

amount of pixels determines the quality of the image. This is known as **resolution**. More pixels results in better quality at the same or larger sizes of the original, but this also increases the size of the file and the amount of space it takes to store the file. The lower the number of pixels, the lower the resolution. Resolution limits the size the image can be scaled up without being able to see pixels.



When to choose vector versus raster?

A vector graphic's small file size and scalability makes it uniquely suitable for use in digital printing from business cards to billboards. They're also used in lower thirds for videos, web-based objects and rendering 2D or 3D computer animation. Their native files are needed for coin designs, laser engraving, t-shirts, patches, etc. **Raster images are best for digital photos and print materials.** If your project requires scalable shapes and solid colors, vector is the best choice, but if your project requires complex color blends, raster is the preferred format.

	Vector Image	Raster Image
Resolution	scalable	pixel, device dependent
File Size	small	large, depends on exported resolution
Usage	<ul style="list-style-type: none">• Diagrams• Logos• Posters• Digital printing (e.g., business cards, billboards)• Lower thirds for video• 2D or 3D computer animation	<ul style="list-style-type: none">• Photography• Posters• Print Materials
File formats	EPS SVG AI	BMP GIF JPG PNG TIFF
Software	Vector-based software (e.g., Adobe Illustrator)	Raster-based software (e.g., Adobe Photoshop) Digital cameras Scanned images



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