

# THE URBAN SKETCHING HANDBOOK

## UNDERSTANDING PERSPECTIVE

Easy Techniques for Mastering Perspective Drawing on Location



**STEPHANIE  
BOWER**



## TERMS

Architects use these terms all the time, and it is very helpful for perspective sketchers to understand this vocabulary as well.

### Parallel

Lines, planes, and objects that are spaced an equal distance apart are *parallel*. Think of train track rails, the edges of a sidewalk or street, the lines that define windows and doors, or parallel courses of stone or brick in a wall.

#### Why is this important?

Even though we understand parallel lines to be equally spaced apart, we actually see parallel lines that recede away from us appear to intersect at one point off in the distance. This concept is important to the structure of a perspective sketch.

### Perpendicular

A line that is at a 90-degree angle to another line, surface, or plane.

#### Why is this important?

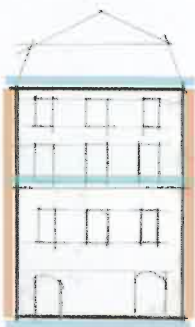
It's often easiest to start a sketch with a view in which your line of sight is perpendicular to what you are drawing.

### Elevation

A flat, frontal representation depicting one face of a building. To approximate seeing an *elevation*, your line of sight is perpendicular to the building face, looking straight ahead. The building's horizontal and vertical lines appear as true horizontal and vertical lines in your drawing.

#### Why is this important?

When sketching buildings and spaces, it is often easiest to start with the simple shapes in an elevation view.



### Elevation Sketch

Chris Lee's sketch of a building facade is an elevation view—he was sitting directly in front of this building and looking straight ahead with his line of sight perpendicular to the building face.

In elevation sketches, it's easy to simplify the shape of the building, which in this image is a tall rectangle. The edges of the building appear as true verticals, and horizontal lines such as the tops and bottoms of windows, the decorative molding, and front roofline appear as true horizontals. Look for these horizontals and verticals to identify an elevation view.

#### CHRIS LEE

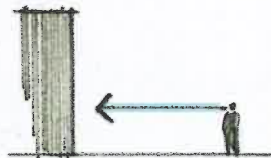
UK

Beaulieu-sur-Dordogne,  
France

11.67" x 8.3" | 29.64 x 21 cm;

Pen, ink, watercolor; 1 hour.

Elevation/eye-level view.





## PROPORTIONS AND MEASURING

To make believable sketches, it's important to capture accurate shapes, and to draw accurate shapes, you need to see accurate proportions (imagine the refined architecture of the Taj Mahal looking too tall or too wide).

For sketchers, *proportions* are the relationship between the **height** and the **width** of an object, building, or space.

You can easily measure proportions in the field by following a few simple steps. First, learn to see buildings and spaces as simple shapes like squares, rectangles, and circles. These are easier to see if you flatten your view by closing one eye, as we need both eyes to perceive depth.

Next, use your pencil as a measuring stick to find the ratio of height to width of the object or space. I usually start by lining up my pencil with a vertical edge, then while keeping my arm locked at the same distance, I drop my pencil horizontally to compare this height to the width.

### Tip

Notice how the windows in this view align vertically. It's helpful to look for architectural elements that relate to each other horizontally or vertically to make drawing easier. Try drawing this as light guidelines in your sketch.



Imagine you are in France at Versailles and want to sketch this window. Ignore the mullions and details, and just look for simple shapes—in this case, a tall rectangle.

Use your pencil to measure the height and width of this basic shape to determine its proportions.

If the window is one pencil tall, it measures half a pencil wide, giving you a proportion of 1:1/2.

Then transfer these proportions to your paper to start your sketch. It's not the actual height of your pencil that you are drawing on your paper, but the proportions of height to width that you observed and measured that will be reflected in your first few lines.

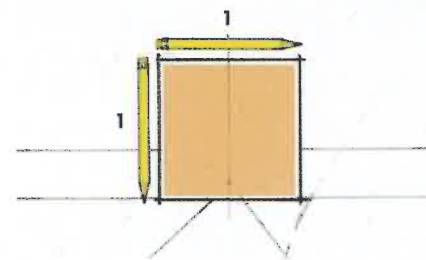
## Draw the Shape of the Face

Notice the horizontal lines on this building facade. This is an elevation view, as you are looking straight ahead.

Ignore any detail and just find basic shape or the **Shape of the Face** of this building in India.

To draw this facade accurately on location, start by using your pencil to measure the proportions of the height and the width.

The proportions here are approximately 1:1, or very close to a square. It's easy to transfer this shape to your paper and start your sketch.

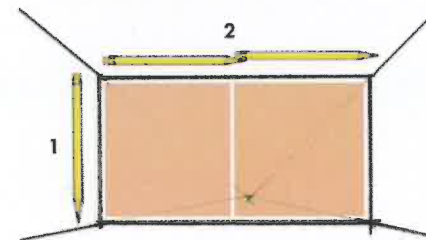


## Draw the Shape of the Space

When drawing architectural spaces like this courtyard in Paris, it's helpful to see this shape as a simple box. Draw the **Shape of the Space** by starting with the back wall of the box as a rectangle.

The proportions here are approximately 1:2, or very close to two squares.

This is the **Shape of the Space** that you transfer to your sketchbook.



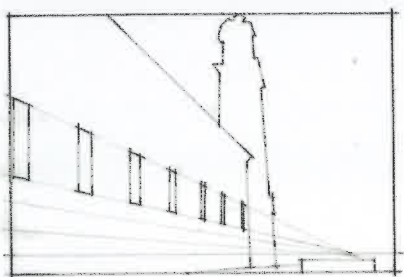
### Tip

When looking at proportions in architecture, look for squares! It's amazing how often you'll find the shape of a square in buildings and spaces.

## DIMINISHING

Think about a long line of telephone poles vanishing into the distance. In the world we see, objects of the same size and spacing appear smaller and closer together as they recede away from us. These changes are important for conveying a sense of depth in perspective sketches.

*Remember: Things close to you look bigger; things far from you look smaller and closer together.*



In Nina's sketch, the windows and arched openings appear gradually smaller and closer together as they recede away from her, giving a strong sense of perspective depth to the building.

**NINA JOHANSSON**  
Sweden

City Hall (Stadshuset) in Stockholm

6" x 8.75" | 15 x 22 cm;  
Uni Pin Fineliner, watercolors,  
Stillman & Birn Alpha Series  
sketchbook; about 1.5 hours.  
One-point/eye-level view.



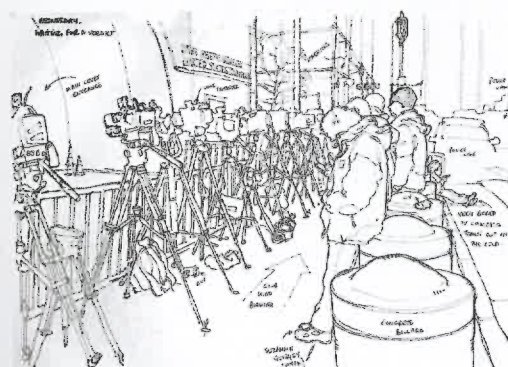
Columns of the same size appear to get smaller and closer together as they recede away from the sketcher.

**GÉRARD MICHEL**  
Belgium

Liège, Palace of the  
Prince-Bishops, First Courtyard  
8.25" x 11.25" | 21 x 30 cm;  
Pencil, watercolor, pigment liners,  
A4 Seawhite sketchbook; 1.5 hours  
One-point/eye-level view.

## Why is spacing important?

The six lines on the left are decreasing in height but are equally spaced, showing little depth. The same lines on the right show both the height and spaces between the lines gradually decreasing. Changes in BOTH height and spacing are necessary to depict an accurate sense of depth in perspective.



The long line of cameras and tripods diminishing into the distance creates a strong sense of perspective depth in Richard Johnson's sketch.

**RICHARD JOHNSON**  
USA

TV camera crews awaiting  
developments at Boston  
Marathon bomber trial

8" x 12" | 20.5 x 30.5 cm;  
Ballpoint pen, Moleskine  
sketchbook; 30 minutes.  
One-point/eye-level view.





## CONVERGING

Stand on a sidewalk and look down the street. We understand that a straight street is a consistent width and that the edges of the street are in fact lines that are parallel to each other. Although we know this in our brains, it is not what we see with our eyes!

Lines that are in reality parallel to each other (like the edges of sidewalks or streets, courses of brick or stone, the tops and bottoms of windows on a facade, etc.) appear to our eyes to recede away from us and intersect at one point off in the distance. The point where these lines converge is appropriately called the “vanishing point,” often labeled “VP,” and is usually at the height of your eye level above the ground.

*Remember: Lines that are parallel to each other appear to converge to one point in the distance.*

① Sidewalk joint lines, the street edge and yellow curb, and the top and bottom lines of the train in Gabi Campanario’s sketch are all parallel to each other. In perspective, we see these lines converging to one point in the distance ... the VP at Gabi’s eye level.

### GABRIEL CAMPANARIO USA

*South Lake Union Streetcar*  
10" x 11" | 25.5 x 28 cm; Pencil, ink, watercolor, Canson Mixed spiral-bound sketchbook; about 1 hour.  
One-point/eye-level view.



① The horizontal lines in the building facade, the lines of stone on the ground, even the bench, are parallel lines that appear to converge to one point in Gérard Michel’s sketch.

### GÉRARD MICHEL Belgium

*Málaga, Antigua Palacio*  
8.25" x 11.5" | 21 x 29 cm; Pencil, liners, watercolor (Payne’s Grey), Sketchbook A4 horizontal, Seawhite of Brighton; about 1 hour.  
One-point/eye-level view.

## Tip

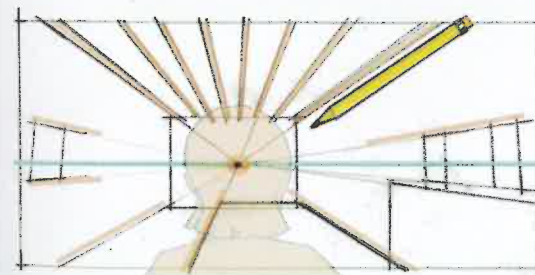
How do you find the point where lines converge? Close one eye and use your pencil to extend the receding lines you see until you find the point where these lines intersect. Then mentally “pin” that point on something in your view that you can reference while you sketch.



② In this sketch of a room interior, we see the walls on either side receding in space. If we extend the lines that are in reality parallel to each other, like the beams in the ceiling and the furniture, they all appear to intersect at one point directly in front of me at my eye level. This is the VP (orange dot) on my eye-level line (blue horizontal line).

### The Civita Institute’s Sala Grande

8" x 16" | 20.5 x 40.5 cm; Pencil, watercolor, Fluid watercolor paper; 45 minutes.  
One-point/eye-level view.



## The mysterious Horizon Line ... what is it?

Think about a time when you were at the beach looking out at the ocean... did you ever notice that the line where the ocean meets that beautiful sunset in the distance was actually at your eye level?

The *horizon line* is literally the horizontal line where the earth meets the sky. The amazing thing about the horizon line is that it is **always at your eye level**, no matter where you are standing or looking.

Most of the time, however, the horizon line is hidden by buildings, mountains, trees, etc., so instead, it is much more useful for sketchers to think of this line as their *eye-level line*.

### Horizon Line, HL = Your Eye-level Line, EL

(Yes, they are the same thing!)

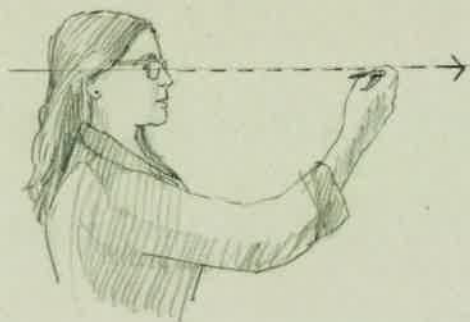
As we've seen with the principle of convergence, most receding perspective lines intersect at points on your eye-level line. If you are standing, your eye level is around 5' (1.5 m) high for a person of average height. If you are sitting, your eye level and VPs are lower—about the height of a door handle. If you are on the thirtieth floor of a building, receding lines are converging to a point straight out in the distance that is at your eye level thirty floors up, and yes, even if you are up in a plane sketching buildings on the ground out your window, lines will converge at the horizon line at your eye level of 30,000' (9 km)!

### How can I find my Eye-Level Line?

Hold out a pencil horizontally in front of your eyes. Don't tilt your head even the slightest bit up or down, just look straight ahead. Find something in your view where you can pin this horizontal line as a visual reference while you sketch.

#### TIP

It's a good idea to always draw your eye-level line lightly into your sketch for reference.



Norberto's sketch at the beach offers a perfect explanation of the horizon and eye-level lines. If you extend the lines of the lifeguard station that are vanishing to the right and find where they intersect, they more or less converge to a point on the actual horizon (try it!). You can also see that the horizon line is the same

as his eye-level line, the same as the eye level for other people standing on the beach.

In an eye-level view, if the ground is more or less flat and the people are roughly your height, their eye level will be the same as yours, whether they are standing close by or far away.

### NORBERTO DORANTES Argentina

Miami Beach

7.88" x 9.75" | 20 x 25 cm;  
Non-waterproof ink, watercolor,  
sketchbook for mixed media;  
20 minutes.

Two-point/eye-level view.



In James Richards' eye-level sketch, everyone's head aligns at his eye level no matter where they are standing in the piazza.

### JAMES RICHARDS USA

Crowd in the Piazza

5.5" x 8" | 14 x 20.5 cm; Ink,  
Prismacolor colored pencils, Canson  
80lb. drawing paper; 20 minutes.  
One-point/eye-level view.



## FORESHORTENING

Place a book on a desk and look down at it. You can easily make out its rectangular shape and size from this view. Now hold the book directly in front of your eyes ... you can no longer see its shape or how big it is. We call this principle *foreshortening*.

For sketchers, foreshortening happens when lines and surfaces appear to flatten out as they get closer to your eye level or vanishing point. Foreshortening is an abstract concept, but it's useful in many aspects of sketching.

*Remember: The closer something is to your eye level or vanishing point, the flatter it will appear.*

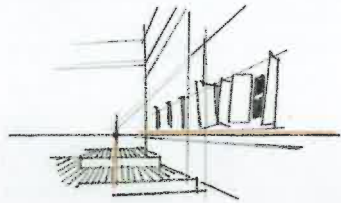
U Tia Boon Sim's sketch shows foreshortening in two ways: The lines in the paving flatten out to a *vertical* line as they get closer to the vanishing point, and the windowsills flatten out to a *horizontal* line, indicating Tia's eye level was at that height.

### TIA BOON SIM

Singapore

National Museum  
of Singapore

8.25" x 10.25" | 21 x 26 cm;  
Hero fountain pen and ink,  
Moleskine Japanese album large;  
45 minutes.  
One-point/eye-level view.

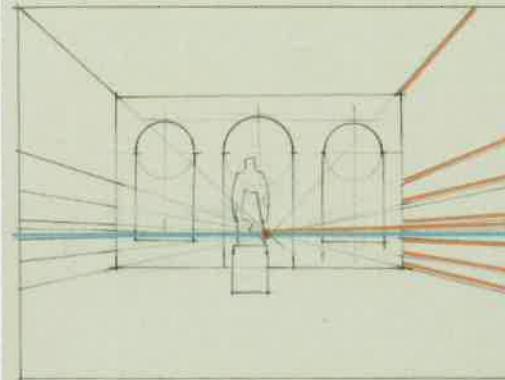


## How can foreshortening help you find your eye level and vanishing point?



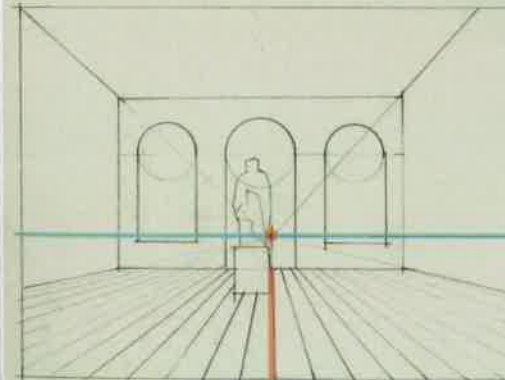
### Foreshortened Lines

The building architecture can show you how to locate the eye-level line and vanishing point in your sketch. It helps to close one eye to flatten your view.



### Horizontal Foreshortening

The angled lines of the molding on the side walls flatten to a horizontal line at your eye level. When sketching, look for architectural elements like courses of stone or brick to flatten at the eye level too.



### Vertical Foreshortening

The receding joint lines in the stone paving flatten out to a vertical line that points directly to the location of the vanishing point. It's often helpful to use lines in the paving or floor to help you locate your VP.

## VIEW EYE LEVELS

Are you in the middle of a busy New York sidewalk or looking down on the street from an upper floor? In general, perspective views are described as being one of three eye levels, each based on the height of your eye level above the ground.

**Eye-Level View:** eye level height of 3'–6' (.9 m–1.8 m), looking straight ahead

**Aerial or Bird's-Eye View:** high eye level, looking down on spaces and people

**Worm's-Eye View:** low eye level, looking up

Knowing your eye level is key to perspective sketching because the primary vanishing points for your sketch will usually be on your eye-level line, regardless of whether you are looking straight ahead, up, or down.



## Eye-level view

The most common view for sketchers is what we call an *eye-level view* in which the sketcher is standing or sitting relatively near the ground and more or less looking straight ahead. This type of view is the closest to what we typically see and is great for showing a pedestrian experience.

An easy way to identify this type of view is to look at people's heads, as they will usually align with your standing eye level, as seen in Simone's sketch.

### Tip

A common error in eye-level sketches is to put the vanishing point a little too high, in effect raising your eye level and "floating". Be sure your VP and EL are fairly low in these views. The lines on the ground are probably flatter than you think.

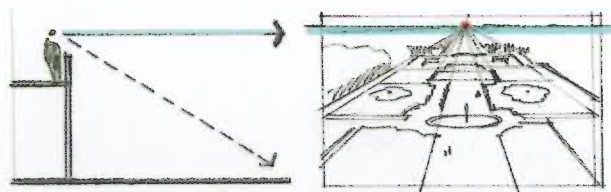


**C SIMONE RIDYARD**  
UK

*St Mark's Square, Venice, an urban sketch*

5.5" x 8" | 14 x 20.5 cm;  
Fineliner pen, watercolor,  
A5 Moleskine; 1 hour.  
One-point/eye-level view.





### Aerial or Bird's-eye view

A bird's-eye view is when most of our subject is below us, as if we were birds aloft. Even though it feels as if we are looking down, the eye-level line and VP are in fact straight out at the sketcher's eye level, seen near the top of this sketch.

Aerial views are great for showing what is happening on the ground plane and for conveying a sense of distance. Notice how in aerial perspectives, people's heads do not align as they do in an eye-level view.

"To get this view of Vaux's famous garden, I had to climb the stairs through the dome and out onto the cupola balcony."

— Stephanie Bower

① Gabriel Prize study of the gardens at Château Vaux-le-Vicomte, France

5" x 8" | 12.5 x 20.5 cm;  
Pencil, watercolor, Pentalic  
Aqua Journal; about 30 minutes.  
One-point/aerial view.

### Worm's-eye view

A worm's-eye view is when we are primarily looking up. In his sketch, Luis' eye-level and VP are low, close to the ground. In worm's-eye views, vertical building lines are often seen as angled, similar to what happens when you tilt a camera up.

These types of views are dramatic and convey a sense of exaggerated height and upward movement. In a typical worm's-eye view, people's heads are seen above the sketcher's eye level.

### LUIS RUIZ

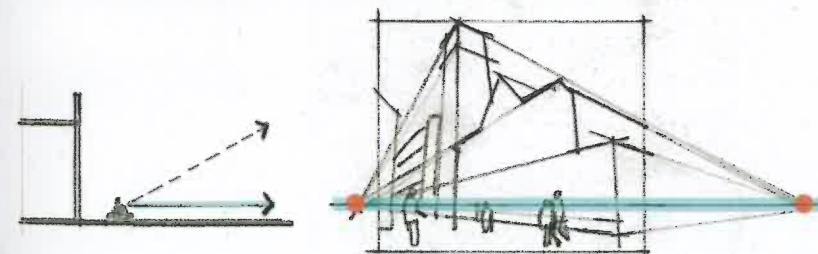
Spain

Church of Santiago, Málaga

8.25" x 11.75" | 21 x 29.7 cm;

Ink, watercolor; 1 hour.

Two-point/worm's-eye view.

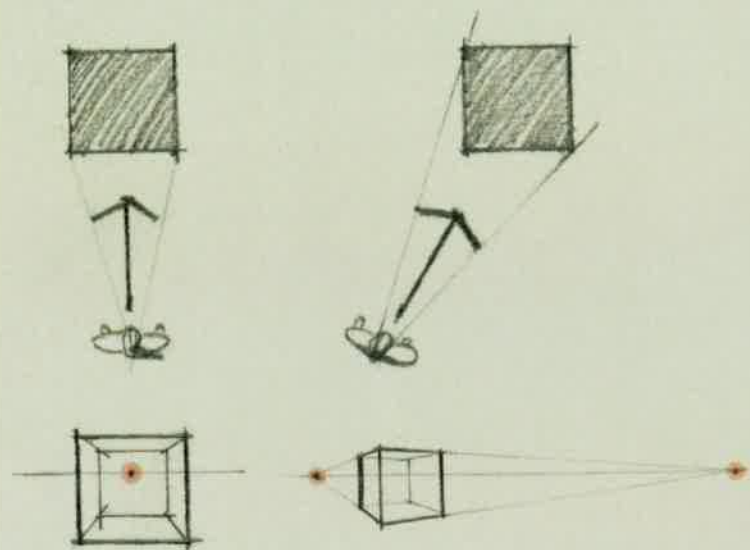


## VIEW ANGLES

Where you are standing and looking impacts the type of perspective drawing you create. We describe the viewing angles primarily by whether the viewer/sketcher is looking straight on at their subject or viewing their subject obliquely at an angle. A straight-on view will usually have one vanishing point, while the angled view will typically generate two vanishing points.

### What is the difference between a one-point perspective and a two-point perspective?

*It's where you stand relative to what you are sketching!*



In a one-point perspective, you are looking straight ahead at an elevation view, with your line of sight perpendicular to the face of the building or space.

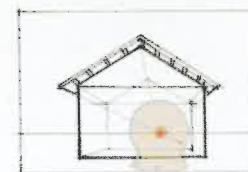
In a two-point perspective, you have walked to one side and are viewing your subject at an angle. Because one corner of the building is now closer to you, it appears bigger. Additionally, you can now see at least two sides of the building or space.

Each side has its own set of parallel lines that will generate their own vanishing points. In a two-point perspective, you'll have one VP on the left and a second VP on the right, with BOTH on your eye-level line!



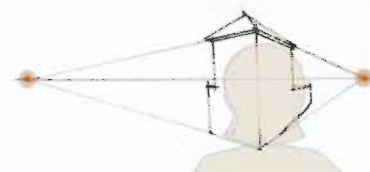
**N** Nina is looking perpendicularly at the face of this house and sees an elevation view, generating a one-point, eye-level perspective sketch. We can see bits of perspective in the receding roof edges and rafters tails. The location of the VP is directly in front of her, at her eye level.

**NINA JOHANSSON**  
Sweden  
Shop in Torsby, Värmland, Sweden  
6" x 8.25" | 15 x 21 cm;  
Ink fineliner pens, watercolors,  
Stillman & Birn Alpha Series  
sketchbook; 1.75 hours.  
One-point/eye-level view.



**C** In another small house sketch, Murray Dewhurst is viewing the building at an angle. The left side of the house will generate a VP on the left, while the right side will generate a VP to the right. Both VPs are on his horizontal eye-level line.

**MURRAY DEWHURST**  
New Zealand  
126 John Street, Ponsonby, Auckland  
8.25" x 5.88" | 21 x 14.8 cm;  
Pencil, Winsor & Newton watercolor,  
Pentel brush pen, Hahnemühle A5  
sketchbook; 45 minutes.  
Two-point/eye-level view.







**📌** Artist and architect Bill Hook carries a sketchbook for making quick thumbnails when something catches his eye. He uses these as studies for larger paintings.

**BILL HOOK**  
USA

*France, Painting Studies*  
12" x 9" | 30.5 x 23 cm;  
Pencil, watercolor; about 1 hour.  
One-point/eye-level views.

**Next, make a thumbnail sketch.** This is a small drawing about the size of a large postage stamp. Don't include detail, just shapes and maybe some tone. I do these in the back of my sketchbook to quickly figure out the basic perspective and composition of my sketch in only a minute or two.

**Now, it's on to your drawing.** It's important to establish the size and content of your entire sketch in the first few minutes. Simplify your subject and quickly block out all the basic shapes using light *construction lines*. If you need to adjust the size or composition, erase now and start over before you invest a lot of time in your drawing. It's terrible to be 30 minutes into your sketch only to discover the top of the building doesn't fit on the paper!

**Build your sketch in layers.** By adding information in layers, big shapes are broken into smaller shapes with final layers of detail and color. The next few sections outline a sort of recipe I've developed for this process. The Shape of the Face, Shape of the Space, and Shape of the Box will provide you with a simple approach to creating the accurate foundational lines of almost any perspective sketch, in only three easy steps.

**Finally, don't worry...** about getting things perfectly accurate, as perspective only needs to be believable. Simply knowing these concepts will already help you to draw a better sketch. Remember, good cooks don't always follow the recipe as written. Enjoy the process, and with practice, you'll become your own cook and write your own recipes.

👉 You can ignore the detail altogether! Seattle Architect Alan Maskin does amazing sketches as part of his design process, but he learned this skill making observation drawings. In this sketch, he added one wash of simple color for glow and sketched the building forms over the wash to give the sense of the street as a valley.

**ALAN MASKIN**  
USA

*Aerial*  
12" x 9" | 30.5 x 23 cm; Pencil, watercolor; about 20 minutes.  
Multiple VPs/aerial view.

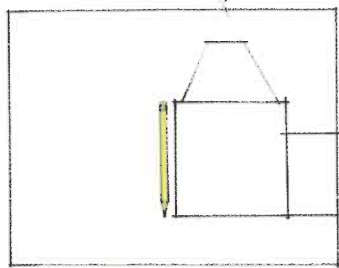




## SHAPE OF THE FACE A One-Point, Eye-Level Perspective

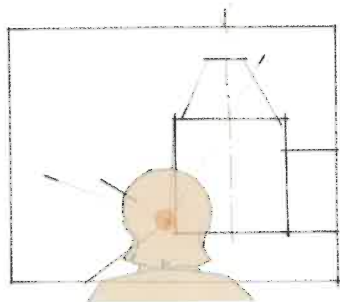
### What to look for

Picking a spot to sketch is important. In this one-point, eye-level view, I've found a place where I can see this building in the Tuileries of Paris as a straight on, elevation view. My line of sight is just to the left of the building.



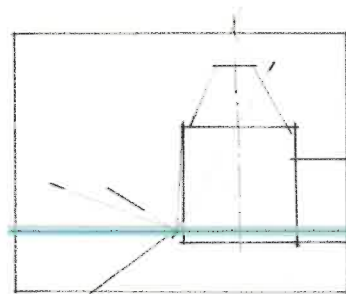
### 1. DRAW BASIC SHAPES

Reduce what you see to simple shapes. Use your pencil to measure proportions of height to width, then transfer this shape onto your paper using light lines. Erase and redraw if needed to make sure everything fits on the page.



### 2. FIND THE VANISHING POINT

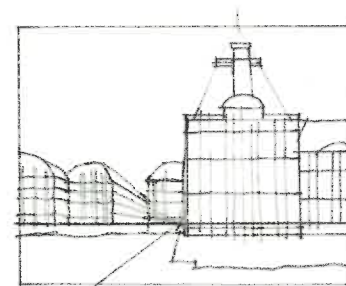
Use your pencil to extend receding lines to find the point where they intersect directly in front of you. "Pin" that point mentally in your view, and mark it on your drawing.



### 3. DRAW YOUR EYE-LEVEL LINE

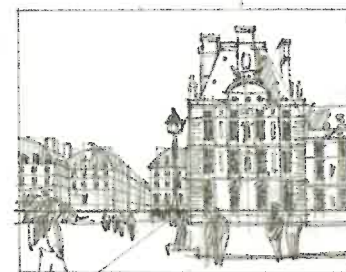
For useful reference, draw your EL line horizontally across your sketch and through the vanishing point. Receding lines above it angle down to the VP, lines below it angle up.

Now you have all you need to draw accurate lines in perspective!



### 4. BREAK BIG SHAPES INTO SMALLER SHAPES

Layering in more information, add the major horizontal and vertical lines in the building faces. Draw the shapes of other buildings using the VP for receding lines.



### 5. ADD DETAIL AND TONE

Suggest building detail and a sense of materials. Darken lines as needed. Add people for scale, heads aligned along the eye-level line.



### 6. ADD COLOR

Finish the sketch with layers of watercolor, leaving lots of white paper for sparkle. Add spots of bright colors near the VP to draw the eye and suggest activity.



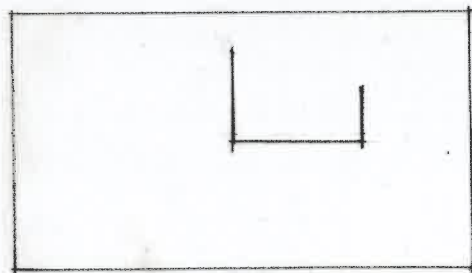


## SHAPE OF THE SPACE

### A One-Point, Aerial Perspective

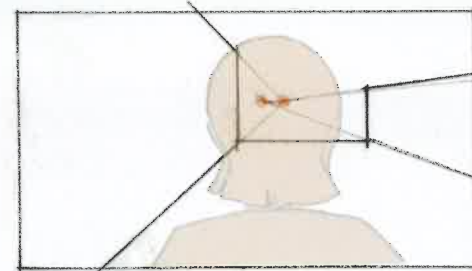
#### What to look for

Looking out from the rooftop loggia of the Basilica San Marco in Venice, Italy, this is actually a simple space to sketch. Change the proportions and this is the same approach I use for drawing a street or interior spaces.



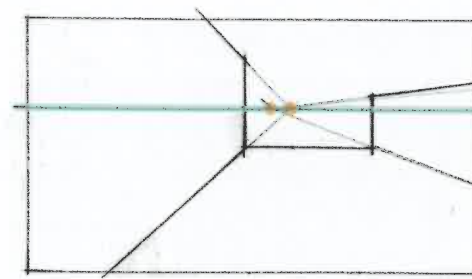
#### 1. DRAW BASIC SHAPES

Think of a piazza as box or outdoor room without a ceiling and draw the back "wall" that defines the shape of this space. Try starting with the vertical edge on the left.



#### 2. FIND THE VANISHING POINT

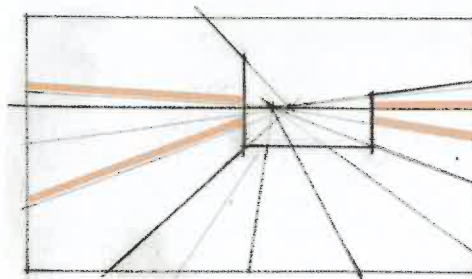
Use your pencil to extend receding lines to find the point where they intersect. Here, the two side walls are not parallel to each other, so each side has its own vanishing point on your eye-level line.



#### 3. DRAW YOUR EYE-LEVEL LINE

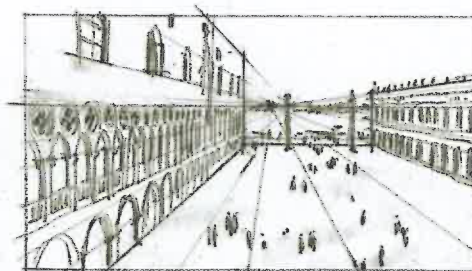
Here we can see that your eye-level line and horizon line really are the same, with the VPs on that same line.

Now you have all you need to draw the accurate foundation lines of your sketch in perspective!



#### 4. BREAK BIG SHAPES INTO SMALLER SHAPES

Layering in more information, add the major horizontal lines in the building faces, including a line that connects the tops of the arches. Notice how most of the horizontal lines are below eye level and angle up to the VPs.



#### 5. ADD DETAIL AND TONE

Suggest the long rows of arches, each appearing smaller and with tighter spacing as they recede away from you.

Add people for scale, and notice how in an aerial view their heads do not align.

#### 6. ADD COLOR

Finish the sketch with layers of simple watercolor.



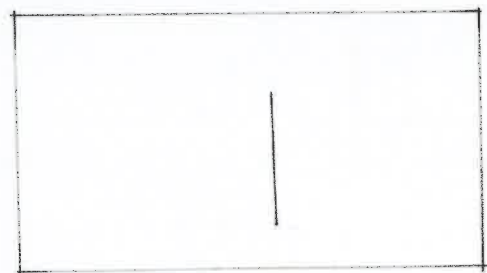


## SHAPE OF THE BOX

### A Two-Point, Worm's Eye-Level Perspective

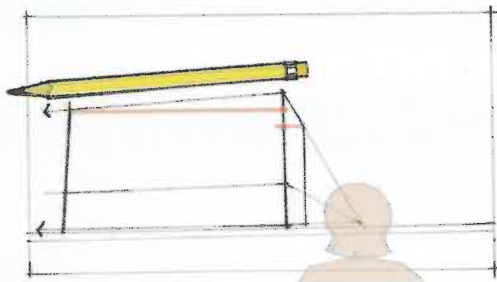
#### What to look for

In this two-point perspective, you're viewing the Château Vaux-le-Vicomte at an angle. The principles of perspective tell us that what's closer is bigger, so the corner edge closest to you will be tallest and might be the best place to start your sketch. Steps two and three might blend a bit, as you need the VPs to draw the shapes.



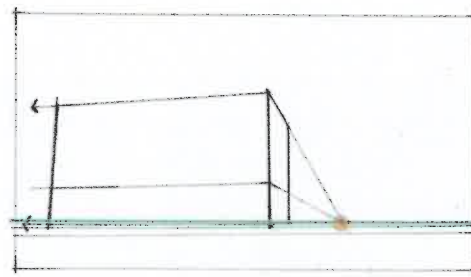
#### 1. DRAW AN EDGE

Think of this building as a box. Start to measure shapes with your pencil from the most prominent corner. This vertical edge can be a useful measuring tool, as you can compare its height to other objects in your sketch (notice the orange lines in Step 2).



#### 2. FIND THE VANISHING POINTS, DRAW SHAPES

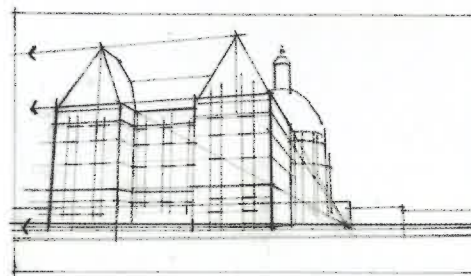
Use your pencil to extend receding lines to find the points where they intersect. Here, one VP is directly in front of you and will fit on your page. For the VP to the left, use your pencil to measure the angle then transfer it to your sketch. Remember, both VPs are at your eye level.



#### 3. DRAW YOUR EYE-LEVEL LINE

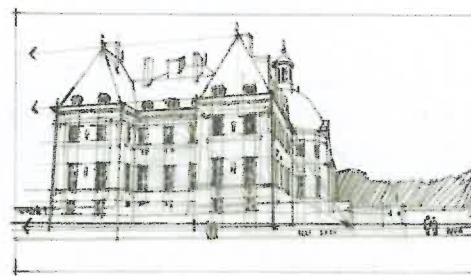
Your eye level is actually below the building, so most of the building lines will angle down and appear flatter as they are closer to your eye-level line.

Now you have all you need to draw the accurate foundation lines of your sketch in perspective!



#### 4. BREAK BIG SHAPES INTO SMALLER SHAPES

Lightly draw in guidelines to help you align the windows vertically and horizontally. Notice where the point of the roof aligns compared to the windows on the building face.



#### 5. ADD DETAIL AND TONE

Add fireplaces, windowpanes and dark glass, the cupola over the dome, background trees, and people on the ground.

#### 6. ADD COLOR

Finish the sketch with layers of simple watercolor. Here, the dark and stormy indigo blue sky makes the lighter building pop, adding drama to the sketch.

