

## Chapter 1 : Human Scale in Architecture

*Many architects, particularly in the Modernist movement, design buildings that prioritize structural purity and clarity of form over concessions to human scale. To serve automotive scale. Commercial buildings that are designed to be legible from roadways assume a radically different shape.*

Similarly, many time periods studied in science involve time scales much greater than human timescales geological and cosmological time scales or much shorter than human timescales atomic and subatomic events. Mathematicians and scientists use very large and small numbers to describe physical quantities, and have created even larger and smaller numbers for theoretical purposes. Human scale measurements, however, are more in the order of: Buildings scaled to human physical capabilities have steps, doorways, railings, work surfaces, seating, shelves, fixtures, walking distances, and other features that fit well to the average person. Humans also interact with their environments based on their sensory capabilities. The fields of human perception systems, like perceptual psychology and cognitive psychology, are not exact sciences, because human information processing is not a purely physical act, and because perception is affected by cultural factors, personal preferences, experiences, and expectations. So human scale in architecture can also describe buildings with sightlines, acoustic properties, task lighting, ambient lighting, and spatial grammar that fit well with human senses. However, one important caveat is that human perceptions are always going to be less predictable and less measurable than physical dimensions. Human scale in architecture is deliberately violated: One extreme example is the Rodina Motherland statue in Volgograd. Many architects, particularly in the Modernist movement, design buildings that prioritize structural purity and clarity of form over concessions to human scale. This became the dominant American architectural style for decades. Commercial buildings that are designed to be legible from roadways assume a radically different shape. The human eye can distinguish about 3 objects or features per second. Auto-scale buildings tend to be smooth and shallow, readable at a glance, simplified, presented outward, and with signage with bigger letters and fewer words. This urban form is traceable back to the innovations of developer A. Ross along Wilshire Boulevard in Los Angeles in Common sense and human scale[ edit ] " Common sense " ideas tend to relate to events within human experience, and thus commensurate with these scales. There is thus no commonsense intuition of, for example, interstellar distances or speeds approaching the speed of light. Weights and measures tend to reflect human scale, and many older systems of measurement featured units based directly on the dimensions of the body, such as the foot and the cubit. The metric system, which is based on precisely reproducible and measurable physical quantities such as the speed of light, still attempts to keep its base units within the range of human experience. Systems of natural units such as Planck units are useful in theoretical physics, but are not suitable for everyday purposes; because the SI units are defined in terms of constants of nature they can be thought of as natural units rescaled to human proportions. Quotes[ edit ] "Man is the measure of all things, of things that are, that they are; and of things that are not, that they are not [1]".

*An architect's scale is a specialized ruler designed to facilitate the drafting and measuring of architectural drawings, such as floor plans and orthographic [www.nxgvision.com](http://www.nxgvision.com) scientific and engineering terminology, a device to measure linear distance and create proportional linear measurements is called a scale.*

By Joffre Essley Scale is size in relation to ourselves and the world around us. Human scale is that scale that feels comfortable to man. We naturally measure things against ourselves. That is why we have measure things by the foot. It was a natural scale that we always carried with us, but there are other scales to consider. In architecture we deal primarily in 4 scales: Our houses are typically built to this natural scale. A man feels comfortable walking through our doorways. The ceiling neither bumps his head, nor is lost in the shadows. Monumental scale is impressive. Our public buildings are monumental. This is a statement of hierarchy. Those institutions represented by those buildings are bigger than us and we should stand in awe of them. The steps and portico of the Supreme Court building dwarf the people and the rest of the building. The porch is beautiful. Shock scale can be either smaller or larger, but it is so out of the ordinary that it jolts us. You sometimes see it in art, and in architecture that strives to shock, but it is a rare thing in residential architecture. And that is the way it should be. You enter this building through the space between the two sides of these over-sized binoculars. The binoculars are to shock scale because they are far bigger than could ever be used. Like the leaning columns on the right their purpose is to shock you out of your sense of the normal. Intimate sizes are smaller than what is normal. Not everybody would recognize intimate as a separate category. It is more of a sub-category of human-scale. Monumental Scale The porch on this house is built to human-scale. People on the porch are neither dwarfed nor crowded. It is both comfortable and practical. A house should be human scale, or perhaps intimate scale. The exception would be palaces, where homes also represent the power and wealth of the state. However, even in palaces it is often the case where the actual living quarters are scaled down to human size. Kings and princes are human, and have the same basic needs as the rest of us. Houses sometimes have oversized porches. Consider the Greek Revival houses with front porticos that belong on a temple. These are monumental sized, but the rest of the house is not. The structure may be two stories, but you enter in to only the bottom floor. It is not monumental sized in its interior. This is one of the arguments against that style. Contemporary houses sometimes have walls that are several stories high covered in glass. A monumental room with a monumental glass wall can overwhelm the people in it. The view may be worth it, but it is probably best if there are intimate spaces within that room, and other rooms on a human scale that people can escape to. I am not saying that monumental is always bad, just that we are less comfortable in such a place than we would be if it was human scaled. Nor am I arguing against atrium ceilings. Most houses have atriums that are not much larger than a normal room. It is when you get the point where the elements of the house are no longer to human scale that we have problems. Intimate Scale Intimate scale is sometimes used in our houses, usually in the form of nooks and alcoves. A recessed seat in a bay window, and an inglenook by a fireplace are examples of places that could be built to intimate scale. Here the closeness of the walls provides protection and privacy. A bedwomb, or bed alcove, from Naturalhomes. This is pattern number , "Bed Alcove". Thomas Jefferson, in his house in Monticello, had a bed chamber tucked into the walls between two rooms. With the curtains down you could consider it an intimate scaled room. Architect Nader Khalili, inventor of the superadobe method of building, advocated the use bed wombs for sleeping. The intimate scale provides a womb-like enclosure that helps you sleep. It is not for claustrophobics, but some people find these rooms cozy and comfortable. There is a small movement that favors tiny houses. These are entire houses that take up no more space than an average living room. Obviously humans are living in these things, so you could call it human-scale, but it is smaller than what the average modern person would be comfortable with. From the standpoint of residential architecture, the specialty of this website, I advocate for the use of human scale as the rule with a few intimate exceptions embedded into the design of the house. I will grudgingly accept the monumental in the public rooms, so long as there are retreats and private spaces that mitigate the intimidating aspects of that scale. So then, where does one draw the line? At what point does a

room move out of the human scale and into the monumental? Are 12 foot ceilings bad? I think you have to consider the whole. A grand ballroom is appropriate if you have grand balls, but to use it as your living room creates a situation where the room takes on the character of a hotel lobby. Now hotel lobbies can be very nice, but they are exposed and public, whereas a home should be private and protective. The understanding of scale in the course of design is probably not going to make the difference between ugly and beautiful, but it may make the difference between comforting and intimidating, and that can make a difference in how you enjoy your house. Did you like this page? Then check out my Architectural Concepts page. Or, move on to the next topic - Proportions Like Me! Comments Have your say about what you just read! Leave me a comment in the box below.

## Chapter 3 : Scale ruler - Wikipedia

*Shock scale can be either smaller or larger, but it is so out of the ordinary that it jolts us. You sometimes see it in art, and in architecture that strives to shock, but it is a rare thing in residential architecture.*

**SCALE** Scale allows us to understand the relationship between a representation - a drawing or model - and reality. Being able to draw accurately to scale, and to shift fluidly between scales, is one of the most important aspects of architectural drawing and spatial design. Rather, we are often trying to confirm that what we are looking at is shown at a common scale, one that we know and understand, so that we can translate the spatial qualities in our mind and imagine occupying the spaces. We represent scales using the mathematical way to show relationships: For example, a drawing might be at 1: Using Scale Why do architects use Scale? At a basic level, the main point of scaling is to ensure to we are able to represent reality on a piece of paper, or in a model. Fundamentally, this is based in the practicality of making the drawing fit on your page, or your model fit on your table, or be light enough to lift. If you are using this technique, be sure not to omit any aspects which are critical to the understanding or construction of the building, such a changes in levels or materials interfaces. Architects often use a different set of scales than engineers, surveyors or furniture designers rely on. This relates to the standard measurements, the size of what is being designed, and the relative complexity of the design. And then there is that added complexity of which measurement system you use! In New Zealand, the metric system makes it fairly straightforward for us - with most scales being multiplications of 2, 5 and The imperial system gets bit trickier. And converting between the two? Understanding Scale Scale is how we relate our representations to reality; a magic correlation of mathematics with experience. Scale is one of the architectural ideas that truly blends the abstract and the real. The first of these, the mathematical, can be learned, working with fairly simple systems of ratios and percentages. The second, understanding scale in experiential terms, will probably take time to embed, but will eventually come to you so naturally it becomes difficult to identify it as a skill in its own right. Converting between reality and your representation A wall which is one metre long will be drawn as 1cm long, or 0. The same one meter long wall, at a scale of 1: This answer can be found by dividing 1m by This is where it gets fun, but the technique is the same: If you can follow this logic you can figure out the others. A 24 metre long wall is drawn as 12cm long in a 1: To transfer from the 1: This is a two step process which involves using the 1: From the given drawing, figure out the actual length of the wall at 1: To do so, multiply the drawn length by the scale factor. So, to get to 1: This is the most direct process, where you figure out the ratio of the two scales, and use that to calculate the resultant scale change. First we need to determine the ratio of the two scales to each other. To do , divide the desired scale by the current scale: Understanding these percentages is fairly fundamental to being able to use the photocopier to scale up or scale down a drawing. The other place you will increasingly need this skill is on the computer. Tge process that is fairly simple when going from 1: You can easily rescale from there if need be. This is why we like to use common scales - because they are the ones we can immediately visually understand, and can often draw completely freehand, yet quite accurately, to these scales. To make it even easier for you I have embedded the video above - just click on it to play! In the Powers of Ten, the Eameses use film to visualise scale changes, focusing on the mathematical concept of exponential powers. The film reveals that even the most everyday, 1: Our experience of scale is obviously always at the 1: These are just a starter - but understanding scale in your everyday life is critical to internalising the concepts of scale. Know how big your handspan is. Know how high the ceiling is in the key spaces you use. This might be your office, school studio, or bedroom. Know what the column spacing is in your building if you can see the columns! This is particularly useful for conceiving of larger spaces. Think about the width of spaces. How does a narrow hallway or corridor make you feel? How narrow is a doorway? How narrow can a ledge or walkway be until you feel uncomfortable? Measure these spaces and tuck those measurements away in your mind with the experience of space. Develop a personal scale toolkit. Scale model people and cut outs try 1: Click on the button above to download your copy. You can use it as a starting point as you plan out your drawing set, to ensure you are setting yourself up to produce a clear, relevant and easily understandable set of drawings. You

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can even print it out and highlight which scales you are using for which drawings, for your personal reference, if you want. More in Portico Journal:

## Chapter 4 : Scale and Proportion | Life of an Architect

*I think that size, scale, and proportion are where a good architect makes their living. There are all sorts of devices that have been developed to help designers determine how best to guide them in their creations the Golden Section, the Modular, the Canons of Proportion, on and on. Swiss born.*

Scale refers to the size of an object a whole in relationship to another object. Scale refers to the relationship between two or more objects, one that has a commonly known size. In most cases, the size of objects is compared to our own human scale. We can find examples of this in our homes and workplaces; for instance, standardized heights have been created for counter tops, chairs have been scaled to fit our bodies, the widths of hallways allow for people to comfortably pass one another. You can see that the way we build our environment is based on the commonly known anthropometric data of human scale. In architecture we deal primarily in 4 scales: Humans interact with their environments based on their physical dimensions, capabilities and limits. Buildings scaled to human physical capabilities have steps, doorways, railings, work surfaces, seating, shelves, fixtures, walking distances, and other features that fit well to the average person. Human scale in architecture is deliberately violated: Many architects, particularly in the Modernist movement, design buildings that prioritize structural purity and clarity of form over concessions to human scale. To serve automotive scale. Commercial buildings that are designed to be legible from roadways assume a radically different shape. Intimate sizes are smaller than what is normal. Not everybody would recognize intimate as a separate category. It is more of a sub-category of human-scale. Intimate Scale Monumental Scale: If a building, monument, statue, sculpture, etc is a monumental space, meaning that it is giant compared to human size, is because it wants to show that what it stands for is bigger than life itself meaning religion, political ideologies, some memorial, etc. Monumental scale is impressive. Our public buildings are monumental. Shock scale can be either smaller or larger, but it is so out of the ordinary that it jolts us. Shock Scale Shock Scale Proportion: Proportion refers to the relative size of parts of a whole elements within an object. We often think of proportions in terms of size relationships within the human body. Proportion is the term used to describe the relationship between two things of different size. In architecture we are looking for the proportional relationship between spaces and the size of the human body. The proportion of the room can greatly affect the way a person feels in a space.

## Chapter 5 : Architecture and Aesthetics-Elements of Design

*Staedtler Prof-quality Architect Triangular Scale, 12" Length, Aluminum, 1 Each, Silver.*

There are all sorts of devices that have been developed to help designers determine how best to guide them in their creations – the Golden Section, the Modular, the Canons of Proportion, on and on. The system is based on a number of variables including: So why am I telling this? Sounds a bit melodramatic but if I had to share my secret as to why I think my playhouses look so good is because I spend A LOT of time getting the scale and proportions right. Rather than simply walk you through the construction of my playhouse design, I thought it would be interesting to include some additional information about why I designed my playhouse the way I did and how I modified standard off-the-shelf products to get the scale correct – at least as I see it. So this is where it all started – the design. You can see the original version here. They get what I am trying to do, the same guys work on these playhouses every year, and they consistently demonstrate ownership and sound decision-making throughout the break-neck speed at which these playhouses get built. The picture above represents what they got built in one day! Tying my description back into the scale and proportion theme, I spent a good chunk of time sizing the round opening, locating its distance above the perch – even the size of the perch itself. These panels are I wanted to break up the massing of the elevation and thought that changing the shingle type would accomplish that goal. For added visual interest, I decided to break up the elevation a bit further by painting the half-round panels an accent color. This is the rear elevation. I went with a pair of doors and asked the contractors to build the doors custom so that they could match the slope of the roof and minimize the impact these doors would have on the elevation. Here is the inside of the playhouse – awesome right? Rather than shrug my shoulders, I try to design all my playhouses so they have a purpose beyond those first few weeks. There is a light inside this playhouse, a desk, plenty of work space, you could even use it as a storage shed. The final look at the painted rear elevation. I included this picture because I wanted to point out the visually minimal solution to the door hardware. You can just see a little black blob on the right hand door in the picture above. There is a second cane bolt on the right-hand side that slides into the left-hand door – much cleaner than a generic gate latch. I took this picture on the morning that the playhouse was scheduled to be delivered. You can see that the trim to the opening has now been painted the accent blue – much better in my opinion. I also included this picture because I found it amusing to see 8 construction workers who were on hand to manually pick this playhouse up and set it on the trailer for delivery. Once the contractor delivered the playhouse to the mall, the highly skilled folks at the mall take over and expertly locate all the playhouses throughout the mall. Sounds easy enough right? I thought I would wrap up this longer than anticipated post with some cost information. Nobody is making any money on this playhouse. BufordHawthorne Homebuilders pays for everything out-of-pocket – they are the real heroes here because without them there is no Bird Playhouse. Most of the subcontractors they use to build this playhouse donate their supervision but the actual workers get paid their normal hourly rate.

### Chapter 6 : How To Use an Architectural or Scale Ruler

*Architects also deliberately design spaces with changing scale by varying heights of ceilings and sizes of rooms. This makes the occupants movement through the space more dynamic. Back to Architecture and Aesthetics.*

Scale and proportion are also where a good architect makes their living. I can remember losing sleep as I fretted over the size of the pipe columns in the first project I ever designed by myself in the real world read: The struggle is real as far and scale and proportion go. A good case in point is the gable vent I recently designed for a house in Dallas that I am currently working on. This particular garage has an automobile lift in it stacks one car on top of another and as a result, the ceiling is rather tall. This created a facade that was quite a bit more exaggerated than originally planned and this enlarged scale was going to require some additional focus and attention. This was one of the initial design sketches I did for this gable elevation design study. Luckily, I have mediocre Photoshop skills and can fix it â€” This is the same sketch, I just took out the 4 lines and divided it up into a 5-panel garage door. As a result, my scale figure now appears to be appropriately sized. Whew â€” Thanks, Photoshop! The other item I added to this gable end elevation is the limestone gable vent which was actually the reason I created these sketches in the first place. I still needed to break up the brick massing and knew that I needed to add something in this end wall to provide some visual relief and provide some scale. I literally woke up in the middle of the night and thought â€” C. FFA Voysey was a 19th Century English Architect, furniture, and textile designer, and designed some rather remarkable country houses. What I will acknowledge is that the stone gable vent I designed for this house is an inverted homage to similar type vents done by CFA Voysey. That Architectural History class is still paying off. The sketch above has a similar condition. This is the back side elevation at the Master Bedroom. How many vertical limestone pieces should there be? How wide should the limestone be? How far should the bottom sill piece extend beyond the verticals? How big should the gaps between the limestone be?? Eventually, I landed on this â€” three vertical legs â€” the height of each vent varies slightly between the two gable ends because the amount of brick massing is different. Once we had figured out the scale and proportion, it was a fairly simple matter of drawing up the pattern and sending it off to the contractor. I will admit that I have never done a vent like this before and I spent some time trying to determine what would be placed behind the vertical limestone members. The not-a-real-vent was installed on the garage elevation at the end of last week, and once the masons starting pulling down the scaffolding I was able to get a good look at the scale and proportion that I had labored over. Yes, I also have a thing about getting the height of your scale figures correct â€” because I am a lunatic. One of the most important skill sets a designer can have is their ability to visualize space and the things that occupy that space. What I can tell you is that that this is something that I pay a lot of attention to getting right. I probably pull out a tape measure and verify exactly how big something might be a few times every single day.

### Chapter 7 : Scale and Proportion - The Architect's Domain | Life of an Architect

*Scale allows us to understand the relationship between a representation - a drawing or model - and reality. Being able to draw accurately to scale, and to shift fluidly between scales, is one of the most important aspects of architectural drawing and spatial design.*

Post written by Paul de Vries and Simon Droog. Which architectural means do we have to create specific atmospheres that can elicit specific emotions? In history there have been many theories about order, scale and proportion in architecture. And as a result of this, there have been many attempts to incorporate mathematical and musical principles into the proportions of architecture. This is all due to the fact that people have an affinity for order. Steven Holl wrote in an essay on proportion, scale and perception: Just as we can tune musical instruments with a minuteness of proportional adjustment to produce harmonies, so we have an analogous ability to appreciate visual and spatial proportional relations. In music, as in architecture and any of the visual arts, these sensibilities must be cultivated. There have been people interested in this one proportion ever since the days of antiquity. Pythagoras and his disciples, theorists of the Renaissance and in more modern times Le Corbusier. But we do not experience the exact measurements of these proportions. We do feel that the spaces are related in size and are part of a greater whole, though. This means that people have an affinity for order, as mentioned before, but what kind of order does not really matter. The golden section, for example, is just one of the orders that can be used in architecture. Or the order of the Japanese Tatami mat building tradition, where all proportions are based on the dimensions of the Tatami mat. For example the Japanese Tatami mat building tradition sets the plan of rooms in a house two, three, four, eight, twelve, fourteen, etc. Building was automatically scaled to the human in a proportional series. This can change over time, from place to place and from person to person. Scale and proportion People have an affinity for a certain level of order, but what kind of order does not really matter. If you have any comments or questions about Scale and proportion “ please let us know. Proportion, scale and perception. Phenomenology of Architecture p. Tokyo, A and U.

### Chapter 8 : Scale and Proportion - CustomResidentialArchitectsNetwork

*CAD Scale Factors* For instance, when drawing a door in CAD, the door would be 3 feet wide and 7 feet tall. However, since these drawings get placed on sheets of paper that are much smaller, a scale factor is required so that the final drawing has a usable conversion factor.

For our final post in our blog series, we are going to focus on the elements of design, scale and proportion. In commercial Interior Design, the most important objective for a project is to enhance our everyday experiences within the environments we work, live, and play. Although consideration of all the elements of design is necessary to achieve this goal, scale and in turn, proportion have the largest impact on spatial functionality. In the room pictured above by Design Partners International for Kuper, vertical line has been applied to the ceiling and wall to draw the eye down and add a sense of proportion to the space. Without this consideration for scale and proportion, this room may not be so well balanced simply due to the low horizontal nature of the seating. Scale Without consideration of scale, in particular, human scale, our everyday activities would be more difficult. Scale refers to the relationship between two or more objects, one that has a commonly known size. In most cases, the size of objects is compared to our own human scale. We can find examples of this in our homes and workplaces; for instance, standardized heights have been created for countertops, chairs have been scaled to fit our bodies, the widths of hallways allow for people to comfortably pass one another. You can see that the way we build our environment is based on the commonly known anthropometric data of human scale. The application of contrasting colour and texture on the ceiling, walls, and floor, as well as the incorporation of low horizontal furniture could lead to this room feeling out of scale; however, DAP Studio masterfully counterbalanced this effect by repeating and lowering the horizontal light fixtures. Proportion Proportion is a word often used interchangeably with scale although there is one subtle difference between the two definitions. While the word scale implies the comparison of objects where the actual size of one object is known, proportion relates to the general size of two objects without information regarding their actual sizes or scales. While scale is more absolute, proportion is truly relative and requires the interior designer to understand the interactions between objects within a 3 dimensional space. There is no right or wrong when it comes to this application of proportion. Often interior designers will apply proportion in contrasting ways to emphasize a particular area. This design by LemayMichaud Architecture Design is a great example of this; note how the oversized fixtures really call attention to the bar. In most cases designers aim to achieve proportion within the spaces they design; however, there are times when the design goals call for disproportion. One way to create emphasis in a space is to introduce oversized items in a way that is disproportionate for the space. For instance, large pendant lights over a cash counter or boardroom table could call attention to that area. Although understanding the ideas behind proportion and scale are important, design requires an awareness of every element and principal check back for future blog posts about the various principals of design. It must be said that Interior design is complicated; there are so many interactions between all the elements of design and these interactions, as a whole, have an effect on the feel of a space. Did you miss our post about line? Read about it by clicking [here](#). Did you miss our post about colour? Did you miss our post about texture and pattern? Did you miss our post about light?

### Chapter 9 : Architect Scales to Create Architectural Plans & Read with Scale Rulers

*When architects talk about scale and proportion they are usually talking about how the individual parts of the project relate to each other, how the project relates to the size of the human body and how the project relates to its contextual scale.*