

ART/EGR 499A and B: Architecture and the Environment

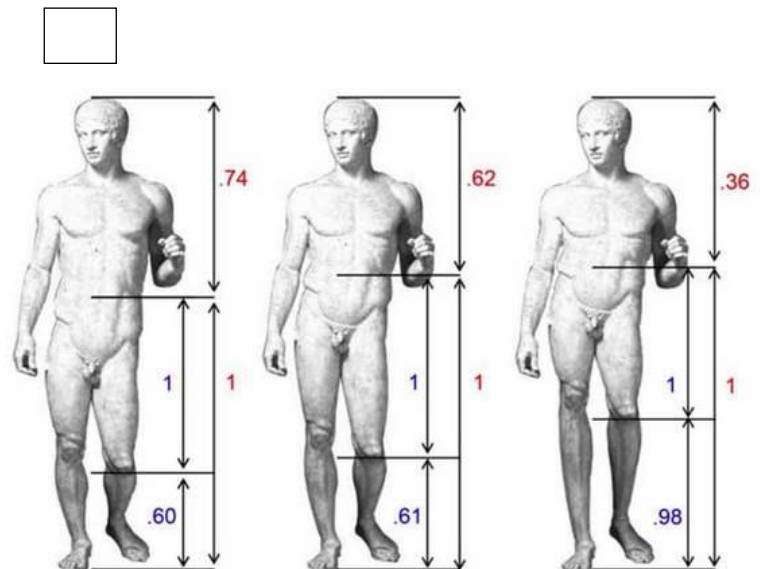
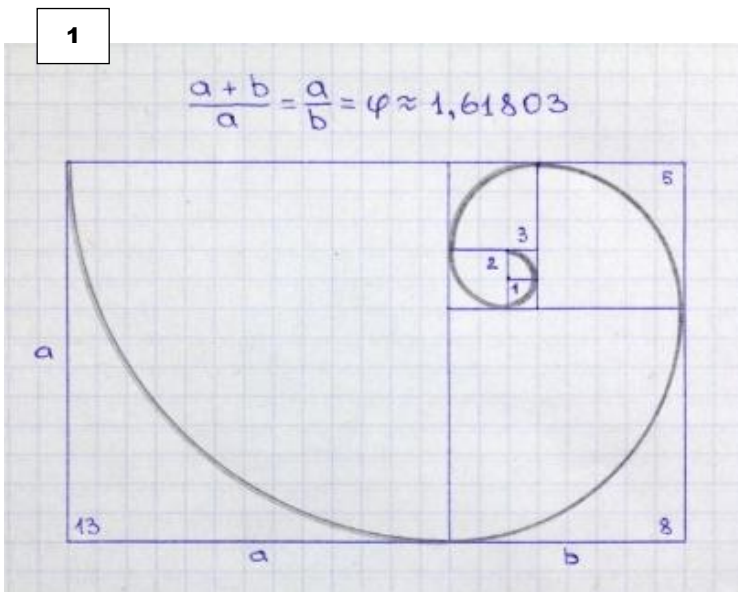
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There is no such thing as a truly unique building. All architecture or art is a subtle collage inspired by people, naturally occurring forms, and even which was inspired by something, gathering inspiration from hundreds of thousands of different sources and inspirations across time, but still all traceable to specific roots. The earliest buildings such as the Egyptian pyramids and Mesopotamian ziggurats were modeled off distant mountains. More modern examples are buildings such as the Beijing National Stadium (also known as the bird's nest) is designed to look like you would imagine, a birds nest. Even at microscopic levels, geometric shapes that are normally considered man-made or unnatural such as cubic, tetragonal, and hexagonal are very much existant in natural occurring elements like Sodium. These shapes are also observable to the naked eye in the form of crystals.

Certain paterns and shapes are more pleasant to the human eye than others, though it varys by time period and location. Generally speaking, curved, concave, and smooth forms were considered ideal for architecture. Some people believe we find these kind of forms to be beautiful because of human proportions and natural curves in women for instance. For example, a slight curve in the shaft of the column or other structure for aesthetic purposes is known as as entasis. In geometry there is a shape called the golden spiral or golden ratio that it represented as the character ϕ , but you might know the shape better from the nautilus shell (1) which almost perfectly follows the logarithmic spiral. This shape is significant because artists all the way from the ancient greeks to as recent as the renaissance observed that many proportions considered to be attractive, including that of humans, can be determined by this simple swirl (2).

The Greek people made good use of the natural environment in their architecture. The third order of columns known as the Corinthian order have a flowering design around the capital of the support. This specific style was inspired by the Greek Acanthus Plant. Columns like those in Greece can be found even today in buildings such as the National Archives in Washington DC, USA. Another Greek sculpture inspired by natural forms is the Caryatid. These are columns shaped in the form of a female. The Caryatid Porch of the Erechtheion, Athens is a good place to find these. Dating back to around 400 BCE they are some of the oldest examples of this style of support.



On the subject of human forms, there is also what's known as a human scale. Most architecture designed for everyday human use around the world is built with proportions to what fit our body. In the US, doorways are on average 2 meters high, with ceilings being around 2.2 meters. Buildings that are not built to a human scale are religious structures like Cathedrals with large windows and a high ceiling known as a clerestory, designed to invoke a religious experience. Skyscrapers are the most recognizable structures from a distance due to their incredible heights. Though when clumped together in a cramped city environment people can feel like they are walking through a giant ravine. At worst a city can cause claustrophobia and even feelings of inadequacy. If we look at humans and what they do as a product of nature, and therefore technically "natural", then what we build could be considered to some foreign beings to be no more or less natural than anthills or beehives, albeit much less significant.

What we build and produce can have a profound impact on our environment, more often than not, negative. The Japanese however are quite exceptional at working around their environment, gracing the land by working with it as apposed to flattening it over and building with one's own desires in mind. It may be because of Japan's fragile "receive imported resources, export technology" based economy that they are so careful with what they have. Another reason may be because they have very little land on their set of islands to build on. Frank Lloyd Wright was one of history's greatest architects because he took from the Japanese philosophy of working with your environment to build buildings that matched the landscape they were to reside in. Wright's prairie style for instance was perfectly fitting for the flat midwestern landscape (3).



"No house should ever be on a hill or on anything. It should be of the hill. Belonging to it. Hill and house should live together each the happier for the other." –Frank Lloyd Wright

Lighting also plays a tremendous role on setting the mood of architecture, and it effects us more than we consider. The composition, focus, contrast, color, and intensity of light are all important factors of lighting a space. Naturally, darkness is associated with the unknown, fear, confusion. We have the expression "I finally saw the light" which expresses how someone has finally reached an understanding after being lost. Light + location = mood. For instance, a dimly lit restaurant or boat ride can be romantic or peaceful if you are in a high class city like Venice for instance. But a dimly lit alleyway or subway with no people except you and someone else in a black coat can be a totally different experience. Us humans value light. Light generally can bring feelings of comfort. Most residential architecture in most countries throughout the world are brighter warmer color palettes. Dark colored houses tend to be less common because of several reasons; brighter colors mean a more welcoming facade, darker building materials tend to be less available in most regions of the Earth, and the fact that black objects absorb all wavelengths of light and reflect close to none, meaning more heat, which is not ideal if you live in a location that gets very hot during warmer months.

Also worth mentioning is how weather impacts choices for building methods and design. Sometimes there is little other options for materials and people have to get creative. Colder climates of the world require properly insulated houses with extra support of a pitched roof for snow to build up on. Many cold climates such as northern Canada, Russia, and Scandinavia are populated with coniferous trees which in turn mean wooden cabins and the like. Digging a foundation and underground pipelines are some the biggest struggles with living around here as the water in the dirt freezes. This freezing of dirt can even move foundations of houses if the basement is not deep enough. In hotter climates like the western United States, South America, and the Middle East, new chalanges take place. There are few trees in desert regions and in especially sandy terrain digging down to solid, sturdy ground can pose a challenge. Because deserts get exceptionally cold at night due to lack of clouds or plantlife to obsorb and trap heat, designing a house that stays cool during the day and traps heat from radiators or a fire at night is an important concern. Countries like Greece used their abundant supply of naturally occuring marble to build houses several hundred years ago. In parts of Mexico and Africa, Adobe, otherwise known as mud brick in Spanish is another good building material for this situation.

In religious architecture in India, parts of their prayer sites and buildings are designed to represent figures of the human body. These buildings usually encompass the theme of fertility and represent conception in the earth before being born (entering heaven). In hindu sacred space, a Shikhara is a mountain peak shaped temple with an entrance called the Garbhagriha (womb chamber). Inside the temple is a Lingam (vertical stone phallus).

Today in modern America, we all have our own plots of land. Most people in rural areas have front and back yards, with around 2 or 3 plants in their home. People who live in the city however have a problem to overcome; they live in a giant tower of garbage on a cold cement slab. There are a few solutions we've come up with in the last century for this problem. One of which is to have public parks. Central Square in NYC designed by Frederick Law Olmstead is a beautiful 3.41 sq. km. lot along W 59th Street and 5th Avenue completely manmade to look as natural as possible. Some people believe that when the city was built this large rectangular lot was kept untouched but it was quite the other way around. Another solution the lack of green in a citscape is to have gardens on rooftops or on patios.

Modern humans do more than simply take inspiration from the environment, we actually obsorb the sun's light on solar collectors, let the wind turn massive turbines, and use geothermal heat, heat from the center of the earth, to generate power. Even to the extent of harnessing the power generated from nuclear energy can we now power entire cities. A great modern example of several of the aforementioned "green" energy saving techniques all together is the Shanghai Tower in Lujiazui, Pudong, (you guessed it) Shanghai. A slightly curving, upright triangular-prism~esque, neo-furturist, 632 meter tall skyscraper. Currently being built, it will soon be the second tallest building on earth.

Humans have taken inspiration from natural organizims and landscapes since the first buildings we've ever made. We harness the natural movement of the elements; wind, water, the heat from inside our own planet. We've even used nuclear fission to generate our own power by means of radioactive decay. To some extent we've managed to control the weather ourselves. Given enough time we might even be able to genetically modify our own new kinds of plants to grow in unnatural, geometric shapes. If nature can produce creatures as detailed and symmetrical as, say, tigers, flowers, and of course, humans; who's to say we couldn't manage to design a tree that grows square? What if we could design a plant that grows in the shape of a hollow square with a roof, windows, and a floor. A GMO house? Or a perhaps a quite literal *tree house*.



No one has yet modified any organism in nature in such a way that it can be considered a genetically modified building.

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