

Architecture for Urbanism

The Canons of Humane Architecture

Version 1.3

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The Canons of Humane Architecture

The characteristics of Humane Architecture help people feel comfortable. Most modern buildings lack them. Most beloved buildings have them. The following ones are especially important, and are tightly related to each other.

1. **Beauty.** Architecture should be beautiful, and also be designed to suit public and private taste. We share the experience of beauty, so we should make things that other people find beautiful. We should also adjust them to individual tastes.
2. **Human Scale.** The human scale makes the urban and rural environment more beautiful. It helps us feel at ease, because it addresses the human form.
3. **Craft.** We long for craft throughout the human environment. It requires aptitude, panache, care, and often dexterity, but not mechanical precision.
4. **Character.** Buildings' character should represent their inhabitants and their surroundings. They should treat each other and their setting with decorum.
5. **Permanence.** Buildings should be permanent. They should be made of durable materials. The most permanent materials should be deepest in the structure, and materials that need to be renewed periodically should be on the surface. Designers should avoid materials that give a false sense of durability.
6. **Flexibility.** We should change buildings over time, as our needs change. Buildings should support general functions wherever possible, and should not be confined to narrow functions. They should be open-source and adaptable to new needs — without injuring their beauty.
7. **Legibility.** A building should tell us what purpose it serves, and what role it plays in society. When we pass or visit a building, we should be able to tell what kind of building it is.
8. **Bounded Variety.** We enjoy variety within bounds. These bounds can be narrow or wide, depending upon the desired effect. Neither mechanical uniformity nor heedless novelty is desirable. Creativity is best released when it is appropriately constrained.
9. **Imitation of Living Order.** Everything designed for the urban or rural realm should follow the lead of living nature. It should be part of a hierarchy of greater and lesser features, and it should have a familial resemblance between its peers. Nevertheless, it should rarely ape natural forms literally.

The Canons Explained

One of the problems with today's architectural discourse is that there is a gap between architects' claims and what they actually produce. Some architects will claim that they are being sensitive to the surrounding buildings by contrasting boldly with them. Some claim lyricism for heavy-handed design. In our case, we attempt to recapture some of these ideas for common sense.

Each of these canons requires some explanation. One reason for the explanation is to indicate how they relate to each other. They are all, then, indispensable for each other.

Beauty

Architecture should be beautiful, and also be designed to suit public and private taste. We share the experience of beauty, so we should make things that other people find beautiful. We should also adjust them to individual tastes.

We have been victimized by the truism that "beauty is in the eye of the beholder." We are taught that each of us has an individual sense of beauty, and that we don't share it with others. Yet, even if it is subjective, most people share roughly the same subjective impression of beauty.

Beauty is a shared sense of what is attractive. Most of us are perfectly capable of making things that other people will find beautiful. Beauty comes in different forms: spare beauty, sensuous beauty, and so on. We can agree what these terms mean, and we can refine our sense of them. As we learn what others mean, we can get more and more precise about what is "spare" or "sensuous."

Beauty is also important to us emotionally, and is a key part of the responsibility of architect-urbanists, as proposed by Joanna Alimanestianu.¹

Biophilia



Figure 1. Natural beauty

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Another word for "beauty" might be "biophilia." Nikos Salingaros defines it as ". . . our attraction to the geometry of biological structures." He goes on to say,

*"This very broadly includes enjoying environments that are either natural, or that mimic nature in an essential geometrical manner, but not just as a superficial copy or decoration. Biophilia also includes our positive interaction with other persons, which is necessary for us to live life fully."*²

In order for us to find something beautiful, it has to have the structural, or geometrical qualities of living things. These include things like rhythms, the correspondence between the parts, having big and small scales, and so on. One such summation is Christopher Alexander's 15

properties of wholeness apply to living nature too.³ A picture of a flower is not necessarily beautiful. If it doesn't have those qualities, it won't be. However, a stone building or a hard pavement that has those qualities can be beautiful. So things people make can be beautiful if they copy natural structures. ([See Imitation of Living Order on page 21.](#))

A good building can help us feel a certain way, and still help us feel comfortable at a deep level. Since the beauty of biophilia is not skin-deep, a coarse skin can still be beautiful.

Taste



Figure 2. The stern historic Arizona State Capitol

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Figure 3. The effusive, robust Columbia Parliament

CC BY 2.0 / Ian D. Keating / Flickr

Different people have different tastes. Taste dictates only the kind of beauty that someone prefers under certain circumstances. It does not dictate what is beautiful. We have public taste too, which is the taste that we admit we share with others. At one point in our lives we might prefer something playful, and another something dour. We might admit to each other that a stern beauty is appropriate to a state capitol, and an effusive, robust beauty is appropriate to a Canadian province's parliament. We can almost think of taste as a word for "emotional range."

We can learn to agree with other people about what is playful or dour; dignified or lyrical. The more we are able to draw and talk and question the different kinds and degrees of beauty, the less we need to be trapped in our own heads. As we learn to agree upon beauty and ugliness in all their forms, we find it easier to collaborate with each other. We can agree what constitutes "playful" and what constitutes "dour" without necessarily agreeing upon which is best for a particular building. Shared vocabulary makes it easier for an architect to explain what expressive qualities some craftsman's refinement should have. Only if we share a vocabulary for different emotional qualities in design can we build a truly open system of design and construction.

Beauty and Propriety



Figure 4. Central Police Station, Bristol UK

CC BY-SA 2.5 / William Avery / Wikimedia Commons

The type of beauty should support the building's narrative. The building should put people in a good frame of mind not just to use it, but to be at least a little edified by it. At a minimum, the building should be so beautiful as to justify itself over what it replaces. It should be a net gain. This does not mean that it must be superficially attractive. It can also deploy deep, resonant meaning using what we can call architectural "Poetry." (See [Legibility on page 16.](#)) A prison's walls can have a severe, even cruel beauty to them, and that beauty supports its rhetorical or pedagogical purpose. If its interior is more humane, even pleasant, that can tell the inmates about redemption.

Beauty in architecture should pursue an ideal, but it should also have a meaning.

Human Scale

The human scale makes the urban and rural environment more beautiful. It helps us feel at ease, because it addresses the human form.



Figure 5. The Chrysler Building, New York

CC BY-SA 3.0 / Norbert Nagel / Wikimedia Commons

One of the complaints about modern architecture is that it lacks a human scale. Yet we hardly agree what that means. If the Chrysler Building is pleasant to walk past, and it is, scale must not be a function of size. It is a function of coherent design.

Human scale requires a full ladder of scales from small to large. If we were to take pictures of a tree at various distances from it, we would probably notice that there is interesting detail all the way from far away down to the microscopic scale. There are the whole tree, the major branches, the twigs, the leaves — right down to the chloroplasts. It's the same with the Chrysler building: from the giant arch right down to fine details. The building imitates that aspect of nature. If we perform the same test with many modern buildings, something else happens. The overall form may be interesting, but as we get closer there is less and less to engage us. In particular, there is often almost nothing at the size of a person.

If the windows and doors are either too small or too large, or if the door handles are not fitted to the human hand, or if a bench is a stark slab, we lose the human scale. Yet, if things are the right size, and if they engage us with humanity, even very large buildings will feel humane.

In general, jumps in scale should be around 2.7:1. That is, there should be a legible pattern visible from about, say, 1 foot, 3 feet, and 7 feet. If it exceeds that ratio, the result will be dramatic, but a little cold.⁴ In fact, it will be a little dramatic *because* it is a little cold.

Lack of Human Scale



Figure 6. Former Whitney Museum, NY by Marcel Breuer

CC BY 2.0 / Timothy Brown / Flickr

When the scale around the size of a human being is missing, we feel a sense of aloofness. There are some common moves: doors are 8 feet tall, windows go all the way to the ceiling, benches are so low that they almost force us to crouch. Features are duplicated mechanically.

This kind of scale can be refreshing. It is not always bad. It is similar to the scale jump between a single straw of grass and a whole prairie. In nature, this sort of jump in scale is found at the scale of whole landscapes, but not at the scale of individual living things. Individual living things always have intermediate scales. The scale of our bodies does not jump all the way from a single joint of a small toe to our whole height. There are the ankle, the shin, the waist, the shoulders, and then the whole body.

Size Versus Scale



Figure 7. National Building Museum, Washington DC

Public domain / Gryffindor / Wikimedia Commons

Size is often confused with scale. We might say that a six-story building in a two-story neighborhood is "out of scale" for the neighborhood. We should be clear about what we mean. The building is outsized for that neighborhood. It may still have a human scale. Scale is tied to the sizes of things that are usually around the size of a human body: seats, windows, doors, and ceilings. A monumentally scaled door is much taller than a diminutive old cottage door. Yet, a 12 foot tall loading dock door is not monumental. A monumental door recognizes the scale of a person so as to dwarf it. That makes it monumental: not size alone.

It's tempting to think that adding familiar, human-sized elements to a grand building will undermine its scale. The opposite is true. When the size of a normal human being is represented in a grand building, the effect is all the more monumental.

Human scale, then, requires two things. First, it must represent a complete ladder of scales from the small to large. There should be no big gaps. Second, it should refer to the human form. If something is simply oversized, we should say that it is oversized. We should not say that it is "out of scale." Scale has its own very important job to do.

Craft

We long for craft throughout the human environment. It requires aptitude, panache, care, and often dexterity, but not mechanical precision.

We often stereotype craft as if it only included handcraft. However, a broader definition is more useful for our purposes.

Craft includes the application of care and technique as well as sheer dexterity. Stone carving is the epitome of handcraft. It can be blocked out by machine, but the actual work must usually be done by hand. Certainly, expressive detail must be. A statue or ornament designed and executed by hand is clearly a work of craftsmanship. All of the old handcraft techniques, from thatching to welding, and even riveting, involve handcraft in this sense.

Evidence of Care



Figure 8. A cottage door

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Love of craft is often considered to be against our zeitgeist of clean modernity. However, an industrial product that is untouched by human hands usually involves small mismatches, uneven fit, and visible fittings. A sleek, clean, minimal appearance usually involves a high level of craftsmanship: craftsmanship so skilled as to make itself invisible. While this sort of craftsmanship requires self-effacing care, it shows little evidence of care. For our purposes, craftsmanship requires evidence of care. We not only want to *know* that some mind has lavished care on something; we want to *sense* that some hand cares. We can call this "Evidence of care."

Craft at the Front-End



Figure 9. Capital, Prudential Guarantee Building, Louis Sullivan

CC BY-SA 4.0 / TomFawls / Wikimedia Commons

However, some aspects of manufacture have been part of craftsmanship for millennia. A Louis Sullivan terracotta panel may show immense craftsmanship in its manufacture, but less in its execution. Each panel comes from a mold — but making the mold itself takes immense skill. We can call this "Craft at the front end."

Craft at the Back-End

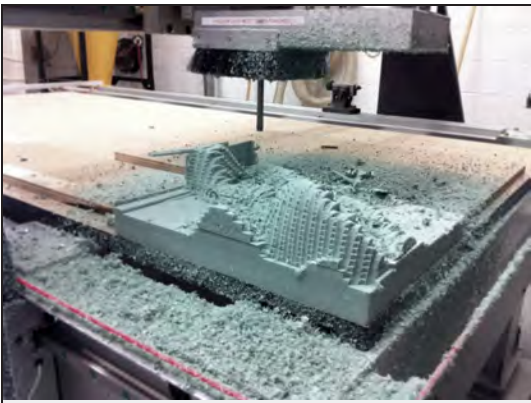


Figure 10. A CNC router

CC BY-2.0 / Madeline Gannon / Flickr

We might also imagine that a machine carves down a block of stone so that an artist can finish it. Every inch of the final surface may be hand worked — but the machine goes through the labor of removing the excess stone. We can call this "Craft at the back end."

Character

Buildings' character should represent their inhabitants and their surroundings. They should treat each other and their setting with decorum.

Character sweeps across styles, and in a way makes them irrelevant. For example, a building from the 19th century, one from the 16th, and one from the 21st can all have a similar character, despite differences in style. In fact, styles ascribed to historical periods can distract us from character.

Shared Character



Figure 11. Street in San Juan

Public domain / Dan Morales

Local character comes from a careful and penetrating understanding of the site and region. Places that have a distinct character are built by steadily adding buildings and landscape that integrate harmoniously with those that are already there. When buildings' purposes change, they should still contribute to the shared character. A facade might outlast the building behind it — if it is loved enough. Buildings should enter a *conversation* with neighboring buildings, and engage them by using similar visual characteristics. Moreover, each building's character must reflect favorably on its locale, since its citizenry have collectively built that character.

Buildings' Character



Figure 12. St. Michael in Bamberg, with medieval and baroque features

Public domain / Erge / Pixabay

The character of a building should respond to its inhabitants and its site. It should build represent the family, firm, institution — or group of them — that it houses. Sometimes this means it should be made from buildings it is like. A state capitol should probably be like other capitol buildings and have a dome. (See [Legibility](#) on page 16.) It should also impart a strong sense of identity to its inhabitants. That identity should come from the site's scales, patterns, materials, and building traditions. It should express the building's purpose and place in the civic realm. If it does, it can help everyone understand itself and its community. In short, it should strive for decorum.

Decorum



Figure 13. Soane Street, Ipswich

CC BY-SA 2.0 / Stephen Richards

Architecture should have both good manners and propriety. If it does, we can say that it has "Decorum." In general, "manners" means that buildings should not insult their neighbors, or disrupt the public realm, or behave boorishly in general. The notion of "propriety" is a little more complex, and to some it may seem old-fashioned. It is the idea that the building should fit its purpose, including some deference to greater buildings' importance. In a democracy, the more important buildings have bigger publics. A state Capitol building might be more important than a city hall, which might be more important than a Masonic auditorium, which would be more important than an office building. The office building would be more important than a house.. This sense of hierarchy might at first grate on people's sensibilities, because it seems undemocratic. From the perspective of decorum, though, it is actually

more democratic than the current free-for-all.

Permanence

Buildings should be permanent. They should be made of durable materials. The most permanent materials should be deepest in the structure, and materials that need to be renewed periodically should be on the surface. Designers should avoid materials that give a false sense of durability.



Figure 14. Spalling concrete wall

CC BY-SA 3.0 / JohnRichfield / Wikimedia Commons

While nothing lasts forever, some things are more permanent than others. There are degrees of permanence. Sometimes ostensibly impermanent buildings outlast their original purpose. "Temporary" buildings have sometimes lasted decades longer than intended: rough shacks in Western towns, emergency sheds set up for World War II barracks, and sagging old mobile homes. Likewise, many buildings intended to be permanent — or parts of them — often fail before they should. Expensive façades hung on rust-prone straps sometimes need to be replaced because they are dangerous.

Layered Permanence



Figure 15. Converted loft

CC BY-NC-SA 2.0 / Tobias Mikkelsen / Flickr

Permanence, in architecture, generally means that something is durable enough that the more changeable elements of a building can rely on it. Some things change quickly and some change slowly, so we can think in terms of "Layered permanence."

The deepest and least accessible structural parts of a building should be the most permanent. Materials exposed to the weather and non-loadbearing walls should be put where they can be replaced easily. If some things have a lower degree of permanence, they can actually make the whole building more permanent. For example, a house with inconveniently arranged rooms formed by structural walls may become hopelessly obsolete faster than a similar house whose interior walls can be knocked out.

Stewart Brand introduced this idea as "pace layering" in the book, *How Buildings Learn*.⁵

Permanence in Design and Construction



Figure 16. Fine half-timbering

CC BY-SA 3.0 / Arnoldius / Wikimedia Commons

Buildings that are made of durable materials and that are constructed properly can last indefinitely. They still require maintenance, such as replacing roofs and painting walls, but with proper maintenance they can last. Some buildings, though, are built with time limits. If a critical part of a building deteriorates, the whole building may be lost. Different alternatives pose different life-cycle costs in the near and the short-term.

Flexibility

We should change buildings over time, as our needs change. Buildings should support general functions wherever possible, and should not be confined to narrow functions. They should be open-source and adaptable to new needs — without injuring their beauty.



Figure 17. Converted house, Portland, OR

CC BY 4.0 / Bruce F. Donnelly

While buildings may strive for permanence, they must also be flexible enough to change their use. Many older buildings have been saved from obsolescence by repurposing them. This can be managed partly through layered permanence, and partly by ensuring that buildings are only loosely tailored to their functions whenever possible. (See [Permanence on page 12.](#))

Flexibility is partly to do with being capable of modification, and partly to do with being capable of supporting various functions without Having to be modified.

Loose Fit

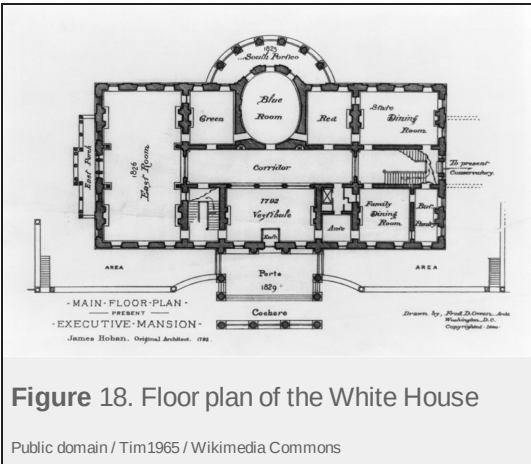


Figure 18. Floor plan of the White House

Public domain / Tim1965 / Wikimedia Commons

One of the things that makes many older buildings easy to retrofit for new uses is that their plans are somewhat generalized. They are usually organized by a hierarchy that has little to do with the rooms' initial functions. Buildings that are tailored only to highly specific uses are hard to use for new purposes. In flexible buildings the rooms are usually supplied in a range of sizes and in an organization that allows them to be reconfigured without being destroyed. This can be called "Loose fit." Sir Alexander Gordon considered "Loose fit" to be essential for buildings' longevity.⁶ Like beauty, adaptability is also important to us emotionally, and is also part of the responsibility of architect-urbanists, as proposed by Joanna Alimanestianu.⁷

Such loose fit can be distinguished from modernist ideas of flexible servicing — which are not always as flexible as advertised. In the 1960s, for example, expensive open-plan office systems of cubicles and movable partitions often cost more than solid but non-load-bearing walls.

Non-Proprietary Parts



Figure 19. Metal Stud wall

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Many modern buildings are filled with proprietary parts that cannot be replaced if the company that manufactures them goes out of business. This may make it especially daunting to rehabilitate an industrially built building from the 1960s — even compared to a handmade building from the 1850s. It may be much easier to replicate a window from the 1850s than to replicate one from the 1950s. While advances in 3-D printing may eventually make proprietary parts easier to replicate, even that may require licensing intellectual property.

Where Beauty Goes



Figure 20. Chapter House from Sant Dominic's Covent in Valencia

Public domain / Felivet / Wikimedia Commons

One of the simplest answers to flexibility is to put it where it counts — and out of the way. If we think about what makes a building beautiful, it is probably the size, shape, and arrangement of rooms; the location and design of openings; the elaboration of decor; and the use of attractive materials. Elaborate details are usually placed high in rooms, and around openings that are unlikely to change. In most traditional buildings, the room is much plainer from eye-level down than it is from eye-level up. This helps to keep finicky bits out of the way. We can use this strategy to ensure more flexibility without damaging the beauty.

Legibility

A building should tell us what purpose it serves, and what role it plays in society. When we pass or visit a building, we should be able to tell what kind of building it is.

Sometimes it is easy to tell what a building is for. A city hall, for instance, may announce clearly that it is an important civic building. A house may look domestic. An office building may have a more generalized appearance. It may look very dignified without shouting that it is an office building. The same may go for a hotel, which may not look appreciably different from an apartment building, except for the generosity of its entrance. Many newer buildings, though, are deliberately mute. They work so hard at being singular (or alternatively, bland) that they cannot be characterized by people on the street.

Legibility, in architecture, requires that a building be well-behaved, that we can sense its purpose, and that it uses a language we understand. Then it can rise to the level of poetry.

Purpose



Figure 21. Rock Springs Camp Meeting Ground, Denver, NC,⁸

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We should be able to read each building's purpose. This is more important than reading its function. For example, it is important to recognize a public library as a civic building first, and then second as a library. It is more important that it not be mistaken for an office building than that it not be mistaken for a school. This is the opposite of functionalism, in which it may be more important to express the book stacks than it is to express the building's civic importance.

If a school, for instance, is converted for apartments, its civic purpose changes. It had been a civic building, but it is converted into a residential building. It originally had the right to draw attention to itself, but after the conversion it needs to adopt a background appearance. This may require some ingenuity and some substantial adaptations.

If it is set back from the line of adjacent apartment buildings, perhaps new wings filling the gap would help it fit in better. Moreover, the symbolism of the building may have to change. If it has a carved motto about education and a cartouche with books on it, those might be better preserved elsewhere, and replaced with more appropriate symbols.

Language



Figure 22. The Reliance building, Chicago

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The defining characteristic of traditional architecture is a "Shared language." No characteristic is more essential or is under more constant assault in today's architectural discourse. People are more likely to understand what a building is for, and how important it is, if it uses a commonly understood language.

It is important to note that this language should be a living language, so that new "words" can be added as time goes on. It should not be just any architectural language. For instance, a building based on a Palladian villa, but located in Chicago's Loop would be even less legible than a gridded glass office tower. The glass grid has become part of the architectural language of Chicago, so a new building might have to speak it, even if it has more traditional details as well (Chicago-style windows, say). It's also important to realize just how much flexibility a traditional building language can have. In some ways, saying that the traditional language is limited is like saying that the colors on your television are limited by the colors red, green, and blue. Buildings can enjoy a tremendous expressive range within a limited language. A plain building, for example, can be ennobled by adding columns and a pediment. A house can be made to look cute or severe by subtle tweaks to details such as dormer windows.



Figure 23. A cute house on Kinnaird Estate

CC BY-SA 3.0 / Dominic Dawn Harry and Jacob Paterson

Meaning and Poetry



Figure 24. World War I competition entry,
Roy Lewis

CC BY-NC-ND 4.0 2015 / Roy Lewis

The use of architectural language may not be enough to tell the story of a building and its purpose. Certainly, the building can explain itself by using certain narrative tools. Architecture can use "Poetry." It can make analogies to other buildings of its type (such as a dome on a state capitol building), and it can deploy its program to create a narrative (such as a processional sequence into a church). It can also deploy historical and cultural references — including literal sculpted or pictorial references to historic events. Thus, legibility can go far beyond just being understood in a literal sense. It can be poetic and evocative.

Bounded Variety

We enjoy variety within bounds. These bounds can be narrow or wide, depending upon the desired effect. Neither mechanical uniformity nor heedless novelty is desirable. Creativity is best released when it is appropriately constrained.



Figure 25. Over-the-Rhine, Cincinnati, Ohio

Public Domain / WholeTone / Wikimedia Commons

Most good art requires a limited palette, and good urbanism is no different. In fact, one way to ensure that each neighborhood has its own distinct flavor is to ensure that it has a limited range of expression. That is, the expression should be within certain bounds — but freely expressive between them.

Bounded variety like this suffuses many of the most delightful and photogenic places on earth. An Amsterdam canal, for example, might be lined by tall houses that are all variations on a theme. Likewise, the houses of a Methodist camp might be roughly consistent, and each cottage also might be flamboyantly individualistic. Each of these sorts of places may be markedly distinct from other neighborhoods, but very consistent within itself.

One of the complaints that some of today's architects have about traditional design is that it doesn't offer much scope for invention. To them, it does not offer creativity. Yet, traditional architects often feel they have a very broad expressive range. An actor has a limited palette of human emotions. A film director may have a limited palette of types of story and of film genres. Yet, there is expressive range galore for films. On the other hand, contemporary art galleries in which innovation is the price of entry are often filled with art focused around a narrow emotional range of expression.

It is paradoxical, but creativity comes not from unalloyed freedom, but from useful constraints. Some constraints are useful: a shared experience and tradition, a commitment familiar stories in new ways, and a commitment to impart buildings with greater emotional depth.⁹ Each city, neighborhood, and building should enjoy soft bounds outside of which it does not venture — but designers should enjoy wide freedom within those bounds.

History



Figure 26. Andrew Gould's Holy Ascension Church, SC (2008)

CC BY-SA 2.0 / Andrew Gould / Flickr

Humane qualities appear throughout history and across the globe — but rarely in modernism. These qualities do not rest on historicists' idea of authenticity, but every attempt to eliminate *all* historical references risks losing the humane qualities that are common to almost all pre-modernist architecture. According to Carroll William Westfall, "All buildings are made from other buildings or parts of them"¹⁰ — especially ones with humane qualities. Imitation creates bounded variety. (See [Bounded Variety on the previous page.](#))

Since architecture should be appropriate to its purpose and its location, it would be just as inappropriate to grab from it randomly as it would be to ignore it. Rather, architects should take a relaxed and knowing approach: select what is most appropriate and reject the rest. Architects

must not be enslaved by any one period — including both the present and the future.

Creativity



Figure 27. Art Deco, Miami Beach, FL

CC BY-NC 2.0 / Chris Goldberg / Flickr

There is every opportunity for creativity today. It wasn't until the "International Style" emerged that people believed the trope that creativity precluded learning from history. In the United States, Art Deco and Moderne architecture were both eminently creative and eminently humane. Many traditional architects (and some modernist ones) are able to do both today, too.

Creativity can thrive within bounds, and the bounds of humane architecture are not terribly constraining. This is the first era in which architects complain that the great examples of the past are constraining. The same examples used to thrill architects, and still thrill those unafraid of great humane buildings



Figure 28. Gare do Oriente, Lisbon

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Imitation of Living Order

Everything designed for the urban or rural realm should follow the lead of living nature. It should be part of a hierarchy of greater and lesser features, and it should have a familial resemblance between its peers. Nevertheless, it should rarely ape natural forms literally.

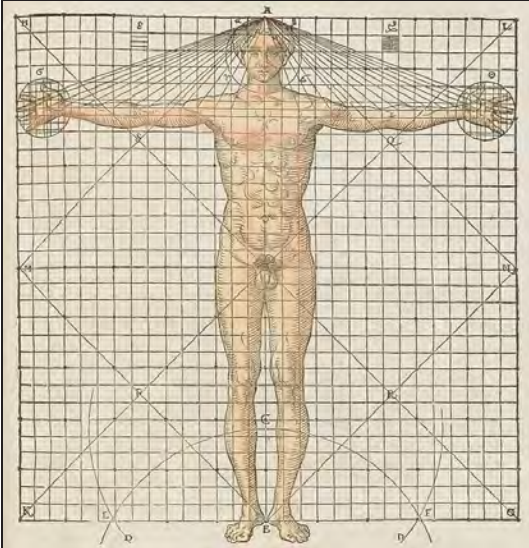


Figure 29. The Vitruvian Man, Marcus Vitruvius Pollio & Walther Hermann Ryff

Public Domain / Deutsche Fotothek / Wikimedia Commons

If we were to combine all the characteristics of good design from a typical book about good architectural design, they would add up to the qualities of living things. These include symmetry, proportion, scale, shape, rhythm, contrast, and all the rest visible in both good architecture and the natural world. (See **Biophilia** on page 3.)

However, this list may not be enough. We also need a certain amount of order. A Greek temple does not copy nature literally, as in aping a tree. It *does* imitate nature's deep order, harmony, and grace. It imitates nature as if it were perfected. It needs a clear order that we can grasp. It needs a certain simplicity — which might even seem naive.

This imitation of natural order is not a simple formula. Moreover, among the principles in this paper, it is the one most easily misunderstood. Yet it is in some ways the most important. It is important for getting a feel for design. The more designers embrace nature's structure, the more apt and beautiful it will be.

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Acknowledgments and Endnotes

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¹Alimanestianu, J. (2011). The Responsibility of Architect- Urbanists: A "Hippocratic Oath" for the Built Environment. Retrieved April 20, 2016, from <http://www.sustasis.net/HIPPOCRATIC%20OATH%20FOR%20THE%20BUILT%20ENVIRONMENT.doc>

²Micro-interview: Nikos Salingaros and Biophilia - Archiimpact. (n.d.). Retrieved from <http://archiimpact.com/micro-interview-nikos-salingaros-and-biophilia/>

³Alexander, C. (2002). *The Phenomenon of Life*. Berkeley: Center for Environmental Structure.

⁴Salingaros, N. A., & Mehaffy, M. W. (2006). *A Theory of Architecture*. Isi Books.

⁵Brand, S. (1995). *How Buildings Learn: What Happens After They're Built*. Penguin Group US.

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Glossary

B

Beauty

A combination of qualities that pleases the aesthetic senses, particularly the visual. Beauty is often distinguished from the "sublime," which inspires awe or fear instead.

Bounded variety

Architectural expression that varies freely within a limited range.

C

Craft

The activity of making things with skill, especially by hand.

Craft at the back end

Craft that shows evidence of care, and that occurs after any mechanical process (if any).

Craft at the front end

Craft that shows evidence of care, and that is completed before final manufacturing (if any).

D

Decorum

In architecture, a building that obeys propriety and good manners.

E

Evidence of care

Evidence that somebody has lavished careful thought and hand-craft on something.

F

Flexibility

In architecture, the capability of being adapted or modified within the time it is designed to last.

H

Human scale

The presence of detail at manageable intervals, from the scale of the whole object down to the tiny.

I

Imitation of Living Nature

In architecture, the act of following the model of idealized living things in design.

L

Layered permanence

The placement of the most permanent building elements in the deepest part of the structure and the most changeable elements and decor in the most accessible locations, for ease of modification.

Legibility

The quality of being clear enough to read; in architectural terms, the ability to understand a building.

Loose fit

The deliberately loose tailoring of design to use, so that the design can accommodate a variety of uses.

P

Permanence

In architecture, the quality of being durable over a period long enough to serve more changeable elements of a building reliably.

Poetry

In architecture, the deployment of certain tools to create a narrative about a building and its purpose. The most common tools are meaning in language, analogy of type and program, and the history of the site and the culture for narrative purposes.

Purpose

In architecture, the building or building element's place in society.

S

Shared language

A design language shared among the buildings of a place or a culture.