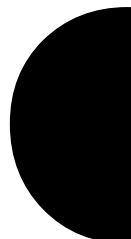


Conceptual Scale

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S O C I A L S C I E N C E | S P R I N G 2 0 2 4



Preface

When initially starting to look into the concept of scale, our first thought was to do a quick google search and get the definitions out of the way. In our architectural heads, scale is something completely ordinary, almost essential to understanding the world. Every idea, every project, every illustration has a scale. That is why we were really surprised when we discovered that scale (the architectural concept of scale) is nowhere to be found in google's list of definitions of the word. You have scale as in a thick layer of skin, scale as each of the small, thin horny or bony plates protecting the skin of fish and reptiles, and you have scale as in a flaky covering or deposit on either teeth, inside a kettle or on a heated metal. Why is it that a concept that seems so self-evident to us, is not even on the general public's list of definitions of the word. Is it because it just isn't relevant to most people? Surely there must be some cases where scale is essential to the non-architect.

This essay is written as an investigative foundation for our diploma project about scale and infrastructure at Bergen School of Architecture in Spring 2024. We want to research the potential role of the architect in a case non-typical to our profession, namely hydropower. The aim is to analyze and test the architectural tools used in ordinary architectural investigation, and evaluate the potential outside our discipline.

As complexity in buildings and design has increased, our roles as architects become more demanding in terms of multidisciplinary knowledge. The complexity in technology, materials and other involvement has led to a vast specialization of many professions and a dependence on other disciplines. The architect is no longer the grand master of a building site, or a planner that does it all. What is the potential of the architect today?

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1. Introduction

To give context to what this essay is dealing with, a brief history of the architect's role in general is needed. Architect originates from the Greek word "Arkitekton " - Arkhi meaning head, chief or master and Teckton meaning worker or builder. For centuries the architect was what its title describes; the one who was responsible for both the design and the construction of a project with sufficient construction expertise to oversee the project from inception to completion.¹² Eventually, complexity of projects required a higher level of specialization leading to the separation of the designer and the builder. Since that separation, the role of the architect has continued to change and evolve, yet they remain the focal point of the construction process.³

The history of the architect, their role and their past and present responsibilities, is clearly reflected in the development of their tools. The

first part of this essay will give both a brief overview of some of our most frequently used tools, reflections on their power and potential, and how scale is a concept in everything we do. The second part revolves around scale, its many interpretations and definitions, both conceptually and in practice. This section discusses how scale is a tool, but also an eternal presence in every action of creating and in the general perception of the world around us.

As architecture continues to shape and be shaped by various scales, from the individual to the global, the call for a more inclusive, context-sensitive, and socially aware architectural practice becomes evident. In exploring scale as a concept, architecture reveals its interdisciplinary and multimedial nature. The consideration of technique and the adoption of new skills in representation provoke reflections on how architecture is perceived and, consequently, conceptualized.

1 (Woods, 1999)

2 (Lee 2016)

3 (Jones 2006)

The evolution of the architect's role, intertwined with technological advancements, societal shifts, and political dynamics, underscores the dynamic nature of our field. The traditional association of scale with the human body, is explored in the context of architectural representation through Gerald Adler's book: *Scale: imagination, perception and practice in architecture*.¹ His work challenges conventional meanings and interpretations of scale, emphasizing its transformation in the face of technological advancements and societal changes.

This essay explores the research question:

¹ (Adler et.al. 2012)

2. Problem Statement

How can we expand the role of the architect, and how can architectural tools and understanding of scale bring new and meaningful input in unconventional discourses?

3. Tools and their power

The general consensus around the architectural drawing revolves around scaling down something too large to depict on a media. A drawing is typically scaled in anything from 1:5 to 1:2000. Scaling to the “right size” is trying to make sense of something too large, or too small to understand. So are all architectural tools; trying to investigate and communicate potentials, rules and future realities.

“If an architect begins to use a method of representation in order to understand architecture, it is likely that he will also use it to think about the architecture to be built”¹

Architects are not trained in theory, nor are we specialized within the field of construction, art, mathematics, anthropology, psychology, materiality or physics. We practice a large span of tools within multiple disciplines and ways of representing throughout our studies. We enter the world of architecture with previous experiences, bringing ourselves into the design process. Our arguments

for why and how a design is what it is, are both linked to subjectivity, ability to research and to a large degree; determined by the tool we use to both explore and represent our intentions and proposals.

The hand - 2D drawing

Architectural drawings are primarily communication tools. They are areas of information and collections of data for all phases of the planning and realization of a structure. They must contain the right amount of information and resolution according to project stage and scale, and also need to be appealing and sell.

According to Schulz and Schulz in their book *Perfect scale*, they argue that architectural design also needs to be communicated between disciplines. How this is meaningfully accomplished, at what level of design and engineering detail is required and sensible, during different stages in the development of architecture, is commonly determined by a shared consensus across disciplines and even

¹ (Schillaci, Burelli, & Avella, 2009: p16.)

countries around scale.¹

The drawing evolved parallel with technological innovation and as a result, so did the role of the architect. Generally in this essay we deal with our tools and their history after the invention of paper and within the context of the global north, mainly Europe.

Plan

Definition: usually connotes a floor plan, meaning that the drawing shows the view looking straight down at the floor. Everything you see in the drawing is as if a cut had been made horizontally across the building at 1200mm height.

The first method of representation mentioned by the Roman architect and military engineer Marcus Vitruvius Pollio, in what is named the first book of architectural theory; *Ten Books on Architecture*, is iconography, the footprint of an object left on the soil. Traces of this method are found as early as 7200 BC.² There are clear examples from both Greek and Roman times, and there are no reasonable sources of doubt that the plan was used as a method of representation in medieval times. Not until the fifteenth century can we find code closer to those we use today.

According to Schillaci, Burelli, and Avela in their book; *Architectural renderings construction and Design Manual*; history and theory, studios and practices, the plan remains the most familiar and easy to interpret even to the inexperienced eye, even though it is one of the more abstracted and analytical representation forms of drawing. Subway maps, park maps for tourists and diagrams of public buildings and fire escape plans are drawn in plan. According

1 (Schulz & Schulz, 2015)

2 (Mamura, Morgan, & Warren, 1914)

to the architect Carlos Marti Aris, the concept of type in architecture leads to extensive use of the plan as a fully sufficient representation to define the types in question.³ He claims that we have accepted contemporary architecture as complex forms, the plan remains among the forms of representation still used by all BIM programs, which provide more or less automatic procedures for extracting plans from three dimensional models.⁴

Orthogonal projection - Section and elevation

Definition: Orthographic projection is a means of representing three-dimensional objects in two dimensions. It is a form of parallel projection in which all the projection lines are orthogonal to the projection plane.⁵

Elevation: Shows the facades of the buildings as if they are perfectly flat. Because elevations do not adjust for perspective as the human eye does, they may look weird and out of proportion.

Sections: drawings work the same way as plans, except that they show vertical cuts through the building. It's as if the outside wall of the building were missing and the insides of the building were exposed straight on to the viewer. Sections can be drawn at any point in the building; usually the architect "takes a section" where it will give the most information about how the building and space works.⁶

As the orthogonal projections evolved during the gothic period so did the role of the architect. As

3 (Aris, 2021)

4 (Schillaci, Burelli, & Avella, 2009)

5 (Maynard, 2005 p. 22)

6 (Gordon & Stubbs, 1991)

well as being the head of the building site with great technical skills, the need to visualize the building required not only in-situ sketches, but drawings with which to organize the project.¹ The elevation drawing, like the plan, underwent a refinement during the renaissance. One reason that may have played a role in this process lies in the education of the renaissance architect, which included study through the survey of buildings in order to write compositional rules and codes. In painting the ancient building, little by little, orthogonal projection turned out to be even more effective because it allowed the architectural order to be drawn and described with geometrical and impartial accuracy.²

The orthogonal drawings of gothic cathedrals are also interesting because they fit together the exterior view of the building (the facade) with the interior view (the section).³ The complexity of the gothic construction elements and the refined geometries give legitimacy to the systematic use of the front view.⁴ The reason for the continued presence of these projections today is their ability to portray accuracy, enter and exit a building and a space, and remains both as a tool for presentation and designing.

Perspective - a form of projection and a "view" of something

Definition: Perspective is a collective term for various techniques used to create the illusion of spatial depth on a flat surface. Perspective can also be applied to emphasize central content or highlight important individuals or actions.⁵

1 (Millon, et. al, 1994)

2 (Schillaci, Burelli, & Avella, 2009)

3 (Rasmussen, 1959)

4 (Millon, et. al, 1994)

5 (Mørstad 2023)

The perspective has evolved from a distorted flat like view in the Byzantine times, to the one point perspective of the renaissance and later two point. With the Renaissance, humanist depictions of architectural space were innovatively delimited using linear perspective, in which the image is fixed to a viewer's eye. Perspective remained the primary mode of pictorial representation late into the nineteenth century until another post-humanist, rationalist mode of pictorial representation challenged its authority: the axonometric.⁶ The perspective, although less measurable and inaccurate compared to the plan or the orthogonal projections, also has close relations to mathematics and worldview evolution.⁷

The perspective is seen as the variation of the concept of space, it changes the settings of the perspective, the positioning of the main point, or the rotation of the perspective plan.⁸ The perspective is also closely linked to modern language: gain perspective on something, get a new perspective. It does not only revolve around representation or depiction, but view, perception and opinion.

Axonometric - parallel projection

Definition: A projection in which a three-dimensional object is represented by a drawing having all axes drawn to exact scale, resulting in the optical distortion of diagonals and curves.⁹

The axonometric drawing originates from the reconstruction of city wall fortifications. The projection was initially created due to the involvement of architects into the military (hence

6 (Adler et al., 2012)

7 (Mørstad 2023)

8 (Jacoby, 1971)

9 (Thesaurus, 2024)

Gaspard Monge is considered the father of differential geometry because of his work *Application de l'analyse à la géométrie* where he introduced the concept of lines of curvature of a surface in 3-space (Aarnes 2023). It could precisely be the power of the code of the orthogonal projection, reinforced by the work of Gaspard Monge, that allowed them to remain until the early decades of the twentieth century: the concept of Facade, front elevation, side elevation as well as the permanence of the architectural order (Schillaci, Burelli, & Avella, 2009).

why many countries still use the term Civil Architect today). When the architect became a military planner an adequate system of representation was developed.¹ The projection was, until after the War, mainly used for depicting machines due to its precise and readable projection. After World War II, everything was called into question: politics, democracy, economic growth, visual arts, literary patterns. The beginning of the twentieth century presented fertile ground for the displacing of axonometric projection from the design of machines to architecture and architecture as a machine.²

The axonometric projection consists of putting together information about the plan with information about the profile. Because of its military origin and level of accuracy alongside readability it is still, by many, named the military axonometric projection. Many architectural critics assert that meaningful architectural representation was eroded by the technical instrumentality tied to a representation generated by the positivism of science.³

The axonometric projection is arguably the most disputed drawing representation of the modern architect. Meyer and Meyer argue in their book: *Textbook of axonometric projection theory*, “that central perspective, called the ‘painter’s perspective’, infinitely restricts the image to the eye; whereas axonometric projection, by virtue of its true parallelism in infinite space, ‘allows the eye to hover at each single point’, and is thus liberated and imaginative”.⁴

3D representation

1 (Schillaci, Burelli, & Avella, 2009)

2 (Buckminster Fuller, 2008)

3 (Adler et.,al. 2012)

4 (Meyer and Meyer, 1863, p.4)

Today, architects mostly use computer-aided design (CAD) for drawings, allowing for precise 1:1 scale representation by entering “actual” dimensions. However the creator sees it in the undetermined scale of their computer screen. The constant level of detail (with only line weight changing- determined by how much you zoom in and out), provides a deep immersion into a “drawing”, but the constant view of details makes the final drawing lose some of its initial purposes, unless it is edited according to scale - the purpose being - communication between stakeholders. Drawing by hand, however, limits the depiction to an appropriate scale according to the capacity of the hand, the paper, the media and the drawer.⁵

The computer screen

*“The digital drawing, too, is a kind of artistic act of abstraction on its essential elements, which turn it into a usable and beautiful drawing”*⁶

Definition: Computer-aided design is the use of software to aid in design processes. CAD software is frequently used by different types of engineers and designers. The software can be used to create two-dimensional drawings or three-dimensional models.⁷ Architects were initially hesitant to embrace the computer revolution due to cost and resistance within the field, but eventually found value in the software. Developers responded to architects’ needs by creating comprehensive 3D software, streamlining the design process and enabling architects to focus more on creativity. This transformation elevated personal computers to critical resources in architecture.⁸

5 (Schulz & Schulz, 2015)

6 (Schulz & Schulz, 2015, p. 19)

7 (Chai, 2020)

8 (Gordon & Stubbs, 1991)

A downside to this according to Gordon and Stubbs in their book *How Architecture Works*, is because computers are everywhere they have become important design considerations in themselves. The possibilities and restrictions of computer based design takes up a significant percentage of the energy consumed in most office buildings. According to Gordon we are now thinking of how to maximize the potential of the computer, how to get the best posture, best screen light and supply of clean power. We are thinking of this while we are sitting at our CAD stations and the computer is helping the architects better the environment for other computers.¹

“What has failed in the common digital drawing is the need for a “piori” thinking that involves choices about “what” to see, “how” to see it, and “why” see it in one way rather than another“.

Potential

“Considering technique as a dimension that creates thought with a set of bi-univocal reports, one wonders if and how the use of new skills can influence and change the way we represent, and, therefore, think about architecture.”²

The role of the architect has changed parallel with their available tools and mediums of representation. As technology, society, politics and the general professional environment has evolved, so has the architect adapted and taken part in the changes in society. The war marks a great change in architecture and the role of the architect as a critique to society, culture and politics. Both the development of 3D- drawing software, modernism, postmodernism, and

philosophical change in the world reflects in the architecture and in the potential of the architect today.³ A consciousness around what tools we use for what, at what scale and at what resolution is both important at an individual level, societal, political and environmental. In his book: *Seeing like a state*, the political scientist and anthropologist James C. Scott claims that; depiction can alter perception.⁴

1 (Gordon & Stubbs, 1991)

2 (Schillaci, Burelli, & Avella, 2009, p.39)

3 (Woods 1999 & Jones 2006)

4 (Scott, 2020)

Grid, a quick mention of a large subject

The grid is another tool architects have a close relation to. The grid is not elaborated in this essay, as the main focus will be on the concepts of scale. A grid on its own will only have potential for proper architectural scale relationships, if the intervals between grid components relate to objects of a known size (Moore & Allen, 1976). There are two major European systems for patterning space according to the anthropologist Edward Hall. One of these, “the radiating star” which occurs in France and Spain, is sociopetal. The other, the “grid,” originated in Asia Minor, adopted by the Romans and carried to England at the time of Caesar, is sociofugal. The grid system separates activities by stringing them out. Both systems have advantages, but a person familiar with one has difficulty using the other (Hall 1969). The grid is both mentionable in urban design, but just as much in the design of structure, scaling, and organization of the world. The grid is a concrete concept, conceptual phenomena, mathematical tool and unnatural natural reality of human perception - it is therefore too large a phenomenon to discuss in this text. ‘

4. Scale

*“Architecture is never constrained to the scale at which we might first perceive it”.*¹

Scale is a word which underlies much of architectural design practice in its history, theory and technology. Scale has traditionally been linked with the human, in the sense of relating to human societies and to human form. ‘To build in scale’ is an aspiration that is usually taken for granted by most of those involved in architectural production, as well as by members of the public. ²Scale as both a tool and a concept is embedded into the skin of an architect, but according to Adler we are taking it for granted. Casting our mind back in time to the first week of architecture school when we were turning the scale rule in our hands, as if it were part of some strange ritual. Or, before that, we might have used expressions such as being “in scale”, “off scale”, “large scale project” or “small scale”. According to Jaque in his introduction to the book: Superpowers of scale, in terms of

buildings and sites, scale is crucial in providing the right setting, physically and psychologically, for human encounter and wellbeing.³

The generally known way of thinking in terms of scale, according to architects, means abstracting the contents to be displayed in a scaled manner, and focusing on solving scale-relevant architectural problems. The choice of a drawing scale and model follows questions on the topics being covered; what information the drawing should have; and to whom the drawing is addressed.⁴ The concept of scale refers, according to the french architect and urban planner Philippe Boudon, also to the specific relationship between the abstract space of design and the tangible space of the built environment.⁵ The concept of scale emerges as a tool of architectural design thinking that makes it possible for architects to handle the fundamental question of how they should deal with the

1 (Jaque 2020:25)

2 (Adler et.al. 2012)

3 (Jaque 2020)

4 (Schulz & Schulz, 2015)

5 (Boudon, 2003)

relationship between the model of the building and the tangible reality this model represents.¹

Scale - term and concept

The older, more particular, meanings in the humanities, pertaining to classical Western culture, are where the sense of scale often resides in cultural production. Scale may be traced back, ultimately, to the discovery of musical harmonies, and in the arithmetic proportional relationship of the building to building parts. What is culturally specific about scale? And what does scale mean in a world where an intuitive, visual understanding is often undermined or superseded by other senses, or by hyper-reality? Adler challenges the accepted meanings, uses and interpretations of the term scale in his book.²

There have been two fundamental changes in our understanding of architectural scale over the last few decades. First, the growing medialization of the discipline of architecture, as well as its popular reception, has meant that we have become distanced from actual size relationships. Second, the effect of the computer has been to minimize scale differences in the act of design, and to distance the architectural object from the actual size of elements in its environment. These changes in architectural perception, reception and activity have been driven by social and technical 'advances', but have also been paralleled by new thinking in the arts and humanities.³

Charles Moore's practical exploration in *Dimensions: Space, Shape, and Scale in Architecture* addressed scale in the latter half of

the 1900s.⁴ However, Adler's "Scale: Imagination, Perception, and Practice in Architecture" signifies a more contemporary and less pragmatic approach to scale, presenting it as both an invented measuring tool and a discovered phenomenon; "*Scale is something we invent, a nominal device to measure with, or something we discover*".⁵

Measuring and the human body

Scale, and consequently proportion, as related to representation, has a long tradition of being related to the human body. 'Near' is a place to which we can get quickly on our feet, not a place to which the train or the car will take us quickly. 'Far' is a place to which we cannot get quickly on our feet. We are the measure, our feet are the measure for distance and our hands are the measure for ownership.⁶ Adler explained that, the commonly used measures of the rational metric remain close to the old measures based on the human frame: the meter, for instance, is to all intents and purposes an English yard. So even where great abstractions allegedly rule our observations of the world, we feel most comfortable with ones that have an intimate connection with the human body.⁷

Architects bear the responsibility of articulating, understanding, and working across scales. According to the American anthropologist Edward Hall, interdisciplinary collaboration becomes crucial when considering the psychobiological aspects of design.⁸ Both behavioral science and aesthetics take on challenges at the social scale, where assumptions

1 (Albertsen & Lundequist, 1999)

2 (Adler et.al. 2012)

3 (Jaque, 2020)

4 (Moore & Allen, 1976)

5 (Adler et al., 2012 p. 33)

6 (Moore & Allen, 1976)

7 (Adler et al., 2012).

8 (Hall 1963)

about a singular emotional unit clash with statistical averages and subjective ratings.¹

Returning to the topic of the axonometric projection: the infinite top down or “bird eye” view of the parallel projection was challenged by the “worms-eye view”. The subjectivity of the worm’s-eye view pulls the viewer into the space of the building. Such rational, scaled drawings denote the spirit of architecture’s essence – the space of the structure and the space of man.² This bottom and top view, worm and bird - allowed for the axonometric projection to work across scales. In the sense that it has a measurable scale, but gains a conceptual, spiritual and subjective forced perspective, created by the creator of the drawing. It illustrates how a parallel projection becomes meaningful due to point of view. The worm’s eye perspective, a ground-up projection, immerses us into the human scale, emphasizing the subjectivity of projection within the spatial boundaries of architecture.³ Compared to other parallel projections or the orthogonal, which demands us to abstract and interpret our own position in relation to what is being depicted.

Scale controlling perception - a power tool

It seems that scale has tended to conform to rather simplistic characteristics, either side of the political and artistic debates pertaining to relative size. According to Jaque, human scale is a crucial determinant of a comfortable and meaningful environment. This has real political and social grip in today’s world of ever-increasing gigantism. However, digital tools seem to be here to stay: it is an indisputable part of lived experience across

the globe today, and has been a central aspect of modernist aesthetics for a century now.⁴

Rhetorical architecture

“An object taken out of a situation/proportion/scale is an ethical problem.” Adler advocates for challenging synthetic ideas by embracing a nuanced understanding of scale. Using Aristotle’s ethos/pathos/logos model as a metaphorical procedure, the author explores the potential in embodying design principles within a small scale, offering architects greater control over decision-making. Ethos, pathos, logos could be envisioned as a kind of rhetorical programme, as a guide for judgment within the realm of various scales of practiced activities also for the architect. Scale is a mode of thinking that relies on careful consideration and facilitates the transference between large and small. It is in the situational nature of practice that scale emerges as the crucial link between size, ethics and meaningful building.⁵

*“Problem with the predictability and stability of scale is not just limited to architecture “.*⁶

1 (Helen Mallinson in Adler et al., 2012).

2 (Adler et.,al. 2012)

3 (Bloch 1995)

4 (Jaque, 2020)

5 (Adler, et. al., 2012).

6 (Adler, et.al. 2012 p. 258)

The scale of everything

According to Adler, architecture is not confined to initial perceptions of scale. The significance of architecture lies in its interconnection with various entities: environments, infrastructure, financial plans, policies, biological designs, advocacies, and activism. Its impact unfolds as it transitions across scales: climatic, material, technological, spatial, and temporal: articulating larger reality-making apparatuses such as plans, discourses, ideas, calculations, regulations, and genetics. The agency of architecture is rooted in its ability to surpass limitations imposed by scale.

1

Scale as a concept within architectural practice, but also as a tool for the public to organize the world around us, should be part of a continuous discourse. We should be conscious about what scale we choose, what that scale involves and how that scale affects human perception. Interdisciplinary collaboration is crucial to both understanding a situation and all its stakeholders. In the world of digitalization, questioning scale is essential to future architectural practice and involvement. Working across scales is a means of being conscious in architectural practice, understanding and practicing that nothing works or lives in 1:100 but everything is in 1:1.

1 (Adler et al., 2012).

5. Potential of our role

Architecture's main role today is compositional. Architecture brings together and organizes diverse elements, operating in various time and space settings between, with and against disciplines. Viewing architecture in this manner doesn't diminish its identity as design objects. Instead, this perspective helps highlight the political aspects of shaping forms and the impacts they have.¹

Architecture is not about space, nor about containment. It's not possible for architecture to spatially contain the trans scalar societal compositions where life, politics, knowledge and interactions happen. Architecture extends beyond human scales to engage with the microbiological, mineral, geopolitical, climatic, technological, and ecosystemic realms. It avoids linear narratives, ignores easy solutions, and questions the notion that social spaces are easy to agree on.² Architecture in itself is both conscious and unconscious

depictions of society, reflections of human perception of both themselves and the world. The architect needs to reflect on their role, their responsibility, and in a changing sphere of scale perception, where all mysticism is scraped away by science or politics, the architect needs to reinvent and adapt their position.

Smith and Steinø further argue in their book; Public space design between alienation and appropriation, that the role of the architect needs to be discussed. The design and materialization of space in urban practices must include a role for the architect where they are between segregation and intolerance and concussion and curiosity. While the design approach may vary, it ultimately plays a large role in determining the scope of inclusion offered in a particular space and the degree to which space is appropriated as place.³ The engagement with scale in art and perception broadens the discourse surrounding architectural representation and the role architects

1 (Jaque, 2020)

2 (Adler et al., 2012 & Jaque 2020)

3 (Smith & Steinø, 2018)

play in shaping the built environment. This expanded perspective reinforces the need for architects to navigate the intricate interplay between physical dimensions, conceptual spaces, and societal contexts. It is evident that the potential of architectural tools, including the nuanced understanding of scale, extends beyond the confines of conventional practices.

“Today it is obvious that architects are breaking away from the rather limited inventory of architectural styles based on the European intellectual tradition. Therefore, placing the stamp of quality on a given piece of architecture will become increasingly difficult and complex as time goes on. I think the day will come when architects and town planners will work much more closely with anthropologists, sociologists and psychologists, for I believe that architects will increasingly come to value their research on the basic space requirements of various groups or people. The architecture of the future will be judged not only by how well he makes his statement but also on whether there is congruence between his statement and the context in which it is being placed”.¹

1 (Hall 1963 p. 4)

6. Conclusion

How can we expand the role of the architect, and how can architectural tools and understanding of scale bring new and meaningful input in unconventional discourses?

In conclusion, the exploration of scale as a concept in architecture reveals its multifaceted nature, extending beyond the mere representation of physical dimensions. As articulated by Schillaci, Burelli, and Avella, the consideration of technique and the adoption of new skills in representation provoke contemplation on how architecture is perceived and, consequently, conceptualized.

The evolution of the architect's role, intertwined with technological advancements, societal shifts, and political dynamics, underscores the dynamic nature of our field. The traditional association of scale with the human body, as exemplified in Moore and Allen's assertion that "we are the measure," is explored in the context of architectural representation. Gerald Adler's work challenges conventional meanings and interpretations of scale,

emphasizing its transformation in the face of technological advancements and societal changes.

The broader implications of scale, links societal, political, and environmental aspects of architecture to conceptual scale. Throughout this essay we have argued that scale is a powerful instrument in spatial design, not just for zooming in and out but for choosing the right scale in which design problems should be addressed and represented.

The exploration of scale as a rhetorical program, guided by Aristotle's ethos/pathos/logos, adds a nuanced perspective to architectural judgment and demands a wide, cross scaled perspective on design. The notion of scale as a means for the utilization of references in conception or perception, as articulated by Albertsen and Lundequist in the *Nordic Journal of Architectural Research*, underscores the dynamic role of scale in shaping not only physical dimensions but also the conceptual space within which architecture is conceived.

Architects carry the responsibility of articulating, understanding, and working across scales. In the world of digitalization, questioning scale is essential to future architectural practice and involvement. The concept of scale emerges as a tool of architectural design thinking that makes it possible for architects to handle the fundamental question of how they should deal with the relationship between the model of the building and the tangible reality this model represents.

In summary, the exploration of scale in architecture and perception serves as a fitting conclusion to the essay, highlighting the dynamic and multifaceted nature of scale within the broader architectural discourse. It invites further contemplation on how the understanding of scale contributes to the meaningful conception of architectural space and the evolving role of architects in a changing world. The words of Hall "the future of architecture may lie in closer collaboration with anthropologists, sociologists, and psychologists, acknowledging the intricate interplay between architectural statements and their contextual congruence"¹, remains relevant in 2024. We conclude by emphasizing the potential of architectural tools in transcending conventional scales. Architecture is portrayed as a dynamic force that exceeds scale containment, contributing to societal compositions and engaging with diverse domains beyond traditional human-centric perspectives.

1 (Hall 1963 p. 4)

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