

Towards A Critical Optimism in Architecture

Abe Bonnema Lezing 2023

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by

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Dear Marcella Bonnema, Ed Nijpels, Marc Visser of the Abe Bonnema Foundation

Dear Rijksmuseum's General Director, Taco Dibbits
Distinguished colleagues and friends

Why Optimism is better than Hope

One might ask, "Is optimism merely a sophisticated term for hope?" In my view, while hope is akin to a distant light at the tunnel's end, optimism is the torch we bear, illuminating our journey. It represents proactive collaboration rather than passive anticipation. Hope dreams; optimism plans and acts. It embodies a leap of faith, fully aware of the potential stumbles along the way.

In architecture, optimism is not a luxury; it is a necessity. Each line we sketch, every concept we imagine, is imbued with the conviction of crafting a brighter tomorrow. Our blueprints are more than drawings; they are optimistic affirmations of our ability to elevate human lives.

Redefining the Optimistic Narrative

But let's ponder – is this perspective overly idealistic? If simplicity reigned, we might swiftly proceed to celebrate the exemplary projects that encapsulate this optimism.

Initially, I was captivated by the theme – a resonant blend of personal and professional ethos. However, a second, more reflective thought emerged: Does emphasizing optimism today implicitly acknowledge its scarcity in contemporary practice? In the maelstrom of challenges – local, national, global, and planetary – have we relinquished the optimistic spirit required to navigate these turbulent seas? I choose to believe otherwise. Despite the inundation of disheartening headlines, our true test lies in forging a path of action amid these crises. The solution is not straightforward.

Global Challenges

The context is opportune for reflecting on architectural optimism. Half a century post the seminal 1972 Club of Rome's "Limits to Growth" study, we face the dual responsibility and chance to reorient architecture's foundational design principles. Because – this much is certain – we will no longer save the planet with pen and paper. As we confront an era defined by urgent upheavals – technological, economic, social, ecological – these are not abrupt anomalies but the culmination of decades-long developments.



Sultan al-Jaber, the CEO of Abu Dhabi National Oil Co., is elected to speak for the upcoming COP28 summit in Dubai, the United Arab Emirates. Photo: Kamran /AP

Concurrently, critical decisions unfold in Dubai at this year's UN Climate Change Conference COP28. These global gatherings transcend mere meetings; they represent a nexus where politics, practice, and science intersect, ideally steering action. However, as gleaned from a recent interview with the current chairman of the conference – incidentally, the president of the local oil conglomerate – navigating these issues is frequently tainted by double standards.

Yet, let us not be naive. The journey to confront the significant challenges of our era was never foretold to be simple or equitable.

Nevertheless, it's essential to pause and consider the larger context. By comprehending the wider scope, we attain a more lucid understanding of these interrelated challenges. This serves as a reminder that in our quest for solutions, be it in architecture, technology, or environmental policy, we must consistently be conscious of the interconnected nature of our actions and their ramifications on both the digital and ecological spheres.

From a Post-Industrial World to Network Societies

The inception of the Climate Change Conference approximately 30 years ago, in the early 1990s, signified a critical shift in our global environmental awareness. This era was concurrently marked by another groundbreaking event: the emergence of the Internet at the European Organization for Nuclear Research (CERN). Initially conceived as a mechanism for rapid and efficient information exchange within the scientific community, it gradually transformed into the foundation of what is now recognized as the “Network Society”. This concept, introduced by Dutch scientist Jan van Dijk in 1992, encapsulated the essence of this newly interconnected epoch.

In that same epochal year, Abe Bonnema unveiled the Delftse Poort towers for the an insurance company in Rotterdam. These buildings, with their reflective facades, mirrored not only the urban landscape and the shifting skies but also embodied the dynamic essence of Rotterdam.

The Bonnema towers emerged as a symbol of the burgeoning 'post-industrial society' that began to take shape following the 1970s and early 1980s. This era marked a transition from traditional craftsmanship and

manufacturing to an information-driven economy, propelled by the advent of 'immaterial labor' and new neoliberal paradigms. This shift heralded a move from localized production to global services, resulting in a surge in office building construction – edifices that now frequently stand empty, awaiting demolition or repurposing.

As we transitioned into the 2010s, the full manifestation of the data society became apparent. This period is characterized by developments ranging from delivery service platforms to the proliferation of deep fakes, and from advancements in machine learning to the advent of AI-generated imagery and text, as we utilize today. It is only now, in this moment, that we are beginning to comprehend the extensive implications of existing in a data-dominated society. This evolution, from the nascent days of the Internet and mirrored towers reflecting societal change, to our current data-centric reality, underscores an extensive transformation. As architects, we are charged with navigating this intricate maze of change, where our buildings, urban spaces, and digital realms are seamlessly interconnected.

In today's world, the cultural sphere is profoundly digital, defying a purely cultural interpretation – just as the digital realm is steeped in cultural significance, resisting a solely digital understanding. Technological questions inevitably raise cultural considerations – and vice versa. While this may seem self-evident at first, its true complexity is often overlooked.

The paramount question of the 21st century is: What does it mean to design within a society striving to balance Artificial Intelligence, the datafication of life in all its facets, rapid global migration, and pressing environmental challenges?

Blurring Lines

Today, we find ourselves in an era where the boundaries between human and machine, design and data, are becoming increasingly indistinct. Machine learning is not only transforming the design tools at our disposal but is also reshaping our fundamental approaches to storytelling, creation, and understanding. Traditionally a static medium, the written word is now evolving into an interactive dialogue – a fusion of human insight and machine intelligence. Reading is becoming a collaborative journey, with algorithms capable of interpreting, suggesting, and even creating content. This evolution marks a new era in reading and writing, characterized by fluidity, interactivity, and unprecedented creative possibilities.

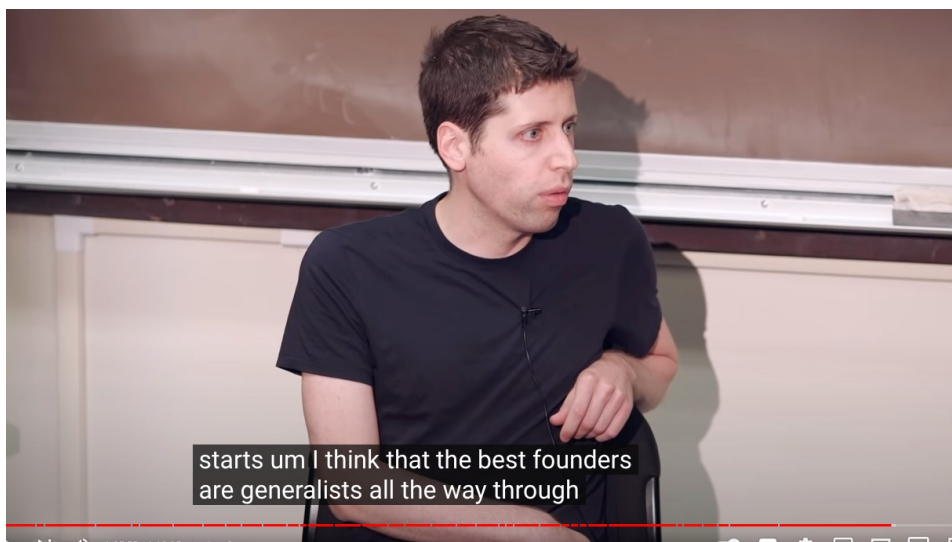


“Hey ChatGPT, finish this building...” Billboards on an unfinished building in Antwerp, Belgium. The advertising was created for IMPACT, a Belgian employment agency in construction. Image: Impact.

In this changing landscape, buildings are assuming new roles and meanings. As architects and urban planners, our task extends beyond merely designing structures. We are charged with creating ecosystems that blend the physical with the digital, thereby enriching the human experience in a world increasingly governed by data and AI.

The Architect's Role in a Data Society

Before delving into the profound insights of Sam Altman, let's briefly introduce this influential figure. Altman is a renowned entrepreneur and technologist, best known as the co-founder and CEO of OpenAI, a leading artificial intelligence research lab. With a background in computer science and entrepreneurship, Altman has been a pivotal force in the tech industry, previously serving as the president of Y Combinator, one of the most successful startup accelerators globally. His work and thoughts, particularly on the intersection of technology, society, and economics, have been influential in shaping current discussions on AI and its role in our future. Altman, in an early interview with Stanford University, not only highlighted the significance of generalist thinking but also, perhaps inadvertently, underscored a fundamental truth about the role of architects in society.



Sam Altman was interviewed at Stanford University, 2015.

Altman's focus on the importance of "generalist thinking" in shaping our future and addressing the complex challenges of our time deeply resonates with the field of architecture. His advocacy for a broader, more integrative approach amidst an era of increasing specialization is not only refreshing but also highly pertinent.

Altman's perspective serves as a clarion call for a return to holistic thinking. He suggests that solutions to some of our most pressing issues – ranging from climate change to social inequality – are unlikely to emerge from isolated specialties. Rather, they are more likely to arise from the integration of various knowledge domains. This requires the ability to connect dots across different areas, developing solutions that are not only human-centric and technologically advanced but also aesthetically compelling.

For architects, this translates into a role that encompasses both connector and curator within our data society – merging design data with environmental insights to create spaces that are functional, beautiful, and socially and environmentally responsible. In essence, architects become curators of experiences and facilitators of community.

Illuminate 'Critical Optimism' in History

The exploration of 'critical optimism' within architecture presents a profound framework for understanding the evolving role of architects in society. To delve deeper into this concept, we will examine three historical architectural examples that illustrate this philosophy. These selected case studies serve as more than mere examples of innovative design; they are testaments to the enduring spirit of optimism and practical engagement with the multifaceted challenges and opportunities of their times.

Each example, in its unique context, reveals how critical optimism has been and continues to be a driving force in architectural thought. Through these historical lenses, we gain invaluable insights into how architects have historically navigated complex social, environmental, and technological landscapes, offering us guiding principles for envisioning optimistic futures in our own era.

The Building as Medium

The first example is about Hans Hollein, the celebrated Austrian architect. He was a true visionary. As a pivotal figure in the architectural avant-garde of the 1960s, he anticipated the evolving role of the architect at the confluence of burgeoning digital culture and the emergent post-industrial society. His work and thought process were instrumental in reimagining the boundaries and potential of our profession.



In December 1969 the Austrian TV station ORF broadcast a half-hour portrait of the architect Hans Hollein, including a presentation of Hollein's Mobile Office project: essentially an inflatable plastic bubble in which one person could sit and work.

One of Hollein's most iconic creations, "The Mobile Office," is a quintessential representation of this innovative spirit. The image of Hollein, engrossed in his work within a transparent bubble, surrounded by emerging media and communication technologies, symbolizes the fusion of architecture with early digital culture. This portrayal has become synonymous with the mediation of design and the evolving role of the architect, powerfully illustrating the architect as a forward-thinking individual adept at navigating the nascent landscape of digital technology.

However, while this image continues to be influential and is celebrated for its foresight and vision, it also reflects a perspective that might seem somewhat dated in today's context. Contemporary architectural practice, like many creative and professional fields, has evolved into a more collaborative, team-oriented approach.

Despite this, Hollein's work remains a significant source of inspiration, prompting us to reflect on how the architect's role and the nature of creative work have transformed from the post-industrial era to our current data-driven society. In this context, architects become facilitators and curators, using their skills and knowledge to create spaces – both physical and conceptual – where information exchange, learning, and community involvement can take place. This role is crucial in today's world, where urban and environmental challenges require not just technical solutions but also informed and engaged citizens.

The Building as Information

To illustrate an example that perhaps aligns better with our current understanding of design in the data society, let's consider a different scenario, one that operates more on an institutional level of knowledge production for society. That underscores an essential shift in perspective regarding the role of architects. It's not solely about individual contributions but more about creating platforms for informing and engaging society. This approach reflects a broader, more collaborative vision of architecture, where the focus extends beyond designing buildings to fostering informed communities and participatory urban development.

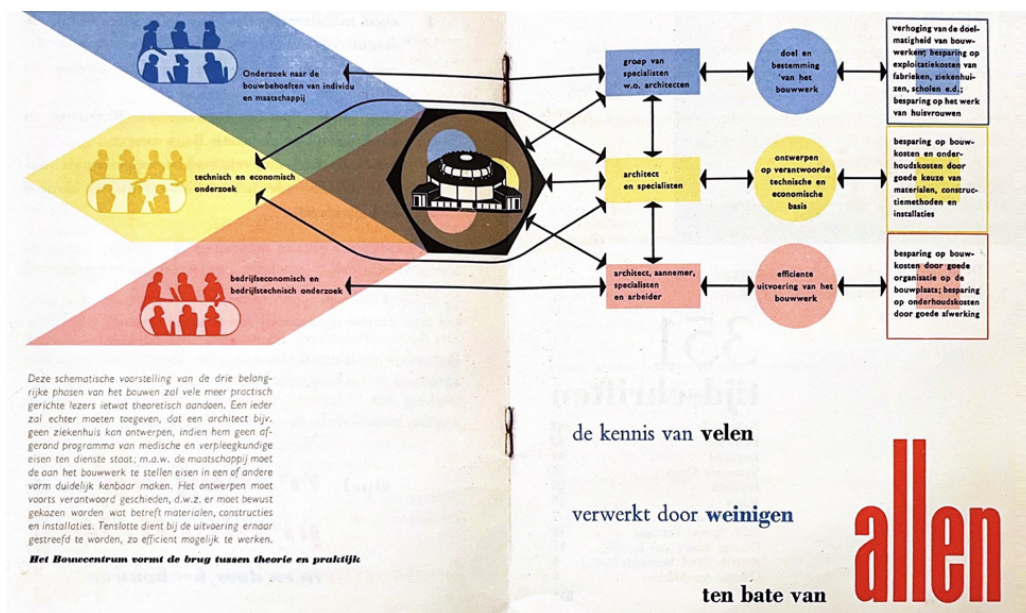
Immediately after WWII, the Netherlands had a monumental task: rebuilding damaged and destroyed infrastructure and homes. The Bouwcentrum Rotterdam was established in 1947/48 as a statistical office tasked with documenting, supporting, and promoting the country-wide reconstruction efforts. It became a crucial institution that connected architects, urban planners, interior designers, the construction industry, and the public. They worked together, sharing knowledge and collaborating as they attempted to tackle this massive challenge.



Image of the Bouwcentrum Exhibition Pavilion, designed by J.W.C. Boks in 1948, located at Diergaardesingel, Rotterdam. Image: National Collection for Dutch Architecture.

Data and statistical thinking formed the methodological basis of the Bouwcentrum Rotterdam. The institution's founding director, Jan van Ettinger (1902-1981), an expert in statistics, had joined the Central Bureau of Statistics in 1939. Working alongside influential graphic designers, artists, and researchers like Gerd Arntz, Otto Neurath, Philip Idenburg, and Jan Tinbergen, he made significant contributions and helped develop ISOTYPE (International System of Typographic Picture Education), a groundbreaking method for bringing statistical data to life through visuals.

The Bouwcentrum was a knowledge hub for the built environment. It operated as an information and documentation centre for architects, planners, and the public in the Netherlands. The Bouwcentrum had three main objectives: First, they wanted to provide “impartial information” to architecture and the construction industry, to become a reliable source of unbiased and accurate information that could inform design decisions. Second, Bouwcentrum wanted to serve as a bridge connecting academic theory and real-world praxis. Finally, the founders of the Bouwcentrum aimed to create a truly international system of cooperation. The credo of the Bouwcentrum, 'The knowledge of many. Processed by the few. For the benefit of all,' encapsulates a vision that is remarkably forward-thinking and resonates even today.



“The knowledge of many. Processed by the few. For the benefit of all”
 Bouwcentrum Diagram, 1951, Image: Den Haag National Archive

Van Ettinger and his team understood the value of connecting with experts and organisations around the world. They wanted to ensure that knowledge and best practices could be shared so that advancements in one part of the world could spread quickly. They wanted to improve the built environment not just in the Netherlands, but everywhere.

These three objectives—providing impartial information, bridging theory and practice, and promoting international cooperation—drove Bouwcentrum, guiding its initiatives and ensuring its lasting relevance. Their immense impact in the world of post-war architecture continues to reverberate in the twenty-first century.

One of the most notable creations of the Bouwcentrum was the exhibition pavilion designed by Joost Willemsen Cornelis Boks in 1948. This round building, envisioned as a publicly accessible information center, also symbolized resilience and recovery. In a time when building materials were scarce, the construction of such a pavilion was not only an economic investment but also a national symbol of reconstruction and optimism.

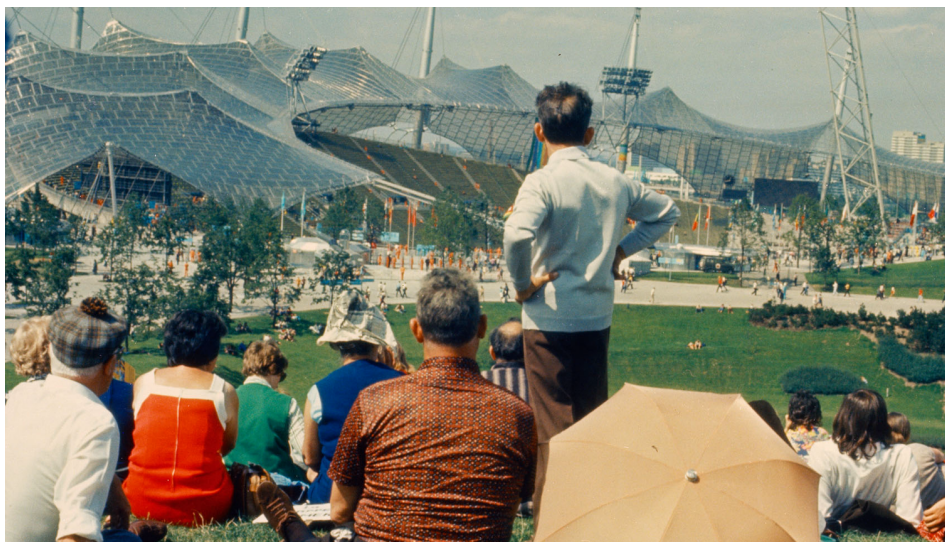
The Building as Open Space

Rethinking the concept of the building need not always be synonymous with the creation of new institutions, as exemplified by the Bouwcentrum.

Let us reflect on the work of Frei Otto, a pioneering German architect renowned for his unconventional and optimistic approach. Before exploring his distinctive approach to architecture, it's important to recognize Otto as a seminal figure in the field. A pioneering German architect and structural engineer, Frei Otto is renowned for his revolutionary work in lightweight, tensile, and membrane structures. His approach was deeply inspired by natural forms and structures, leading him to champion sustainable and efficient design principles.

Drawing inspiration from the myriad forms found in nature, Otto explored the fascinating interplay between biology and construction. He looked to the structures of cells, bones, and spider webs, drawing from these natural marvels to inform his architectural designs.

His experiments with simple materials like soap and water resulted in the creation of strong, aesthetically pleasing structures. Otto's work is a testament to the idea that revolutionary architectural concepts can emerge from the most unexpected sources. What sets Otto's work apart is his approach – it was not merely about construction, but about innovation and creative thinking. His methodology revolutionized the way we approach architectural design, shifting the focus towards problem-solving and inventive thinking.



Iconic tent-like roof landscape developed by Frei Otto for the 1972 Olympic Games in Munich, designed by Günter Behnisch, Frei Otto Archive, saai/KIT

Frei Otto's legacy includes a range of groundbreaking structures. Perhaps most famous is the roof of the Munich Olympic Stadium for the 1972 Olympics, a stunning example of his work with tensile structures. Another notable project is the Multihalle in Mannheim, Germany, a gridshell structure celebrated for its innovative and organic design. Additionally, his work on the West German Pavilion at Expo 67 in Montreal showcased his expertise in creating avant-garde, lightweight structures. These projects, among others, highlight Otto's profound understanding of the natural environment and his dedication to architectural solutions that are both sustainable and harmoniously integrated with their surroundings.

Frei Otto's philosophy and designs transcended traditional architectural thinking, inspiring generations of architects and designers to explore the boundaries of space, material, and structural possibilities. His influence remains a touchstone for innovative architectural practice.



Soap Bubble Experiments, 1961, Image: Frei Otto Archive, saai/KIT

My greatest interest lies not in superficial digital enhancements to the built environment, nor in the relentless pursuit of more advanced technology for its own sake. These approaches neither advance the art of design nor contribute meaningfully to the betterment of the world. Rather, my fascination lies with collaborative think tanks that aim to fundamentally reimagine architecture through technology, not merely by applying it, but by redefining the very parameters of design. I am captivated by architects who view the environment as an open system, developing tools and crafting new narratives in design through coding. Equally intriguing are designers who find the seeds of social innovation in experimental thought.

This revision enhances the focus on optimism in architecture, emphasizing the innovative and forward-thinking approaches of architects like Frei Otto, and exploring the broader implications of these philosophies in modern architectural design.

The Building as Microchip

Fritz Haller, a Swiss architect of notable repute, was another figure who uniquely blended architectural practice with design innovation. Following the Second World War, Haller honed his skills at the esteemed Rotterdam architectural firm Willem van Tijen & Maaskant. This experience paved the way for his later achievements, which included a collaboration with Konrad Wachsmann in Los Angeles, where they focused on developing geometry-based modular systems for industrial buildings and housing – a testament to Haller's versatility and foresight in architectural design.



USM pavillon designed as the first open office landscape by Fritz Haller, Münsingen/Bern, Switzerland, 1967, Fritz-Haller Archive, gta/ETH Zurich

While Fritz Haller's name may not immediately ring a bell for many, his influence is unmistakably present in the realm of design. A stroll through the Museum of Modern Art in New York or a visit to the Research Center of the Nieuwe Instituut in Rotterdam will reveal a piece of furniture that has transcended time and style to become an international design classic: the "USM Haller" system.

This modular furniture system, known for its flexibility and elegance, has found its place in the most sophisticated architects' offices and stylish living rooms around the globe.

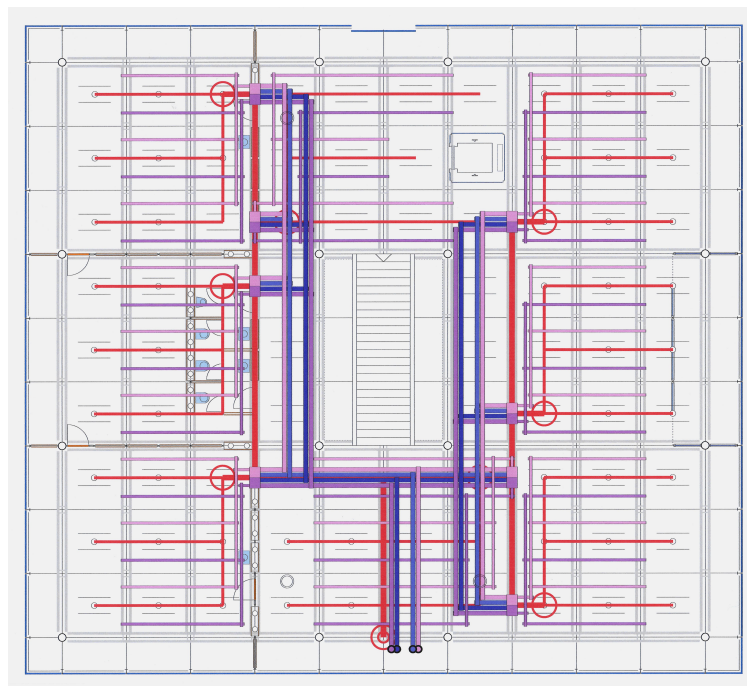
Fritz Haller's collaboration with USM (Ulrich Schärer Münsingen) marked a defining moment in furniture design. In the 1960s, he was commissioned to design a new factory building for USM in Münsingen, Switzerland. It was during this project that Haller conceptualized the modular furniture system known today as the "USM Haller System." This system was initially created to meet the flexible interior needs of the new USM factory. However, its innovative design quickly gained recognition for its versatility and aesthetic appeal, leading to its commercial production in 1965.



USM factory designed as a modular construction system by Fritz Haller, Münsingen/Bern, Switzerland, 1965, Fritz-Haller Archive, gta/ETH Zurich

The USM Haller System is renowned for its sleek, modular design, allowing for endless configurations. Its signature chrome-plated brass ball joints and powder-coated steel tubes and panels exemplify Haller's commitment to both form and function.

Haller represented a new generation of architects with tangible experience in building. Alongside notable architects like Alfons Barth, Hans Zaugg, Max Schlup, and Franz Füeg from the Solothurn region, Haller gained international recognition in the early 1950s as a protagonist of the so-called Solothurn School. His architectural research, however, distinguished him with a unique position.



Planing Software Armilla, by Fritz Haller, ca. 1984

Haller sought to geometrically classify building systems based on their spatial and temporal attributes. Central to his work was the development of a "grammar" to assist in system planning. This involved theoretical and practical development of tools for planning multidimensional structures, capturing regularities in such systems and making them visible through models. This multidimensional approach illustrates how architectural objects evolved into assemblages of structures and relationships, shifting focus from individual buildings to systems, from objects to series, and from permanence to changeability.

Around 1980, Haller, alongside a team of architects and computer scientists, embarked on groundbreaking research into digitizing modular systems. The outcome was the planning software Armilla, inspired by Italo Calvino's narrative in "Le città invisibili." This digital platform, conceptualized and technically evolved over the years, integrated interactive tools and AI-supported systems to aid designers in the planning process, enhancing construction knowledge with tools knowledge.

Haller's innovative approach to tools stemmed from the core of industrial construction – the spatial world of geometry and temporal assembly processes. He drew parallels between construction assembly processes and the construction of microchips, emphasizing the similarities in their structural logic. In an interview in the late 1990s, Haller advocated for a new language to represent interlinked relationships, drawing comparisons between computer chips and modern art, illustrating the intricate connections between technology and culture.

Fritz Haller's genius lay in his ability to transform the structural thinking of industrial construction into the operational logic of information technology. In a world increasingly characterized by miniaturization and virtualization, Haller's insights not only demonstrate the evolving nature of architectural practice but also underline the importance of embracing change and innovation. His work inspires us to remain optimistic about the future of architecture, encouraging us to think beyond the tangible and explore the vast potential of integrating technology with our built environment.

Envisioning the Future

In reflecting on the journey from the experimental designs of the 1960s and '70s to our present reality, it would be overly simplistic to draw a direct line. The era's idealism and originality in design, marked by individual architects and engineers, now face a more critical agenda: the pressing challenge of global climate change and our collective responsibility, as architects and designers, to address and reverse its effects.

Architectural design stands as one of the most intricate cultural forms of knowledge in our world. To design is to briefly grasp the history, present, and future of architecture, and of ourselves, in a singular vision. It's akin to peering through a prism into the vast expanse of space and time.

As architects, our role is multifaceted. We understand digital technologies not merely as isolated solutions but as integral to broader social contexts. This understanding necessitates a departure from conventional mindsets, fostering new methods of perceiving digital realities, and seeking specific, innovative solutions for the future rather than relying on generalizations about the present. Creating new paradigms for the future, particularly those that address social and environmental issues, requires us to build upon our experimental past while forging a collective vision for what lies ahead.

The End of 'Quick and Dirty'

Fritz Haller reimagined buildings from a systems perspective. Frei Otto approached them through the lens of lightweight construction. Today, our challenge is to reconceptualize buildings in the context of data. How can AI contribute to our design processes? And how are data-driven technologies reshaping our concepts of privacy, security, comfort, health, citizenship, and our interconnections within the world?

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In our journey toward redefining the future of architecture, I think, we are witnessing the end of the 'quick and dirty' era – a shift from expedient, short-term solutions to meticulously crafted, sustainable futures. This transformation marks a significant turning point in our approach to architectural design, underscoring the importance of quality, sustainability, and thoughtful consideration in every project we undertake.

Crafted Futures

The concept of 'crafted futures' speaks to a new era of architectural practice. It's an era where the quality of our living environments takes precedence, emphasizing the need for spaces that are not only aesthetically pleasing but also conducive to well-being, environmentally responsible, and adaptable to future needs. This approach requires a deep understanding of materials, culture, community needs, and environmental impacts, fostering a harmonious relationship between the built environment and its inhabitants. As architects, our role is pivotal in shaping these 'crafted futures.' It involves a commitment to excellence, a dedication to detail, and a responsibility to envision spaces that enhance the quality of life for present and future generations. By moving away from the 'quick and dirty' mindset, we embrace a philosophy that values longevity, functionality, and beauty, ensuring that our architectural legacy contributes positively to the world we inhabit and the future we are building.

As we stand at this pivotal moment in history, our role as architects is not just to build but to envision, innovate, and respond to the urgent needs of our planet. Our optimism lies in our ability to embrace these challenges, to rethink and reshape our built environment, and to contribute meaningfully to a sustainable, interconnected future.

Architecture is an unending quest for new models of coexistence and community – socially, politically, aesthetically, technically. It's a relentless pursuit of the unknown, our most precious resource: the future. To reach this goal, we need not reinvent architecture; rather, we must collectively rediscover it.

Let us remain critically optimistic, embracing the future with open minds and collaborative spirits.

Thank you.