

Precarity, the future of architectural research in a time of much uncertainty

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No better term captures the sentiment many of us feel given the times we live in as that of, ‘precarity’. Whether concerned for the health of our planet as professionals who teach and conduct research on the built environment, or troubled as citizens by increasing challenges to the fair and equitable distribution of our limited material resources, we live in unsettling times. In the global north and south, summers are plagued with over-exposure to blistering temperatures and excessive heat warnings. In Southeast Asia, threats to human habitat accompany each massive flooding event, while hundreds of millions involuntarily breath catastrophically high levels of parts per million of toxic air. Postindustrial landscapes in the West continue to reveal their nineteenth century scars, where social determinants of health remind us how cities are unequal. While citizens of developing countries continue to be overlooked by the prejudicial distribution of capital. The rush to build projects for the wealthiest five percent perpetuates luxury economies that continue to separate the haves from the have not. And, at the very center of these vastly unsustainable and unethical practices are our extractive design and building industries.

A large number of doctoral researchers chose to answer our call for papers which asked: **What is the future of architectural research in a time of much uncertainty, when instability, insecurity, and risk plague the contemporary production of architecture?** In spring 2022, barely six months following the partial re-opening

of academic institutions following the most cataclysmic global public health event of the past hundred years, the PhD program in Architecture at the Weitzman School of Design of the University of Pennsylvania hosted an online doctoral conference featuring the work of promising new scholars and researchers dedicated to the theme of ‘Precarity’. Students working across the architectural fields evidenced, described, analyzed, and interpreted the various ways that uncertainty and volatility have impacted the built environment and those who design, build, occupy, and operate within it. As chair of the PhD Program in Architecture, and alongside graduate students Sarah Alajmi, Mostafa Akbari, Rami Kanafani, and M.C. Overholt, conference organizers engaged in a peer-review process to identify significant examples of scholarship and research that would contribute to the discussion. The doctoral papers included in this special edition of *ENQ, The ARCC Journal for Architectural Research* began their lives as papers presented during the Precarity conference in April 2022.

Keynote presentations by leading researchers in the field were curated with the goal of highlighting prominent voices at the center of the discourse around critical technologies, post-coloniality, diversity, labor, and empowerment. Architectural historian Ana María León in her piece “A Ruin in Reverse,” spoke of spatial practices of power and resistance that have shaped modernity and coloniality in the Americas: urban and social theorist Natasha Iskander discussed the political

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environment of building labor within spaces of migration in her address “Does Skill Make Us Human? The Making of Urban Futures in Qatar and Beyond”: architect, artist, and digital researcher Vernelle A. Noel argued for socially determined design practices at the intersection of digital technology, interdisciplinary creativity, and human-computer interaction in her presentation “Craft, Culture and Computing: Grounding our field in the social.”

Doctoral papers, here included, were solicited and organized around three of the sub-fields typically subtended by architectural research: technology, design, and history and theory. “Technology’s Boundaries and Affordances” questioned how architectural technology might address the urgencies and probable harms occasioned by environmental traumas, resource scarcity, and extreme climate. Papers in this group foreground the need for interdisciplinary engagements with energy efficiency, thermal comfort, healthy buildings, and environmental justice. To this end, Debanjali Banerjee’s paper investigates the disproportionate impact of the Urban Heat Island effect on vulnerable populations such as low-income individuals living in the inner cities of the United States. While Mandi Pretorius’ paper reminds us that water scarcity and security are matters of governance where regulatory structures are often to blame for the uneven distribution of this most essential of resources. Mitigating future risks, according to Praetorius, requires new models of decentralization if cities and their citizens hope to avoid the desperate scares of the ‘Day Zero’ drought in Cape Town, South Africa. Technology’s boundaries and affordances are also of interest to architects working at the intersection of digital design and fabrication, material innovation and generative design. In this space, the work of Mohamed Ismail in less economically developed countries recognizes the very real cost of using material resources that are structurally unnecessary. Instead, adopting innovative 3D-shape parameterization techniques, Ismail optimizes the cross-section of beams to reduce the amount of structural concrete and hence, to lower embodied energy and CO2 for significant portions of the building industry. Similarly, the design and material prototyping of Virginia Melnyk reminds us that there is much structural work yet to be done when marrying Buckminster Fuller’s tensegrity structures with the elasticity of knitted fabric membranes.

“Materializing Projects” speaks to architectural research centered on the data incarnation of built projects. Here the practice of project making addresses the very real risks of information gathering and misinformation

sharing for the ends of building. Alex Blanchard writes of the changing practice of the architect who is now faced with the ubiquity of virtual twins and building information modeling. The question central to Blanchard’s paper is whether a poetic dimension is even recoverable when the design and documentation of contemporary building are predicated on algorithms.

Lastly, in the context of architecture’s engagement with modalities of scholarship in the “Contested Territories” of history and theory, a critical set of papers contribute both optimism and reality checks in light of intellectual displacements engendered by precarity. Philip Crosby for example, seeks inspiration for the design of future cities and landscapes by looking well beyond the narrative subgenre of eminent nihilism that is “anti-utopianism”, embracing instead ‘Solarpunk cities’ as viable models for communal, sustainable, and just new worlds. Less sanguine is Aparajita Santra’s analysis of the city of Kolkata whose contested spaces work to exclude “common women” who are the working-class women of the city’s informal settlements. Whereas Melissa Rovner’s scholarship addresses the many instances in our recent history in which the indigenous populations of America have been less than cared for on their own lands. Writing of the establishment of the Sherman Institute in California, we confront the many ways that education and labor have been used to colonize and harm. Disempowerment as a function of the built environment, however, is not limited to buildings in the United States, as Patrick Jaojoco underscores in his essay which considers the relationship between state sponsored infrastructural projects and the subjugation of agricultural workers in the Philippines. Lastly, Kyle Stover reminds us that the availability of building materials is deeply impacted by the financial and legal conditions subtending all material supply chains. The common usage of “artificial stone” at the end of the turn of the 19th century presages the culture of insurance and risk aversion endemic to contemporary architecture.

This special issue of *ENQ*, affirms that notwithstanding the unfortunate conditions of precarity that define not only our individual but equally our professional lives, a young generation of scholars is hard at work at understanding the many ways that we might better mitigate, critically evaluate, and address the potential harms that the built environment invites on those who work, live, and play within it. Might these articles inspire us all to continue to the tools and theories that help us more just and sustainable worlds.