Imprecision
in Materials + Production

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Inherent in the materiality and production processes of the built environment is the realization that the tools of design are physically and conceptually disengaged from the objects of their production. In the technological space we currently occupy, there may no longer be any identifiable tooling residuals left to distinguish between a digitally rendered, handmade, robotically produced, or co-robotically crafted artifact. The dichotomy between the virtual and the real inhabits a variety of dualities spanning both material qualities and production methodologies. This can be seen for instance in the "transparency" of glass, both as a performative material characteristic, as well as a conceptual framework. Through a different lens a duality plays out in the philosophical argument surrounding the relationship between drawing and building, which tends to simultaneously materialize both within the realm of architectural theory, and with the practical goal of creating a fully integrated building model.

Optimization, precision, and repeatability have given designers the ability to create novel, one-off, near-perfect artifacts through the integration of a rapidly evolving production-based toolset. We have now reached a point in time where the boundaries between digital and physical output are nearly indistinguishable, and where craft is derived from the "over-complexification" of computational/machine programming rather than through simple iterations, trial and error, or chance. This desire for perfection has overlooked an inherent, unexpected potential achievable when the digital and physical spaces do not perfectly align. New typologies of form, surface, texture, space, or even environments arise through the unpredictability inherent within the tools of imprecision and imperfection. Glitching, "messy" programming, and/or the misuse of materials, tools for production/assembly, among others utilized during both design and fabrication processes, could allow for new outcomes to arise.

The virtual is never truly "real," and what is "real" is only accessed through lenses and interfaces of design that afford action on physicality and production within a language of computation and simulation. This disconnection provides fertile ground for playing with precision as a means of design, thought, and constriction. By revealing this imprecision, and further, by celebrating the potential within an absence of precision, we—designers, teachers, thinkers, and builders—open up the vast field of operation that inhabits the intersections between materials and production.

The experiments within this section exemplify, question, and push the boundary of what it means to be imprecise in the realm of computation in the built environment, forcing us to face imprecision as a physical materiality that simultaneously enhances our research and challenges our ideas.