

Porter House I Norton House: Reconstructing Affordable Housing in Pontiac

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Post-bubble, many neighborhoods in America, have seen the appraised values of properties decrease markedly, resulting in a sharp lapse in public and private investment. This, combined with stagnant income for many American families, has created an increased demand for rental properties within our urban cores, which has inflated the costs associated with renting. As a result, in areas like Detroit, renters can expect to pay three times more per month than homeowners on housing – a situation that forces families to spend well over half their modest income on housing and leaving precious little for food, heat and other essentials. This serves to further depress housing values in many neighborhoods, making new development unthinkable.

Although unfortunate, this arrangement makes sense. After all, if new homes built using traditional means of construction will cost well over \$140 per square foot only to value at less than \$55 per square foot upon completion, only those entities who can accept this loss will enter into development. Groups supported by donations and with a mission to help, such as Habitat for Humanity, may develop a few homes, but profit-based entities will not. Nor will banks, which makes home ownership a distant possibility, even for the shrinking cohort of families with enough funds for a down payment.

Two soon-to-be-completed homes question this arrangement. Realized in partnership with local and international citizens, businesses, non-profits, and academic units, these homes leverage the intelligence and efficiency found within various industries (most of which are completely unrelated to housing production) to effectively re-invent the housing delivery process. The process itself is the result of years of research and a growing partnership between students and faculty, builders, real estate agents, appraisers and production centers. The research and resulting work attempts to strategically overlap ancient and emerging techniques of simulation, fabrication,

and assembly to make housing production more economically viable, environmentally sustainable, culturally relevant and socially responsive. It is important to note that the process inspired by this effort does not propose a new technology. Rather it strategically overlaps existing techniques and technologies in order to cut in half the time and money associated with housing construction, while increasing the value, in financial, environmental and social terminology. Most importantly, as the techniques utilized rely heavily upon components and approaches attached to digital fabrication, the intelligence earned through these constructions will be immediately embedded into the process, to the benefit of every home produced thereafter. It, like the techniques of industrial production that inspired it, will thus become smarter over time, at a scale and pace currently unthinkable within housing production.



Full-scale prototypes and experiments were used by students to test their research and proposed amendments to the building delivery process.

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