



### REFLECTION:

#### 00.GOALS:

The goal of my thesis work was to experiment with potential approaches to addressing issues haunting housing across developed world countries. Namely, housing being: dehumanizing, unaffordable, wasteful in production, and under-performing. The main objective was to define the principles that would help creating the process which would enable configurative freedom for end users in terms of flat positioning, spatial layout, façade features and internal finish selection, whilst reducing cost and strain on environment. The redefinition of housing from machine for living to the ecosystem for living. In a hunt for this redefinition I tried to answer following questions: How can housing schemes become more attuned to the needs of the future occupants? Is there a way for designing with kit-of-parts systems to be combined with generative tools to unlock the hidden potential? How can we limit waste and performance issues in the built industry?

#### 01.METHODS:

The avenues of research and exploration in potential improvements were defined by studying firms at the forefront of housing innovation, and the historical advancements in approaches to housing systems development. Main exploration fields included gamification, productization, cataloguization and componentization. Thesis involved a wide range of study methods. To name a few: The study of modularity was conducted via formulation of a step by step validation process that helped define the proportions and final elements of construction system. Gamification was explored by methodical improvements and increasing of complexity of a generative wave function collapse script. Final solutions were created based on open building and passive house principles and references and were manually defined in a "CAD laboratory".

#### 02.SIGNIFICANCE:

Overarching theme of my work was convergence. The synthesis of many principles and approaches under the umbrella of creating better future of housing. I believe that this synthesis is precisely what makes my work significant; trying to connect multiple dots in an effort of finding common ground makes the project a unique contribution to the architectural body of knowledge. The thesis biggest achievement is also one of its shortcomings as it brings wide variety of ideas under one banner of improvement in housing design, it also meant lesser depth of exploration. The biggest achievement in a singular field of study was in my view the research in gamification, as I was able to create a computer program that is capable of automatically configuring valid architectural solutions based on a pre-defined catalogue of tiles and set of connectivity rules between them. This validator would be invaluable element of allowing users to directly participate in design process as it would ensure correctness of their play.

### 03.FURTHER RESEARCH:

The thesis work is merely a foundation for future development and research. The creation of truly inclusive mass housing design process would require much deeper dive into the systems of feedback, giving users real time understanding of how their decisions influence the performance, quality and cost of their homes. More specific definition of minimal performance requirements would be needed to ensure climatic viability of any users creations. It would be vital to stress test the real life mockups of construction system for its lateral stability capacities and bearing strength. The ultimate dream would be a creation of interactive platform that would facilitate participatory design and exchange of information between parties involved in the process.

### 04.SHORTCOMINGS:

Scope of the work has been very ambitious and perhaps too broad. This in some ways impeded the clarity of expression and clarity of conclusions. The wide range of research and development has resulted in over-reliance on references and precedents and has perhaps resulted in making the true innovation impossible to attain as none of the fields that were brought together was studied in sufficient depth and rigor.

