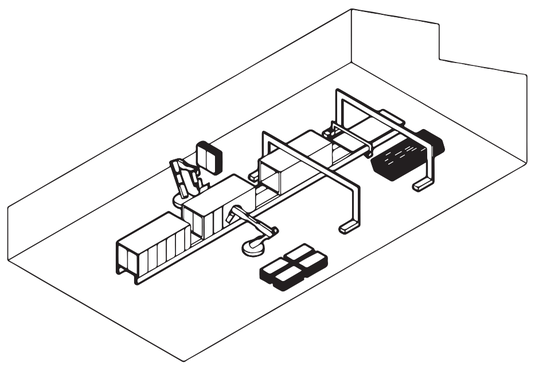
ADAPTABLE HOUSING SYSTEMS

How increased participation through adaptable construction systems could lead to greater user influence on English social housing.



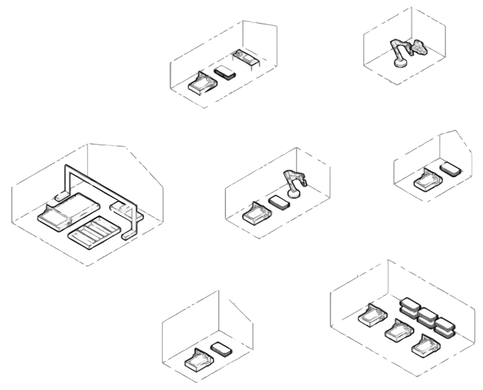


Figure 1: WikiHouse systems, a case study

With thanks to my tutor Orit Sarfatti for her invaluable help and support.

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Abstract

With governmental consensus that we need 225,000 new homes yearly to tackle past under-supply, it is critical to scrutinise present-day housing construction. While contemporary architectural theory places a strong emphasis on the constantly evolving nature of architectural practice in response to its socio-economic conditions (Crysler, Cairns, & Heynen, 2012), in reality this evolution is not always achieved. The British government's focus on tackling its housing crisis has engendered a gap in the application of evolutionary design.

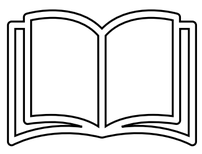
Evolving, adaptive housing is not currently considered as a large-scale housing solution in England. Housing kits and systems have been tested within small participatory projects in Britain, but the exploration of these as a system for wider evolving housing design is limited. This is a result of funding being directed towards private firms rather than public developers, where the prioritisation of profit over quality-of-living is leading to monotonous mass production. Therefore, this research considers alternative production systems, to produce new perspectives.

Methodology

By considering the works of both philosophers and architectural philosophers, a conclusive set of guidelines towards the production of evolutionary social housing are drawn. Without application to present conditions, these conclusions would only be tentative. In order to avoid this, the guidelines evolved throughout the course of research, by supplementing them with contextual and case study research. The resulting guidelines are then evaluated, determining further studies that could be conducted to continue the evolutionary process.

1 Contextual Analysis

Further funding would need to be directed towards localised development, in order to reduce the scale of construction and encourage more individualised housing. This could involve altering legislation to encourage groups such as housing associations.



Legislation alterations

Figure 2: the study area

2 Theory

These systems could develop existing prefabrication systems to allow adaptation at two crucial scales: adaptation of the construction parts at the community scale, and adaptation of the organisation of parts at the scale of individual homes - where differing modular elements are designed for specific groups of people based on practice-led design research.

Scaling down developments

3 Case study analysis

Room-sized reusable modules could be implemented, that have the capacity to produce housing units that alter in size, within larger static structures. Small elements of each module could also be interchangeable, such as facade materials and interior walls, using cheap, local, reusable materials.

Developments could involve localised factories, with small groups of about 20 households working together. Developments at larger scales could be coordinated through open-source software.

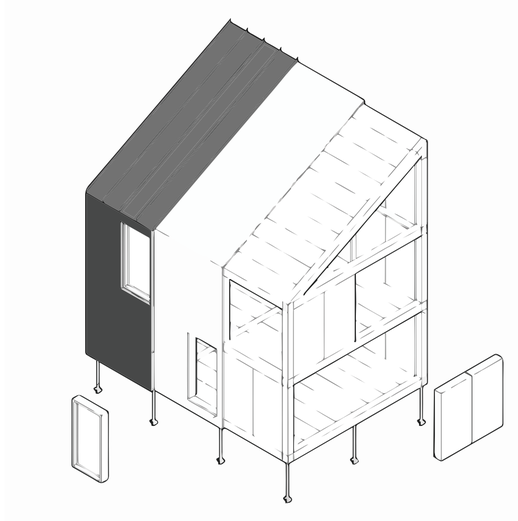
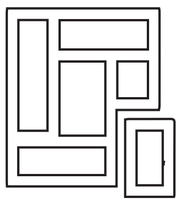


Figure 3: Wikihouse construction, a case study



Adaptable, modular systems

References

Crysler, C. G., Cairns, S., and Heynen, H. (eds.) (2012) The SAGE handbook of architectural theory. Los Angeles: SAGE.

Figures 1 and 3: Open Systems Lab. (2019) he DfMA Housing Manual. Available at:https://docs.google.com/document/d/1OiLXP7QJ2h4wMbdmypQByAi_fso7zWjLSdg8Lf4KvaY/edit (Accessed: 28 May 2020)

Figure 2: Needpix.com. (2019) England Black Cartoon Free Photo. https://www.needpix.com/photo/716123/england-black-cartoon-map (Accessed: 28 May 2020)