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Prefab is Back in Town

Site profile: **Y:Cube**.

By Theadora Trindle and Benjamin Walch, LSE MSc Regional and Urban Planning Studies, 2014-15.

London is in the throes of a housing supply crisis, we all know this by now. What is less known is how to address it in a way that produces new stock quickly, efficiently and of high quality. While often overlooked, there is a precedent in London's history for doing this successfully: the use of prefabricated technologies in post-war home-building. Yet despite its original practicality, the stigmatised connotations associated with 'prefab' have inhibited it from serving as a legitimate housing solution. The charity organisation [YMCA London South West](#) (YMCA LSW) is now challenging this vision through the development of a pioneering modular housing scheme known as [Y:Cube](#).



According to its Director of Housing and Development, Andy Redfearn, the impetus behind this project was both social and material. On the one hand, they wanted to move away from the prolonged hostel-stay model that, held hostage by London's 'high rent regime', was proving costly and leading towards a cycle of economic stagnation among the residents. Choosing an efficient and cost-effective housing solution that provides those accommodated by YMCA's housing services with a sense of independence and ownership could help equip with them with the foundational tools necessary to take professional risks and to better confront life's challenges. At the same time, as a charity in a severely constrained economic



The modular 'plug and play' Y:Cube was born out of a collaboration with Roger Stirk Harbour + Partners (RSHP) who modified a previous design [competition](#) proposal to fit the YMCA's key demands. The prototype (displayed in YMCA Wimbledon) is based on a flexible design. It has the ability to quickly transform vacant lots into affordable housing developments while

simultaneously providing the potential for dismantlement. As a physical unit, it can therefore adapt to London's unique housing demands.

Its first 'real life' application, which is nearly complete, is located within a green and well-connected residential neighbourhood in Mitcham (London Borough of Merton) on a site unused for over 10 years. It will consist of thirty-six stacked 26m² units to form a three-story structure with open air corridors and metal stairs between the units and a garden in the centre. The fully contained one-bedroom flats are built in a factory (a nine day process for each unit) and brought on site with lorries. The onsite stacking and linking process takes only one and a half months and the site itself has a life-span of at least 60 years. They will house residents of the current YMCA Wimbledon hostel as well as local authority tenants for anywhere between 3 to 5 years.

The low cost of rents (65% below market rent in the area, or £145pw) were achieved through a unique partnership model between four social investors that lent the required £1.7m to develop the Mitcham site; a £300,000 GLA grant for the prototype unit in Wimbledon; and the pro bono design services of Roger Stirk Harbor & Partner (RSHP). The cost of a one bedroom unit is now £30,000. Long-term, the investment made in Mitcham is expected to pay off in less than 10 years (with their low-rent revenue) and to bring a 5% rate of return.



with the partners that contributed to Y:Cube: RSHP, AECOM[1], and SIG[2] in order to develop it. This mechanism allows the YMCA to make a revenue from the license, which it can then reinvest into further Y:Cube developments. In order to safeguard the scheme against private sector interests and spiralling market-driven costs, Mr. Redfearn hopes to tie the licence to an affordability clause.

Prefab development implies some form of standardisation, but expanding the model to fit into London's environment requires finding sites, meeting with the architect to adapt to site-specific requirements, doing a feasibility study for pre-planning applications, and building a solid revenue model—all costly and time-consuming steps that only allow developments with an average of 24 units to be economically viable. For now, YMCA LSW focuses on proving that Y:Cube is well-designed and implementable. It has ambitions to build a Y:Village in the future and to construct a factory in London where semi-skilled workers could work on building Y:Cube units.

On balance, while Y:Cube is atypical to the mainstream offer and may not be *the* solution to the housing supply crisis, a large range of people—from homeless and unemployed individuals to young professionals whose salary levels bar them from market rents—could benefit if the concept is scaled up. Therefore, while the YMCA's motivations and processes are unique to their organisation, they also provide useful, if tentative lessons for London as a whole:

- Conducting business through a partnership model like the one employed here may be a more efficient, if not always a replicable way of providing more quality affordable housing. While they did rely on some subsidy for initial investment, Y:Cube is expected to quickly pay off and become self-sustainable.
- It offers a viable model for other local authorities (LAs) and housing developers to follow. Specifically, its licence and affordability clause could help smooth the planning application process and help LAs save on housing benefit costs.

Ultimately, its novel approach, strong brand identity and business partnership model, alongside a credible social mission, reveal that Y:Cube's innovation lies not only in its physical design, but also in how the design is delivered and locked in for the future. Harnessing the potential of inventive construction techniques and

[1] AECOM, a construction consultancy, produced the technical studies to determine the materials, the construction system, etc.

[2] SIG is a provider of specialist building products including insulation materials.

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