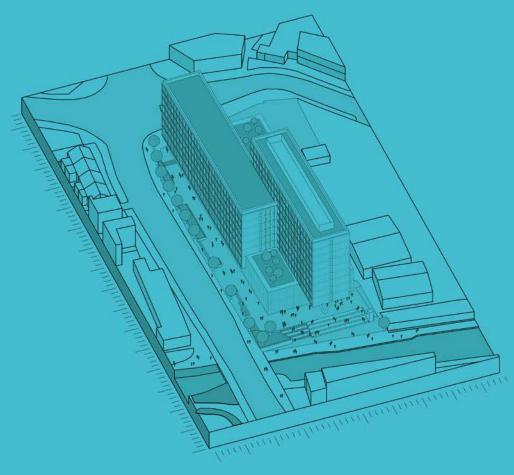
URBAN CO-LIVING AS AN EMERGING TYPOLOGY

The Collective, Old Oak, London



ANDREI MARTIN





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Location: Old Oak, West London Architect: PLP Architecture Lead architect: Andrei Martin Client/Funder: The Collective

Collaborators:

Collective Living, DP9

Programme:

Co-living with 550 micro-units, communal facilities, restaurant, retail, co-working incubator

Size: 16,000 m²
Cost: Confidential
Date: May 2016



Figs 1-5 The Collective Old Oak Fig. 1 photo: Nick Guttridge Figs 2-5 photos: The Collective

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* WELCOME HOME! The collective old dak.

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ABSTRACT

This folio describes the development of a new, socially organised, commercially-driven, high density housing typology – leading to the largest co-housing project in the world, as well as to the writing of new legislation for large scale co-housing in London.

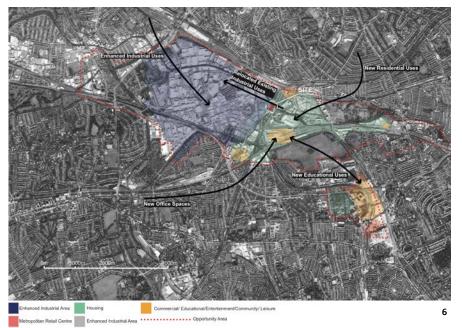
This innovative project was done in collaboration between the design team at PLP Architects, led by Andrei Martin, and the client behind the commercial co-housing start-up The Collective. It involved extensive consultation with the Greater London Authority (GLA), in a lengthy process of developing and negotiating legislative and planning frameworks and standards for this new typology, for which no legislation previously existed.

The Collective model aimed to improve the experience of high density, micro dwelling units by delivering optimal opportunities for social space and social interaction. This included the use of social modelling concepts such as the Dunbar number intended to help optimise and enable community cohesion at high densities. The project also explored the possibility of large-scale containerised construction, before switching to light weight metal construction.

The prototype building delivered was The Collective at Old Oak, West London with 323 micro-units (551 beds) and a range of shared and public facilities. It was the largest co-housing project in the world when built in 2016. A second and larger Collective at Canary Wharf by SOM opened in 2019 and a third, also by PLP, at Stratford has been under development. The building has attracted widespread interest across sectors including residential and lifestyle providers, family and sheltered housing, as well as in urban planning and place-making.

RESEARCH QUESTIONS

- How can a new typology negotiate the construction and regulatory environment and regulations to achieve its vision and be a commercial proposition? How can the lessons from co-housing inform future large-scale co-housing proposals as well as other housing types?
- How can commercial housing typologies tackle urban problems of affordability, quality, isolation and marginalisation in ways that foster communality?
- What densities, numbers of occupants, facilities and management regimes successfully balance privacy and communality at the cluster levels identified – i.e. 'household', 'village' and 'metropolitan' scale?
- What are the applicable lessons of prefabricated and pre-fitted construction for mass housing in the UK, both practically and economically?







 $\bar{\text{Emerging}}$ planning context around the site

Figs 7-8

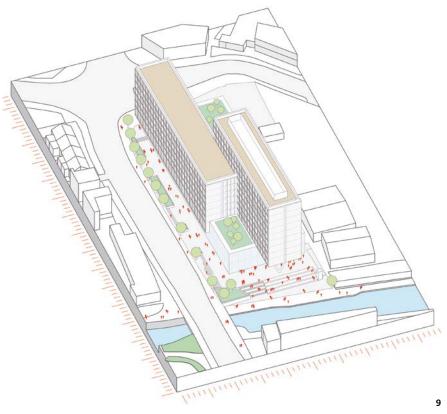
Previous building on site

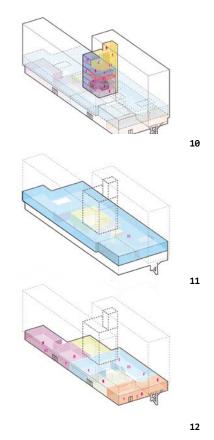
Fig. 9

 ${\bf Proposed\ scheme\ on\ site}$

Figs 10-12

Common spaces are distributed to address the public at the ground level, the entire community on the first floor, and the tenants on the upper levels





GENERAL DESCRIPTION

The Collective Old Oak opened in May 2016 in West London on the Grand Union Canal. It provides 16,000m² of accommodation including 323 micro-units (personal spaces), communal facilities, a restaurant, retail and co-working. It is part of the strategic Old Oak Common regeneration zone where a London terminus for the HS2 railway is proposed.

Developing the strategy involved establishing optimum group sizes in scale from personal space pods to the overall numbers at which communities could work successfully within a building. The accommodation is organised at three scales: intimate household clusters of 15 to 20 individuals; village groupings made up of several clusters each; and a 'metropolitan moment' formed by all the villages in the building.

The Collective building takes the form of two slim, connected volumes that visually slide past one another. The household clusters contain individual rooms with shared kitchens and dining rooms while villages are based around facilities such as screening rooms, libraries, cafés and games rooms.

Private spaces within the clusters are largely organised around one person, sometimes two, with private bedroom and bathroom and each unit having either an individual kitchenette or sharing it with one other.

Central public functions for all the villages (and outside users) are located where the two building volumes overlap in the podium in order to maximise interaction opportunities for residents. This hub comprises amenity spaces including: a gym, spa, co-working space, meeting rooms and laundrette. At ground level, public spaces include an entrance lobby, restaurant and small convenience shop. On top of the podium are roof gardens that include individual allotments and event spaces.

The local authority asked that the scheme have the potential to be reconfigured into alternative uses, such as a hotel or student residential block, should the co-living model prove untenable in the long run. The building was therefore designed with this adaptability in mind. This flexibility has already been tested within the Old Oak Collective where a number of the original 'twodios' (two bedrooms sharing a small kitchenette) have been converted into single studio living spaces.

This typology, which houses a large number of people, needs adequate public transport nearby. The site has a PTAL (Public Transport Accessibility Level) rating of 4b and the building has car spaces for six Blue Badge owners as well as two Car Club members.







Fig. 13 Transportation links around site







Fig. 14 Photos of approaches to the existing building on the site

CONTEXT

Housing Crisis

A shortage of housing of acceptable quality and affordability is a pervasive problem in contemporary global cities such as London. Younger cohorts of renters are being effectively pushed to the margins. At the same time social isolation is increasing. Charities such as Crisis and the Joseph Rowntree Foundation point out that rising private sector rents are pushing renters into poverty. According to Crisis, in England nearly a third of private rented homes fail to meet government standards.

Many landlords in England and Wales offer only short tenancies of six or 12 months and this undermines the security of people living in private rented housing. The ending of a private tenancy is now the leading reason for homelessness in England.³

Emerging Housing Typologies

Alternative accommodation typologies have their drawbacks, even for those who can afford them; hotels, for example, are not designed for long-term occupation and serviced apartments can be expensive and isolating. Yet each of these typologies, along with other emerging spatial types such as co-working spaces, can inform the development of a new model aimed at young professionals. Unlike long-term co-housing for older people or families that may be inappropriate for younger users, this model needs to be able to serve a clientele that is mobile and outward-focused and where flexibility is key. At the same time, it needs to be 'adult' in a way that balances privacy and sociability, activity and quietude.

Given high land prices and a typology that relies on a repeating module, this project set out to explore a high-rise, high-density model that could maximise the benefits of relatively novel types of construction such as modular prefabrication and containerisation.

And while there are complex and extensive housing and planning standards for some dwelling types such as HMOs (Houses in Multiple Occupation), co-living was, during the project's design stage, a housing type without precedent and therefore these non-standard co-living proposals had to be defined, and accepted, in planning terms.

The Collective: Client Context

In 2009, whilst still a student, Reza Merchant, the founder of The Collective, started London Student Rent, an agency matching students with accommodation. In 2010 London Student Rent became Share in the City, providing housing for young professionals in a number of refurbished buildings. In 2013 Share in the City became the co-living venture The Collective, with a focus not just on providing rooms for rent but on creating communities of like-minded young professionals in bespoke rather than converted accommodation.

Share in the City ran HMOs, residential properties that accommodate three or more tenants who share facilities such as bathrooms or kitchens. The term is used to designate residential accommodation occupied by unrelated tenants rather than single households. One of the ambitions of The Collective was to provide an alternative to poor quality, or even illegally converted HMOs that offered substandard accommodation and displaced families.



Fig. 15 The Collective Old Oak, viewed from canal

Photo: Nick Guttridge

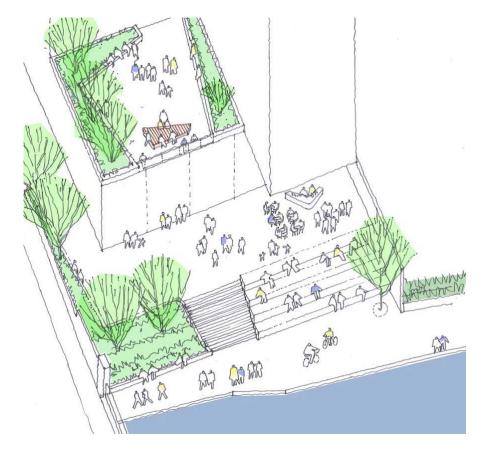


Fig. 16
Proposal for roof terrace and garden terrace by canal

Image: Turkington Martin

The co-living concept also goes much further than an HMO in that it caters for a large number of people and relies on shared communal facilities that are actively managed in order to amplify a sense of community among its occupants.

The Collective thus operates within a fast-emerging commercial co-living sector that includes similar properties such as those run by Quarters, a developer in Berlin, New York and Chicago, that is now expanding further, as well as WeWork's sister company, WeLive, which is exploring the co-living model in the US. Another provider, Roam, is a 'digital nomad community' that is setting up co-living and co-working hubs on both sides of the Atlantic.⁴

In many ways, these co-living models are the commercial market's response and contribution to the broader drive towards a more sustainable urbanism which includes the sharing economy and collaborative consumption where products are loaned rather than individually bought.

PLP Architecture

PLP Architecture is a 10-year-old practice which explicitly aims to investigate how emerging technologies and shifts in cultural practices can combine to establish innovative types and variants of architecture, and initiate new social and political realities within the commercial context.

Other PLP projects have included The Edge, which has been described as one of the greenest office buildings and the smartest building in the world;⁵ and Oakwood Tower, an all-timber super-high rise that received the RIBA President's Award for Design & Technical Research.⁶ For PLP, the common theme running through all these projects is an effort to use commercial opportunities as a way of enabling new strategic and architectural responses to these issues. As a result of this work, the practice is increasingly asked to undertake projects that go beyond a conventional architectural remit often exploring new strategies for cities and proposing buildings that anticipate changing needs and social habits enabled by emerging technology.

AIMS AND OBJECTIVES

- To achieve a model for a new communal housing typology that is both successful commercially and a desirable place in which to live.
- To understand better how people can live together communally and at density, including how personal space, shared amenities and social provision can be organised and, where possible, self-managed within a commercial development.
- To do this at large scale and in city locations with good public transport links where such developments can offer a catalytic regeneration effect.
- To optimise construction and reduce costs by using methods such as off-site construction and pre-fabrication.

Figs 17-18 Proposal for upper (Fig. 17) and ground (Fig. 18) floors Images: Alan Marten





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METHODOLOGY

PLP Labs is a multidisciplinary research group within PLP Architecture, offering expertise in technology, media, social science, sustainability and workplace futures. It anticipates progressive policies as well as market forces, proposes intelligent forms and models of organisation which balance individual need with social and ethical motivations, and aims to make the built environment more integrated with emerging technologies, more user-conscious, fair and inclusive and better equipped to fight climate change.⁷

In researching the organisational and formal strategies for the Collective Old Oak, the team at PLP began by looking at historical precedents and collective living typologies. These ranged from Robert Owen's utopian paternalism at New Lanark to monastic communities and almshouses. What these had in common was that they revolved around a structured daily life that fostered and supported collaboration. They also revealed architectural typologies conducive to community formation, such as quadrangles and shared eating and socialising spaces.

The team looked at the operational and physical aspects of such communities and it soon became clear a co-living operator could not simply be a landlord; events and activities would be a vital aspect of any successful scheme and would, in some ways, provide an alternative to the structured life of communities such as monasteries that worked towards a collective goal.

Social Co-living Design

A key early question in designing communal living at high density concerned the numerical patterns of successful communities at different scales. At Old Oak, the basic unit was the household cluster – small groups with the 'pyjama factor', as in a dormitory or student hall where people are familial enough to use shared kitchens and other facilities with a low level of formality. This was established to be 15 to 20 people who might come into regular contact with each other over the course of a week. This number therefore informed the design whereby typically 15 bedroom units share a large kitchen-dining room.

The team then looked at the insights of British anthropologist Robin Dunbar who, in the 1990s, researched primate brain size and average social group size. He proposed that humans can comfortably maintain up to 120 to 150 stable relationships. At this scale, a member of the group knows who the other members are, as well as how each of them relates to the others. Subsistence villages, hunter-gatherers, military units all revolve around this number.

This has become known as Dunbar's Number,⁸ and has been used to inform the 'village' scale units at The Collective. It is at this larger social scale that shared amenities are provided such as screening rooms, libraries and games rooms. Visitor rooms for family and friends were also provided in each village. Communities at this scale can self-manage, lessening the need for active institutional oversight. Beyond this number, Dunbar says greater organisational structures are needed. The design and management of the metropolitan moment facilities at The Collective, which are available for all building users and the public, are therefore both more public and more managed. These include regular 'town hall' meetings which offer a forum for suggestions and grievances.

MAYOR OF LONDON THE SPATIAL DEVELOPMENT STRATEGY FOR LONDON CONSOLIDATED WITH ALTERATIONS SINCE 2011 MARCH 2016

MAYOR OF LONDON

THE LONDON PLAN

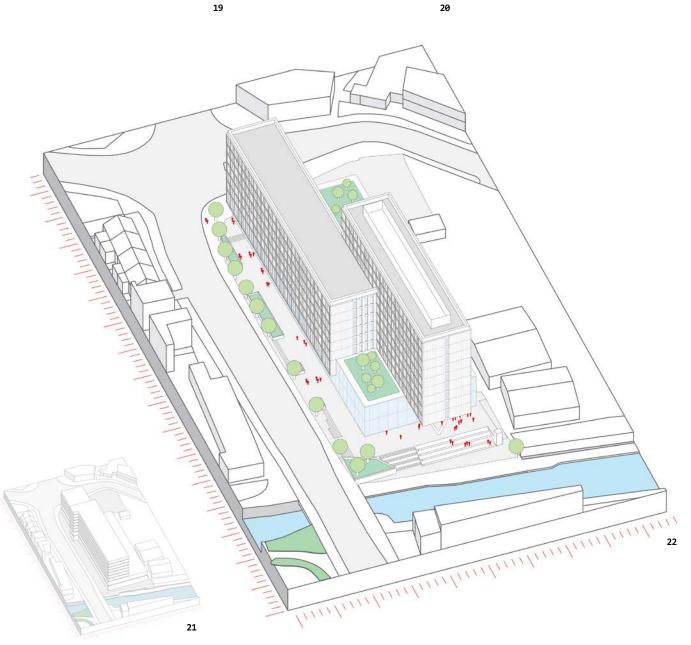


Fig. 19 London Plan, 2016 © Greater London Authority

London Plan, first consultation document © Greater London Authority

Fig. 21 Original outline consent on site

Fig. 22 Redesigned scheme for The Collective



The Collective, Old Oak, West London

The shared village spaces are designed to establish different moods and atmospheres as counterpoints to the private experience of the rooms. Their fitout is light to enable easy reconfiguration. Success and failure is measured through a number of metrics including room access and booking frequency as well as through polling via periodic surveys and town hall meetings.

However at the scale of the whole development, when these villages come together there are sufficient people to trigger what the design team calls a 'metropolitan moment' where the building begins to act as a section of a city. At this metropolitan scale, a sharing economy was also encouraged with a 'library of things' that could be borrowed – from tools and sports equipment to musical instruments and a canoe (The Collective Old Oak is on the Grand Union Canal). At this scale also, there is public access to some of the facilities. In Old Oak these are the restaurant, the Exchange – co-working space – and the lobby and the outdoor terrace. The lack of surrounding facilities at Old Oak created the conditions to test how such metropolitan moments might operate, such as how one might 'go out' on a Friday or Saturday evening without actually leaving the building.

Planning and Legislation

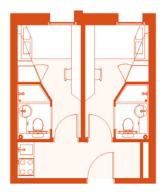
The Old Oak site already had outline planning permission for a 323-unit student housing scheme with ancillary retail, community and gym spaces. However the population density and shared facilities of the outline permission were insufficient for the new scheme and both needed to increase.

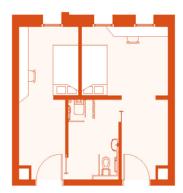
Negotiating this project through the planning system and other regulations was a lengthy process of approximately two years. Other typologies such as serviced apartments have to comply with London Plan space standards including amenity space. The unit size at Old Oak, however, was less than half that demanded by the London Plan for permanent studio accommodation. Hotel rooms may be smaller but the length of stay is capped at ninety days. So a crucial factor in negotiating was successfully demonstrating the value of extensive communal facilities at all scales.

Initial attempts to establish the co-living approach as a form of student housing planning use class were redirected following discussions with the Greater London Authority and the London Borough Ealing. Ultimately, the development remained *sui generis* rather than falling into a formal planning use class in order to maximise the diversity of potential occupiers. As part of these negotiations, a Section 106 planning agreement was put in place that limits occupants to graduate students or professionals. Children and undergraduates could not be accommodated.

These negotiations also demanded that the client demonstrate that the operational proposals would be complied with and deliver the intended vision and mitigate any emerging negatives (such as the noise problems arising from large numbers of student homes in some areas of university cities).

All the physical, occupational and operational/management factors that were measurable were documented and agreed as part of these regulatory negotiations.









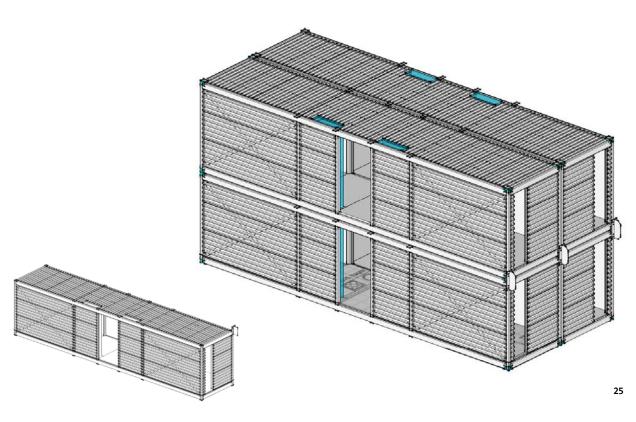
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Fig. 23 Unit types

Fig. 24 Visiting manufacturer to inspect units

Fig. 25 Initial arrangement of shipping container-inspired prefabricated construction



Construction

The building was designed for conventional concrete construction for its ground and first floor and for a volumetric containerised method for the levels above. Through the initial design process, PLP Architecture, together with engineering practice WSP, developed a design that relied on a purpose-built module of a size and with corner-post connections matching those of shipping containers. Each module would accommodate two single bed units, distributed at either end and with room for a corridor in the middle. The module has a weatherproof outer shell towards the façade and additional cross-bracing to stabilise it, both during maritime shipping and also within the building itself, as there is no other primary structure in this upper zone. The modules would arrive fully fitted-out with a furniture system sized with adequate tolerances away from the walls and ceilings so as not to be damaged by the module torsion during shipping and construction.

Two fabricators were identified in Guangzhou, China and in Vietnam to produce the modules. However, the fabricators could not ensure shipping that would satisfy the construction programme. As a result, the building was eventually built using a lightweight metal system, relying on similar principles to the original containerised system but without relying on volumetric components throughout. Part of the construction was done on site, with elements fabricated off site and assembled in situ. The construction programme was 58 weeks; a typical programme for a conventional building of this size and scale is approximately 75 weeks.

Prefabricated methods typically provide an 80% saving on cost and programme over conventional methods. ¹⁰ In common with so many pieces of research and development done within architectural practice, the detailed development of this aspect of the proposal will be drawn on for projects in the future depending on functional and economic viability.

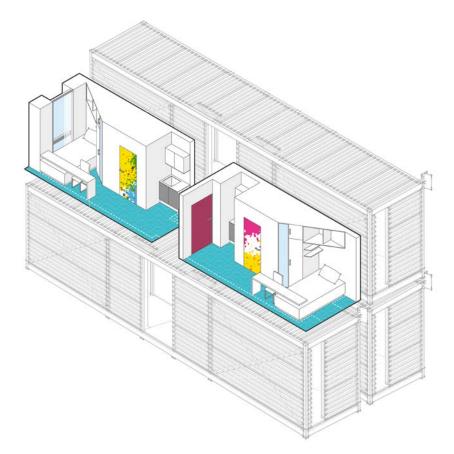


Fig. 26
Exposed axonometric, revealing layout of rooms within initial prefabricated unit

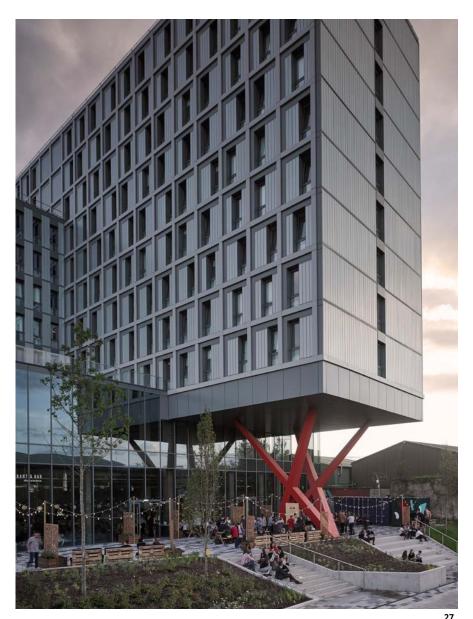






Fig. 27-29
The Collective Old Oak, exterior, shared kitchen and individual room layouts
Fig. 27 photo: Nick Guttridge
Figs 28-29 photos: The Collective

OUTPUTS AND FINDINGS

The 16,000m² Collective building at Old Oak opened in May 2016, and reached full occupancy in four months. As the largest co-living development in the world, the project received broad coverage both in the design and general media.

The final unit count was 323 with 80 percent of these being twin units ('twodios' with separate bedrooms and bathrooms and shared kitchenettes and 20 percent single units. Ten percent of the total are accessible. None have individual balconies. A higher acoustic rating than normal was required for some internal walls – between individual bedrooms within twin units for example.

Villages are centred around the shared amenity spaces within the residential areas of the main blocks while the metropolitan moment amenities are housed in the double-height podium that contains the co-working space that transforms into an evening bar. The podium is purposely over-scaled with a substantial floor-to-ceiling height to allow for flexible post-occupation reconfigurations. Its rooftop provides landscaped terraces that have some individual allotments as well as collective event spaces.

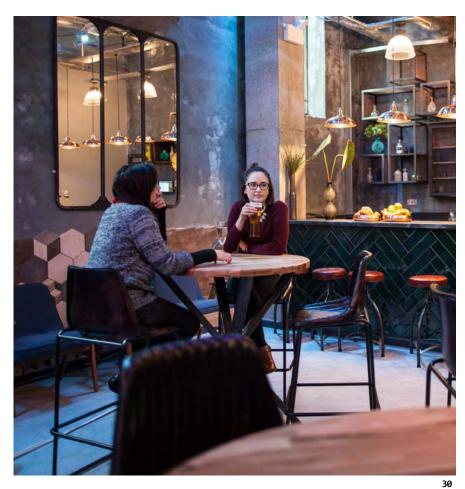
The occupant population has been largely young (under 30) and transient on the whole with the average stay lasting a little over a year. But over-40s have become a growing minority and now make up some 12 percent of residents despite no marketing directed at this cohort. The oldest resident is in her 60s.

The standards negotiated with the GLA as part of regional planning policy have been incorporated into the latest draft of the London Plan as Policy H18 – large-scale, purpose-built shared living. It applies to co-living developments of 50 units and above, and provides guidance on housing quality, tenancy limits, affordable housing requirements and Community Infrastructure Levy liabilities.¹¹

Local authorities are also starting to codify co-living in their emerging Local Plans to allow for this emerging typology and this building is being widely used as a model for such developments.

Post-Occupancy and Management Findings

An extensive post-occupancy survey was undertaken in 2018. Among its main findings were that 50% of events are resident-run with 70% of residents attending one or more events per week which was more successful than envisaged. 92% of residents were either happy or very happy, with 91% of them making new friends since living at Old Oak, a very impressive result. 57% of residents were from the UK, 31% from elsewhere in Europe, and 12% from the rest of the world; 71% of residents were aged 30 or under and 8% aged over 40; the gender split was 57% male and 43% female. 28% of tenants were key workers a figure close to the national average of 33% .¹² This suggests a successful model for integrating younger key workers and other professionals. The median salary was £30,000 per annum.



Figs 30-35 Shared amenities and common areas Photos: Amandine Alessandra/The Collective











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Social Occupation

The main co-working space transforms into a social amenity complete with bar and hang-out spaces in the evening. The co-working spaces have been successful in a number of ways. Firstly, they act as extensions of the internal amenity spaces and are free to use to tenants. Co-working spaces are also available for rent by non-residents.

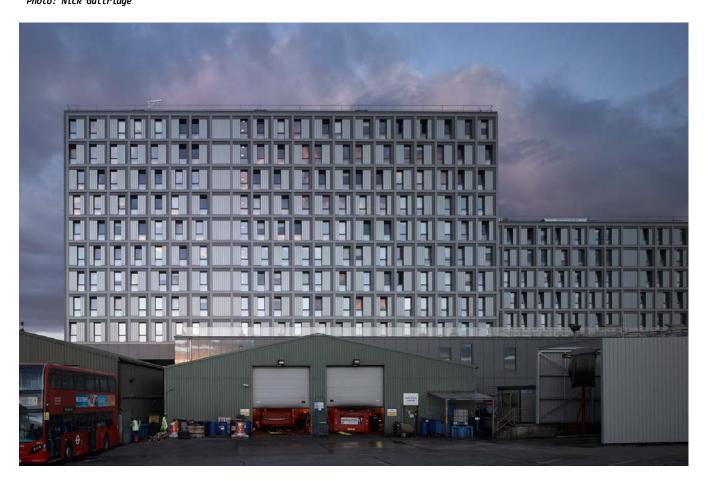
The Collective has a comprehensive management policy covering all aspects from community, event and facility management, including pastoral care, but the details of this policy are commercially confidential as part of Collective's proprietary operational strategy.

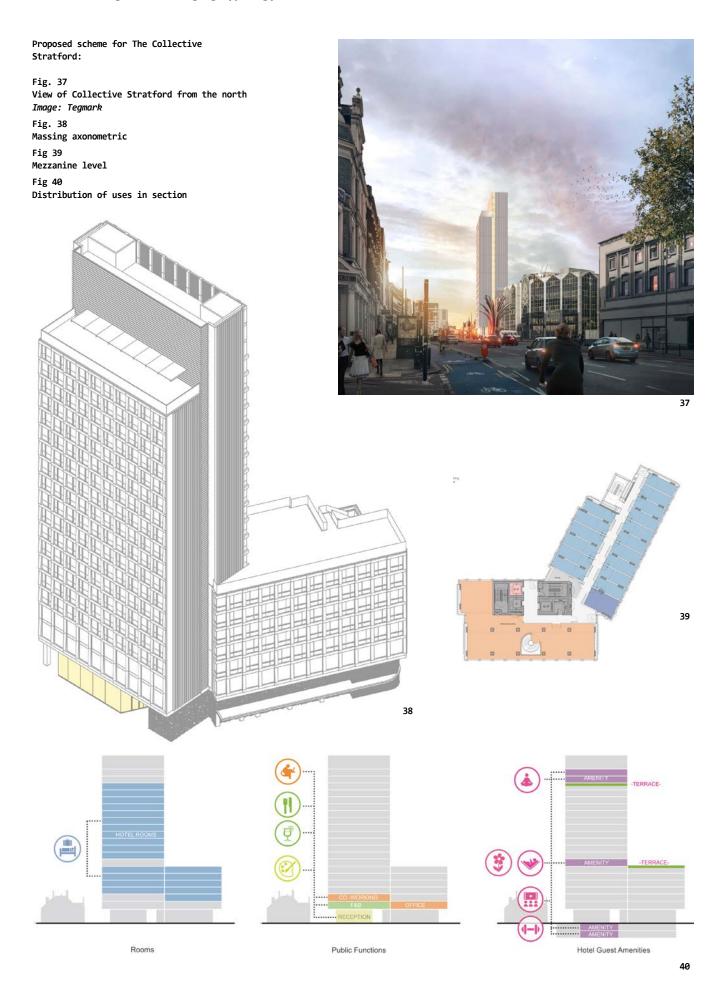
The self-management model has exceeded expectations with more than 50 percent of events being held within the spaces provided arising out of the community and run by it, for example the regular weekly brunch. Community organisers work in shifts covering 24 hours.

Dissemination

Besides its widespread coverage in the national media, the project has been disseminated through the general, design and academic press, as well as through its inclusion in number of exhibitions both in the UK and internationally. It has already been included in a major academic publication on collective living by Susanne Schmid, Dietmar Eberle and Margrit Hugentobler, *A History of Collective Living: Forms of Shared Housing* (2019).

Fig. 36
Exterior of The Collective Old Oak, behind bus garage
Photo: Nick Guttridge





CRITICAL SELF-APPRAISAL

A measure of the success of The Collective's first project is the proliferation of schemes similar to Old Oak which have now emerged in London and internationally, including and beyond the second and larger Collective in Canary Wharf by SOM.

However, this proliferation has been also subject to a some criticism of the commercialisation of the sharing concept. Such ventures have also been critiqued for institutionalising smaller personal living spaces with a high rental per square metre.

Countering this is the fact that the building has remained at virtually full occupancy since September 2016 (four months after it had opened). Tenants have selected to live there rather than in, for instance, one-bedroom apartments in the same area which would require a comparable amount of rent but excluding amenities and bills. This reflects a genuine desire for this type of communally-minded living among a wide demographic range.

The individual rooms are compact. However, when seen holistically, the project aims to maximise both the amount of shared community spaces as well as opportunities for people to spontaneously encounter each other and socialise. The nature of the social spaces, their layout and distribution throughout the building is perhaps the most important consideration of the building. Residents have access to a wealth of amenity spaces provided throughout the building including a cinema room, games room, library, secret garden, spa, disco, laundrette and gym. The residential component of the building is accompanied by a co-working space, also managed by the Collective: an incubator for young start-ups which will also offer access to the many amenities in the building. A restaurant and event space also add to the creative possibilities within the building's social ecosystem.

Given the typological link between physical space and operational strategy and management entailed in co-living buildings, it is difficult to judge the success or failure of either architecture or community on their own. Some elements of the scheme have proved far more successful than others; single rather than twin units are particularly sought after, with some reluctance to share even a kitchenette. And at the community scales, less 'pre-programmed spaces' have proved more successful with screening rooms and the spa not much used. The Library was the most visited shared amenity and the spa the least visited. The games room and Secret Garden were also popular with the latter's reconfigurability and 'weak theming' seen as making it particularly desirable. Here, many self-generated events happen including poetry readings, stand up and various workshops.

While there are limits on dissemination of all aspects of the scheme because of the commercial context, it is clearly arguable that this project has allowed the real development of the typology. It is particularly interesting that PLP has been asked to present this project to forums addressing the elderly and family housing, ¹³ since it demonstrates that the viability of this model, both commercially and socially, extends beyond the demographic and the cultural specifics of the generation for whom it was devised.

DISSEMINATION, ACHIEVEMENTS, PEER REVIEW

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Exhibitions & Talks

The City is Ours: A Tale of Two Cities (2018). Museum of London, 14 July 2017 – 2 January 2018. Part of the City Now City Future Season, featuring Collective Old Oak (lead curator: Lauren Parker).

NUB: New Urban Body – Experiences of urban generation (2018). Triennale di Milano, Design Museum, 24 November 2017 – 7 January 2018, featuring Collective Old Oak, (curators: Giordana Ferri and Stefano Guidarini).

The Future Starts Here (2018). V&A Museum, 12 May – 4 December 2018, featuring Collective Old Oak, (curators: Rory Hyde and Mariana Pestana).

Our Ageing Futures (2019), 13th Anglo-Israel Colloquium, Djanogly Hall, Mishkenot Shaananim, Jerusalem, 14-17 November 2019.

FOOTNOTES

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