West Kentish Town Estate Retrofit

Presentation to Residents

The work in this presentation was carried out by AAB architects as part of research project funded provided by the Royal Institute of British Architects (RIBA). Within this research, West Kentish Town Estate was used as a case study to explore an alternative method of estate regeneration; using new-build infill and refurbishment of the existing estate, rather than the standard approach of regeneration through demolition and rebuilding.

This work provides an **alternative** to the plan to demolish and rebuild the West Kentish Town Estate. It introduces a scheme based on **retrofit and selective infill,** where:

Layouts of existing flats will be changed and improved

New homes to be built in between existing blocks

An extra floor of new flats will be built on top of the existing blocks

This means flats provided across the estate which will be **larger, better lit, ventilated, heated and soundproofed- and all delivered in a much faster time-scale and in a less disruptive manner.**

Improvements to urban design, wayfinding and biodiversity across the estate using a strategy of retrofit also formed part of the original research project, but has been omitted here. This is to focus the presentation on the homes proposed, and the strategy of how they may be provided. This additional research can be provided on request.

Durston, West Kentish Town Estate. 2022

This research has been carried out with the benefit of a grant by the Royal Institute of British Architecture (RIBA) Research Fund awarded in 2019

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Construction of West Kentish Town Estate

West Kentish Town estate was built over a 3-year period beginning in 1961. It was an early stage of the government-funded slum clearance programme that entailed demolition and rebuilding of the whole west Kentish Town and Gospel Oak area. The mid-nineteenth century terraced houses were dilapidated and overcrowded, and considered to be obsolete.

The new estate was built using a large panel system fabricated by Reema Construction Ltd. The Reema Hollow Panel system was a basic form of precast reinforced concrete panel construction, one of many developed throughout the 1960s and 70s.
A reviewer of the built project in 1964 wrote:

"West Kentish Town as a result is one of the first, if not the first, fully considered "industrialised" environments in this country".

Official Architecture and Planning,
Vol. 27, no.11, Nov 1964

West Kentish Town Estate overlaid upon the previous street pattern, 1964

An 'industrialised building system'

Large panel systems (LPS) could be constructed very quickly compared to traditional methods, and for this reason were used in mass-housing construction programmes across the UK in the post-war period.

A three storey block and the central tower under construction, both using the Reema Hollow Panel System

Clearing the slums

The terraced houses which stood on the site of the estate were built very closely together, with little space between them at the back. The new estate aimed to provide ample external space, light and air to each new flat.

Conditions within the housing cleared for West Kentish Town Estate (images courtesy of London Borough of Camden)

Summary: strategy for retrofitting

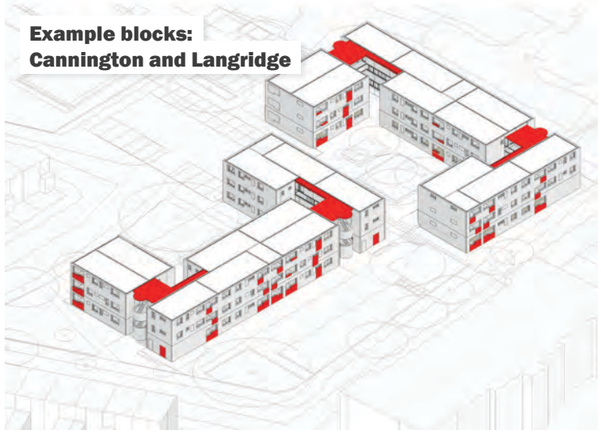
AAB architects' proposals show possible alterations to the buildings to bring homes up to current standards. The accommodation provided would have most of the benefits of new-build social housing. The care and attention required by PAS 2035, the British Standard for retrofitting dwellings, would result in fewer defects than occur in many new build developments.

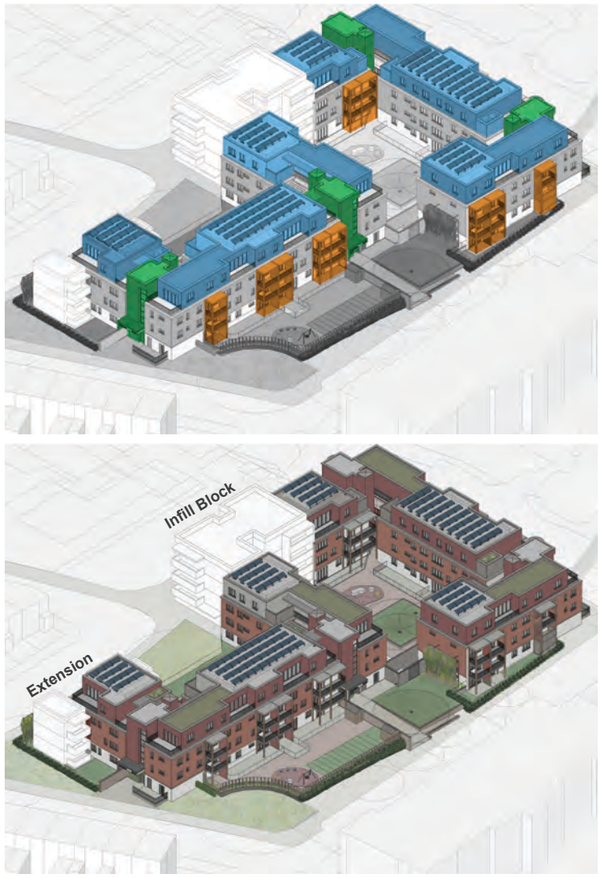
Due to the existing design of a replicated 5-flat layout across each block in the estate, a retrofit approach can be easily rolled out across the entire site.

Most of the retrofitted homes retain their size. However, as the existing flats are reconfigured, they become new homes created within the existing concrete structure, with internal partitions replaced to provide better layouts, larger bedrooms, improved circulation due to better ventilation and increased acoustic separation.

Residents would move out when the work is being done. Complete replacement of each flat's services is feasible. Some 2-bedroom flats are joined to create 4- or 5- bed homes. Inadequate one-bedroom studio flats at ground floor are replaced with shared facilities, e.g.. cycle storage. The floor-to-ceiling height would be slightly less than that of a new-build, but as there are no deep-plan configurations the internal daylight is good.

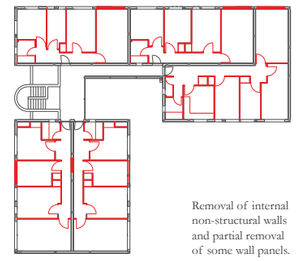
New homes meeting the requirement for larger homes on the estate are proposed on the residents' garage sites and the roofs of the three storey blocks. A prefabricated system would be employed to minimise disruption and local pollution during construction.





Internal reconfiguration

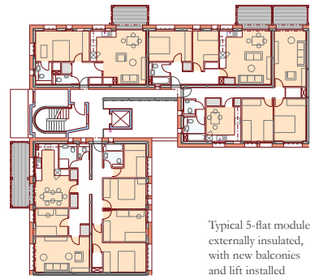
Internal partitions are removed to enable new layouts compliant with current Housing Standards. The concrete panels are cut down to floor level to provide access to new balconies and connect adjacent flats.



Removal of internal non-structural walls and partial removal of some wall panels.

New rooftop and retrofit of flats

External walls are insulated to a high standards, renewable heating systems are installed and new balconies added to give each flat external space. Lifts are installed in every courtyard, and an additional floor of new homes added upon the roof of the 3 storey blocks.



Typical 5-flat module externally insulated, with new balconies and lift installed

Communal spaces and infill blocks

New buildings are built on the old garage sites to add 3 and 4- bedroom homes suitable for families. Secure central gardens and play spaces are created for each block, easily accessible from each flat.

An infill block between Cannington and Langridge encloses a central garden

Retrofit interventions proposed for every block:

Window openings are made bigger to enable access to new balconies and private gardens

Deeper window reveals and balconies will minimise overheating by shading windows from direct sunlight

An additional storey is proposed on the 3-storey blocks creating new homes (these are larger homes to make up the deficit)

Some flats are to be combined into flats for large families

Lifts are proposed to provide access to every flat

Each block is wrapped in a insulating external cladding. This reduces the energy needed for heating, reducing bills, and make flats more comfortable to live in

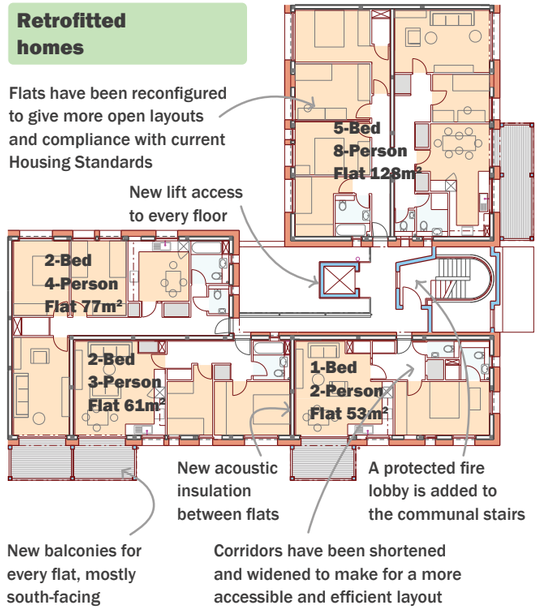
Solar PV panels and air-source heat pumps are installed on the roofs of each block, further reducing energy use and bills

Well insulated, comfortable homes provided though retrofit

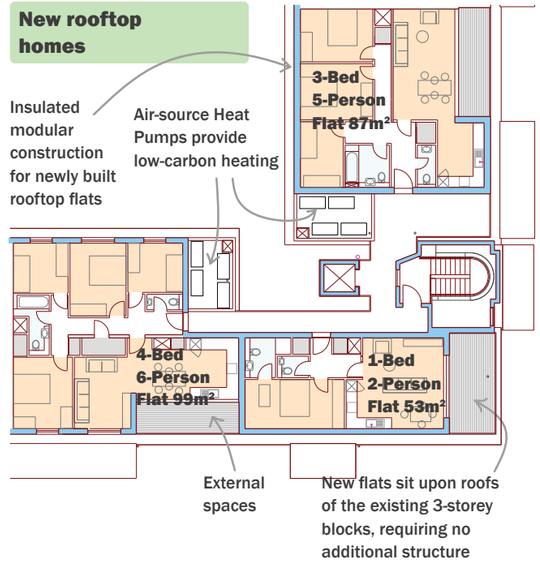
As a result of these improvements, residents' flats will retain more warmth, helping them reduce their heating bills during the winter months, and there will be less noise leakage between both floors and neighbouring flats.

The existing blocks will be externally wrapped with new insulation to minimise heat loss during the winter and reduce energy use for heating. Internal walls and floors will also be fitted with acoustic insulation to reduce sound transmission between rooms and flats. The work will include swapping existing gas boilers for air source heat pumps, part of the national transition to clean, affordable and low carbon energy.

Retrofitted homes



New rooftop homes



Upgrading the external envelope

The existing shell and structure is retained, meaning the need to dig new foundations is minimised

An external layer of insulation sits on the outside of the existing wall on independent footings, placing no additional load on the existing structure

New insulation is blown into the cavities of the existing Reema panels, adding an additional layer of insulation to each flat

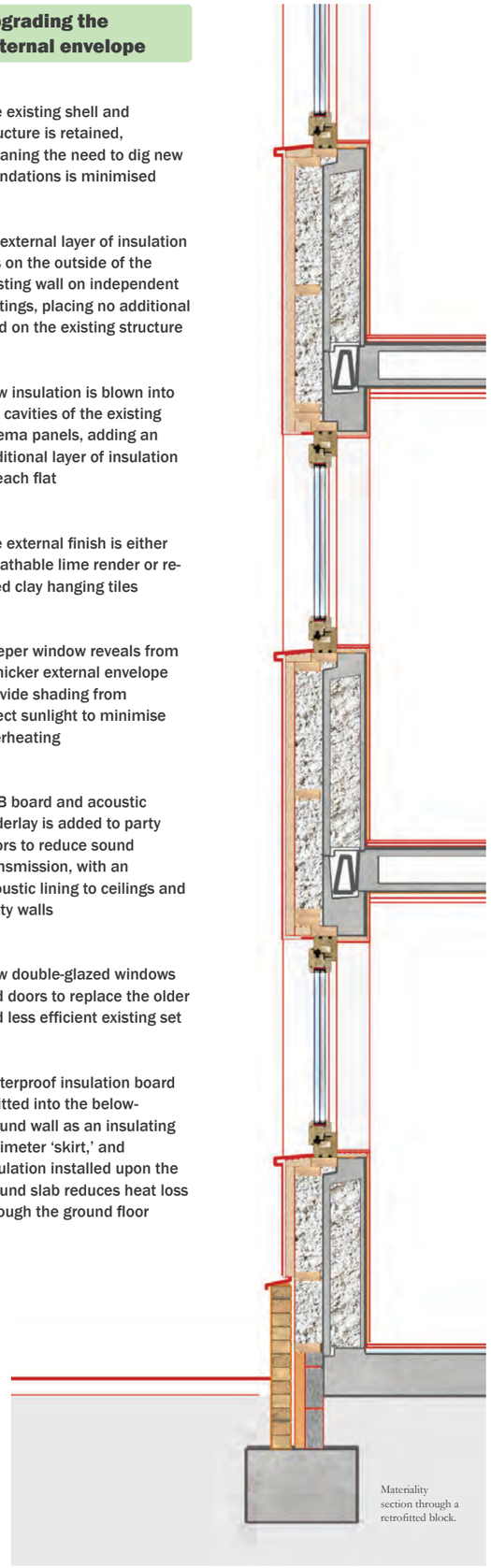
The external finish is either breathable lime render or re-used clay hanging tiles

Deeper window reveals from a thicker external envelope provide shading from direct sunlight to minimise overheating

OSB board and acoustic underlay is added to party floors to reduce sound transmission, with an acoustic lining to ceilings and party walls

New double-glazed windows and doors to replace the older and less efficient existing set

Waterproof insulation board is fitted into the below-ground wall as an insulating perimeter 'skirt,' and insulation installed upon the ground slab reduces heat loss through the ground floor



Materiality section through a retrofitted block.

Construction cost and duration of retrofit

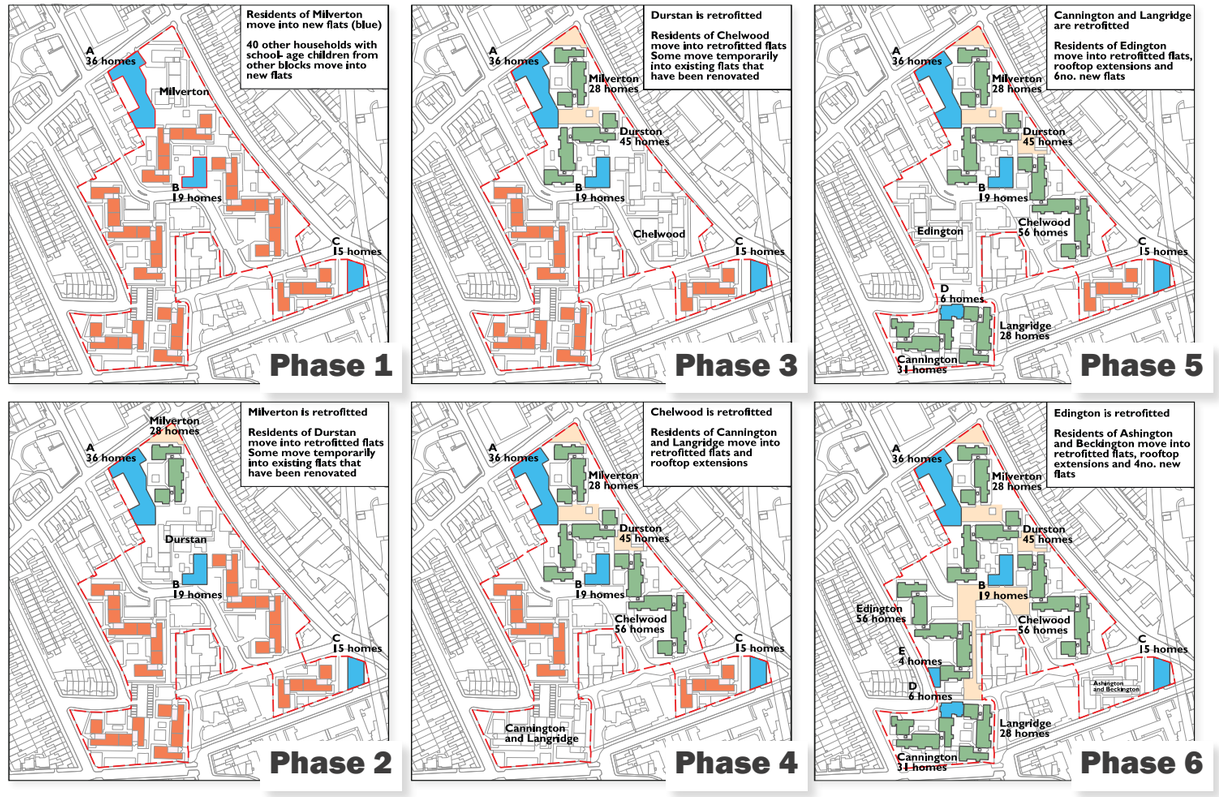
The estimated time required for construction of the retrofit and infill proposal is around 10 years, half the time Camden Council have estimated the demolition and rebuild scheme will take to complete (19 years).

The retrofit scheme will lessen disturbance for residents of the estate and surrounding area and reduce health impacts of pollution.

The construction of the retrofit scheme will use less material and construction resources at a time when both are in short supply for retrofitting the UK's existing building stock, required for mitigating climate change.

The estimated development cost of the retrofit proposal is around 1/4 that of the demolition and rebuild scheme, due to:

- Less overall floor space
- Simpler form of construction
- Leaseholders do not need to be bought out (they could move into a new-build flat temporarily, before returning to their retrofitted flat)
- Existing sewers and road infrastructure do not need to be replaced



Phasing for a retrofit redevelopment

Phasing diagram for a retrofitted West Kentish Town Estate:

Phase 1: 2024-2026
Phase 2: 2026-2027
Phase 3: 2027-2029
Phase 4: 2029-2031
Phase 5: 2031-2033
Phase 6: 2033-2035

For comparison, Camden Council have approximated that phasing for a demolition-and-rebuild proposal will conclude in 2043

A phased retrofit plan can capitalise on the existing estate's replicated block design. Once the scheme for an initial block has been designed and built, the detailing can be copied from one block to another, repeating fabrication patterns and reducing material wastage. Construction processes can be repeated reducing the duration of each phase compared to those of a new-build development where each block may be different.

The construction programme starts with 70 new flats, enabling families in most urgent need to move in first, plus those moving out of the first block to be retrofitted. This small block would enable the testing of the retrofit design and construction, before rolling out the retrofit at a greater speed and scale. Residents would move out of their existing home and straight into a newly retrofitted home.

Cost Summary: Retrofit and infill new-build

RIBA Stage 1 cost estimate	No.	Area m2	Cost per m2	Cost	Total cost
Preparatory works					
Demolition cost, general site clearance and contamination					**£675,000**
Accommodation					
Retrofit residential units	232	20,584	£2,143	£44,111,512	
Extensions to retrofit units		132	£2,500	£330,000	
New-build residential units	80	7,679	£2,700	£20,733,300	
New-build extension (roof-top units)	42	3,520	£2,501	£8,803,520	
Community space		200	£2,000	£400,000	
Commercial shell and core		1,938	£1,500	£2,907,000	
					£77,285,332
Allowances					
Wheelchair adaptable units	8		£10,000	£80,000	
Enhanced for leasehold reprovision	53		£15,000	£795,000	
					£875,000
External works, SUDS and statutory services					**£5,763,000**
Infrastructure costs					**£1,050,000**
Unmeasured allowance					**£4,265,410**
Preliminaries					**£17,914,722**
Overheads and Profit					**£10,748,833**
Fees, relocation and contingency (allow 30%)					**£35,471,150**
Totals	**354**	**34,053**	**£4,524**		**£154,048,447**
				Cost per home	£435,165

Cost Summary: demolition and new-build

Totals	**886**				**£565,920,000**
				Cost per home	£638,736

Estimate assumes: commencement date 2022

Cost comparison

The total development cost of the retrofit and infill scheme is £154m.

The proposed demolition and rebuild scheme by comparison is estimated by Camden Council to be £565m at 2022 prices, ie. approximately £608m at 2024 prices.

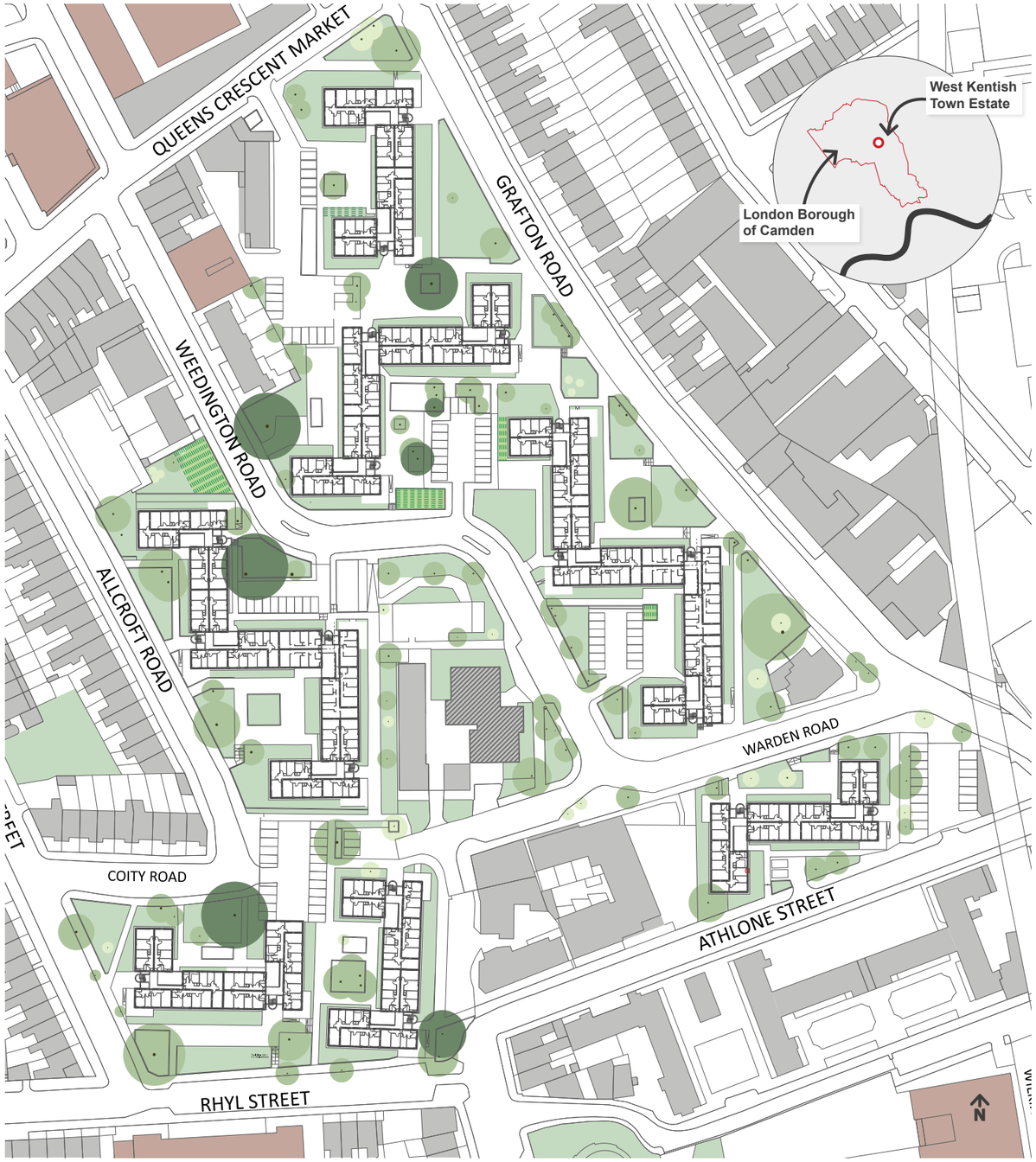
Existing site plan

The original brief to the architects was to redevelop a 11.3 acre (4.57 hectares) site to a density of 135 persons per acre.

The estate was designed as a ‘mixed high and low development’, comprising two high blocks of 10 and 15 storeys containing 71 flats, forming a tower, surrounded by 3 and 4 storey blocks with 316 flats set in open green space. It was planted with trees with the help of the Civic Trust and seen as a ‘successful integration of landscaping and architecture’. In 1988 the central tower (shown hatched) was sold to avoid the cost of undertaking structural strengthening work, leaving the low-rise blocks which make up the estate today.

The original 5-flat module, repeated 62 times providing:

229no. 2-bedroom flats
62no. 3-bedroom flats
with 19no. studio flats on the ground floor



Repeated modules and south-facing living rooms

The layout of the 3 and 4 storey blocks uses a repetition of a module of 5 flats accessed from an entrance courtyard (19 courtyards in total). The module is reflected, rotated and joined together to achieve a variety of configurations and end conditions. The blocks have been organised to enable living rooms to face south (yellow) or east (pink), minimising north-facing living rooms (blue).

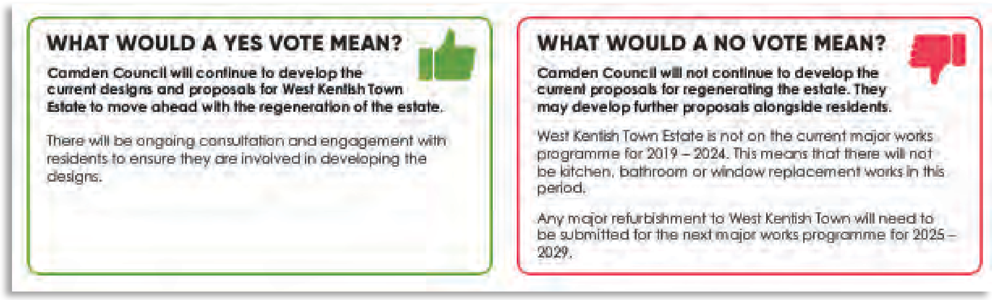
Past refurbishment and proposed demolition

The Reema system- although structurally sound- had minimal insulation. This resulted in condensation problems which would require major works to be rectified. In 1982, residents campaigned for improvements to the blocks. Demolition-and-rebuild was initially considered by Camden Council but residents insisted on refurbishment, which was carried out in 1986.

By 2016 the backlog of maintenance and repairs on the estate was again a problem, with damp and mould occurring. In addition, there was overcrowding due to families being housed in flats that are too small for them. Camden Council began to discuss the possibility for redevelopment with residents.

Consultants were appointed to carry out an options appraisal, including a 'low intervention' scheme for refurbishment with infill development.
However, options that retained the buildings did not aim to resolve issues such as lack of access to external space, problems with the internal layout or the need to upgrade services, and the environmental implications of demolition-and- rebuild options were ignored.

In 2020, tenants were offered a choice: keep the existing estate with no possibility of refurbishment of any kind for another 7-12 years or demolish the estate to provide new housing. Tenants voted for demolition- 93% voted in favour for this binary choice via a ballot.



WHAT WOULD A YES VOTE MEAN?

Camden Council will continue to develop the current designs and proposals for West Kentish Town Estate to move ahead with the regeneration of the estate.

There will be ongoing consultation and engagement with residents to ensure they are involved in developing the designs.

WHAT WOULD A NO VOTE MEAN?

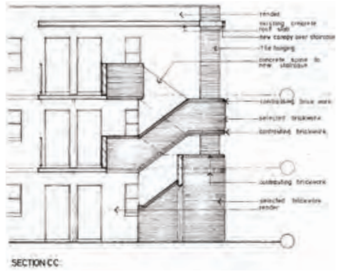
Camden Council will not continue to develop the current proposals for regenerating the estate. They may develop further proposals alongside residents.

West Kentish Town Estate is not on the current major works programme for 2019 – 2024. This means that there will not be kitchen, bathroom or window replacement works in this period.

Any major refurbishment to West Kentish Town will need to be submitted for the next major works programme for 2025 – 2029.

The question upon the ballot paper given to residents in March 2020.

1986 improvements and repairs:

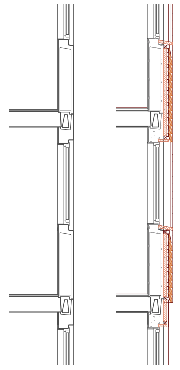


Stairs

The original spiral staircases were replaced with straight-flight brick staircases to improve accessibility, with a secure entrance door to each block.

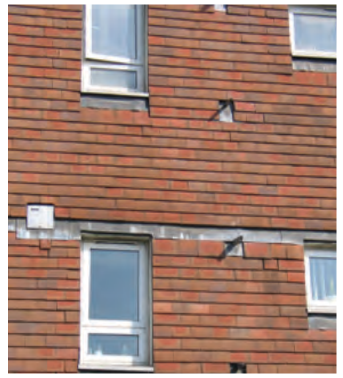
Roof repairs

The original asphalt roof suffered cracks and damage from sustained exposure. It was repaired and protection added. The protection has since been stripped back and the roof is now unprotected, uninsulated and prone to leaks.



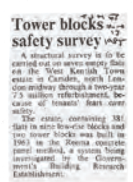
Tile cladding

The hollow concrete panels which make up the external wall of each block were clad in clay hanging tiles and render, with 50mm of mineral wool insulation behind. Although providing some improved thermal performance, it is far below current standards.

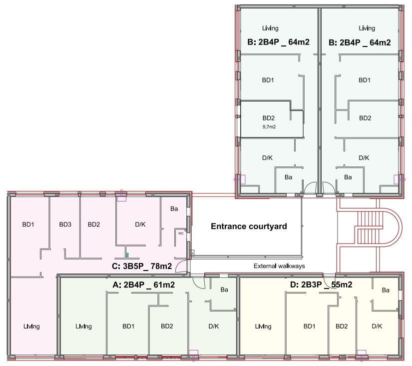


Residents push for refurbishment, 1982

Strong campaigning by residents of the estate in the 1980's secured structural testing and refurbishment works to be carried out by the local authority.



Newspaper clippings courtesy of the Heath and Hampstead Society.



The 5-flat module post-1986 improvements

The Residents' Brief, 2019

Discussion with residents led to the formulation of a list of requirements to be delivered through redevelopment of West Kentish Town Estate:

- **Good quality, well insulated and ventilated homes**
- **Access to external private and shared space**
- **A mix of different size homes to suit larger families (in accordance with Camden council's policy)**
- **Level access to homes on all floors**
- **Improved acoustics between homes**
- **Improved layout with larger bedrooms and increased storage**
- **Retention of trees and open space**
- **Improved security and way-finding**

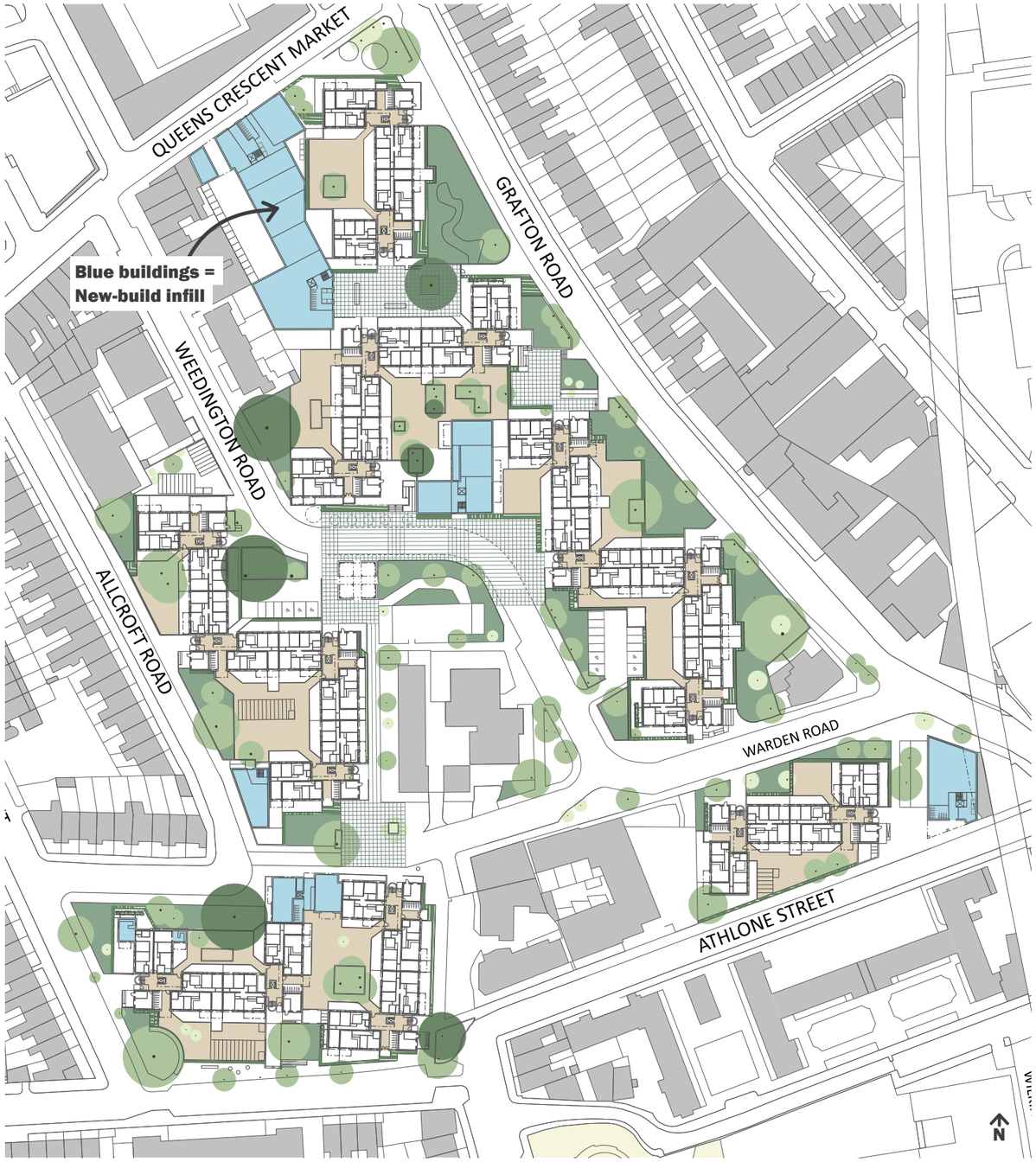
Source: West Kentish Town Engagement Summary, makegood/Camden council, July 2019

Proposed site plan

The West Kentish Town Estate retrofit and infill proposal shows that a good mix of homes can be provided. The site plan responds to the needs of existing residents who include:

- Older people who have lived on the estate for decades, whose children have left home and now need to downsize
- Families with school age children, who are often living in over-crowded conditions
- Families within the borough who are on the housing register and in need of social rent homes
- Leaseholders who want to stay living on the estate

The existing buildings can be altered to meet modern standards, and the public realm improved, without causing the rupture that comes with demolition. Although the overall floor area is significantly increased, the overall massing and height of the proposals is not dissimilar to the existing, and the many aspects that residents appreciate about the estate are retained- easy access to outdoors, green surroundings and sense of community.



Accommodation:

Total number of homes in a retrofit scheme:

354 homes

(316 on estate as existing)

The proposed scheme would include:

232 retrofitted homes
42 new rooftop homes
80 new three- bedroom homes in new buildings

The numbers of different flat sizes would be:

57 one-bedroom flats
127 two-bedroom flats
97 three-bedroom flats
70 four-bedroom flats
3 five-bedroom flats

Number of flats increased by 12%.
Overall floor space increased by 63%.

Integrated landscape and architecture

With a retrofit scheme the mature trees across the estate can remain in place as an integral part of the public realm. Retaining the existing buildings avoids the replacement of infrastructure such as sewers and foundations, which is disruptive and carbon intensive.

The new infill blocks are proposed to be built on the sites of garages and car parks, minimising the loss of grassy areas and planted green space wherever possible. The biodiversity on the site is enhanced by additional elements such as wildflower meadow and hedgerow planting, as well as purpose-built structures to encourage wildlife.

Views of AAB architect's retrofit proposal for West Kentish Town Estate:

These views show refurbished blocks with roof extensions and new balcony structures along Grafton Road. It is proposed that the grassy areas upon the edge of the estate are seeded to create native wildflower meadows. Each new and existing flat would have access to a private balcony or garden looking on to the improved landscape.

Looking down (south) Grafton Road

Looking up (north) Grafton Road

The resident's experience of retrofit

In the retrofit proposal a higher overall number of social homes is proposed, leaseholders retain their homes, and the benefits of the existing estate are retained.

The demolition and rebuild scheme developed by Camden Council provides many more homes, 60% of which are flats for sale, marketed to maximise value to fund the scheme rather than targeted at housing need. There is likely to be high proportion of short-term residents, and the identity of the estate will be lost. The total built floorspace will be quadrupled, which will transform a tranquil area- sighted by residents as something they like about the estate- to a high- density environment with a very different character.

	Residential floor space m^2 (GIA)		Number of homes	
Existing estate				
Social rented homes	17,223	83%	263	83%
Leaseholder homes	3,514	17%	53	17%
Total	**20,737**		**316**	
Retrofit and infill				
Social rented homes	31,783		301	85%
Leaseholder homes			53	15%
Total	**31,783**		**354**	
Demolition and rebuild				
Social rented homes	33,580	42%	275	31%
Affordable' rent homes			80	9%
Market homes	47,159	58%	531	60%
Total	**80,739**		**886**	

Additional floorspace required versus percentage of tenure mix achieved; a conventional demolition and rebuild scheme requires vast amounts of additional floorspace to achieve a similar level of socially rented homes upon the site

Render of a kitchen within the retrofitted flats: A newly fitted kitchen and balcony open out onto the retained courtyards

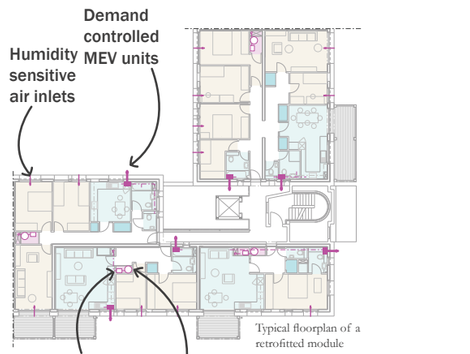
Mix of dwelling sizes	1-bed	2-bed	3-bed	4-bed	
Existing estate	19	234	**62**	**1**	**316**
Camden Council's recommended	63	95	95	63	**316**
Retrofit and infill scheme	57	127	97	73	**354**
Camden Council's recommended	71	106	106	71	**354**

Camden Council's Housing Commission and Partnerships Team suggested a percentage mix of 20/30/30/20 for 1/2/3/4-bed dwellings for any new development upon the West Kentish Town Estate site (Dec 2022)

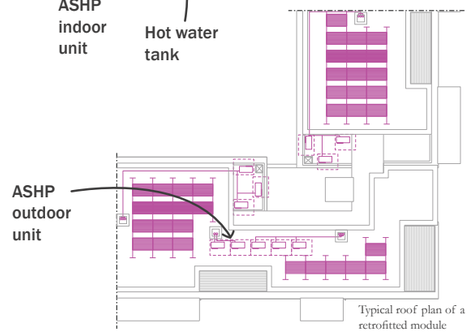
Mould and Damp

Overcrowding and lack of suitable ventilation systems mean that some residents suffer from condensation and mould in their homes, exacerbated by leaking roofs. The existing estate is portrayed as not able to be improved. Some local councillors have described the buildings as 'made out of cardboard' and 'rotting'.

Retrofit works with new ventilation systems providing continuous background ventilation to the whole home (with or without heat recovery) will eliminate the harmful effects of condensation and growth of mould spores.



Typical floorplan of a retrofitted module



Typical roof plan of a retrofitted module

Addressing overcrowding: rebalancing unit size mix

74% of the existing flats have two bedrooms. In the retrofit proposal flats are reconfigured to meet housing standards: the smaller 2-bedroom flats become 1 bedroom flats, and others become 3 person flats or are joined together to create larger flats. AAB architects' proposal shows that by combining retrofit of existing homes with infill new-build, the required mix of unit sizes can be provided.

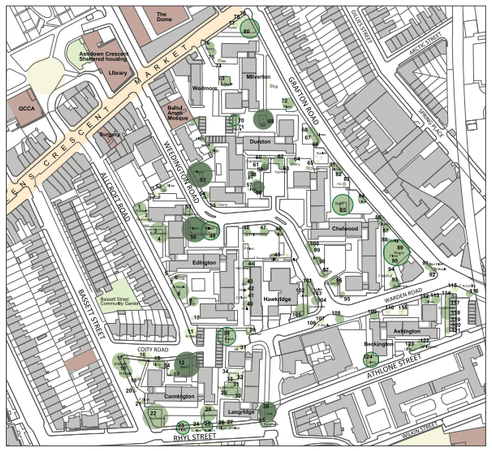
Renewable Energy

Retrofit offers a more comfortable internal environment, better air quality and lower energy bills. The options for low carbon heating, by either ASHPs (air source heat pumps) or GSHPs (ground source heat pumps) has not been explored in detail, but would be part of the scheme, along with roof-mounted solar panels to supply residents directly with locally generated electricity.

The value of mature trees

The 40 different species of trees growing on the estate provide an established landscape and sustain an ecosystem for local wildlife. They draw pollutants from the air and sequester carbon at a greater rate than younger trees and saplings. The canopies of mature trees provide a large area of shading and cooling across the estate, and the developed root structures assist in water retention to minimise ground saturation and water run off.

A tree survey carried out by an arboriculturalist in 2019 found that, of the 124 trees upon the estate, 20% had a future life expectancy of over 40 years, including oak, lime and beech trees, and 90% had a future life expectancy of over 20 years.



Existing
tree plan

Purpose of the research

We believe that the proposal shown in this document addresses the needs set out in the Residents' Brief in 2019.

The proposed improvements will take a shorter amount of time to complete compared to a demolition-and-rebuild scheme, with significantly less disruption to the estate whilst improvement works are carried out.

A deep retrofit to existing blocks across the West Kentish Town Estate would provide much need improvements to the homes of existing residents. The building fabric and layout of each flat will be refurbished and improved to create warm, mould and damp-free homes. Access to a balcony or garden will be included for each flat.

New rooftop flats and infill blocks will provide more housing to the estate, including new flats built at sizes which suit the requirements of local families.

A similar amount of new social rent homes will be provided in this scheme as compared to the proposed demolition-and-rebuild scheme, and at a density which is appropriate for the local area.

Although not shown within this presentation, the full research project also how retrofit and refurbishment could address the need to improve wayfinding across the existing estate, and how retaining and improving the existing trees and landscape around the estate- rather than excavating and redeveloping it- could bolster existing biodiversity across the site.

Recapping the Residents' Brief, 2019

- Good quality, well insulated and ventilated homes
- Access to external private and shared space
- A mix of different size homes to suit larger families (in accordance with Camden council's policy)
- Level access to homes on all floors
- Improved acoustics between homes
- Improved layout with larger bedrooms and increased storage
- Retention of trees and open space
- Improved security and way-finding

Source: West Kentish Town Engagement Summary, make:good/Camden council, July 2019