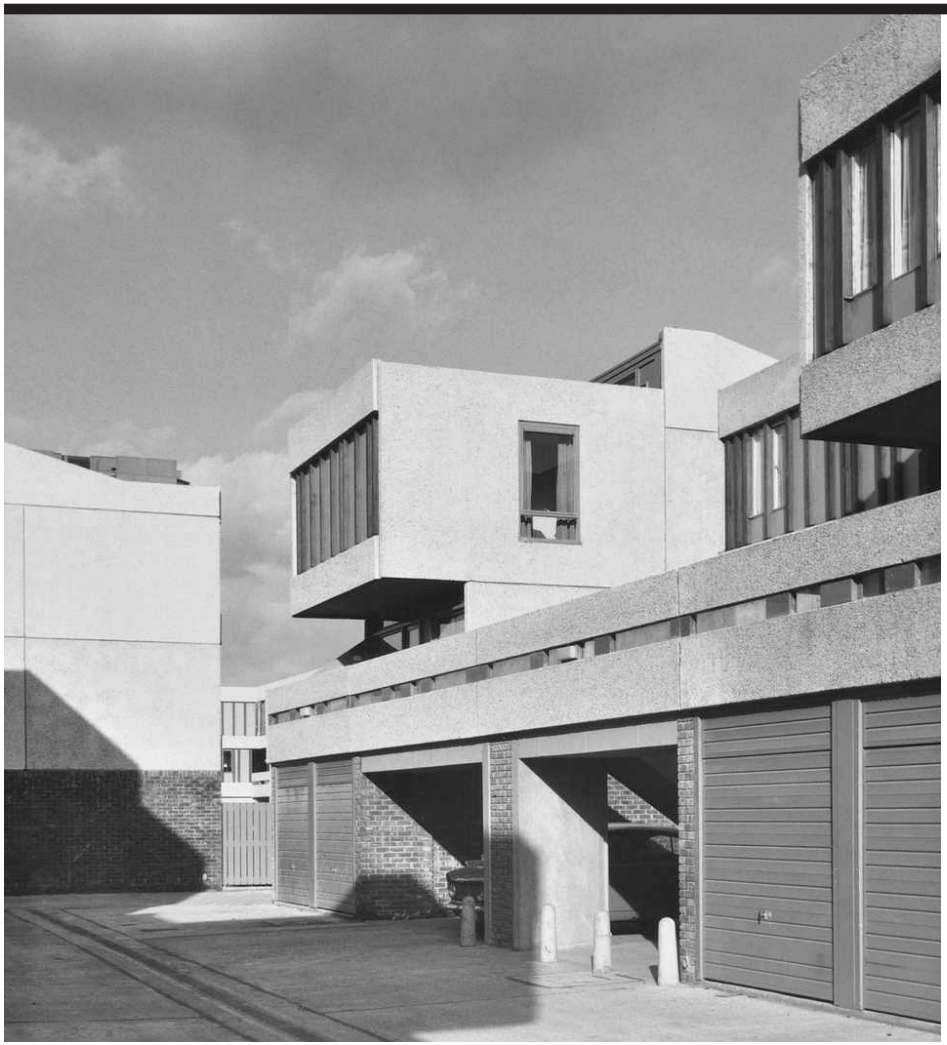
Retrofit Thamesmead



Lesnes Estate Retrofit, South Thamesmead, London

AAB architects
December 2023

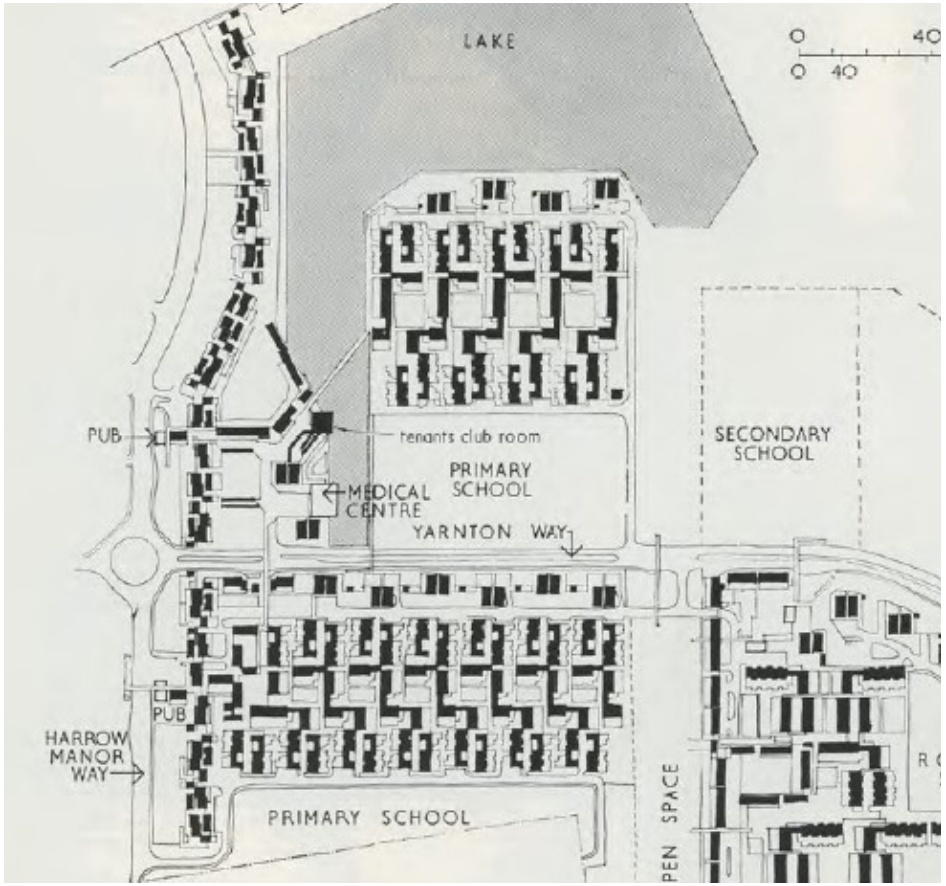
(Left) Lensbury Way, Lesnes Estate, 1970. Copyright London Metropolitan Archives
(Right) Lensbury Way, Lesnes Estate, 2023. Copyright AAB architects

Resident meeting discussing retrofit potential across Lesnes Estate, 2023. Copyright AAB architects

Residents of the Lesnes Estate, South Thamesmead, want to develop a retrofit strategy to upgrade their homes and make them fit for the future.

Retrofit works could be deployed individually- household-by-household, on a block-by-block basis, or a combination of the two. It is proposed to carry out a feasibility study, including assessment of the existing condition of the houses and flats, and conversations with residents to determine how homes are being lived in. Proposals will include a set of fabric-first retrofitting measures which can be deployed across each home. This study will be carried out in the context of regeneration delay and to support campaigns by residents to retain their homes.

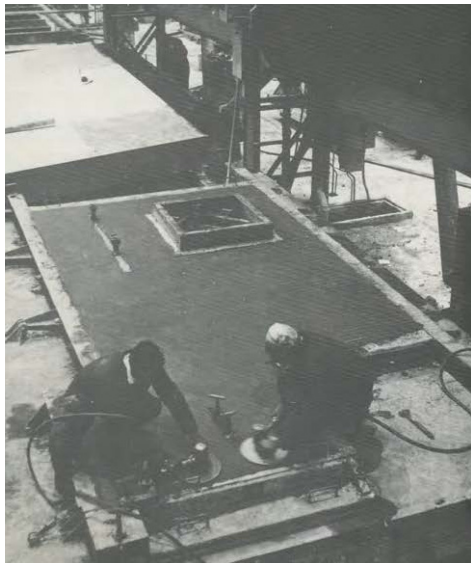
Aerial photo of Southmere Lake (top), Southmere estate (middle), Lesnes estate (bottom). 2023. Copyright Google Maps



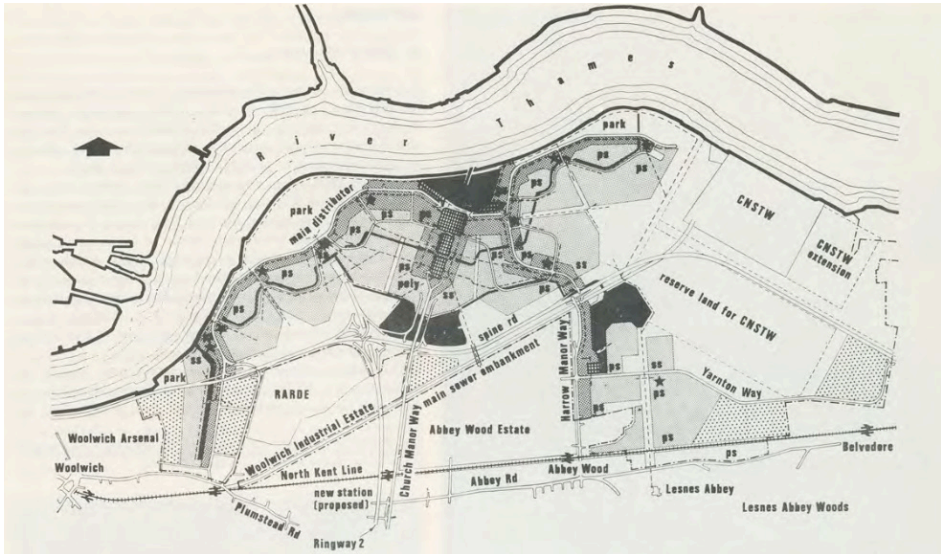
Site plan showing the South Thamesmead development; Lesnes Estate at the bottom, Southmere Estate at the top, and Parkview Estate to the right. 1972. Copyright Thamesmead Community Archive

The Lesnes Estate was part of the first phase of an ambitious scheme for what was essentially a new town of 60,000 homes, built on industrial marshland to the south of the Thames. It is mostly composed of 3-storey town houses, arranged above garages in various layouts to create parking mews and interconnected pedestrian courtyards, with six 13 storey towers along the northern edge of the estate. Thamesmead was designed by the GLC and constructed between the late 1960s and early 1970s using the French Balency precast concrete system. With its striking modernist architecture the area-wide mass building scheme has held both architectural and cultural significance since it's construction.[2]

Interior of on-site industrialised building factory, 1968. Copyright Bexley Local Studies & Archive Centre



Finishing panels and removing from moulds, 1972. Copyright Peabody

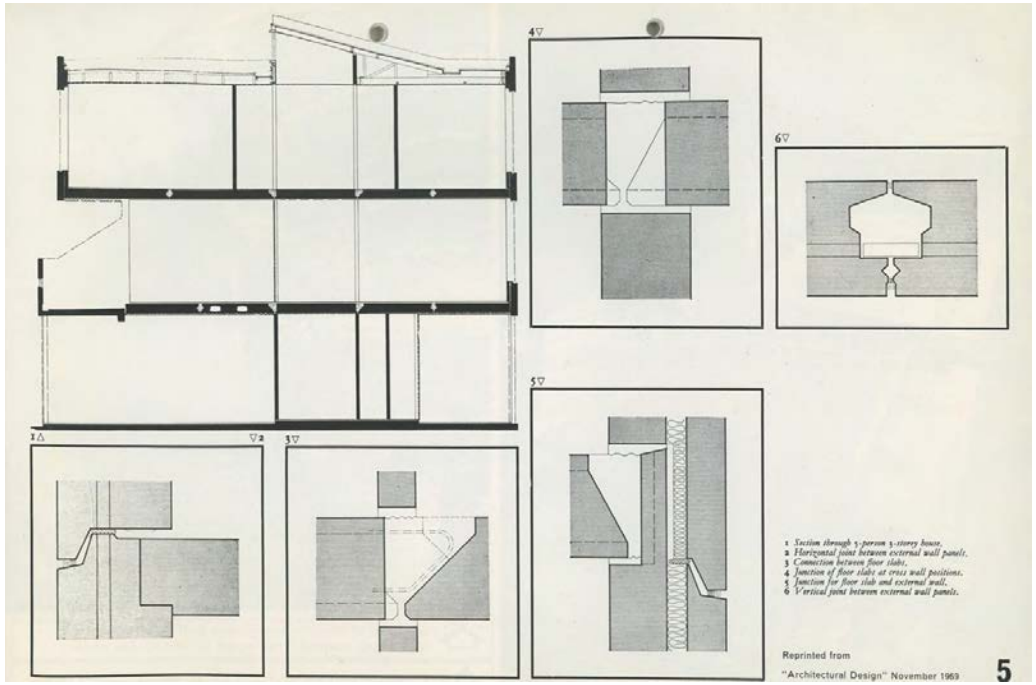


Site plan showing the 'New Town' of Thamesmead, 1972.
Copyright Thamesmead Community Archive

South Thamesmead under construction, 1969.
Copyright Thamesmead Community Archive

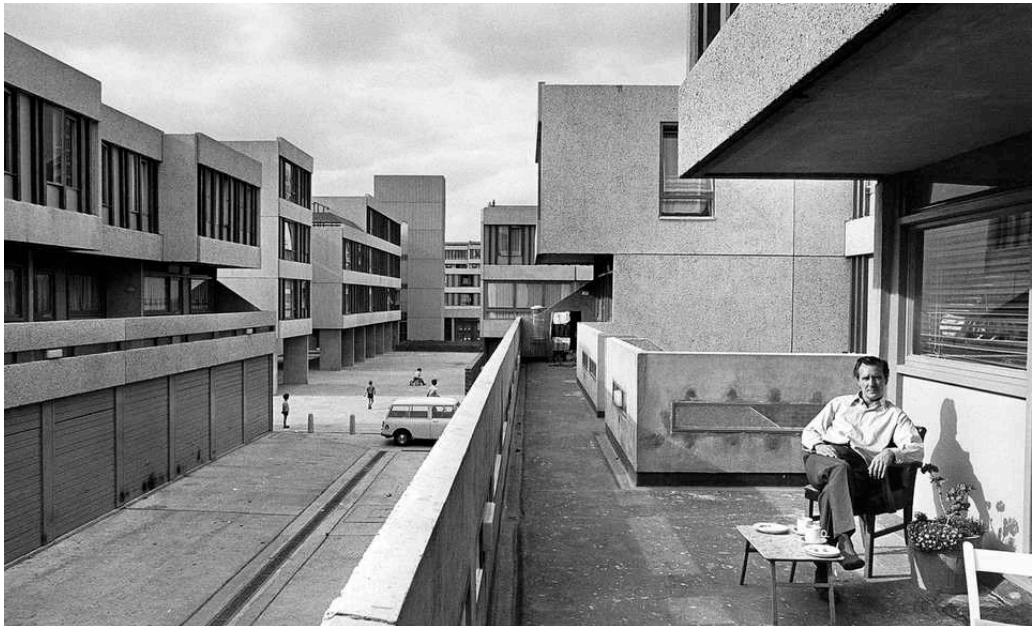
South Thamesmead remains a important example of New Towns-era, post-war planning within the UK. Built upon land purchased from by the GLC from the Ministry of Defence, the new area was built to alleviate post-war housing shortages across the city. South Thamesmead was designed following the principles of New Town planning set out by the Town and Country Planning Association, following on from the 1946 New Towns Act. These included integrating schools and facilities within the scheme to build a localised sense of community, integrating a network of green space into the town's fabric, prioritising social housing, and innovative building design.[3]

Original cavity drain to junction between precast concrete panels, 2023



Construction details of the Balency industrialised building system used within South Thamesmead, 1972. Copyright Thamesmead Community Archive

Infilled garages (top L), new windows and wall panels (top R), home decorations (bottom L), original windows (bottom R), 2023. Copyright AAB architects

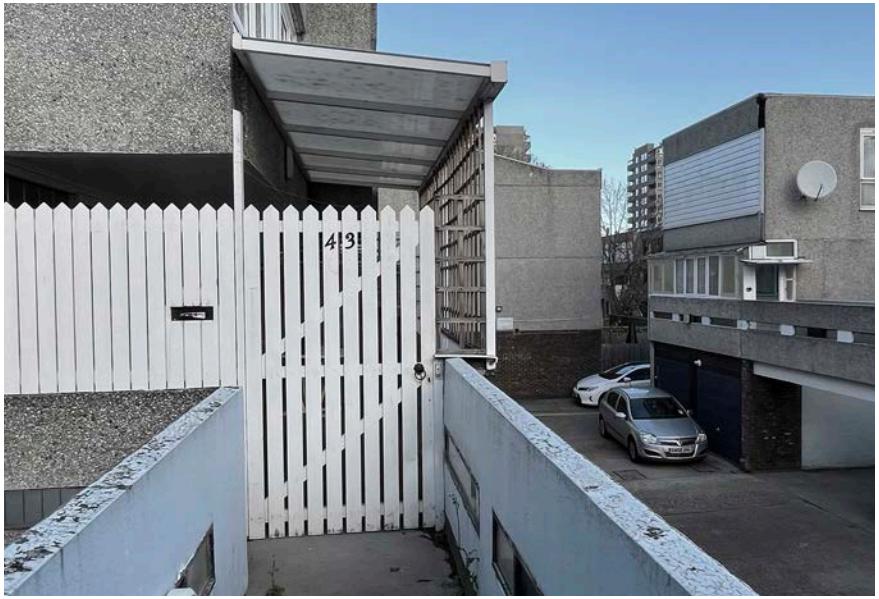


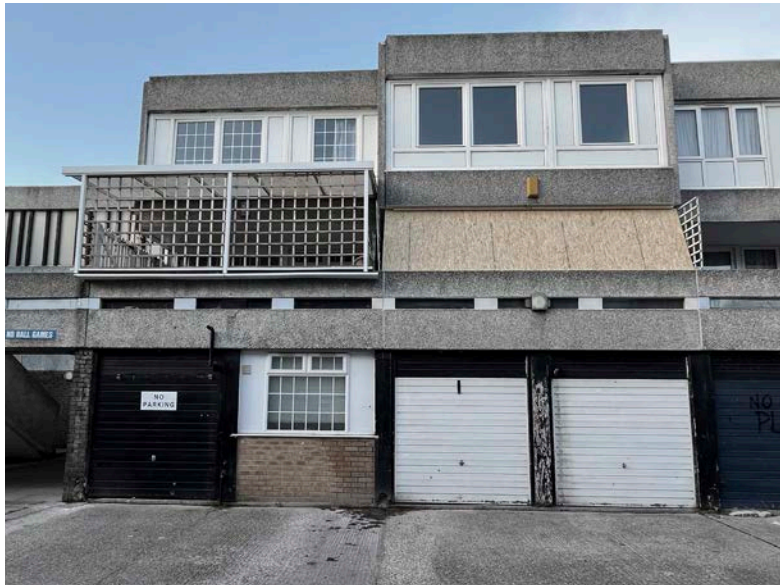
An original resident of the Lesnes Estate sitting outside his home, 1970. Copyright RIBA

173 of the 596 homes on Lesnes Estate are freehold houses which have been bought by long term residents of the estate. Over the years they have upgraded their homes through means such as window and cladding replacement and converting garages to living accommodation. The estate has evolved in a patchwork manner, where residents have stamped their own individuality upon identical houses they occupy. The original precast concrete walls, however, are predominantly untouched, and houses remain largely uninsulated.

The estate sits within the top 20% most deprived areas in the UK according to the Multiple Deprivation Index (2019).[4] Fuel poverty is a major challenge across the estate, and a key issue which residents wish to address through means of retrofit. The estate sits in a ward with a diverse demography, with 45% of residents identifying as Black, 38% White, and 11% Asian.[5] The Tenants and Residents Association is currently going through the process of constitution in order to apply for funding opportunities such as the AHF.

Residents walking through Lesnes Estate today, 2023. Copyright AAB architects





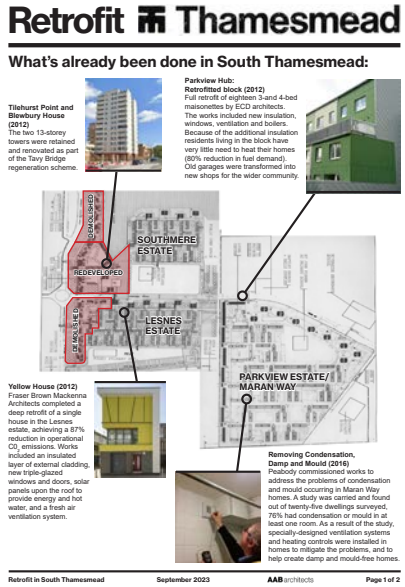
Examples of alterations carried out to the houses on Lesnes estate.

Wolvercote Road, Lesnes Estate 2023.
Copyright AAB architects

The feasibility study will:

- Assess the construction of the houses and flats through non-invasive, but detailed surveys of the structure and fabric.
- Understand specific ventilation and heating issues through conversations with residents.
- Accurately draw and model homes as currently constructed.
- Develop tailor-made retrofit solutions for the typology of terrace house upon the estate.

AAB architects have already met with residents to discuss the possible benefits of retrofit and carried out initial research into the existing buildings and previous work to retrofit them.



Retrofit Thamesmead

What's already been done in South Thamesmead:

Tilehurst Point and Blewbury House (2012)
The two 13-storey towers were retained and renovated as part of the Tavy Bridge regeneration scheme.

Parkview Hub: Retrofitted block (2012)
Full retrofit of eighteen 3-and 4-bed maisonettes by ECD architects. The works included new insulation, windows, ventilation and boilers. Because of the additional insulation residents living in the block have very little need to heat their homes (80% reduction in fuel demand). Old garages were transformed into new shops for the wider community.

SOUTHMERE ESTATE
REDEVELOPED
UNDER CONSTRUCTION
LESNES ESTATE
PARKVIEW ESTATE/ MARAN WAY

Yellow House (2012)
Fraser Brown Mackenna Architects completed a deep retrofit of a single house in the Lesnes estate, achieving a 87% reduction in operational CO_2 emissions. Works included an insulated layer of external cladding, new triple-glazed windows and doors, solar panels upon the roof to provide energy and hot water, and a fresh air ventilation system.

Removing Condensation, Damp and Mould (2016)
Peabody commissioned works to address the problems of condensation and mould occurring in Maran Way homes. A study was carried and found out of twenty-five dwellings surveyed, 76% had condensation or mould in at least one room. As a result of the study, specially-designed ventilation systems and heating controls were installed in homes to mitigate the problems, and to help create damp and mould-free homes.

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How we retrofit:

Homes do not need to be demolished and rebuilt to improve them. Refurbishments can be made to existing flats and houses to improve their condition. Insulation can be added to make homes warmer, new windows and doors installed to make homes less draughty, and new heating and ventilation can be installed to reduce damp, mould and heating bills. New rooms and extra space can even be created. Many improvements can be made whilst residents remain in their homes. Measures set out to retrofit a home include:

- Insulation to roof, walls and floors
- Improving the thermal performance of windows and doors
- Reducing draughts and heat loss caused by uncontrolled ventilation
- Improved ventilation, with heat recovery where necessary
- Measures to prevent overheating
- Low energy heating systems such as Heat Pumps
- Renewable sources of energy, such as solar voltaic panels
- Improved control of energy use

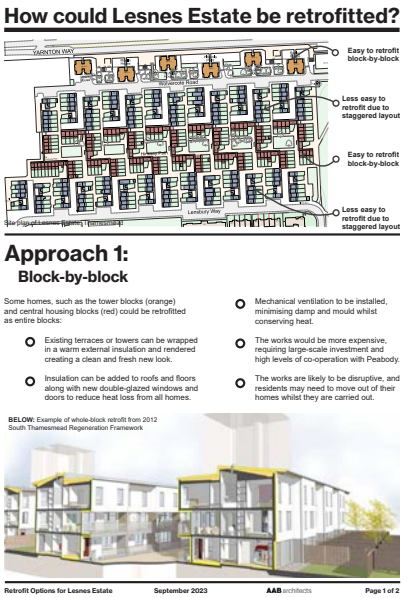
Retrofitting estates around the UK:

The cost of retrofitting works is much less than an equivalent demolition and rebuild, and the works can be done more quickly. The carbon emissions of the construction is less than for new build which helps the climate crisis.

Arctic Street, London (2014-2018)
15 flats for North Camden Housing Co-operative

Park Hill, Sheffield (2013-present)
Originally built in 1961, The Park Hill estate went through a slow decline towards dereliction. Instead of being demolished, the estate has been undergoing phases of retrofit and refurbishment, improving 900 existing flats and houses into warm, modern homes.

Wilmcote House, Portsmouth (2014-2018)
Portsmouth City council decided to retrofit the 11-storey block of Wilmcote House in 2014. They provided safer access to each home, and additional winter-garden spaces for residents in each flat. Residents reported much warmer flats after completion, and many reported cheaper fuel bills. The majority of residents could remain in their homes whilst the works were carried out.



How could Lesnes Estate be retrofitted?

YARNTON WAY
Easy to retrofit block-by-block
Less easy to retrofit due to staggered layout
Easy to retrofit block-by-block
Less easy to retrofit due to staggered layout
Solar Study of Lesnes Estate | Retrofit Thamesmead

Approach 1:
Block-by-block

Some homes, such as the tower blocks (orange) and central housing blocks (red) could be retrofitted as entire blocks:

- Existing terraces or towers can be wrapped in a warm external insulation and rendered creating a clean and fresh new look.
- Insulation can be added to roofs and floors along with new double-glazed windows and doors to reduce heat loss from all homes.
- Mechanical ventilation to be installed, minimising damp and mould whilst conserving heat.
- The works would be more expensive, requiring large-scale investment and high levels of co-operation with Peabody.
- The works are likely to be disruptive, and residents may need to move out of their homes whilst they are carried out.

BELOW: Example of whole-block retrofit from 2012 South Thamesmead Regeneration Framework

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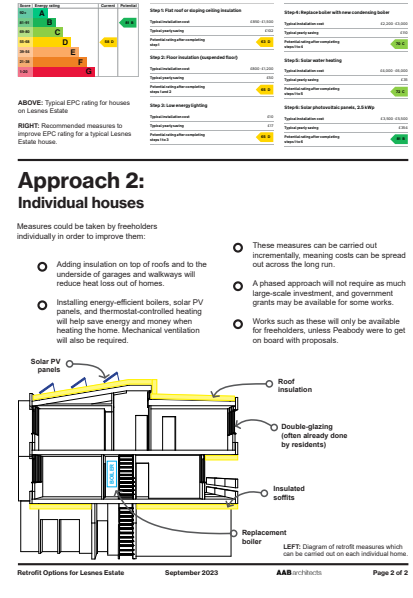

ABOVE: Typical EPC rating for houses on Lesnes Estate

RIGHT: Recommended measures to improve EPC rating for a typical Lesnes Estate house.

Approach 2:
Individual houses

Measures could be taken by freeholders individually in order to improve them:

- Adding insulation on top of roofs and to the underside of garages and walkways will reduce heat loss out of homes.
- Installing energy-efficient boilers, solar PV panels, and thermostat-controlled heating will help save energy and money when heating the home. Mechanical ventilation will also be required.
- These measures can be carried out incrementally, meaning costs can be spread out across the long run.
- A phased approach will not require as much large-scale investment, and government grants may be available for some works.
- Works such as these will only be available for freeholders, unless Peabody were to get on board with proposals.

Solar PV panels
Roof insulation
Double-glazing (often already done by residents)
Insulated soffits
Replacement boiler

LEFT: Diagram of retrofit measures which can be carried out on each individual home.

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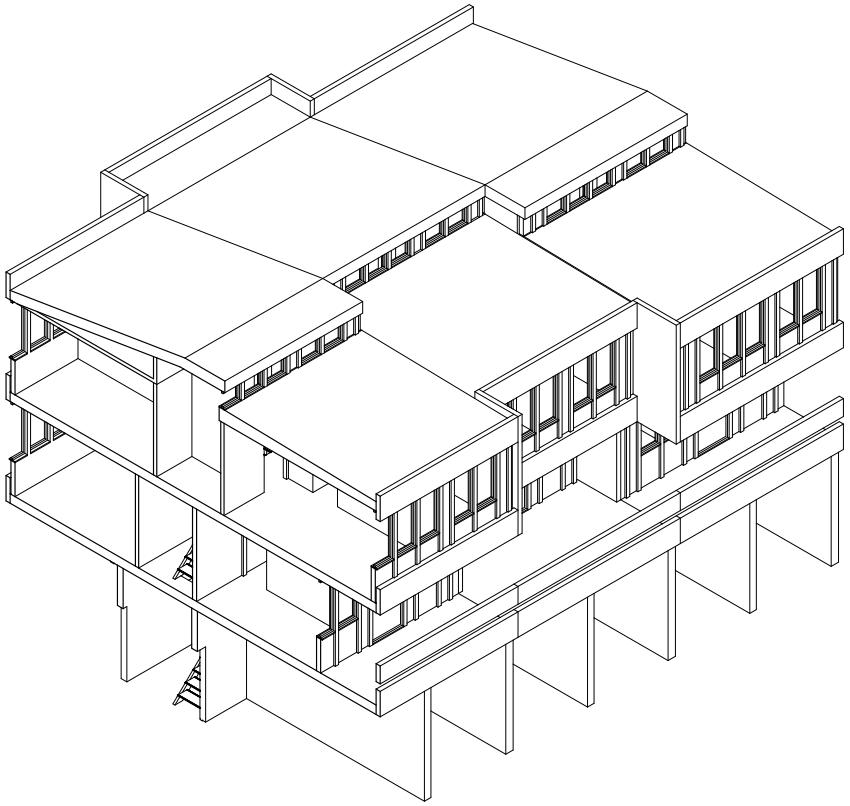
Leaflets provided to residents about retrofit potential across Lesnes Estate, 2023. Copyright AAB architects



Axonometric view of town house typology upon Lesnes Estate, 2023. Copyright AAB architects

Retrofitting schemes have been previously carried out within South Thamesmead with the aim to improve conditions within the 1960s building stock; a scheme which monitored and improved energy and ventilation conditions with smart meters upon the neighbouring Parkview Estate, and a deep retrofit of a row of flats and shops upon Yarnton Way. Lesnes Estate, however, has had no coordinated improvements to date, yet residents are keen to thermally improve their homes.

Peabody purchased large swathes of South Thamesmead from Gallion Housing in 2014, with the intention of demolishing and reveloping the land. This proposal has since been put on hold, and the opportunity to retain and retrofit has since arisen.

Towers on Yarnton Way, 2023.
Copyright AAB architects

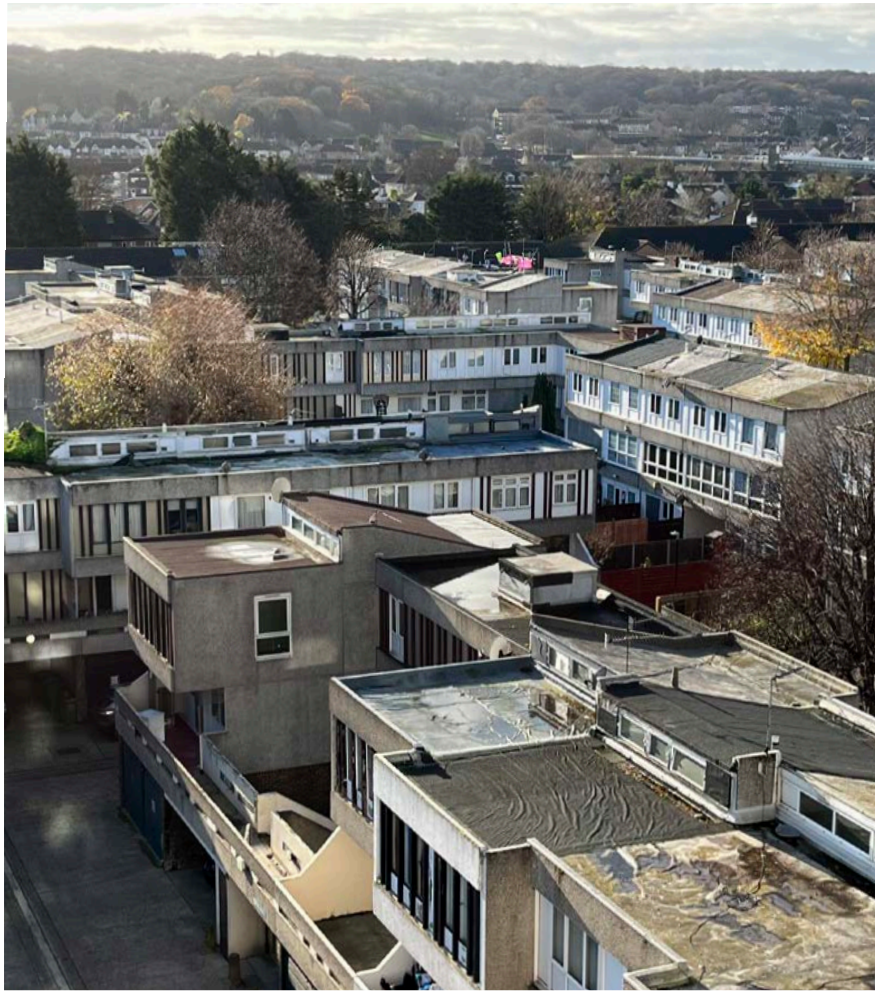
Plan of Lesnes Estate, 2023.
Copyright AAB architects

External space in the neighbouring Southmere Estate, 2023. Copyright AAB architects

Work carried out in a feasibility study for Lesnes Estate will be applicable to the adjacent estates of Parkview and Southmere, of which there are no current plans for demolition or redevelopment. These were constructed at the same time as the Lesnes Estate and follow the same (Southmere) or similar (Parkview) typology. Strategies developed within the feasibility study could inform strategies for these estates. Outreach to residents of these estates could be encouraged within this feasibility study.

A study into retrofit of post-war modernist buildings could also have a wider impact. Currently, knowledge about how to thermally renovate post-war public housing is lacking and it is often overlooked as an option. Focus has often been on individual houses, generally of traditional construction. The opportunity for retrofit at large scale- necessary to tackle the climate and ecological emergency- will be unlocked through schemes such as this. It will help build a greater understanding of how we can successfully retrofit our post-war building stock throughout the UK.

Pro-refurbishment banner and resident march upon Lesnes Estate, 2023. Copyright AAB architects (right/bottom), Thamesmead's first residents upon their new terrace, 1968. Copyright Bexley Local Studies & Archive Centre (top), a DIY partition upon a walkway, date unknown. Copyright Thamesmead community Archive (middle).



Roofscape showing varying maintenance of roofs 2023. Copyright AAB architects

Initial retrofit assessments have been carried out and work is ongoing.

Insulation of the timber roofs of the houses is a priority retrofit measure. Residents are continuing to maintain their own roofs but the housing association owned properties are left to degrade.

Retrofit Thamesmead Occupancy Questionnaire no.

Name:

Current EPC rating:

Address:

Occupancy Information:

Number of occupants:

Hours in week occupied:

Information about energy use:

Electrical annual use (kWh):

Gas annual use (kWh):

Information about heating and hot water supply:

Gas boiler details (make/model/age of boiler):

Electric heating details:

Hot water details:

Information about ventilation of the home:

Are there trickle vents in windows? If so which/where:

Mechanical ventilation in bathroom?

Mechanical ventilation in kitchen?

Retrofit Thamesmead Occupancy Questionnaire no.

Details of construction:

Roof:

Windows:

Walls:

Floors:

Details and date of previous improvements:

Extension:

Windows:

Other:

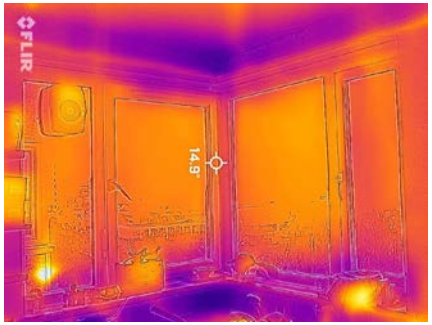
Survey info:

Overall plan dimensions:

Floor to ceiling heights:

Size of windows:

Roof repairs under way 2023. Copyright AAB architects



boarded up house
2023. Copyright AAB architects

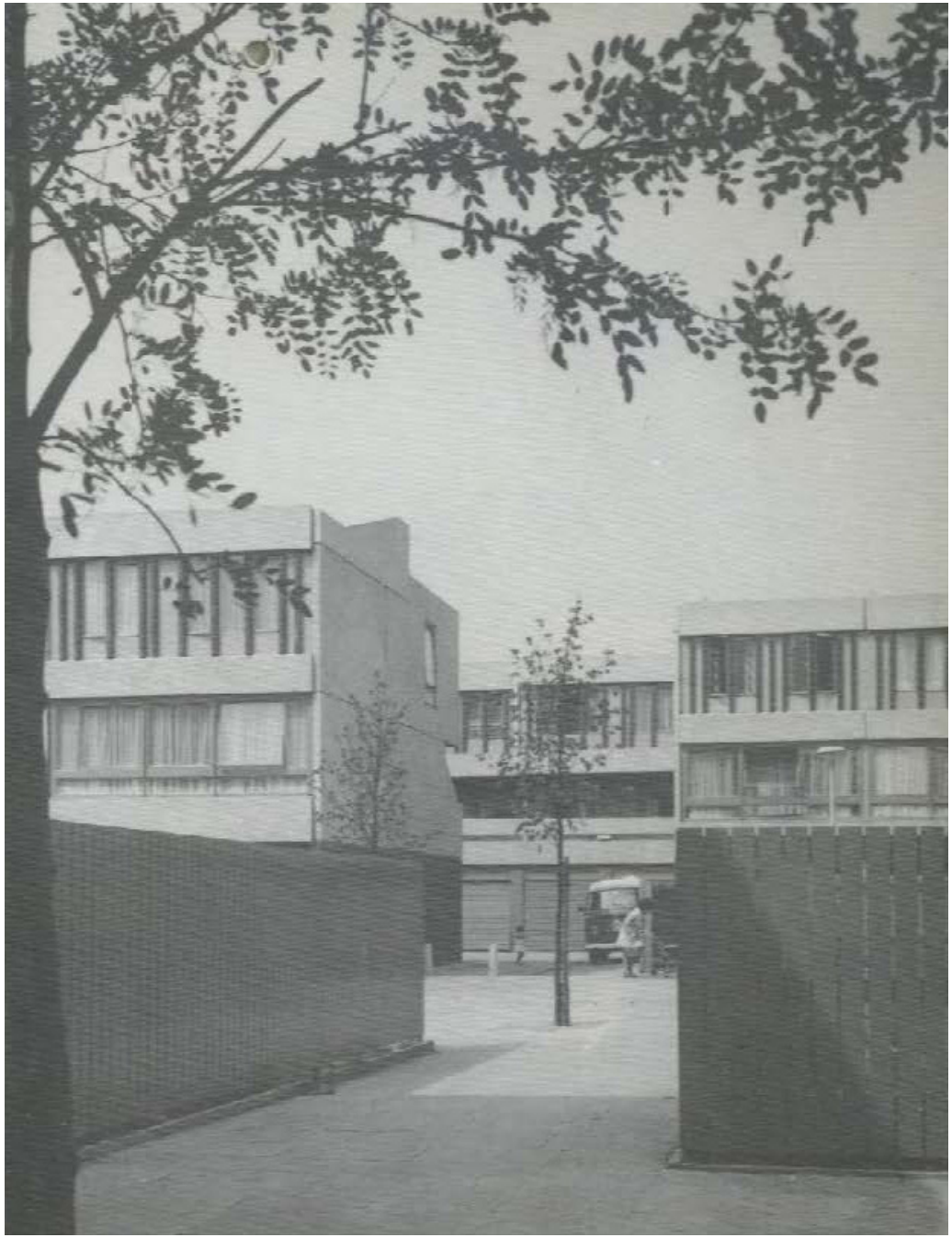
[1] ‘The making of Thamesmead’ https://thamesmeadcommunityarchive.org.uk/explore/stories/construction-the-making-of-thamesmead [accessed 09/11/23].

[2] ‘Thamesmead on Film’ https://thamesmeadcommunityarchive.org.uk/explore/stories/thamesmead-on-film [accessed 09/11/23].

[3] Markowitz, A. ‘The Making, Unmaking, and Remaking of Thamesmead’, UCL Development Planning Unit, November 2017.

[4] ‘Indices of Multiple Deprivation (IMD)’ https://public.tableau.com/app/profile/christina4704/viz/Bexley-DeprivationIndicesofMultipleDeprivation/IndicesofMultipleDeprivationIMD [accessed 09/11/23].

[5] ‘Census 2021’ https://www.bexley.gov.uk/discover-bexley/bexley-data-hub/census-2021 [accessed 09/11/23].



Lesnes estate after completion, 1972.