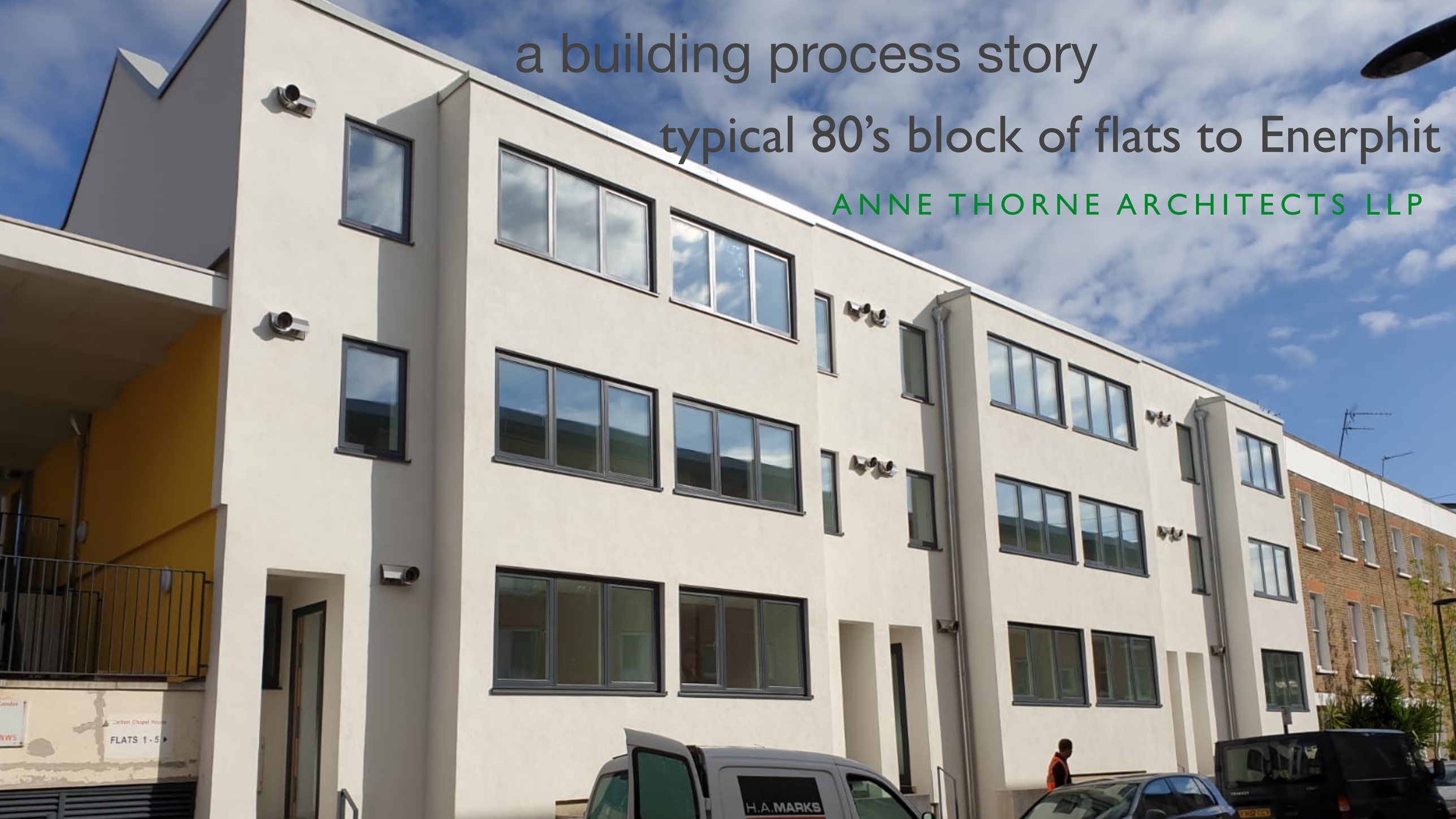


a building process story

typical 80's block of flats to Enerphit

ANNE THORNE ARCHITECTS LLP

Project Team

Client; North Camden Housing Co-operative
advised by consultant Adrian Buffery

Architect: Anne Thorne Architects LLP
Quantity Surveyor: Peter Gittins Assoc
Structural Engineer: Corbett & Tasker
Services Design: Alan Clarke
Contractor: HA Marks

What do you think is the building's number one problem?

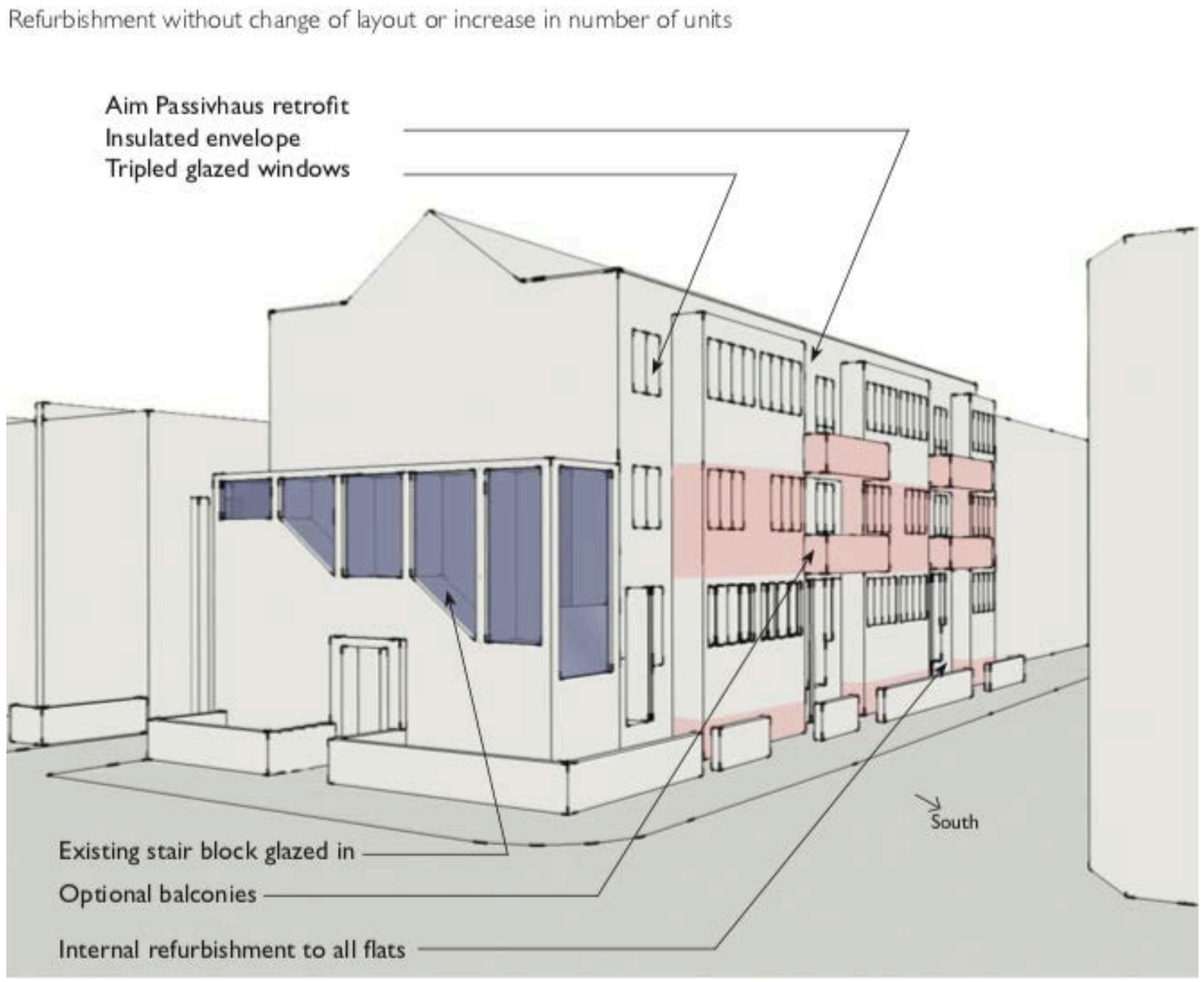
cold
noise

- Rotten windows
- Lay-out of flats.
- Boiler flues
- Ventilation

80's building for single people co-op members

at

costed feasibility



demolition and build new

add storeys

wrap up and simplify external envelope

enclose deck access

convert undercroft

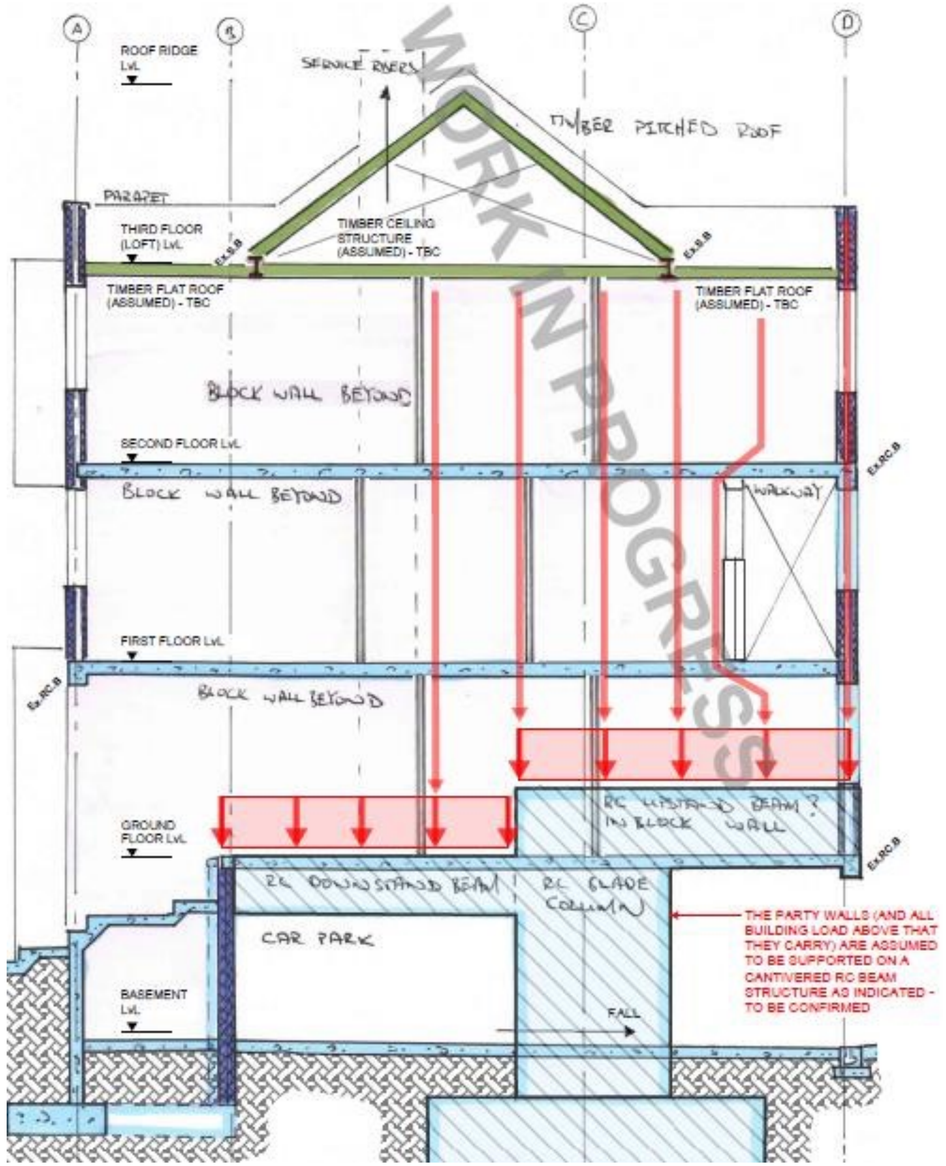
convert bedsits to one bed flats

roof garden/green roof

Enerphit

at

design strategy



Corbett and Tasker structural engineers

fragile fabric - stitch it together

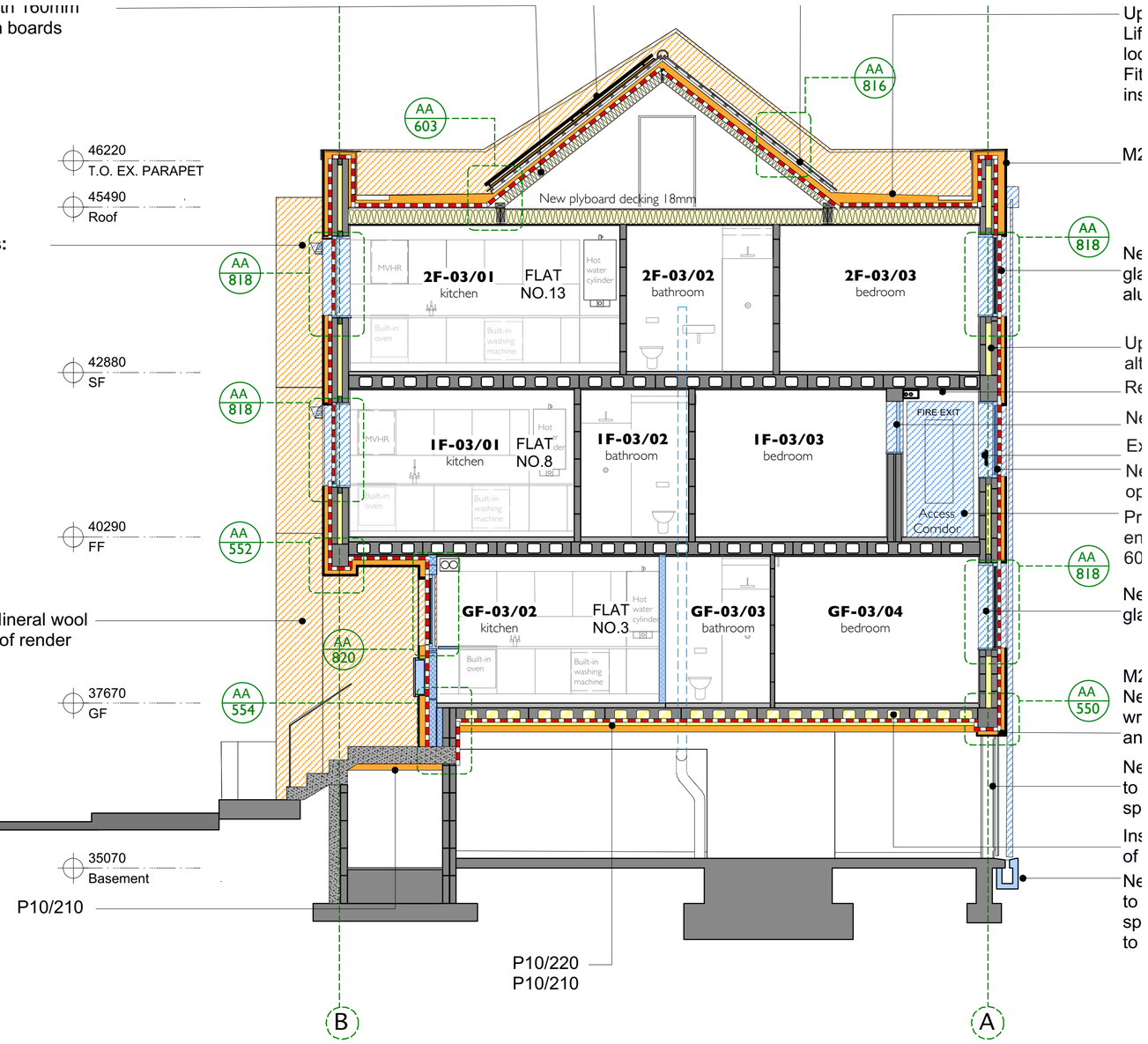
new cavity ties, stitch masonry cracks with helifix ties

airtightness barrier - inside or out?

crossing over from inside to out at party wall

single people housing - electric only?

pv?

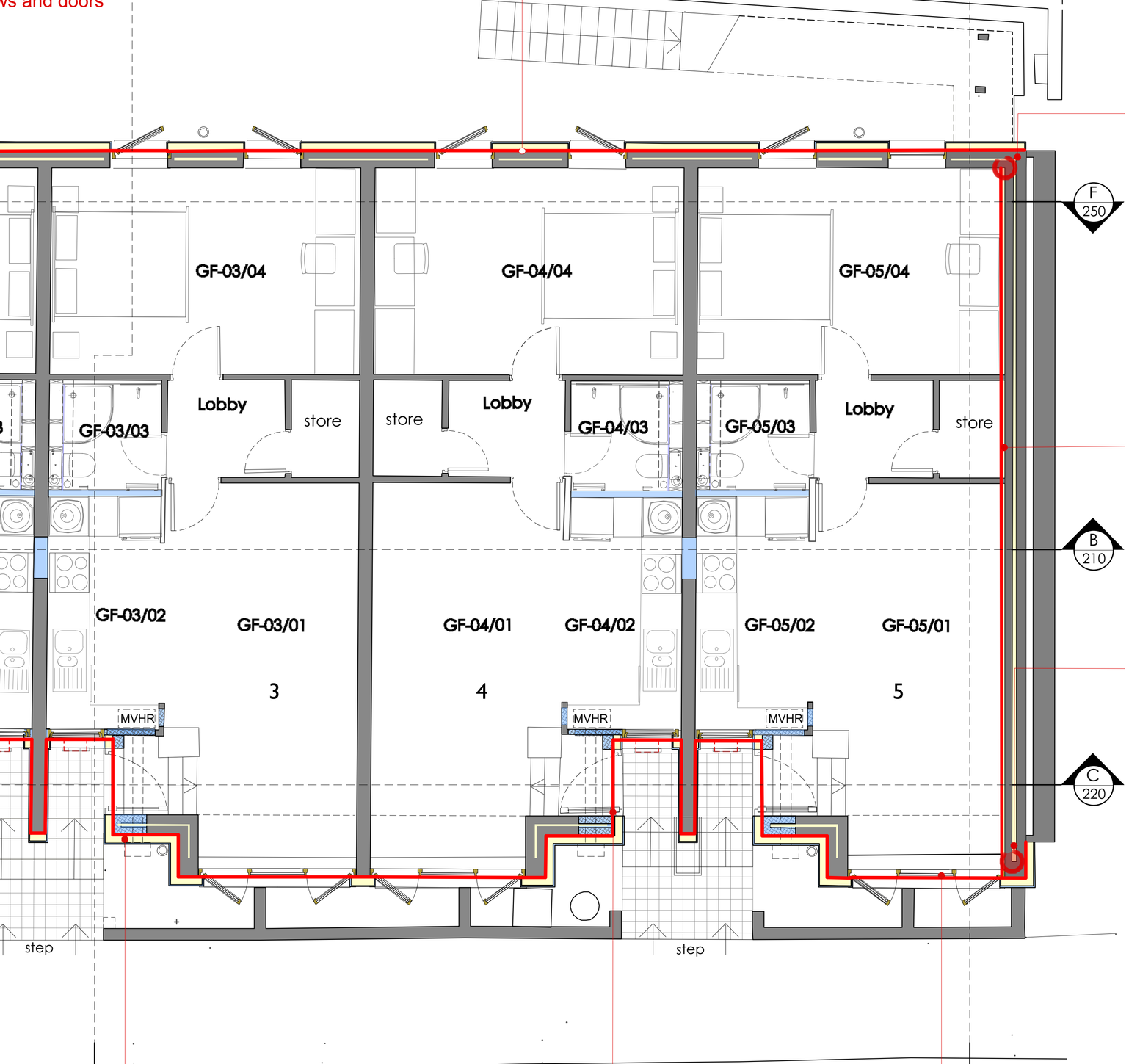


air tightness design

-airtightness barrier outside except at party wall

-allow for whole roof area & parapet to be enclosed

-include ground floor flats in whole envelope if testing is possible



air tightness design

- airtightness barrier outside except at party wall
- wood fibre insulation to internal face
- fill cavity at corners with airtight foam @150mm cs
fill cavities and floor beams

1 SECOND FLOOR FLAT 11, SECTION THROUGH WALL & ROOF OF ENTRANCE BLOCK
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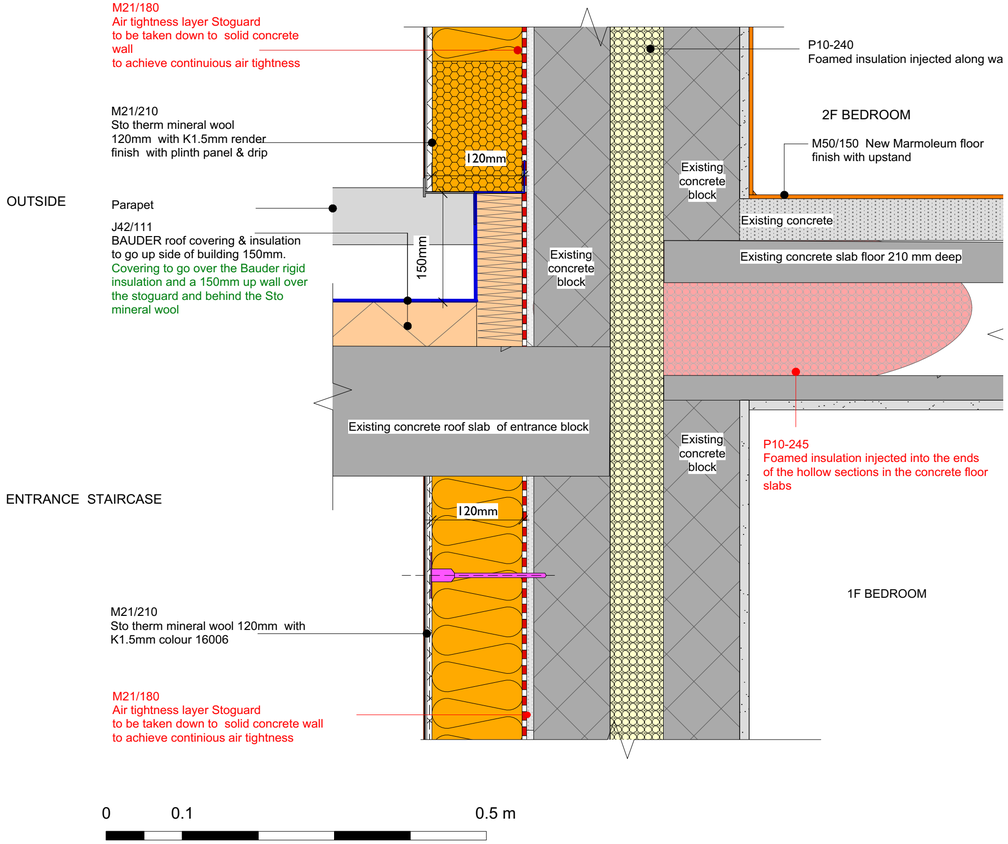
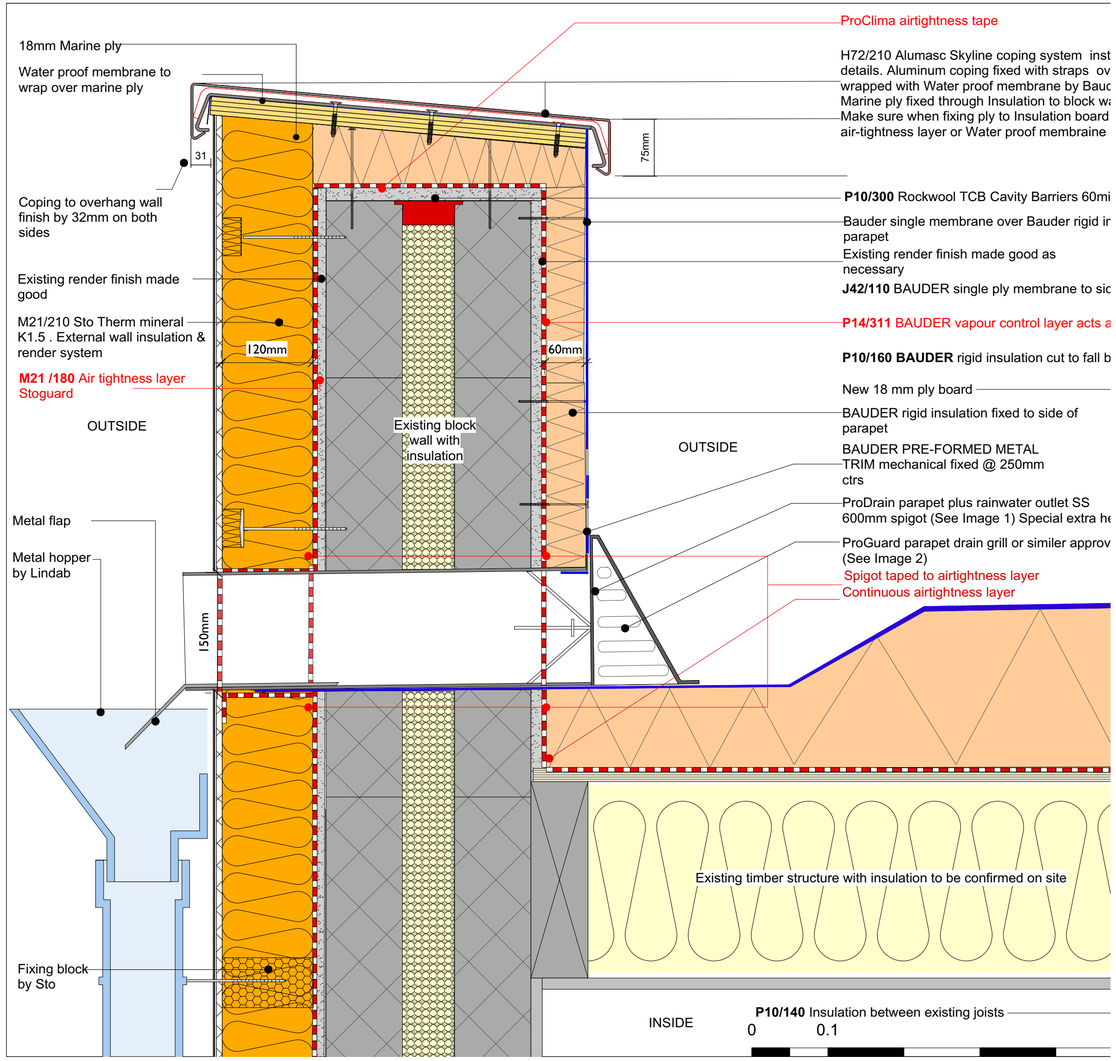
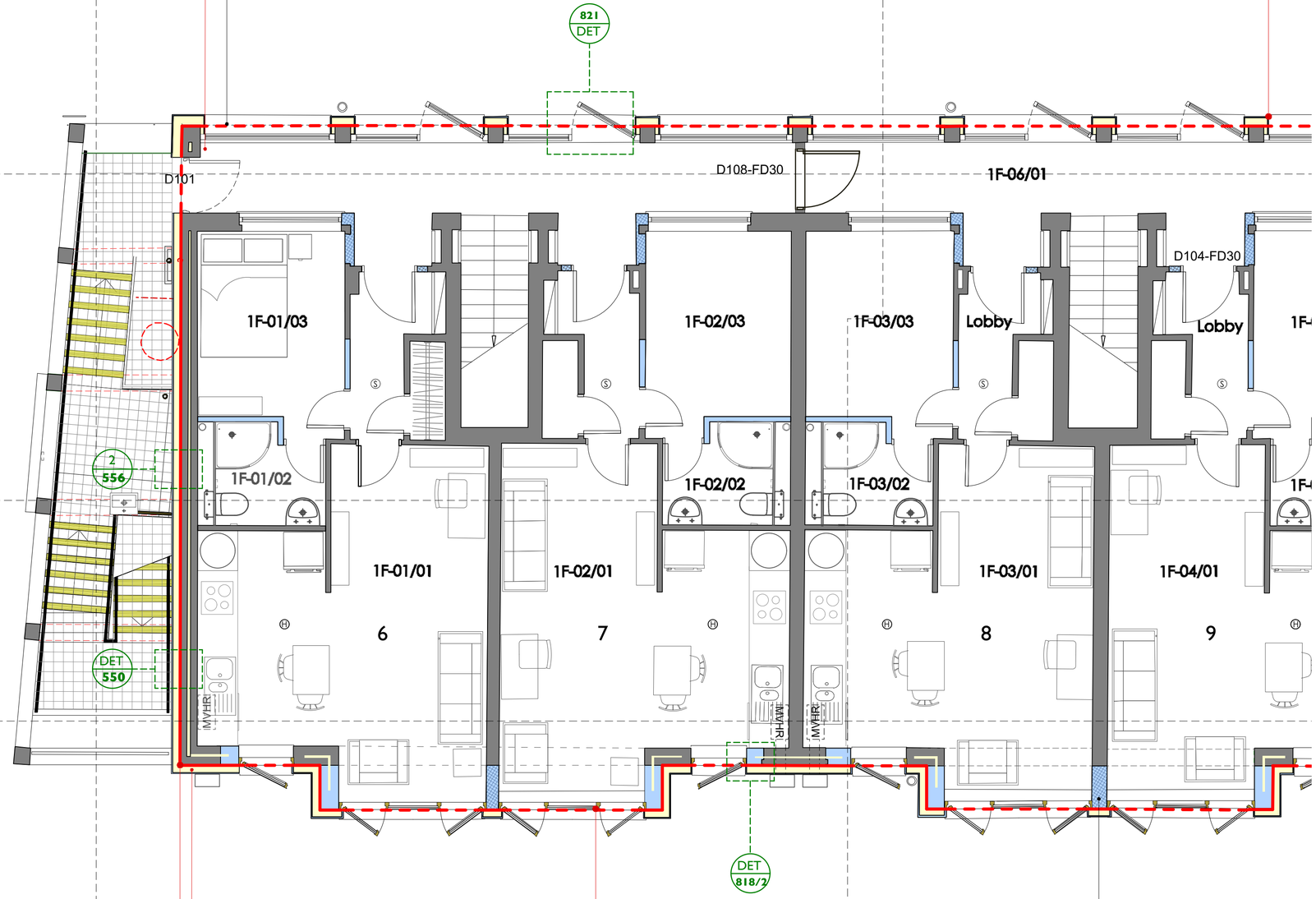




air tightness design



-foam fill floor beam ends and staircase abutments

-internal wall to external roof

New Rationel window
P14/337 Contega Solido
SL-D Proclima airtightness tapes to window reveals rendered with parge coat

M21/210 120 Mineral wool insulation mechanically fixed and glued with no airgaps

M21/ 180 Stoguard applied to existing external walls

E 240

A 200

D 230

Rev	Date	Appr	Rev b

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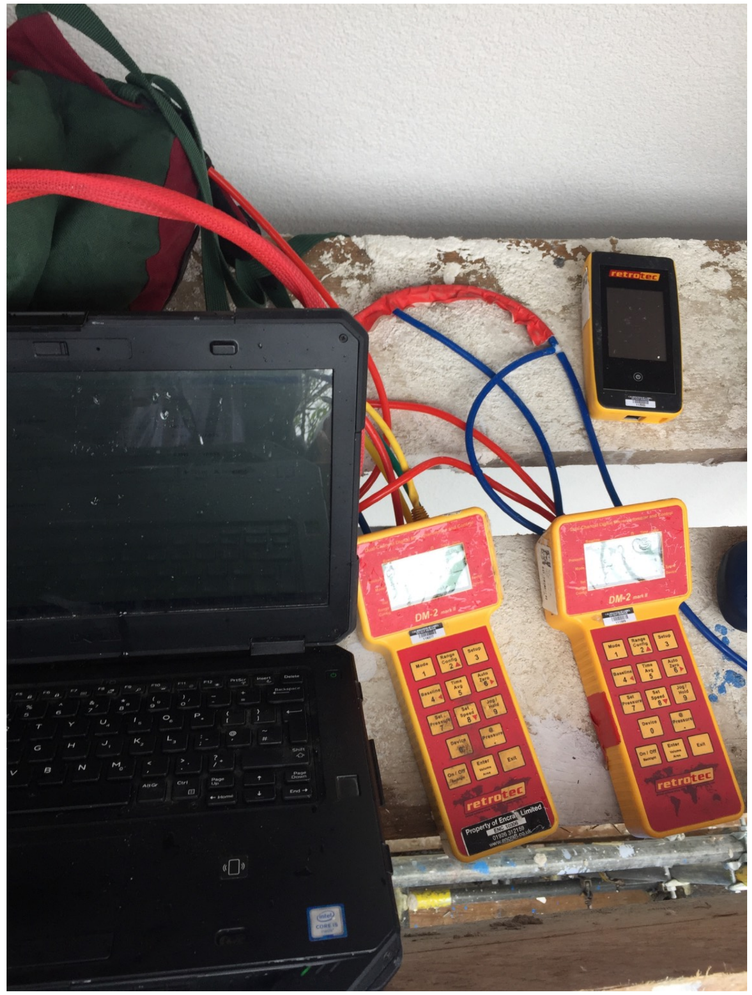
ANNE THORNE
iNDUSTRY, Adelaide Wharf, 2
020 7749 6931 info@annethornea

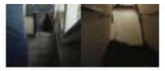
air tightness testing



-testing all floors together with ground floor flats through old service ducts, and checked with a separate line to one of the ground floor flats

design process included

- detailed survey construction, structure *(SE Corbett & Tasker)* and services *(Alan Clarke)*
- consultation with air tightness designers *(Paul Jennings and Ecological Building Systems*
- budget tested and design revised, (including significant omissions, budget reduced from £1.5 to £1.33m *(QS Peter Gittins Assoc)*
-



asphalt covered in reasonable condition, handrail provided, entrance lobby is often unkept

Chimneys & Flues & Extracts, etc.

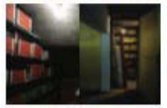
Rendered chimneys to boilers, see ventilation re extracts
Old common flue ducts for boilers no longer used

Overhaul render; new boilers installed in unsuitable (bathrooms) locations with flues added to front (south elevation) badly affect look of building.

External Structures / Canopies, etc.

Main entrance stair is exposed to weather, original front entrance underused

Internal



Basement stores

Co-op storage cupboard well used, individual resident stores, unknown possibly need clearing out

Bin store

Rubbish shoot not in use, bin store large and underused. Rubbish shoot is used.

No dedicated recycling provision

Floor finish

Carpet, vinyl

To be renewed

Wall decoration

Paint, signs of mould on several walls

To be renewed

Ceilings

Some hairline cracks.

Lighting / Switches / etc.

Flat 6 rewired in 2009. No other rewires. In need of upgrading

Bathrooms

Mould growth under shower, original fittings including bath without shower

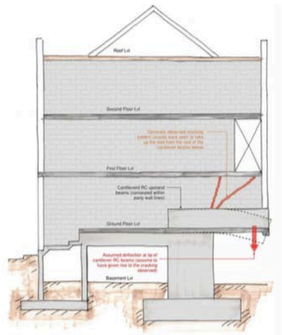


Figure 3 – Assumed causes of cracking observed

The cavity blockwork walls have been identified as providing structural support to the building as a whole; either in terms of lateral stability to resist wind loading or vertical support to walls, roofs and the walls above. As such and given that cracking has been observed to all external walls as well as the main party walls supporting the floors, it would be prudent at this stage to make budget allowances for crack repairs. This will act to locally strengthen the walls and reduce the likelihood of the cracks extending or new cracks forming, as well as improving the general structural robustness and weather tightness of the building.

An example of a specialist supplier of crack stitching and bed-joint reinforcement is Helifix, who may be prepared to visit the site and make recommendations with regards detailed remedial works, once the cracks have been determined to be 'live' or 'dead'. Refer to Figure 4 for an indication of the method proposed.

Figure 4 – Typical image of Helifix crack stitch method where mortar joints and raked out, helical bars inserted and grouted/resin injected in order to reinforce the wall panel

For costing purposes at this stage, it is recommended that crack stitch repairs are allowed for all external wall elevations and the party walls to the rear bedrooms at ground floor level.

Foundations and Ground Conditions

In general, the results of the ground investigations have presented any immediate or significant causes for concern. The presence of high shrinkability clay across the site must be taken into consideration in the design of new foundations in proximity to trees, and the planting of trees adjacent to the buildings needs to be controlled as this could give rise to ground movement in the future. The guidelines of the NHBC should be adhered to.

INTRODUCTION

First-Stage Tenders were invited, on 23 June 2017, from four Contractors on the basis of a two-stage tender approach.

The tender documents consisted of:-

Bills of Contract Arrangements which contain:

Preliminaries and Contract Conditions

Architect's preliminary drawings, Structural Engineer's preliminary drawings and structural feasibility report and Services Engineer's preliminary drawings and specification.

Tender Indicative Cost Section based on Peter W. Gittins & Associates Ltd's Cost Plan. This provided the tenderers with a summary of the indicative net cost of the Works.

Pre-construction Health & Safety Information, Architect's Indicative programme, Asbestos Survey

PRE-TENDER PROCESS AND TRACKER

The tendering procedures followed a Two-Stage approach as, although generally the overall Scope of Works was established at the First-Stage, further detailed design was on-going.

The Pre-Tender Process is broken down into two separate elements, namely:

- Project Specific Questionnaire [PSQ]
- Interviews

2.1 - Project Specific Questionnaire [PSQ]

The initial task undertaken was to put together a 'long-list' of potential Contractors, recommended by the Client and members of the Design Team, and thought suitable to carry out this type of project. It was decided that the Contractors on the list would be issued with a Project Specific Questionnaire

procurement process

invitation to tender for 2 stage tender process

long list of 7 contractors interviewed and 5 invited to tender

first stage tender issue (june 2017) includes:-

post planning stage design, with key construction details

priced document with estimated budget

detailed preliminaries for pricing

3.1 - First-Stage Tender

The First-Stage Tender documents (as described in Paragraph 1.0 above) were produced to enable tenderers to submit, by the end of the Second-Stage, a "fixed price" lump sum tender representing the whole cost of the Works.

The First-Stage tender was built up as follows:-

1. The net cost of the Works - this was given in the Tender Indicative Cost document which was based on the Stage D Cost Plan.

2. The amount required by the Contractor to cover all Preliminary costs associated with the Works - this to be inserted by the Contractor following his examination of the site and the tender documents.

3. The amount required by the Contractor to cover any overheads and profit contributions required on the project.
   This sum to be inserted by the Contractor based on the net cost of the Works and examination of the site and the tender documents.

4. The amount required by the Contractor to cover the cost of procuring the Works in the Second Stage, i.e. a firm cost for procuring the works, negotiating and agreeing the Second-Stage tender sum. This sum to be inserted by the Contractor.

Items 2), 3) and 4) above were required to be fixed sums to be included in the Second Stage Tender. Following the receipt of tenders one Contractor would then be chosen to carry out the procurement of the Second Stage in conjunction with the Design Team, with the aim of reaching a tender sum (and ultimately a contract sum) in line with or less than the budget.

The following safeguards were built-in to the tender documentation.

1. Tenderers were required to review and agree the indicative costs set against individual elements and accept the budget as an achievable Second Stage Tender Sum.

2. The fixed price inserted by the Contractor to procure the building works was to include for all of his costs in connection with arriving at a Second Stage Tender sum.

   Such costs were to include: programming, producing and issuing sub-contract packages, managing, monitoring, attending meetings, evaluating buildability, negotiating with sub-contractors, suppliers and reporting to the design team.

3. The chosen Second Stage contractor will be required to demonstrate on an "open book" basis that a minimum of three tenders have been obtained for each package.

procurement process

requirement to;-

- tender on preliminaries,
- comment on design proposals
- review and agree indicative costs and accept budget as achievable 2nd stage tender sum
- include all costs for arriving at 2nd stage tender return
- demonstrate on 'open book' basis 3 tenderers have bid for each subcontracting package
- to work to programme start on site january 2018

at

procurement process

second stage tender sum:

complete design drawings and specification
developed through active engagement with
Contractor and their Subcontractors
resulting in a second stage of construction method
and budget revisions

nonetheless final agreed budget was £1.4m
and start on site April 2018

at

on site

further damage revealed

new structure on old fittings

helix stitching

replacement joist hangers

etc

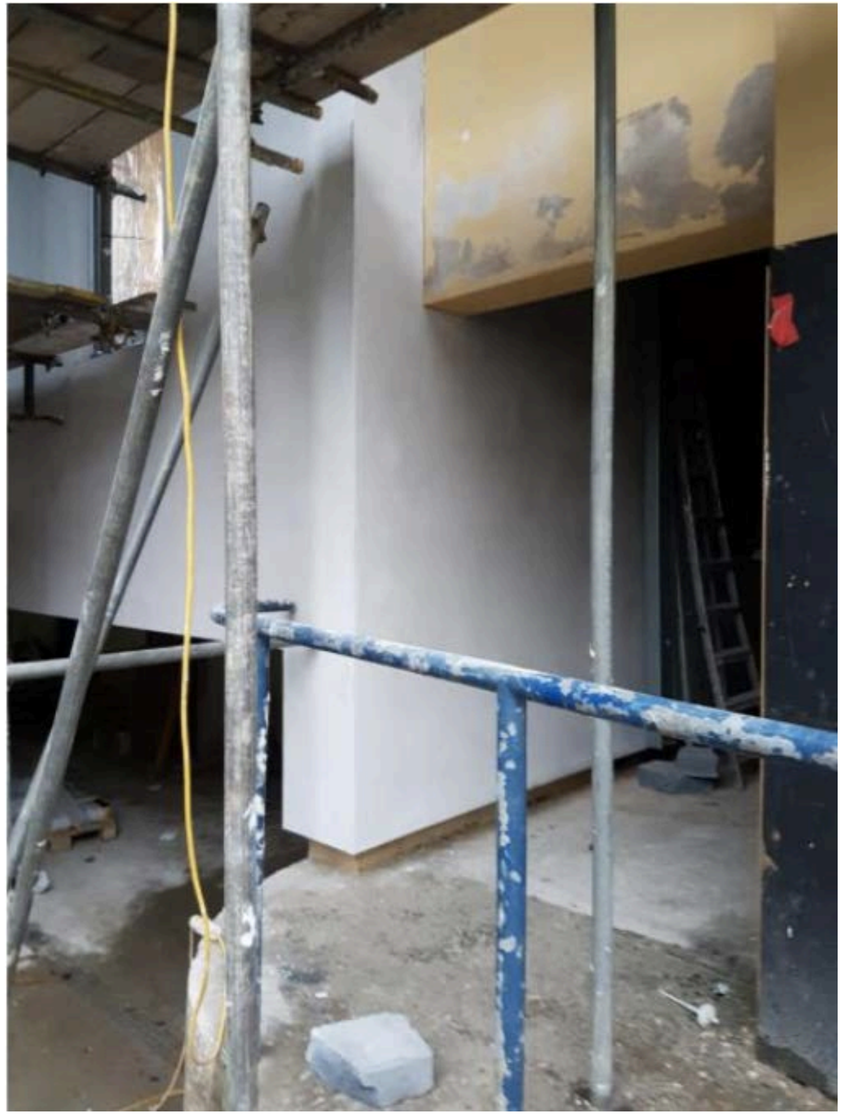
on site

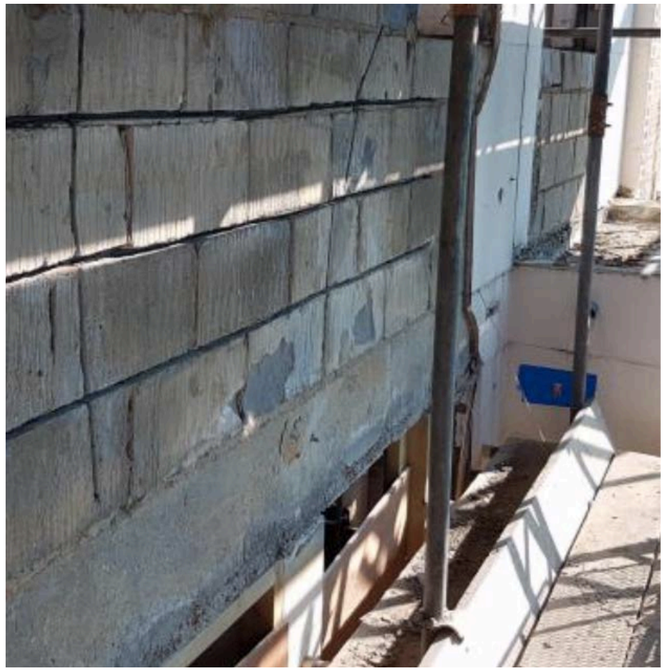
tight MVHR routes

pv to roof

air tightness layer to undercroft,

insulation taken down piers





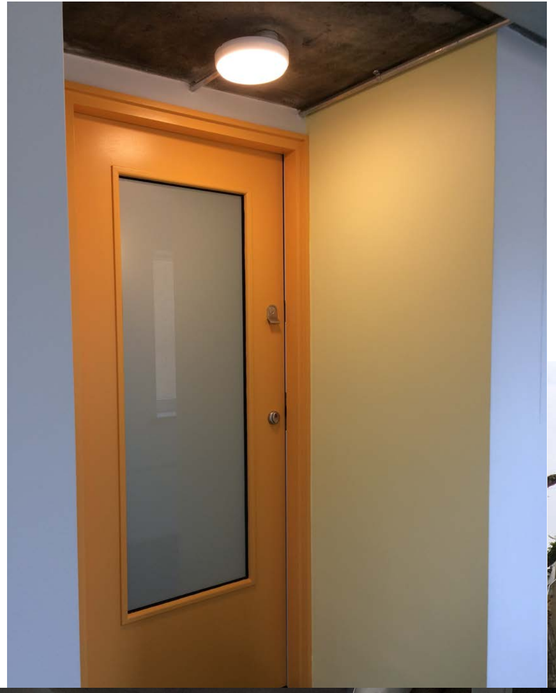
cavities refilled

Sto mineral wool insulation on stitched blockwork with mesh and base coat to insulated boards

preliminary airtightness testing

achieved 0.36 AC/hr

final test result 0.66AC/hr



on site

- airtightness champion,
- excellent site management,
- efficient contractor organising work and pricing variations
- subcontractors engaged
- on site fees for project architect on site weekly

completion

- completed just within budget and programme with short extension of time for extra structural works
- residents moving in
- post occupation evaluation