Semi-Basement Brainstorm



Site Location:

London N1

Climate:

sheltered in the courtyard created by surrounding terraces

Urban heat island effect likely to have bearing on the site

Access: approx. 2 m wide gap between terraced houses, 2 m wide alleyway to plot

 Too narrow for car parking and pedestrian access?

 Room for narrow car/van with sliding door

 Room for bike parking

 Room for waste segregation bins

 Removable/movable bin and bike store construction?

 Permeable pavement to minimise drainage requirements

 What are soil conditions (London, probably clay, possible back fill)

 What was previous use? Pollution issues?

Plot:

occupying space between gardens to N and S

Partially overhung by mature deciduous trees to West and North

 Tree root extent suggest piled/screw/auger foundation may be appropriate

 But basement requires continuous wall and floor

 Some disturbance to tree stability

 Tree root water source may need compensation

 Will new drain runs interfere with roots?

 Flat roof needs access to remove leaves to avoid blockages every year

 Canopy high enough?

to permit construction without some branches being removed

for air-flow and some summer evening solar penetration

 Autumn leaf loss will permit limited winter evening solar penetration

No section through block

 so no knowledge of summer-solstice-winter morning-midday-evening solar penetration

Building:

semi-buried long strip, no windows in basement, light wells (see below)

will require insulation from ground or potential occasional anti-condensation heating in summer

2 southerly high windows to upper floor (Living/dining/kitchen & Wetroom) on boundary

 Are restrictions imposed: ventilation opening? Opening casement projections?

courtyard voids at both ends serving basement via full height sliding or folding doors

rooms to basement courtyards:

West end east facing Plant (potential heat and noise source)/Gym (humidity source),

West end west facing Bedroom (humidity source)

East end east facing AV room (Potential heat and noise source)

Light surfaced courtyard may generate AV luminance problems (use Retro-reflective paint)

Working in kitchen will cast shadows on activity

Consider light pipe or borrowed light from stairwell

Rooms to upper floor of courtyards:

East end east facing Bedroom (humidity source)

West end west facing Living, dining and kitchen (Potential heat, humidity, smell source)

Roof and upper floor indicated as having no down-stand lintel or beam

 Permitting easy removal of heat from rooms

Roof is flat with small parapet:

Roof light over stairwell? Ventilation opportunity?

If there is solar access to flat roofs:

Then need to protect from overheating

By solar resistant high decrement delay building fabric or insulation

Basement construction:

Basement walls:

Likely to be insitu concrete or reinforced concrete block wall, internal insulation and internal drained tanking, (ineffective thermal mass in walls)

Not dimensioned but greater than 300 mm. upper walls

Basement floor:

No information (any thermal mass in floor finish?)

Upper floor:

 Shows thin construction no down-stand beams and no lintels

 Probably Spanning N-S

 No E-W large service routes

 Could benefit from thermal mass

Upper wall construction:

 Indicated as 300 mm thick (insufficient) unless timber framed and fully filled with insulation

 If solar access is present:

Then need to protect from overheating

By use of solar resistant high decrement delay building fabric or insulationI

Roof:

 Shows thin construction so beams if any are within roof thickness

 If solar access is present:

Then need to protect from overheating

By use of solar resistant high decrement delay building fabric or insulation

WC projection on north elevation upper floor:

Is it cantilever over site

 Will loose heat from large surface area

May well be relatively cold and potential condensation risk

 Consider wet room as offsite pod with WC included

Internal basement wet room:

Requires passive, active or mechanical ventilation consider heat recovery.

Water delivery and sewage/waste disposal in 6 locations

 Courtyards, Garden, Kitchen, Wet room, WC, Bathroom may be complicated and expensive

 No ducts or routes indicated: Floor and roof are likely to span from N-S so no E-W routes

Drainage of flat roofs:

 1 RWP indicated in adjacent plot to North permission required/obtained?

 Could drain into courtyards to avoid water supply there

Consider rainwater harvesting and permeable pavement.

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