brief

performance

social

This project achieves three things:

Brings dance for fun and wellbeing into the lives of Canterbury residents, boosting their mental and physcial health

Creates an economic location for dance employment and professional dance opportunities in Kent

Brings a university-level dance course back to Canterbury, in a centre that is shared by students and dance industry professionals

bringing together all types of dancers ...

education

just visiting

interested in *dance* ?

find your place ...

A new dance centre in Canterbury, a city rich in arts and culture. It hosts a varied programme of activities, aiming to make dance accessible to those who are interested, of all ages and abilities.

There are four strands to the programme...

Performances - Giving local and touring dance companies opportunities to showcase work, attracting local dance fans to watch.

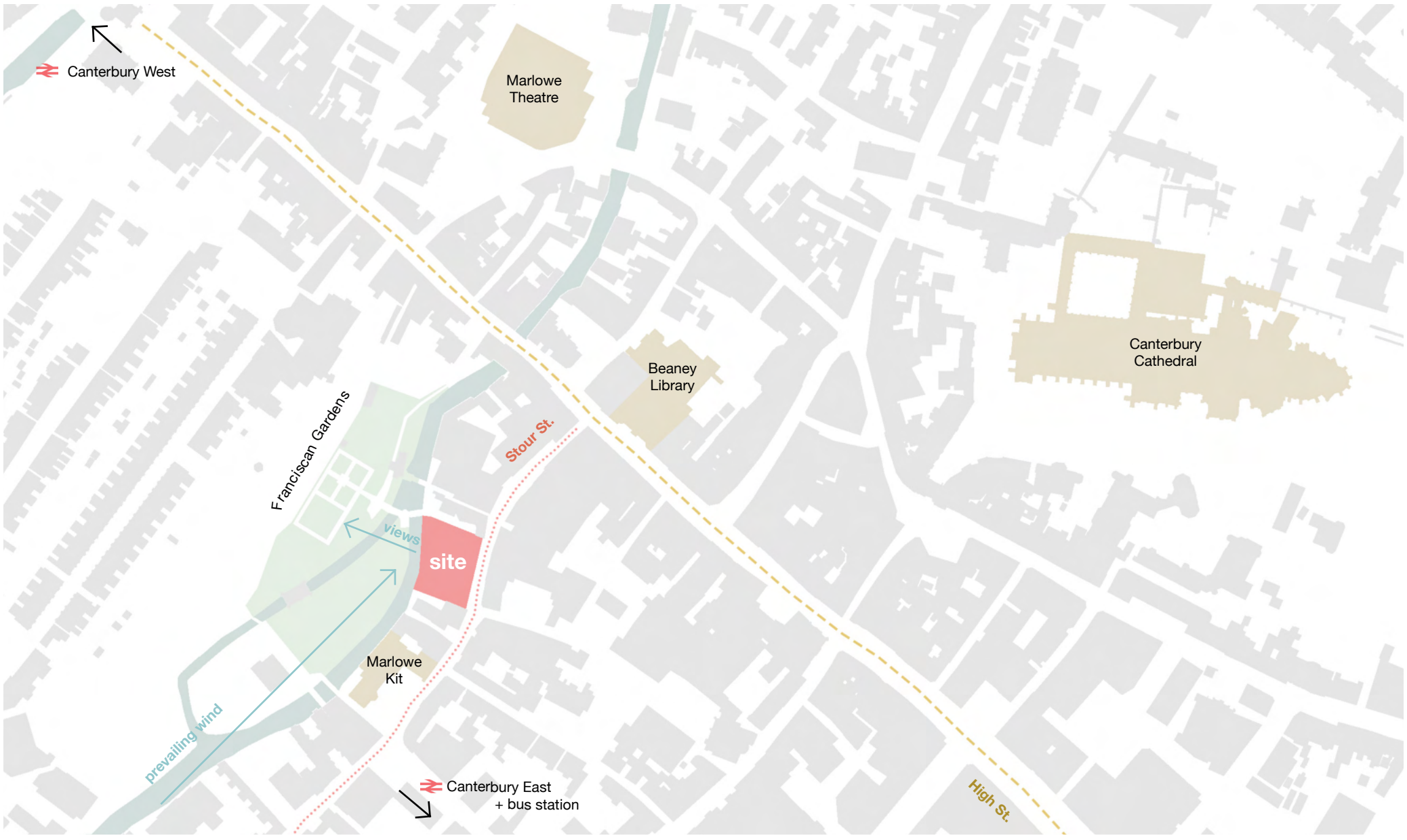
Higher Education - A Dance MA or BA course, the missing piece of the Canterbury higher education scene.

Community / social - Dance workshops for local residents that promote fun and wellbeing, including sessions for kids, and those with limited mobility.

Just visiting - A cafe/bar and riverside courtyard space open to the public, with a bridge to the neighbouring Franciscan gardens.

site research

1 : 2500



A turn off the lively High Street takes you to Stour Street, a quiet narrow road running alongside the equally narrow River Stour. Breaking the tight sequence of wonky buildings, some over 800 years old, is a levelled riverside plot, currently used as a car park. This is the site.

51.279092, 1.077890

Stour Street, Canterbury
Kent, UK

materials around the site

the site currently

Stour St. from the High St.

issue identification

National Dance Agencies in England

UK — Research shows everyone can benefit from dancing. It gets you moving and feeling free in your body.

Kent — Despite Kent's proud artistic identity, it does not have a dance culture or industry independent from London. Several university dance courses have been cut.

Canterbury — Kent's cultural captial. An established city for education and the arts, welcoming over 1 million visitors annually. Home to a big population of students and retirees.

Site — In the centre of the city, a quiet plot with inspiring views of nature, just off the bustling pedestrian High Street. Good transport links for visitors.

Underprovision of fun and accessible dance opportunities for the general public

Professional dance infrastructure missing in Kent

Closure of higher-education Dance courses

Siobhan Davies Dance Studios

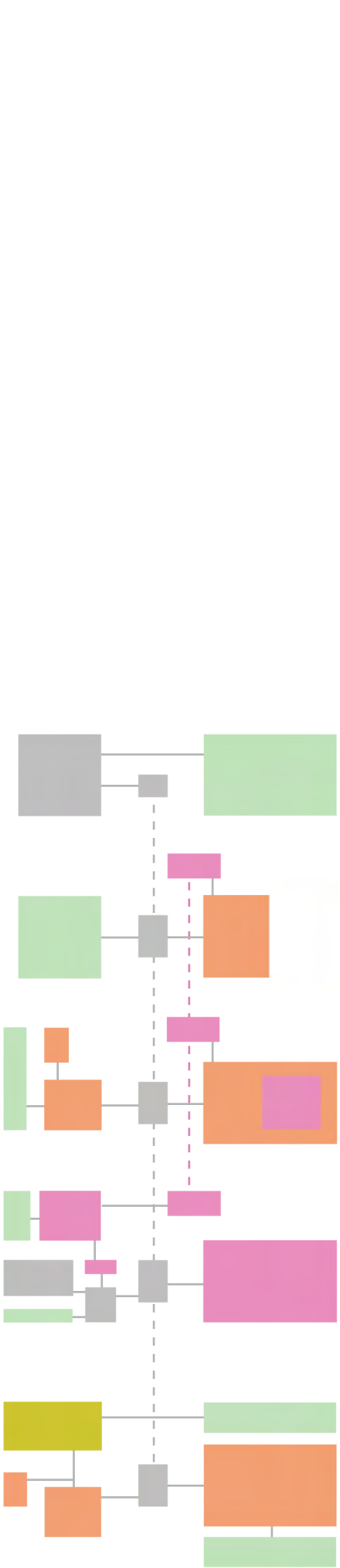
... is a dance organisation in London who have a strong community programme. It includes 'unscary' dance classes, school workshops, seasonal celebrations, and regular sessions specific to marginalised groups. This is in addition to the organisation's post-graduate programme and professional dance performances. Their public programme gives local people opportunities to open up their mind and bodies, and use contemporary dance as a tool for self-expression.

spatial adjacencies

primary user

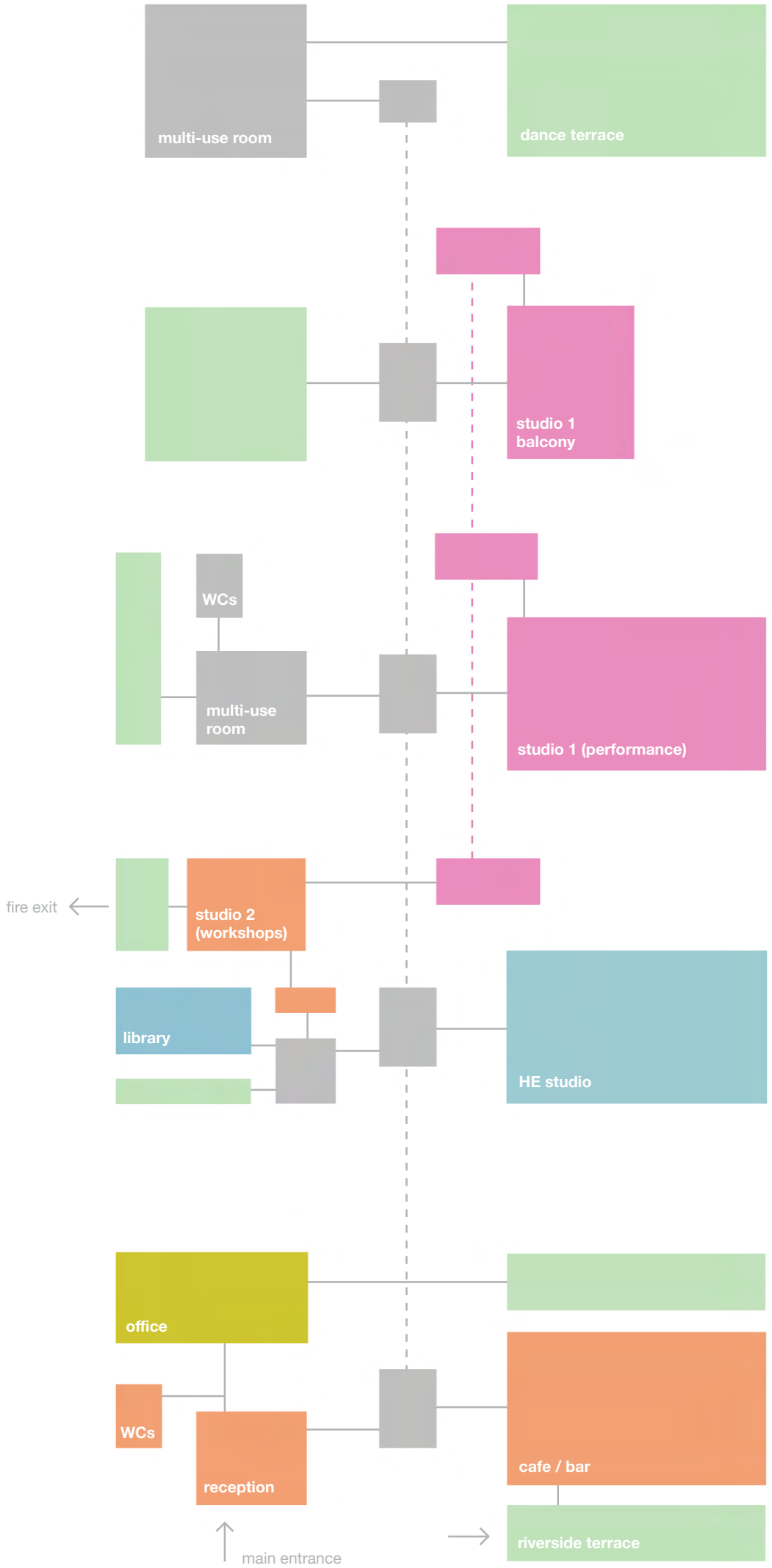
- public
- staff
- performers
- HE students
- all / open

outdoor space



during performances (evening)

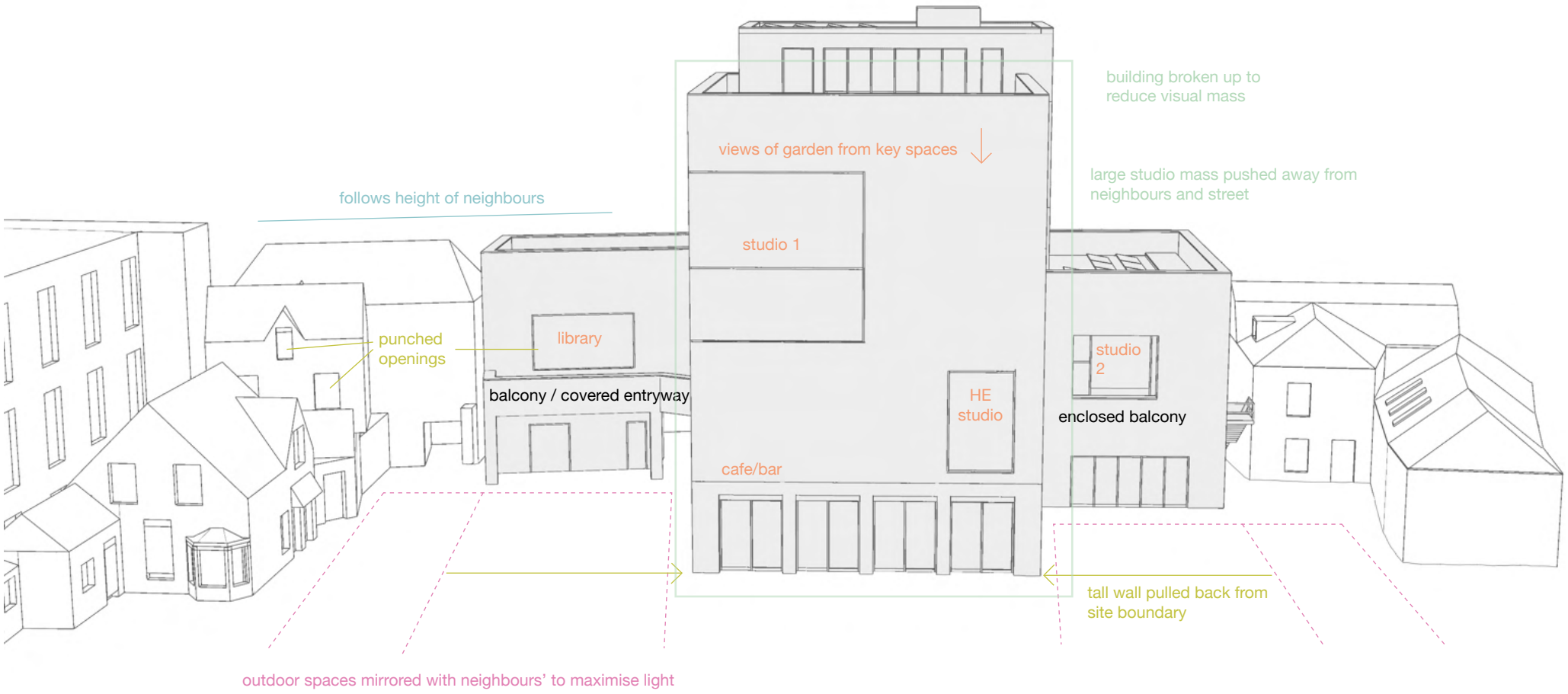
performers can use other studios as ‘back of house’, i.e. dressing rooms, rehersal space

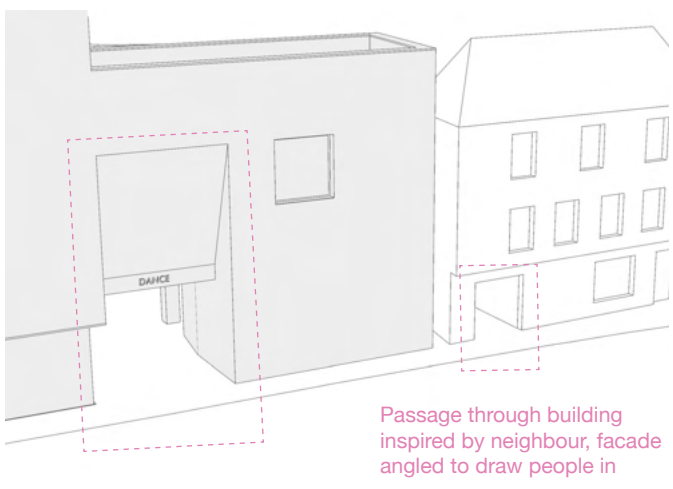


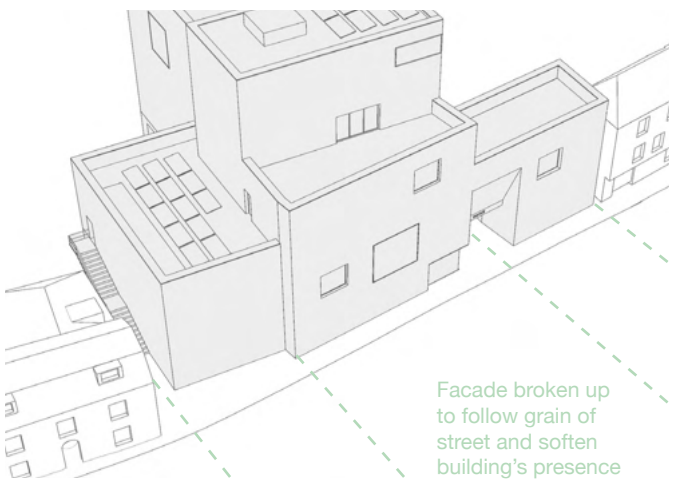
normal activity (daytime)

public access restricted to ground floor, unless participating in a dance workshop

design development







Design Museum, Ghent

(Carmody Groarke)

This soon to be completed building is similar to mine, as it sits in a historic city centre up close next to old buildings.

Impossible to copy the historic vernacular, and with spatial needs of a modern cultural centre, the design is decidedly contemporary. It sympathises with the old through material choice, and measured wonkiness in form and window arrangement.

Gallery Xavier Hufkens, Brussels

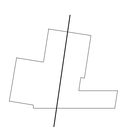
(Robbrecht en Daem Architecten)

Another example of not competing with neighbouring old style, but complementing it with simple design.

An uncomplicated facade with few windows shows respect for the neighbouring style. The form steps back as it grows taller, making the building less imposing and creating terrace spaces. A door-sized cutaway guides you through to the back of the site.

contextual aerial view

section 1:50



1 : 50

1 2

views

The main entrance

... lets you enter the building directly into reception, or be led by river views through the passageway to the courtyard

Public courtyard

... a place for dancers and non-dancers to take a break

Studio 1

... can be a bright, inspiring space, or can transform to a blackout state. The space can accommodate various seating/stage arrangements, which could include the viewing balcony

Studio 2

... is designed to feel enclosed and safe. Lit by skylights and an opening onto the enclosed balcony, with views of the quieter courtyard and river

The dance terrace

... takes influence from Anna & Lawrence Halprin's Dance Deck, offering a place to dance where nature's influence on the body is welcome - a more liberating space than the studio

The dancers' passageway

... is a secret staircase that connects levels 1-3, giving performers their own route from Studio 1 to backstage areas on the lower floors.

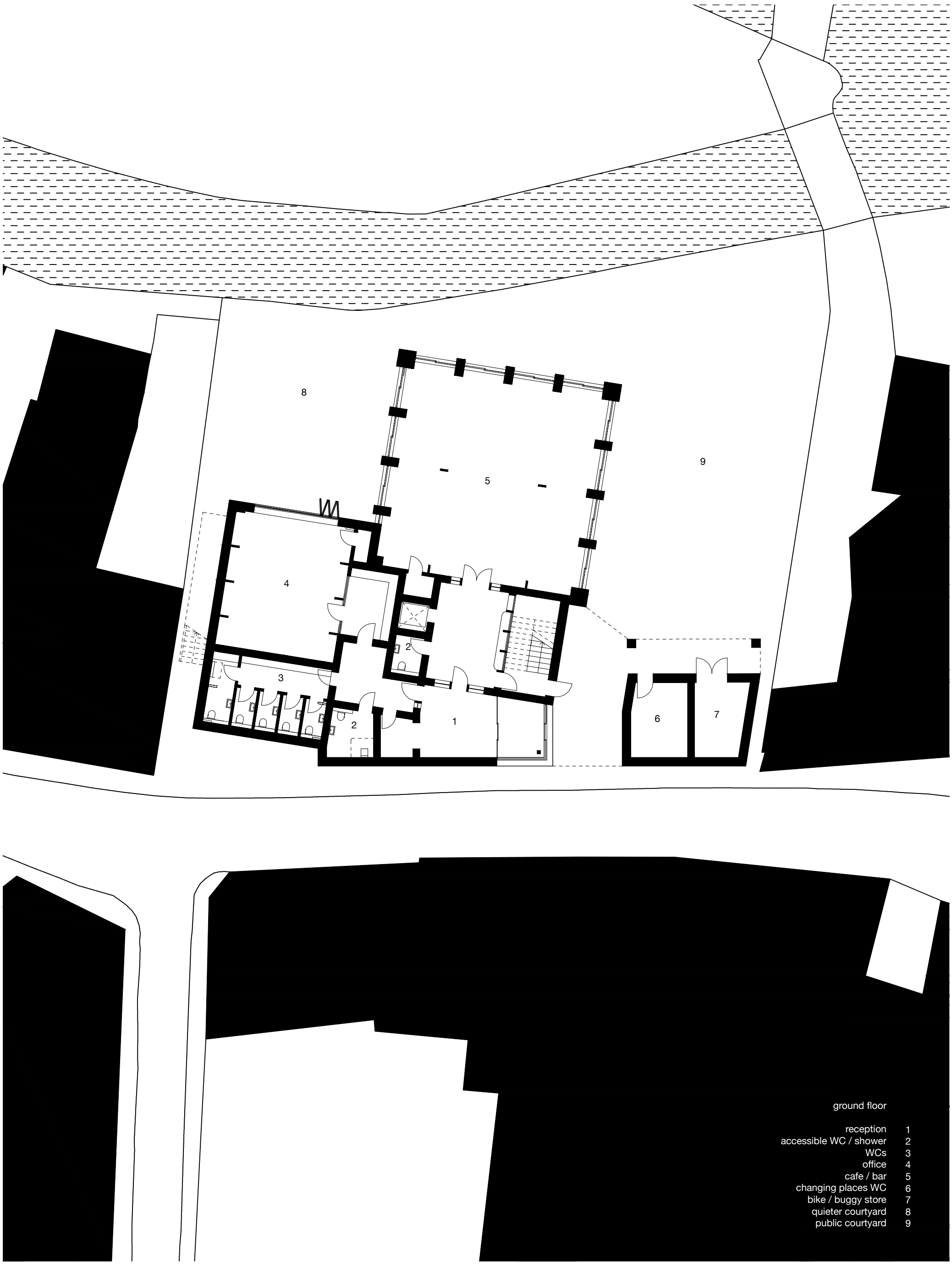
bay study 1:25

A	roof deck	C	electric blinds	E	ribbon radiator	H	ground floor
50 mm	timber decking planks	D	studio floor	F	exterior wall	90	hardwood flooring
50	timber cross battens					9	OSB
50-300	paving pedestals	20	hardwood flooring	550	LVL	50	screed
0.75	water membrane	9	OSB	120	CLT	300	firm insulation
400-650	wood core insulation (sloped)	18	3x stick timber cross batten springs	0.2	vapour barrier	400	concrete strip
0.2	vapour barrier	45	shock absorber feet	115	insulation	400	gravel
200	CLT panels	50	screed	0.75	waterproof membrane	1000	concrete pile caps
600	glulam joists	140	firm insulation	50	void	12000	concrete piles
1000	LVL beams	200	CLT panels	215	stone brick		compressed earth
		400	glulam joists				
B	limestone coping	550	LVL beams	G	limestone trabeation	I	cobblestones

plans

1 : 200

1 5

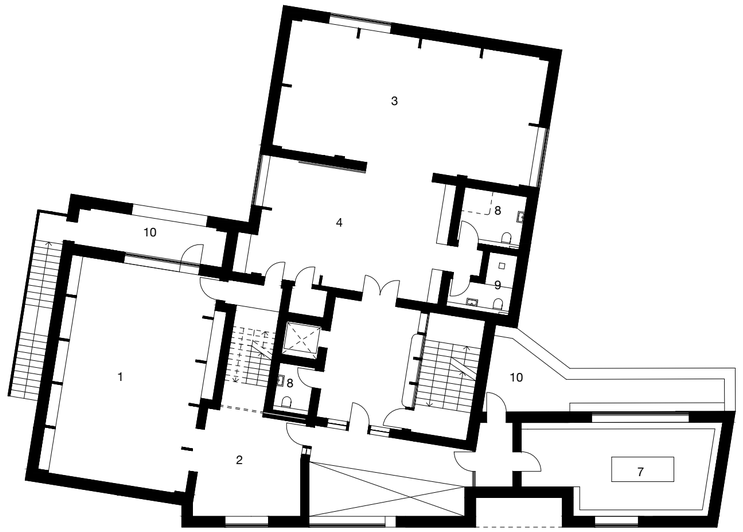


ground floor

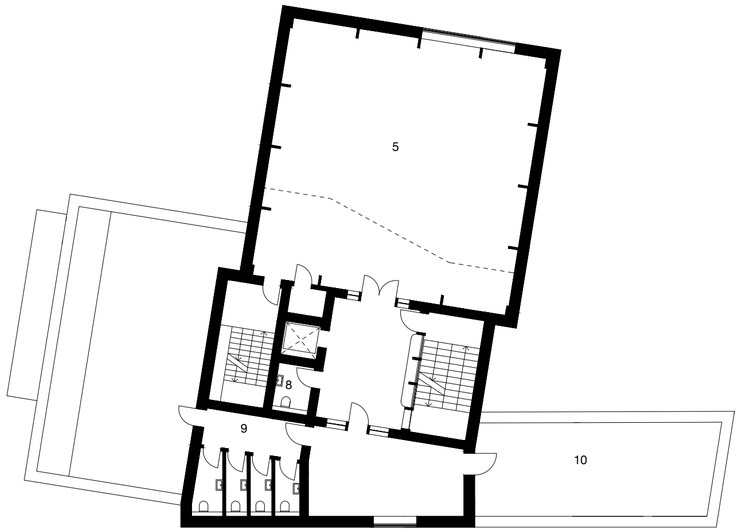
reception	1
accessible WC / shower	2
WCs	3
office	4
cafe / bar	5
changing places WC	6
bike / buggy store	7
quieter courtyard	8
public courtyard	9

plans

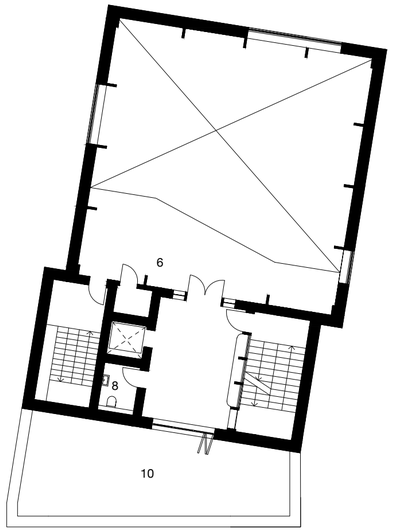
1 5



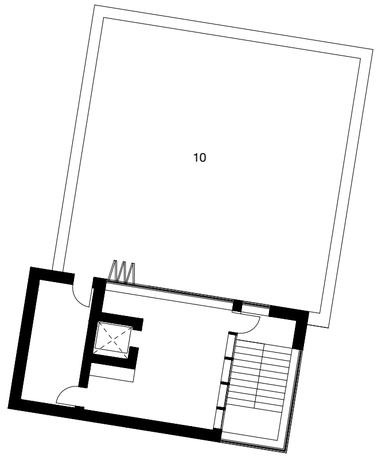
level 1



level 2



level 3



level 4 / roof

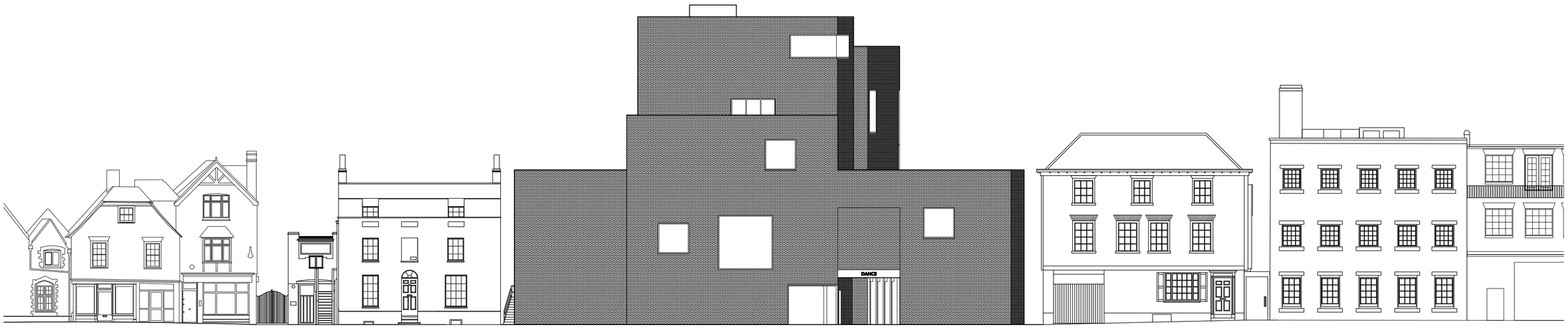
1 : 200

studio 2	1
breakout space	2
HE studio	3
HE common room	4
studio 1	5
studio 1 balcony	6
library	7
accessible WC / shower	8
WC / shower	9
terrace	10

elevations

1 : 200

1 5



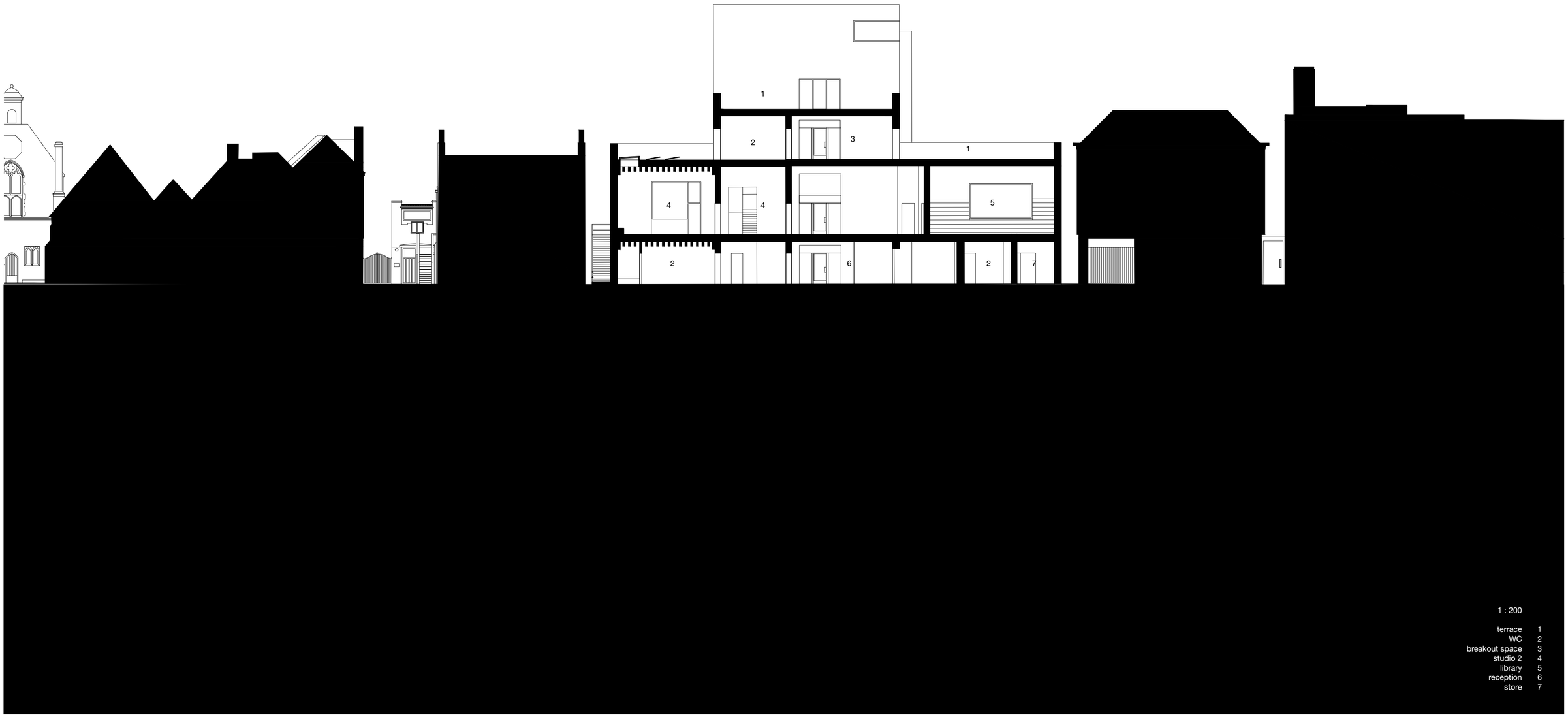
from Stour Street

from RIver Stour

section

1 : 200

1 5



1 : 200

terrace	1
WC	2
breakout space	3
studio 2	4
library	5
reception	6
store	7

landscape strategy

1 : 200

1 5

1 cobblestones (permeable), graded towards river to drain

2 bike / buggy parking

3 bench seating

4 Stone and wooden forms, deliberately ambiguous to encourage exploration and creative movement. They can be sat on, climbed on, balanced on, danced on...

5 stepped seating on riverbank

6 punting dock

7 gate to Franciscan Gardens

8 stone barrier bollards

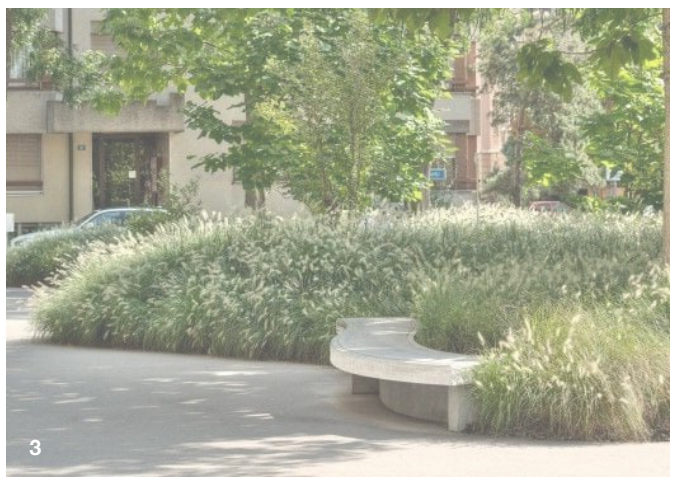
9 This scheme opens the gardener's cottage onto the public courtyard. The planting is arranged to create a more private zone in front of the cottage.


4


1


5


4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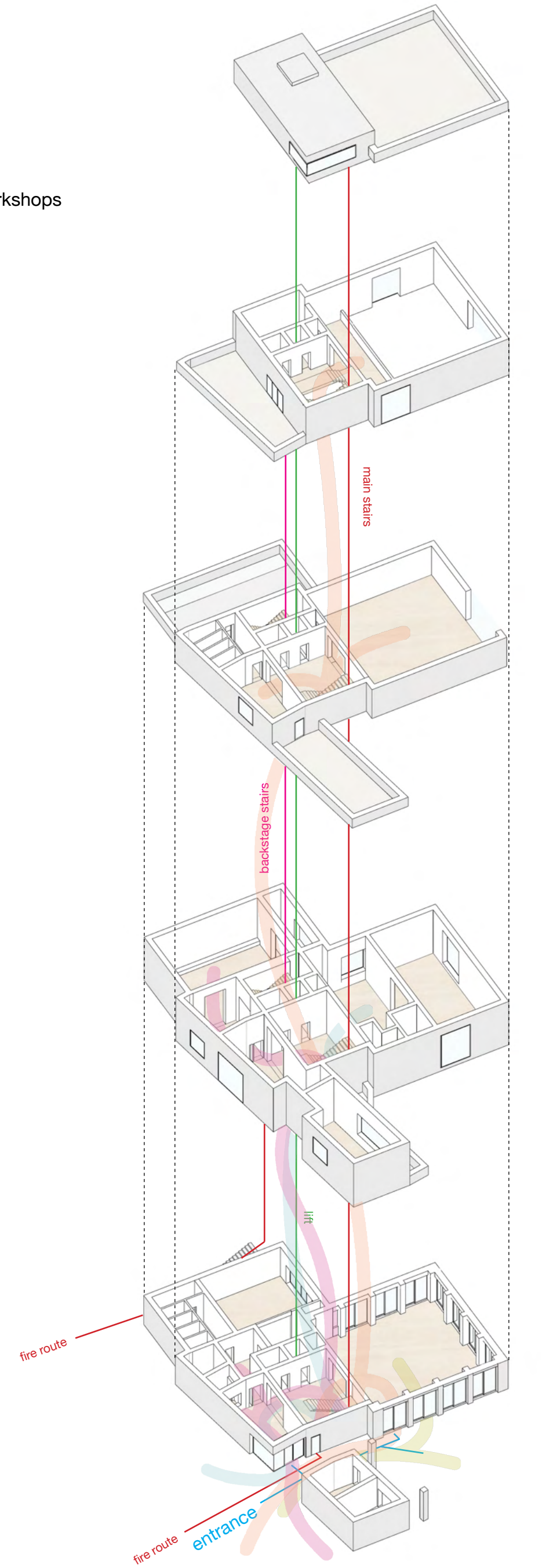
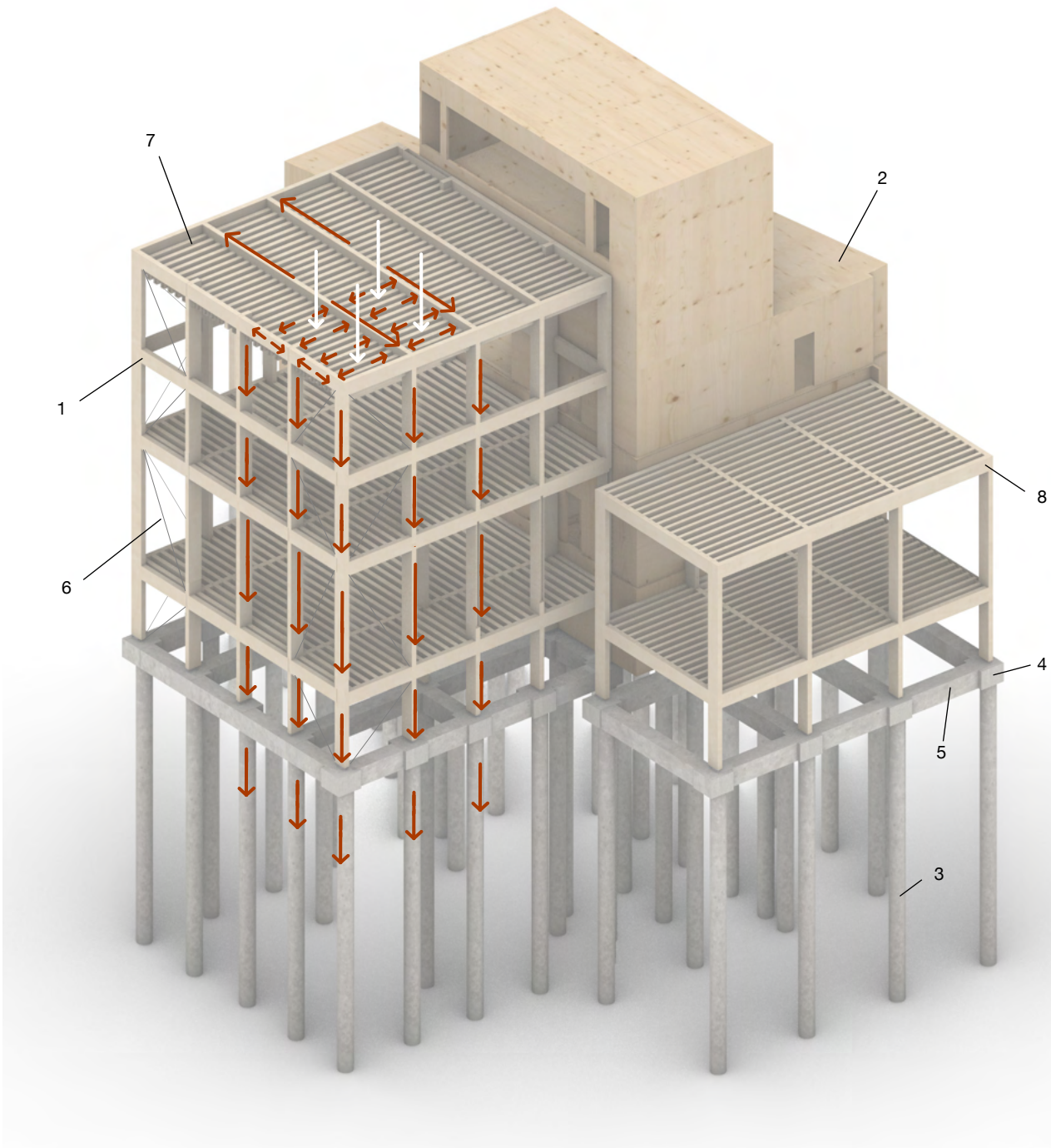
access strategy

primary routes:

- performance audiences
- HE students
- participants of dance workshops
- visitors (non-dance)



structural strategy



Main structure:

1 **LVL columns + beams in grid layout**
< 12m beam spans, used in large, open studios

2 **CLT structural walls + floors**
used in rest of building

Foundation:

3 **Reinforced concrete piles**
12m deep, situated directly under columns and structural walls

4 **Reinforced concrete pile caps**
1 x 1 x 1m

5 **Reinforced concrete tie beams**
1 x 0.4m in section

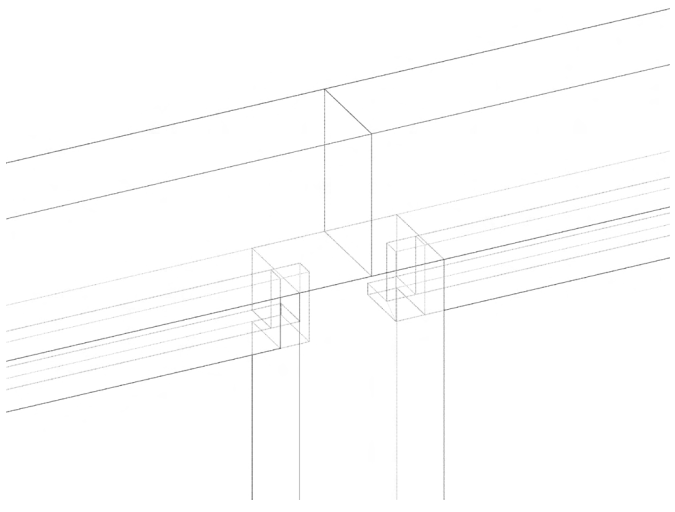
6 **Steel cross bracing**
connected to LVL, prevents torsion

7 **Glulam floor joists**
used with LVL

8 **Steel connector plates**
connects LVL and glulam elements to each other, with timber plugs for lower visibility

Stone trabeation

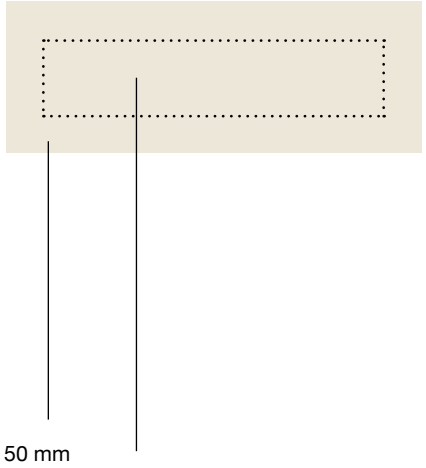
Outside the cafe/bar, a hard limestone post and lintel structure is used to hold up the masonry facade above (separate to primary structure). This creates openings and allows for glazing that connects the cafe/bar to the riverside courtyard.



Mass timber fireproofing

The mass timber is scaled beyond structural recommendation to extend fire rating - the sacrificial outer layer burns and forms a char that protects the structurally critical inner, preventing collapse.

Typical column section:



char buffer : 50 mm
structural inner : e.g. 450 x 100 mm

total section : 550 x 200 mm

material strategy

LVL & Glulam, CLT (Spruce)
Structure, exposed internally

LVL, glulam, and CLT (all mass timber products) are very strong, making an efficent structure. LVL beams can span long distances, allowing for open dance studio spaces.

A mass timber structure is lower in embodied carbon than alternatives like steel or concrete. It is held together with steel plates and bolts, and can be taken apart at the end of the building's life so the timber can be reused.

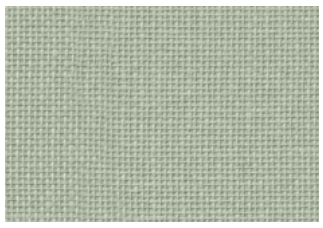
The regular pattern of beams and joists, and CLT surfaces, makes for an interesting interior when exposed.

Hardwood (Beech)
Interior flooring

Hardwood flooring is used in the studios, as preferred by dancers.

Cobblestones
Courtyard

Used in the courtyard and outdoor areas, fits with context and provides a durable surface.



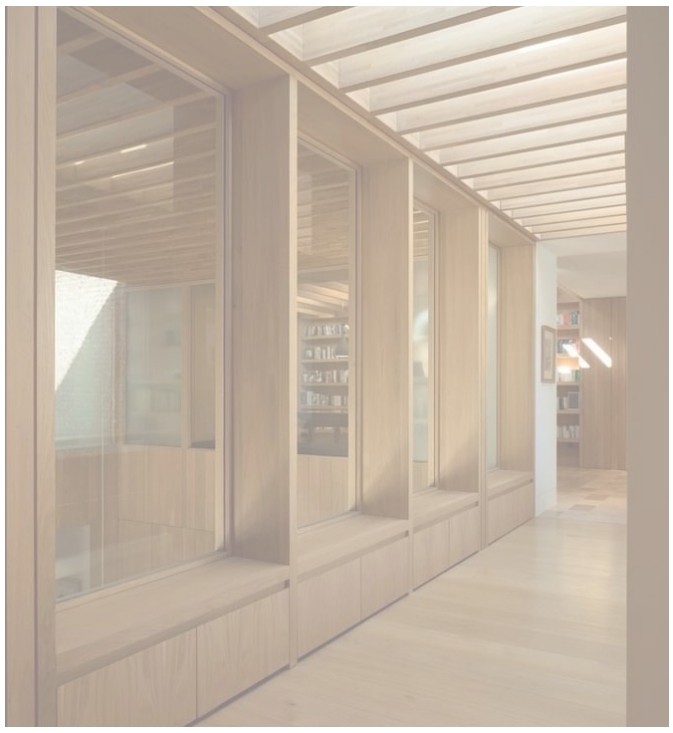
Linen
Interior wall

Stretched on frames within panelling of studio. Provides screening from ventilation system and storage space, while letting air ventilate through.

Portland Stone
Facade

Used for the trabeation outside the cafe/bar. Brushed finish. A hard limestone, strong enough under Kentish Ragstone bricks, and offers a slight tonal difference.

The historic cultural usage of Portland Stone on important civic and cultural buildings in SE England, together with the formal style of the trabeation, contribute an elegant grandeur to the building.



Kentish Ragstone bricks + Lime Mortar
Facade

Many historic cultural structures in Canterbury are made from stone, including Westgate Tower and Canterbury Cathedral. Kentish Ragstone bricks combine the immediately contextual scale of residential brick, with the cultural significance of stone blocks.

Stone bricks are lower in embodied carbon than clay bricks, as they are not fired. Kentish Ragstone is quarried locally, the split face stone bricks would travel approx. 25 miles from Maidstone by road.

Lime mortar is used instead of cement mortar, because it is easier to be chipped away at the end of the building's life, allowing the stone bricks to be reused. Lime mortar absorbs CO2 from the atmosphere as it sets (calcification), as opposed to cement mortar which emits CO2 when is sets (hydration).

Beech
Interior carpentry

Used for the interior carpentry, including doors and panelling. Cohesive with exposed mass timber, and gives the interior a warm and thoughtful atmosphere.

Carbon calculations :

Structure (without sequestration):
LVL grid: volume (79 m3) | mass (43,483 kg) x rating (195 CO2e/kg) = (8,479,185 kg CO2e)
Glulam trusses: volume (70 m3) | mass (35,000 kg) x rating (256 CO2e/kg) = (8,960,000 kg CO2e)
CLT walls + floors: volume (225 m3) | mass (106,875 kg) x rating (205 CO2e/kg) = (21,909,375 kg CO2e)
Reinforced concrete foundations: volume (317 m3) | mass (776,650 kg) x rating (410 CO2e/kg) = (318,426,500 kg CO2e)

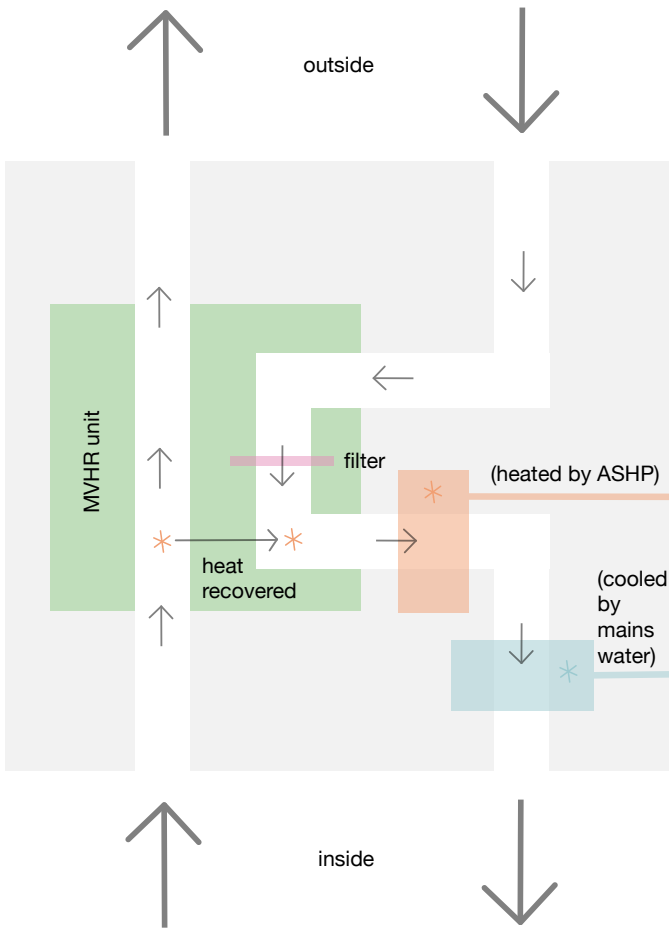
Facade:
Stone bricks: volume (200 m3) | mass (499,200 kg) x rating (0.08 CO2e/kg) = (39,936 kg CO2e)
Lime mortar: volume (40 m3) | mass (60,000 kg) x embodied CO2e rating (0.7 CO2e/kg) = (42,000 kg CO2e)
Rigid insulation: volume (713 m3) | mass (24,955 kg) x embodied CO2e rating (142 CO2e/kg) = (3,543,610 kg CO2e)
Glass windows: volume (6 m3) | mass (15,000 kg) x embodied CO2e rating (2,823 CO2e/kg) = (42,345,000 kg CO2e)

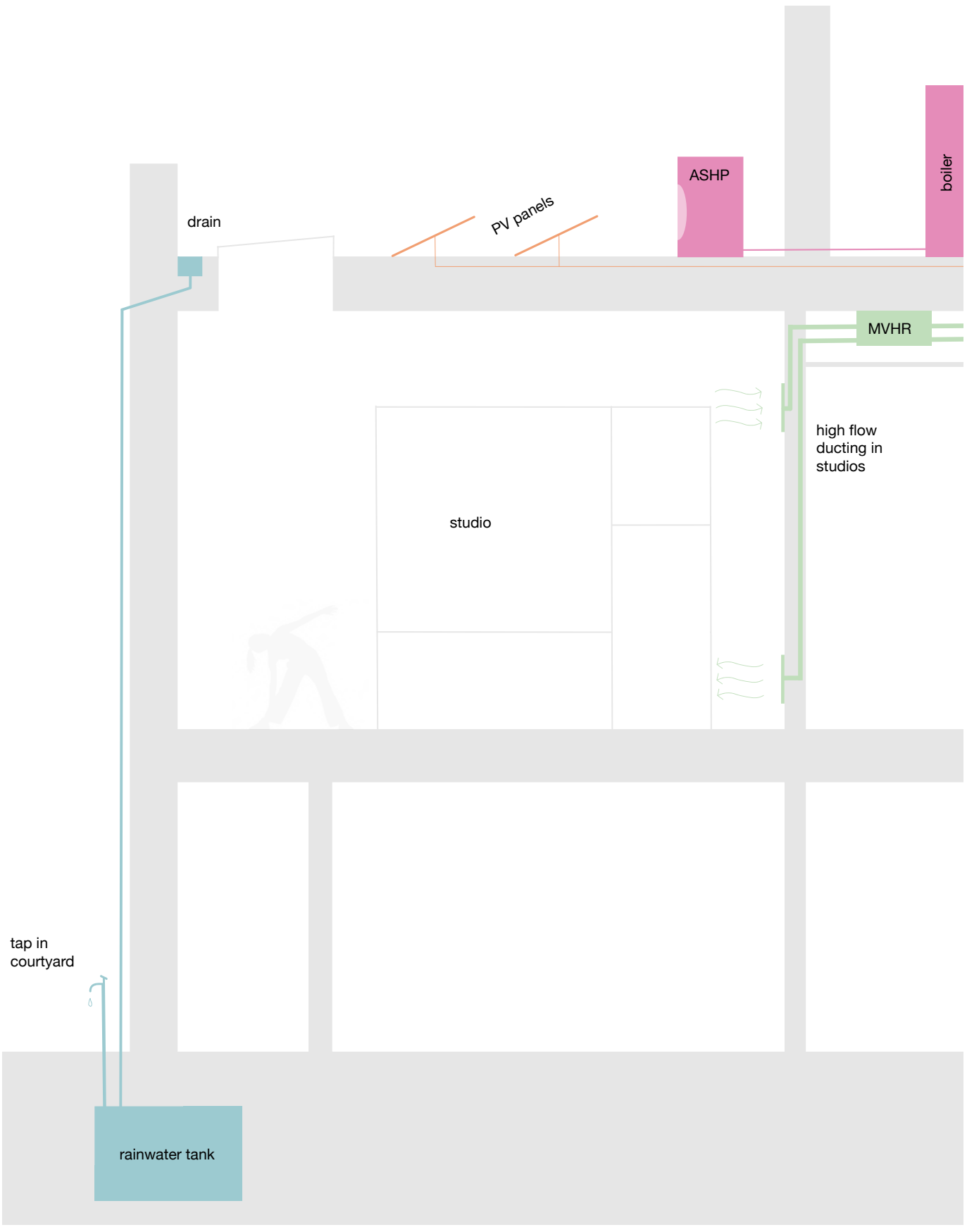
Total embodied carbon for building shell (estimated)* : 403,745,606 kg CO2e

*There are more factors not considered here that contribute to total embodied carbon, including smaller building elements, transport to site, on-site process, operational carbon, and end of life.

This building's embodied carbon has been reduced by building the structure using mass timber instead of concrete (195-256 versus 410 CO2e/kg for similar volume). The mass timber is joined with bolts, and the stone bricks assembled with lime mortar - so they could be reused at the end of the building's life. The stone is sourced locally, reducing carbon emissions in transport. Heat pumps and photovoltaic panels are installed to reduce electricity taken from the grid.

environmental strategy





The building is airtight and is ventilated using an energy-efficient MVHR system, which maintains fresh, room-temperature air. It is adapted to heat or cool the rooms, meaning the air in each studio can be carefully controlled.

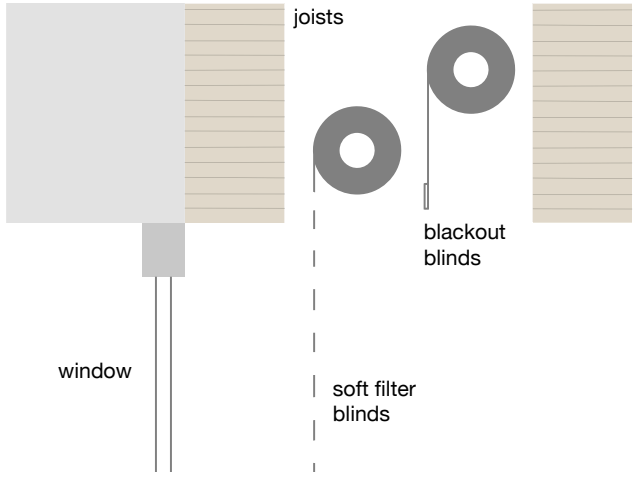
On the southern roof is an air source heat pump that heats water for the building, and photovoltaic panels which provide some of the building's electricity.

A building management system oversees the MVRH heating/ cooling system, reducing wasted energy. It makes the hot water, electrical, and lighting systems easier to operate.

Rainwater is collected and stored in a tank, to be used for courtyard maintenance.

There are fewer windows on the southern exposure, in order to minimise overheating.

Electric blinds are installed on windows to reduce overheating, maintain comfort, and offer the studios a 'blackout' lighting state.



model photos