CABLES WYND HOUSE AND LINKSVIEW HOUSE

SURF – Scotland's Regeneration Forum

COLLECTIVE COLLECTIVE ARCHITECTURE ENERGY

PUTTING PEOPLE AT THE HEART OF RETROFIT

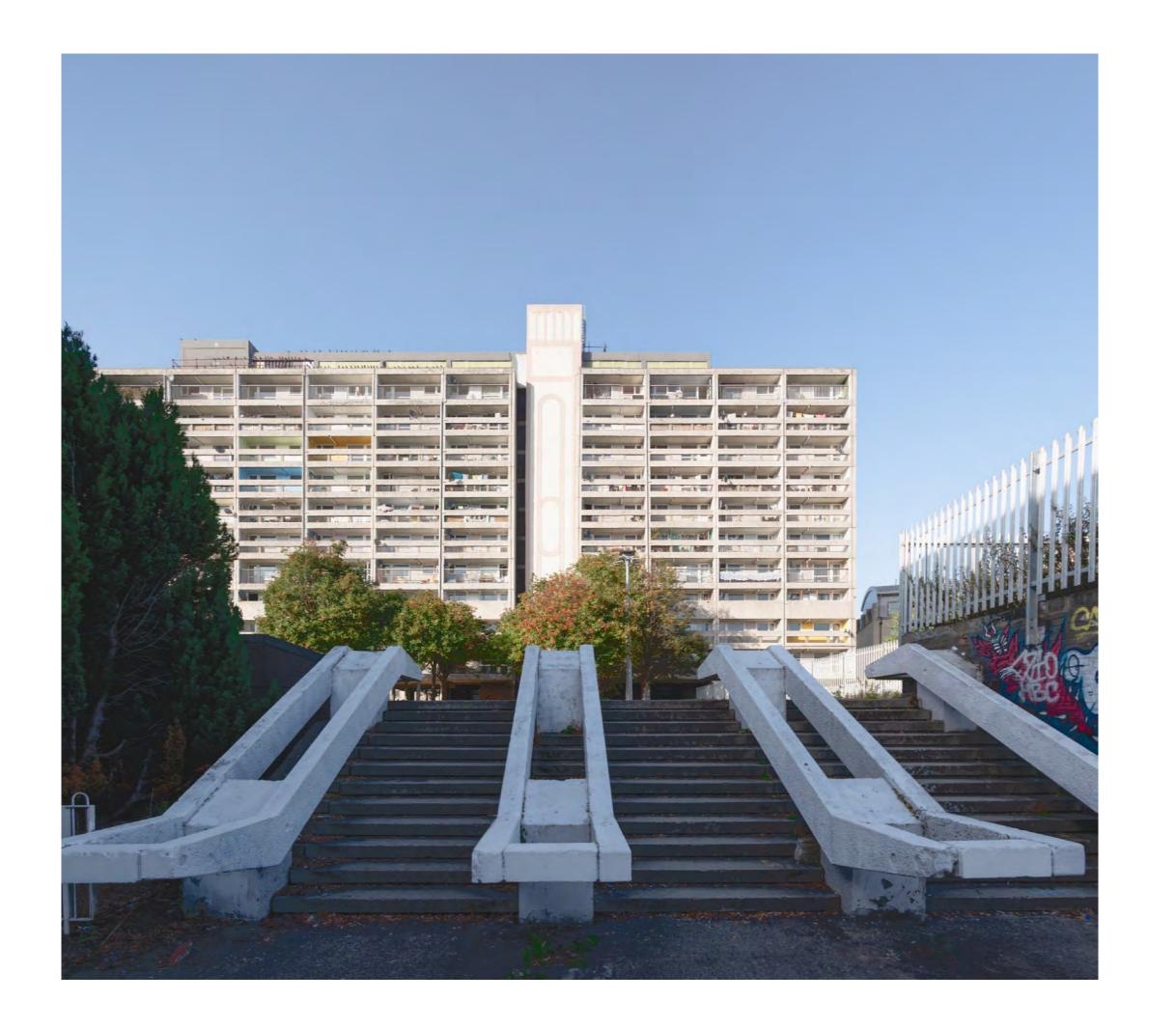
COLLECTIV ARCHITECTUR



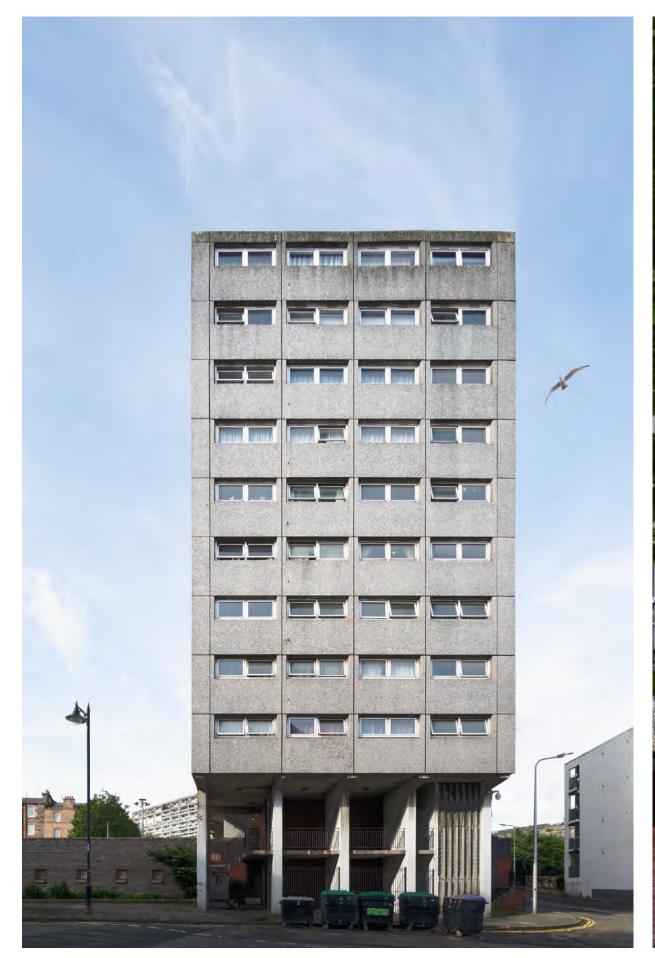






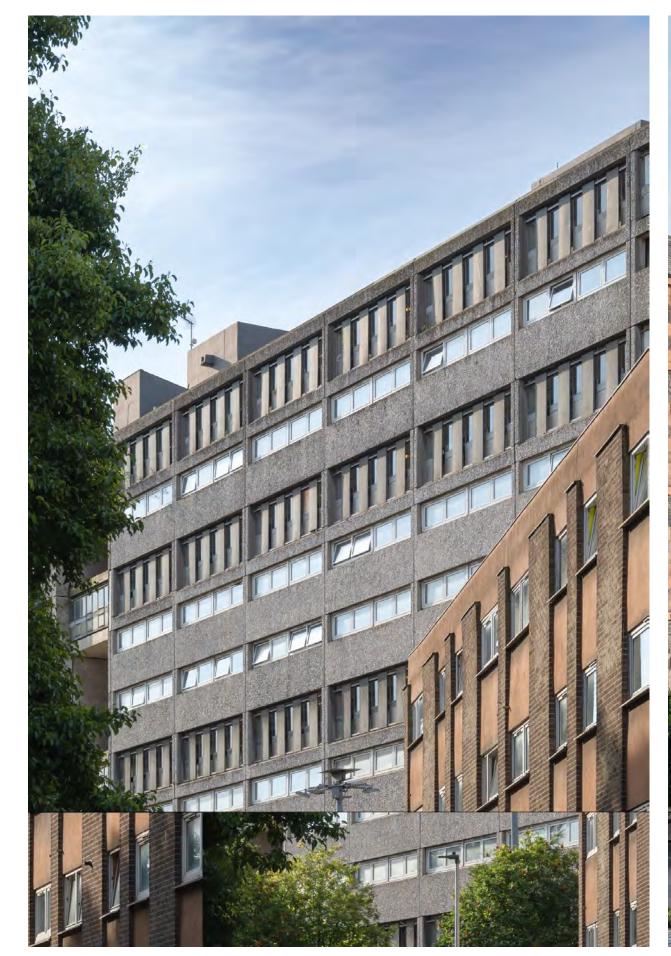




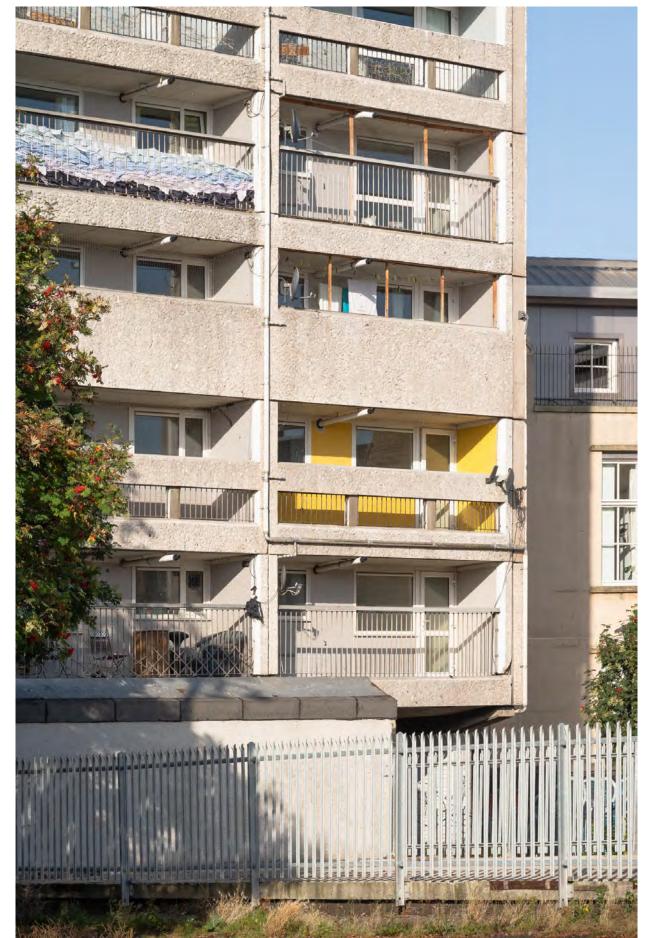












COLLECTIVE ARCHITECTURE

RESIDENT RIGHTS

Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

Universal Declaration of Human Rights (UDHR) adopted by the UN General Assembly

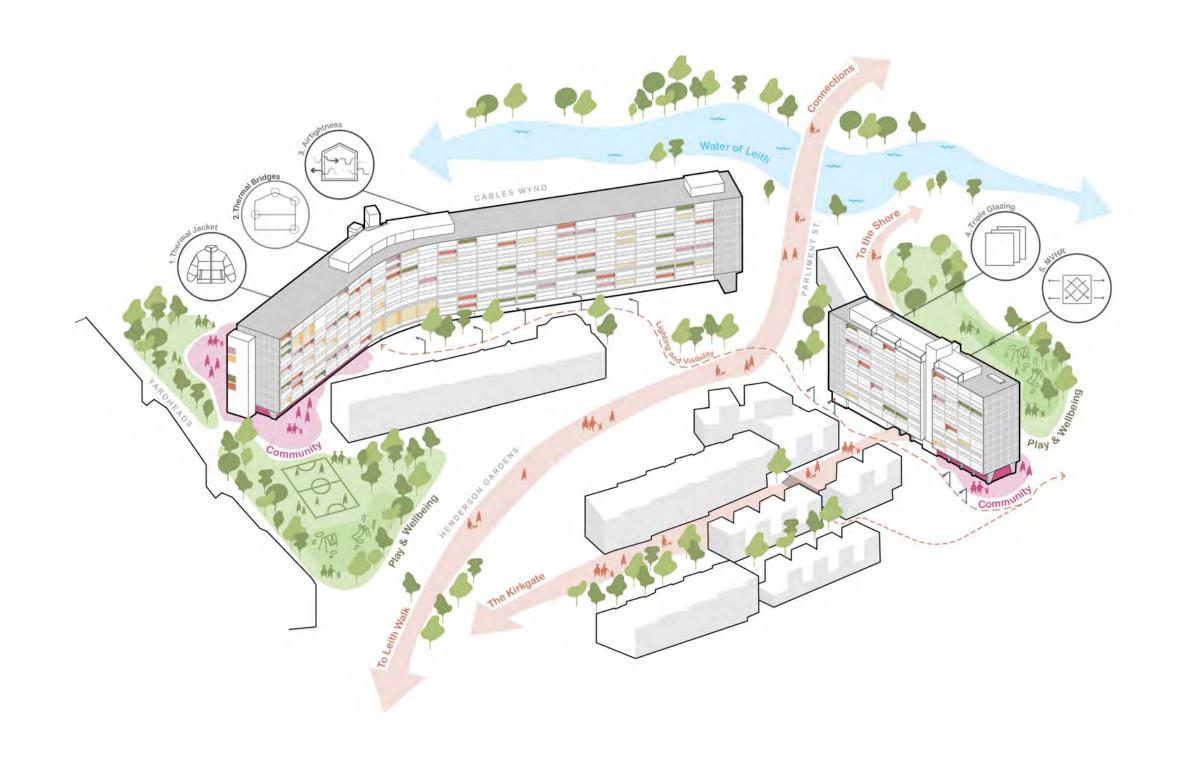
Article 25 (1)

EESSH 2

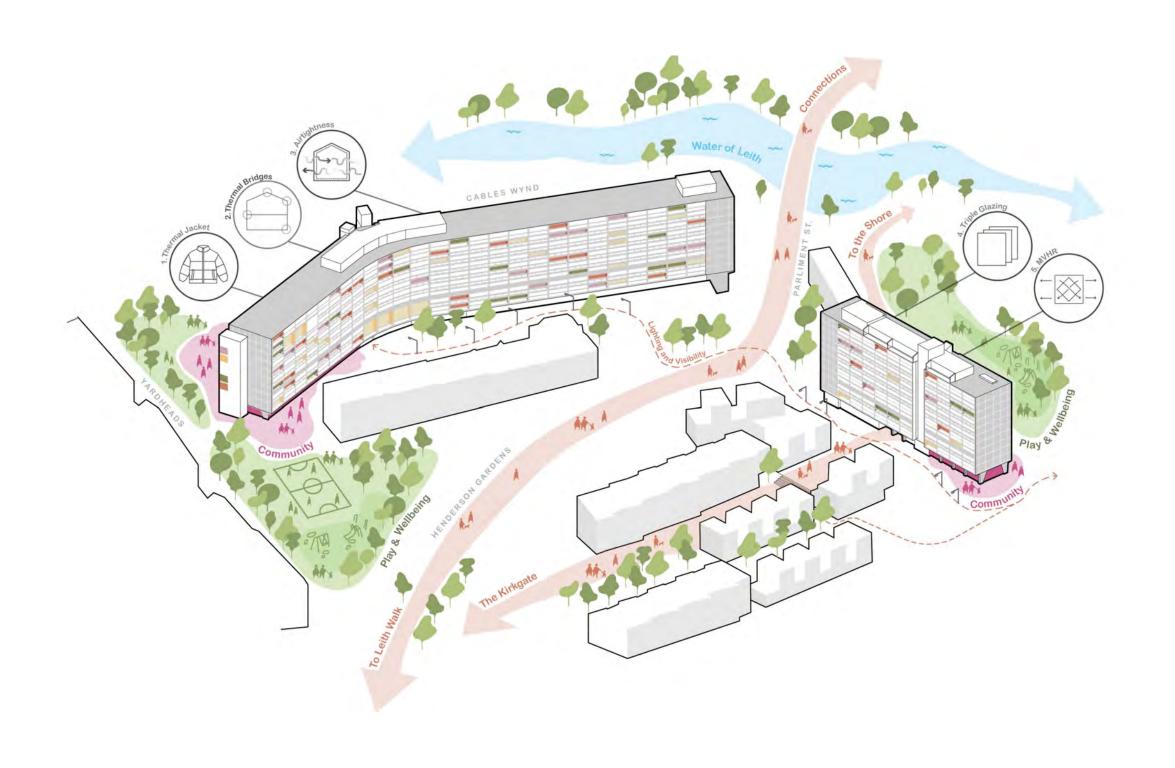
"All social housing meets, or can be treated as meeting, EPC Band B (Energy Efficiency rating), or is as energy efficient as practically possible, by the end of December 2032 and within the limits of cost, technology and necessary consent..."

EESSH 2

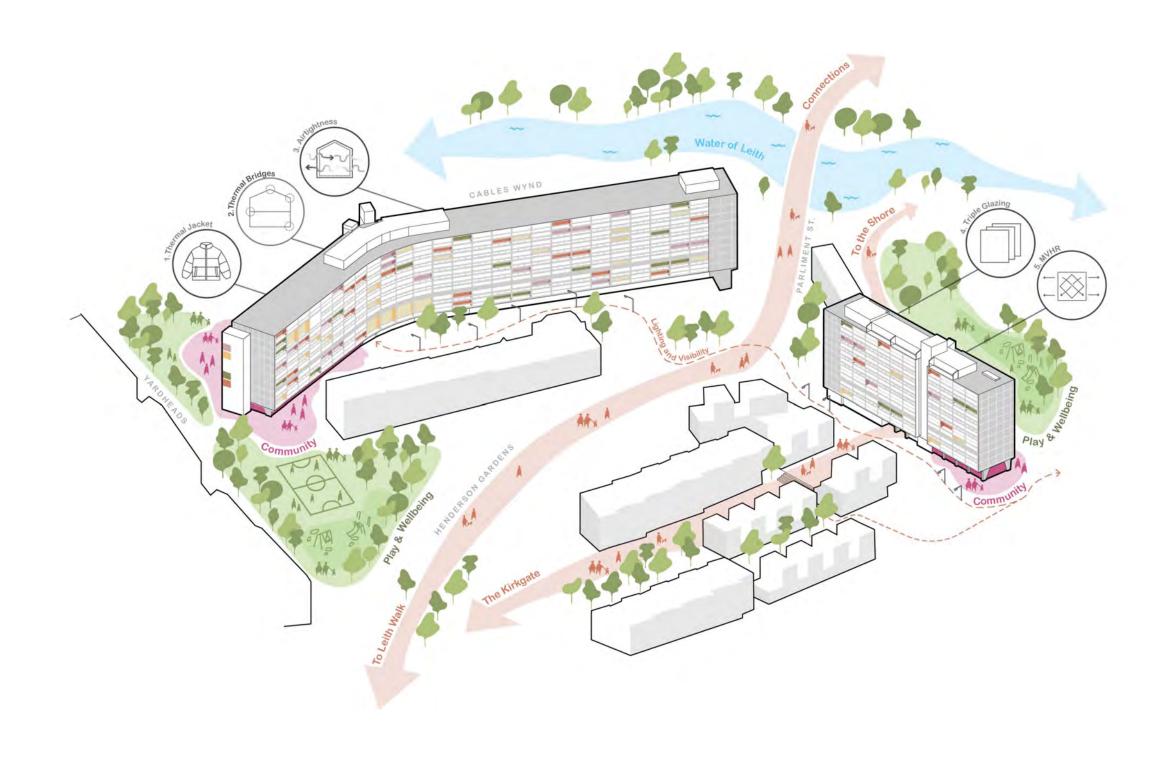
"All social housing meets, or can be treated as meeting, EPC Band B (Energy Efficiency rating), or is as energy efficient as practically possible, by the end of December 2032 and within the limits of cost, technology and necessary consent..."



ENERGY

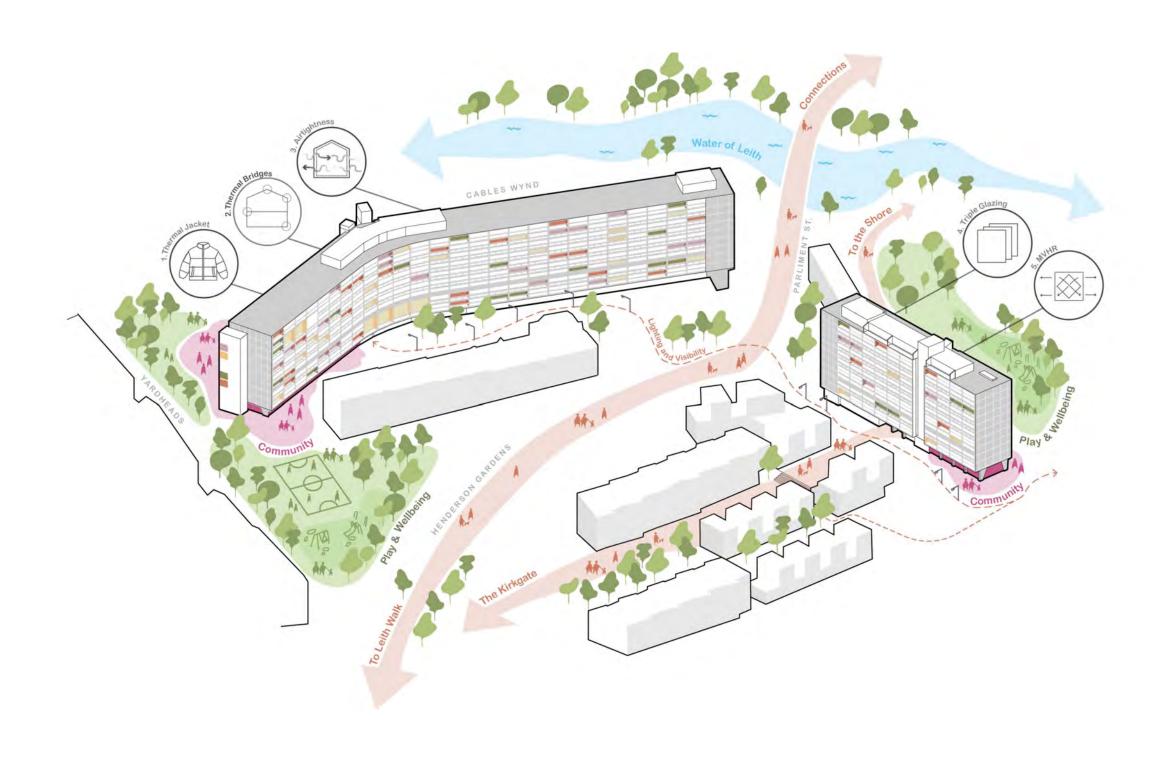


ENERGY COMFORT



ENERGY COMFORT

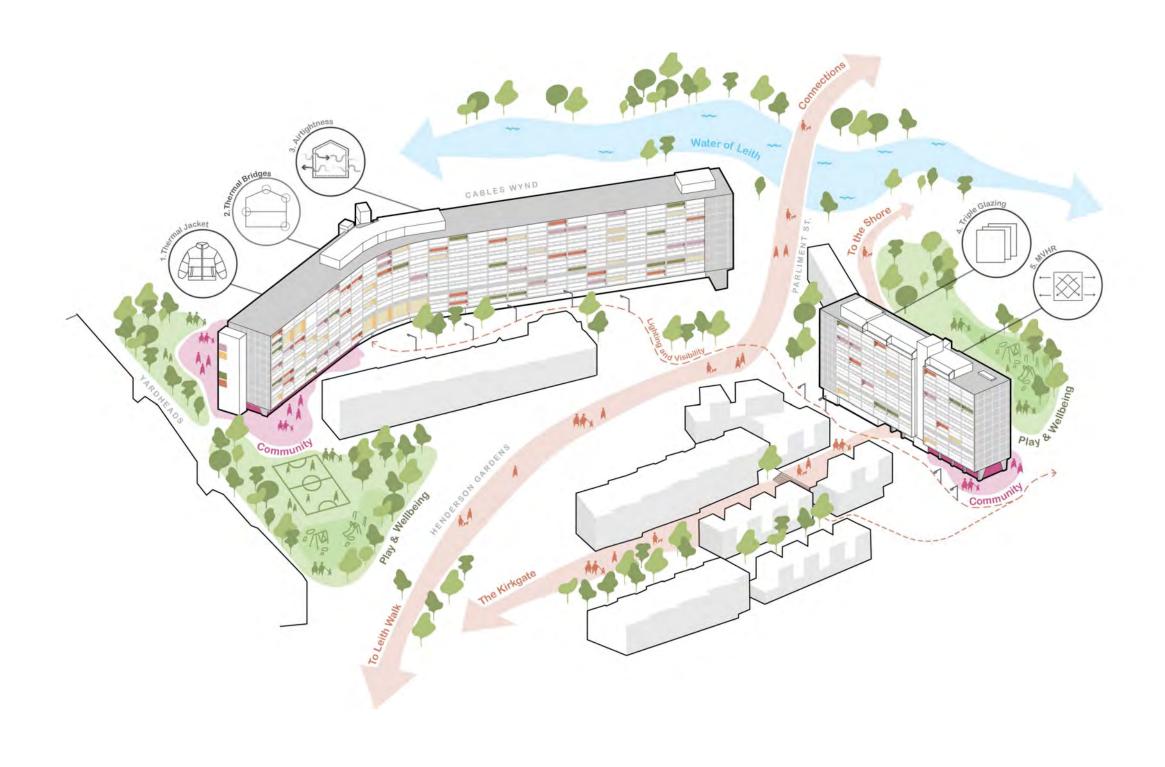
HEALTH & SAFETY



ENERGY COMFORT

HEALTH & SAFETY

PLACEMAKING

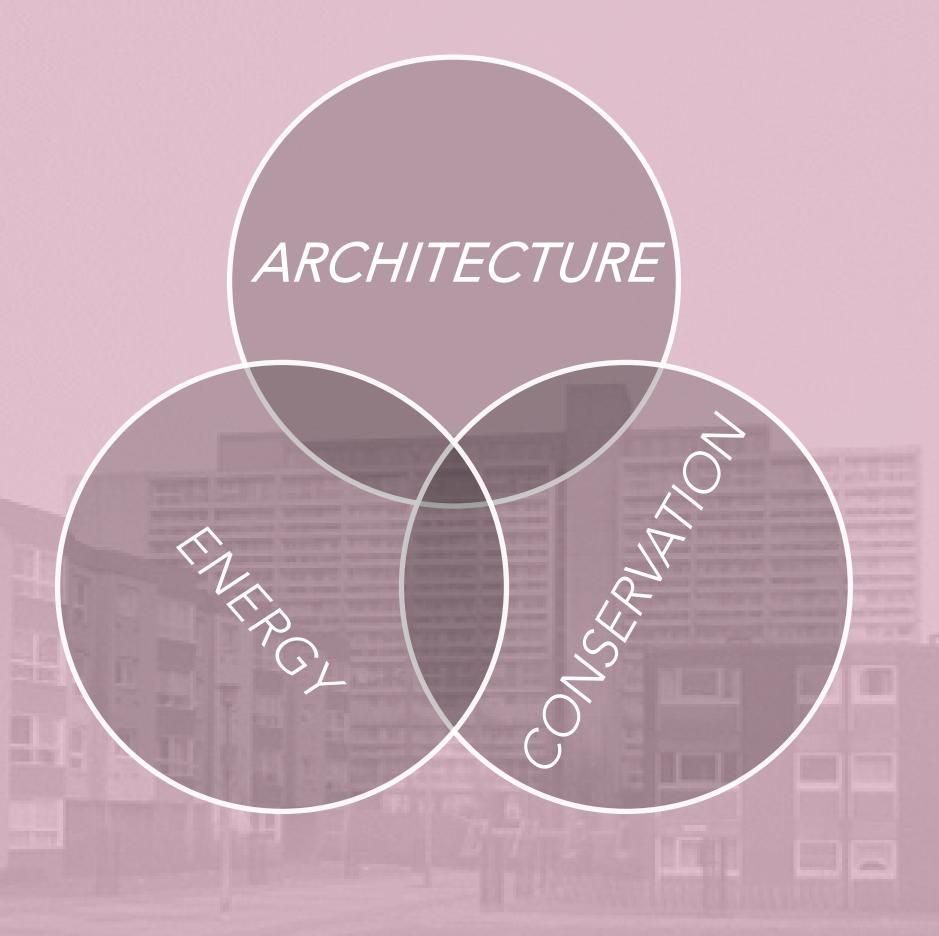


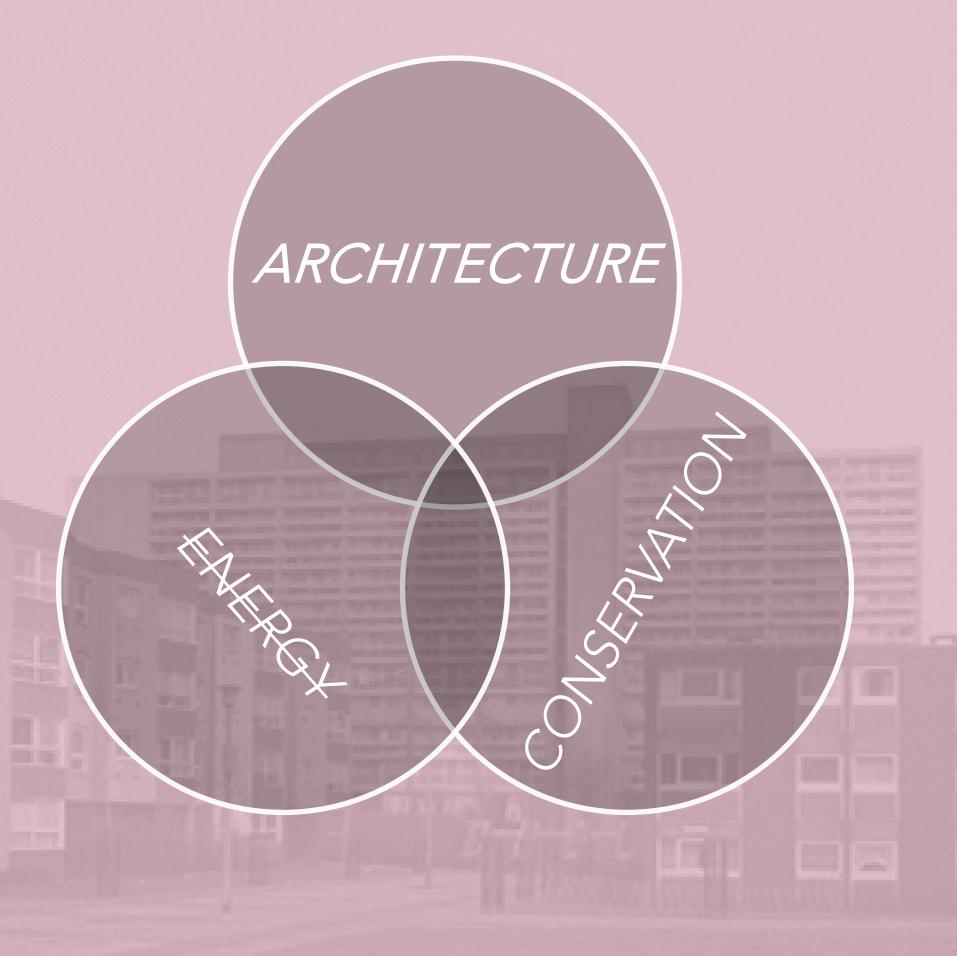
ENERGY

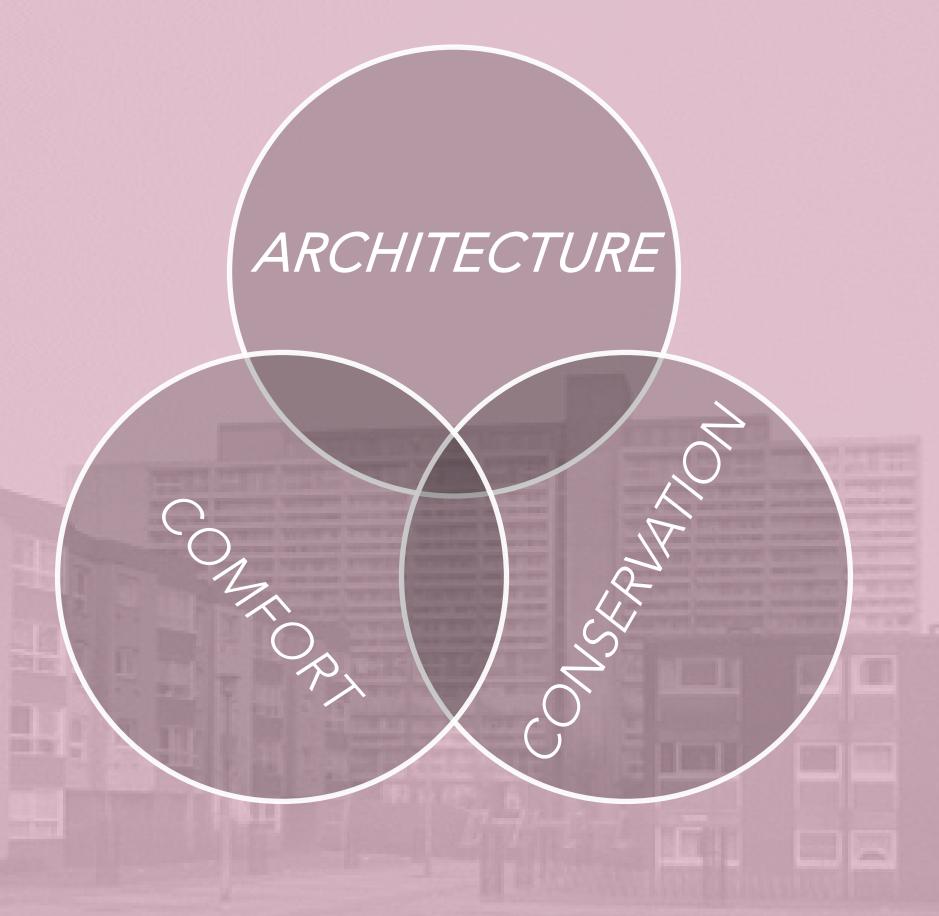
COMFORT

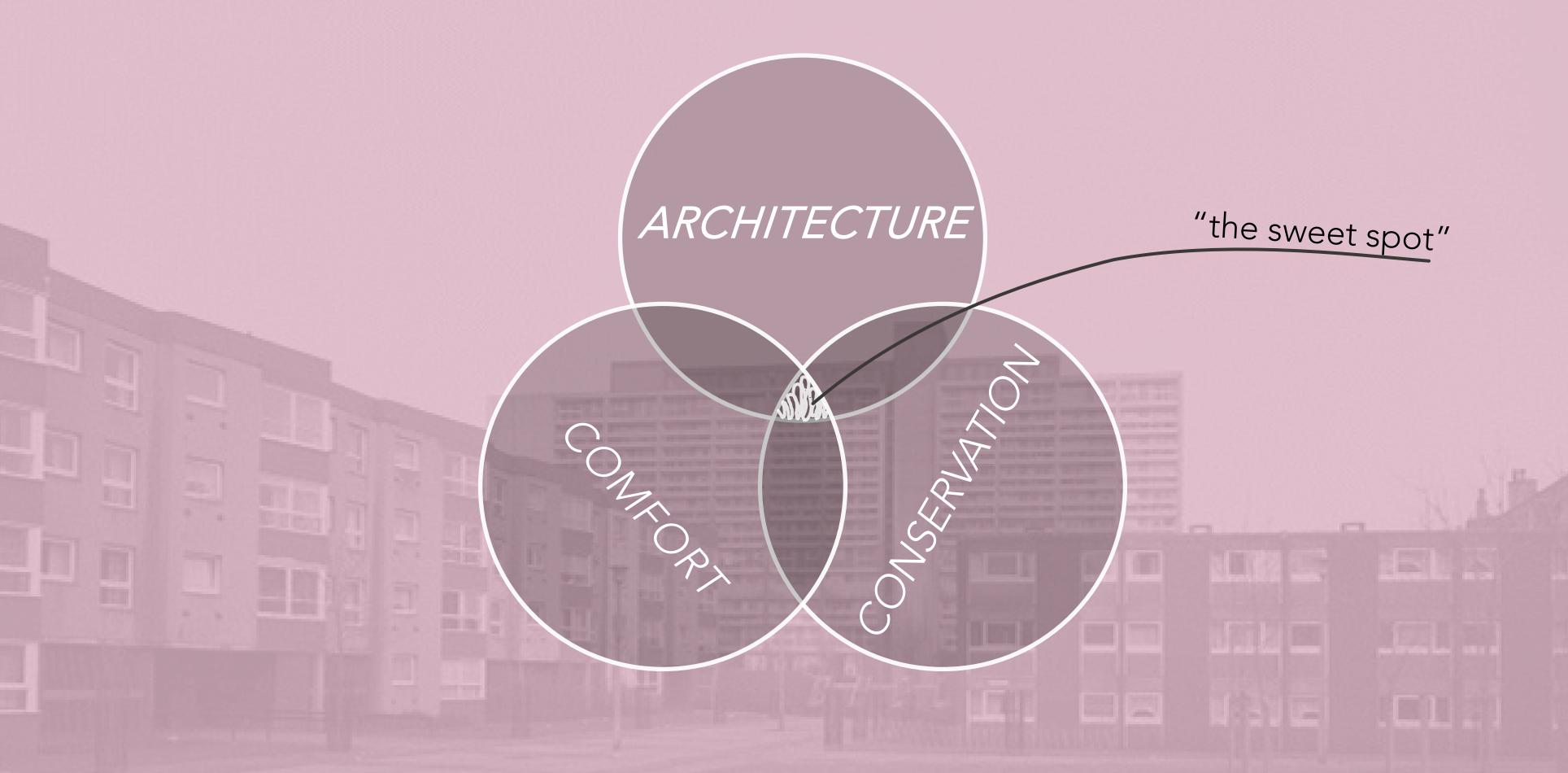
HEALTH & SAFETY

PLACEMAKING









COLLECTIVE ARCHITECTURE

CLIENT

CONSULTANT TEAM

Client

The City of Edinburgh Council

Project Manager

AtkinsRéalis

Architect and Lead Designer

Collective Architecture

Structural and Civil Engineer

Narro Associates

Energy and Sustainability

Collective Energy

Services Engineer

Blackwood Partnership

Conservation Architect Collective Architecture

Landscape Architect **Urban Pioneers**

Lighting Designer

EFLA

Fire Engineer

Atelier Ten

Acoustic Consultant

RMP



CLIENT

CONSULTANT TEAM

Client

The City of Edinburgh Council

RESIDENTS + STAKEHOLDERS

Residents Wider resident population

(incl. owners)

Resident Group

Stakeholders

Local community

Within the Council

External Stakeholders

Project Manager Atkins Réalis

Architect and Lead Designer

Structural and Narro Associates

Energy and Sustainability

Civil Engineer

Collective Energy

Conservation Architect

Services Engineer

Collective Architecture

Blackwood Partnership

Collective Architecture

Landscape Architect Urban Pioneers

Lighting Designer

Fire Engineer

Atelier Ten

Acoustic Consultant

RMP

EFLA



CLIENT

CONSULTANT TEAM

Client

The City of Edinburgh Council

RESIDENTS + STAKEHOLDERS

Residents Wider resident population

(incl. owners)

Resident Group

Stakeholders

Local community

Within the Council

External Stakeholders

Project Manager

AtkinsRéalis

Architect and Lead Designer

Collective Architecture

Structural and Civil Engineer

Narro Associates

Energy and Sustainability

Collective Energy

Services Engineer

Blackwood Partnership

Conservation Architect Collective Architecture

Landscape Architect **Urban Pioneers**

Lighting Designer

EFLA

Fire Engineer

Atelier Ten

Acoustic Consultant

RMP





RELIDENTY
SURVEY OF
PROJUCY

MOOLD PROBLEMS! EULERIC HUTTING

(00)

ACOUSTIC 19665 BETWEEN FUTTS

i janstoviše visusturių an entrance MERD FOR MANTWANCE

MICHAEL +

CLIANDINKY OF

PURIC SLACE 19

EXTRUMENT POOR

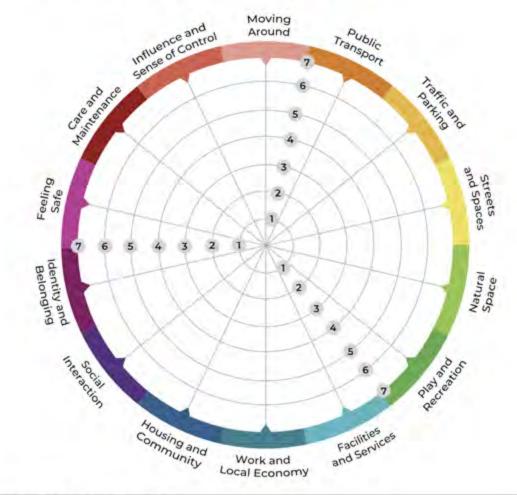
Cabas Wynar:

Ne podantian crossing

- Parking isomes

DOWNIE FLATS
HAVE WAY COLD
CRANGSWAYKWAYS ABOVE

When you have answered all the questions, plot each score on the compass diagram.



Which theme has the highest score? Which theme has the lowest score?

Please use page 25 if you wish to add further comment referencing the question.

Review

It is important to identify and agree the main issues for improvement in your place from your assessment. It may be useful to start thinking about this while it is still fresh in your mind, or you may prefer to come back at a later date to complete on your own or as part of a group. If there have been several Place Standard assessments the organiser may wish to analyse all of the feedback and bring results together before sharing the findings.

Here are some things to think about when reviewing your assessment:

- Are all of the 14 themes of equal importance or do you think some have a higher priority?
- · Which themes scored well and why? Thinking about this might help you to identify opportunities for improvements in other themes.
- · Have you considered issues that may be raised by other people in different groups such as people with specific needs or barriers?
- Have you thought about how your place can both help to combat climate change and adapt to a changing climate?
- · Is your place well prepared to adapt to a global health challenge?
- Can people access the majority of their daily needs locally?
- · Do some themes require a more detailed assessment?

if you are in a group setting, here are some additional things to think about:

- · Are there any areas for improvement that everyone agrees on?
- Are there any areas where there is disagreement? Is further discussion needed to identify the main issues?

(i) Here are some things to think about when identifying the main issues for your place:

- · What do people need to enjoy a good quality of life, now and in the future?
- What would make the biggest difference in your place?

Record the main issues for improvement in your area.

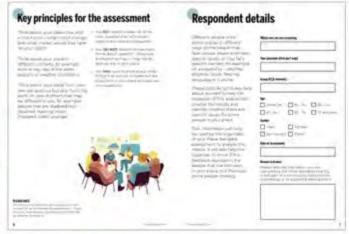
Please use page 25 if you wish to add further comment referencing the question.

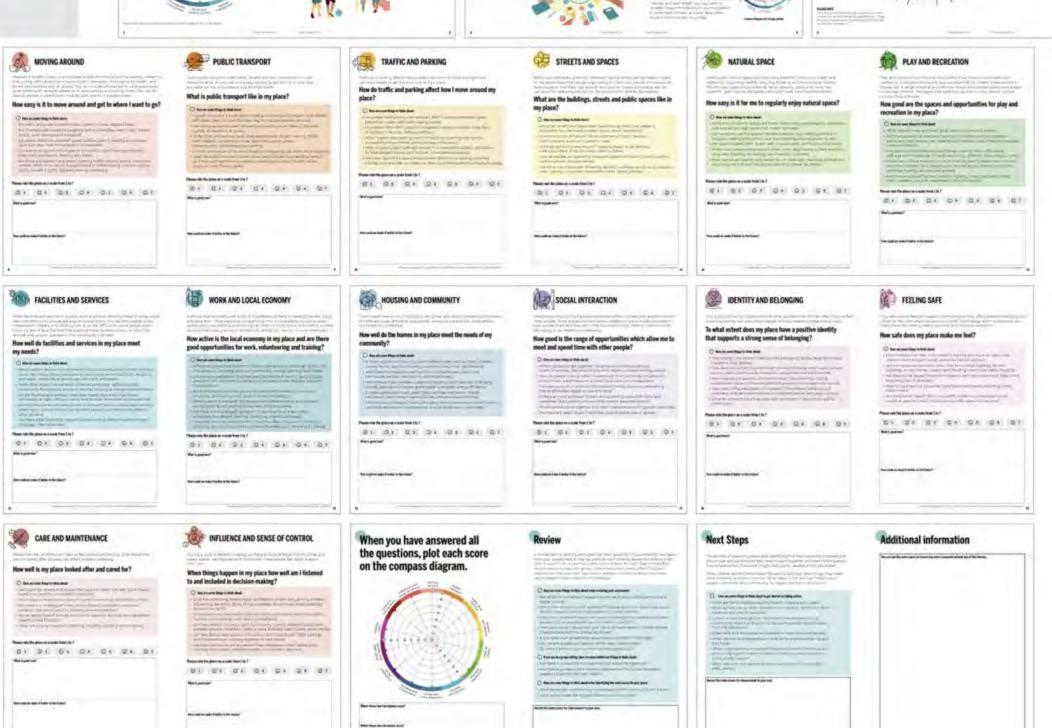












(NAME) influence & sense of control moving around Public transport (AGE) EH6 GBE (POSTCODE) TELL US WHAT YOU THINK lighting on issue in feeling natural space - don't feel safe on plinth at wight, -wouldn't walk on housing & facilities & amenities worl & mare to contheld leve 1 - Very Poor G local economy 2 - Poor " Don't want to move, 3 - Fair love the area, just 4 - Acceptable mant it ho be 5 - Good 6 - Very good will. 7 - Excellent

A Moving Around:

Can I easily walk and cycle around using good quality routes?

B Public Transport:

Does public transport meet my needs?

C Traffic & Parking:

Do traffic and parking arrangements allow people to move around safely and meet the community's needs?

D Streets & spaces:

Do buildings, streets and public spaces create an attractive place that is easy to get around?

E Natural spaces:

Can I regularly experience good quality natural space?

F Play & Recreation:

Do I have access to a range of space and opportunities for play and recreation?

G Facilities & Amenities:

Do facilities and amenities meet my needs?

H Work & Local Economy:
Is there an active local economy and the opportunity to access good quality work?

Housing & Community:
Does housing support the needs of the
community and contribute to a positive environment?

J Social Interaction:

Is there a range of spaces and opportunities to meet people?

K Identity & Belonging:
Does this place have a positive identity and do I feel I belong?

L Feeling safe: Do I feel safe?

M Care & Maintenance:

Are buildings and spaces well cared for?

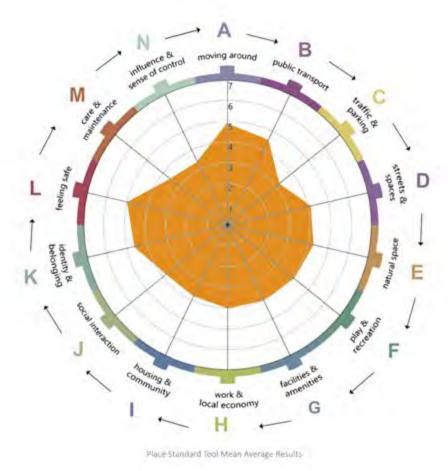
N Influence & Sense of Control: Do I feel able to participate in decisions and

help change things for better?

HELP PLAN AND SHAPE THE FUTURE OF **POWDERHALL** Facilities & Amenities: Do facilities and amenities meet my needs? (shops, schools, places to eat etc) What is your experience of living in the Powderhall Area? Name Postcode Work & Local Economy: Is there an active local economy and the 0-19 20-40 41-60 60+ Age opportunity to access good quality work? moving around Moving Around:
Can I easily walk and cycle around using good quality routes? Housing & Community:
Does housing support the needs of the community and contribute to a positive environment? Public Transport: Does public transport meet my needs? Social Interaction: Is there a range of spaces and opportunities to meet people? Traffic & Parking: Do traffic and parking arrangements allow people to move around safely and meet the community's needs? Identity & Belonging:
Does this place have a positive identity and do I feel I belong? E Streets & spaces: Do buildings, streets and public spaces create an attractive place that is easy to get around? Feeling safe: Do I feel safe? E Natural spaces: Can I regularly experience good quality Care & Maintenance: work & natural space? Are buildings and spaces well cared for? local economy G Play & Recreation:
Do I have access to a range of space and Influence & Sense of Control: Do I feel able to participate in decisions and opportunities for play and recreation? 1 - Very Poor 2 - Poor 3 - Fair 4 - Acceptable 5 - Good 6 - Very good 7 - Excellent help change things for better?

Tell us About Powderhall 01

PLACE STANDARD TOOL FEEDBACK 27|06|18



1- Very Poor 2- Poor 3- Fair 4- Acceptable 3- Good 6- Very Good 7- Excellent

Respondent	Moving Around	Public Transport	Traffic & Parking	Streets & Spaces	Natural Space	Play & Recreation	Facilities & Amenities	Work & Economy	Housing & Community	Social Interaction	Identity & Belonging	Feeling Safe	Care & Mainte- nance	Influence & Sense of Control
P	3	3	3	4	4	4	3	3		2	5	5	3	1
Q	5	6	5	5	5	4	5	5	5	4	5	7	5	2
R	4	5	3	4	5	5	5	4	3	5	4	6	5	5
S	4	3	1	1	3	2	2	3	1	2	5	5	4	- 3
T	4	3	4	1	3	5	4	2	4	3	4	4	4	4
U	6	4	6	4	3	4		4		4	5	3		2
V	4	3	4	4	5	4	2	3	3	3	4	5	4	3
W	6	5	- 6	4	3	6	6	6	4	-4	6	6	5	.5
X	5	4	4	4	5	4	3	4	4	3	-4	3	5.5	5.5
Y	7	1			2	2	3	2						
2	5	4	3	4	13	5	2	3	4	2	3	4	-4	5
AA	.6	7	3.5	5	5	6	4	5	5	4	5	5	4	5
.AB	3	3	3	3	2		3			3	-4	-4	3	
AC	5	4	2	5	4	5	6	7	4	5	-4	6	4	1
AD	6	7	6	5	5	5	7	6	5	6	6	6	4	4
AE	6	6	3	5	5		3	3	3	3	3	3	2	2
AG	5	6	2	2	L	2	2	4	5	2	-4	5	5	5
AH	7	7	2	5	7	7	7	5	2	5	6	7	5	3
Al	5	5	4	5	4	5	3	4	5	4	6	5	4	4
AJ	4.5	2.5	3.5	4.5	6.5	4.5	2.5	3,5	3,5	4.5	5.5	4.5	4.5	3.5
AK	5	3	2	4	4	3	3	3	5	2	3	5	5	3
AL	6	5	4	6	4	1	2	7	2	-	3	3	2	4
MA. AN	5	7	3	4	5	7	5	7	3.5	5		5 7	4	4
AO	5	4	5	5	5	1	2	3	3.5	4	7	4	3	2
AP	7	4	5	6	7	7	7	6	6	7	7	7	5	4
AQ	7	4	5	6	7	7	7	6	5	7	7	7	5	4
AR	5	4	2	5	5	5	2	1	3	2	4	6	3	5
AS	4	2	3	3	4	2	3	3	5	4	4	5	4	-2
AT	4	7	3	3	4	4	4	4	2	2	3	4	2	3
AU		6	5.5	5.5	6	.6	5	4	3	2	5.5	5.5	4	3
AV	7	7	20.00				6	,	6	5	5	6	1	2
AX	6	7	6	5	5	3	5.	5	5	5	4	4	-d.	4
AW	4	5	4	5	3	4	5	3	4	5	4	5	5	-4
AY	1.5	5	1	3	3	4	6		2	6	5	4	25	1
AZ	4.	2	2.5	3	5	4	3	3	4	2.5	5	5	4	3
BA	4	3	2	3.5	3.5	2	2	2	3	2	3,5	3.5	3,5	2
88	4.	5	1	3	3	2	3	5	5	5	6	4	1	3
BC	4	5	2	6	5	6	4	6	1	6	7	5	1	5
BD	2.5	2	3	4	4	2	2	3	1	1	3	4	2	3
Cumulative Average	4.95	4.53	3.36	4.09	4.33	4.2	3.96	4.04	3.72	3.84	4.73	4.93	3.68	3.39

Tell us About Powderhall 01





Existing site photographs

Tell us About Powderhall 01

Total

WORK & ECONOMY

Question

Most commonly referenced qualities

Work & Economy - Tell us your thoughts for places to work....

Small Business - Space to encourage small, start-up businesses / creative spaces / workshops / studios 13

Community Creative Hub - cafe / spaces to socialise

Mixed development - Use should be mixed / fit in with residential area / create vibrant community 9

Under-provided for - There are few / little opportunities for local employment / start-up space 9

Inspirational Answers / Statements

"Disabled, impaired and retired/semi-retired people should also be able to have a purpose in life so we need jobs of all kinds."

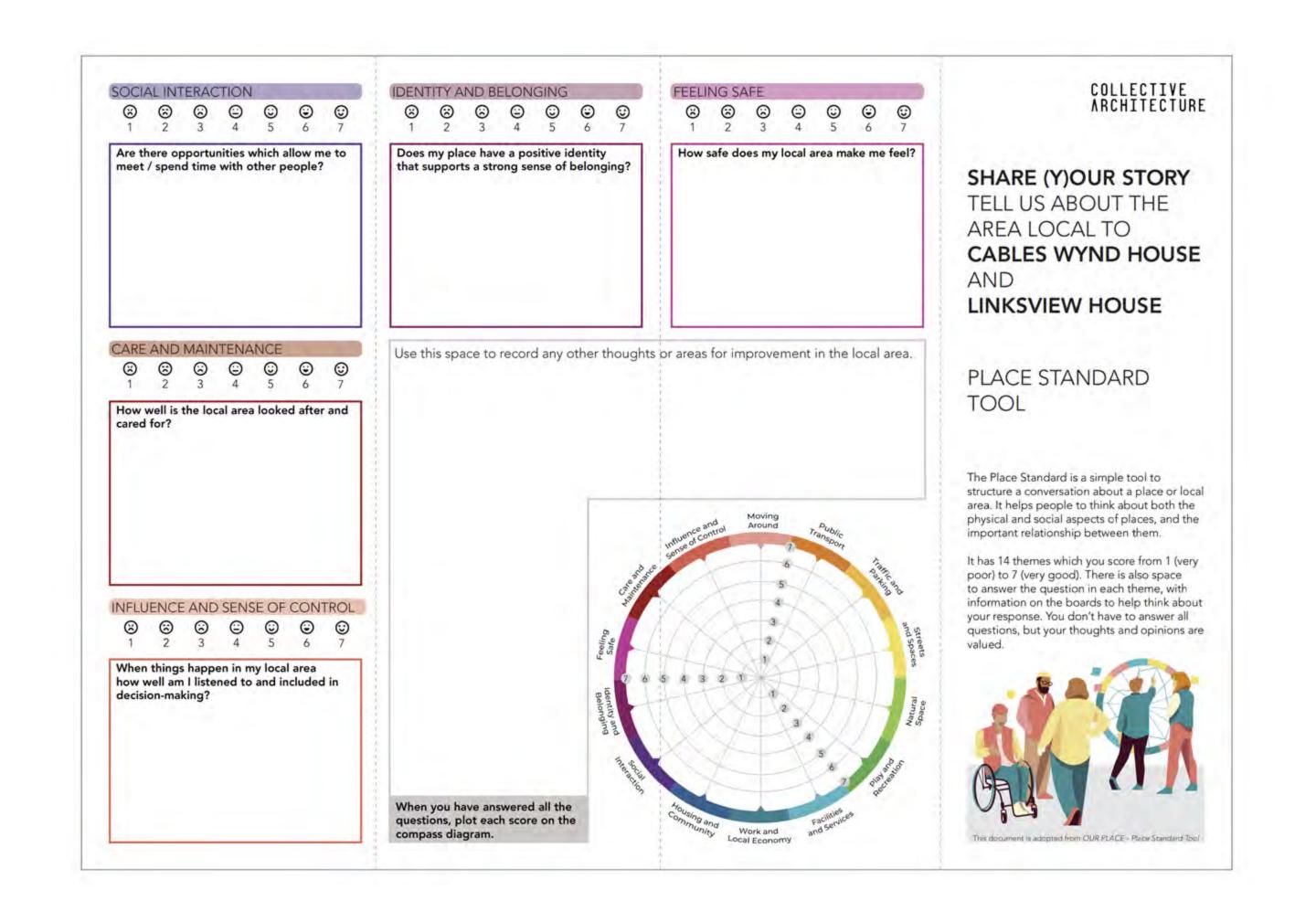
"Great location to link to Edinburgh's Vibrant haspitality, creative and business opportunities,"

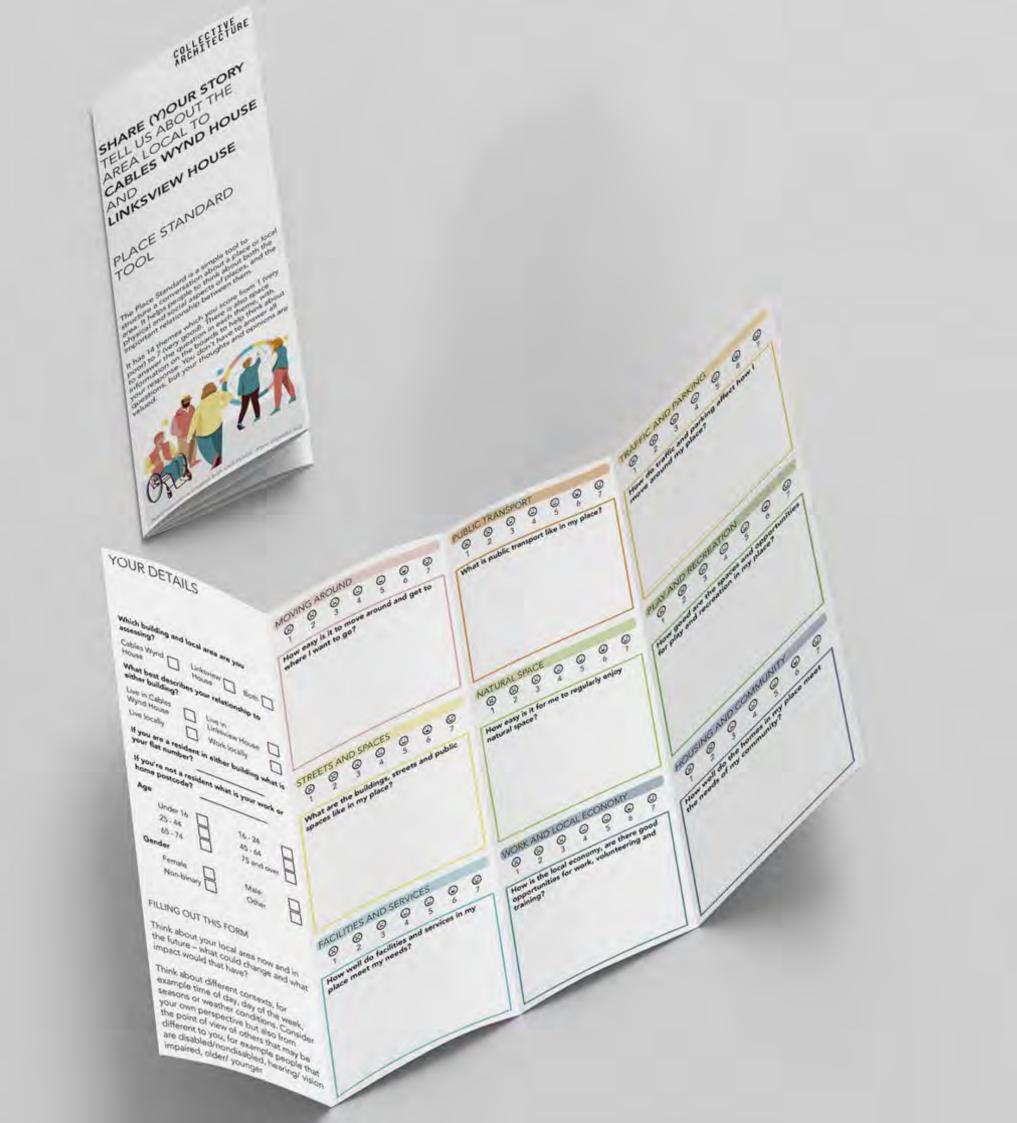
"Work spaces in the stable block will be a very positive additional use to the development."

"Artists / creative studios would be a great boost to the area and are much needed"."

*The area has zero opportunity for creatives, so the arts space idea is, quite frankly, revolutionary and unexpectedly so."

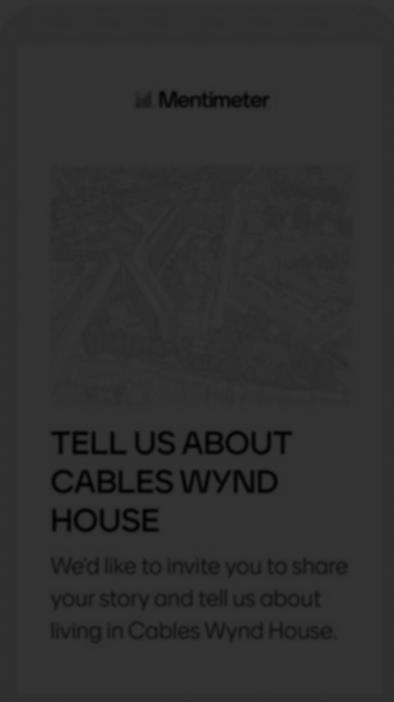
YOUR DETAILS	MOVING AROUND	PUBLIC TRANSPORT	TRAFFIC AND PARKING			
	⊗	8 8 8 9 9 9 9 9 1 2 3 4 5 6 7	⊗			
	How easy is it to move around and get to where I want to go?	What is public transport like in my place?	How do traffic and parking affect how I move around my place?			
Which building and local area are you assessing?						
Cables Wynd Linksview Both House						
Vhat best describes your relationship to ither building?						
ve in Cables Live in Linksview House						
ve locally Work locally	STREETS AND SPACES	AlaTUDAL CDACE	DI AV AND DECREATION			
you are a resident in either building what is our flat number?	STREETS AND SPACES ② ② ② ② ② ② ◎ 1 2 3 4 5 6 7	NATURAL SPACE ② ② ② ② ◎ ◎ ◎ ◎ 1 2 3 4 5 6 7	PLAY AND RECREATION ② ② ② ② ② ② ② ② ③ 1 2 3 4 5 6 7			
you're not a resident what is your work or	What are the buildings, streets and public	How easy is it for me to regularly enjoy	How good are the spaces and opportunities for play and recreation in my place?			
ome postcode?	spaces like in my place?	natural space?				
ge						
Under 16 16 - 24 25 - 44 45 - 64			E			
65 - 74 75 and over			1			
ender						
Female Male Non-binary Other						
	FACILITIES AND SERVICES	WORK AND LOCAL ECONOMY	HOUSING AND COMMUNITY			
LLING OUT THIS FORM	⊗	⊗	⊗			
nink about your local area now and in e future – what could change and what apact would that have?	How well do facilities and services in my place meet my needs?	How is the local economy, are there good opportunities for work, volunteering and training?	How well do the homes in my place meet the needs of my community?			
nink about different contexts, for cample time of day, day of the week, easons or weather conditions. Consider our own perspective but also from e point of view of others that may be fferent to you, for example people that e disabled/nondisabled, hearing/ vision apaired, older/ younger						









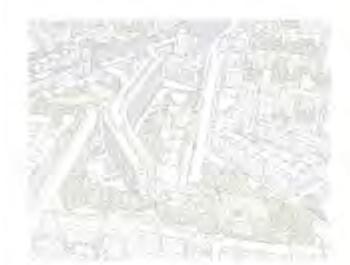




would have.

YOUR DETAILS	WARMTH AND HE	EATING YOUR HOME	SUMMER COOLIN	NG AND COMFORT	CONDENSATION, DAMP AND MOULD		
	⊗	© © © © 7	8 8 8 1 2 3	© © © © 7	© © © 1 2 3	⊕	
Vhat is your flat number? our age: Under 16	to heat?	ome, and how easy is it ly? Are some rooms colder? Is eating system work?	do I cool down the Does it get too hat? Is it	rheat in Summer, how rooms? hard to cool down? Do you or close blinds to cool down?	or mould? Which rooms are probl	ematic? Does opening a window ? Do problems come and go?	
Female Male Non-binary Other ot including you, how many other people							
your home are aged:	OPERATION AND	CONTROLS	CARE AND REPAI	R	OUTDOOR SPACE	E	
Under 16 16 - 24 25 - 44 45 - 64	② ② ② 1 2 3	© © © © 4 5 6 7	⊗	© © © © 4 5 6 7	⊗	© © © © 4 5 6 7	
ow long have you yed in your home? n a typical weekday, or working day, how ng do you spend at home? 0 - 12 Hrs		rems in my home? o problems come and go? Do have smart-home controls?	cared for? Are there ongoing prob happening? Do you rep	lems? Do they keep ort them? Are they repaired?	outdoor space? Do you	rivate garden, balcony or shared Luse these year round? Is there from using these spaces?	
0 - 12 Hrs		Walter and and an artist	Carlandon Co.				
16 - 20 Hrs 20 - 24 Hrs	PRIVACY AND YOU	© © © © 7	Ø Ø Ø a 3	O O O O O 7	© © © 1 2 3	ROOM FOR ACTIVITY a a a a a a a a a a a a a a a a a a a	
COMPLETING THE HOME STANDARD OOL Think about the building in which you live and your individual home, both now and	I relax in my home? Are there problems with	noise? Do you have privacy u have somewhere to relax?	able to live in my h What would need to cha	s change, would I still be ome? inge if you wanted to grow your an accident, ill-health, ageing?	Is there enough space bedrooms or bedspace	eet my day-to-day needs? and storage? Are there enough es? Carr your family do all the in you move furniture around?	





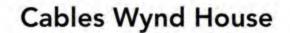
TELL US ABOUT CABLES WYND HOUSE

We'd like to invite you to share your story and tell us about living in Cables Wynd House.

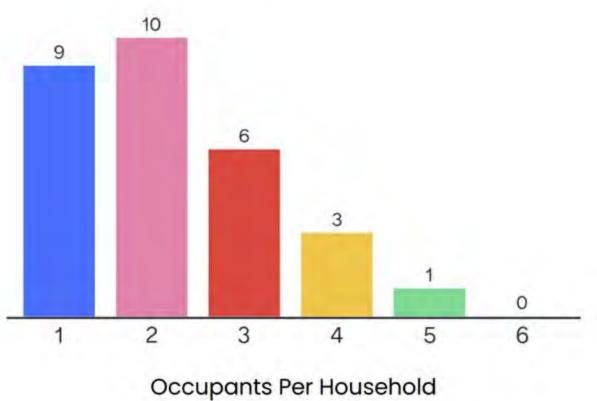
- Warmth & Heating Your Home
- Summer Cooling & Comfort
- Condensation, Damp & Mould
- Operation & Controls
- Care & Repair

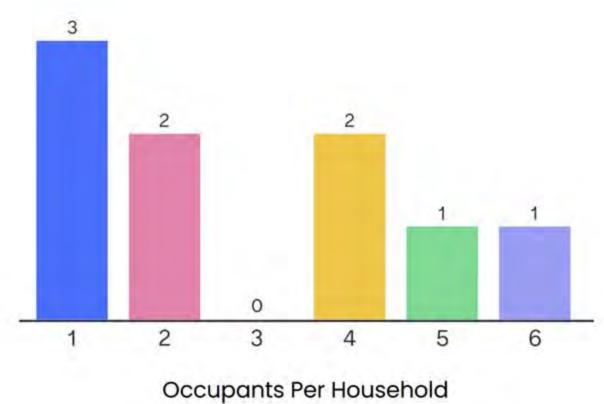
- Outdoor Space
- Privacy & Your Own Space
- Adaptability & Future Needs
- Flexibility & Room For Activity
- Moving Around

- Accessibility
- Community & Neighbours
- Feeling Safe
- Influence & Sense of Control



Linksview House





Under 16

16 - 24

0.3

24 - 44

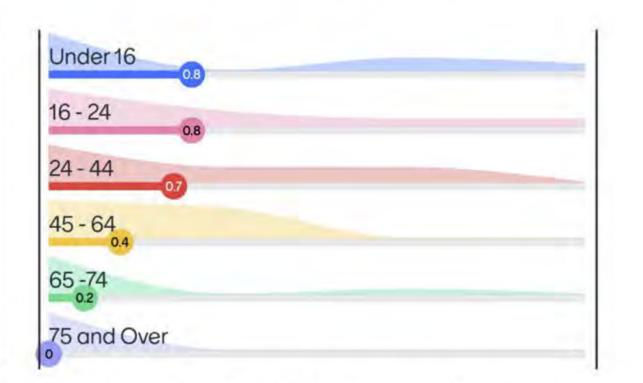
0.6

65 - 74

0

75 and Over

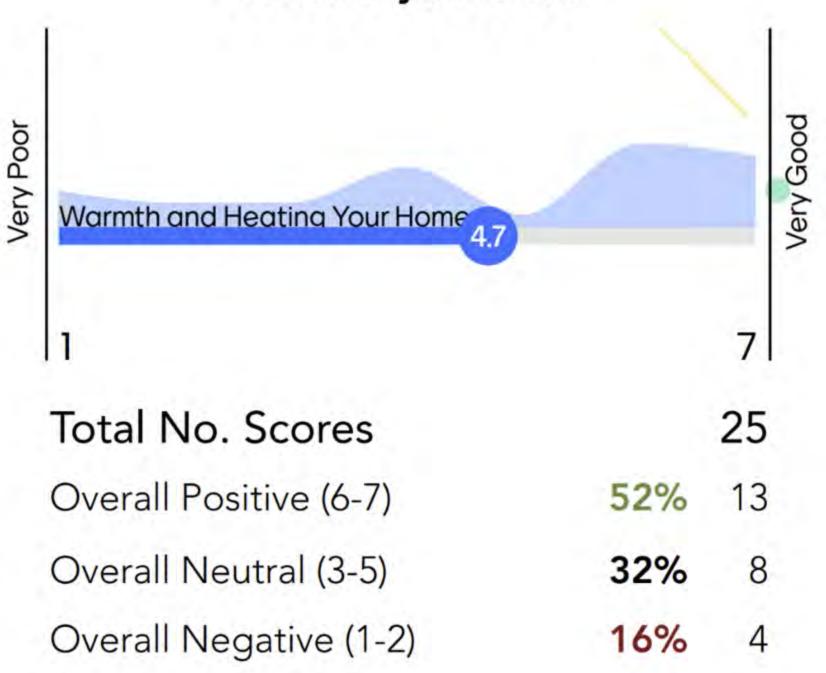
0.1



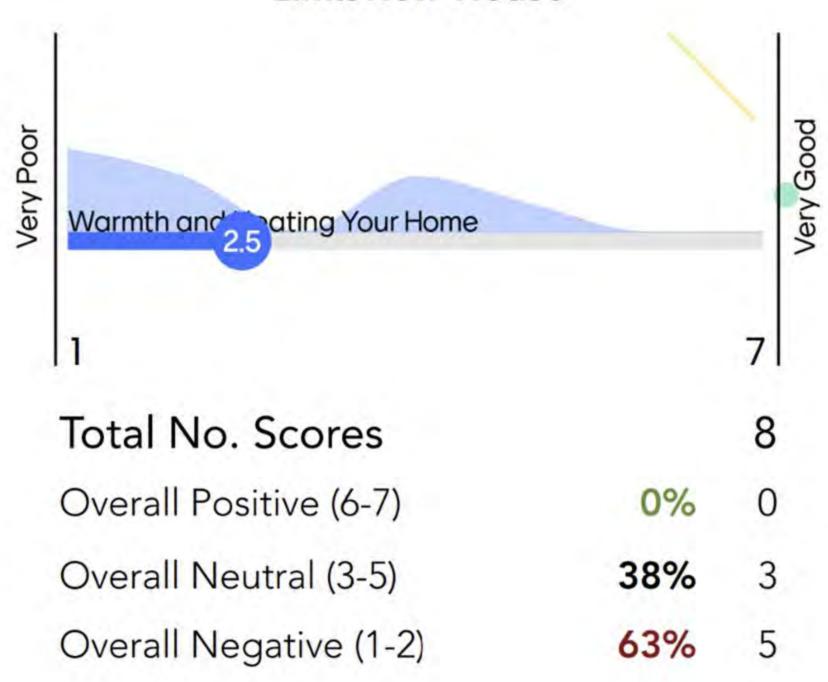
Age Range Per Household

Age Range Per Household

Cables Wynd House



Linksview House





WARMTH AND HEATING YOUR HOME

How warm is my home, and how easy is it to heat?

Use the prompts below to help you to answer:

- Does your home lose warmth easily?
- Are some rooms colder than others?
- · Are there draughts in your home?
- Do you heat your whole home or individual rooms?
- Do you use a central heating system or portable heaters?
- Is the heating system working properly?

"Not very – it's draughty and heat escapes quickly. You can feel where heat stops in a room."

Cables Wvd House Resident, 2023

"If it's windy in a given direction the sitting roof flooring lifts due to the draughts coming in from the balcony wall."

Linksview House Resident, 2023

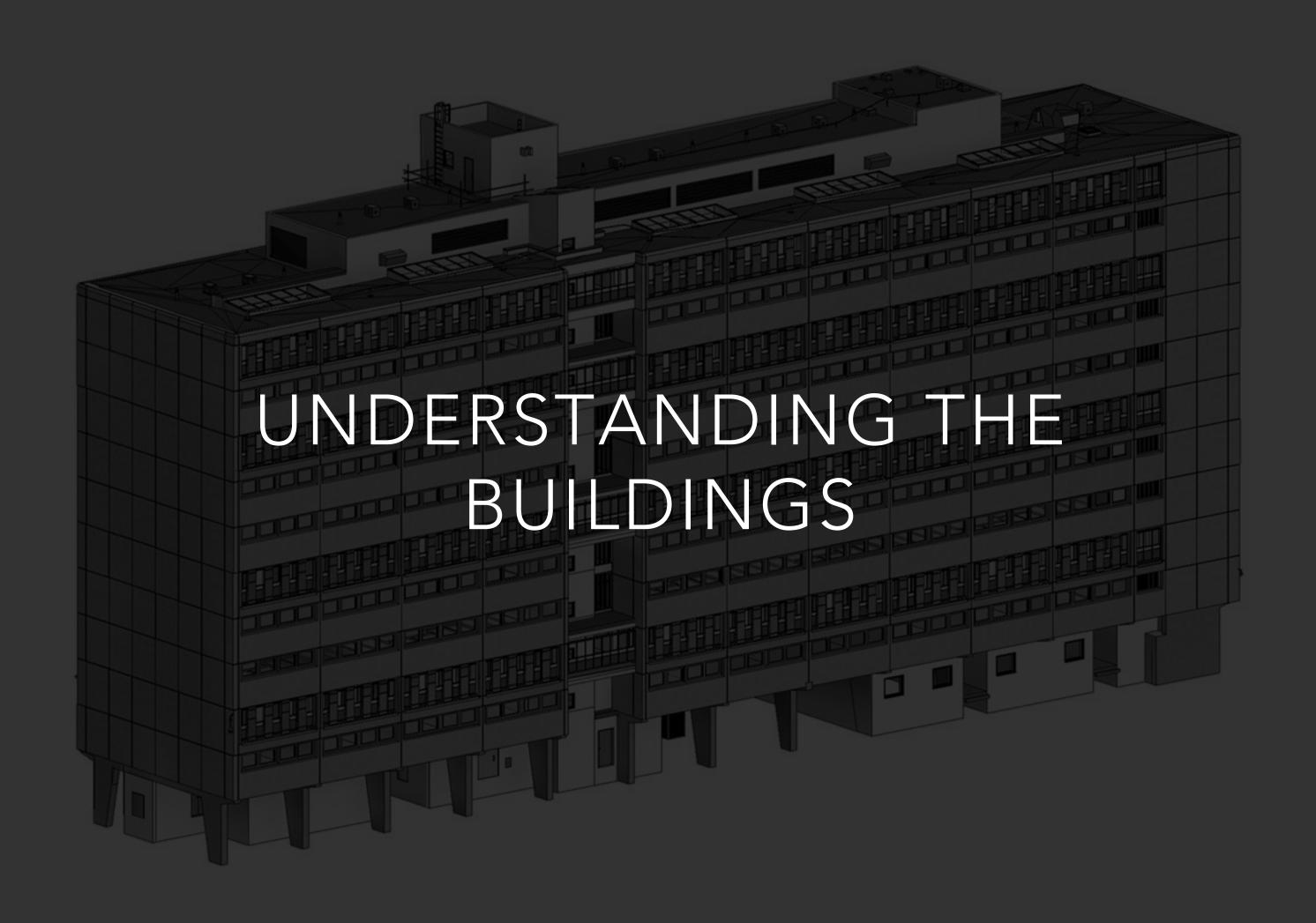


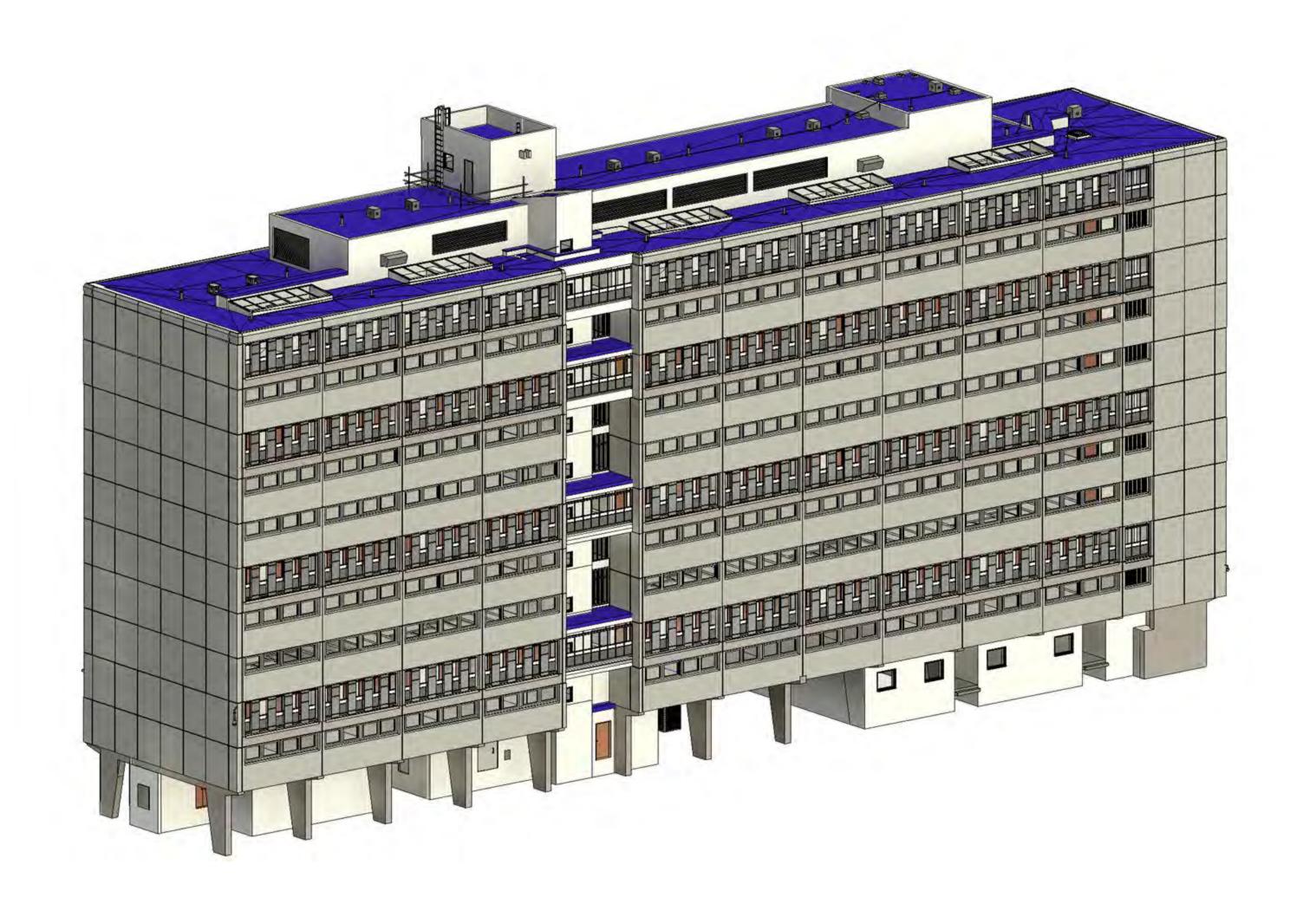
Cables Wynd House

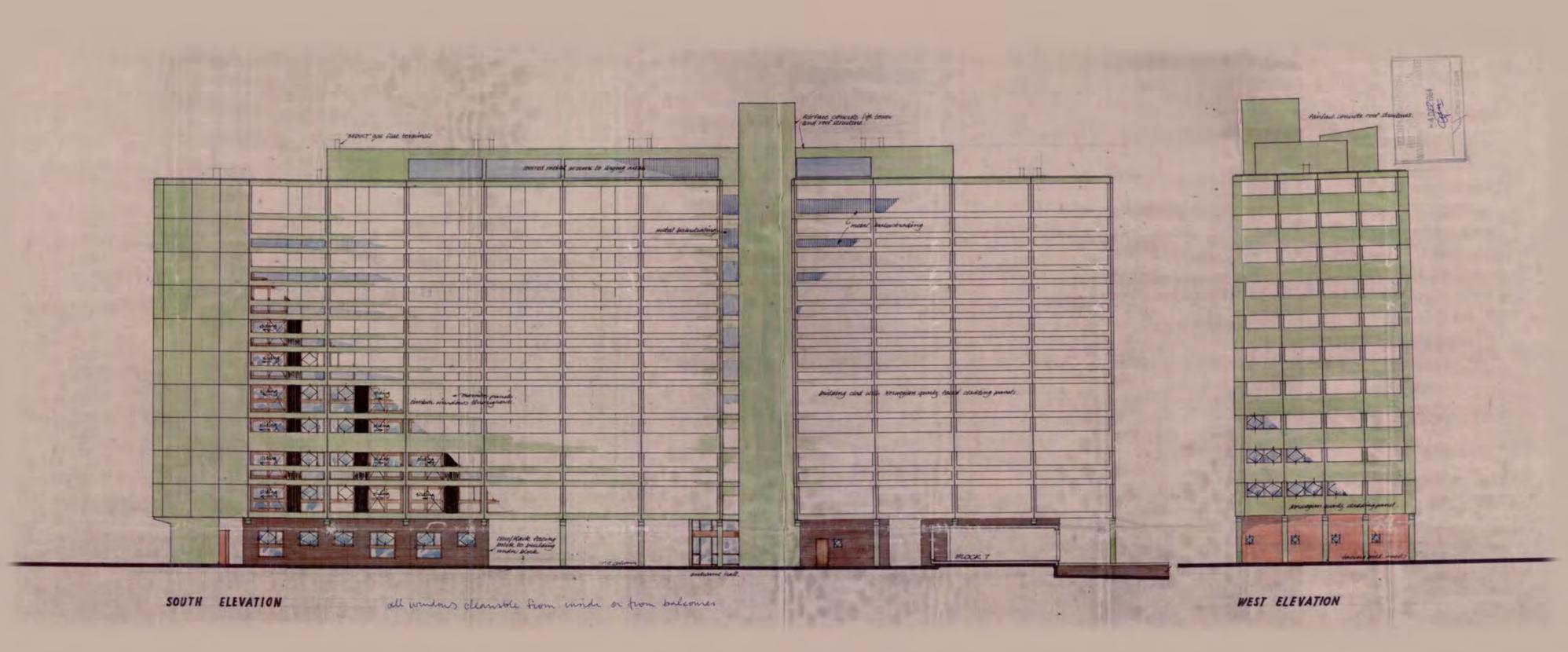
Written Responses		20
Hard to cool down/stuffy	14%	3
Uses/would use a fan	10%	2
Open windows/doors to cool	43%	9

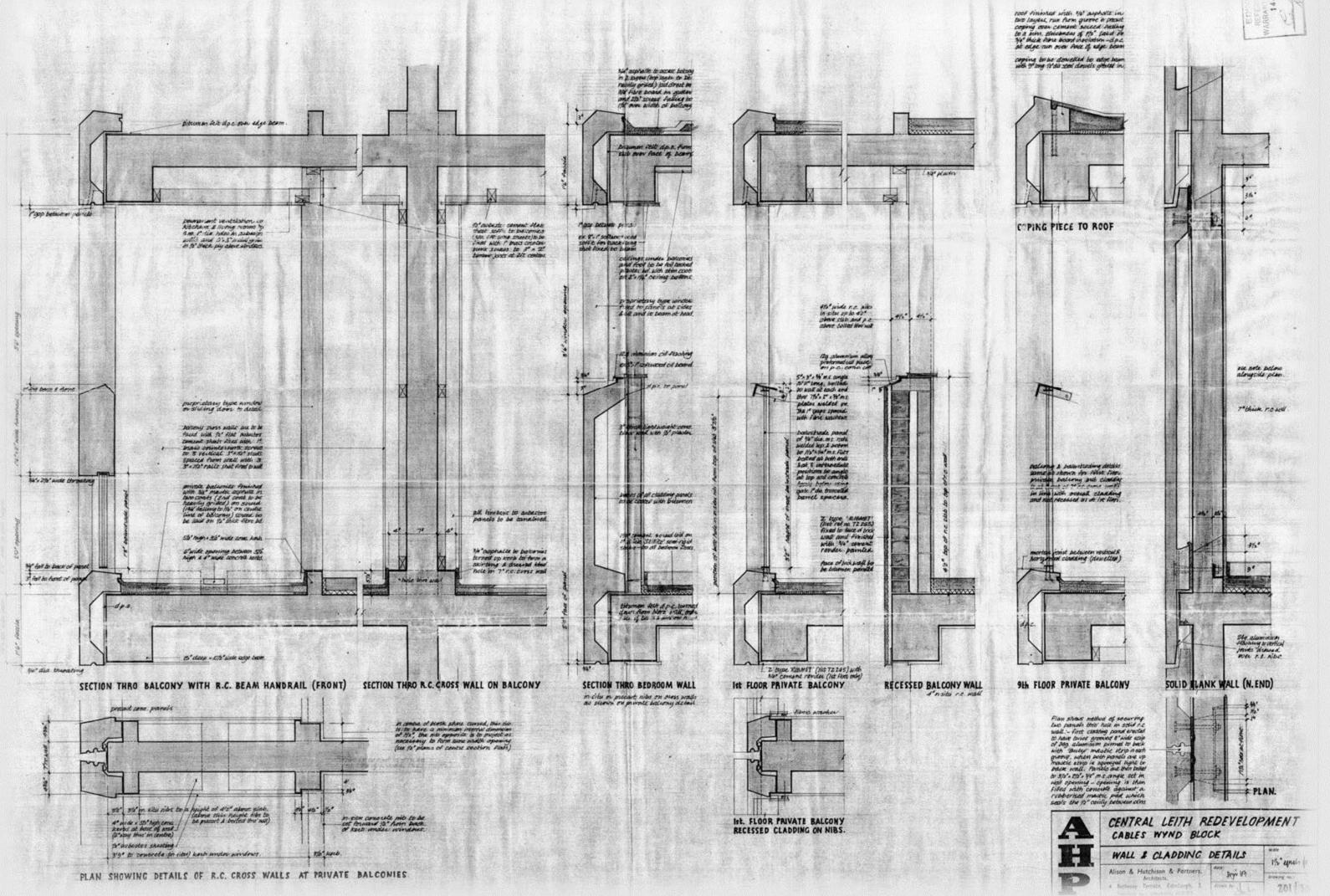
Linksview House

Written Responses		5
Uses/would use a fan	20%	1
No overheating issues	60%	3
Open windows/doors to cool	20%	1

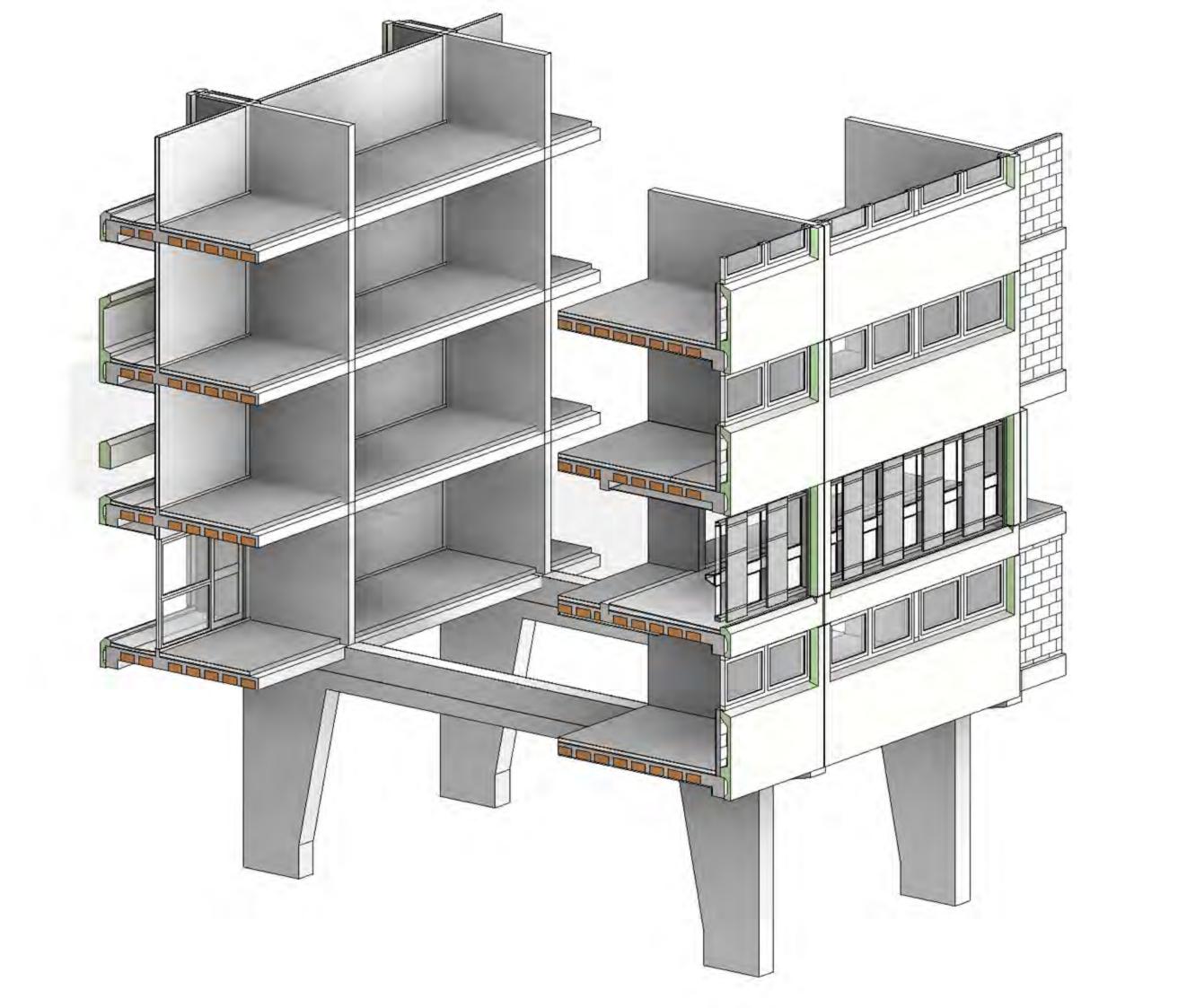


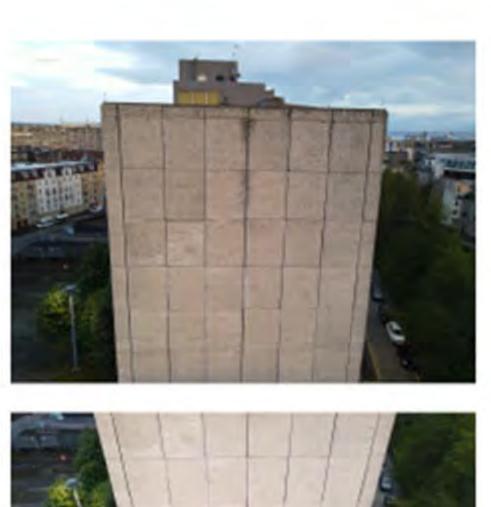


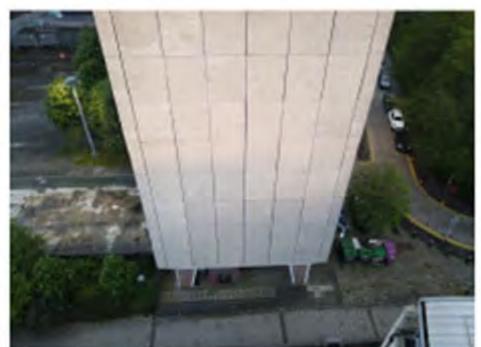


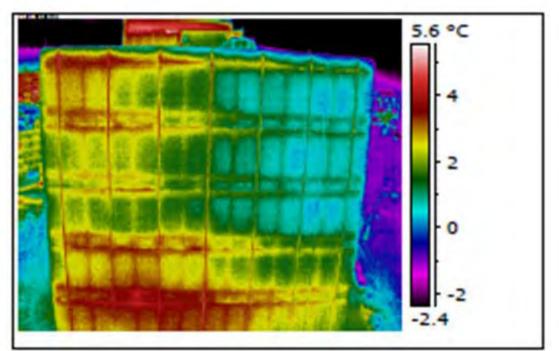


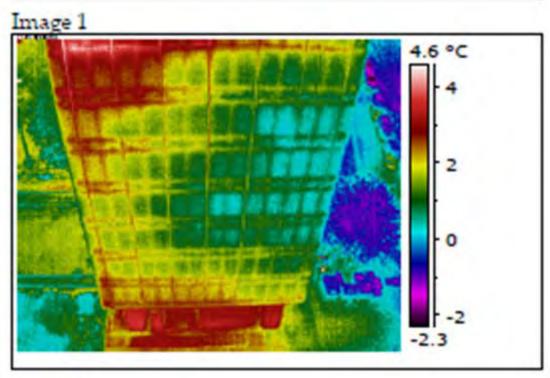
COLLECTIVE ARCHITECTURE

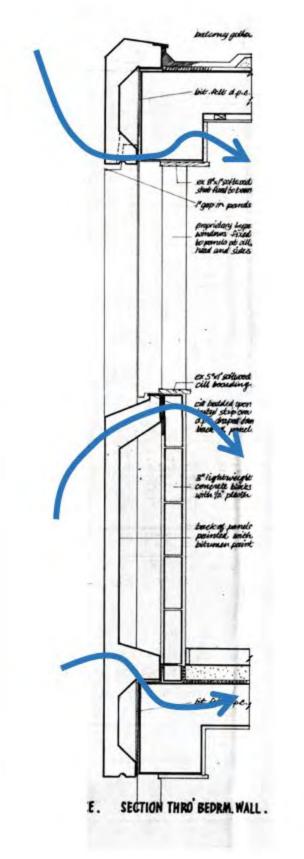


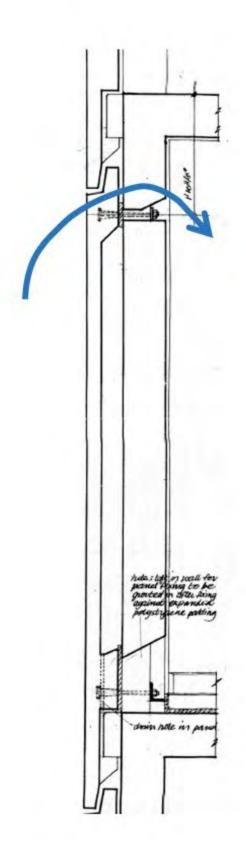




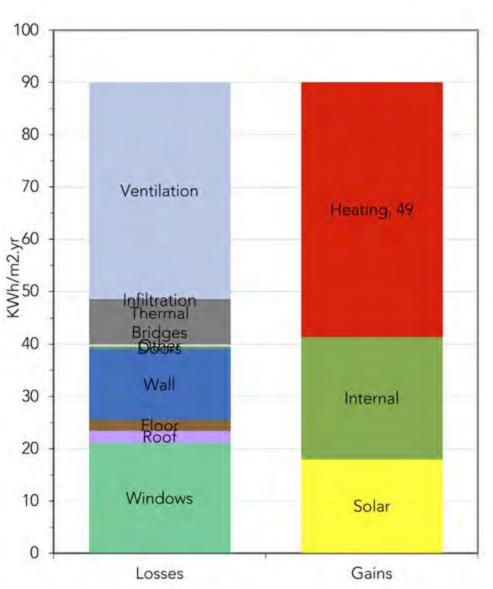












Linksview House – 98 flats

No energy use data available

All properties on private supply

Majority gas central heating

Some all-electric heating systems

Benchmarked energy use – resignly (gr

Benchmarked energy use – resi only (gas Central Heating)

(source: CIBSE Energy Benchmarking Dashboard):

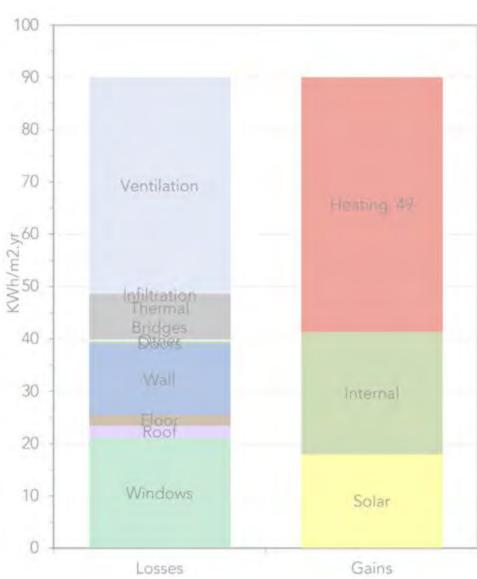
Gas: 138 to 191 kWh/m2/yr Electricity: 37 to 51 kWh/m2/yr

Cumulative Energy Use Intensity: 175 to 242kWh/m2/yr PHPP Modelled energy use (based on 100% gas heating and 50:50 gas: elec split for HW) to heat home to mean 18.8°C

Space heating demand: 163kWh/m2/yr Energy Use Intensity: 223kWh/m2/yr Typical Gas Use per home: 11,392kWh/yr Typical Elec Use per home: 2896kWh/yr

Typical Gas cost per home @ £0.07067/kWh: £805.12/yr Typical Elec cost per home @ £0.28607/kWh: £828.48/y





Linksview House – 98 flats

No energy use data available

All properties on private supply

Majority gas central heating

Some all-electric heating systems

Benchmarked energy use – resi only (gas Central Heating)

(source: CIBSE Energy Benchmarking Dashboard):

Gas: 138 to 191 kWh/m2/yr Electricity: 37 to 51 kWh/m2/yr

Cumulative Energy Use Intensity: 175 to 242kWh/m2/yr PHPP Modelled energy use (based on 100% gas heating and 50:50 gas: elec split for HW) to heat home to mean 18.8°C

Space heating demand: 163kWh/m2/yr Energy Use Intensity: 223kWh/m2/yr Typical Gas Use per home: 11,392kWh/yr Typical Elec Use per home: 2896kWh/yr

Typical Gas cost per home @ £0.07067/kWh: £805.12/yr Typical Elec cost per home @ £0.28607/kWh; £828.48/y

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
pace Heating Demand	*	Silver: 40 kWh/m2/yr (Houses) 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
nergy Use Intensity / nal Energy Demand/ Delivered Energy	*	*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand	*	*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness	*	5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE	*	*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER	*	*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating	*	*	<10%	*	<10%	
Renewable Energy	*	*	*	40% of roof area covered in PV	*	
Thermal Bridges	*	*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	РНРР	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses); 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic; ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*		*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr		*	*	
pace Heating Demand	*	Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses); 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy	*	*		Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand	*	*		20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness	*	5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE	*	*		*	≤ 120 kWh/m2/yr	- Building Specific Retrofit Plan
PER	*	*		*	Classic; ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	1 (61)
Overheating	*	*	<10%	*	<10%	
Renewable Energy	*	*		40% of roof area covered in PV	*	
Thermal Bridges	*	*		Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	PHPP	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand	*	Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 2: ≤ 50kWh/m²/yr	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy	*	*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand	*	*	*	20 kWh/m2/yr :+5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness	*	5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE	*	*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER	*	*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating	*	*	<10%	*	<10%	
Renewable Energy	*	*	*	40% of roof area covered in PV	*	
Thermal Bridges	*	*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic; ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 2: ≤ 50kWh/m²/yr	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	РНРР	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1; Report Result Level 2; ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr 3+5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	-	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

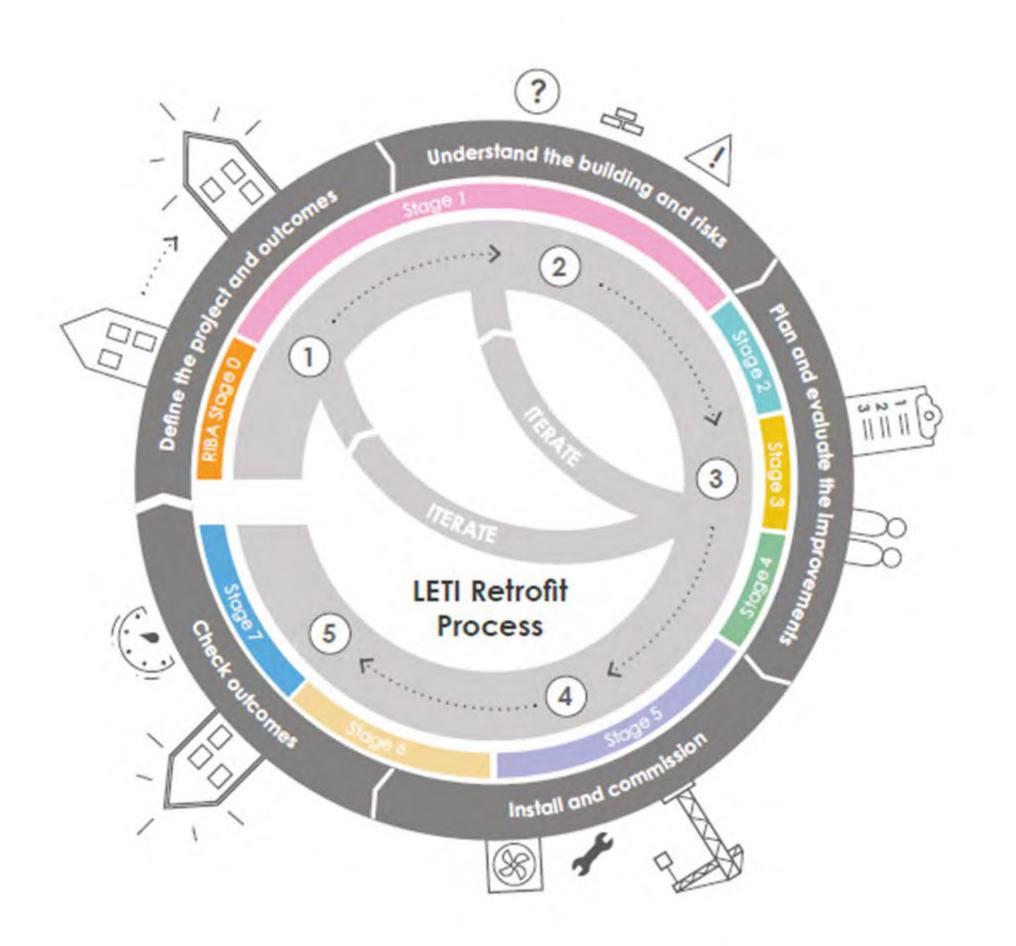
	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	PHPP	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr 3+5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	PHPP	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr 3+5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

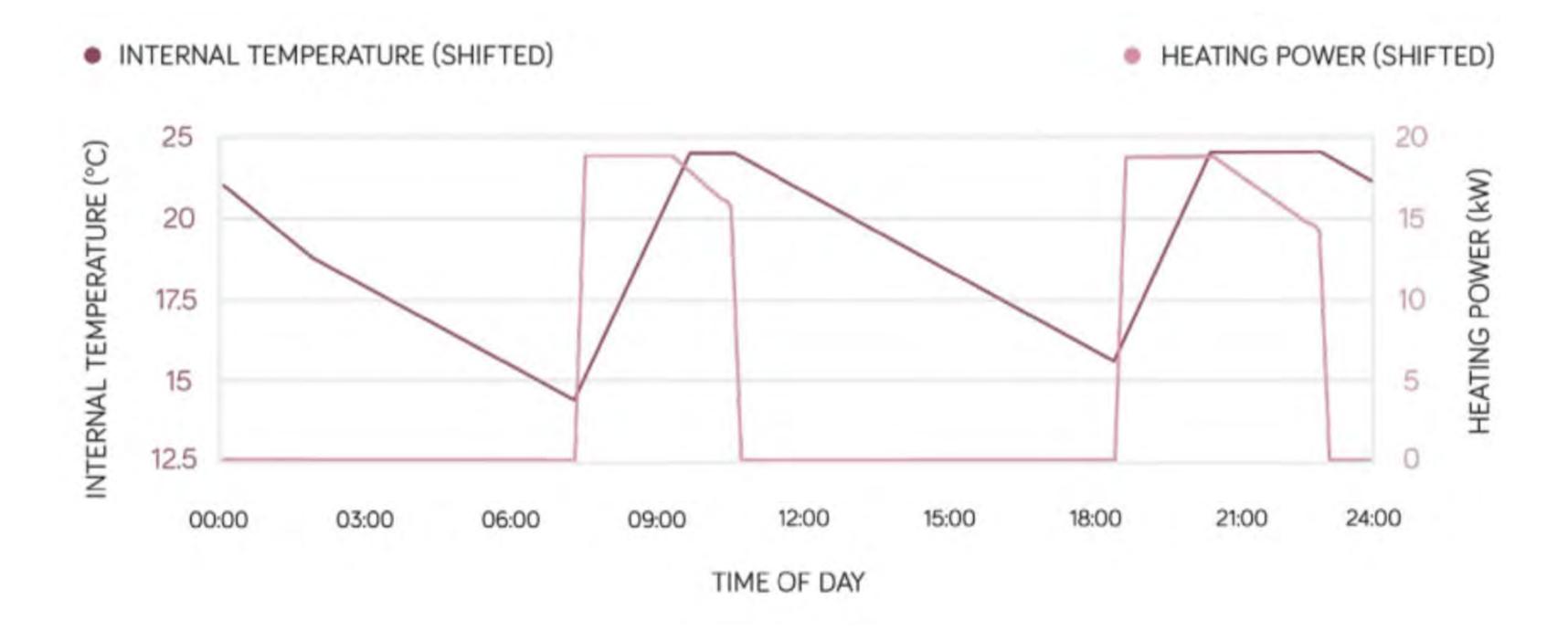
	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	PHPP	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

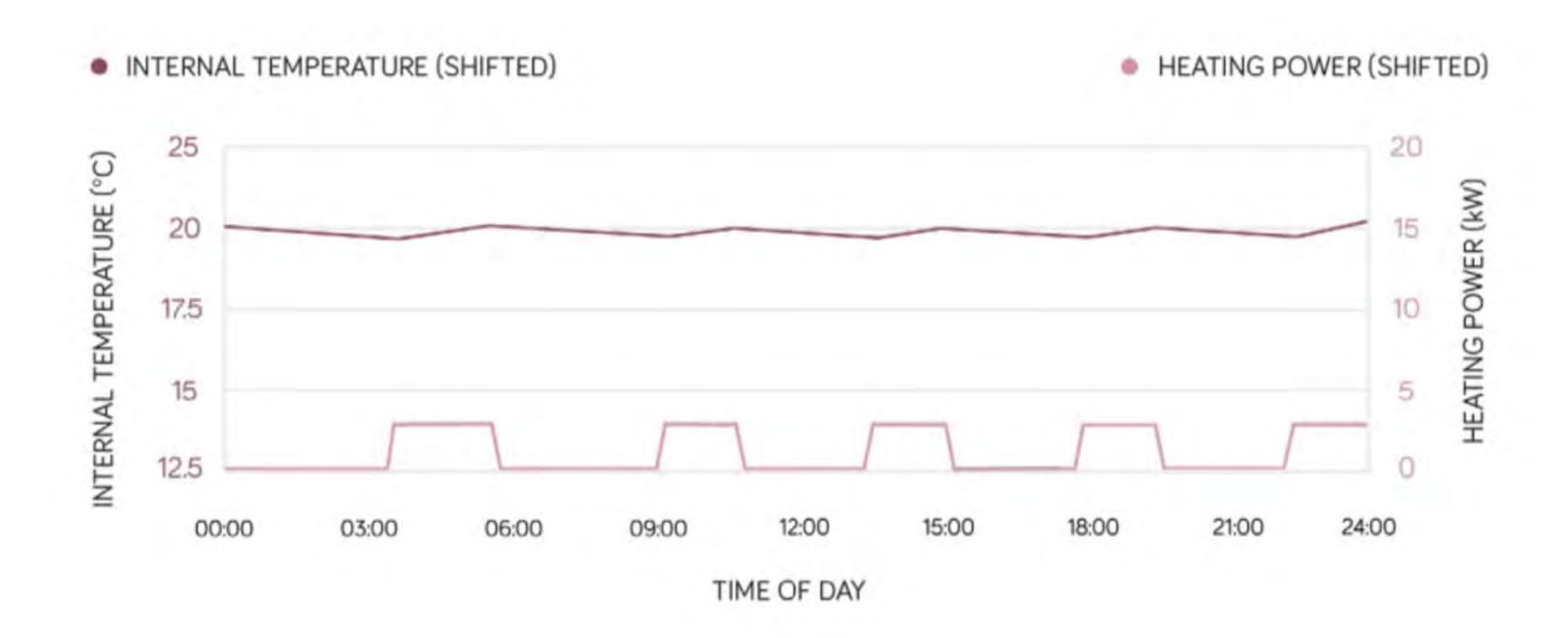
	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr :+5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area covered in PV	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	

	EESSH	Building Standards (New build)	AECB Retrofit Standard	LETI Retrofit Standard	EnerPHit	PAS 2035
Modelling tool	RdSAP (2012)	SAP 10	PHPP	РНРР	РНРР	
EPC Band	EPC B (EESSH 2) EPC C-D (EESSH 1)	*	*	*	*	
CO2 Emissions	Varies relative to EPC band kgCO2e/m2/yr	% reduction on 2010 21% Silver 43% Gold 100% Platinum kgCO2e/m2/yr	*	*	*	
Space Heating Demand		Silver: 40 kWh/m2/yr (Houses); 30 kWh/m2/yr (Flats/Maisonettes) Gold: 30 kWh/m2/yr (Houses) 20 kWh/m2/yr (Flats/Maisonettes)	Level 1: Report Result Level 2: ≤ 50kWh/m²/yr OR ≤100 kWh/m²/yr with exemption	Best practice: 50 kWh/m2/yr Exemplar: 25 kWh/m2/yr	≤ 25 kWh/m2/yr	PAS 2035 is a framework for project delivery, not a standard.
Energy Use Intensity / Final Energy Demand/ Delivered Energy		*	*	Best practice: 50 kWh/m2/yr Exemplar: 40 kWh/m2/yr	*	Core principles: - Professional Accountability - Whole House Retrofit - Bespoke
Hot Water demand		*	*	20 kWh/m2/yr +5 kWh/m2/yr Additional allowance for homes <75m2	*	Projects - Build tight, Ventilate right - Quality,
Airtightness		5 m³/(h.m²)@50Pa (air permeability)	Level 1: ≤ 5 ach @50Pa Level 2: ≤ 2 ach @50Pa	Best practice: ≤ 2 ach @50Pa Exemplar: ≤ 1 ach @50Pa	≤ 1 ach @50Pa	Quality, Quality - Fabric First Retrofit - Suitable Ventilation
PE		*	*	*	≤ 120 kWh/m2/yr	- Building Specific Retrofit
PER		*	*	*	Classic: ≤ 60 kWh/m2/yr Plus: ≤ 40 kWh/m2/yr Premium: ≤ 30 kWh/m2/yr	Plan
Overheating		*	<10%	*	<10%	
Renewable Energy		*	*	40% of roof area	*	
Thermal Bridges		*	*	Best Practice: 0.10 W/mK Exemplar: 0.08 W/mK	*	













Money ▶ Property Pensions Savings Borrowing Careers

Living hell: Britain's rent crisis Housing

Explainer

How harmful is damp and mould in UK homes and who is most at risk?

Anyone can develop health issues from damp and mould, and simple preventive measures can make a big difference

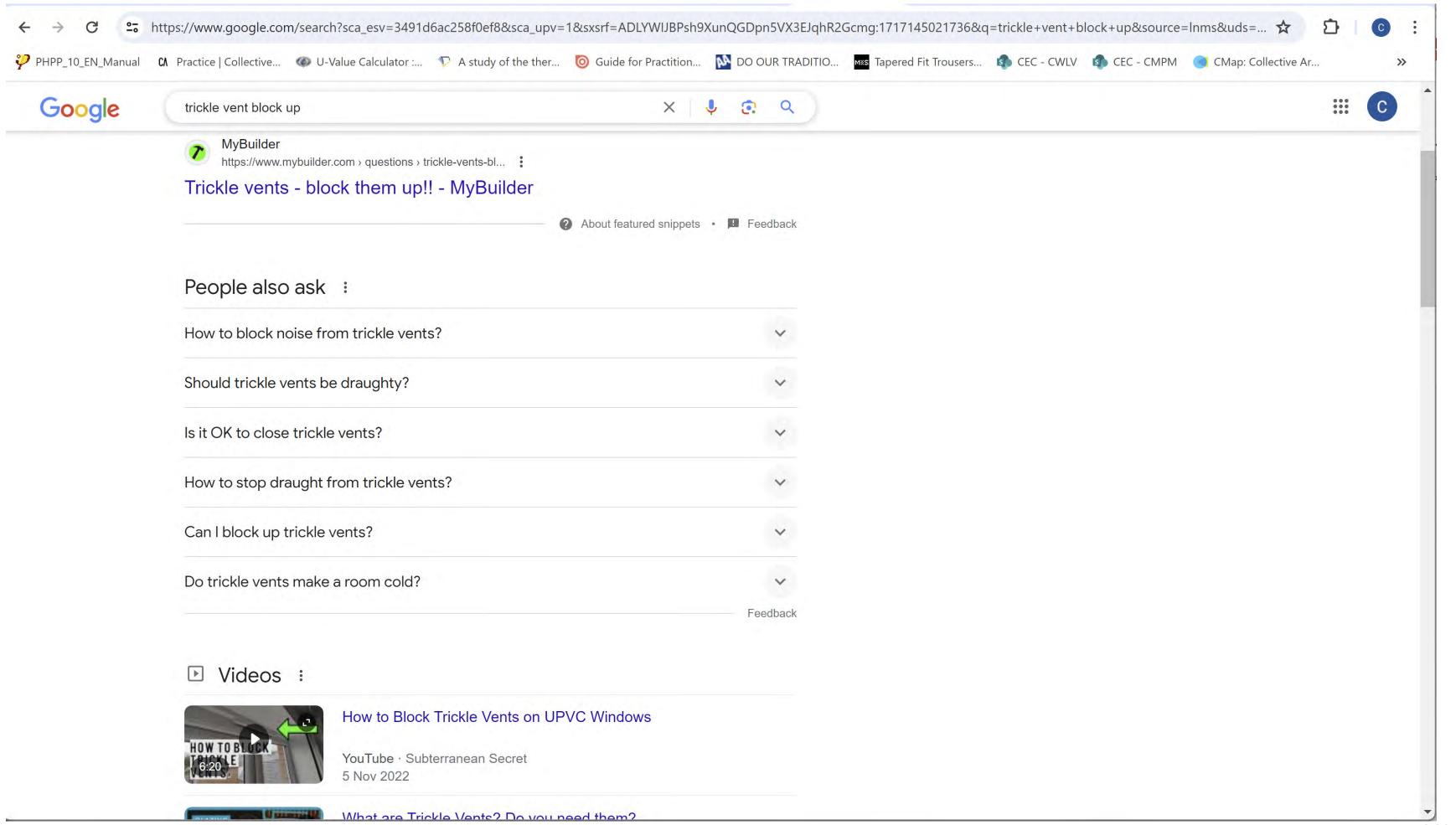


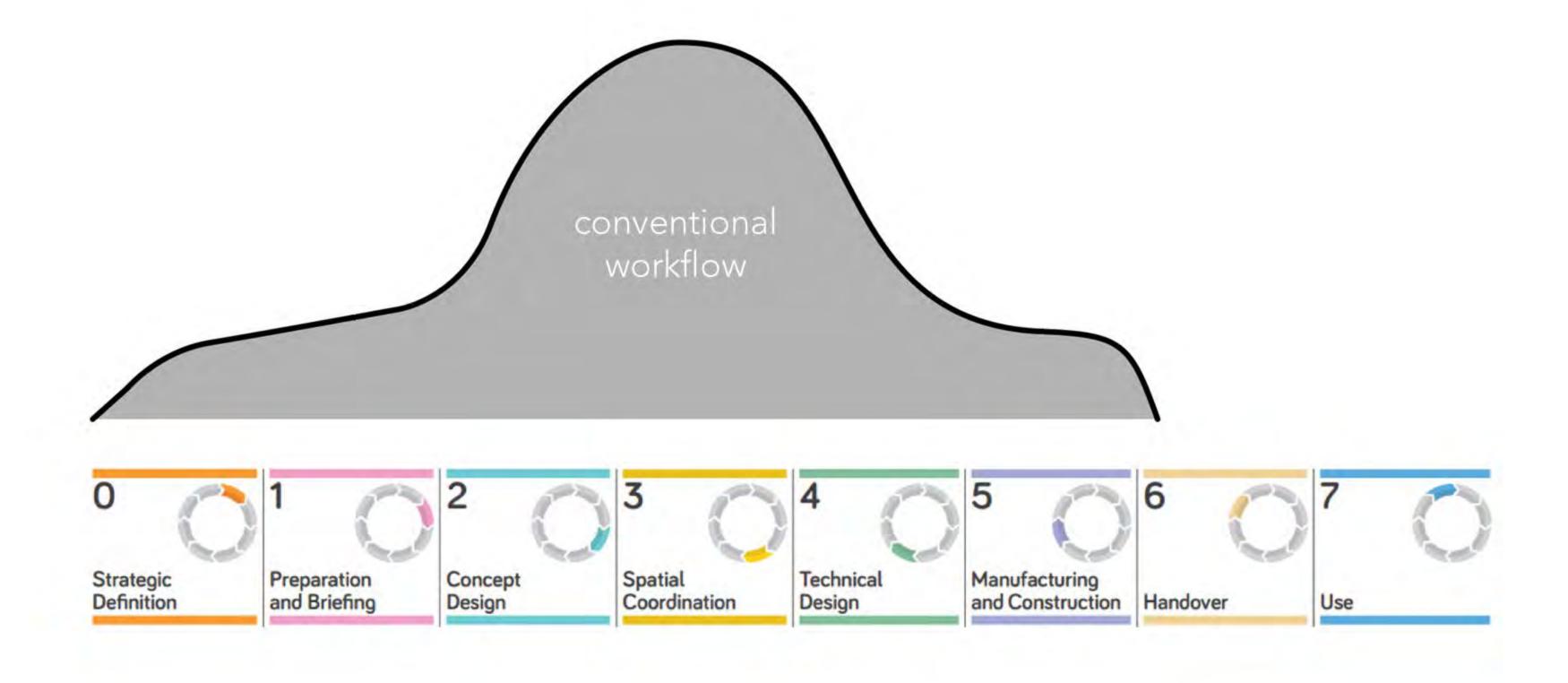


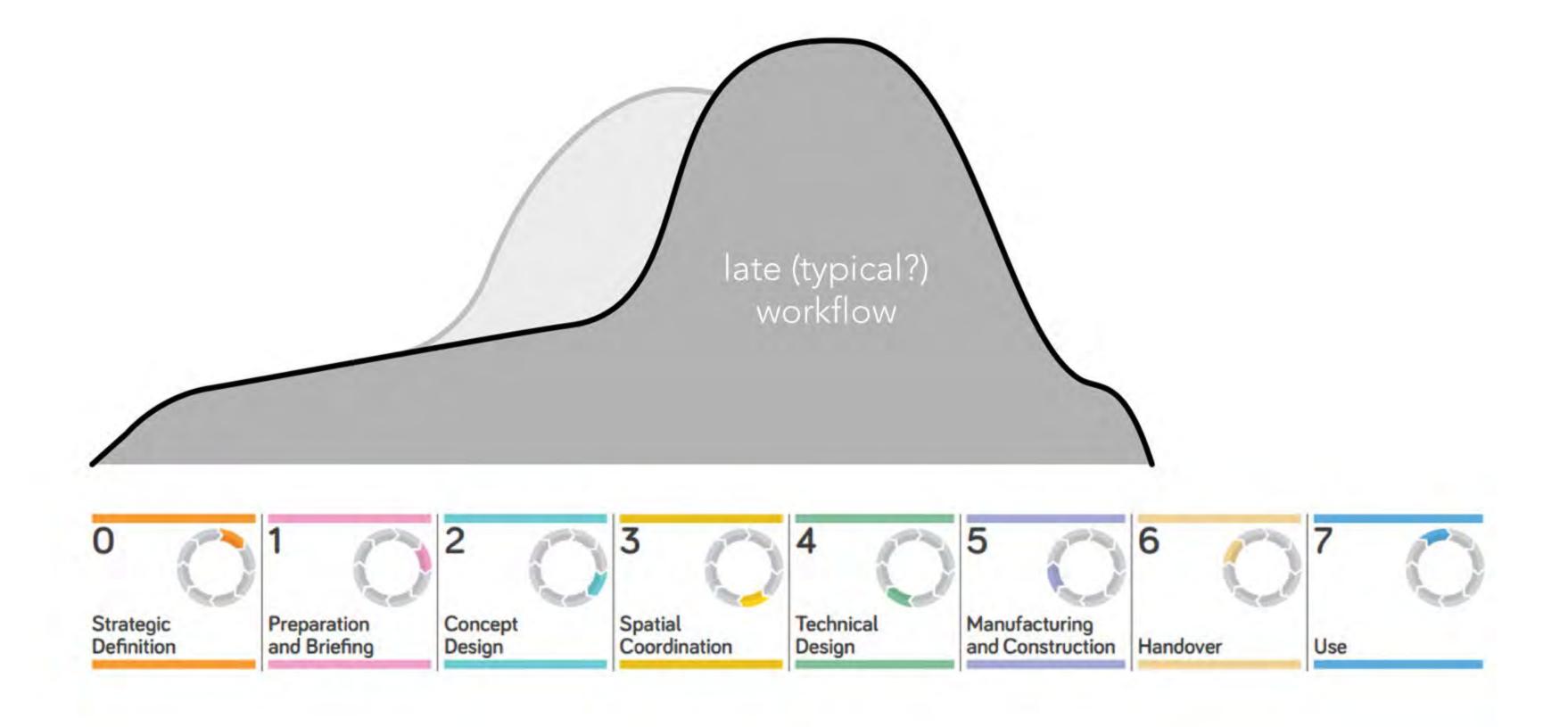
△ About 3% of flats and homes in the UK are classified as having damp. Photograph: Stephen Shepherd/The Observer

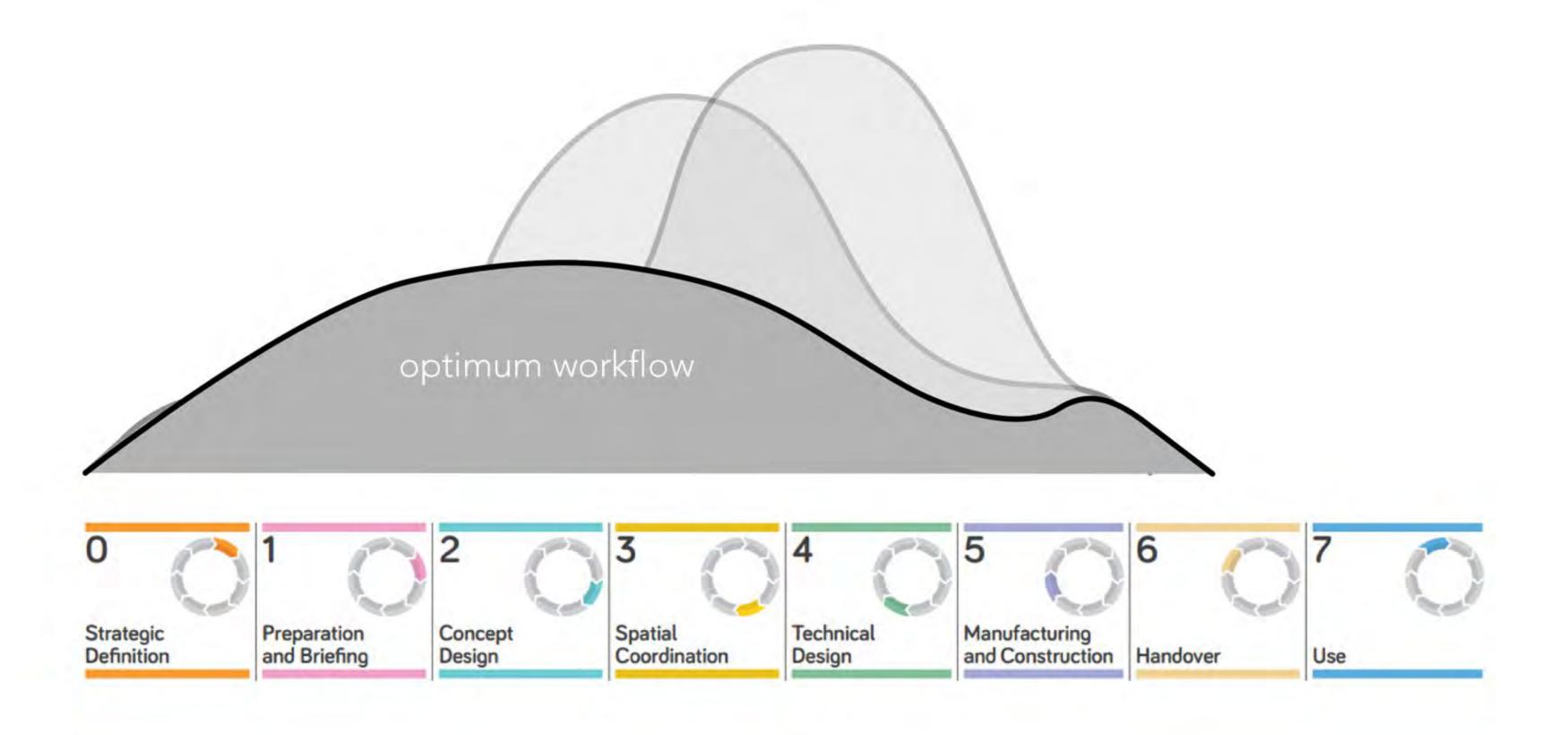
Thousands of people, including babies and toddlers, are hospitalised each year with lung conditions linked to damp and mould-ridden homes. As part of a Guardian series looking at the state of housing, in particular in the

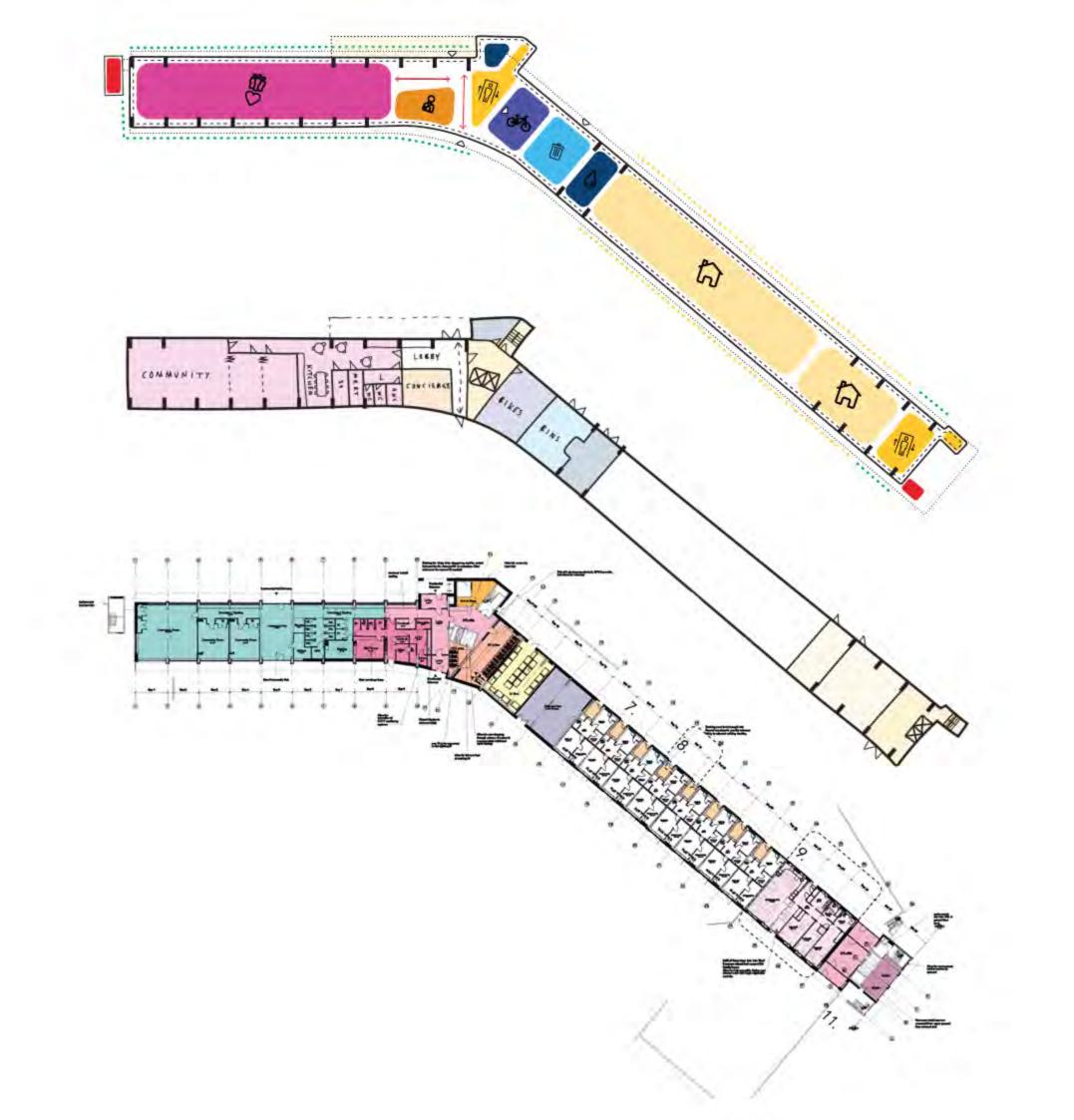
Advertisement

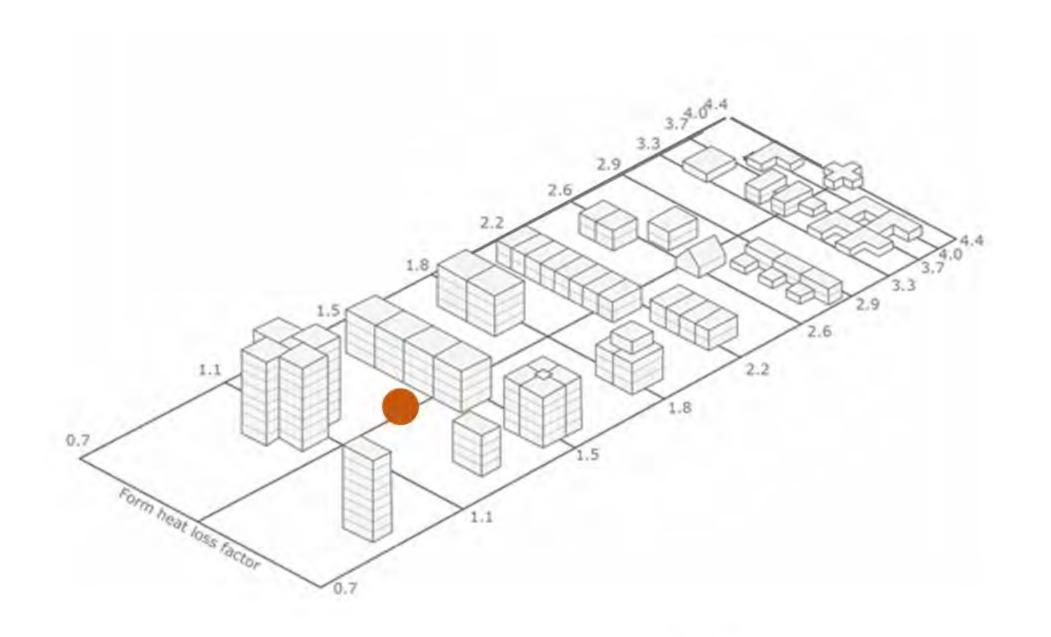




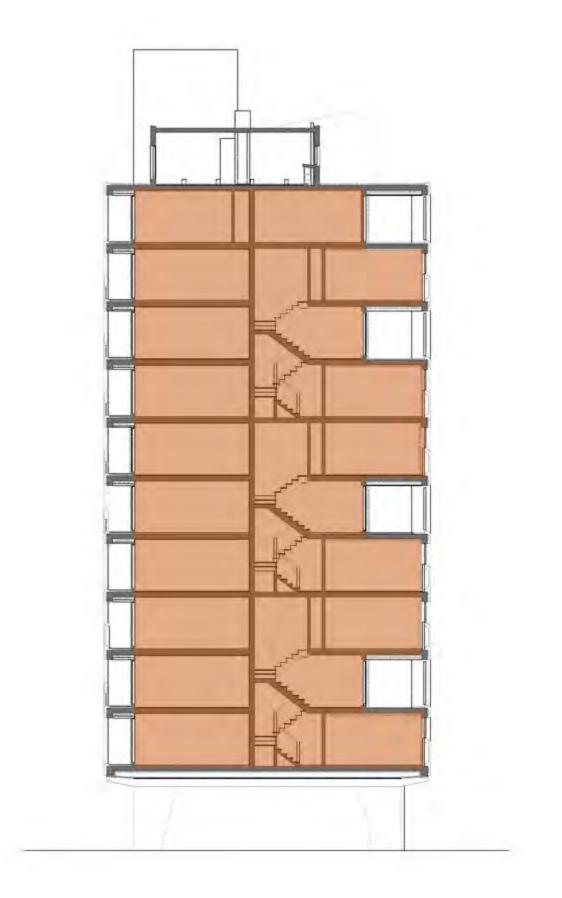


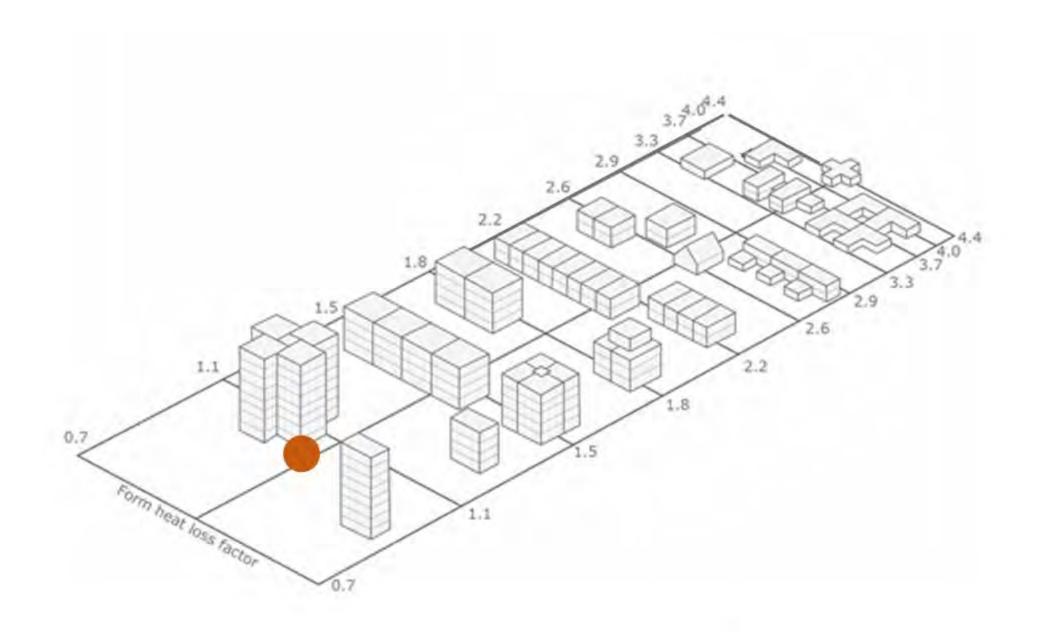




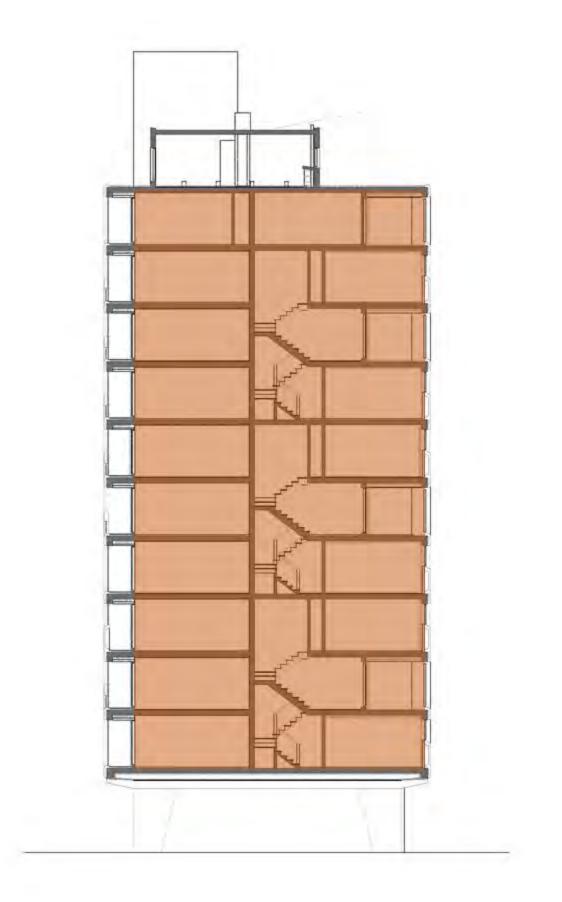


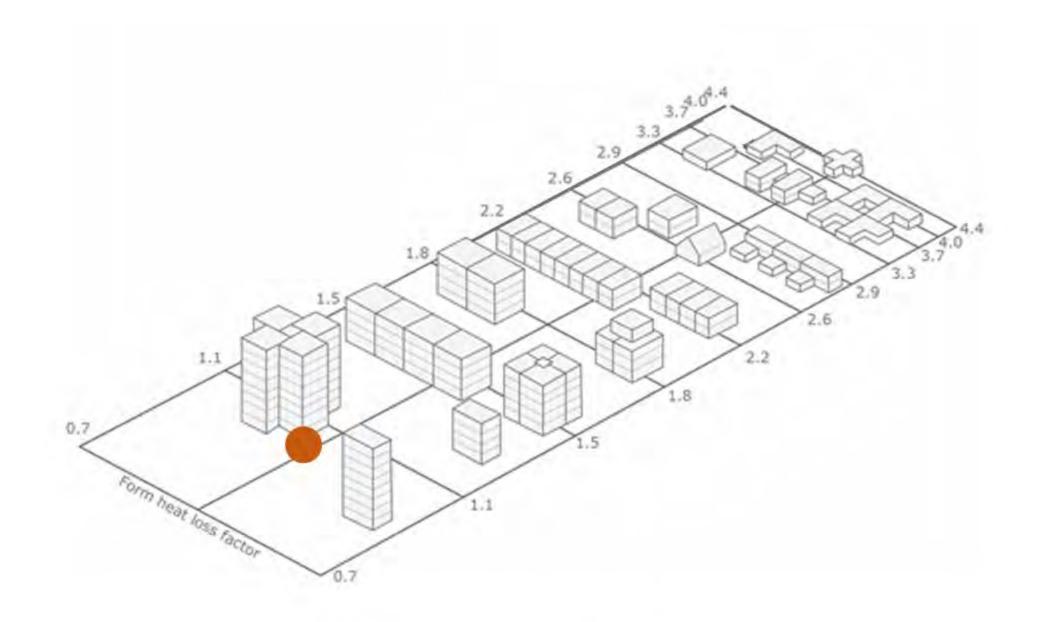
form factor 1.33



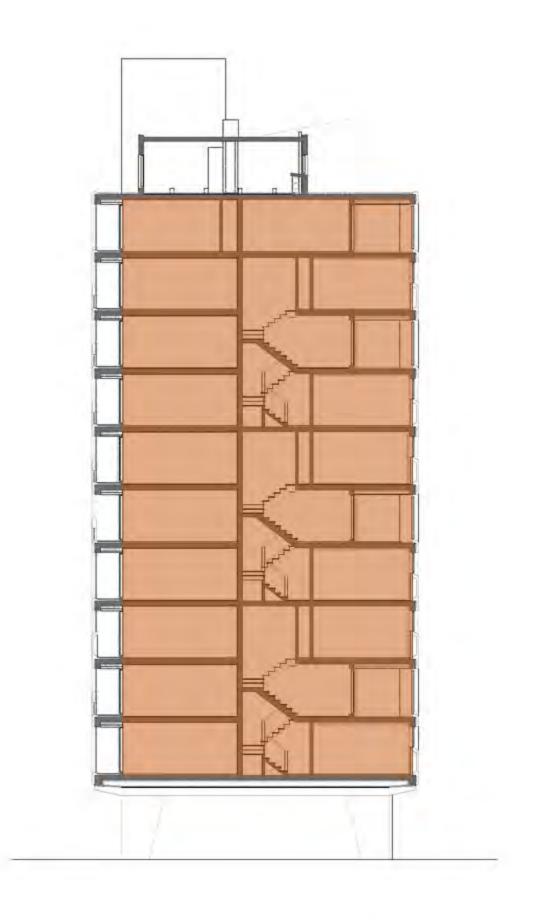


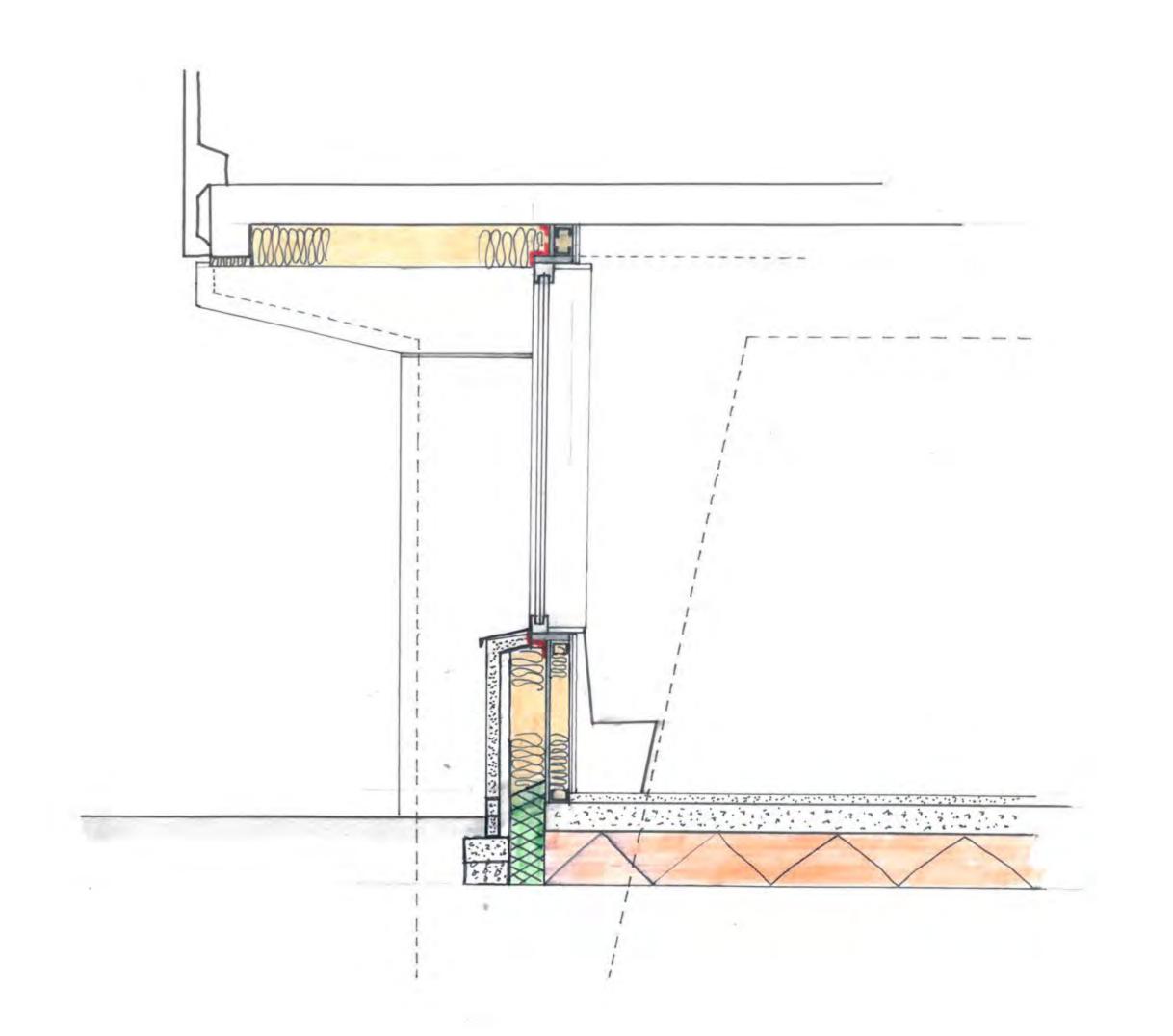
form factor 1.01

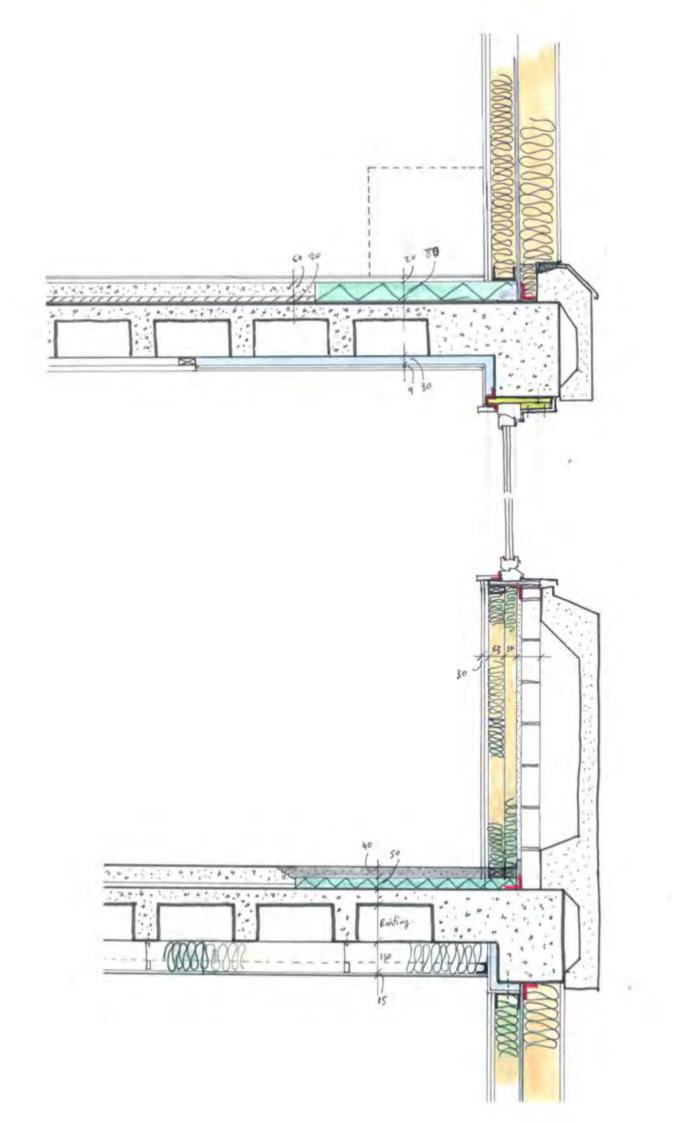


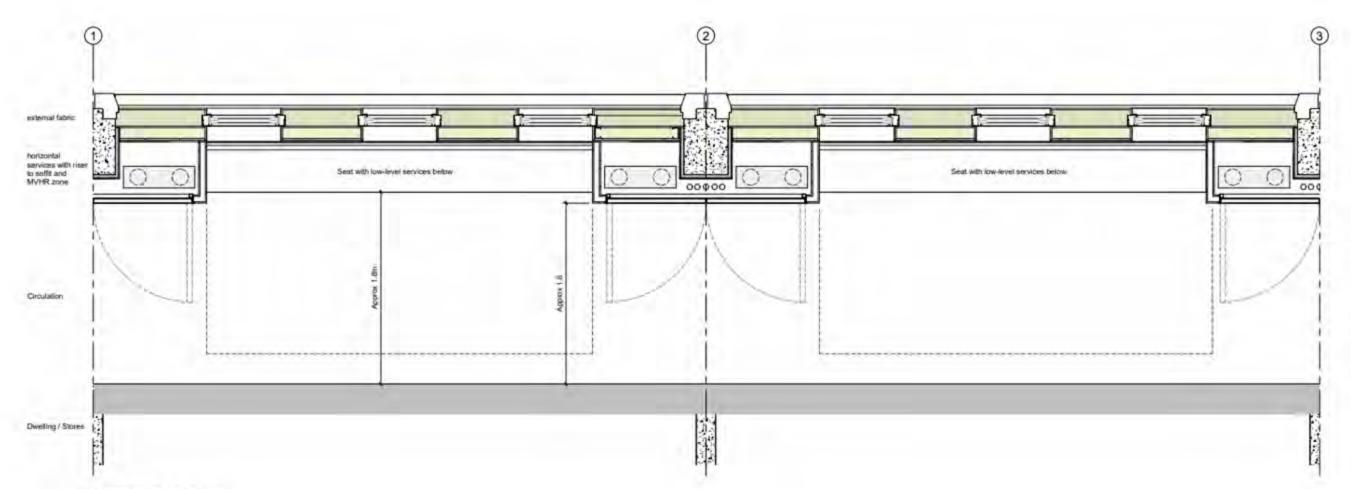


24% reduction

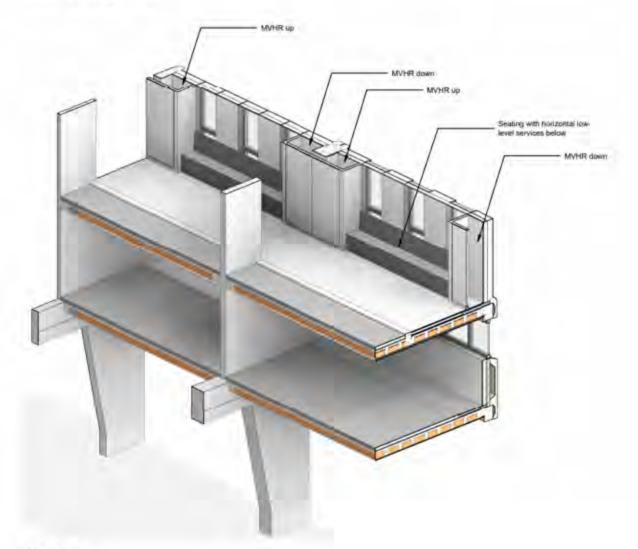


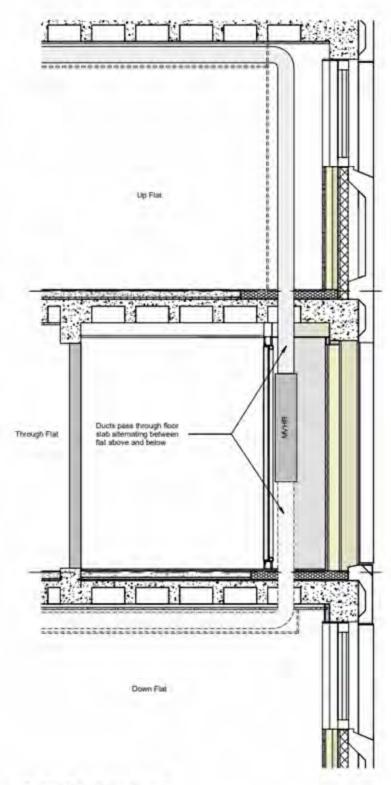






Access galery typical bay





Section through service zone

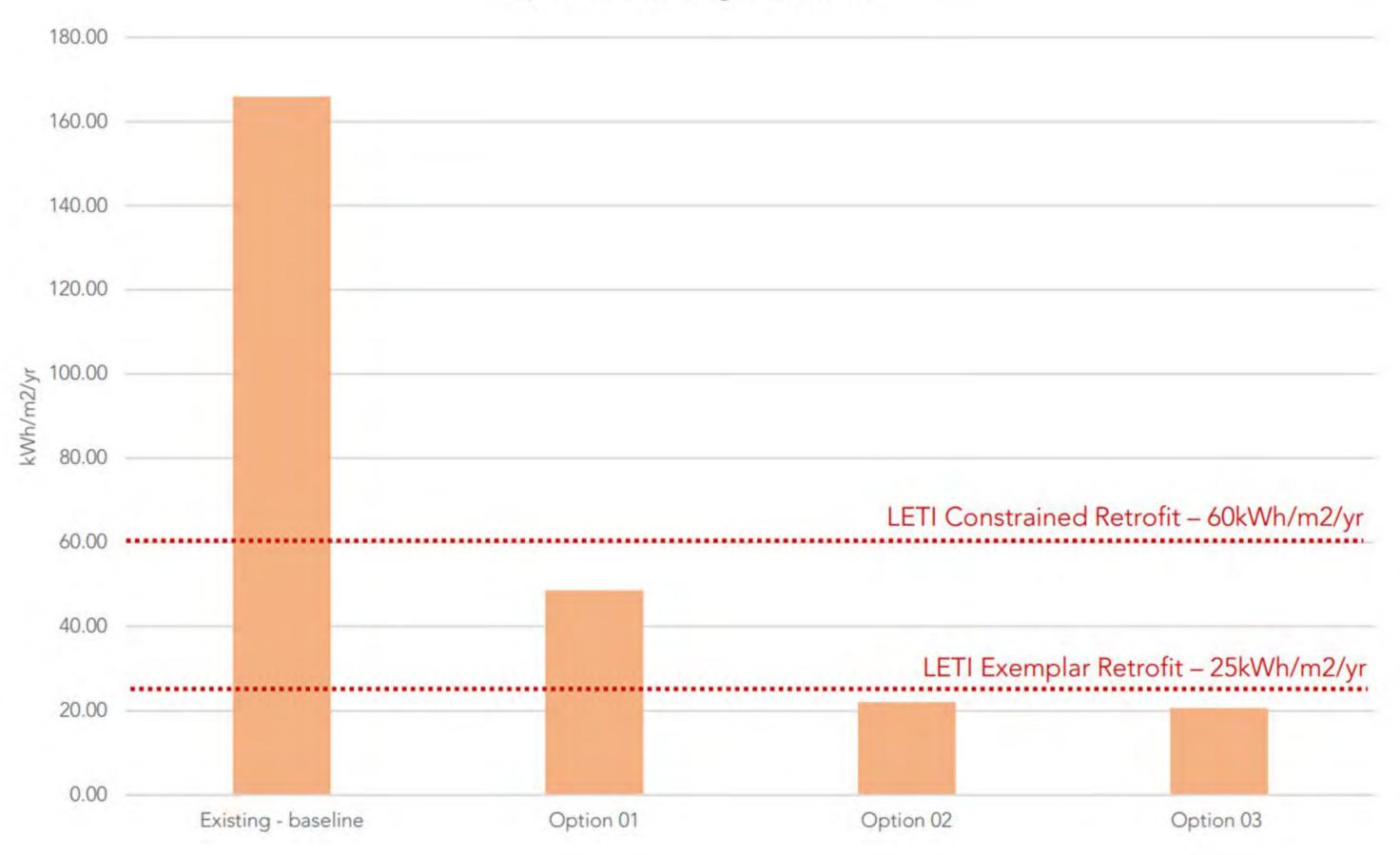
Option			Space Heating Demand	Heat Load	DHW Heating Demand				Energy Source	Energy Demand by Source	Demand after	home	average annual renergy costs per home - Dual Fuel Utilita Smart Energy Dual	
		m3/hr.m2@ 50PA	(kWh/m2/yr)	(W/m2)	(kWh/m2/yr	r) (kWh/yr)	(kWh/m2/yr)	r) (kWh/m2/yr)	7)	(kWh/m2/yr)	(kWh/yr)	(kWh/yr) No. Homes: Existing: 98 Proposed: 97		(£/yr) Elec 2023 £0.318/£0.2157
Existing - baseline Existing Baseline - Electricity Existing Baseline - Gas	Intermittent vent Kitchen with continuous MEV stack to bathroom Gas Central Heating & HW tank	6.00	165,91	55.52	2 25,3	4 1430077	7 227.35	197.70	All Sources Electricity Gas	291324.65 1138752.25	2 291325 1 138752	7 14593 5 2973 11620	£850.19	
Option 01	dMEV/ cMEV Ventilation with Electric Heating & DHW	3.00	48.65	17.00	19.9	638316	91.94	73.12	Electricity	638316.23	638316	658	1	£1,655.05
Option 02	MVHR Ventilation to flats, cMEV to common areas, Electric Heating & DHW	1.00	22.02	10.93	19.9	467136	67.28	53.51	Electricity	467136.10	467136	4816	6	£1,211.21
Option 03	MVHR Ventilation to flats and common areas, Electric Heating & DHW	1.00	20.62	10.53	3 19.9	458125	65.99	52.48	Electricity	458124.5	458125	4723	3	£1,187.84

Existing - baseline	Intermittent vent Kitchen with continuous MEV stack to bathroom	6.00	165.91	55.5	25.3	1430077	7 227.35	197.70	OAII Sources	1430076.8	3 1430077	14593	£1,887.17	
Existing Baseline - Electricity Existing Baseline - Gas	Gas Central Heating & HW tank								Electricty Gas	291324.6 1138752.2				
	COLUMN A DHIVE	3,00	40.60	12.1		(A3931)	91 =	73.1	Sections	RRIDAR	7 (353)	1000		- 200

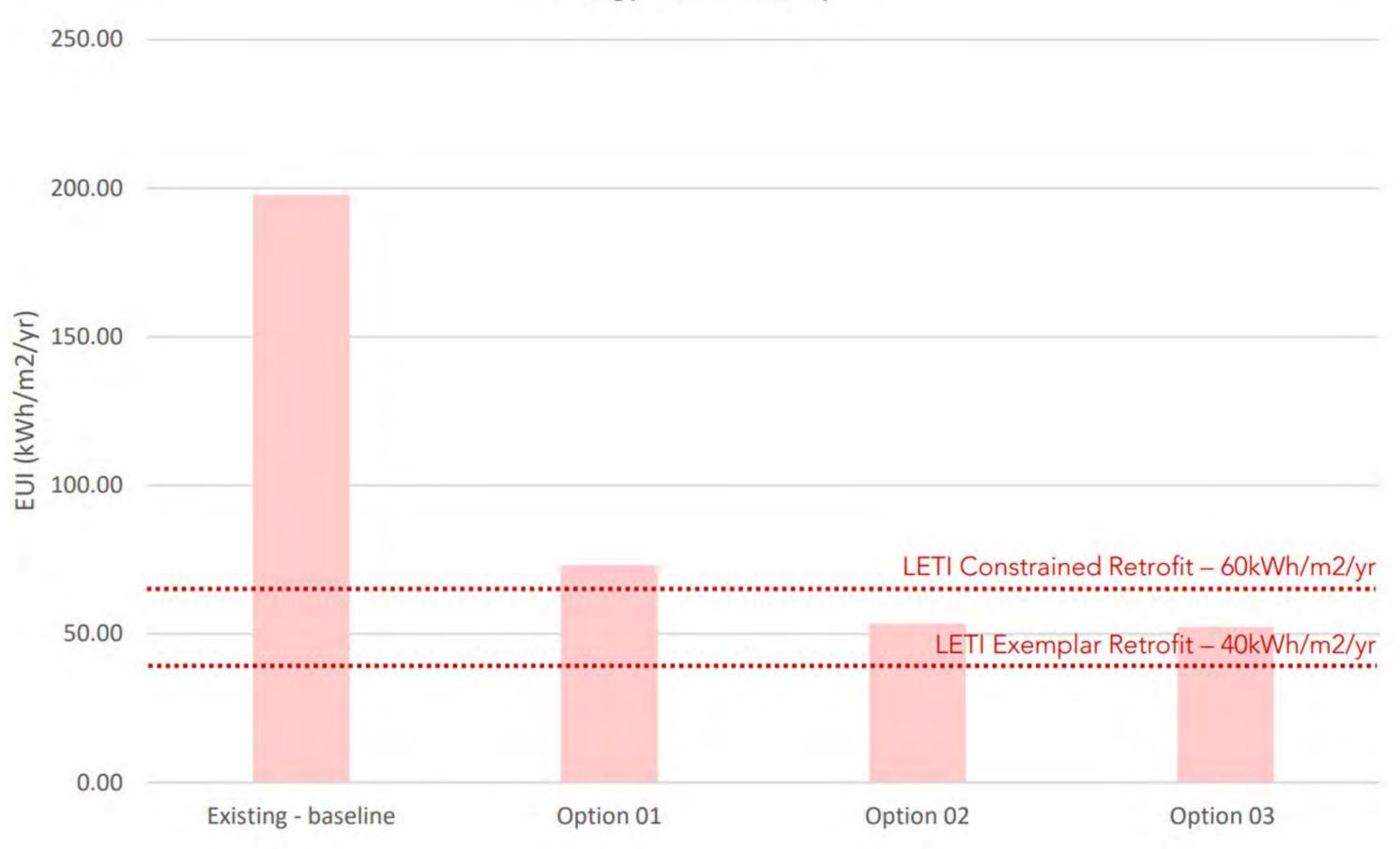
Option 01	dMEV/ cMEV Ventilation with Electric Heating & DHW	3.00	48.65	17.0	6 19.9	638316	91.94	73.12	Electricity	638316.2	7 638316	6581	1	£1,655.0
Dettier De	MVHR Varmeticu to Hos, cWEV in Common meas, Electric Heating & DHW	EDC	250	70%	15.5	5 467132	67.2	333	Electroly	907130 X	0 46712	4816		312112

Option D3	MARK Ventilistran to Hars and common seems Electric Heating & DWV	1,00	50'9	70.5	195	S 458125	45.9	1 52.48	Detron	9581E4.5	15/12	472	3	FI, 187.5
Option 02	MVHR Ventilation to flats, cMEV to common areas, Electric Heating & DHW	1.00	22.0	10.9	3 19.9	95 467136	67.28	53.51	1Electricity	467136.1	0 467136	4816	5	£1,211.2

Space Heating Demand



Energy Use Intensity



Average Energy Cost per Home



Average Energy Cost per Home







HELP SHAPE THE FUTURE OF CABLES WYND HOUSE

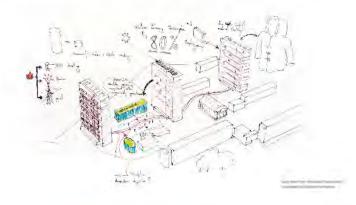
Welcome to this resident drop-in event, please enjoy a hot chocolate, tea or coffee whilst you view the display boards. These show the concept proposals for Cables Wynd House, as well as feedback received to our earlier questionnaire, and the next steps for the project.

Members from the project team and the Council are here to provide further information, answer any questions you may have, or discuss any elements you are particularly interested in. We'd also like you to share your thoughts on the proposals to help shape the future of Cables Wynd House - there's a questionnaire to help structure your feedback.

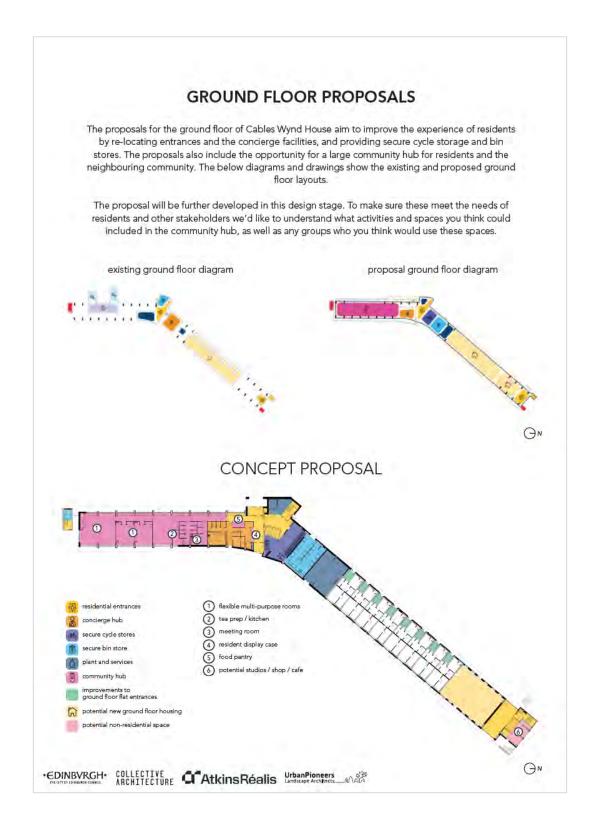
PROJECT AIMS

The City of Edinburgh Council is proposing upgrades to Cables Wynd House through a full energy-based retrofit, as well as improvements to the ground floor areas, communal areas (including stairs, landings and access galleries), and improvements to health and safety. The overall strategy is to bring Cables Wynd House in-line with modern, new-build standards.

Rather than tackle these items individually it is proposed to look at each block as a whole, through a combined approach to energy, comfort, health and safety, and place-making.





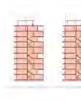


ENERGY EFFICIENCY MEASURES

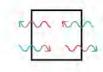
To reduce the energy required to provide warm, comfortable, and well ventilated homes, there are four key proposals which are proposed. These work together in a whole-block approach, rather than as individual measures.



A warm thermal jacket which wraps around the whole building. This will include high performance insulation to walls, roof and exposed floors, as well as triple glazing to all windows.



Reducing the amount of external area which is exposed to external cold air. This means less heat can escape, and brings the access galleries inside the thermal jacket.



Improving airtightness to reduce unwanted cold draughts from coming in through gaps and limiting the warm air leaking out.

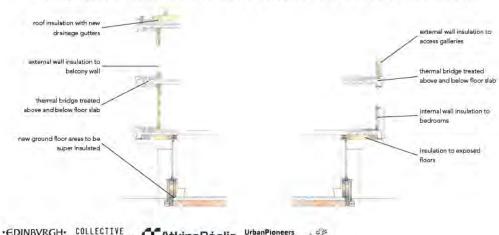


Reducing the amount heat required from radiators by providing constant, filtered fresh air which re-uses the heat energy from outgoing stale air.

THERMAL JACKET - INSULATION STRATEGY

The thermal jacket needs to be as continuous as possible, this is easy to do with external wall insulation on buildings which are flat and don't have recessed balconies, or which aren't listed. The structure and Category A listing of Cables Wynd House and Linksview House means that a combination of external and internal wall insulation will be required.

This also means that the insulation can't be continuous and creates opportunities for heat to escape - we call this a thermal bridge. These thermal bridges need to be carefully considered, and reduced through additional insulation to internal walls and floors, and the external walls and floors on balconies.



EDINBVRGH COLLECTIVE ARCHITECTURE CAtkinsRéalis UrbanPioneers ARCHITECTURE CATKINSRÉALIS





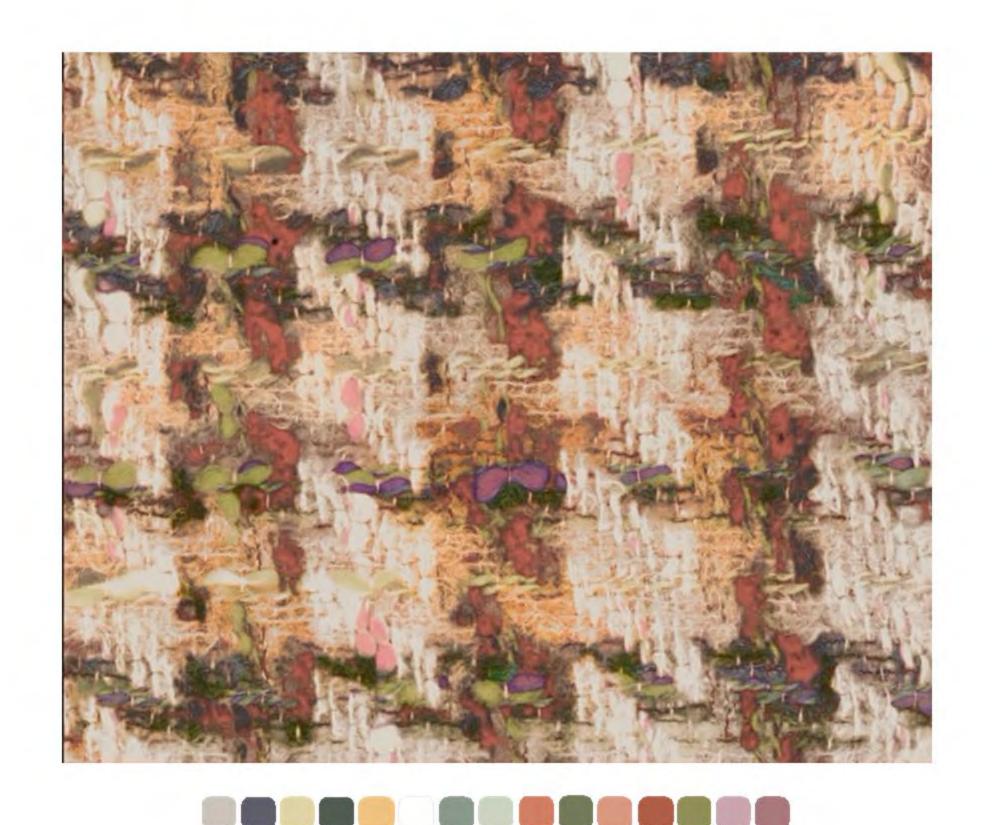
COLOUR

WHY ADD COLOUR ?

"To paint something white is a conscious colour decision. To develop a neutral palette is as much a colour strategy as it is to add a palette with saturated hues and is also a constructed narrative."

Fiona McLachlan -Professor of Architecture, The University of Edinburgh

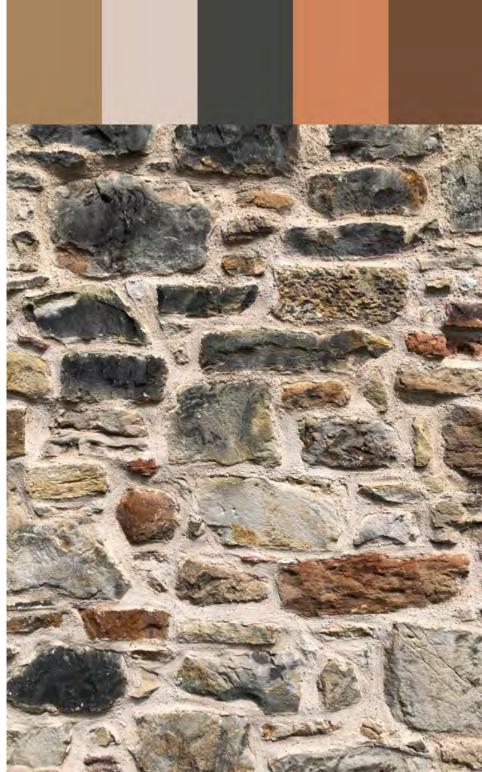








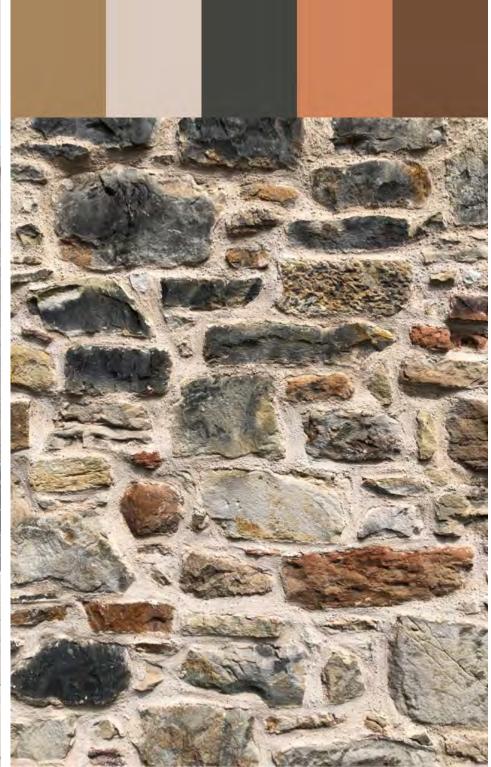






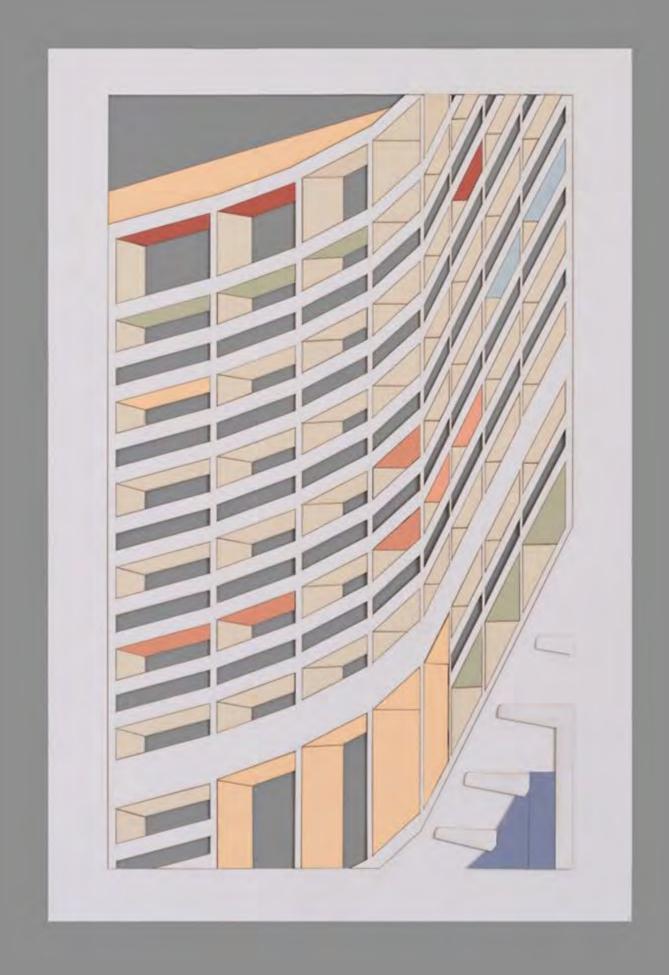










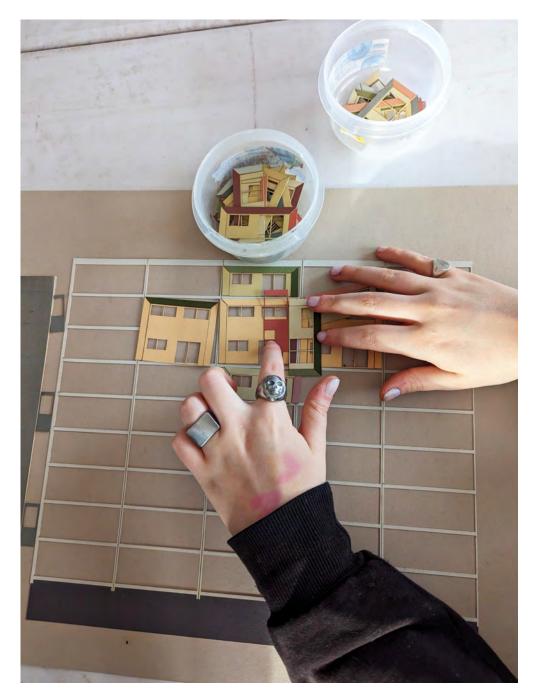








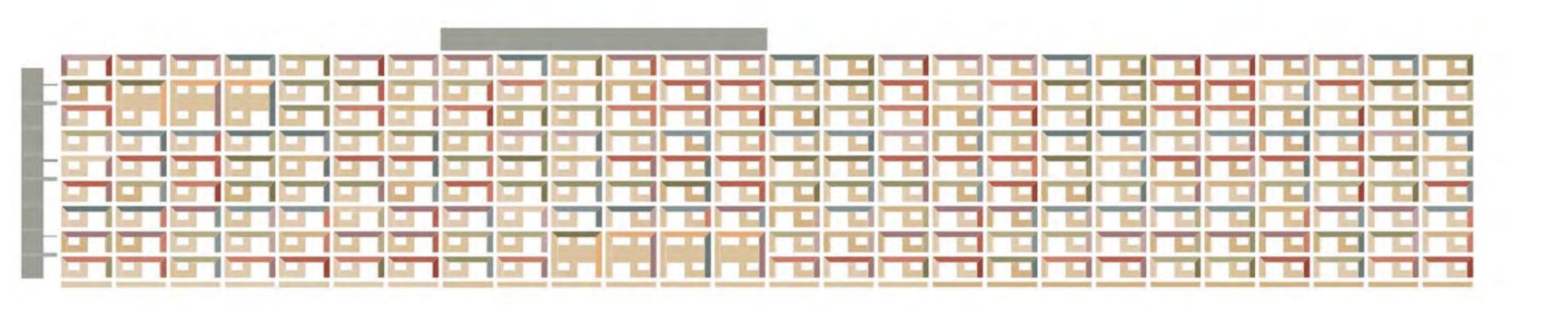


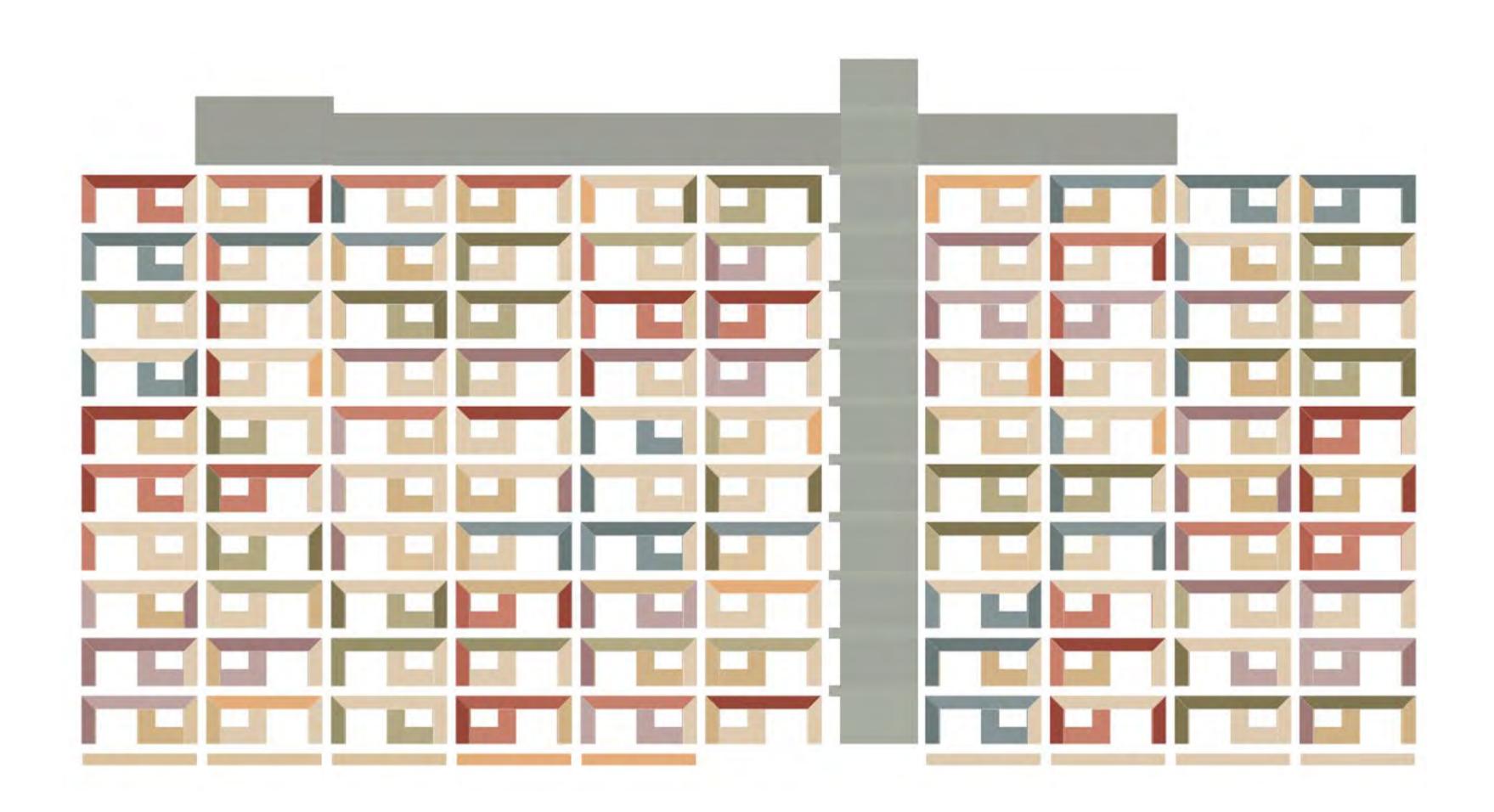












THANK YOU COLLECTIVE COLLECTIVE ARCHITECTURE ENERGY

CARL BAKER c.baker@collectivearchitecture.co.uk