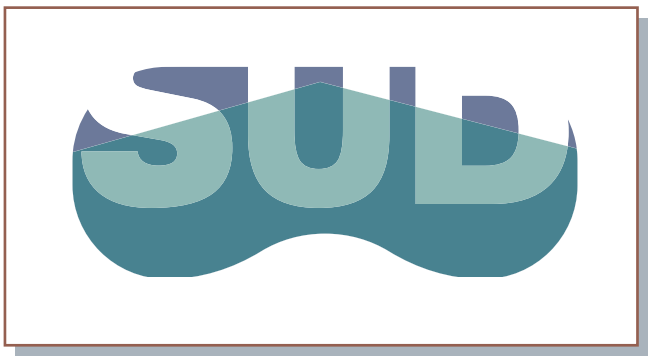


Sustainable Urban Development Architects

Report for Creative Practise Unit

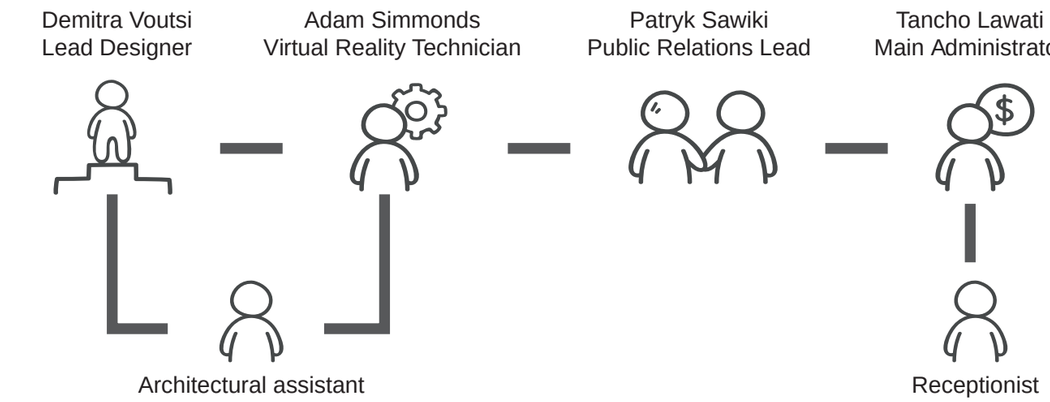
By Tanchho Lawati

Contents Page

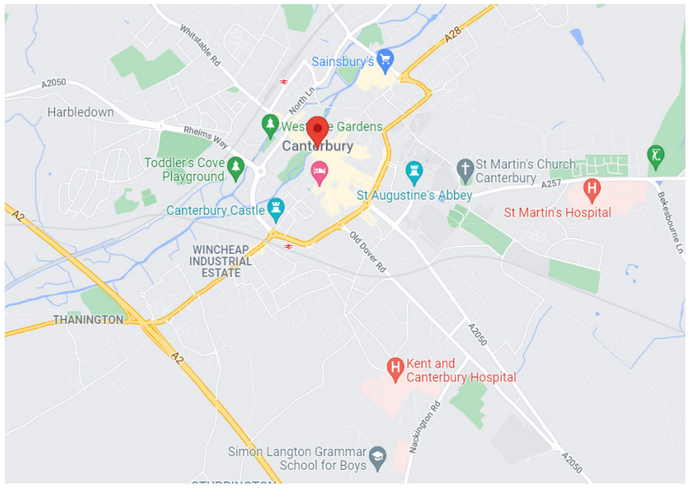
About Us

We are a Canterbury based ***Architectural Partnership*** with a heavy focus on sustainable practice. Specifically attempting to create ***designs with net zero carbon emissions*** or better. Adding in the ***3D VR visuals*** we do for our projects this allows us to transition into a unsaturated gap in the market. ***Our business size is on the micro scale*** thus we only undertake ***small home commissions***.

Our Team



Location



+ Easy Access to London for further
+ Near Folkestone which is getting a lot of attention development wise
+ Access to the Eurotrain hence allows for the projects in Europian countries

- Near the SE corner of the UK hence it is harder to reach clients on the opposite side of the country

Marketing Strategies and Branding

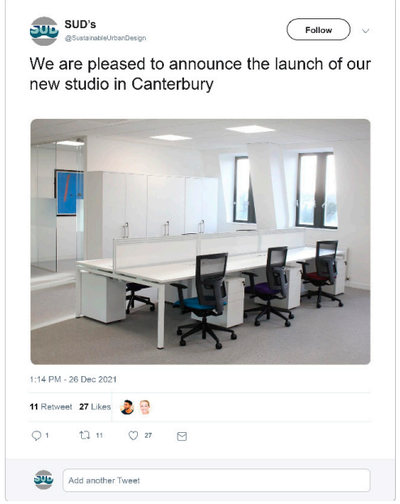
Social media
Our firm has accounts in all popular social media platforms. We post examples of our work and keep updating it so we stay relevant, and people know what we are working on. We focus on creating a well curated gallery that implies our attention for detail and qualitative design.

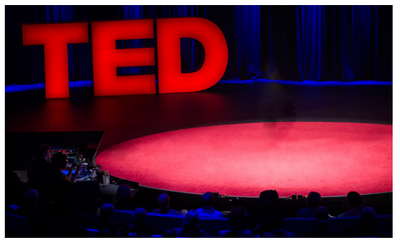
Ads
We invest in personalized advertising so that our work reaches every potential client, or individual that could be interested in our design work.

Networking
Our staff tries to attend as many design events as possible, to take part in important conversations for our discipline and meet ambitious people in order to both learn from others and gain publicity.

Listings
We attempt to appear on reccomended lists by RIBA and other organisation by putting ourself forward to be examined for rewards and competitions.

Educational events
We cease every opportunity to talk about our design process and work. Renews any word of mouth advertisement.





Business Form

LTD - Limited Company

Limited Liability - financial issues for the business won't go beyond it
Profesional Image - Allows for the company to have more credibilty at first sight
Selling Shares - Allows for a posible method of generating capital
Selling Shares - The shareholders make decision making more complicated
Incoporation Fees
Our infromation will be logged into the public records
Accounting - Managing finance will become difficult hence will require an accountant
Financial decisions - Making any transaction requires a lot of paper work and legal confirmation

Partnership

Stronger relationship - The business form allows for more intimate moments between the members
Less paperwork - Doesn't require as many guidelines and rules to follow hence requires less paperwork to be completed for startup and operation
No Business Entity - Less Tax work so doable without an accountant to assist
Unlimited liability - The finacial obligations epxand beyond the business and onto us
Closer relationship - Emotions can be more prevelant during decision making
Total higher Tax - The Tax will be more than if the business paid business Tax

PLC - Public Limited Company

Profesional prestigue - Allows for the company to have more credibilty at first sight
Selling Shares - Allows for a posible method of generating capital
Stock Exchange - Allows us to negotiate with banks and other finacial ventures with favourable results
Transferability - The directors can decide to leave the PLC in the future if they want to with less hassle and without the absolution of the PLC
Public Scrutiny - Due to its relation with the public domain the PLC will need to be more transparent with its affairs allowing it to be scrutinised by anyone
Accountability - The process of gaining shareholder are looser hence being accountable for them is harder to manage
Shareholders coup - The shareholders can end up disrupting the company structure in a major way
Stock Exchange - Pressure from the stock exchange will be forever looming over the company
More Rules - The Companies House add more guidelines that the PLC has to follow compared to other forms
Selling Shares - The shareholders make decision making more complicated
Bigger financial startup - A PLC requires £50,000 as startup capital

LLP - Limited Liability Partnership

Limited liability - The financial obligation stop with the business
Flexible ownership - Allows for companies to be the directors rather than a sole real person
Protected name - Due to the information being handled by the Companies House other companies can't take its name
Public private data - The business form requires a lot of sensitive private data to be given to the Companies House which can be accessed by the public resulting in less personal security
Must be 2+ - The form can only appear when there are at least two members
Reluctant consultants - Due to the Data sharing with the public some profesionals will hesitate to work with us
No hold over profit - All profit generated is distributed and cannot be held by the business to use next financial year

Partnership was chosen over all other business forms primarily due to it protecting us by the firm providing little amount of personal data to the public compared to the others. Another big factor being the intimate nature allowing for informal decisions.

Our professional code

As Professionals and certified Architects, the partners must adhere to the ***A.R.B Code of conduct***. The following summary reflects on the mentioned code of conduct. To uphold the professional obligations, we will:

- Not contradict our profession and make any misleading, unfair or discreditable statements of anyone.
- Report any issues and problems to all parties involved. A written consent will be requested from them for confirmation, or the workflow wil be terminated with them.
- Ensure all clients are informed of other existing work being done by us.
- Work to the best of our abilities and within the agreed time constraints.
- Ensure the project can still progress if an unforeseen accident cripples us.
- Be up to date with any relevant knowledge and skill for our field.
- Uphold a truthful and responsible service with clear.
- Hold ourselves by the code of any additional practice we become involved with. For example, advertising.
- Ensure the work performed are under the correct professional who will be used as the representative figurehead of the said work for us.
- Notify the client of any changes to the leading professional.
- Have the project regularly be reviewed to ensure its quality and nature.
- Have all required resources needed for a contract throughout its relevance.
- Ensure there are multiple security methods used to protect all data involved with the work.
- Enter a contract listing all the elements that MUST be there such as:
  who is involved, what is required, the payment, liability, all restrictions, the rules for suspension/termina ion, an insurance statement from ARB, the method of finding a solution to disputes (ADR), the procedure to process complaints, our license for practice and the ARB code of conduct with no clauses that perfectly prevents reports to ARB.
- Any substitutions that are made must be agreed on and written down.
- Provide the client with any legally entitled papers.
- Advise the clients of in ways to have the result elevate the status of the natural environment.
- Be impartial when providing advice or behaving as a mediator within our field of profession.
- Record and manage all financial aspect to work undertaken exceptionally.
- Have more than the minimum professional insurance requirements verified by ARB officials.
- Execute consequences from any illegal activity appropriately.
- Take account of complaints within 10 working days and perform our agreed process to handle it within 30 working days.
- Update the ARB with the appropriate changes and provide any information requested by them.
- Not discriminate against others due to aspects such as race, age, disability, gender reassignment, sex, religion, belief, marriage, civil partnership, sexual orientation, pregnancy or maternity

Question for Clarification

Question 1. What kind of building project are you trying to create ?
We will udnerstand if the site will have solely residential, commerical or hybrid buildings.

Question 2. What are the limitations of the site?
This will help us understand any glaring problems that need to be addressed. Can heavily effect the design.

Question 3. Who will use this space?
The demographic is important as different econoimc status and socital status would have different wants and needs.

Question 4. What are the time constraints?
We need to know if there are any other deadlines apart from the planning application that have been put onto the developer so we can work around it. This will also help us figure out if there is enough time for us to provide our services or we will decide to not be involved.

Question 5. Do you have any sustainability goals for the project?
Aside from what we will design any additonial sustainable approaches the developer wants can help us develop our relationship with them further allowing for possible future projects with them.

Question 6. Are there any views on the site that are important?
It can heavily affect every aspect of the design so this needs to be one of the leading design trait.

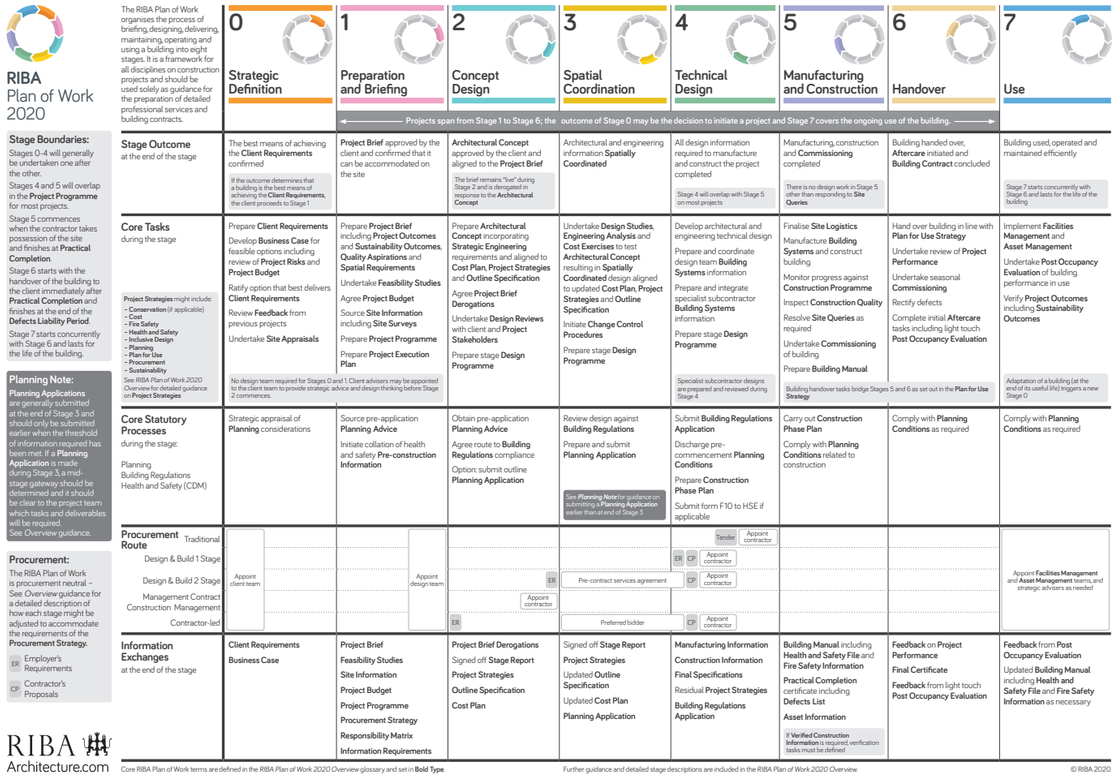
Question 7. What density do you want on the site?
This can help us figure out themeatics and design direction early on, are we working towards micro communities or discreet lanes.

Question 8 - What is the budget for the project?
This will help us think of materiality as well as house sizes that would appropriate for the budget of the project.

Plan of Work

The Plan of Work we will use would be ***RIBA 2020 Plan of Work***. It is up to date and constantly scrutinised due to its usage hence granting it credibility by the process and most importantly designed for the UK so follows all the regulations and law. Each part of it is clearly defined and is built upon precedents that also worked well in the past.

RIBA Plan of Work 2020



Procurement Contract

The procurement routes that we would suggest are ***Traditional***, and ***Design and build***. These two are better than ***Management procurement*** for this project as the feasiability of the buildings being buildable would not matter as they ***will be designed with it being buildable in the first place*** and having a design produced by experience wouldn't produce as much or any value for the land it occupies + the developer will get all the stress and headaches that comes with the design process. ***These are why the developer contacted us in the first place.***

Diagram weighing Traditional and D&B contracts

Procurement Routes		Practise	Developer
Traditional	Pros	Safely acquire work	Not bespoke so has evidence to reassure
		Cannot be novated easily	Gain access to the most creative path if lead consultant is design based = exponential added value
		Allows the most creative freedom	
		Able to negotiate with the Client directly about anything	
	Cons	Purely responsible for design	Clashes with contractor after design work
		Pressure applied by everybody involved in the project	Lead consultant cannot be novated easily
		Will need to manage any stressful last minute changes from the developer potentially with everyone	"Lump sum" contract requires for proportion of the budget being used before the project even starts
			Bespoke design can end up going over the budget
Design and Build	Pros	Less pressure on design	Not bespoke so has evidence to reassure
		Lower amounts of responsibility for design Won't have to deal with any of client's semantics aka no last minute changes without good reason	Only have to deal with one body for the entirety of the project
			Design consultants can be novated
			Cost saving designs
			No time wasted due to communication between design and construction team
	Cons	Will need to fight for the work	Loss of potential push to the limits of the project
		At risk of novation at all times	Will need to get involved more if they want some influence over
		We won't get paid as much due to less involvement	Quality can be compromised
			Last minute changes may not be implemented due to contractor not willing to take risks

Additional Questions to Advise Developer

Whereas the previous questions were to do a generalised summary of what they require from us, these questions begin giving us the answers needed to generate a brief according to the developer's vision.

How many units?

What is the footprint of the house? Are they detached?

How big is the site?

What is the condition of the site ?

Is the soil contaminated ?

Any existing structures ?

Is there power on site ?

How can we access the site for deliveries ?

What are the potential fire exit routes?

Are there any endangered species?

Is it a protected area?

Are there any local pressure groups?

What are the access points to the site like?

Are there any dangers on the site?

What is the topography of the site and what are the constraints?

Which contractors are you going to use?

Who is taking the lead on project management?

Who are the contractors you are using?

What's your idea for the timescale for the project?

What is your budget?

What quality of materials do you want to use?

What is the cost per unit?

Meeting Agenda

1.0 Appointment (if not already agreed)
· Scope of services
· Fee/expenses
· Conditions of engagement

2.0 Brief
· Typology
· Location
· Size
· Client's/architect's previous experience

3.0 Site
· Topography/geology
· Restrictions - rights/restrictive covenants
· Accessibility - connections

4.0 Consents
· Have any statutory approvals already been sought/granted?

5.0 Time-Budget-Quality
· Start date
· Completion date
· Outline budget already established?
· Can any grants be obtained?
· Client's aesthetic aspirations
· Client's technical requirements

6.0 Clients obligations under CDM Regs
· Appointment Principal Designer

7.0 Other consultants
· Architects - has previous design works been done?
· Quantity Surveyor
· Structural Engineer
· M&E Engineer
· Who will be required?
· Are any already appointed?
· Will they be employed by client or architect?

8.0 Procurement
· Most appropriate method for requirements of project
· Client's/architect's previous experience
· Any strategic partnering arrangements already in place?

9.0 Project Strategy
· Management of communications client/design team
· Resourcing - availability of staff
· Programming - critical path analysis

10.0 Any Other Business

11.0 Date of Next Meeting

Fee Structure

Our practise charges an hourly rate for our services, we decided due to most project's uncertainity using a flexible method of charging would be favourable for both us and the client. They won't overpay and we won't have to wait to figure out how much we should get paid on the offchance novation may occur. However we do request 50% of stage 3 - 4 which is calculated by using past exmaples due to this phase being the main period of designing hence novation is most likely to happen thus the 50% covers us under this circumstance. If by the end the fee becomes greater than anticipated then we would send a invoice requesting the difference.

Stage	Fee description	Fee
0	1xMain Administrator initial appointment	£300.00
1	1xLead designer assist creating the strategic brief	£300.00
	1xArchitect + chartered surveyor site visit	£1,000.00
	2xArchitects + Architectural Assistant Site Analysis	£2,700.00
2	1xLead designer brief review x2	£600.00
	1xArchitect + Architectural Assistant Generate concept design x3	£4,500.00
3	5xArchitects + Architectural Assistant Developing the design x20	£96,000.00
	1xArchitects Meeting to present work x3	£900.00
	1xArchitect Planning permission application	£4,706.00

One-time cost	Cost
Planning application	£206.00
Vrset	£3,357.00
Rhino x 10	£8,488.60
Printer	£3,695.00
Graphics Plotter	£756.00
	£16,502.60
x .1	£1,650.26
/ no. of months to stage 5	£235.75

Months in project	Payment
1	£8,394.44
2	£62,797.44

Monthly overheads	Cost
Renting	£2,000.00
Cad Subscription	£1,230.00
Adobe Subscription	£249.70
Heating	£9.69
Lightbulb electricity	£37.20
Microsoft 365 Business Premium	£15.10
Air conditioning	£124.00
10 Desktops electricity	£31.00
Server electricity	£93.00
Virgin fibre broadband	£69.00
	£3,858.69

Fee structure

Using the same system as before except this time we charge a premium price of 50% from stage 5 onwards due to these stages not requiring our main form of services.

Stage	Fee description	Fee
4	2xArchitect + Architectural Assistant Technical Design and specification x 5	£9,300.00
	1xArchitect Building Control application	£900.00
	1xArchitectMeeting - (preparing for and advise on tendering and the building contract)	£500.00
5	1xArchitect Site visit + supervision	£18,000.00
	1xArchitect Design Queries x10	£9,000.00
	5xArchitects Meeting with contractor	£1,200.00
6	5xArchitects Project Programme review x15	£14,400.00
7	5xArchitects Final inspection	Free of charge
	1xArchitects POE	Free of charge

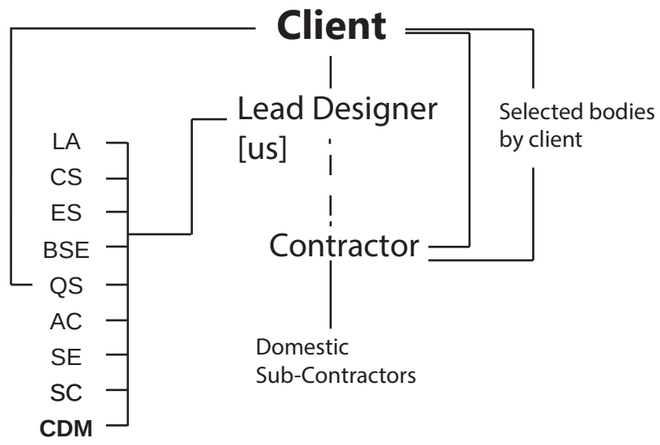
Months in project	Payment
3	£15,835.04
4	£15,835.04
5	£15,835.04
6	£15,835.04
7	£15,835.04
8	£6,224.44
9	£6,224.44
10	£6,224.44
11	£6,224.44
12	£6,224.44
13	£6,224.44
14	£6,224.44
15	£6,224.44
16	£6,224.44
17	£6,224.44
18	£6,224.44
19	£6,224.44
20	£6,224.44
21	£6,224.44
22	£6,224.44
23	£6,224.44
24	£6,224.44
25	£6,224.44
26	£6,224.44
27	£6,224.44

Extra Fee
Printing
Faxing
Travelling
Inflation
Staff hours/leave/sickness
Health and Safety Equipment [Stage 5 - 7]

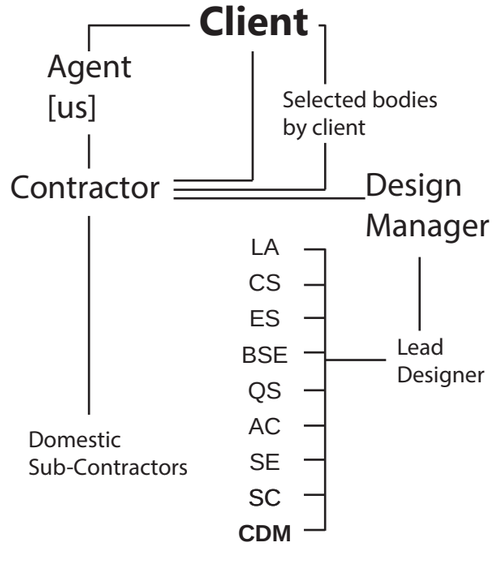
Additional Consultants

To provide our services we will require input from other proffesional consultants. Due to the importance of what these information the additional consultants might add to the overall project their relation to the entire project team matters.

Traditional Procurement route



Design and Build Procurement route



Landscape Architect (LA)
New design perspectives + avenues to venture. Important to adding value to the land beyond the built environment.

Sustainability Consultant (SC)
Help identify and suggest solutions to reducing negative impact on the world, cruical to cause against climate crisis

Structural Engineer (SE)
Crucial to making sure the building is structurally sound and functioning effectively from design to handover

Building Services Engineer (BSE)
Crucial to ensuring end product will achieve desired thermal comfort and safe from design to handover. Addtionially could assist on making the design greener by reducing operational energy requirements.

Arbologist Consultant (AC)
Help with TPOs as well as required ground conditions for planting

Quantity Surveyor (QS)
Crucial to calculating the cost of the design and if it fits within the budget. Also writes the **BILL OF QUANTITIES** which is a important document for tendering.

Environmental Surveyor (ES)
Crucial to figuring out if there are any signs of endangered ecology or dangerous ground conditions

Chartered Surveyor (CS)
Capable of knowing the value of property, the most important consultant for the developer

Construction Design Management Co-ordinator (CDM)
Mandatory as they handle everything health and safety, they ensure the risk of harm to any personnel involved is at a minimum

Appointment Contract

The most appropriate appointment contract to use is the RIBA Standard Professional Services Contract 2020. The other contracts are catered for either consumers or smaller projects whereas the standard is for large scale projects with business clients.

Reasons for the developer to adopt this approach

+ Reasurring as framework is tried and tested
+ Readymade so no lengthy process to make something bespoke
+ Clarity of roles, responsbilities, and obligations
+ Protects the roles from issues outside their obligations
+ Fee, the calculations and payment is clarified
+ Outlines how disputes need to be solved
+ Terms for termination of the agreement

CPD
Continuing Professional Development

RIBA requires all Architects to undergo CPD with the following requirments:
- At least 35 hours of relevant learning each year
- Half of CPD have to be structured
- 20/35 hours must be from the 10 mandatory RIBA Core Curriculum CPD topics
- Acquire 100 learning points via reflection on each activity

1 Year CPD timetable

Mandatory RIBA Core Curriculum Topics	Number	Lecturer	Time	Lecture
Inclusive environments	1	Teri Okoro	1h 45m	Building Inclusivity: Designing Truly Inclusive Housing
	2	Emma Luddington, Living Well at Home Ltd	2h 45m	An Inclusive approach to neighbourhoods of the future
Places, planning and communities	3	Neil Osborn and Simon James	2h 10m	Planning update: what is good design and how to interpret and deliver it
	4	Sophia de Sousa, The Glass-House	1h 30m	Community engagement: collaborative design techniques
Building conservation and heritage	5	Lisa Mcfarlane, Seven Architecture	1h 20m	Planning Work through the conservation lens
	6	EcoRight Limited	1h	Lime in Building Conservation
Design, construction and technology	7	Simone West, Inclusive Design Advisor for TfL and Jane Simpson, Janet Simpson Access Ltd	6h	Access Consultancy [6 modules] Module 1: Inclusive design: what, why, who, when and how? * Module 2: Legislation, regulations and best practice * Module 3: Access auditing and access appraisals * Module 4: Inclusive design in the design process * Module 5: Sanitary facilities: a guide to getting it right * Module 6: Accessible housing *
	8	Colin Blatchford Brown BSc (Hons), FRICS	2h 5m	Building Regulations essentials: principles, requirements and specification for fire safety *
Sustainable architecture	9	Tomas Gaertner	1h 50m	Low Carbon Design: Fuel Poverty, Indoor Environment Solutions and Health
	10	Mina Hasman, RIBA	30m	Climate Literacy Video Series
	11	Tomas Gaertner, 5E3D	1h 45m	Sustainable Design: high performance, human centred, healthy Design
Architecture for social purpose	12	Carys Rowlands and Alasdair Ben Dixon, RIBA	2h 8m	Ethical practice: challenges and rewards
	13	Carys Rowlands, RIBA and Alasdair Ben Dixon, Collective Works		
Health, safety and wellbeing	14	Dieter Bentley-Gockmann	1h 50m	The business of architecture: exploring ethics in practice
	15	Jess Beckwith and Philippa Birch-Wood	1h	Health and Safety Video Series
Business, clients and services + Legal, regulatory and statutory compliance	16	Paul Bussey and Tony Putsman	1h 25m	The changing workplace and its effects on productivity and mental wellbeing
			10h	Principal Designer Webinar Series [6 modules] Module 1: Introduction: hearts and minds: 4 November, 12:30pm-2pm * Module 2: CDM Differently & Visually: 11 November, 12:30pm-2pm Module 3: Visual Risk Pathways and Case Studies: 18 November, 12:30pm-2pm Module 4: Practical review session: 25 November, 12:30pm-2pm Module 5: Significant Risk and effective communication: 2 December, 12:30pm-2pm Module 6: Where to find help and guidance: 9 December, 12:30pm-2:30pm
	17	Lucy Mori, KLMORI Business Consultancy	2h 25m	Business planning: key to running a successful practice
	18	Matthew Cousins	1h 40m	Site Inspection: ensuring delivery meets design
	19	Master Builders Solutions UK Ltd	1h	Watertight Concrete Solutions BS8102 2009 and NHBC Chapter 5.4
Procurement and contracts	20	RIBA Journal	1h	RIBA Contracts: Why do architects need to have a form of appointment?
	21	Altro	1h	Factory Tour: Safety Flooring: Innovation in Manufacturing Product Design
	22	Parag Prasad	2h	Practical strategies for winning new work

Total CPD time = 48 hours 9 minutes

Number of structured CPD = 18/22

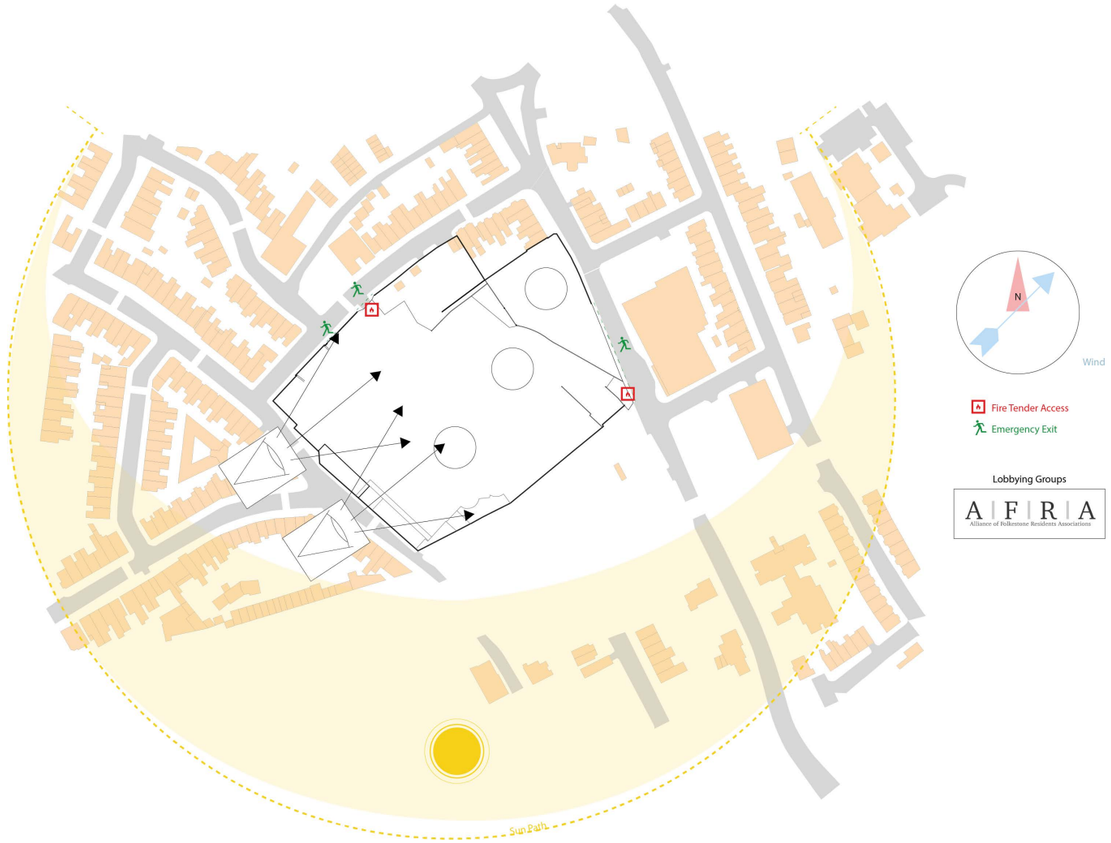
All within Core Curriculum CPD topics
* Relevant enough to impact Housing project

The structure is set up so there is a break after the intense period of CPD set in November and December. Then slowly the CPD sessions begin again with each each one having synergy with the previous and the one that follows to allow for a smoother transition and applying what we've learnt.

The relevant CPD specifically the sustainability will help us stick to our ethos while the others will help us keep the design within legal realms while exploring the concept of forming a community using our design.

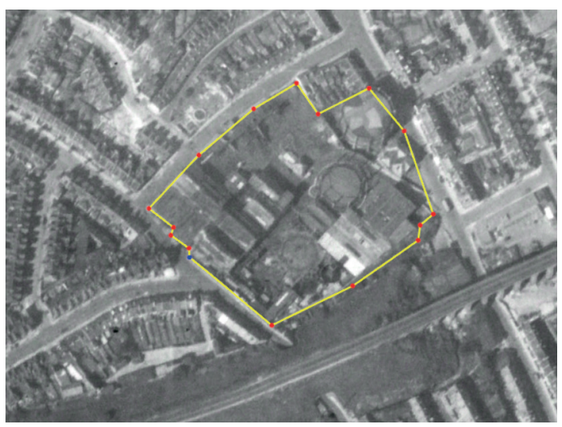
Months	CPD Number
1	16.1 | 16.2 | 16.3 | 16.4
2	16.5 | 16.6
3	
4	12 | 13
5	18 | 19 | 20
6	21 | 22 | 11
7	1 | 9 | 10
8	8 | 14 | 15
9	17 | 2 | 4
10	3 | 7.1 | 7.2
11	7.3 | 7.4 | 7.5
12	7.6 | 5 | 6

Mapping



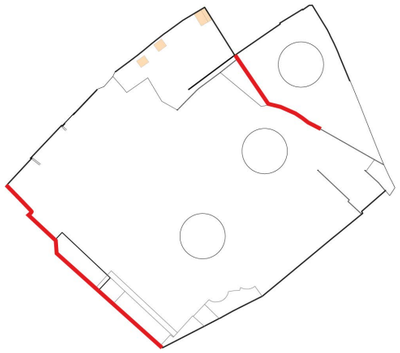
Potential hidden services
Image from 1940

Potentially still contimated land post cleanup
Image from 2008 Pre-cleanup

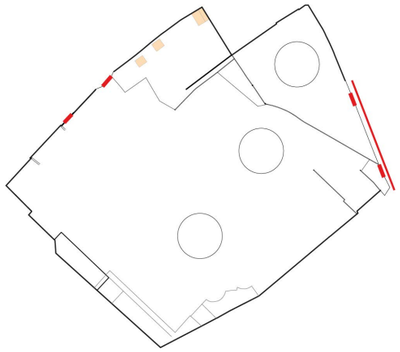


Mapping

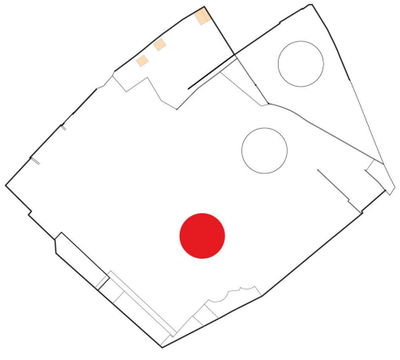
Diagrams showing notiable topics of the site



Sheer Elevation difference
Hazardous if personnel falls from highlighted areas. Ensure safety measures such as railings are added.



Restricted Access Points
Metal fences with locks preventing anyone from entering, will require contacting local authority to gain access for site analysis



Potential ecology issue
Sunken land has produced a micro marshland with drag-onflies, needs further investigation. If is self sustaining then consider bringing it to the locals autority's attention for them to decide its protection or demolition.

Further Surveys to perform

- ***Test performance of Retaining walls*** at elevation drops
- Check for destructive vegetation such as ***Japanese knotweed***

Important documents + Building regs

Documents to revisit prior to designing:

- Town and Country Planning Act 1990
- The National Planning Policy Framework
- Environmental Protection Act 1990
- Pollution Prevention and Control Act 1999
- Local Plan
- Neighbourhood Plans
- Listed buildings
- Foundation
- Use Class
- Building Safety Bill 2021
- The building act 1984
- Fire safety and high-rise residential buildings 2021
- ***THE BRIEF***

Part B 3 - Section 7 Loadbearing elements of structures
7.1 Elements such as structural frames, beams, columns, loadbearing walls (internal and external), floor structures and gallery structures should have, as a minimum, the fire resistance given in Appendix B, Table B3.

Table B3 Specific provisions of the test for fire resistance of elements of structure, etc.

Part of building	Minimum provisions when tested to the relevant European standard (minutes)[1]	Alternative minimum provisions when tested to the relevant part of BS 476[2] (minutes)			Type of exposure
		Loadbearing capacity[3]	Integrity	Insulation	
1. **Structural** frame, beam or column.	R see Table B4	See Table B4	Not applicable	Not applicable	Exposed faces
2. **Loadbearing wall** (which is not also a wall described in any of the following items).	R see Table B4	See Table B4	Not applicable	Not applicable	Each side separately

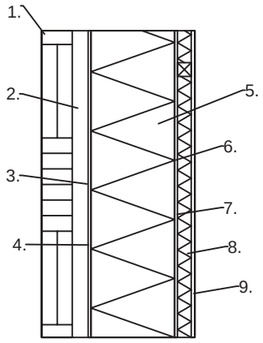
Table B4 Minimum periods of fire resistance

Purpose group of building	Minimum periods of fire resistance[1] (minutes) in a:						
	Basement storey* including floor over		Ground or upper storey				
	Depth (m) of the lowest basement		Height (m) of top floor above ground, in a building or separated part of a building				
	More than 10	Up to 10	Up to 5	Up to 11	Up to 18	Up to 30	More than 30
1. Residential:							
a. Block of flats							
– without sprinkler system	90 min	60 min	30 min†	60 min+§	Not permitted[2]	Not permitted[2]	Not permitted[2]
– with sprinkler system[3]	90 min	60 min	30 min†	60 min+§	60 min+§	90 min+	120 min+
b. and c. Dwellinghouse	Not applicable[4]	30 min*†	30 min†	60 min[5]	60 min[5]	Not applicable[4]	Not applicable[4]

Table 12.1 Reaction to fire performance of external surface of walls

Building type	Building height	Less than 1000mm from the relevant boundary	1000mm or more from the relevant boundary
'Relevant buildings' as defined in regulation 7(4) (see paragraph 12.11)		Class A2-s1, d0[1] or better	Class A2-s1, d0[1] or better

Wall detail of the residential designs



1. 102 mm Brick facade
2. 45 x 45 mm Cavity
3. Breather Membrane
4. 9 mm OSB
5. **235 mm Timber I joist with Sheep Wool Insulation**
6. VPL
7. 9 mm OSB
8. 45 x 45 mm battens with insulation
9. 12 mm Plasterboard

Sheep Wool Insulation Fire Resistence

Classification	Definition	Description
A1	Non-combustible	No contribution to fire
A2	Limited combustibility	Very limited contribution to fire
B	Combustable	Limited contribution to fire
C		Minor contribution to fire
D		Medium contribution to fire
E		High contribution to fire
F		Easily flammable

Fire Resistence of the structural component

3. TEST EVIDENCE

Test evidence is available to demonstrate the fire resistance performance of loaded timber floors constructed using engineered I-joists with various plasterboard ceilings for 30 and 60 minutes fire resistance. The test evidence is summarised below.

Report no.	Test Standard	Joist details Depth x Width (mm)	Plasterboard Ceiling Details	Fire resistance (min)
RF99079	BS 476: Part 21: 1987	220mm high x 44mm thick	15mm LaFarge Wallboard	32

A Solution

Replacing the Sheep Wool with Fibre Glass should allow for the toal fire resistance time to be at least 60 minutes due to it being in Euro Class A. This will allow the deisgn to become compliant with the building regulation.

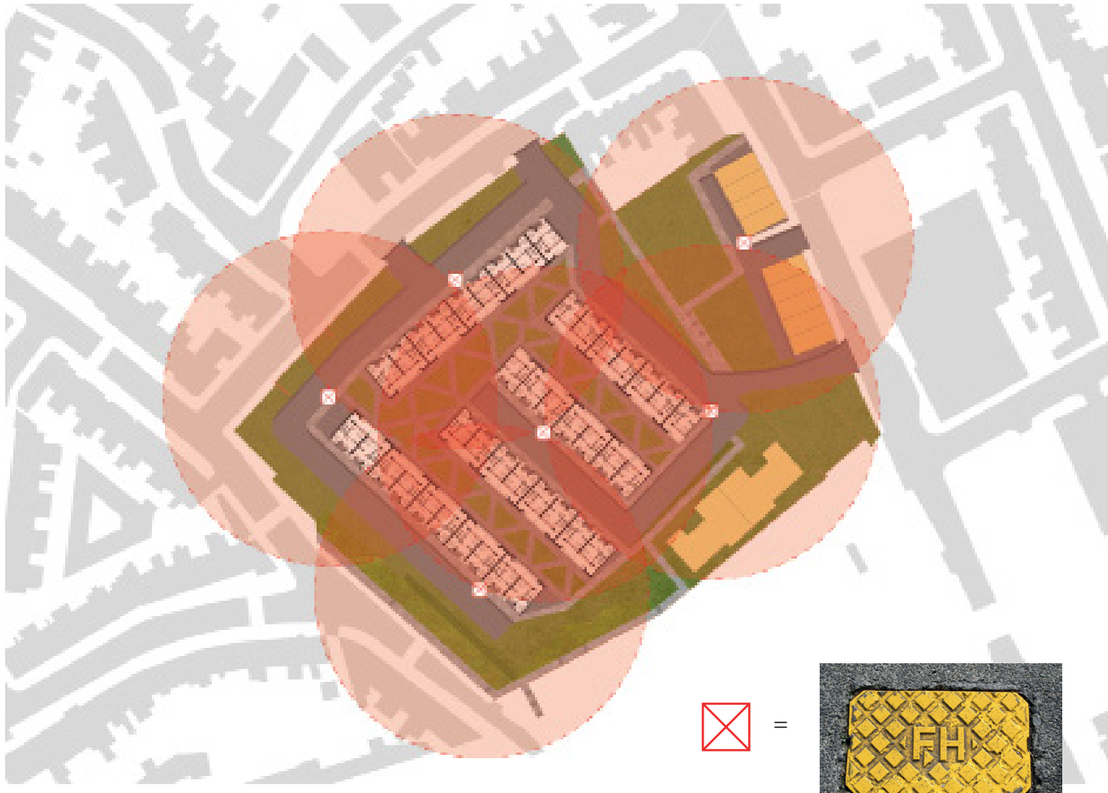
Building regs

Part B 5 - Section 16 Fire mains and Hydrants

16.8 A building requires additional fire hydrants if both of the following apply.
a. It has a compartment with an area more than 280m2
.
b. It is being erected more than 100m from an existing fire hydrant.
16.9 If additional hydrants are required, these should be provided in accordance with the following.
a. For buildings provided with fire mains – within 90m of dry fire main inlets.
b. For buildings not provided with fire mains – hydrants should be both of the following.
i. Within 90m of an entrance to the building.
ii. A maximum of 90m apart.

A solution

By placing a fire hydrant approximately 90 m away from each other and cover the majority of the masterplan will make it compliant to Part B 5 - Section 16



Part K1 - Section 1 Stairs and ladders

1.3 In a flight of steps, for all steps use the measurements for rise and going given for the three stair categories in Table 1.1 below. Use any rise between the minimum and maximum with any going between the minimum and maximum, that complies with the relevant note contained in table 1.1.

Table 1.1 Rise and going

	Rise*		Going*	
	Minimum (mm)	Maximum (mm)	Minimum (mm)	Maximum (mm)
Private stair[1,2]	150	220	220	300
Utility stair	150	190	250	400
General access stair[3]	150	170	250	400

Notes:
[1] The maximum pitch for a private stair is 42°.
[2] For dwellings, for external tapered steps and stairs that are part of the building the going of each step should be a minimum of 280mm.
[3] For school buildings, the preferred going is 280mm and rise is 150mm.

* The normal relationship between the dimensions of the rise and going is: twice the rise plus the going (2R + G) equals between 550mm and 700mm.

For existing buildings the dimensional requirements in Table 1.1 should be followed, unless due to dimensional constraints it is not possible. Any alternative proposal should be agreed with the relevant building control body and included in an access strategy (refer to Approved Document M).

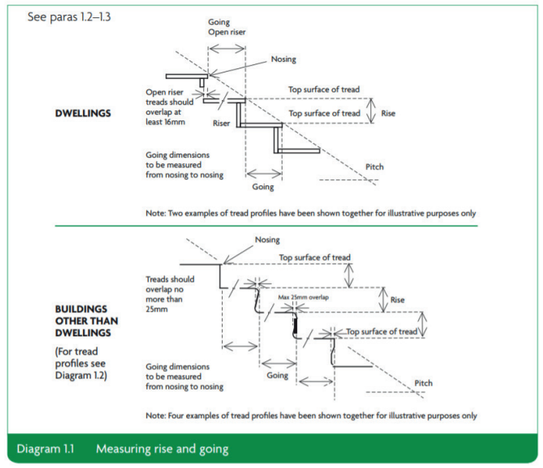
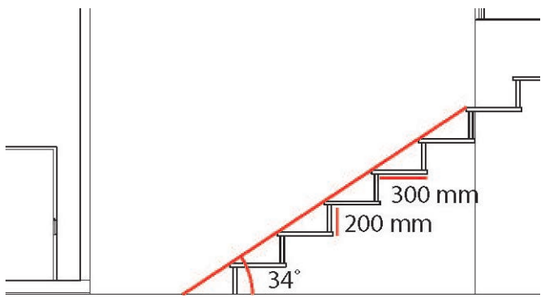


Diagram 1.1 Measuring rise and going

Section from a design for the residental buildings showing that it is Part K1 - Section 1 Stairs and ladders compliant



Part M4(2) - Section 2B 2.25 Bedrooms

2.25 To enable a wide range of people to access and use them, bedrooms should comply with all of the following.

a. Every bedroom can provide a clear access route a minimum 750mm wide from the doorway to the window.

b. At least one double bedroom (the principal bedroom) can provide a clear access zone a minimum 750mm wide to both sides and the foot of the bed.

c. Every other double bedroom can provide a clear access zone a minimum 750mm wide to one side and the foot of the bed.

d. All single and twin bedrooms can provide a clear access zone a minimum 750mm wide to one side of each bed.

e. It can be demonstrated (for example by providing dimensioned bedroom layouts, similar to the example in Diagram 2.4) that the provisions above can be achieved.

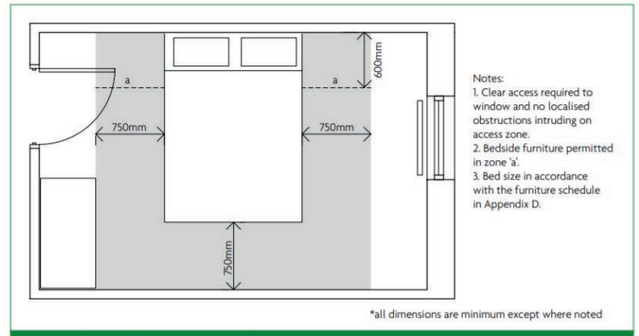
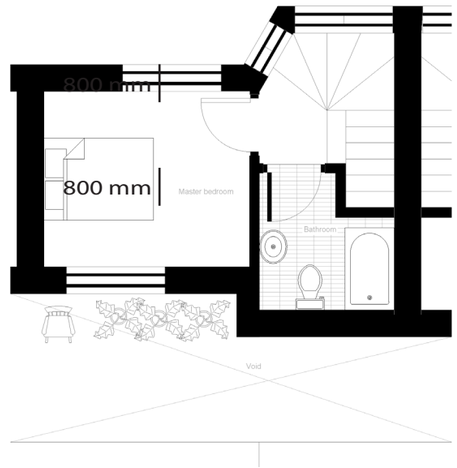


Diagram 2.4 Clear access zones to principal bedroom

Plan of Second Floor to display Part M4(2) - Section 2B 2.25 Compliance



CDM Letter to Developer

Dear client,

I hope this finds you in good health. I am writing to you to focus your attention to the duties you are contracted to during this procedure as per our responsiblity as Principle Desingers before construction starts.

Please ensure to adhere to the following CDM (Construction, Design and Management Regulations 2015) responsiblities:

- Appoint the contractors and designers, includnig principle contractors and designer

- Allow sufficent time and resources for each stage of work

- Ensure the principle designer and principle contractors are carrying out their duties

- Provide sufficent wel-fare facilities (for example toilets, places to eat, etc) for the duration of the construction work

- Uphold the management arrangment of the project and review it

- Inform all designers and contractors that are bidding or already appointed to the project of pre-construction information

- Have the principle contractor prepare a construction phase plan before that phase initiates

- Make sure there is a health and safety file produced by the principle designer for the project for anyone who will need it for the work at the site which is revised as necessary

On the unlikely chance of these reqruirements being breached we could have a scenario where the legal system will be invovled in manners such as fines and legal cases. This will result in increased stress, loss of money and time lost to the case.

King regards,
SUD Architects

Financial Appraisel

Masterplan

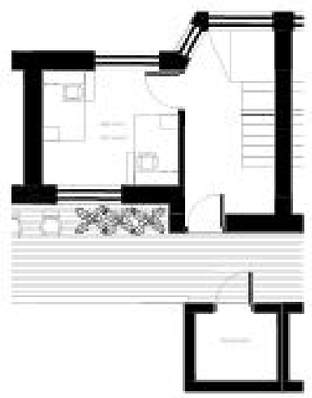
41 Designed homes

9 Generic Maisonette Apartments

Ground Floor

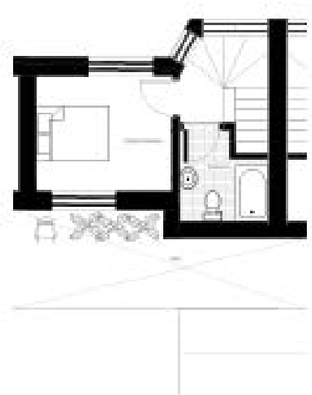
50.15 m²

First Floor



25.95 m²

Second Floor



20.05 m²

Financial Appraisel

Precedents from current housing market

£270,000
Terraced 2 Storey, 2 bedrooms and 1 bathroom

£375,000
Terraced 2 storey, 2 bedrooms and 2 bathrooms

£250,000
Terraced 2 storey, 2 bedrooms, 1 living room and 1 bathroom

Calculating the costs and pricing of my proposal

Floor	Area/m2
Ground	50.15
First	25.95
Second	20.05
	135

	Area/m2
Total houses	8910
Site area	15617.3
Infrastructural/ non built space	6707.3

	Money
House price in Folkestone	£375,000
	£250,000
	£270,000
Total	£895,000
Mean	£298,333

Total revenue	£19,690,000
Price to break even (BE)	£412,795.01
Difference between (BE) and original	£114,461.67
Number of homes to break even	91.32

Description	Cost/£
Loss	-14,679,968
Our fee	£164,306.00

Space	Cost/£
Infra	£5,365,840.00
Ground floor	£8,274,750.00
Subsequent	£3,795,000.00
	£17,435,590.00

Description	Cost/£
Our fee	£164,306.00
Othe Proffesionals	£55,000.00

Description	Cost/£
Our fee	£164,306.00
Project cost	£27,408,776.50

Percentage of Investment	-27.73%

Contractor	Cost
Overhead	£6,102,456.50
Profit	£3,487,118.00
	£9,589,574.50
Cost per house	£294,384.15
Construction cost	£27,025,164.50
Project cost	£27,244,470.50

Our percentage	Percentage
Against cost	0.60%
Against Profit	-2.17%
Profit/loss	-£7,554,470.50

If I were to price my house design in the same state as similiar homes in Folkestone it would make a ***loss of 7 million***. However ***the price of one house is less than the cost to build it*** hence I have created a good scheme I have to use other solutions to increase revenue to generate profit. Due to the design of the house I would be able to proclaim the price is higher than even the break even price due to its ***bespoke aesthetics***. Or if I were to go the less risky route I could i***ncrease the number of homes*** on the site or ***add luxury homes*** that would go for a higher prices to the scheme.

Value Engineering

New calculations and Analysis

Profit if price was £500,000	£5,755,529.50
New consultant fee	£150,000.00
Developer overheads	£400,000.00
Agent fees	£495,000.00
Legal fees	£330,000.00
Coporation Tax	£1,208,661.20
New project cost	£27,739,470.50
New reveneue	£32,175,000.00
30% of construction cost	£8,107,549.35
10% of Architecture cost	£29,438.41
New Profit	£5,644,190.70

If I was able to convince the value of my design to be in the £500,000 the following would be true.

The developer wants to reduce the overall construction cost by around £81,000,000 for the 30% profit margin safeguard. In terms of Architecture there needs to be a saving of around ***£29,500***, which needs to be done via a cladding alternative.

Analysing facade buildup

Collage of surrounding homes

The ***classic red brick*** was chosen as cladding to ***reduce enmity*** between the new and existing community in the first place hence needs to work with this element the closest.

The criterias of the substitute cladding:

Value
Must mimic a brick like facade, colour is up for debate
215 mm x 65 mm facade

Function
Acts as a large storage of heat during the day allowing the home to be warm for longer

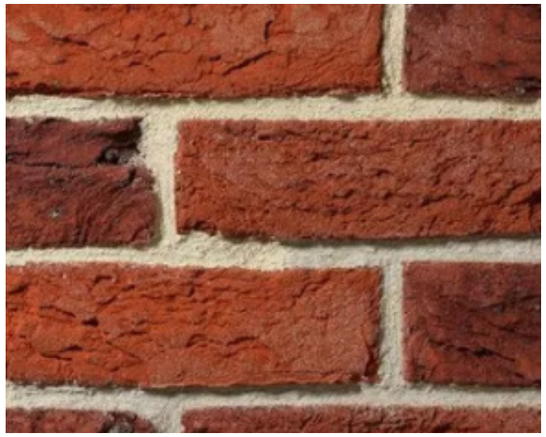
Who to consult with :

Landscape Architect
Most likely has worked with brick substitutes before due to similiar problem

Structural Engineer
Most likely has experience with finding substitute materials due to common request

Optioneering

Option 1 - Brick slips



Real brick cladding - Clay Quattro Handmade Collection - £35 per m²
Requires Adhesives + Another layer underneath to attach to
Value Criteria
It is a thin brick applied onto an adhesive hence achieves the same effect
Function Criteria
It is the same material however in a lower volume, however its requirement for a layer to attach to could be a insulation board that would achieve similiar results as the original cladding

Option 2 - Fake brick render

Rendit - K REND BRICK RENDER 25KG -£16.66
5mm to 2.5 m²
Price per m² = £13.30 per m² of 5 mm red on top of 5 mm grey
Requires - Base coat and Red Top coat
With a artisan the render could end up looking like brick from a distance allowing for the value criteria to be fulfilled.
However for the function criteria it wouldn't be able to do the same, this could be mitigated with insulation but

Option 3 - Insulated fake brick

Dryvit - New Brick - £72% of traditional brick
Value criteria
It is essentially a brick slip but insualted hence is also able to replicate the brick facade
Function criteria
Due to its insulated core this material is much closer than the other two option when it comes to mimicing the thermal mass of traditional brick.