



Planning Approved:
Move your project forward

with Mark Stevenson

Introduction



Agenda

Introductions

Appointing your professional team

Project management

Completing the planning process

Dealing with legal issues

Completing the design

Managing money

Managing time

Managing quality

Managing procurement

Setting up the site



Appointing your professional team

Get the right
team

Architect / Building Designer
Project Manager
Planning Professional
Foundation Engineer
Drainage Designer
Structural Engineer
SAP Assessor (Thermal engineer)
Fire Engineer
Building Control
Warranty Provider
Land Surveyor
Groundworks Contractor
Floor Risk Engineer
Ecology experts
Arboriculturalist
Party Wall Surveyor
Solicitor
Mortgage provider



Professionals – What they cost

Routes to build

Self Manage

- Cost effective but time consuming.
- Requires a degree of competence.

Professional Project Manager

- Cost 8% to 12% of the build cost.
- Convenient and affordable – self funding?
- Keeps you in the driving seat.
- Different services available

Turnkey Builder

- 20% to 30% above basic build cost
- Full build out service but at an expense.
- Builders may be overly focused with profit.
- Requires a clear scope of work and fixed price.



Project Management



The Project Managers Role

- Lead the project team.
- Have clear goals and objectives. Built.....
 - On time
 - Within budget.
 - To a quality standard
 - Safely & protect the environment
- Manage communication and information.
- Advise the customer:
 - What's possible, what's not?
- Plan, manage and coordinate
 - Design
 - The build
 - Trades
 - Procurement and the supply chain
 - Professionals
 - Statutory bodies
 - And more

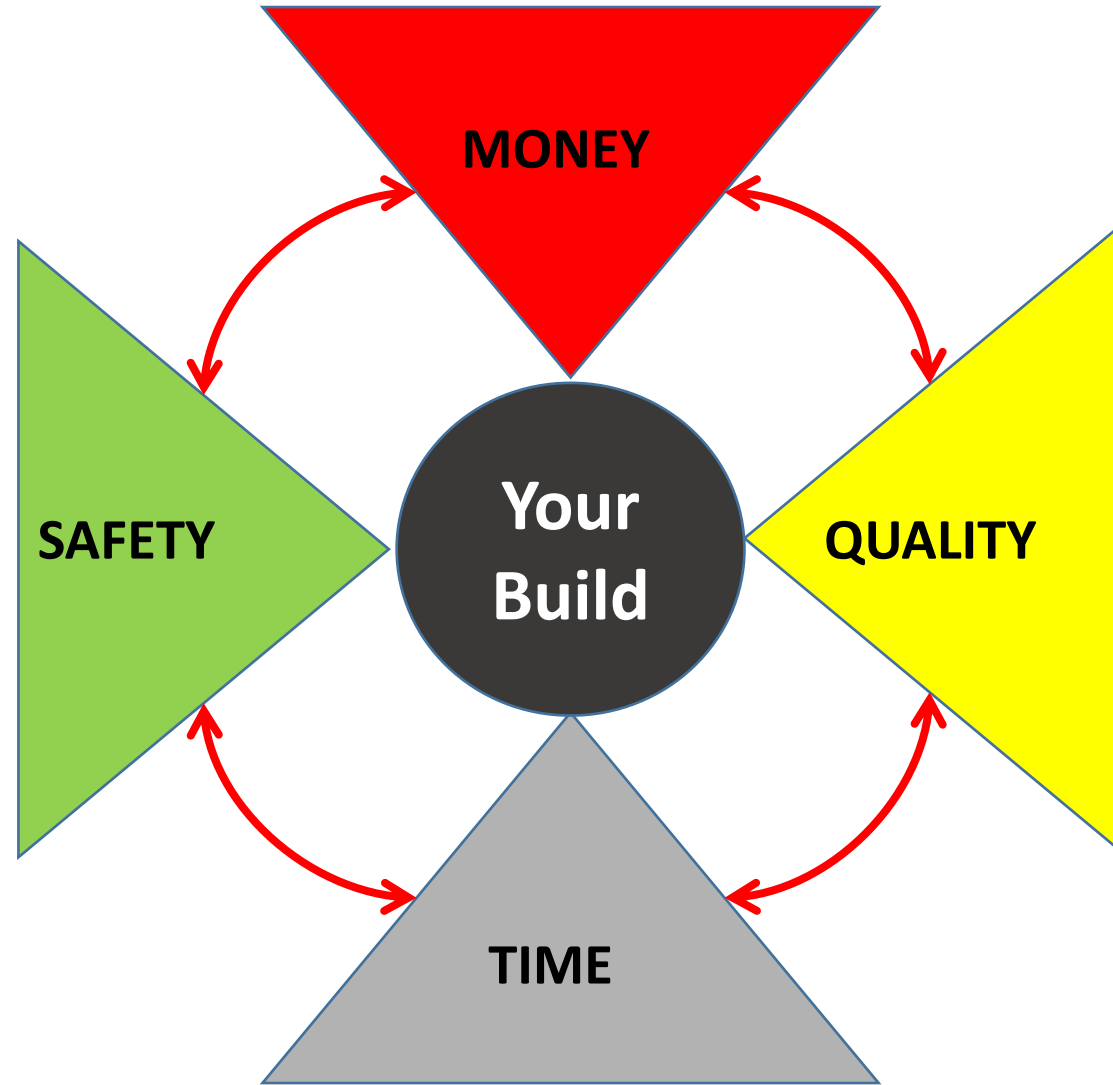


Effective Project Managers

- Are proactive and think ahead
- Have clearly defined goals that everyone understands
- Understands and manages priorities
- Uses teamwork to get things done
- Draw on the experience and skills of their team
- Listens and understands what is happening around them.
- Communicate effectively
- Are accessible and open minded
- Manage risks, make decisions
- Are never afraid to ask!
- Tell you what you need to hear rather than what you want to hear



How a Project Manager Thinks



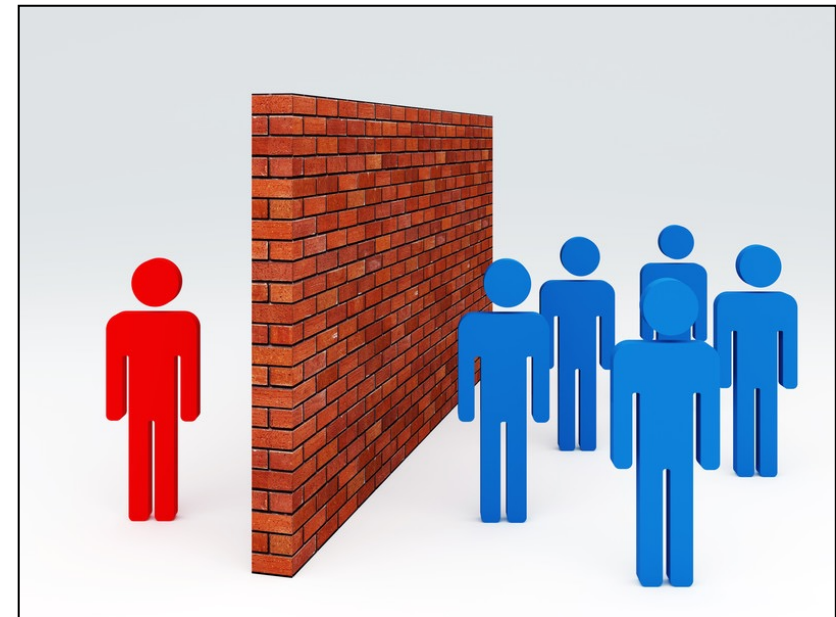
Project Managers Tools

- **Prioritised to-do lists**
- **Project programme**
- **Work package specifications / enquiries**
- **Procurement trackers**
- **Budget planners**
- **Cash flow forecasts**
- **Site layout plans**
- **Health & Safety Plans**
- **Risk assessments / method statements.**
- **Site meetings**
- **Inspection checklists & records**
- **As-built records**
- **Site Diary**
- **Photos**
- **Tape measure and level**
- **Email & Mobile phone**



Effective Communication

- It's always *Good to Talk!* – share information!
- Be *clear, concise* and to the *point!*
- If it's important, put it in writing.
- Be honest and truthful.
- Never be afraid of asking.
- Don't build barriers!
- Don't forget your empathy!



Understanding your planning consent



Understanding the permission granted

Celebrate! Then take stock and ask yourself a few questions;

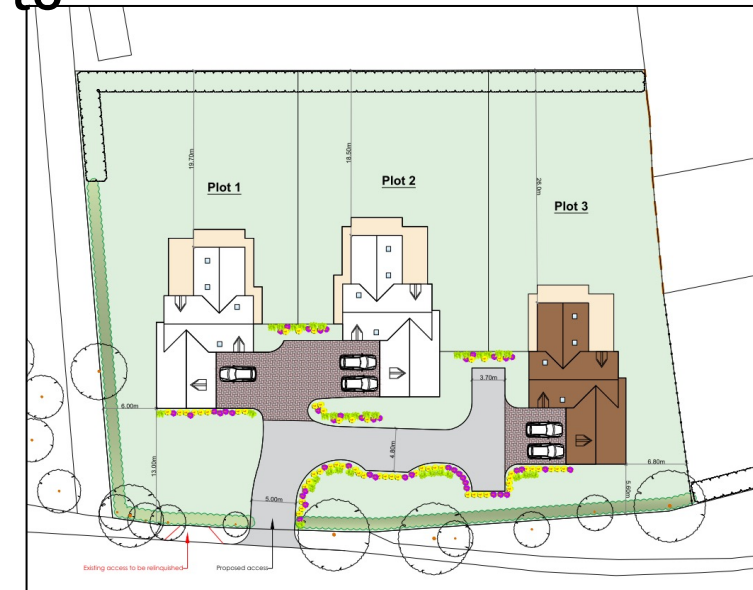
- 1) What have I been granted permission for?**
- 2) Can I satisfy all the conditions?**
- 3) Is it what I want?**
- 4) Can I afford it?**
- 5) Can I build it?**
- 6) Are there legal issues to resolve?**
- 7) Should I change the design?**
- 8) Should I complete the plot purchase?**



Types of permission

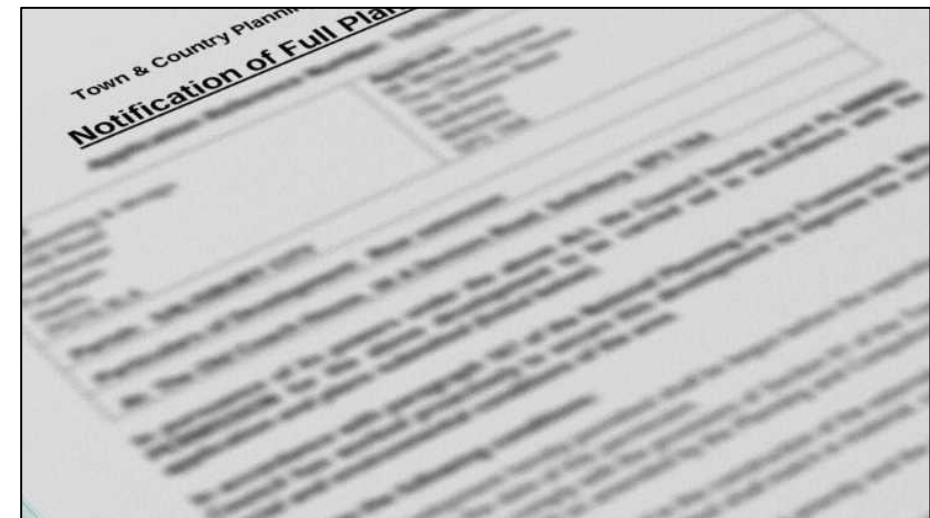
Principle, Outline or Full – What's the difference?

- **Permission in principle** – Is the site suitable or not. No other matters are considered.
- **Outline planning consent** grants permission without addressing all details. It does not define accurately the design of the house.
- **Full planning consent** grants permission for a home with detailed design subject to conditions. Build can progress



Planning conditions to resolve

- Conditions are the small print that comes with the planning permission. They enable a permission to be granted and the finer detail to be resolved at a later date or by a specific stage of the build
- *Warning - Make sure the conditions can be satisfied or discharged otherwise the consent cannot be implemented*
- Typical conditions to resolve;
 - Building position and floor levels
 - External materials
 - Landscaping
 - Boundary treatments
 - Flood risk
 - Trees & ecology
 - Highways & access
 - Archaeology



Planning conditions

Discharging

Ideally, the discharge of planning conditions will normally be completed with the support of an appropriate professional.

Removal/Variation/Approval/Discharge of condition		
Removal or variation of a condition following grant of planning permission		£293
Discharge of condition(s) – Approval of details and/or confirmation that one or more planning conditions have been complied with	Householder permissions	£43
	All other permissions	£145

Approval of proposed materials **should** take no more than 6 to 8 weeks.


If a response is not forthcoming in that time an applicant may serve the council with a “deemed discharge notice” six weeks after applying giving at least 2 weeks notice of when the deemed to discharge will apply – this may have negative consequences so be careful.



Don't forget to understand the planning obligations

CIL (Community Infrastructure Levy)

- Imposes a fee based on size of the house less area of demolished buildings.
- Self builders can claim exemption but **must** do so prior to starting any building work on site.
- Must live in the property 3 years to claim full exemption.
- Evidence of residential occupancy must be submitted.



This form should be saved to your device and then completed using the free Adobe Acrobat Reader application or full version of Adobe Acrobat. Many internet browsers and other applications can display PDF files, but we cannot guarantee their compatibility in regard to these forms. We specifically advise users of Apple devices not to use 'Preview' because of known issues.

Community Infrastructure Levy (CIL) - Form 7: Self Build Exemption Claim Form Part 1

Step 2 of a 4 stage exemption process

Please note: All of the steps described below need to be followed within required timescales otherwise the exemption will either not be obtained or will be rescinded if previously obtained

STEP 1 - ASSUME LIABILITY	STEP 2 - CLAIM EXEMPTION	STEP 3 - COMMENCEMENT	STEP 4 - CONFIRM DETAILS
Applicant should have already assumed liability to pay CIL in relation to the development. This must be done before any exemption can be claimed for.	Submit this Self Build Exemption claim form to the Collecting Authority. The exemption must be granted prior to the commencement of the development.	A Commencement Notice must be received by the Collecting Authority prior to the commencement of the development.	Part 2 of the Self Build Exemption claim form and supporting documentary evidence must be submitted to the Collecting Authority within 6 months of the date of the Compliance Certificate.



Want to change the design

Many people think about changing their design after planning permission has been granted – Why?

Depending upon the extent of changes, amendments can be dealt with as

- *Minor material amendment* – usually associated with planning conditions
- *A non-material amendment* (changes that don't result in a different scheme) can be dealt with under delegated powers
- New application required for significant changes

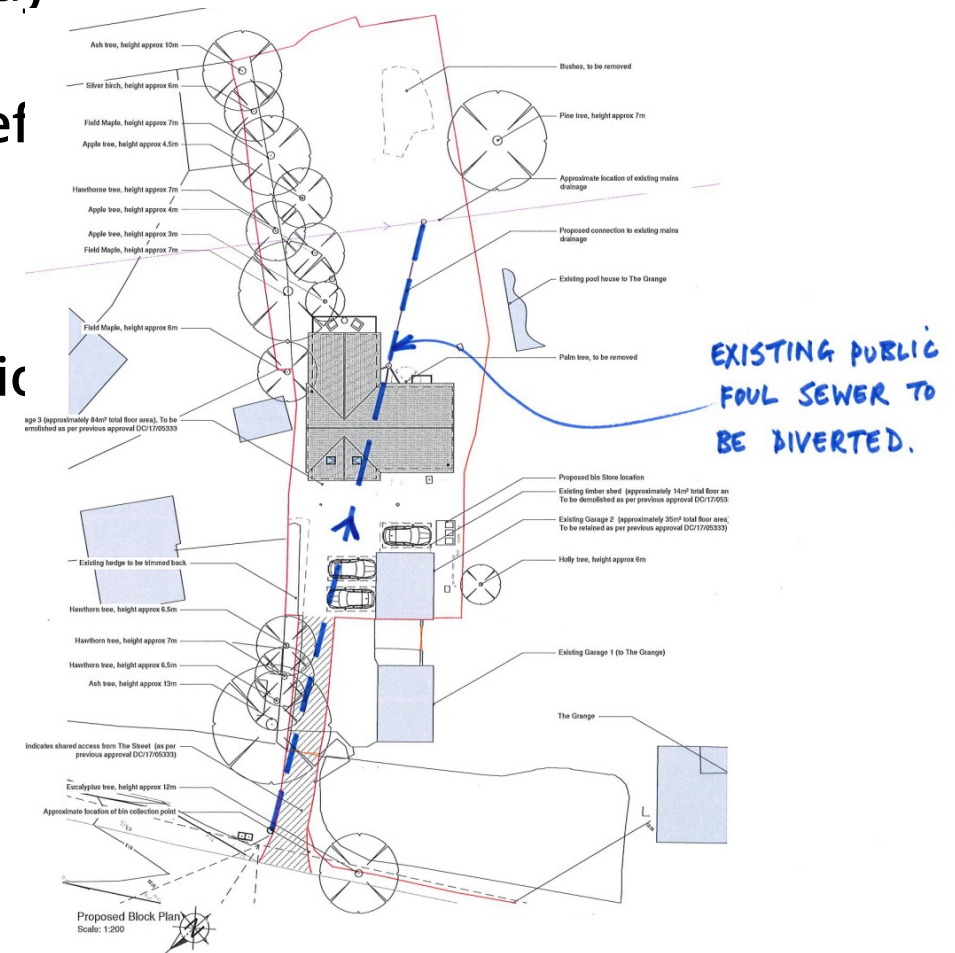


Dealing with legal issues



Legal Issues

- Boundary ownership and position
 - To get the building position right
 - Is a party wall surveyor needed
- Access to adoptable highway (ransom strips)
- Rights of way to plot's benefit
- Rights of way for others
- Restrictive covenants
- Rights for services connecting
- Rights of light
- Easements
- Disputes.....



Legal matters

Access arrangements

Check the access arrangements

- Legal ownership of the access directly to the adopted highway or
- Legal right of way to access the plot for the benefit of the house
- Can visibility splays (planning condition for safety) be implemented?
- Are there delivery or construction restrictions
- Are there 'ransom strips' that must be crossed to gain access
- Any impact from multiple ownership of private roads
- Settle covenants and ransom strips in principle before committing to buy the plot or start the build



Completing your design



Ground investigations

Always complete a ground investigation - If in Doubt dig a hole (Before you exchange contracts)

Ground investigations will investigate the nature of the ground to be able to design the most appropriate foundation method. They consider;

- The bearing capacity of the ground
- Depth of natural vegetation
- Identify filled or disturbed soil
- Locate rock and assess its suitability
- Locate streams/water courses and depth of ground water
- Identify any contamination & gases
- Consider existing buildings / foundations / trees and their impact on the new foundation



Check for hazards

Before commencing any excavation work on site you must ensure the site is checked for hazards. Typical hazards include:

Buried services – electricity, gas, water, telecommunications

Overhead services – electricity and telecommunications

Contaminated ground

Shelters, cellars, shafts and manholes.

Ask the utility companies and your groundwork contractor for advice.

<https://www.linesearchbeforeudig.co.uk/>



Foundation design

Ground investigations help specialist engineers design the foundations – Benefits;

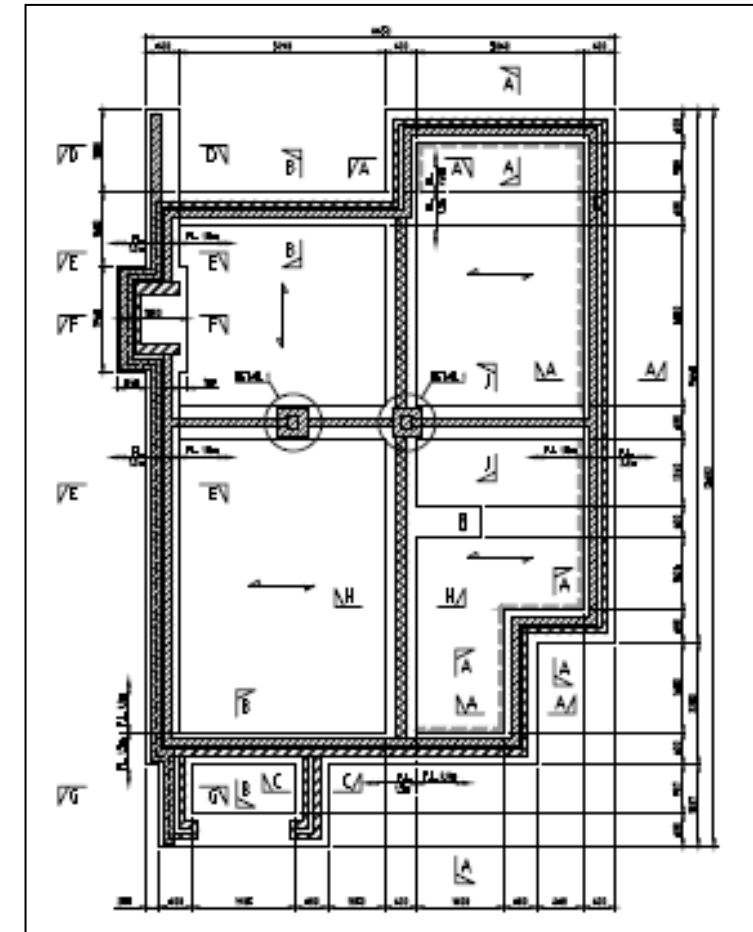
Much more efficient

Will comply with regulations

Keeps warranty providers happy

Foundation solutions;

- Strip concrete
- Mass trench fill
- Piled foundations & ground beams
- Raft foundations
- Basements



Completing your design

Building Regulations



Building Regulations

What are they?

- Building Regulation set minimum standards for design and construction of buildings
- Ensure safety and health of people in and around them
- Developed by government with input from industry and public consultation
- **Approved by government and implemented by local authorities and independent inspectors**
 - **Building Notice**
 - Give 48 hours notice of start. No advance checking
 - **Full Plans Application – the best route**
 - A thorough check in advance of starting work on site that the design meets the requirements of the regulations.
 - A requirement of many lenders
 - Give 48 hours notice of start



Building Regulations

The law

- The regulations themselves are surprisingly brief but gradually getting longer
- Guidance on how to meet the requirements of the regulations is given in a set of Approved Documents
 - Examples and acceptable solutions
- Following the advice in the ADs is not the only way of demonstrating compliance but only the brave (or rash) should take a different approach

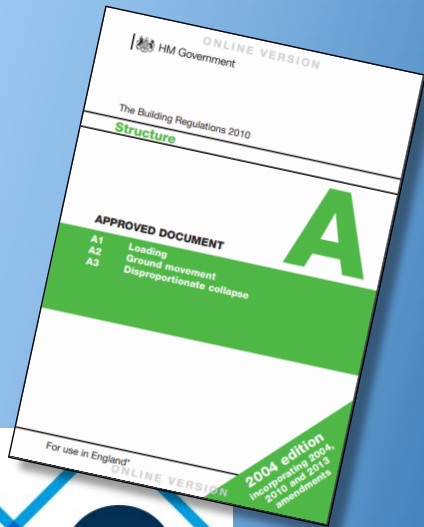
Requirement	Lin
Loading	
A1. (1) The building shall be constructed so that the combined dead, imposed and wind loads are sustained and transmitted by it to the ground:	
(a) safely; and	
(b) without causing such deflection or deformation of any part of the building, or such movement of the ground, as will impair the stability of any part of another building.	
(2) In assessing whether a building complies with sub-paragraph (1) regard shall be had to the imposed and wind loads to which it is likely to be subjected in the ordinary course of its use for the purpose for which it is intended.	
Ground movement	
A2. The building shall be constructed so that ground movement caused by:	
(a) swelling, shrinkage or freezing of the subsoil; or	
(b) land-slip or subsidence (other than subsidence arising from shrinkage), in so far as the risk can be reasonably foreseen, will not impair the stability of any part of the building.	

Requirement	Lin
Disproportionate collapse	
A3. The building shall be constructed so that in the event of an accident the building will not suffer collapse to an extent disproportionate to the cause.	



Building Regulations

Approved documents



- Approved documents can be found here: https://www.planningportal.co.uk/info/200135/approved_documents

	Part
Materials & Workmanship	Reg 7
Structural Safety	A
Fire Safety	B
Site preparation and resistance to contaminants and moisture	C
Toxic substances	D
Resistance to the passage of sound	E
Ventilation	F
Sanitation, hot water safety and water efficiency	G
Drainage and waste disposal	H

	Part
Heat producing appliances	J
Protection from falling	K
Conservation of fuel and power	L
Access to and use of buildings	M
Overheating	O
Electrical safety	P
Security	Q
Physical infrastructure for high-speed electronic communications networks	R
Infrastructure for charging electric vehicles	S

Building Regulations

A typical full plans application includes...

- Working drawings
- Construction details
- Structural calculations
 - Foundations and superstructure
- Energy calculations
- Block plan and drainage design

External cladding dependant on project. Brick cladding may continue or change to render on block or a lightweight cladding such as tile hanging or timber boarding. Note the cladding affects the overall u-value

Masonry cladding set out from sheathing face to ensure a 50mm cavity is maintained

Proprietary timber frame wall ties fixed to studs and spaced vertically at 375mm for 600L studs or 525mm for 400L studs. Reduced to 300mm to sides of openings. First set of ties within 300mm of DPC. Upper ties within 225mm of top of cladding.

215x65mm air-bricks at a minimum of 75mm above ground level with telescopic void ventilator through cavity to provide underfloor ventilation. Avoid locating beneath external doors.

Weep holes / open vents at max. 1.5m centres to drain and vent the cavity.

Normal Ground level

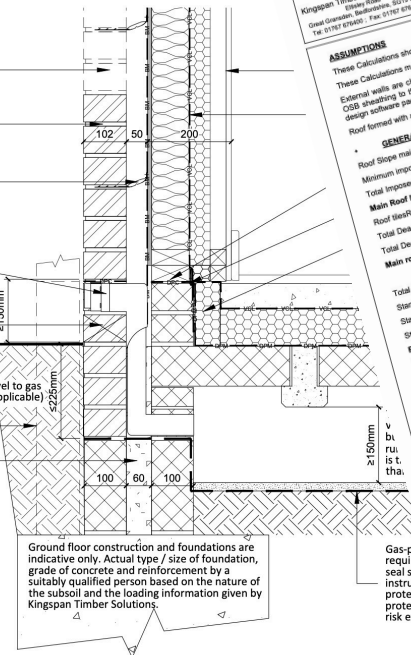
Dashed line represent brickwork position when a plinth is specified (in addition to a masonry skin)

Weak mix concrete cavity fill

Ground floor construction and foundations are indicative only. Actual type / size of foundation, grade of concrete and reinforcement by a suitably qualified person based on the nature of the subsoil and the loading information given by Kingspan Timber Solutions

Gas-pro (where required) seal servi instruction protection risk exists.

REFER TO ORDER DOCUMENTATION FOR SCOPE OF WORKS



ASSUMPTIONS
These Calculations should be read in conjunction with the drawings for the Bespoke house type. External walls are clad to the external side with... Kingspan Timber Solutions Limited

GENERAL LOADING

Roof Slope main House	= 50.0 degs
Minimum imposed roof load on roof	$R_{im} = R_{im} \leq 30, 0.75 \text{ kN/m}^2 \leq (40 - 0) / 30 = 0.25 \text{ kN/m}^2$
Total Imposed load on roof	$R_{im} = 1.16 \text{ kN/m}^2$
Main Roof Loading - sloping ceiling	$R_{m} = 1.50 \text{ kN/m}^2$
Roof dead load on Slope	$R_{d} = 0.75 \text{ kN/m}^2$
Total Dead load on plan Roof	$R_{d} = 0.75 \text{ kN/m}^2$
Main Roof Truss Roof Loading	$R_{t} = 1.42 \text{ kN/m}^2$
UDL roof ties	$R_{t} = 1.49 \text{ kN/m}^2$
Total Dead load on plan Roof	$R_{d} = 0.50 \text{ kN/m}^2$
Standard ceiling Total dead & live load	$R_{c} = 0.91 \text{ kN/m}^2$
Standard truss roof-live Roof	$R_{c} = 1.19 \text{ kN/m}^2$
Standard truss roof-dead Roof	$R_{c} = 1.46 \text{ kN/m}^2$
Rear Projection Roof Loading	$R_{p} = 0.75 \text{ kN/m}^2$
Total Dead load on Slope	$R_{d} = 1.51 \text{ kN/m}^2$
Total Rear Projection Dead load on plan	$R_{p} = 1.51 \text{ kN/m}^2$
Rear Projection truss roof-live Roof	$R_{p} = 0.50 \text{ kN/m}^2$
Rear Projection truss roof-dead Roof	$R_{p} = 0.50 \text{ kN/m}^2$
First Floor	$R_{f1} = 2.00 \text{ kN/m}^2$
Total dead load Floor	$R_{f1} = 1.5 \text{ kN/m}^2$
Imposed load	$R_{f1} = 0.47 \text{ kN/m}^2$
Partitions	$R_{f1} = 0.34 \text{ kN/m}^2$
Total imposed load (inc. partitions)	$R_{f1} = 0.92 \text{ kN/m}^2$
General Internal walls - timber clad with plaster	$R_{f1} = 0.34 \text{ kN/m}^2$
Total wall weight (W _{int})	$R_{f1} = 0.92 \text{ kN/m}^2$
External walls - timber clad with brick / render on block	$R_{f1} = 0.92 \text{ kN/m}^2$
Total wall weight (W _{ext})	$R_{f1} = 0.45 \text{ kN/m}^2$
External walls - timber clad with render on battens	$R_{f1} = 0.45 \text{ kN/m}^2$
Total wall weight (W _{ext})	$R_{f1} = 0.45 \text{ kN/m}^2$
External sliding doors	$R_{f1} = 0.45 \text{ kN/m}^2$
Total window unit weight (W _{win})	$R_{f1} = 0.45 \text{ kN/m}^2$

U-VALUE CALCULATOR REPORT

Project Reference: 18-069
Assessment Reference: 002
Project: Plot 13, Hillberry Green, Douglas, Isle of Man, IM2 6DF
Calculation Type: New Build (As Designed)

U-Value (W/m²K): 0.48
CO₂ Emissions: 0.85 t CO₂/year
General Environmental Compliance: Pass

Assessor Details: Mr. Kevin Hopkin, Kevin Hopkin, Tel: 01767 676487, Email: kevin.hopkin@designsap.com

Building Elements: ULTIMA 32 Block

Layer	Description	Thickness (mm)	Conductivity (W/mK)	Resistance (m²K/W)	Fraction (%)
Layer 1	Render - Cement and Sand	20	1.0000	0.0200	100.00
Layer 2	Blockwork, light	100	0.1800	0.5556	93.43
Layer 3	Low-E Cavity-Glazed Protect 200 Thermo	100	0.8800	0.1136	6.57
Layer 4	Orientated Strand Board	30	0.0650	0.7800	100.00
Layer 5	URSA Timber Frame Roll 35	50	0.1300	0.0892	100.00
Layer 6	URSA Timber Frame Roll 35	50	0.1300	0.0892	100.00
Layer 7	URSA Timber Frame Roll 35	50	0.1300	0.0892	100.00
Layer 8	URSA Timber Frame Roll 35	50	0.1300	0.0892	100.00
Layer 9	URSA Timber Frame Roll 35	50	0.1300	0.0892	100.00
Layer 10	URSA Timber Frame Roll 35	50	0.1300	0.0892	100.00

BUILDING ACT 1984 - THE BUILDING REGULATIONS NOTICE OF PASSING OF PLANS No. 20/00281/DOMFP

APPROVAL

East Cambridgeshire District Council
The Grange
Nuthall Lane
Ely
Cambridgeshire
CB7 4EE

APPLICANT: 2 storey 3-bed detached dwelling

ADDRESS: [Redacted]

APPLICANT: [Redacted]

I have to inform you that the plans and sections deposited by you at my offices on the 14th May 2020 were checked by my Council on the 23rd June 2020.

Please note that all works carried out pursuant to this application must comply in all respects with the Building Regulations, whether or not they are correctly indicated on the deposited plans. It is your duty to notify my office at the various stages of the works (as noted in the inspection service plan previously sent to you in accordance with Regulation 16).

23rd June 2020



Building Regulations

Part B – Fire Safety

- Fire resistance (walls and floors) typically 30mins for most detached dwellings – but not always.
- Fire protection in 2.5 storey homes and those with open plan layouts.
- Reaction to fire requirements close to site boundaries
- Structural building elements should have proven fire performance. E.G EN 1365.
- Emergency egress windows must have total area $>0.33\text{m}^2$ with no dim $<450\text{mm}$ and opening below 1100mm above floor level.
- Ensure road provides is sufficient to enable a fire appliance to be within 45m of all points within the dwelling

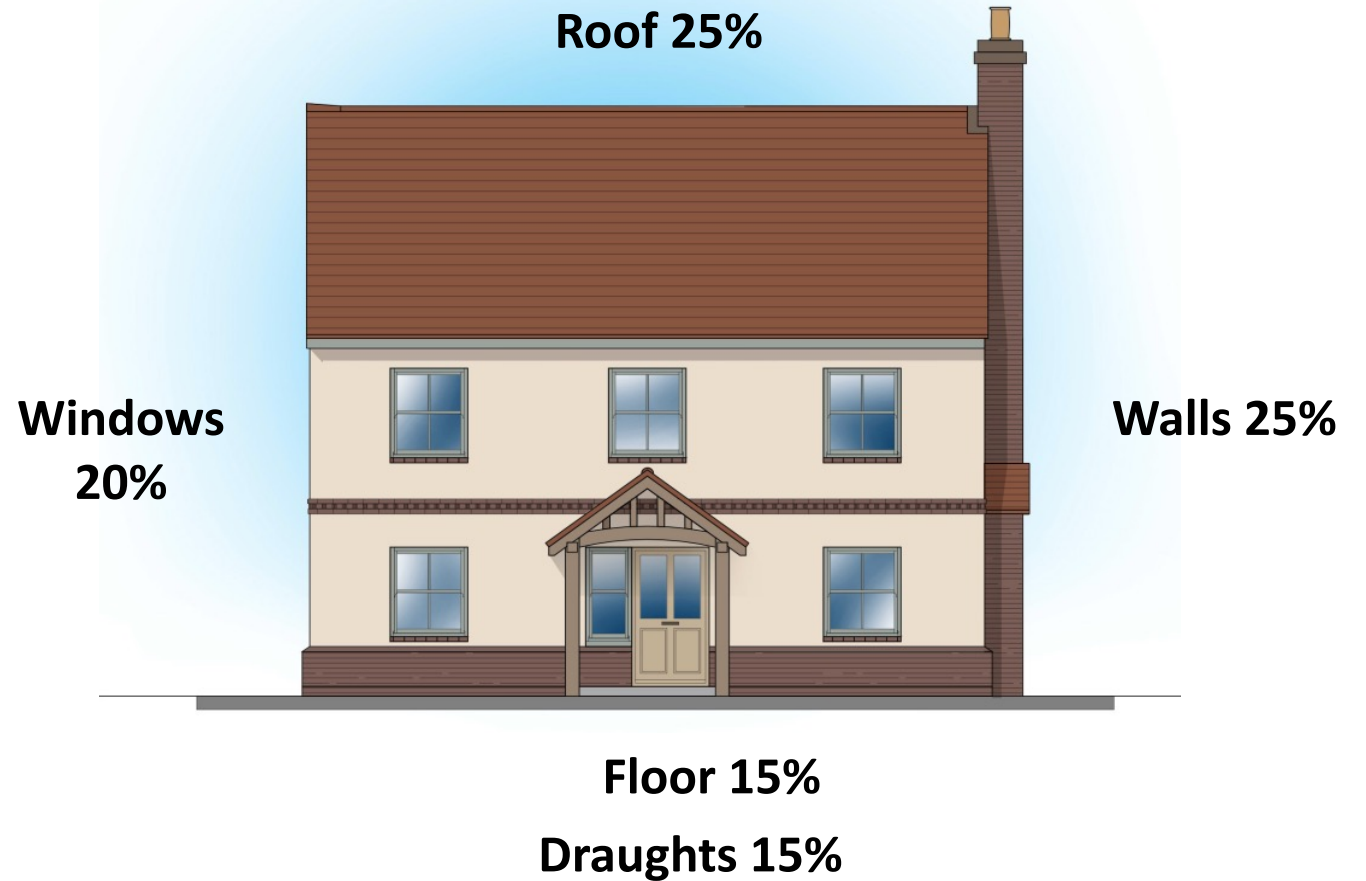


Building Regulations

Part L Conservation of fuel and power

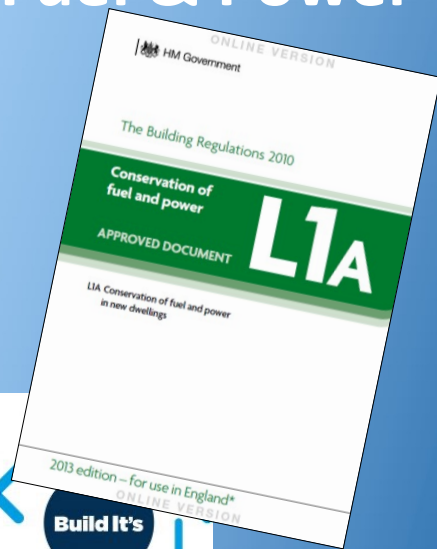
Energy efficiency

Typical heat loss - Building envelope and element performance



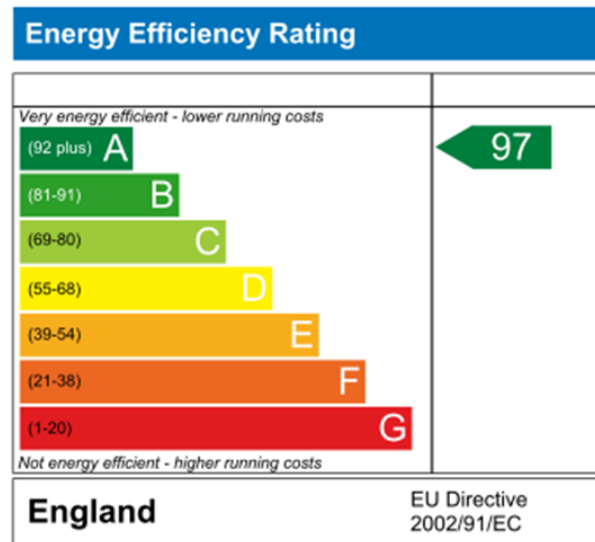
Building Regulations & SAP

Part L Conservation of Fuel & Power



New Part L is @ 30% improvement in Carbon Dioxide emission performance compared to previous version

The SAP measure is given on a scale of 1-100 based upon predicted running costs and reproduced on the EPC (Energy Performance Certificate)



SAP Report Submission for Building Regulations Compliance

Client: Mr & Mrs Stevenson

Project: Greenfields, London Road
St Ives, Cambridgeshire, PE27 5EU

Contact: Alexandru Ardelean
Alexandru Ardelean
alex.ardelean@kingspan.com

Report Issue Date: 04/02/2019

EXCELLENCE
IN ENERGY
ASSESSMENT

Building Regulations & SAP

Part L1A Conservation of Fuel & Power

Achieving SAP



Notional Dwelling Specification

Roofs	0.11 W/m ² K
Walls	0.18 W/m ² K
Floors	0.13 W/m ² K
Windows and doors	1.2 W/m ² K
Opaque doors	1.00 W/m ² K
Opening areas	Not greater than 25% of TFA
Heating	Gas, interlocked controls, WWHR
Solar PV	Required. Amount based on floor area kWP = 40% GFA/6.5
Air Tightness	5.00 m ³ /hr/m ² at 50 Pa
Thermal bridging	Table R2 psi-values so $\gamma = @0.05$
Lighting	Low energy throughout

Energy efficiency

Thermal bridging

This is mission critical – photographic evidence of ‘as built’ required

Junction Reference	External Wall / Ground Floor (E5)
Model Reference	E5 Parallel (Kingspan K103)
Date Calculated	09/08/2022

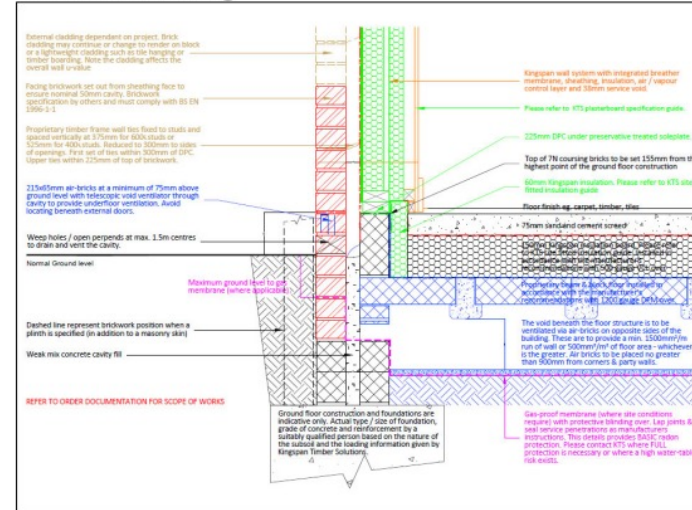
Total Heat Flow Q (W)	12.653
ΔT (K)	20
Length Wall lw (m)	1.5
Model Depth (m)	1
Modelling U-value Wall U'w (W/m ² K)	0.118
Modelling U-value Floor U'f (W/m ² K)	0.1150

Calculated Ψ -value (W/mK)	0.045
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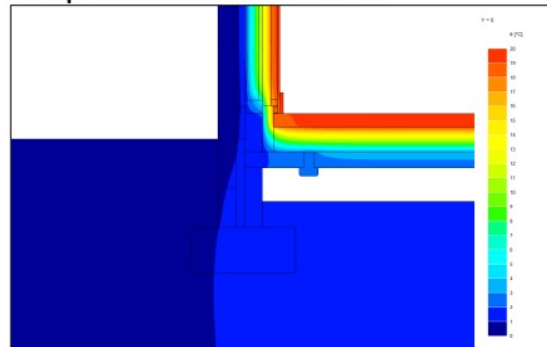
Internal Temperature Ti (K)	20
External Temperature Te (K)	0
Intermediate Temperature Tu (K)	2.13
Min Internal Surface Temperature Tsi (K)	18.83

Temperature Factor	0.94
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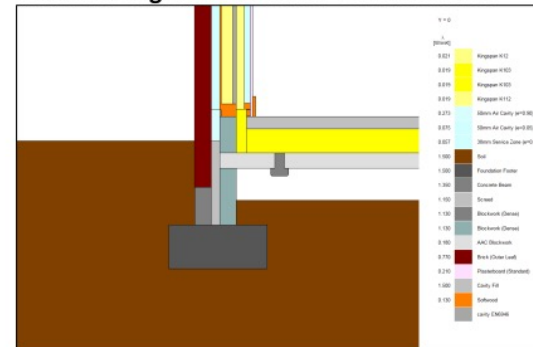
Architects Drawing



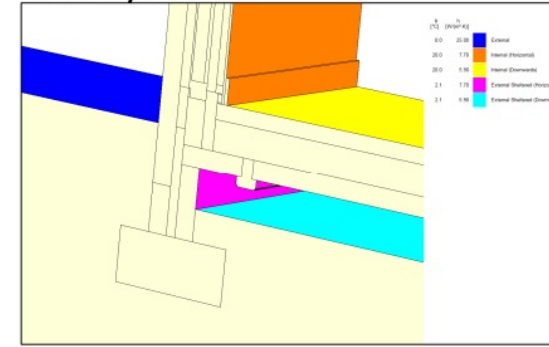
Temperature Distribution Profile



Material Legend & Thermal Conductivities



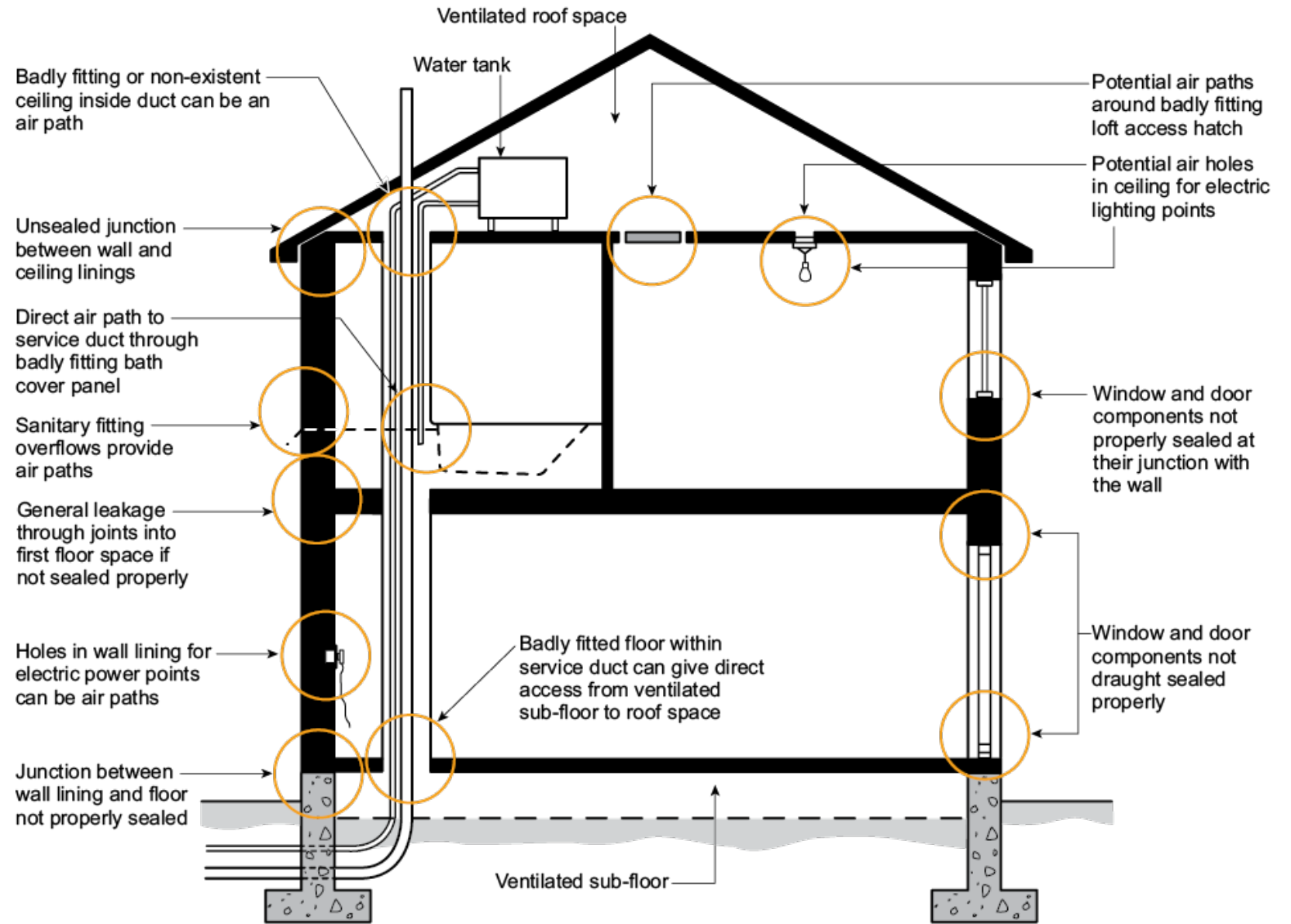
Boundary Conditions



Energy efficiency

Air-tightness & Ventilation

Photographic evidence of 'as built' required



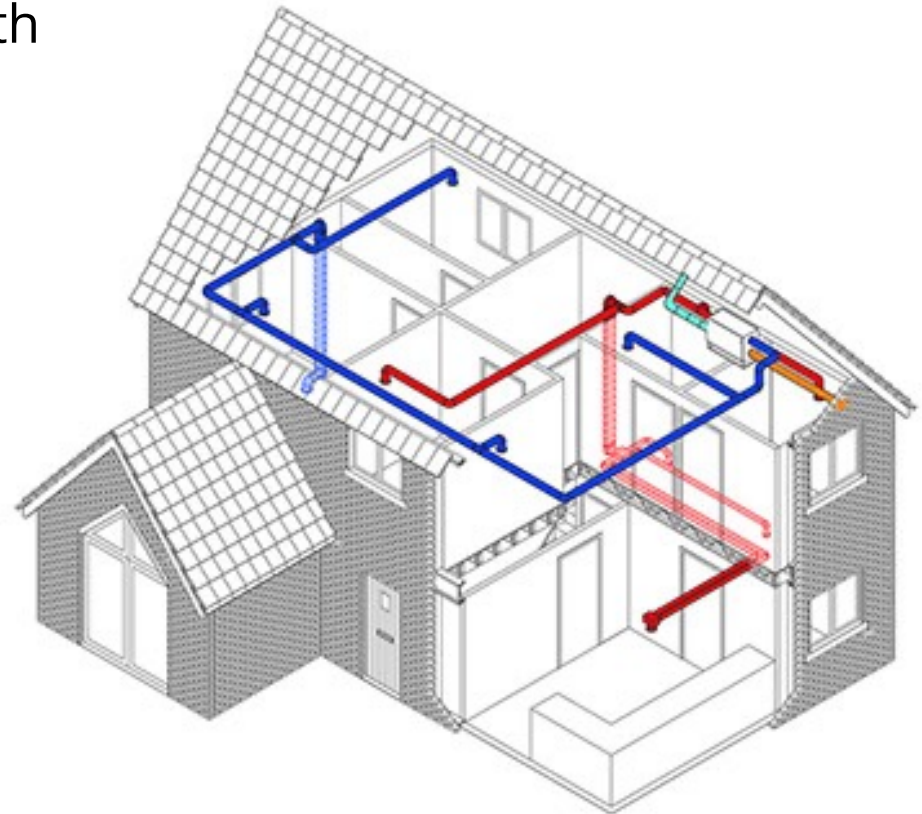
Energy efficiency

Air-tightness & Ventilation

- What is air-tightness target, is there a strategy?

“Build tight – Ventilate right”

- Is MVHR being used? Does a design exist? Does it clash with structural design?
- If background ventilation is natural - by trickle vents then check correct amount can be provided



Building Regulations

Part O - Overheating

- Overheating assessment needed – may affect architectural design so do early
 1. Limit unwanted solar gains in summer
 2. Provide adequate means to remove heat from the indoor environment - cross ventilation important.
 3. Assessment of glazing, glazed areas and opening characteristics.



elmhurst energy Approved Document O - Simplified Method Report
Created in the Elmhurst Overheating tool - For use in England only

Building and Site Details	
Residential building main number	1
Street	The Causeway
Town	Stowth
County	Cambridgeshire
Postcode	
Proposed building use/type of building	Dwelling
Are there any security, noise or pollution issues?	No
Site Details	Moderate site location with cross ventilation
Is this building high risk and shading strategy required?	No
Shading strategy included? (Give details)	N/A

Results			
	Target	Result	Pass/Fail
Maximum area of glazing (m ²)	Enter target from reference table 1	Enter result from Table 1	Pass
Maximum area of glazing in the most glazed room (m ²)	Enter target from reference table 1	Enter result from Table 1	Pass
Total minimum free area as % floor area (m ²)	19.40	19.44	Pass
Total minimum free area % glazing area (m ²)	17.26	19.44	Pass
<i>(The greater of the minimum free area floor area or glazing area should pass - highlighted in yellow)</i>			
Bedroom 1 minimum free area (m ²)	0.83	0.92	Pass
Bedroom 2 minimum free area (m ²)	0.61	0.92	Pass
Bedroom 3 minimum free area (m ²)	0.53	0.83	Pass
Bedroom 4 minimum free area (m ²)	0.48	0.83	Pass
Bedroom 5 minimum free area (m ²)	0.00	0.00	Pass

Dwelling overall result	
	Pass

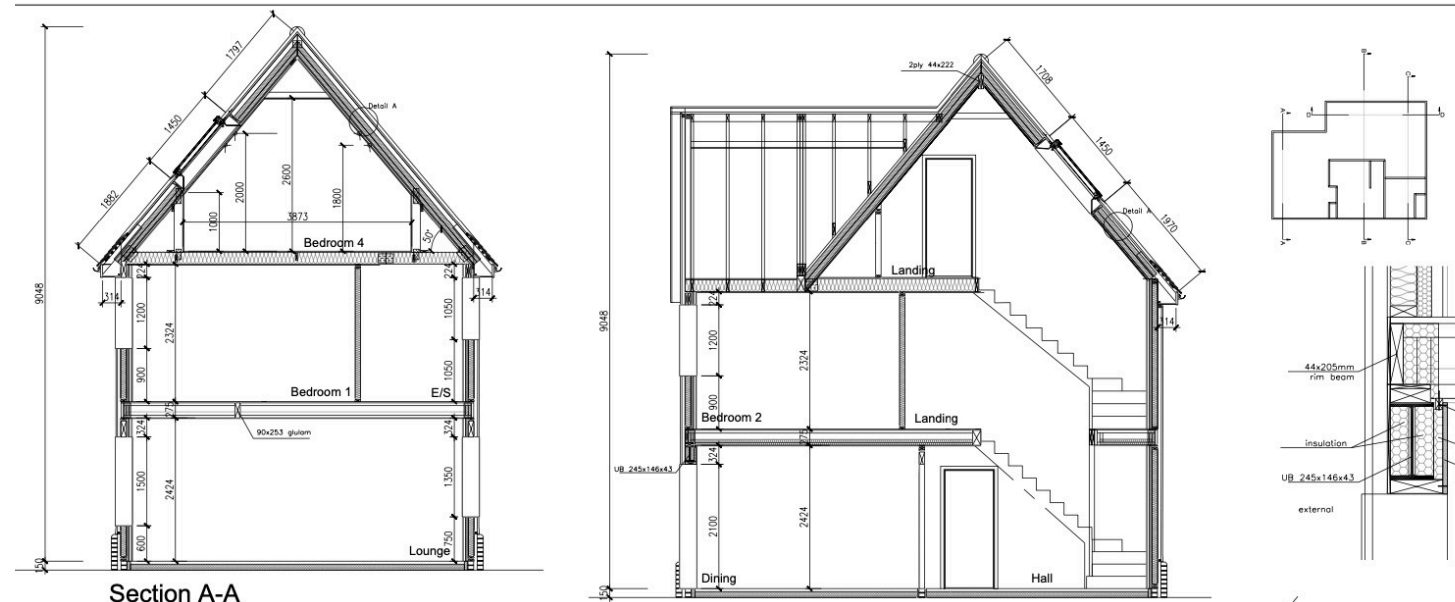
Designer's declaration

Designer's name	Keith Butler
Designer's organisation	Polton
Designer's email	keith.butler@kingston.com
Designer's contact number	01753 216435
Designer's signature	kbutler
Registration number (if applicable)	
Date of design	21/04/23 Based on Rev 0 Drawings



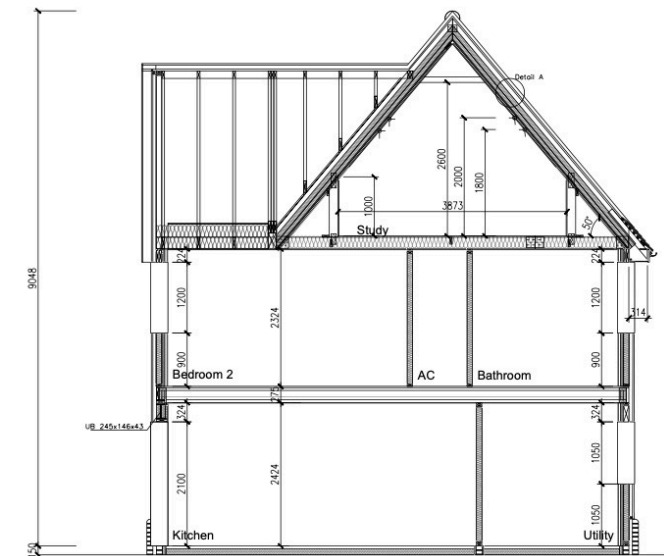
Building Regulations – the basics

A typical full plans application includes...

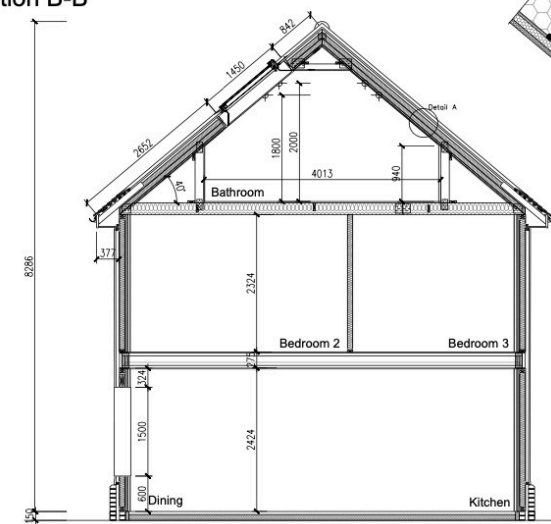


Section A-A

Section B-B



Section C-C

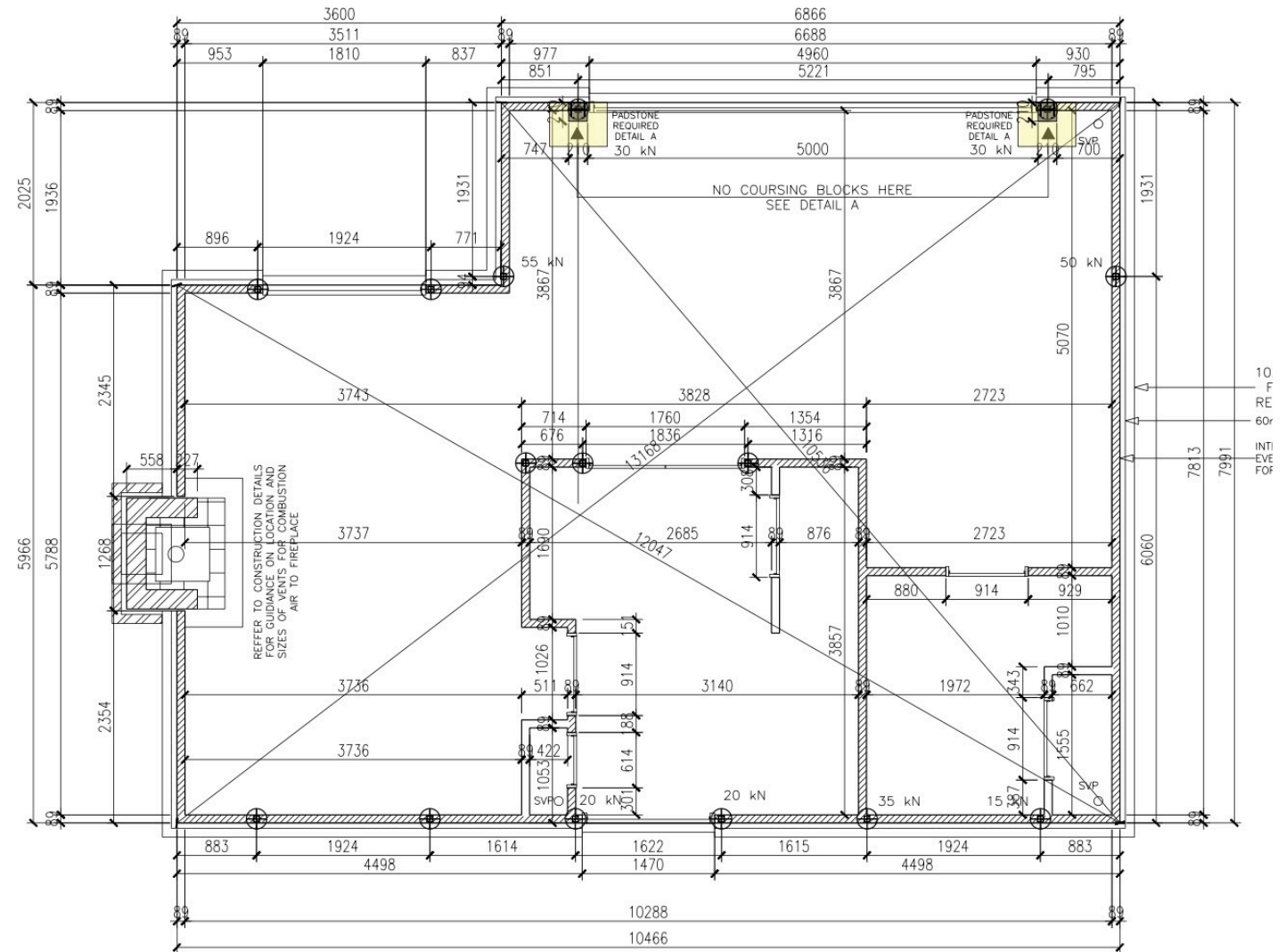


Section D-D



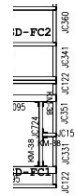
Building Regulations – the basics

A typical full plans application includes...

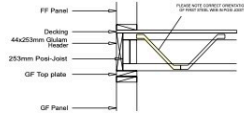


Building Regulations – the basics

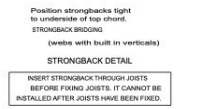
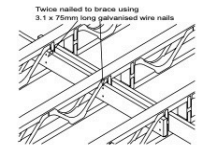
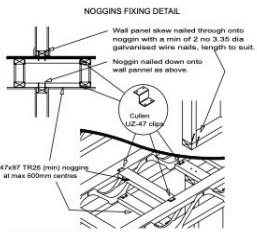
A typical full plans application includes...



SAFETY DECK
SAFE WORKING LOAD
150kg



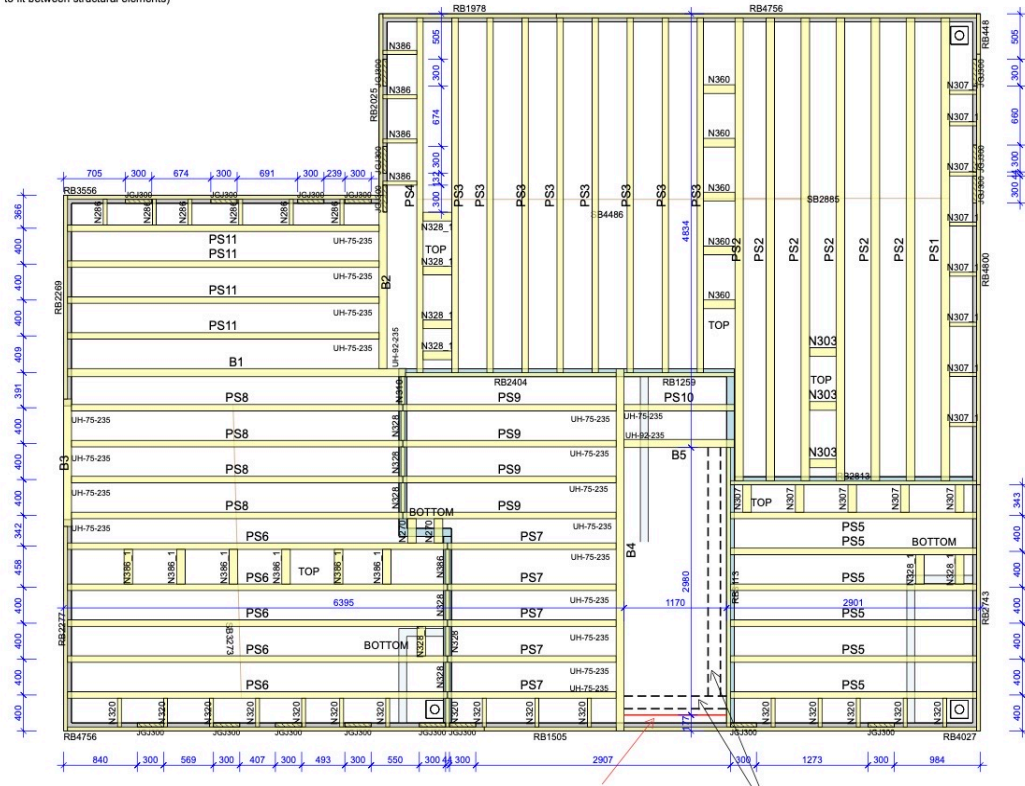
Note:
JOJ (45x253) blocking to be fixed with UH-46-235 Clip from the joist side
Nogginns to be fixed with UZ-47 Clip from both side



INSERT STRONGBACK THROUGH JOISTS BEFORE FIXING JOISTS. IT CANNOT BE INSTALLED AFTER JOISTS HAVE BEEN FIXED.

NON-LOADBEARING PARTITIONS PARALLEL TO FLOOR BEAMS

45/90/140x253x300 GL blocking (JGJ300/JGL300/JGK300) below point load (trimmed if necessary to fit between structural elements)

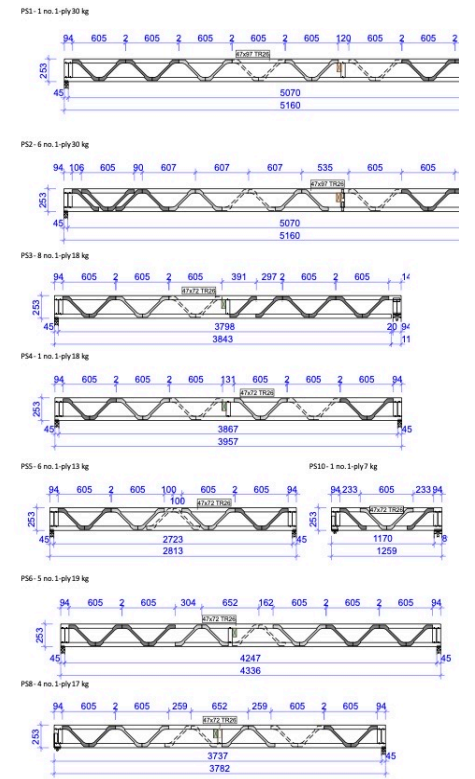


Battens line
Position of safety deck trimmers

7 no.	97x47	TR26	328	mm	N328_1
5 no.	97x47	TR26	360	mm	N360
5 no.	44x253	GL24h	386	mm	N386
6 no.	97x47	TR26	386	mm	N386_1
1 no.	44x253	GL24h	448	mm	RB448
1 no.	44x253	GL24h	1259	mm	RB1259
1 no.	44x253	GL24h	1505	mm	RB1505
1 no.	44x253	GL24h	1978	mm	RB1978
1 no.	44x253	GL24h	2025	mm	RB2025
1 no.	44x253	GL24h	2269	mm	RB2269
1 no.	44x253	GL24h	2277	mm	RB2277
1 no.	44x253	GL24h	2404	mm	RB2404
1 no.	44x253	GL24h	2743	mm	RB2743
1 no.	44x253	GL24h	2813	mm	RB2813
1 no.	44x253	GL24h	3113	mm	RB3113
1 no.	44x253	GL24h	3556	mm	RB3556
1 no.	44x253	GL24h	4027	mm	RB4027
2 no.	44x253	GL24h	4756	mm	RB4756
1 no.	44x253	GL24h	4800	mm	RB4800

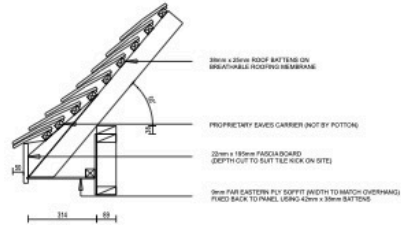
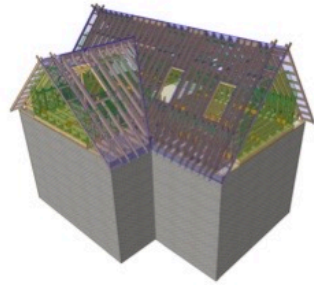
Rim board

Strongback 47x97 1x2885, 1x3273, 1x4486 mm

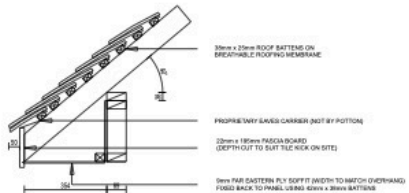


Building Regulations – the basics

A typical full plans application includes...

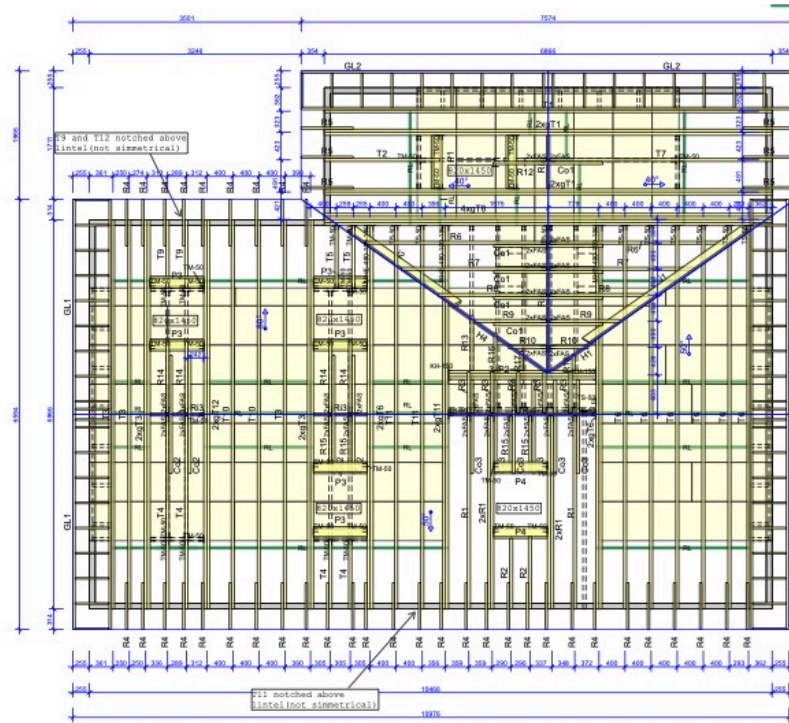
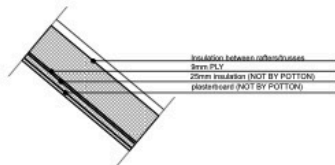


50° -PLAIN TILE- BOXED EAVES DETAIL (SCALE 1:15)
TO BE READ IN CONJUNCTION WITH THE CONSTRUCTION DETAILS STANDARD EAVES DETAIL & TILE MANUFACTURERS TECHNICAL DETAILS.
EXAMPLE TILE SHOWN: REDLAND 'PLAIN' TILE



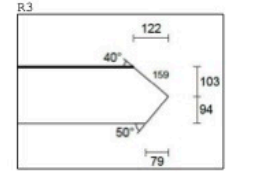
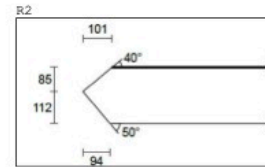
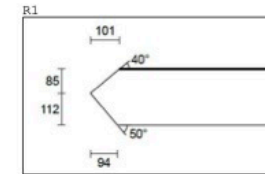
40° -PLAIN TILE- BOXED EAVES DETAIL (SCALE 1:15)
TO BE READ IN CONJUNCTION WITH THE CONSTRUCTION DETAILS STANDARD EAVES DETAIL & TILE MANUFACTURERS TECHNICAL DETAILS.
EXAMPLE TILE SHOWN: REDLAND 'PLAIN' TILE

Ply bracing detail (scale 1:15)



Infill schedule

Description	Material	Width	Depth	Length	Stock Length	Qty
CO3	TR26	47	97	1672	1800	5
CO2	TR26	47	97	1834	1950	4
CO3	TR26	47	97	1463	1500	6
H1	TR26	47	197	1419	1500	1
H4	TR26	47	172	2643	2700	1
I1	C24	44	147	3639	3900	1
I2	C24	44	147	2429	2700	1
P1,P3,R13	TR26	47	197	820	900	10
ZXP2	TR26	47	172	2260	2400	1
P4	TR26	47	197	823	900	2
ZXR1	TR26	47	197	4705	4800	2
R1	TR26	47	197	4705	4800	2
R2	TR26	47	197	1782	2100	2
R3	TR26	47	197	1097	1200	5
R4	TR26	35	97	1229	1500	37
R5	TR26	35	122	1143	1200	6
R6	TR26	47	197	3799	3900	2
R7	TR26	47	197	3056	3300	2
R8	TR26	47	197	2316	2400	2
R9	TR26	47	197	1724	1800	2
R10	TR26	47	197	930	1200	2
R12	TR26	47	197	764	900	1
R13	TR26	47	197	1604	1800	1
R14	TR26	47	197	1702	1800	4
R15	TR26	47	197	1331	1500	4
R16	TR26	47	197	1237	1500	1
R17	TR26	47	197	799	900	1
R18	TR26	47	197	723	900	1
R11	TR26	47	197	2319	2400	1
R12	TR26	47	197	820	900	1
R14	TR26	47	197	2260	2400	1

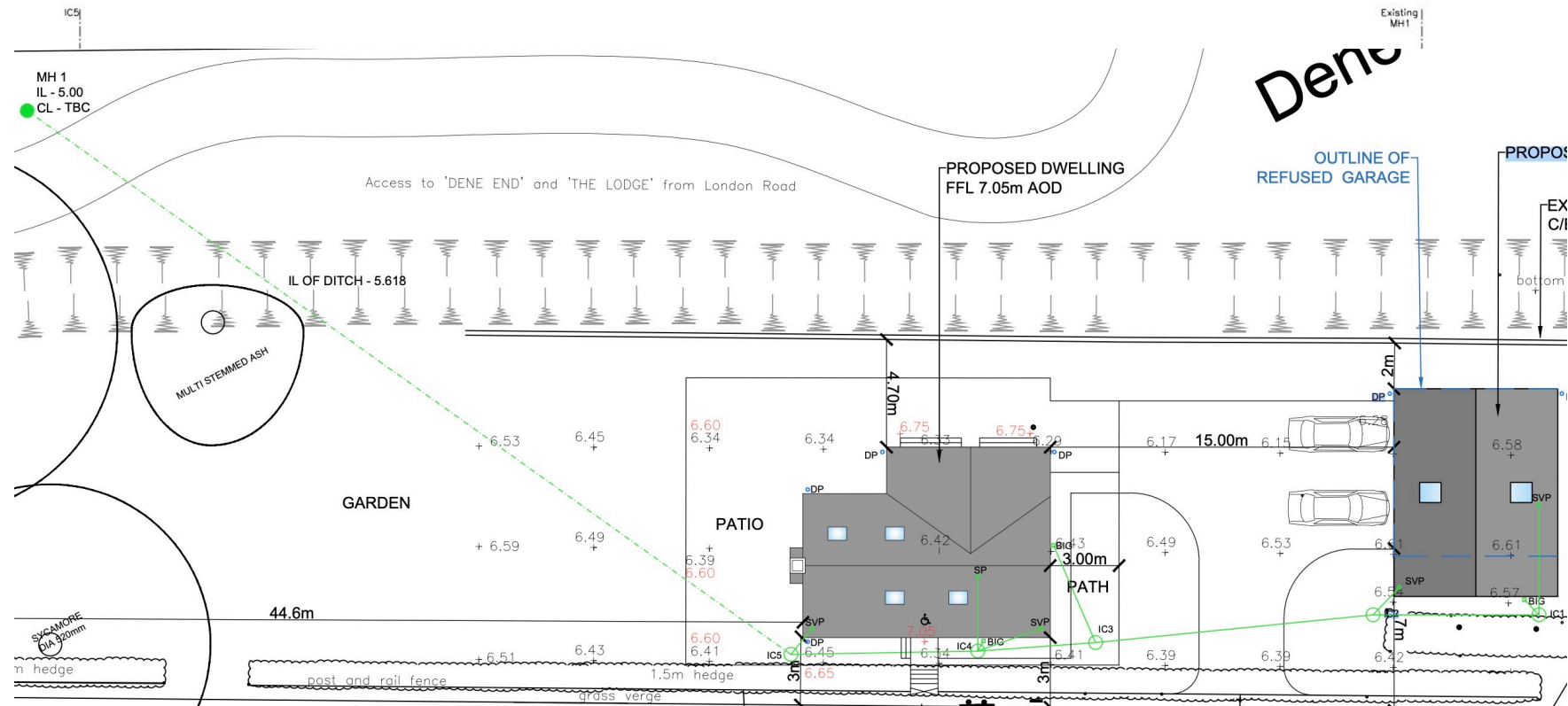
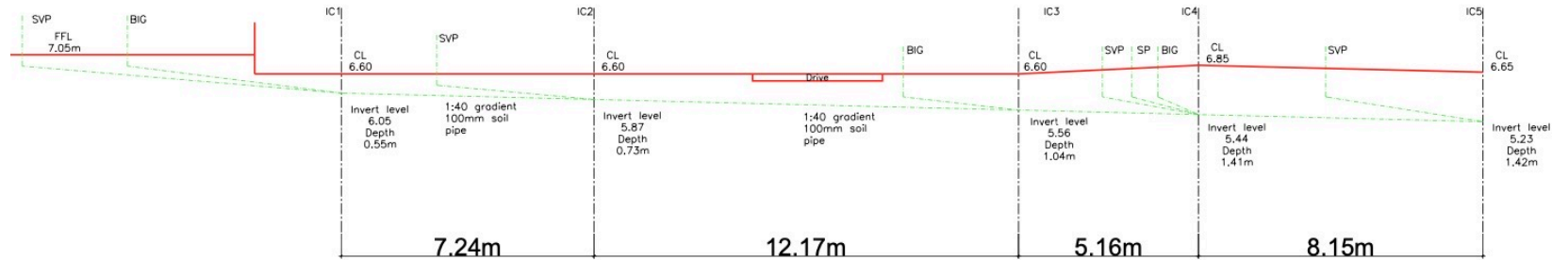


Building Regulations – the basics

A typical full plans application includes...



DRAINAGE SECTIONS - SCALE 1:100
BASED ON A PROPOSED FFL OF 7.05m AOD



Building Regulations – the basics

A typical full plans application includes...



External cladding dependant on project. Brick cladding may continue or change to render on block or a lightweight cladding such as tile hanging or timber boarding. Note the cladding affects the overall wall u-value

Masonry cladding set out from sheathing face to ensure a 50mm cavity is maintained

Proprietary timber frame wall ties fixed to studs and spaced vertically at 375mm for 600% studs or 525mm for 400% studs. Reduced to 300mm to sides of openings. First set of ties within 300mm of DPC. Upper ties within 225mm of top of cladding.

215x65mm air-bricks at a minimum of 75mm above ground level with telescopic void ventilator through cavity to provide underfloor ventilation. Avoid locating beneath external doors.

Weep holes / open perpend at max. 1.5m centres to drain and vent the cavity.

Normal Ground level

Maximum ground level to gas membrane (where applicable)

Dashed line represent brickwork position when a plinth is specified (in addition to a masonry skin)

Weak mix concrete cavity fill

12.5mm plasterboard to provide 30 minute fire protection

Kingspan wall system with integrated breather membrane, sheathing, insulation, vapour control layer and 38mm service void.

225mm DPC under preservative treated soleplate.

Top of 7N coursing bricks to be set 155mm from the highest point of the ground floor construction

60mm Kingspan Kooltherm K103 perimeter insulation

Floor finish eg. carpet, timber, tiles

65mm sand and cement screed.

90mm Kingspan Kooltherm K103 insulation board installed in accordance with the manufacturer's recommendations with 500 gauge VCL over

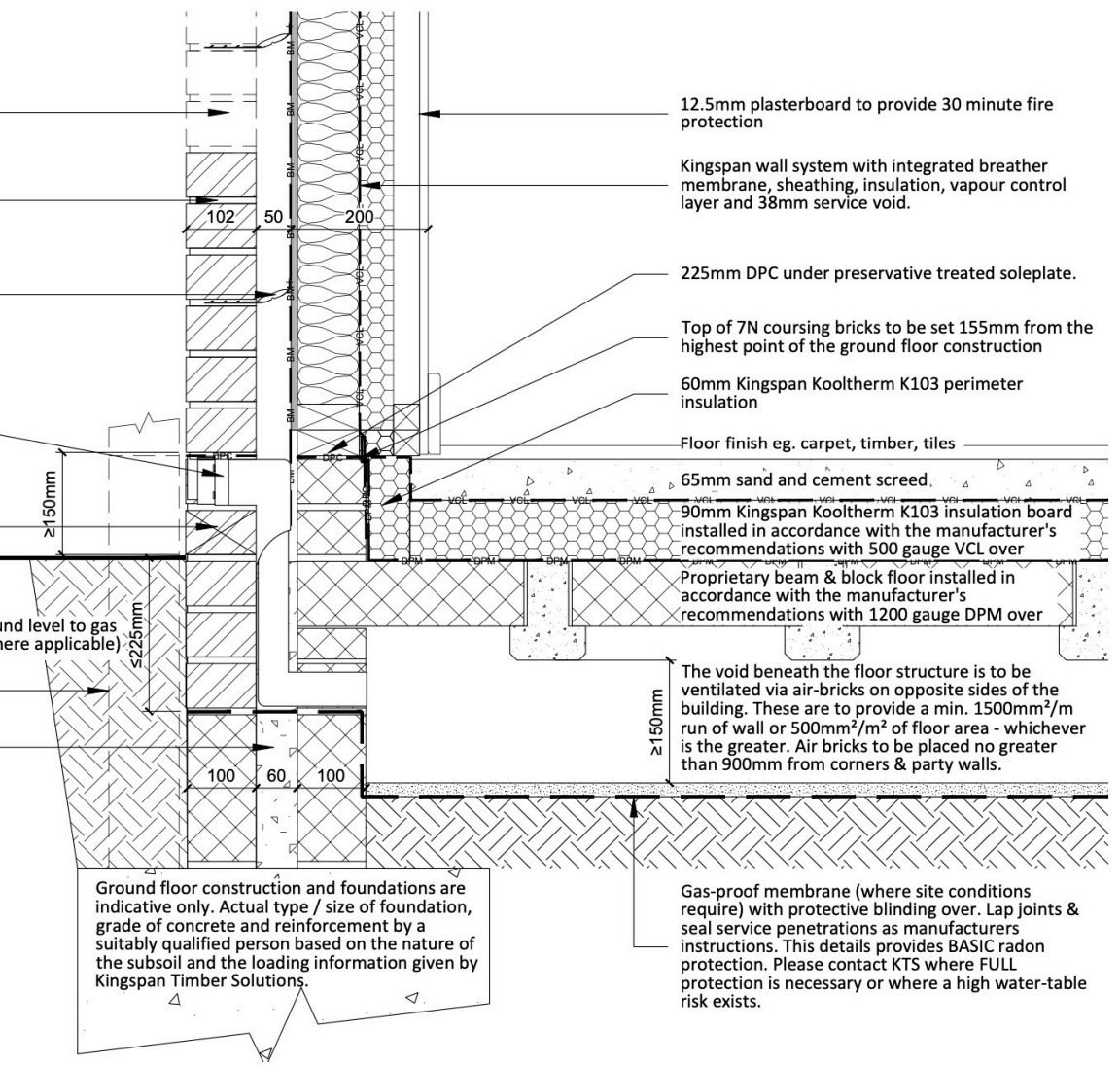
Proprietary beam & block floor installed in accordance with the manufacturer's recommendations with 1200 gauge DPM over

The void beneath the floor structure is to be ventilated via air-bricks on opposite sides of the building. These are to provide a min. 1500mm²/m run of wall or 500mm²/m² of floor area - whichever is the greater. Air bricks to be placed no greater than 900mm from corners & party walls.

Gas-proof membrane (where site conditions require) with protective blinding over. Lap joints & seal service penetrations as manufacturers instructions. This details provides BASIC radon protection. Please contact KTS where FULL protection is necessary or where a high water-table risk exists.

REFER TO ORDER DOCUMENTATION FOR SCOPE OF WORKS

Ground floor construction and foundations are indicative only. Actual type / size of foundation, grade of concrete and reinforcement by a suitably qualified person based on the nature of the subsoil and the loading information given by Kingspan Timber Solutions.



Managing quality

10 year structural warranty

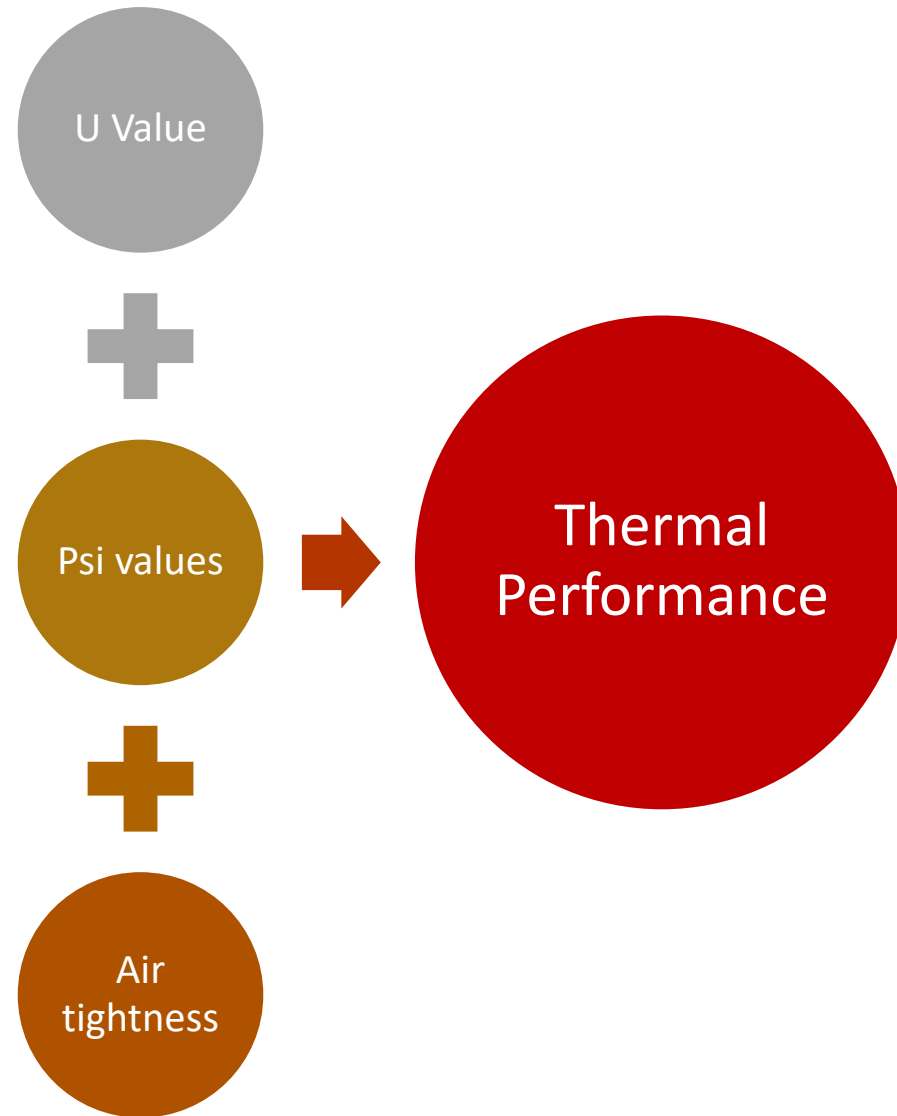
- Absolutely essential in my opinion
- A requirement of your lender
- A good idea if you intend to sell
 - The purchasers conveyancing solicitor will ask for evidence
- For a turnkey project, should be arranged by the builder
- Can be purchased from a number of providers
- Is there an alternative?



Completing your design Choosing a build system



Energy efficiency



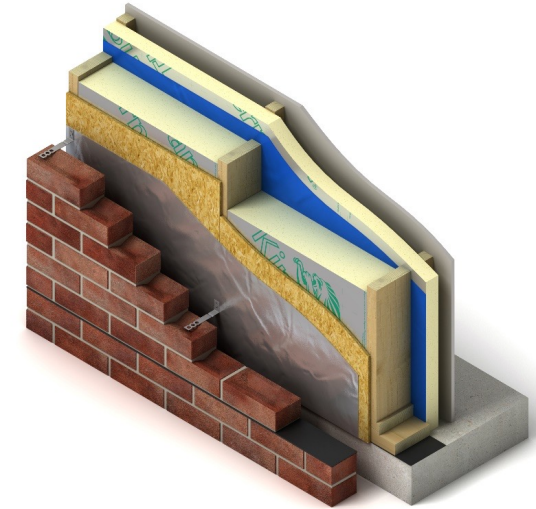
Choosing a building system

Choosing a building system for your new home is a big decision that in a few cases must be taken early!

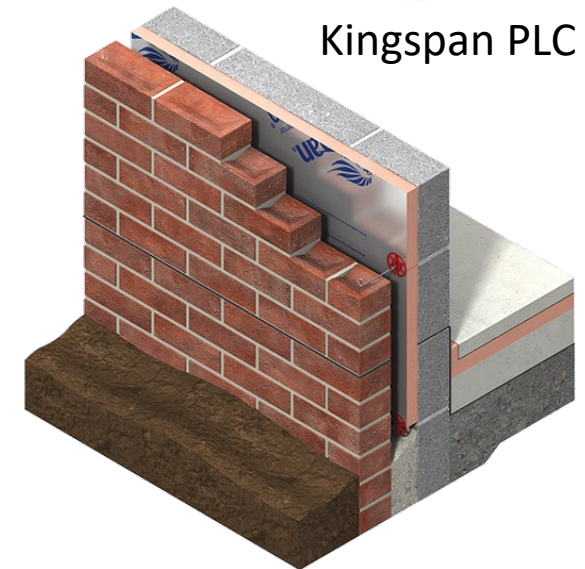
The method you choose to build will have implications on practically every level of your project;

- Cost
- Speed of build
- Performance – energy, fire, structure, acoustic
- Design flexibility
- Design and construction responsibility / risk
- Health & Safety

Let's consider some of the pros and cons of the main two options; masonry and timber frame



Kingspan PLC



Timber Systems

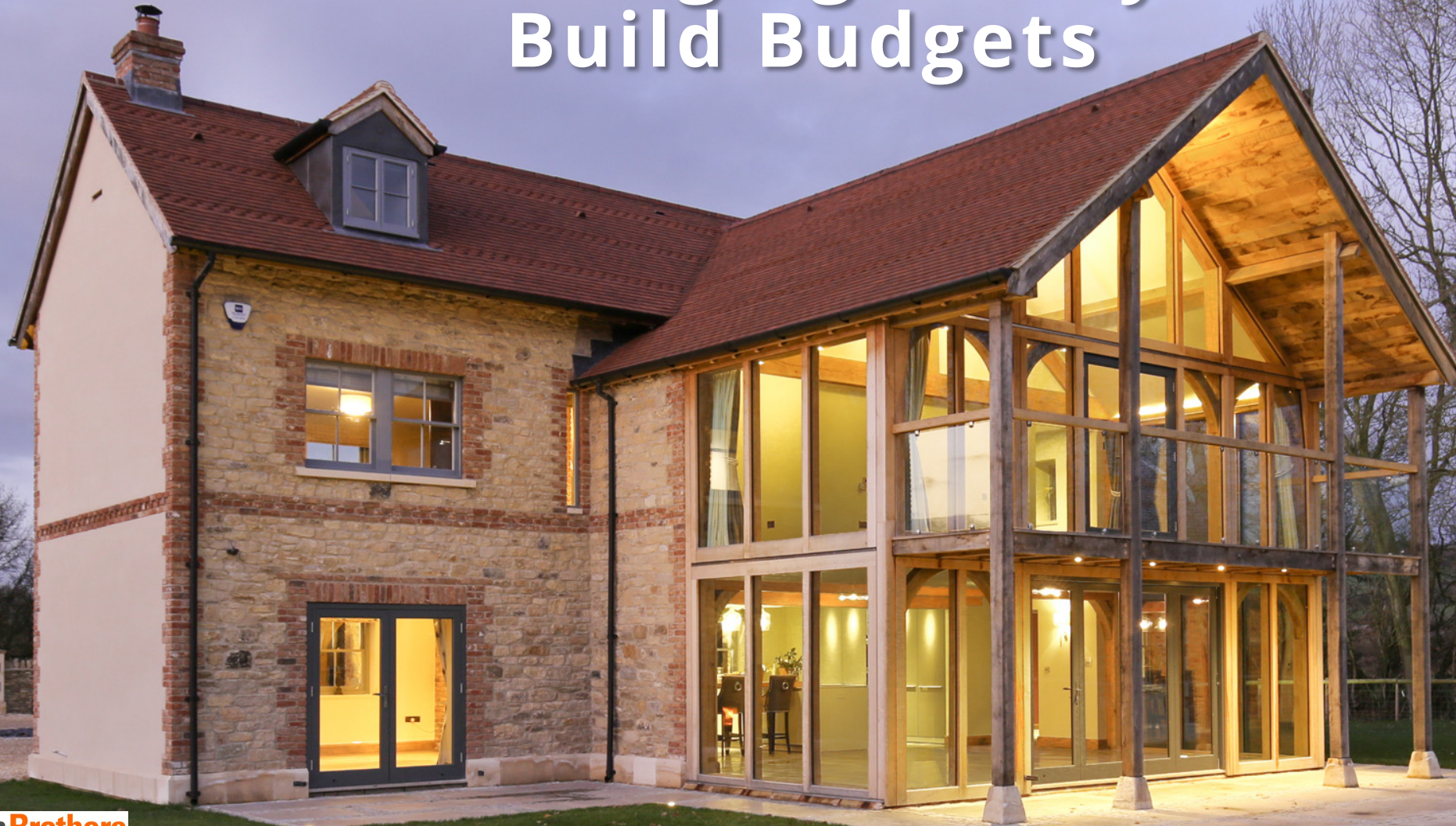
- Prefabricated whole house building system forms the structural envelope.
- Building systems include roofing and flooring elements to form a coherent engineered building structure.
- More than structural solutions - also underpin thermal, acoustic and fire performance
- Different systems deliver varying levels of thermal performance & design flexibility
- Manufacturers are appointed to design, manufacture and erect the frame offering **single point responsibility for the building structure**



Masonry or Timber?



Managing Money Build Budgets



Build Budgets

Why are budgets important?

- Help to balance what you can afford
- Will give funders confidence
- Provides a shopping list of what to buy.
- Provides the basis of cost control
- Offers an early warning

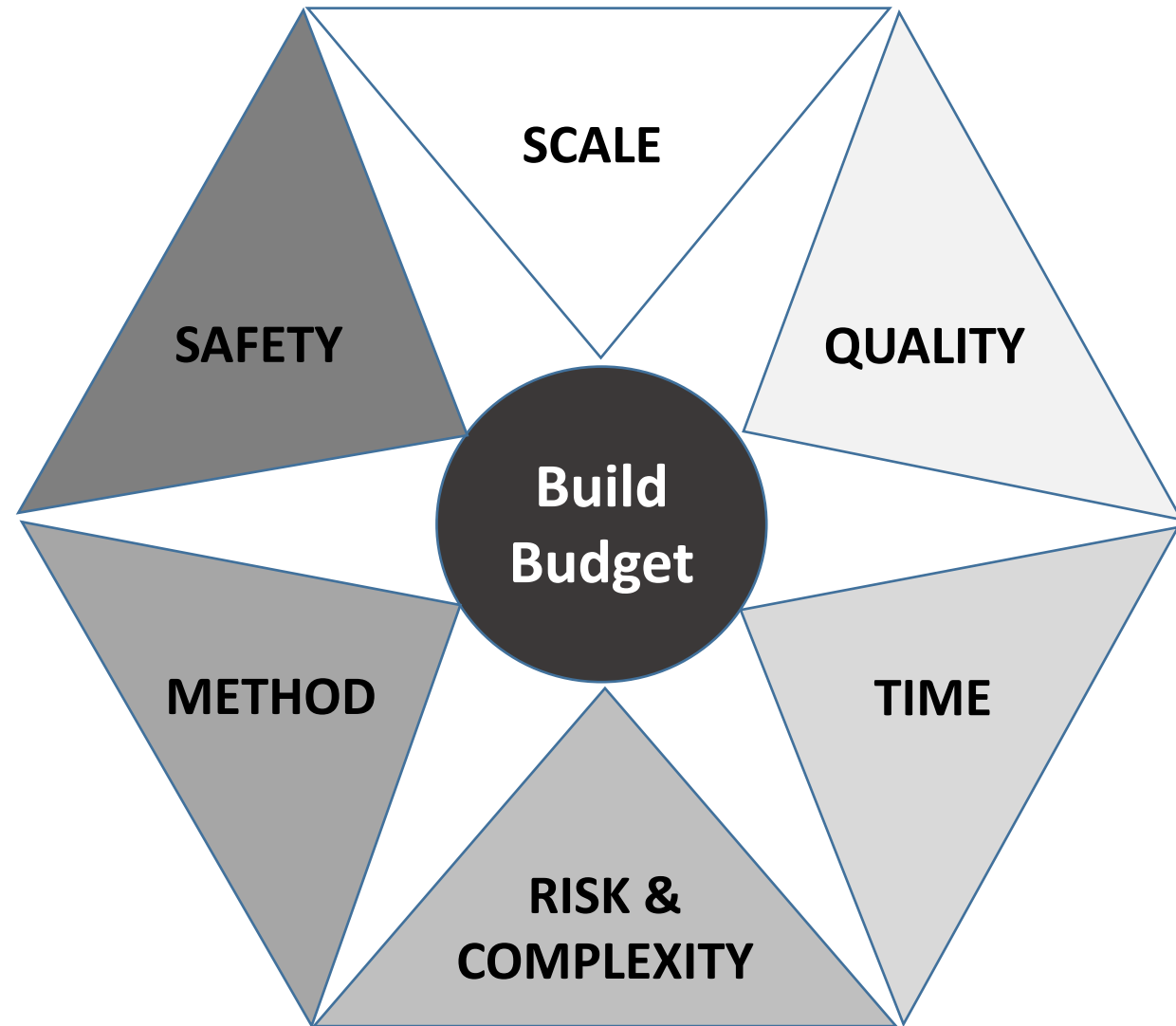
Budgets should be?

- Put together at the outset of a project.
- Realistic and 'tested' against the market.
- Accurate and reflect the work needed.
- Monitored and updated throughout the build.
- Deliverable and reflective of what you can afford.

Financial problems and over runs usually start life as a bad budget or a half-baked plan!



Six factors that affect budgets



All of these factors will be influenced by your experience, level of expertise and knowledge of what things should cost



Putting together a build budget

Working out the build budget is an interactive process of checking and validating decisions

- 1) Decide how much you want to spend
- 2) Decide how you intend to build
- 3) Set a guide project budget
- 4) Complete the design
- 5) Put together a detailed scope of work
- 6) Validate budget assumptions
 - Quotations
 - Professional advice
 - Comparison with other projects
- 7) Finalise the budget
- 8) Monitor and adjust as the project progresses



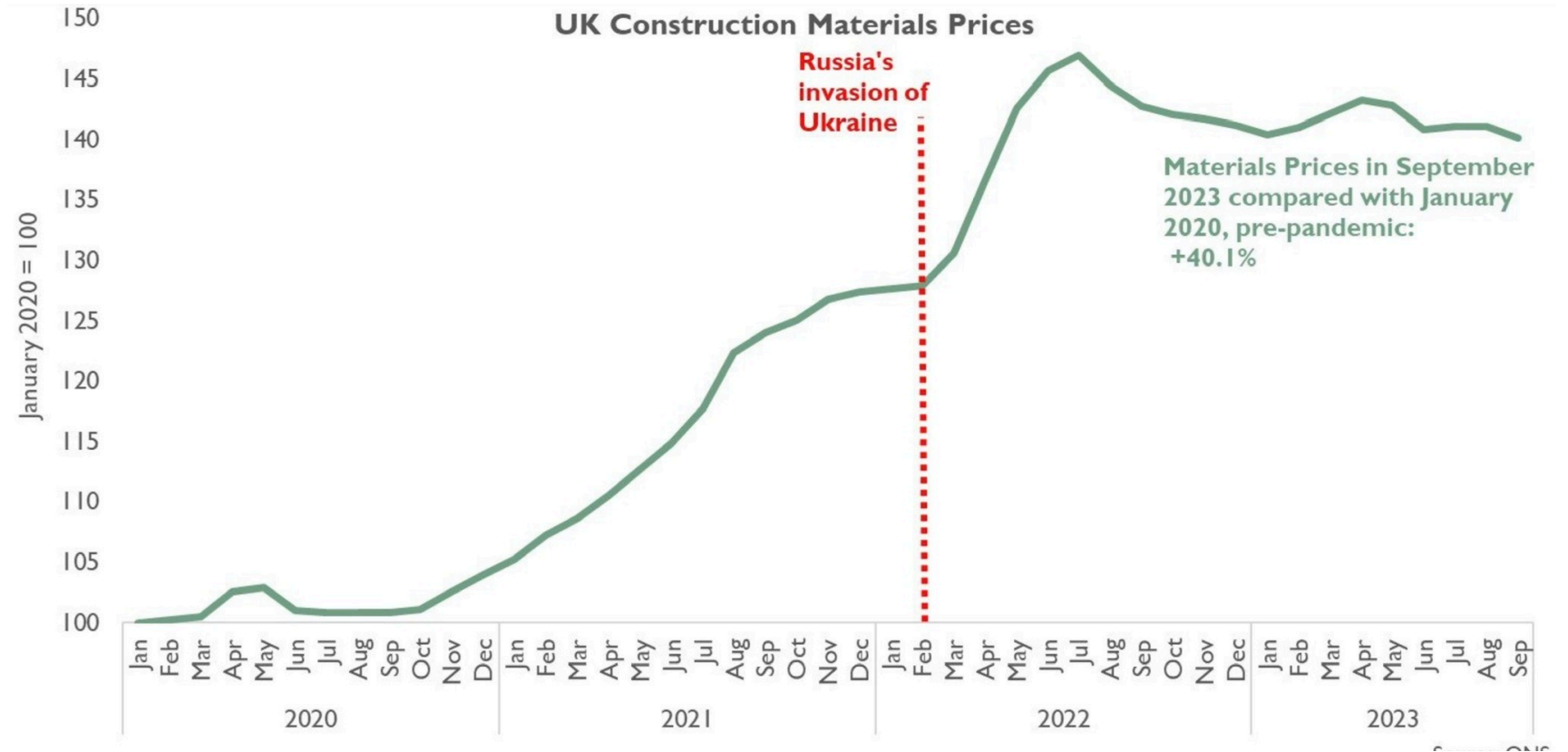
What's the industry average cost today?



Source Noble Francis CPA



What's the industry average cost today?



Source Noble Francis CPA

A typical New Build Budget – my view

N.B. These allowances are based on an average of 4 typical self build projects



Guide build cost comparisons

Total square meters
Total square feet

Timber frame package
Windows and Doors (Inc labour)
Strip foundation /Slab
External Cladding; brick, render, boarding etc
Roof coverings inc velux / dormers / roof line
Plastering & screeding
Kitchens (inc finishes)
Plumbing & Heating (underfloor)
Internal Joinery (inc labour)
Landscaping (PC Sum)
Bathrooms (sanitaryware & tiling)
Decoration
Scaffolding
Electrics
Prelims
Services connections
Staircase (PC Sum)
Structural Warranty
Site Insurance

Total Build Cost
Contingency (say 7.5% - risk dependant)
Client managed cost /m2 (Excluding Contingency)
Client managed cost/ft² (Excluding Contingency)
Total Guide Build Cost (Including Contingency)

Guide prices from Jan 24

Caxton Show House	Gransden Showhouse	Milchester Showhouse	Wickhambrook Showhouse	Average
162	259	284	267	243
1740	2786	3057	2822	2601

Cost / m2

£120,124	£182,393	£164,884	£177,386	£161,197	£663.36
£25,010	£67,137	£96,191	£48,453	£59,198	£243.61
£42,000	£62,320	£50,545	£45,816	£50,170	£206.46
£29,924	£43,911	£40,104	£48,172	£40,528	£166.78
£31,113	£35,447	£33,110	£36,918	£34,147	£140.52
£23,700	£31,100	£42,600	£36,000	£33,350	£137.24
£21,000	£25,000	£30,000	£27,000	£25,750	£105.97
£21,400	£29,320	£31,580	£29,887	£28,047	£115.42
£13,574	£16,682	£22,472	£29,710	£20,610	£84.81
£15,425	£16,611	£17,798	£17,204	£16,759	£68.97
£12,136	£15,280	£16,001	£15,900	£14,829	£61.03
£11,967	£16,228	£18,200	£17,566	£15,990	£65.80
£7,950	£11,865	£10,679	£11,865	£10,590	£43.58
£11,200	£15,400	£16,900	£16,000	£14,875	£61.21
£9,000	£9,000	£9,000	£9,000	£9,000	£37.04
£7,500	£7,500	£7,500	£7,500	£7,500	£30.86
£3,560	£4,746	£7,119	£8,306	£5,933	£24.41
£4,500	£5,500	£5,850	£5,500	£5,338	£21.97
£2,575	£2,575	£2,750	£2,675	£2,644	£10.88

£413,655	£598,015	£623,282	£590,858	£556,452	
£31,024	£44,851	£46,746	£44,314	£41,734	
£2,553	£2,309	£2,195	£2,213	£2,290	
£238	£215	£204	£209	£214	
£444,680	£642,866	£670,028	£635,172	£598,186	

A typical New Build Budget – What others think

Guide build cost comparisons

Total square meters
Total square feet

Guide prices from Jan 2024

Caxton Show House	Gransden Showhouse	Milchester Showhouse	Wickhambrook Showhouse
162	259	284	262
1740	2786	3057	2822

Average
242
2601

Client managed cost / m2	£2,553	£2,309	£2,195	£2,213	£2,290
Project managed cost / m2 (10% Fee)	£2,809	£2,540	£2,414	£2,434	£2,519
Turnkey builder cost / m2 (22.5% overheads & Profit)	£3,128	£2,828	£2,688	£2,711	£2,805

110%
122.5%

On line calculators for a 242m2 two story house of high standard of finishing **Guide prices from Nov Sept 2023**

Build It Cost calculator	Self Manage	£567,734
	Builder	£617,102
Home Building & Rennovating	Self Manage	N/A
	Builder	N/A
RICS Rebuild Calculator (based upon rebuild of existing property)	Builder	£538,000
Average Self Manage	Self Manage	insufficient data
Average Builder	Builder	

Cost / m2

£2,348
£2,553
N/A
N/A
£2,223
£2,388



Is this right for every project

Every project is unique and your choices and decisions will influence the costs involved.

Costs will also be influenced by;

- Personal preferences
- The quality of design
- The build route - Self manage or Project Manager or Builder
- How well the project is managed
- Speed of build
- Quality of the finished product

Timber frame package	29.0%
Windows and Doors (Inc labour)	10.6%
Strip foundation /Slab	9.0%
External Cladding; brick, render, boarding et	7.3%
Roof coverings inc velux / dormers / roof line	6.1%
Plastering & screeding	6.0%
Kitchens (inc finishes)	4.6%
Plumbing & Heating (underfloor)	5.0%
Internal Joinery (inc labour)	3.7%
Landscaping (PC Sum)	3.0%
Bathrooms (sanitaryware & tiling)	2.7%
Decoration	2.9%
Scaffolding	1.9%
Electrics	2.7%
Prelims	1.6%
Services connections	1.3%
Staircase (PC Sum)	1.1%
Structural Warranty	1.0%
Site Insurance	0.5%
Total Build Cost	100.0%
Contingency (say 7.5% - risk dependant)	7.5%



Example
@ January 2024

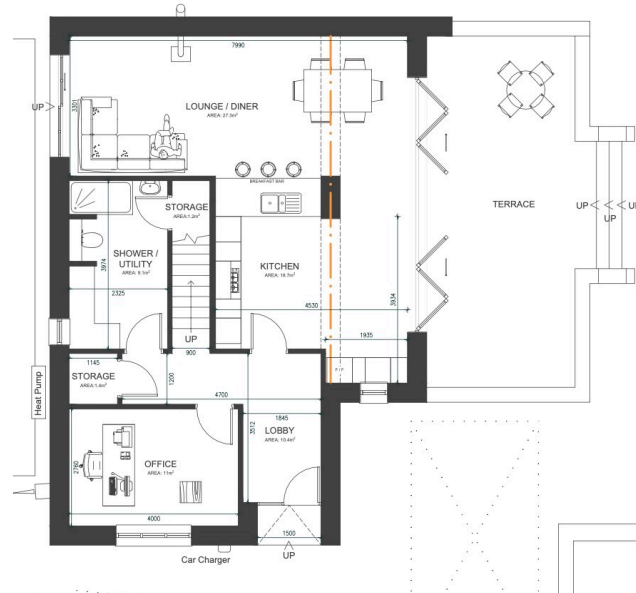
**Self
Managed** £2460/m²

**Project
Managed** £2700/m²

Builder £3000+/m²



Proposed Elevation (S.E.)



Proposed Elevation (N.W.)

Credit: Lloyd Harden Architects



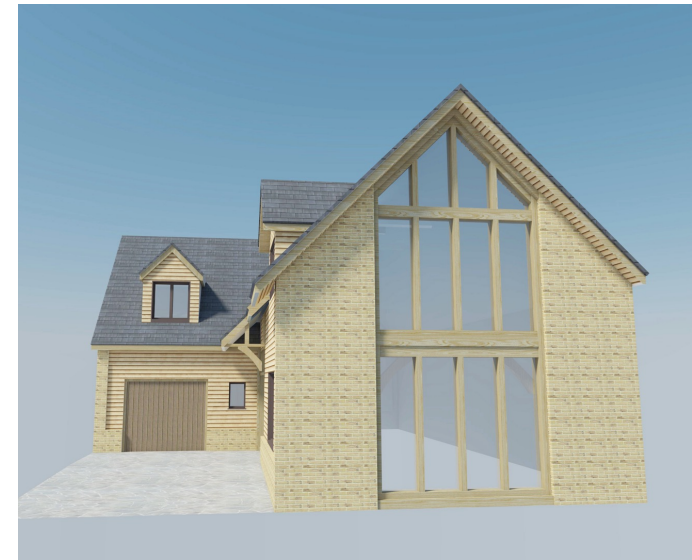
Managing Money Controlling cost



Controlling cost

Keep things simple, tried and tested

- complex buildings add cost.
- Don't reinvent the wheel, use systems that are proven to work with known cost and recognized by funders.
- Get the interfaces between design elements right – this is where money leaks.
- Complete the design before you start to build. If you can draw it, you can build it!



Controlling cost

Always value engineer the proposals

Ask if there's any alternative, cheaper ways to achieve the same thing?

- A standard process on commercial projects .
- Don't be dissuaded by designers not wanted to revise drawings
- Know what are must haves and nice to haves.
- Use engineers to avoid unnecessary cost e.g. foundation designs.
- Invest in things that cant be changed at a later date – structure, thermal performance etc.

Areas of cost impact;

1. Scale
2. Complexity
3. Specification
4. When things go wrong



Controlling cost

VAT



Know the VAT Rules

Some projects are VAT exempt, therefore take care to manage the VAT to avoid losing money.

- VAT should be charged correctly by contractors for the project;
 - New builds zero rated for VAT.
 - Conversions reduced to 5% (must apply).
- For materials only, you have to pay the VAT and reclaim it at completion.
- The arrangements for reclaiming VAT are set out in VAT notice 431N .
- Services provided by subcontractors, such as roofers, bricklayers, plumber. carpenters etc. should all be zero-rated so you shouldn't pay any VAT on these.
- You can claim for most building materials which you purchase yourself, with a few exceptions. As a rule of thumb, building materials must be incorporated into the building or site.
- VAT receipts must be submitted to evidence any claims.
- Have a read <https://www.gov.uk/vat-building-new-home>.



Controlling cost –

Manage contingencies

Manage problems – have a contingency.

Contingencies are essential for overcoming the unexpected and getting your project finished. Funders will also expect to see a healthy allowance.

All budgets should include a contingency allowance – circa 10% to 20%. The level of contingency will depend upon the project risks.



Controlling cost

How you can make an impact?

Figure out where spending your time positively affects the budget

- Firstly, do your research
- DIY might save money unless its done badly.
- Sourcing materials can often save money.
- Think of the opportunity costs.
- Be the bridge between trades.
- Focus on making sure the site is ready for the trades to be productive.
- Don't be indecisive.
- Pay people fairly but always on time.



Managing Time



Pre-start Plan

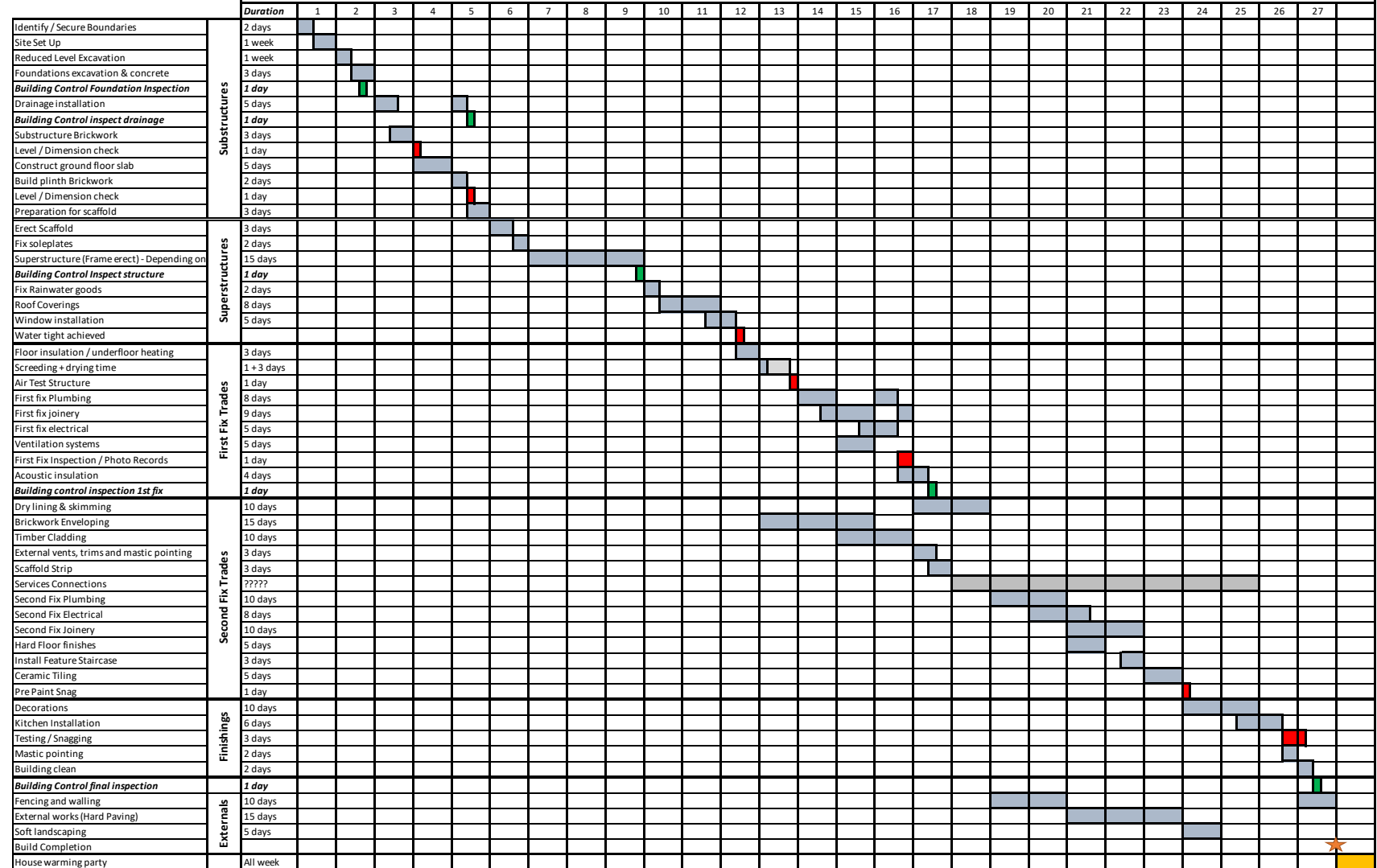
- Very important to ensure you start at the right time.
- Helps to organise consultants to complete their work on time.
- Avoids delays on site which can cost time & money
- Enables the construction phase to be efficient and effective

Pre-start Planner		-10	-9	-8	-7	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5
Finalise project finance	Finalised budget & funding arrangements																
	Check the capflow works																
Address Planning conditions (Minimum 8 weeks to resolve) - Depending upon conditions included within the consent	Receive planning consent		*														
	Resolve planning conditions																
Complete site surveys	Understand your plot and its constraints																
	Deal with legal issues, covenants and ransom strips																
	Topographical - Check boundary position for setting out																
	Check for hazards & existing services																
	Ecology issues - address before starting work on site if possible																
	Complete ground investigation																
Appoint key subcontractors & Suppliers - analyse quotations thoroughly and hold prestart meetings	Complete the foundation design																
	Subcontractor and supplier enquiries																
	Self Build Package provider																
	Project Manager (if required)																
	Main contractor (if required)																
	Main services quotations - Electric, Gas, Water, Drainage																
	Ground works contractor																
	Order long lead materials - Bricks, Lintols, Joinery etc																
	Roof lining contractor																
	Cladding / brickwork contractor																
	Electrical contractor																
	Mechanics & Plumbing contractor																
	Plastering / Dry lining																
	Kitchen installations																
	Decorations																
	External works and landscaping																
Design Development	Receive planning permission		*														
	Energy efficiency strategy - Choose building system																
	Appoint Building Control & Warranty provider																
	Self Build System Package - 12 weeks lead in																
	Complete the Architectural and Engineering design																
	Finalise structural loading calculations																
	Complete building regulation & warranty design																
	Review design and sign off																
	Submit Building regulations design																
	Design for manufacture																
	Manufacture structural kit																
	Site delivery and commence erection																
Finalise health and safety arrangements	Plan how the site will operate & stay safe																
	Complete Health and Safety Plan																
	Notify HSE of project commencement																
	First aid and emergency arrangements																
	Notify interested parties of commencement																
	Arrange site insurances																
Claim CIL Exemption - get confirmation of agreement	Before any work is done on site																
Initial works leading upto the kit delivery	Secure the working area																
	Setup site welfare and temporary services																
	Complete substructure works																
	Inspect & approve substructure works																
	Site delivery and commence erection of structural kit																



Typical Build Programme

Example Construction Programme - Timber Frame



Short Term Programmes

		Week Commencing										
		Week Number	1					2				
Ref.	Task	Duration (Days)	M	T	W	T	F	M	T	W	T	F
1	Design packages											
2	Timber Frame											
3	Architectural											
4	Foundations											
5	Fireplace and Chimney											
6	Landscape											
7												
8	Groundwork Package											
9	Clear site and reduce levels											
10	Hardcore storage and scaffold areas											
11	Set out structure											
12	Excavate and concrete foundations		■	■								
13	Inner blockwork skin to DPC				■	■	■					
14	Concrete block and beam floor						■					
15	Service trenches and form entries							■	■			
16	Connection to existing sewer											
17	Storm and foul drainage (including testing)											
18	Hard and soft landscaping											
19	Boundary fencing											
20												
21	Scaffold Package											
22	Erect scaffold for timber frame											
23	Adjust scaffold for following trades											



Procurement



Controlling
cost

Getting the
right
contractors

Employ the right people

- 1) Work out which trades should be contract and which shouldn't!
- 2) Be thorough when getting quotations.
 - Know what you want and send out clear, well thought through enquiries
 - Make it easy to price – cut the waffle.
 - Read and analyse - check the small print and compare quotations.

Consider;

- References – Are previous customers happy?
- Visit current builds – look for banners.
- Relevant Experience – Are they “Self Build Savi”?
- Financial Checks – Are they financially stable
- Ask yourself;
 - Are they organised?
 - What does the customer think.
 - Would they be bothered if things go wrong?
- Check their health and safety attitude / record.
- Visit their Offices, look inside their vans.
- Make sure they share your vision and expectations.



Controlling cost –

Getting the right
contractors

Make proper appointments;

Hold prestart meetings to agree terms;

- The price for the work.
- Accept fixed prices not day rates.
- Scope of work (What's in, What's not)
- Notice period to start .
- Duration of the work.
- Resources required.
- Attendances;
 - power, water and welfare facilities
- How to deal with variations
- Arrangements for communications.
- Inspection, testing and certification.
- Health and safety arrangements .
- Obtain copies of insurances etc.
- Agree retention to be held – if any!
- List key design information.
- Agree payment terms .
- Understand VAT implications.
- Understand the implications of retentions.
- Use a contract – sometimes but not always!

**Is a contract
needed?**



Health & Safety



Health & Safety

CDM and the self builder

The Construction, Design and Management Regulations 2015 (CDM).

Self build projects are required to comply!

Domestic Clients & 'Self Builders'

- A domestic client is an individual who has construction work carried out on their home that is not done as part of any business.
- The self builder is a 'domestic client' when they are building a home for their residential purposes.
- The only responsibility a domestic client has under CDM 2015 is to appoint a **principal designer** and a **principal contractor** when there is more than one **contractor**.

<https://www.youtube.com/watch?v=V1jLyWTscjs>



Health & Safety

CDM and the self builder

How does CDM 2015 apply if you intend to manage your own self build project?

Where the self builder acts as their own project manager, employing individual trades at different times, thereby taking control of construction work, they must comply with all the matters outlined in Part 4 of CDM 2015.

- The self managing self builder will in effect become a contractor and the HSE will expect self builders to demonstrate sufficient health and safety capability to comply with regulations.
- The expectation on a self builder in this position will be on coordination and management , not on direct supervision of contractors on site.
- The self builder is entitled to expect contractors to plan, manage and monitor their own work in compliance with the CDM Regulations.



Health & Safety

CDM and the self builder

What you have to do

1. Produce a Construction Phase Safety Plan for the project.
2. Consider safe systems of work and make sure contractors put together risk assessments and method statements.
3. Make sure the necessary resources (time and money) are available to build safely.
4. Ensure the site is safe and secure.
5. Arrange appropriate welfare facilities.
6. Make First aid and emergency arrangements available.
7. Notify the HSE of the site commencement (Form F10) and of any reportable incidents.
 - A construction project is notifiable if the construction work is expected to: last longer than 30 working days and have more than 20 workers working at the same time at any point on the project or exceed 500 person days



Health & Safety

CDM and the self builder

Putting together a Construction Phase Plan

Putting together a Construction Phase plan.

- Arrangements for health and safety
- Site Inductions - Do's and Don'ts
- Risk Assessments / Method Statements
- Site and contractor insurances
- Competent persons
- Site housekeeping
- Security / Intruders
- Safe systems of work
 - Working at Height – Stairwells / Scaffold
 - Safe excavations
- Site Safe Checklist & Inspections
- First aid arrangements
- Emergency procedures & Fire Precautions



Setting up the site

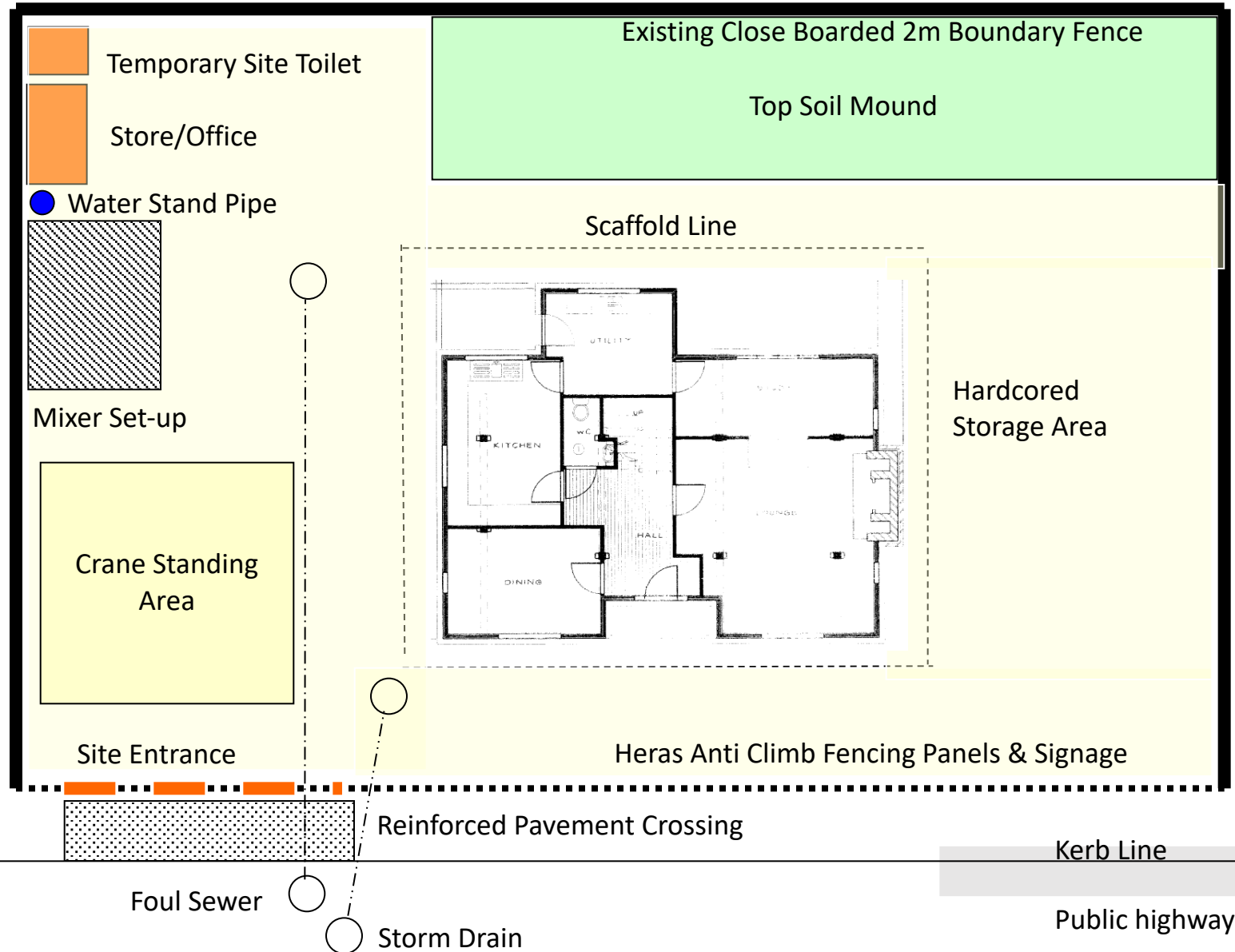


Setting up the site



Setting up the site

Site layout plan



Getting ready to start work?

What needs to be in place before you put a spade in the ground

1. Work out who's in charge & who is doing what?
2. Appoint your team
3. Address the planning conditions
4. Claim CIL Exemption
5. Deal with legal issues
6. Appoint warranty provider
7. Appoint building Control
8. Complete site surveys (ground investigation & hazards)
9. Survey the site – identify and secure the boundaries
10. Work out the energy efficiency strategy
11. Select the best build system
12. Finalise detailed design (Architectural, & Engineering)



Getting ready
to start work?

What needs to
be in place
before you put
a spade in the
ground

13. Complete the building regulations submission
14. Decide route to build
15. Gather construction information
16. Complete the programmes
17. Finalise project finance
18. Setup record keeping
19. Appoint key subcontractors and suppliers
20. Finalise Health and Safety arrangements
21. Plan the site layout / access / welfare / temp services
22. Apply for services connections
23. Arrange site insurance
24. Notify interested parties of commencement.





Q & A



NEED HELP?

**ELSWORTH
PROJECTS**

GIVE ME A CALL

Mobile : 07862 257384

Email

markstevenson@elsworthprojects

Plot Support Services;

- Development appraisals
- Site investigations

Project Management Services:

- Build budgets
- Health & safety plans
- Project coaching
- Problem solving
- Project Management
- **Specifying and sourcing a timber building system**





THANK YOU
FOR JOINING US

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