



**How Can We Build Faster,
More Efficiently and
More Sustainably while
Ensuring compliance**

- Established in 1997
- Background in the timber processing industry
- Initial focus on high spec 'selfbuild' and commercial markets
- Circa 2000 began supplying large scheme developments
- 2004/2005 factory constructed
- 2007 UK office
- 2018 Extended factory
- 2020 Major investment in digitalization
- 2022 Went paperless on factory floor
- 2024 Extension started



Timber Frame Market Share

2019 Market share 37%

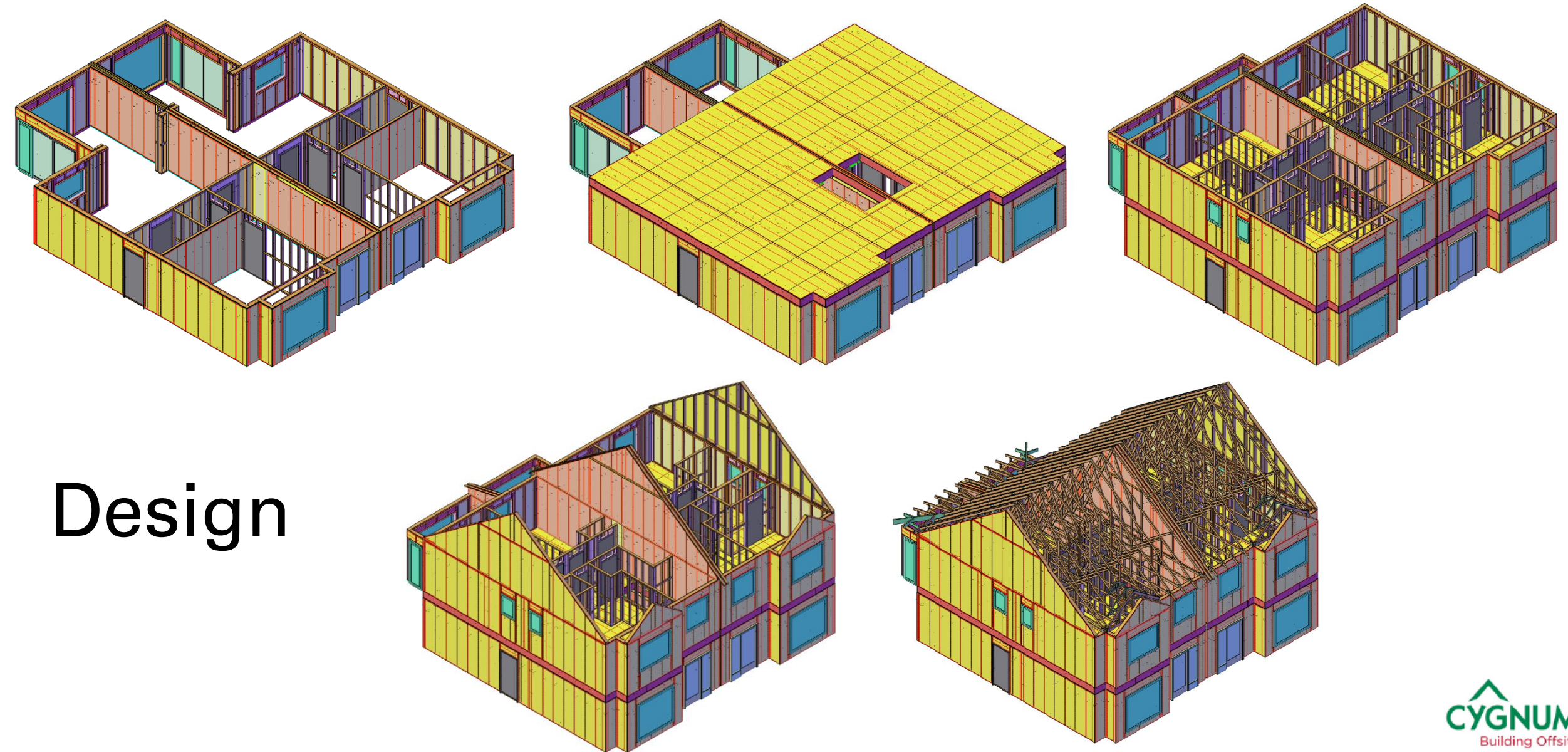
Latest Figures

over 60%

of all low rise housing units



What is Timber Frame?



Design

What is Timber Frame?

Manufacture



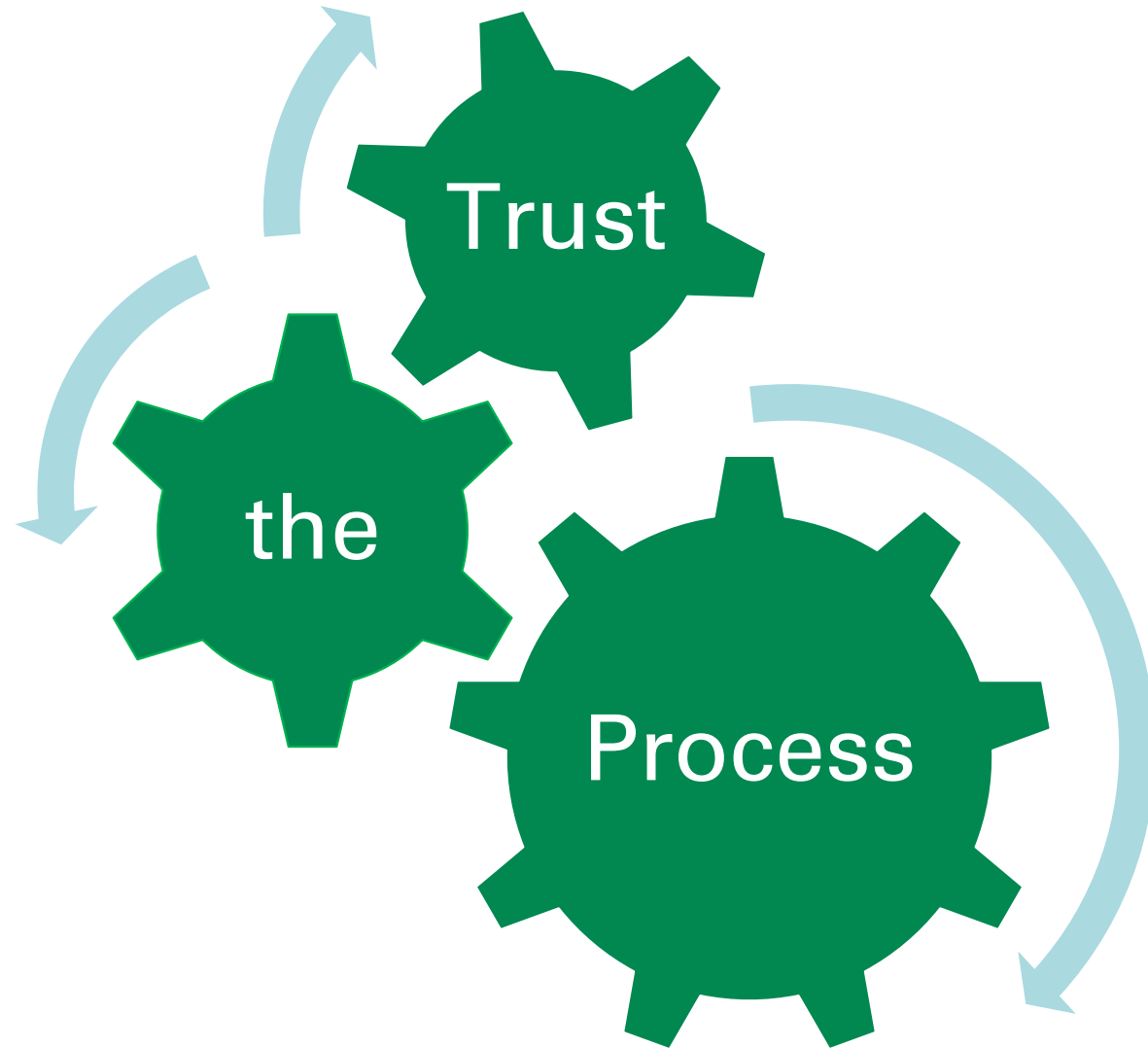
What is Timber Frame?



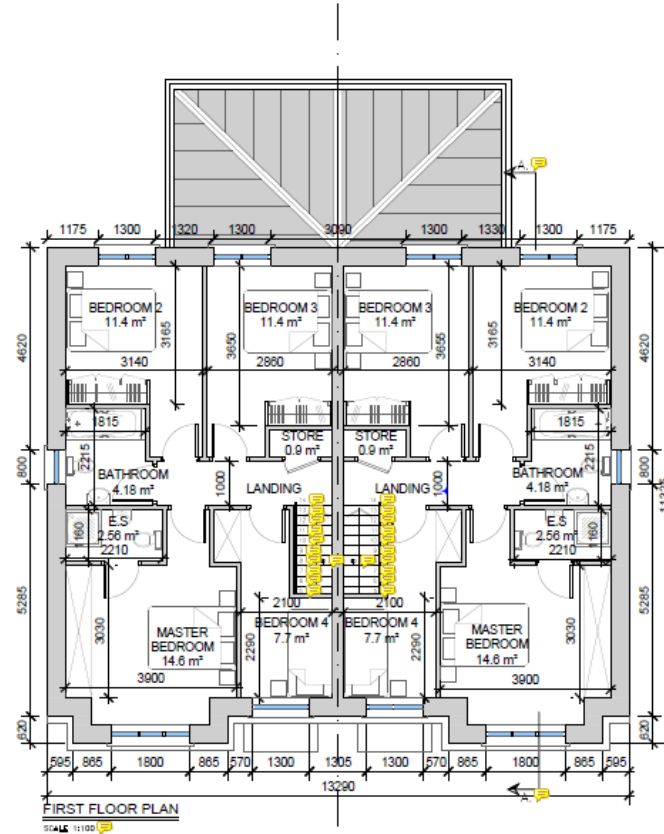
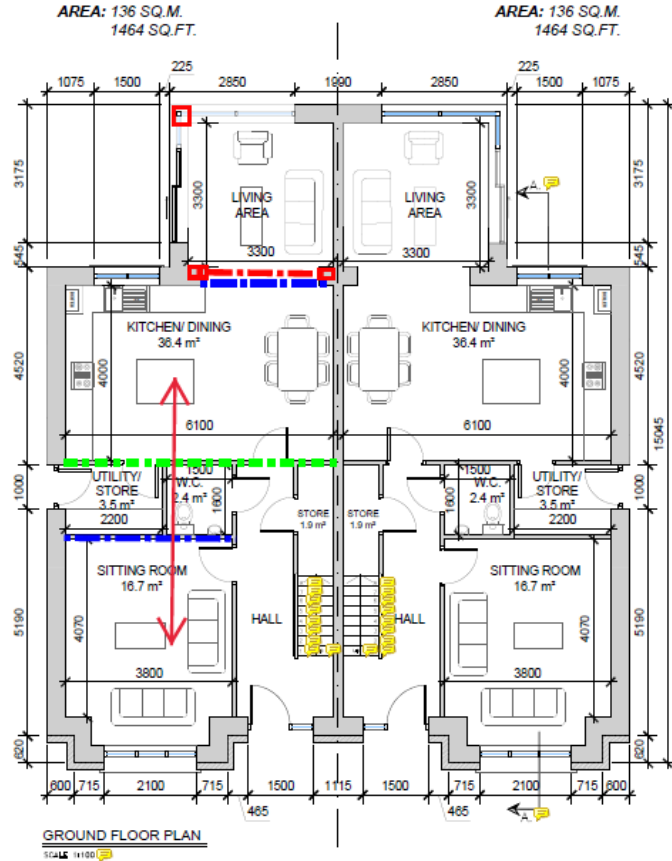
Installation



How does it work?



House Type B1 (4 Bed)	Proposed
Overall floor area	136 m ²
Living/kitchen/dining area	36.4 m ²
Living area width	3.8m
Bedroom areas	14.6m ² + 11.4m ² + 11.4m ² + 7.7m ² = 45.1m ²
Storage area	1.9m ² + 0.9m ² + 3.5m ² = 6.30m ²



Frozen Architectural drawings received for pricing

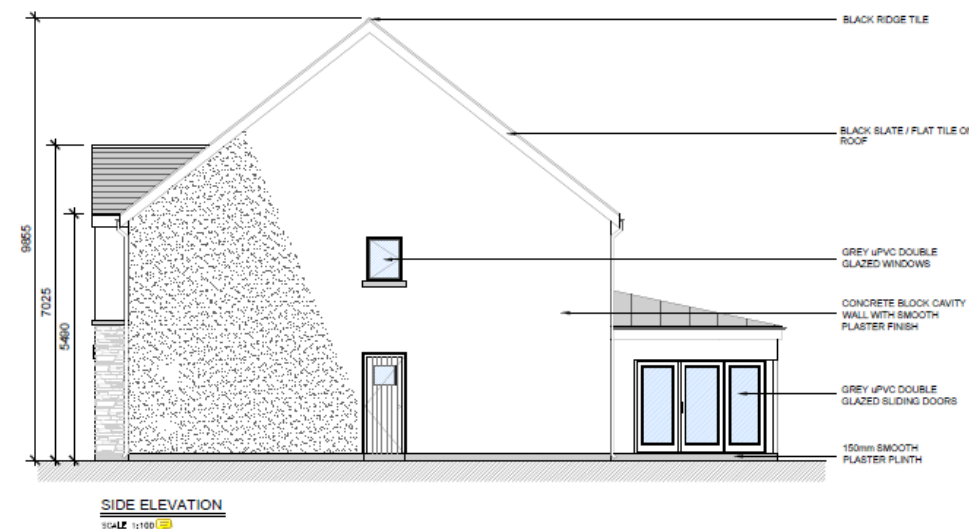
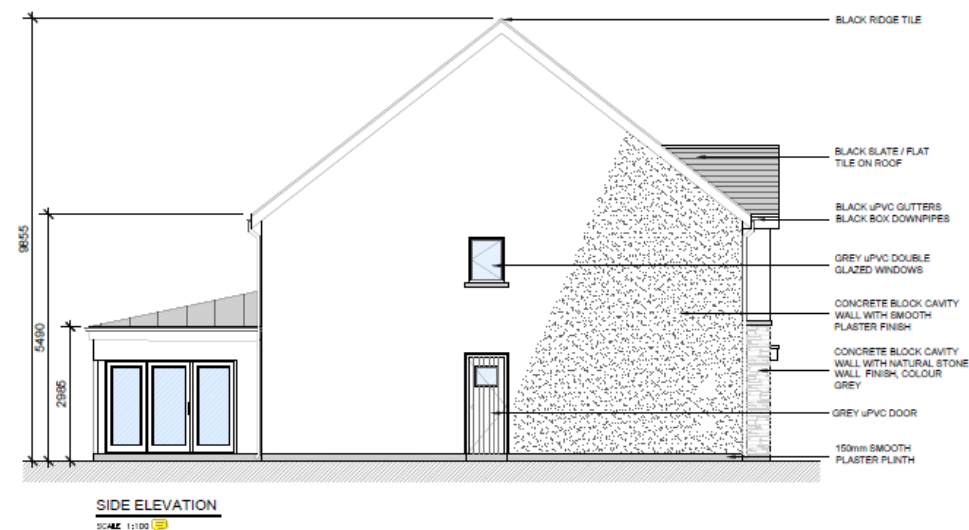


FRONT ELEVATION
 SCALE 1:100

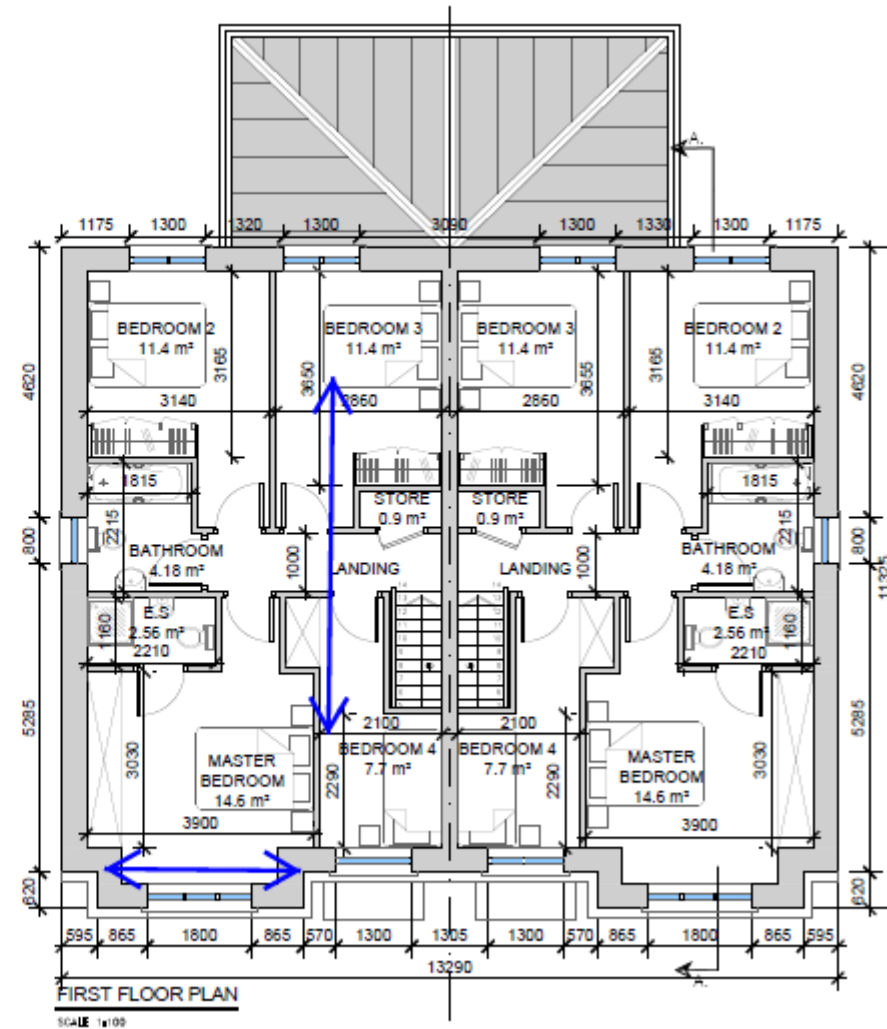
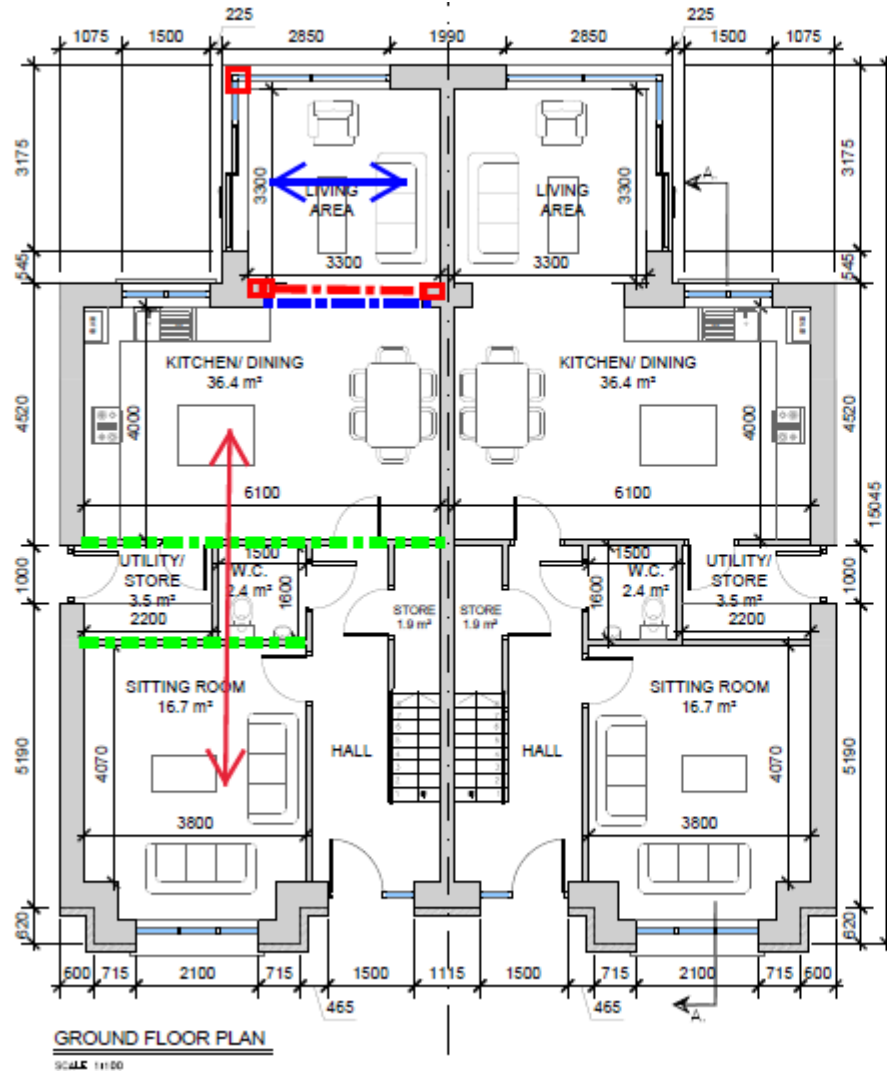


REAR ELEVATION
 SCALE 1:100

ALL DIMENSIONS ARE TO FACE UNLESS NOTED OTHERWISE
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Drawings marked up for pricing



Quotation based on drawings issued clearly showing supply and non supply items



Cygnum Standard Wall Heights*	
Ground floor	2456mm
First floor	2456mm
Second floor	N/A
* Ground floor ceiling heights are taken from FFL (bottom of soleplate) to underside of joist/service cavity.	
* First/Second floor ceiling height are taken from top of 18mm OSB3 to underside of joist/service cavity.	

Specification Summary	
Erection of kit including crane hire	Included
External Walls Stud Size	38 x 140mm at 600mm/c
External Wall Insulation	PIR to achieve 0.17 U Value
Floor Panel Construction	300mm I beam at 400mm/c
Internal Walls Stud Size	38 x 89 mm at 400mm/c
Party Wall Panels Stud Size	38 x 89 mm at 600mm centres double stud
Party Wall Plasterboard	Factory fitted
Party Wall Insulation	Factory fitted
External wall/ Party wall VCL Membrane	Factory fitted
Smoke/Fire barrier fitted to party wall	Supply and Fit
Wall Ties	Supply Only
Cavity vents	Supply Only
Cavity Barrier (excluding windows and doors)	Supply and Fit
Pre fabricated Trusses	Supply and Fit
Roof Felt	Supply Only
Tiling Battens	Supply Only
Structural Steel for timber frame if required	Supply and Fit

Optional Extra's	
Ceiling airtightness package	Supply and Fit
Ceiling Insulation package	Excluded
Felt and Batten Fitting	Supply Only
Fall arrest netting to underside of truss	Excluded

Note : Please refer to the structural kit package specification pages for full details

Here is what some of our key clients say about us

"The whole process, the efficiency and the quality of the work is of a very high standard. The quality control system they have in place from Manufacturing to installation on site is seamless. We have complete confidence in Cygnum's capabilities to deliver high quality housing."

Paul O'Carroll, O'Callaghan Property Development



"Working with Cygnum helps me streamline a working programme on site and helps me plan ahead in terms of how many tradesmen I would need to complete my developments"

"Cygnum's key strengths are their employees, Everyone I have dealt within the team are helpful and professional, from Sales, Design, Manufacturing and Installation, all of my queries have been dealt with in a timely manner"



Jim O'Driscoll – JOD Developments

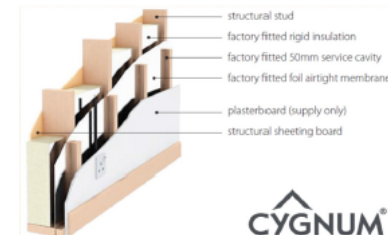
Quotation	Wall Range	Specification	Erecting	Terms				
Structural Kit Package Specification								
Walls			Cygnium Supply	Cygnium Factory Fit	Cygnium Site Fit if Erecting	Optional Extras	Client Supply	Client Fit

SOLEPLATE

Preservative treated soleplates under external ground floor & lb panels	✓	✓	✓	✓	✓	✓	✓	✓	✓
DPC factory fitted to soleplates	✓	✓	✓	✓	✓	✓	✓	✓	✓

REFLECT 140 EXTERNAL WALLS

1.) External finish	100mm Blockwork	✓	✓	✓	✓	✓	✓	✓	✓
2.) External cavity/battens	50mm	✓	✓	✓	✓	✓	✓	✓	✓
3.) Breather membrane	TF 200 Thermo	✓	✓	✓	✓	✓	✓	✓	✓
4.) External sheathing	9mm OSB3	✓	✓	✓	✓	✓	✓	✓	✓
5.) Stud size	38 x 140 mm Treated	✓	✓	✓	✓	✓	✓	✓	✓
6.) Stud centres	600mm	✓	✓	✓	✓	✓	✓	✓	✓
7.) Wall insulation	PIR to achieve 0.17 U Value	✓	✓	✓	✓	✓	✓	✓	✓
8.) VCL membrane	VC Foil	✓	✓	✓	✓	✓	✓	✓	✓
9.) Service void	38mm	✓	✓	✓	✓	✓	✓	✓	✓
10.) Service void insulation	None	✓	✓	✓	✓	✓	✓	✓	✓
11.) Plasterboard	15mm plain	✓	✓	✓	✓	✓	✓	✓	✓
Airtight tapes to seal panel/floor junctions (Gerband)		✓	✓	✓	✓	✓	✓	✓	✓
Airtight tapes to seal wall/window junction (Gerband)		✓	✓	✓	✓	✓	✓	✓	✓
Airtight mastic to seal wall/concrete floor junction (Gerband)		✓	✓	✓	✓	✓	✓	✓	✓
Stud positions identified on external walls to highlight wall tie positions		✓	✓	✓	✓	✓	✓	✓	✓
Window and door cavity closers		✓	✓	✓	✓	✓	✓	✓	✓
DPC to windows and doors		✓	✓	✓	✓	✓	✓	✓	✓
Expansion/movement joint material or it application		✓	✓	✓	✓	✓	✓	✓	✓
External finishes eg blockwork, timber cladding, cement board etc		✓	✓	✓	✓	✓	✓	✓	✓
Windows, doors, glazed areas, bay windows		✓	✓	✓	✓	✓	✓	✓	✓
2nd fix joinery		✓	✓	✓	✓	✓	✓	✓	✓
Plasterboard/services noggins		✓	✓	✓	✓	✓	✓	✓	✓
Kitchen/bathroom noggins		✓	✓	✓	✓	✓	✓	✓	✓
Cutting/drilling/notching service holes		✓	✓	✓	✓	✓	✓	✓	✓
Parapet cladding/capping or materials to form hidden gutters		✓	✓	✓	✓	✓	✓	✓	✓
Stainless steel hold down straps		✓	✓	✓	✓	✓	✓	✓	✓
Eaves and barge cavity closers		✓	✓	✓	✓	✓	✓	✓	✓
Cavity vents		✓	✓	✓	✓	✓	✓	✓	✓



Achieving a U-value 0.17 W/m2K* this 140 x 38mm wall panel is sheathed externally with 9mm OSB and supplied with factory fitted rigid insulation, factory fitted reflective external breather membrane, factory fitted internal reflective airtight membrane and factory fitted 50mm service cavity. All external wall/floor joints are sealed and taped during erection.

*U value based external block/brick external finish



Quotation	Wall Range	Specification	Erecting	Terms					
<u>Structural Kit Package Specification</u>									
Trussed/Rafter Roof			Cygnium Supply	Cygnium Factory Fit	Cygnium Site Fit if Erecting	Optional Extras	Client Supply	Client Fit	Excluded

TRUSSED/RAFTER CONSTRUCTION

1.) External finish	Concrete tile	✓	✓	✓	✓	✓	✓	✓	✓
2.) Tiling battens	50x35mm Untreated	✓	✓	✓	✓	✓	✓	✓	✓
3.) Counter battens	50x50mm Untreated	✓	✓	✓	✓	✓	✓	✓	✓
4.) Roofing felt	Non breather	✓	✓	✓	✓	✓	✓	✓	✓
5.) Sarking	9mm OSB3	✓	✓	✓	✓	✓	✓	✓	✓
6.) Prefabricated roof trusses	As per truss manufacturers	✓	✓	✓	✓	✓	✓	✓	✓
7.) Loose roofing rafters	270mm	✓	✓	✓	✓	✓	✓	✓	✓
8.) Prefabricated roof truss/rafter centres	600mm	✓	✓	✓	✓	✓	✓	✓	✓
9.) Insulation to slope roof ceilings	220mm Metac	✓	✓	✓	✓	✓	✓	✓	✓
10.) Insulation to flat roof ceilings	400mm Thermal	✓	✓	✓	✓	✓	✓	✓	✓
11.) Internal VCL membrane	VC Foil	✓	✓	✓	✓	✓	✓	✓	✓
12.) Service cavity to slope roof ceilings	38mm	✓	✓	✓	✓	✓	✓	✓	✓
13.) Service cavity to flat roof ceilings	38mm	✓	✓	✓	✓	✓	✓	✓	✓
14.) Service cavity insulation to slope	50mm	✓	✓	✓	✓	✓	✓	✓	✓
15.) Internal finish	12.5mm plain	✓	✓	✓	✓	✓	✓	✓	✓
16.) Gable ladders	38x89mm	✓	✓	✓	✓	✓	✓	✓	✓
Valley sets including valley lay boards		✓	✓	✓	✓	✓	✓	✓	✓
Structural infill timbers to complete roof (dormers, hips, valleys etc)		✓	✓	✓	✓	✓	✓	✓	✓
Ventilation products		✓	✓	✓	✓	✓	✓	✓	✓
Guttering & secret gutter materials or supports		✓	✓	✓	✓	✓	✓	✓	✓
Rainwater goods		✓	✓	✓	✓	✓	✓	✓	✓
Roof lights, flashing kits, and framing upstands		✓	✓	✓	✓	✓	✓	✓	✓

Structural Kit Package Specification									
Ancillary Items				Cygnum Supply	Cygnum Factory Fit	Cygnum Site Fit if Erecting	Optional Extras	Client Supply	Client Fit

ANCILLARY ITEMS

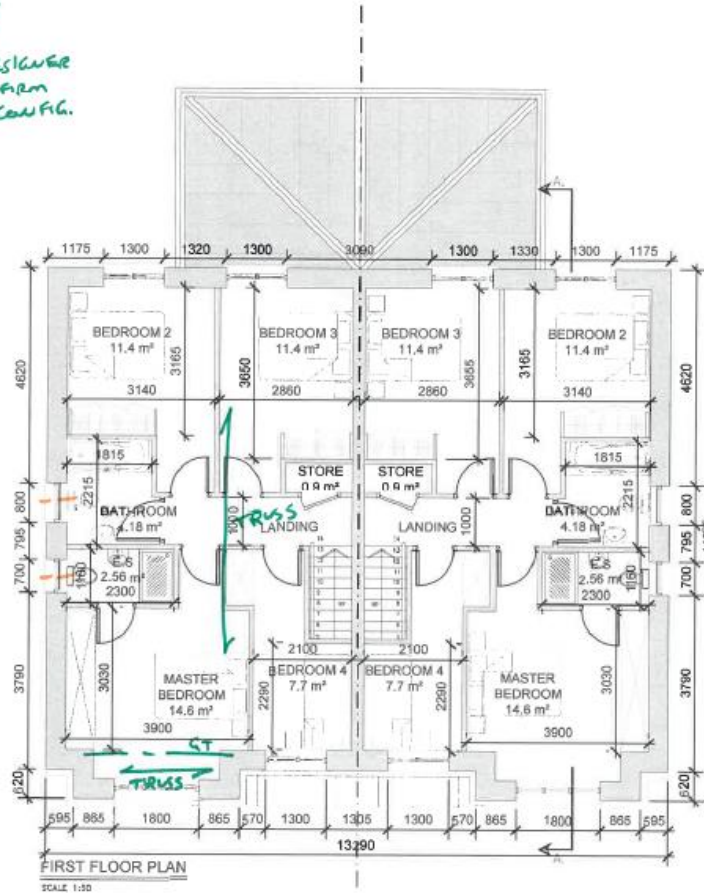
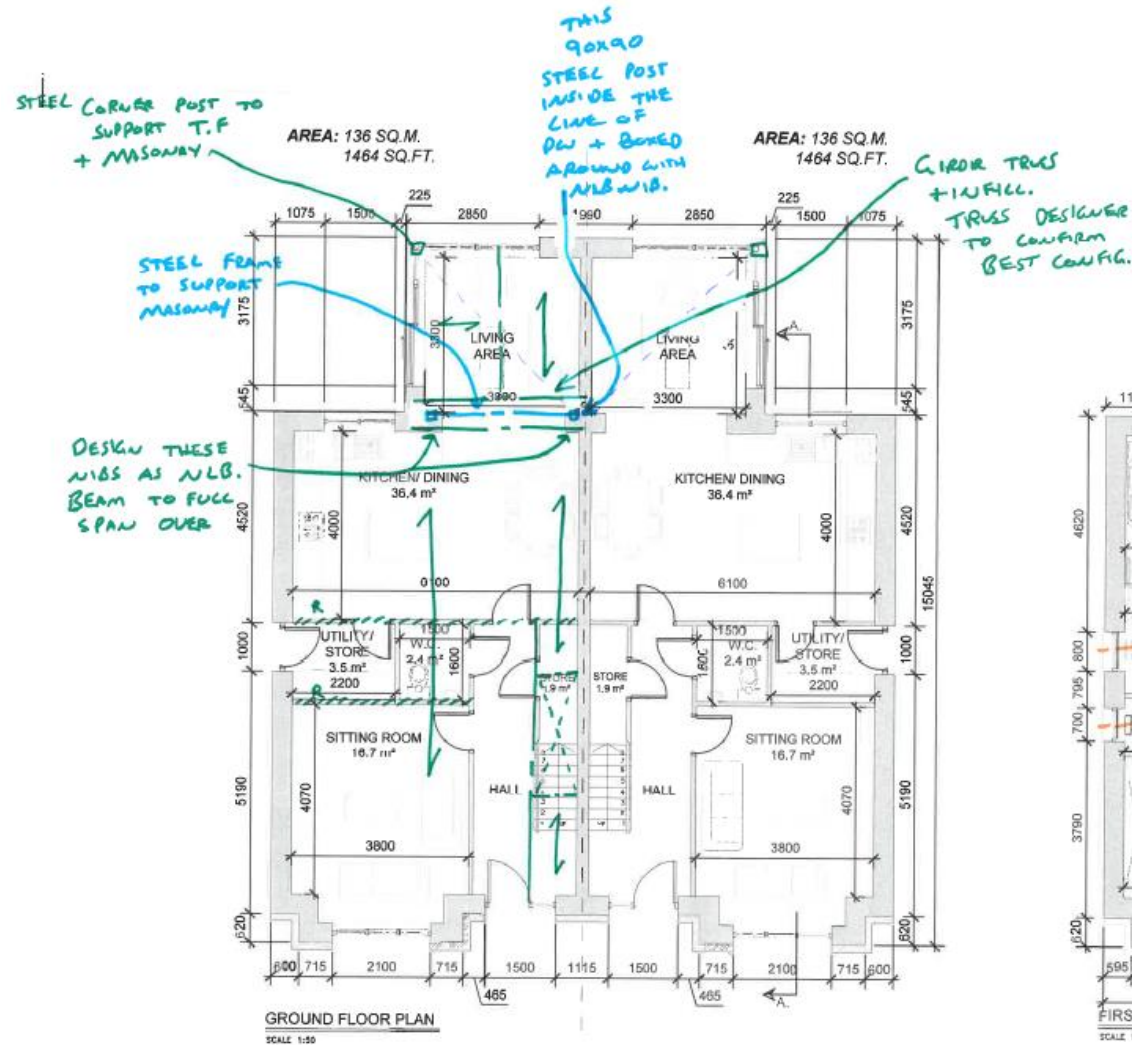
1.) Subfascia	175x22mm	✓	✓	✓	✓	✓	✓	✓	✓
2.) Roof felt	Non breather	✓	✓	✓	✓	✓	✓	✓	✓
3.) SU roof felt	SU felt	✓	✓	✓	✓	✓	✓	✓	✓
4.) Tiling fillet	11mm OSB3	✓	✓	✓	✓	✓	✓	✓	✓
5.) Roof tiling battens	50x35mm Untreated	✓	✓	✓	✓	✓	✓	✓	✓
6.) Roof bracing	100x22mm	✓	✓	✓	✓	✓	✓	✓	✓
7.) Valley boards	222x35mm	✓	✓	✓	✓	✓	✓	✓	✓
8.) Gable ties	140x38mm	✓	✓	✓	✓	✓	✓	✓	✓
9.) Water tank supports	As per truss manufacturer	✓	✓	✓	✓	✓	✓	✓	✓
10.) Attic hatch	N/A	✓	✓	✓	✓	✓	✓	✓	✓
11.) Wall ties & SS nails	For 50mm cavity	✓	✓	✓	✓	✓	✓	✓	✓
12.) Structural ironmongery	For timber frame items only	✓	✓	✓	✓	✓	✓	✓	✓
13.) Hold down straps	For 50mm cavity	✓	✓	✓	✓	✓	✓	✓	✓
14.) Cavity fire barrier	65x65mm Sleeved	✓	✓	✓	✓	✓	✓	✓	✓
15.) Cavity vents	For 100mm blockwork	✓	✓	✓	✓	✓	✓	✓	✓

STRUCTURAL BEAMS, POSTS & CONNECTORS (required to support timber frame structure)

All glulam steel columns & beams required within timber frame structure as detailed by our structural engineers	✓	✓	✓	✓	✓	✓	✓	✓	✓
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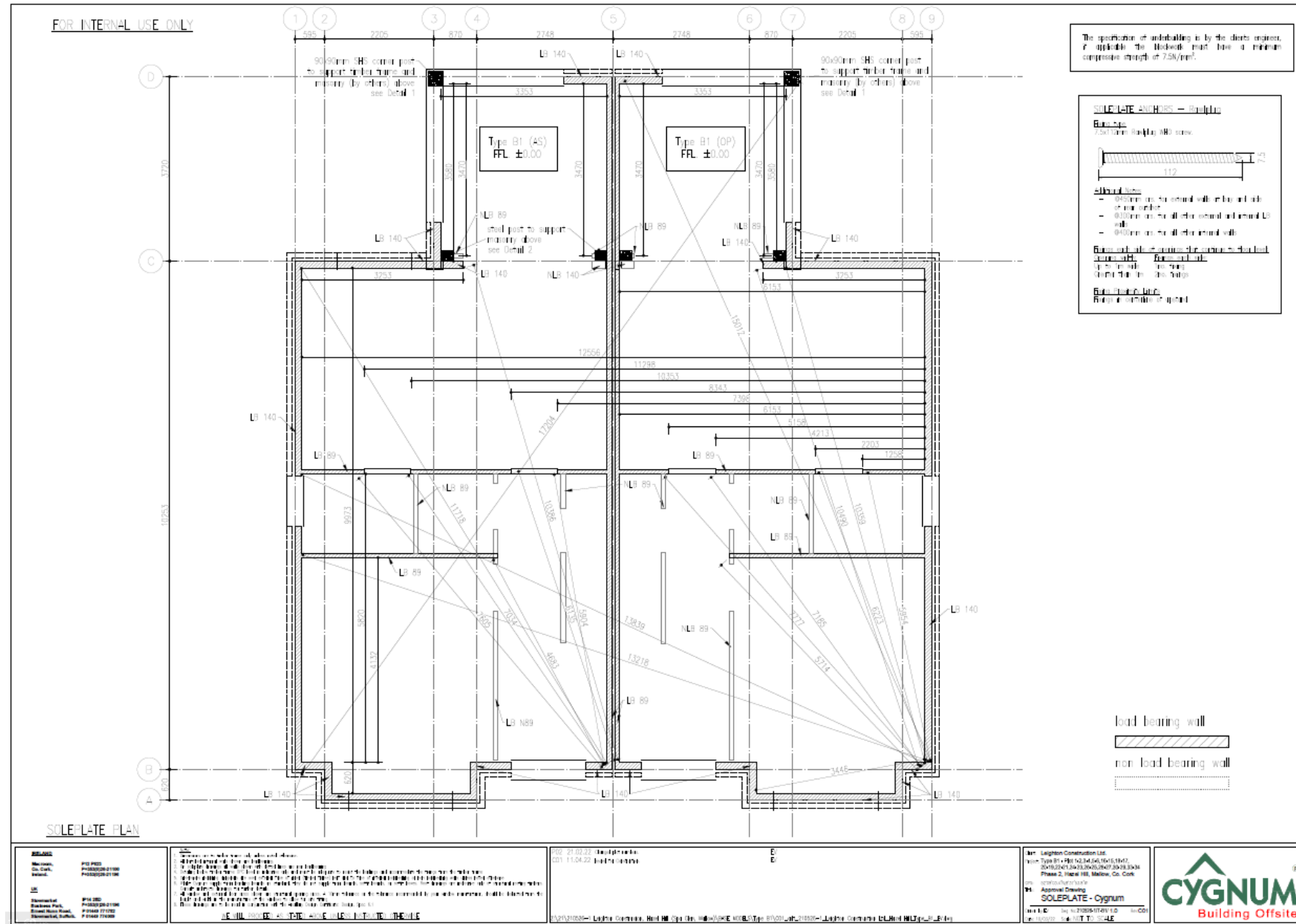


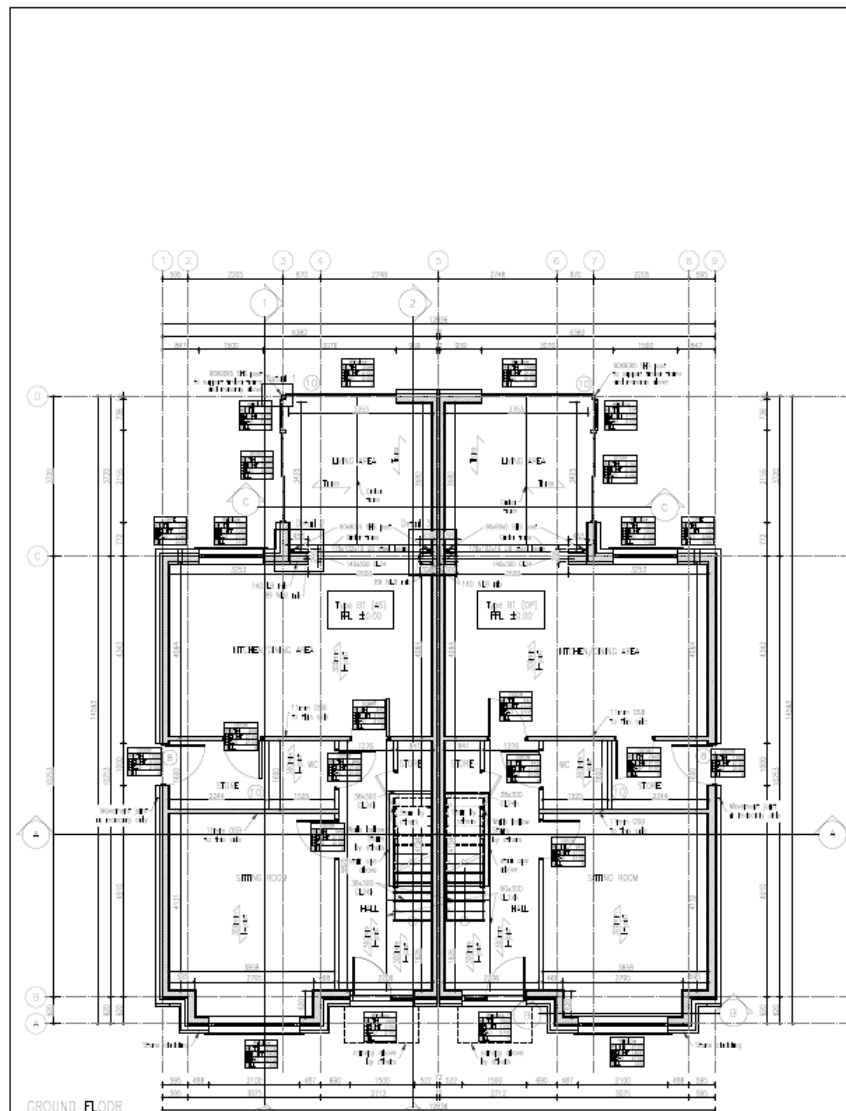
Design appraisal to allow approval drawings stage to commence



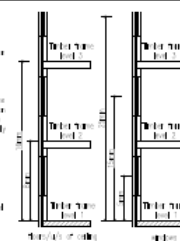
* SIMILAR TO TYPE B IN PREVIOUS PHASE, BUT DIFFERENT REAR EXTENSION.

Approval drawings issued for design team review





There are certain things to be taken into account in a proper drilling.



Note:

Wall To Wall: (from memory): taller FT-50 wall ties (with supplied 3.5x50mm dry-lash nails) fixed by others

1. Generally: - @ 450mm vertical x 500mm horizontal centre
2. Double wall-ties: - vertically, along opening joints and outside of movement joints (i.e. @ 225mm on)

Control Supply Chain
And then come to us or go to them as suppliers

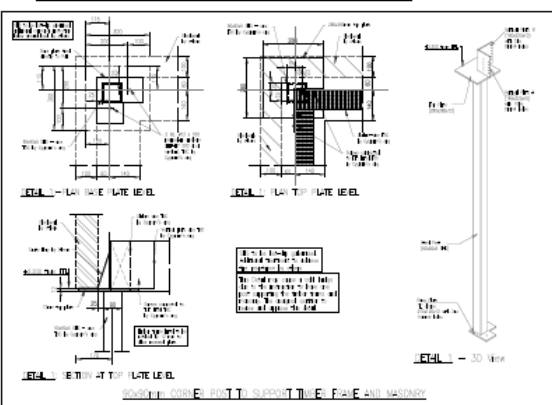
Control and supply **WOLFF**
TWO Teams
from 2002
on always 25 members
Sustainable and fair - fairly paid
Full circle members - fairly paid
Full circle supply - fairly paid

Handwritten note: Both full-time and part-time students must be registered for a minimum of 12 credits per semester.

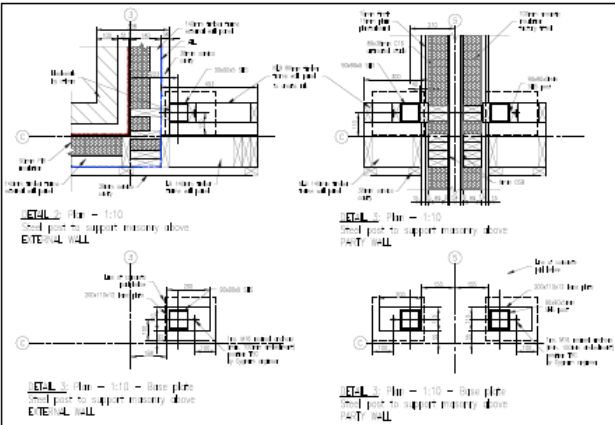
Answer: **1** **2** **3** **4** **5** **6** **7** **8** **9** **10** **11** **12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100** **101** **102** **103** **104** **105** **106** **107** **108** **109** **110** **111** **112** **113** **114** **115** **116** **117** **118** **119** **120** **121** **122** **123** **124** **125** **126** **127** **128** **129** **130** **131** **132** **133** **134** **135** **136** **137** **138** **139** **140** **141** **142** **143** **144** **145** **146** **147** **148** **149** **150** **151** **152** **153** **154** **155** **156** **157** **158** **159** **160** **161** **162** **163** **164** **165** **166** **167** **168** **169** **170** **171** **172** **173** **174** **175** **176** **177** **178** **179** **180** **181** **182** **183** **184** **185** **186** **187** **188** **189** **190** **191** **192** **193** **194** **195** **196** **197** **198** **199** **200** **201** **202** **203** **204** **205** **206** **207** **208** **209** **210** **211** **212** **213** **214** **215** **216** **217** **218** **219** **220** **221** **222** **223** **224** **225** **226** **227** **228** **229** **230** **231** **232** **233** **234** **235** **236** **237** **238** **239** **240** **241** **242** **243** **244** **245** **246** **247** **248** **249** **250** **251** **252** **253** **254** **255** **256** **257** **258** **259** **260** **261** **262** **263** **264** **265** **266** **267** **268** **269** **270** **271** **272** **273** **274** **275** **276** **277** **278** **279** **280** **281** **282** **283** **284** **285** **286** **287** **288** **289** **290** **291** **292** **293** **294** **295** **296** **297** **298** **299** **300** **301** **302** **303** **304** **305** **306** **307** **308** **309** **310** **311** **312** **313** **314** **315** **316** **317** **318** **319** **320** **321** **322** **323** **324** **325** **326** **327** **328** **329** **330** **331** **332** **333** **334** **335** **336** **337** **338** **339** **340** **341** **342** **343** **344** **345** **346** **347** **348** **349** **350** **351** **352** **353** **354** **355** **356** **357** **358** **359** **360** **361** **362** **363** **364** **365** **366** **367** **368** **369** **370** **371** **372** **373** **374** **375** **376** **377** **378** **379** **380** **381** **382** **383** **384** **385** **386** **387** **388** **389** **390** **391** **392** **393** **394** **395** **396** **397** **398** **399** **400** **401** **402** **403** **404** **405** **406** **407** **408** **409** **410** **411** **412** **413** **414** **415** **416** **417** **418** **419** **420** **421** **422** **423** **424** **425** **426** **427** **428** **429** **430** **431** **432** **433** **434** **435** **436** **437** **438** **439** **440** **441** **442** **443** **444** **445** **446** **447** **448** **449** **450** **451** **452** **453** **454** **455** **456** **457** **458** **459** **460** **461** **462** **463** **464** **465** **466**

From 2002 to early 2010, at each venue:
 Top tier 3000 C16 ticket holders and family ticket
 donors paid 10% to become 40000+ = money in
 2009 then [2] 40000 then [2] placeholder = money in
Appendix
 1999-2002
 2003-2009
 2010-2011 = money in

Three terms not found in Chapter
 Two terms – supply and
 Range of Results – σ^2
 Standardized and variance coefficients and as expected
 VC $\sigma^2 = \sigma^2$
 Squared value of $\sigma^2 = \sigma^2$



	Year made	Year made	Year made



Key design notes

- ☐ **Intuition** is a gut feeling or a premonition and may or may not be based on logic.
- ☐ **Logic** is a rational process that involves the use of reason and evidence to reach a conclusion.
- ☐ **Emotion** is a feeling or a state of mind that can influence our thoughts and actions.
- ☐ **Reason** is the ability to think logically and make decisions based on facts and evidence.
- ☐ **Instinct** is a natural, automatic response to a stimulus that is often based on survival.
- ☐ **Logic** is a process of reasoning that involves the use of rules and principles to reach a conclusion.
- ☐ **Emotion** is a complex state of mind that can be influenced by a variety of factors, including thoughts, experiences, and social interactions.
- ☐ **Reason** is the ability to think critically and make decisions based on a careful analysis of the facts.
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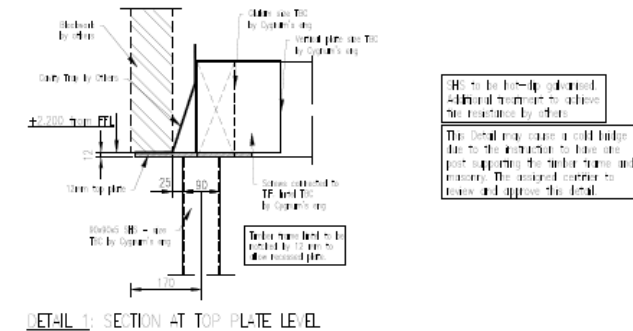
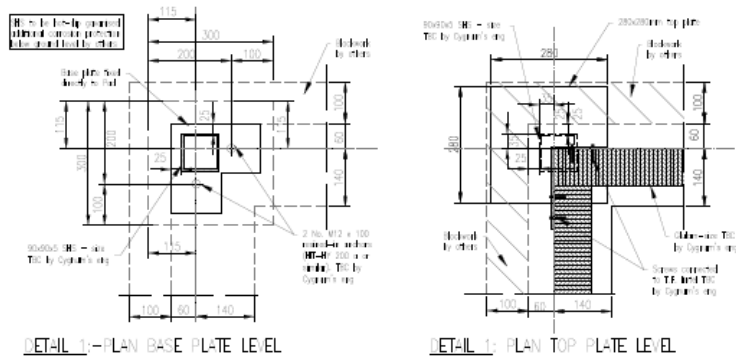
land bearing wall
non land bearing wall

[illegible][illegible]

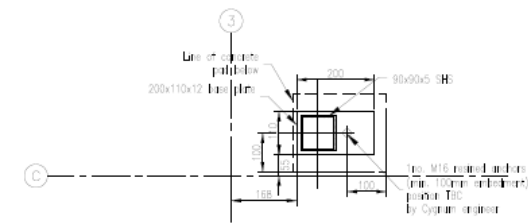
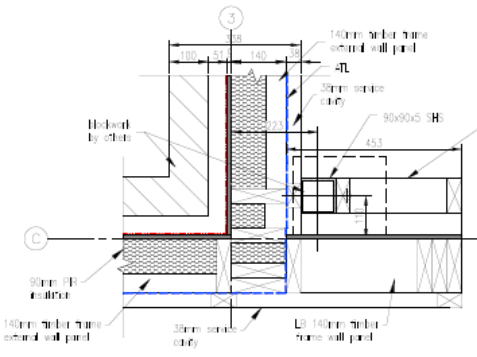
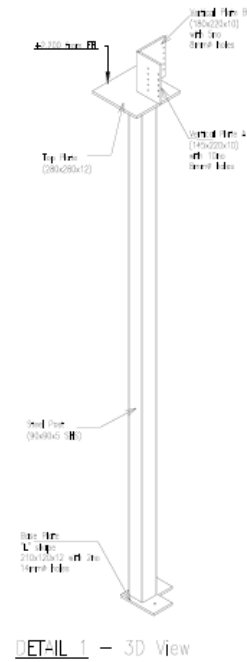
by: Leighton Construction Ltd.
 Type B1 - Not 1,2,3,4,5,6,16-17, 20-19,22-21,24-23,25-26,27,30-28,33-34
 Phase 2, Hazel Hill, Mallow, Co. Cork
 WPS: 2020012/001/015/016
 (M): Approval Drawing
GROUND FLOOR PLAN
 Issue 1: 2 Sep 2018 2:10 PM Rev: 0
 10/03/20 1:50



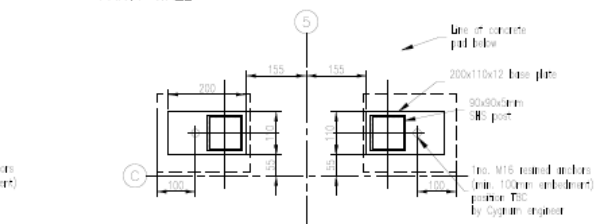
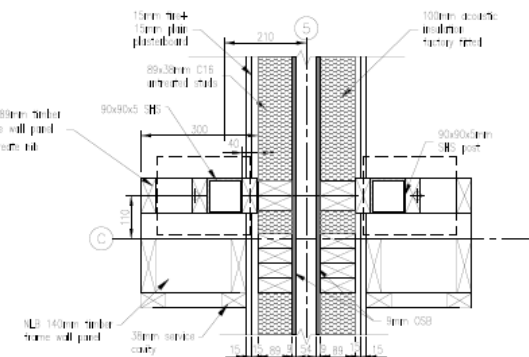
House specific details are shown on the approval drawings



90x90mm CORNER POST TO SUPPORT TIMBER FRAME AND MASONRY

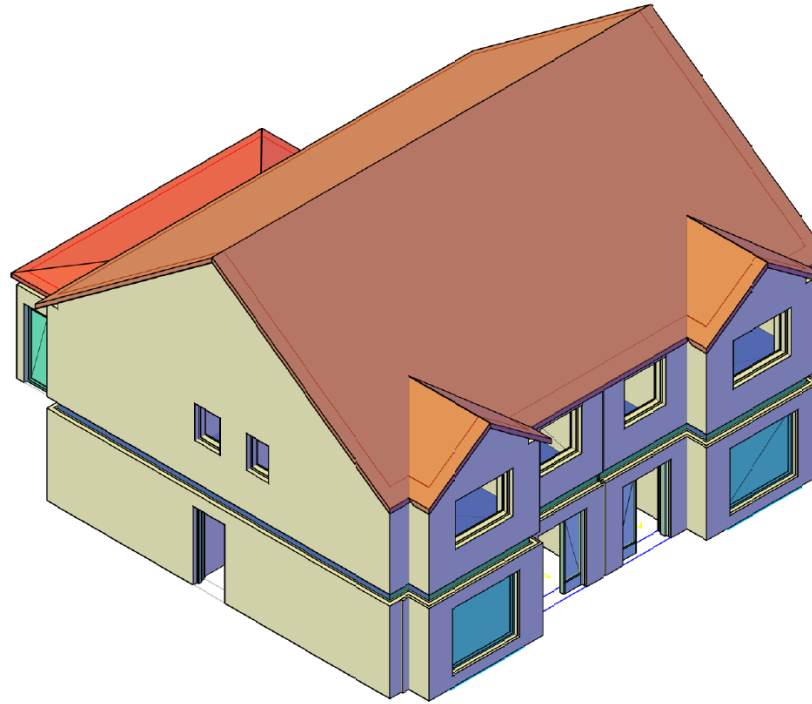
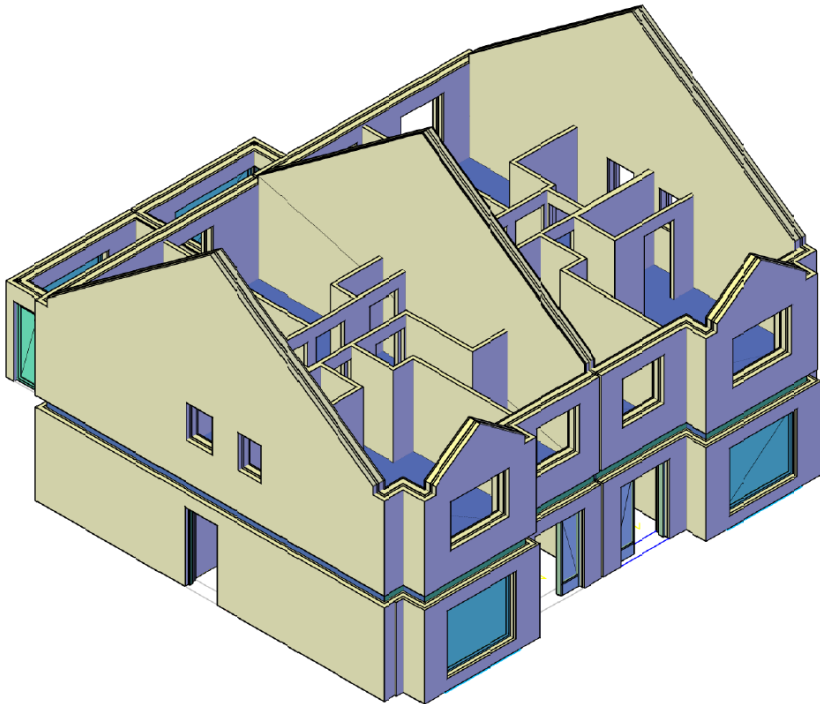
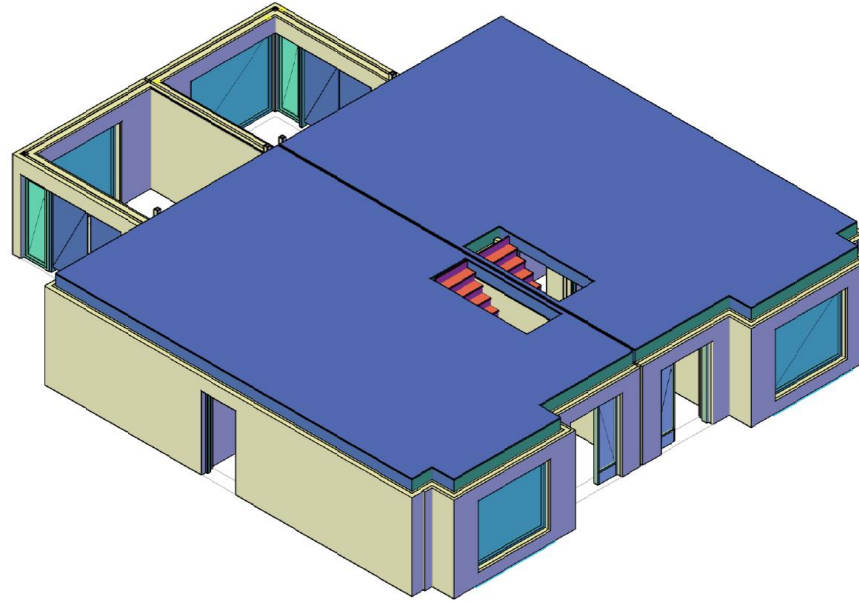
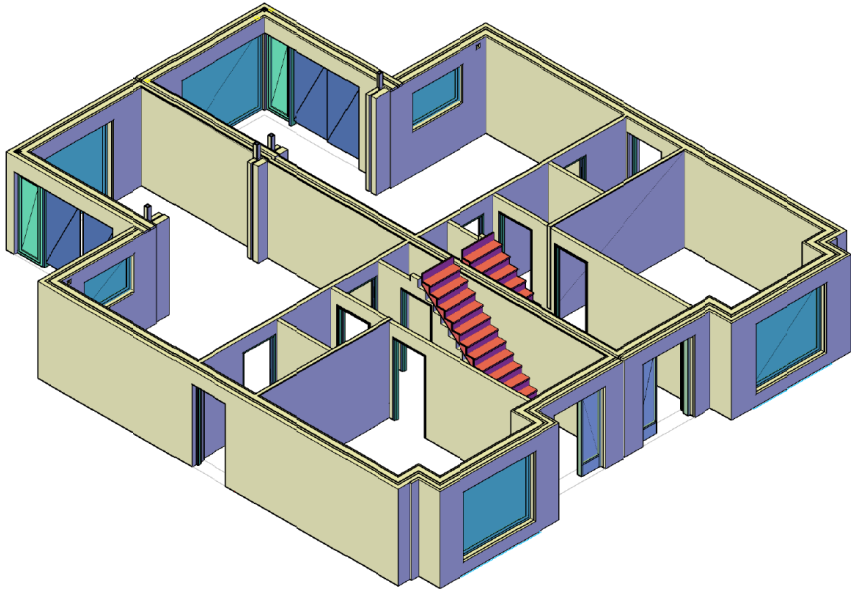


DETAIL 3: Plan - 1:10 - Base plate
Steel post to support masonry above EXTERNAL WALL

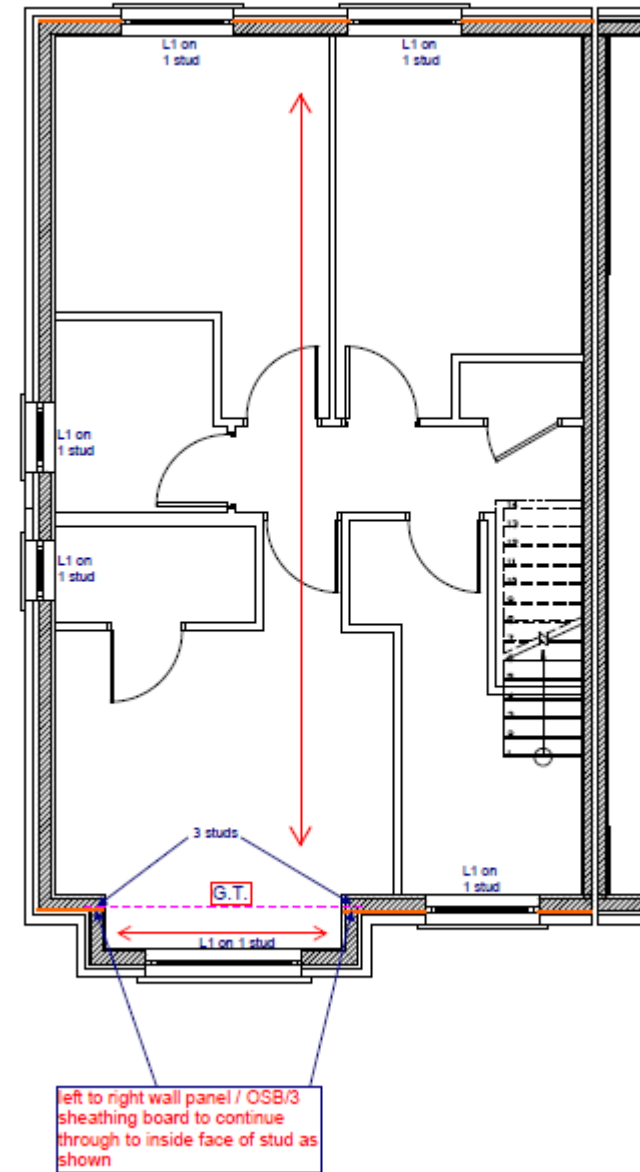


DETAIL 3: Plan - 1:10 - Base plate
Steel post to support masonry above PARTY WALL

**Approval drawings all
carried out in 3D
model**

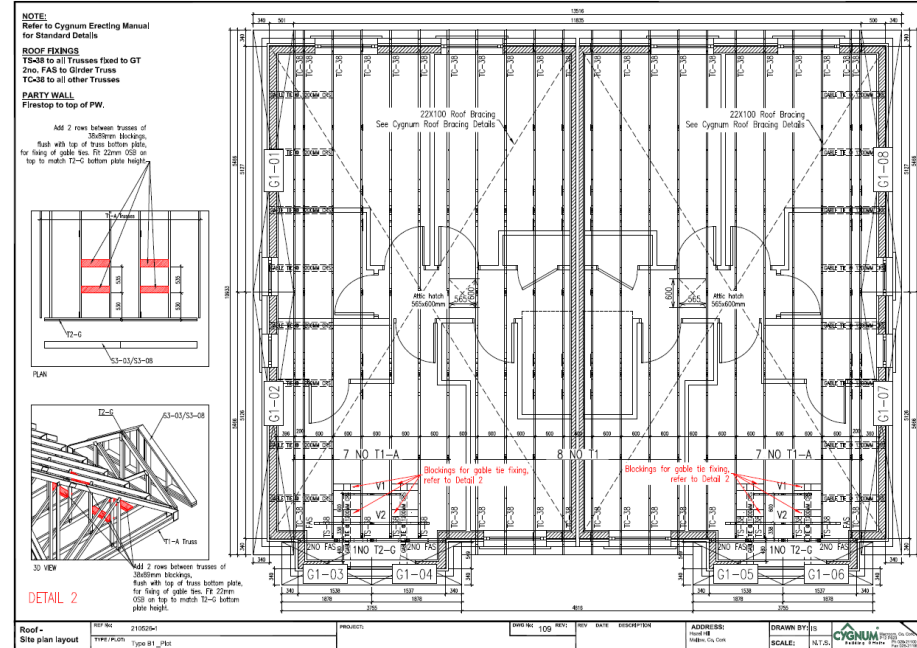
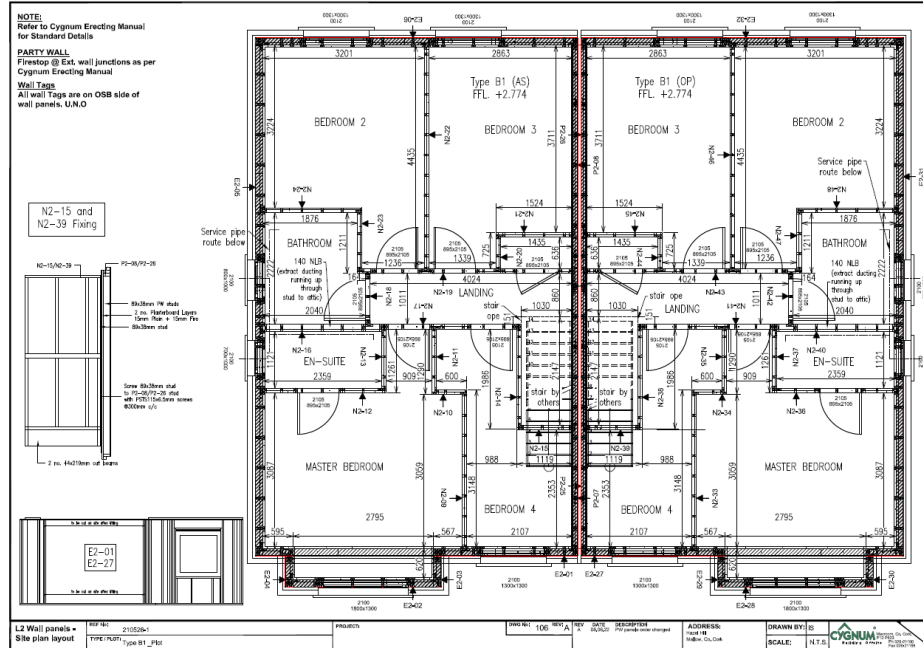


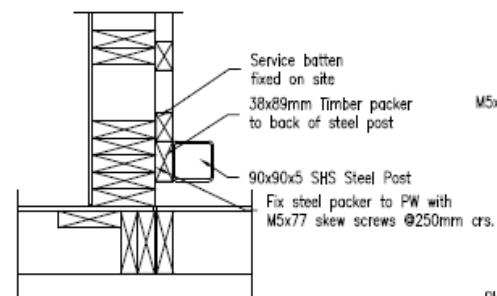
80 x 80 x 5 SHS post on L-shaped (200 x 200 x 12mm base-plate) (2 no. M12 x 100) welded-in anchor - Hilt HIT-HY 200a or (USA into concrete pad).



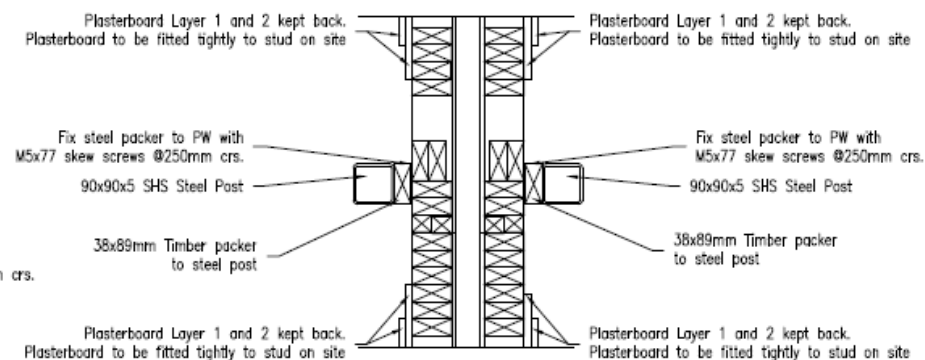
- 1 layer OSB3 - nails 50 / 100

Studs External walls (all) - 140 x 38 C16 @ 600mm crs. Internal walls (supp. joists) - 89 x 38 C16 @ 400mm crs. Internal walls (sep. wall leafs not supp. joists) - 89 x 38 C16 @ 600mm crs. Stud Notes: 1. Design assumes head-binder on all wall panels which are lapped at all wall / wall panel junctions (straights and at corners).	1F Level Floor joists FJ1: - 300 x 47 H300 @ 400mm crs. (P5 or OSB-web) (joist hangers at all beams : Cullen UH-50-300). FJ2: - 300 x 60 HM300 @ 400mm crs. (P5 or OSB-web) (joist hangers at all beams : Cullen UH-61-300). Joist Notes: 1. Joists specification above assumes joists are continuous over internal walls (or continuous to face of trimmers / beams where applicable). 2. Design assumes 3rd party approved structural board onto joists, e.g. 18mm OSB3. This should be placed strictly in accordance with board manufacturer's technical requirements. 3. Joists to be placed in accordance with joist manufacturers Technical requirements. 4. Where joists are parallel to direction of external wall, provide perpendicular I-joist blocking pieces (same as joists), @ 600mm crs., between rimbeam and adjacent joist. 5. Where joists are perpendicular to direction of external wall, provide I-joist blocking pieces between joists to provide support to inside face of external studs (as per Cygnum standard practice). 6. Place 300mm deep I-joist blocking directly over all GF internal load-bearing walls. 7. Joist design assumes standard domestic floor load.	FIXINGS Nailing over and above standard Cygnum Details Sole-plate to base fixings - Rawlplug-R WHO-7.5 x 112 as follows: (a) Ext. walls in pink or orange - @ 300mm crs. (b) Ext. walls except above - @ 450mm crs. (c) Internal, OSB-sheathed partition walls - @ 400mm crs. (d) Separating wall leafs - @ 400mm crs. Straps (base) - Cullen ST-PFS-50 (6 no. 3.35 x 50mm stainless steel fixings) to be placed at all building corners and each side of all door and window openings (2 no. straps at these positions for walls highlighted in pink). Party Wall Straps - 9 no. PWS straps at min. 1.2m crs. at each of 1F and eaves levels. Wall tie fixings (from masonry): Cullen FT-50 wall ties (with supplied 3.5 x 50mm ring-shank nails) 1. In general - @ 450mm vertical x 600mm horizontal centres. 2. Double wall-ties at location stated on layout. 3. Double wall-ties, vertically, along opening jambs and each side of movement joints (i.e. @ 225mm crs.).
Beam & Trimmer Notes: 1. Connect 18mm OSB3 board to beams with nails (as per those used to connect board to joists) @ 150mm crs.		
Lintels L1 - 3 no. 219 x 44 C24 L2 - 220 x 140 GL24h glulam L10 - 2 no. 219 x 44 C24 Lintel Notes: 1. Lintels are placed in accordance with Cygnum T.F. standard details. 2. See studs section for stud sizes applicable to external and internal walls. 3. The number of studs stated refers to the number of cripple studs, at each support, beneath lintel. We assume that there will be a full height stud each side also.		

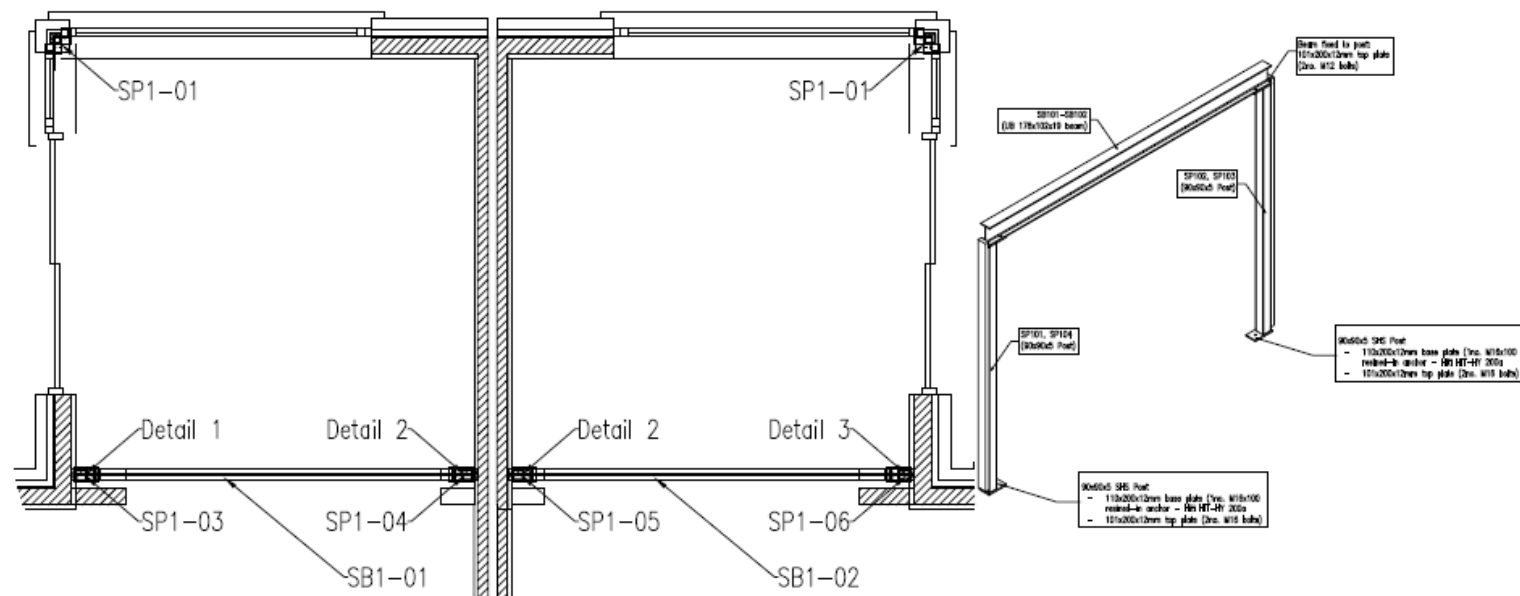
The logo for CYGNUM Building Offsite. It features the word "CYGNUM" in a bold, green, sans-serif font, with a green roof-like shape above the "Y". Below "CYGNUM" is the tagline "Building Offsite" in a smaller, red, sans-serif font. A registered trademark symbol (®) is located to the upper right of "CYGNUM".

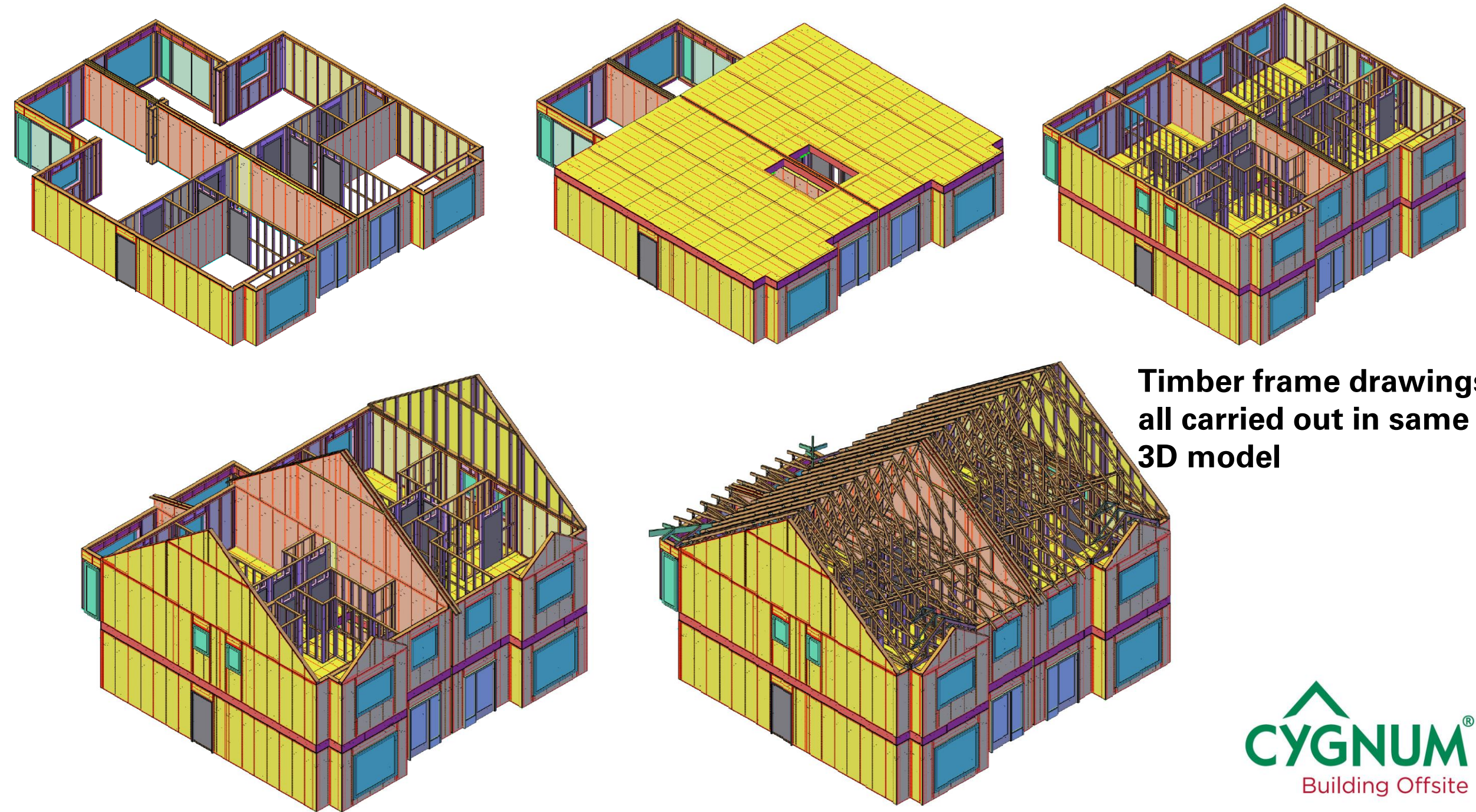


Detail 1
SP101



Detail 2
SP102, SP103





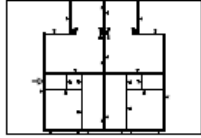
**Timber frame drawings
all carried out in same
3D model**

Manufacturing Checklist	
Plate Marking	
Cripping	
Assembly	
Insulation	
Sheeting	
Membranes	

Reflect (140 Stud) 38x140

Diagonal: 10389,3

Sheet Nailing: Perimeter 100mm / Intermediate 200mm

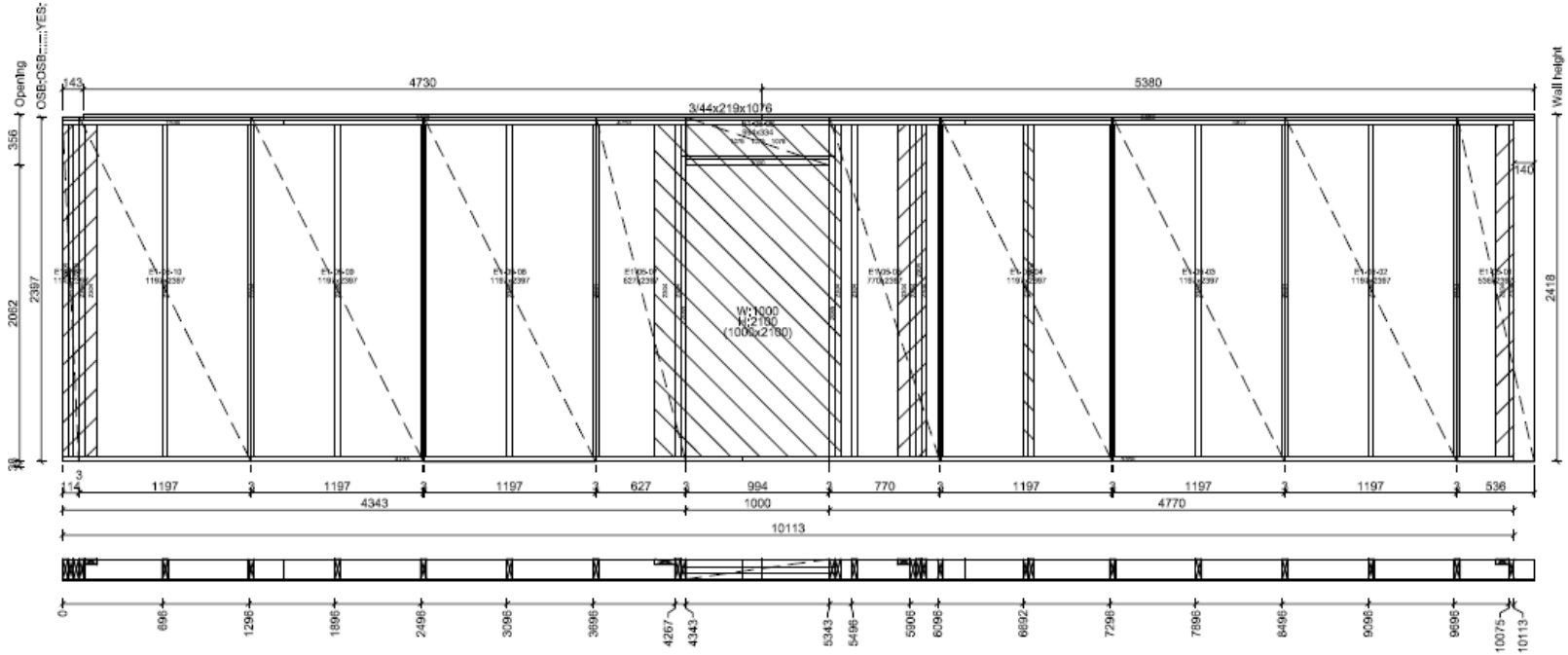


Timber									
Pos	Name	Width	Label	Height	Length	Material	Grade	Pos	Angle
2476	BOTTOM PLATE	38	A	140	5380	CLS	C16	1	0.00>0.00
2479	BOTTOM PLATE	38	B	140	4730	CLS	C16	1	0.00>0.00
2483	CRIPPLE	38		140	2085	CLS	C16	2	0.00>0.00
373	HEADRINDER	38	B	140	4730	CLS	C16	1	0.00>0.00
2375	HEADRINDER	38	A	140	5380	CLS	C16	1	0.00>0.00
2482	CHIMEL	44		219	1016	CLS	C24	3	0.00>0.00
375	STUD	38		140	2304	CLS	C16	28	0.00>0.00
2485	STUD	38		89	2304	CLS	C16	3	0.00>0.00
2377	TOP PLATE	38	B	140	4750	CLS	C16	1	0.00>0.00
2378	TOP PLATE	38	A	140	5380	CLS	C16	1	0.00>0.00
2481	TOP PLATE	38	C	140	1536	CLS	C16	1	0.00>0.00
2484	TRANSOM	38		140	1000	CLS	C16	1	0.00>0.00
2412	Roofset	140		22	1000	OSB		1	

Sheeting Front Layer 1					
Label	Width	Length	Height	Material	Pos
E1-05-01	2397	538	9	OSB	1
E1-05-02	2397	1197	9	OSB	1
E1-05-03	2397	1197	9	OSB	1
E1-05-04	2397	1197	9	OSB	1
E1-05-05	2397	770	9	OSB	1
E1-05-06	134	994	9	OSB	1
E1-05-07	2397	627	9	OSB	1
E1-05-08	2397	1197	9	OSB	1
E1-05-09	2397	1197	9	OSB	1
E1-05-10	2397	1197	9	OSB	1
E1-05-11	2397	114	9	OSB	1

Sheeting Front Layer 2					
Label	Width	Length	Height	Material	Pos
E1-05-01	2397	538	9	OSB	1
E1-05-02	2397	1197	9	OSB	1
E1-05-03	2397	1197	9	OSB	1
E1-05-04	2397	1197	9	OSB	1
E1-05-05	2397	770	9	OSB	1
E1-05-06	134	994	9	OSB	1
E1-05-07	2397	627	9	OSB	1
E1-05-08	2397	1197	9	OSB	1
E1-05-09	2397	1197	9	OSB	1
E1-05-10	2397	1197	9	OSB	1
E1-05-11	2397	114	9	OSB	1

PANEL SPECIFIC NOTES:



Panel drawings: E1-05	PROJECT: Leighton Construction Ltd	REF No: 210526-1	DRAWN BY: IS	Panel - Front
	TYPE / PLOT: Type B1 _Plot	ADDRESS: Hazel Hill, Mallow, Co. Cork	WEIGHT: 487 kg	



Timber frame
Manufacturing
drawing



Top of Cassette
PANEL SPECIFIC NOTES

NO.	DESCRIPTION	AMOUNT
2000	UH 40x300	1
2001	UH 40x300	1
2002	UH 40x300	1
2003	UH 40x300	1

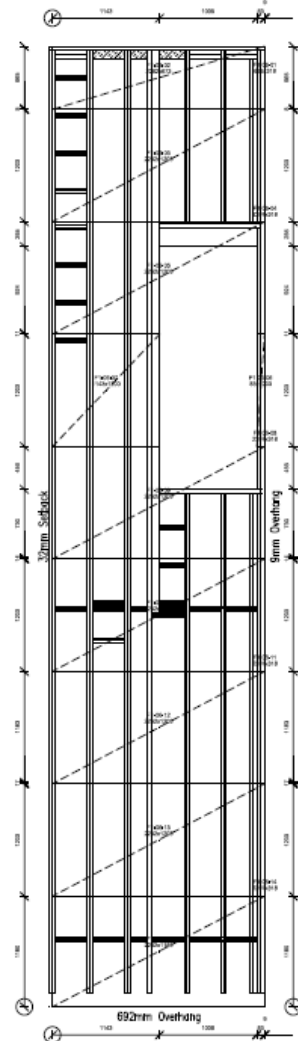
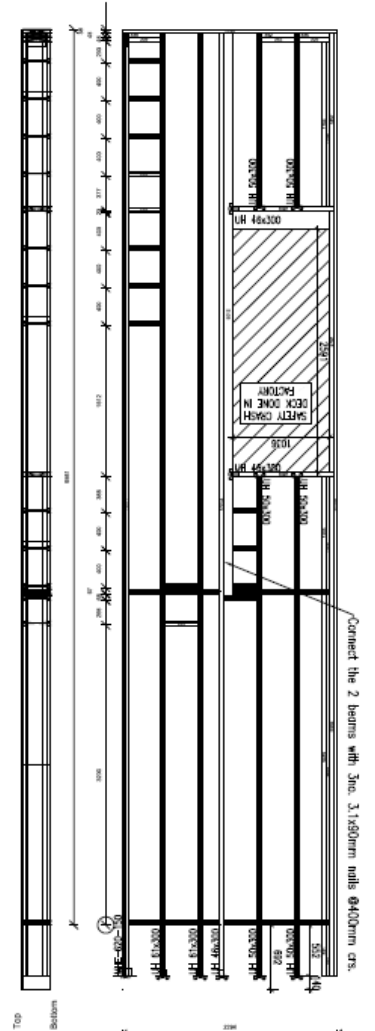
NO.	DESCRIPTION	AMOUNT
2004	UH 40x300	1
2005	UH 40x300	1
2006	UH 40x300	1
2007	UH 40x300	1

NO.	DESCRIPTION	AMOUNT
2008	UH 40x300	1
2009	UH 40x300	1
2010	UH 40x300	1
2011	UH 40x300	1

NO.	DESCRIPTION	AMOUNT
2012	UH 40x300	1
2013	UH 40x300	1
2014	UH 40x300	1
2015	UH 40x300	1

NO.	DESCRIPTION	AMOUNT
2016	UH 40x300	1
2017	UH 40x300	1
2018	UH 40x300	1
2019	UH 40x300	1

Connect 300x90 GL24h to 300x45 GL24h Beams with 3no. 3.1x90mm nails @400mm crs.



Panel drawing
F1-06

PROJECT Leighton Construction Ltd
TYPE / PLOT Type S1_1.kit

REF No: 210526-1
ADDRESS: 100, City, Can

DRAWN BY: 15
WEIGHT: 818 kg

Manufacturing Checklist	
Cutting	
Assembly	
Shoring	

Factory Built Precision

Earlier collaboration between design and manufacture process removes design issues at an early stage



INNOVATION THROUGH FACTORY AUTOMATION



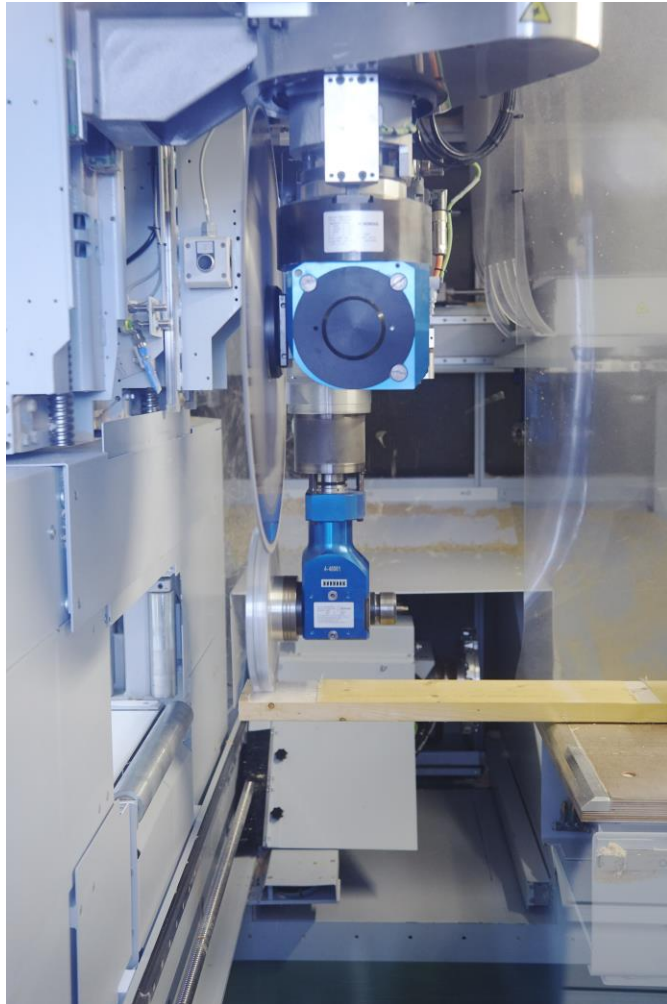
3no. Weinmann Multi
Function Bridges





2no. Multi Function
Tables





5 Axis Multitool Beam
Processor (15 Head options)



4 axis multi tool sheeting processor



Speed of Construction

Semi Detached houses watertight in 5 working days

3 Block terraced unit watertight in 7 working days

4 Block terraced unit watertight in 10 working days

5 Block terraced unit watertight in 13 working days

Earlier introduction of follow-on trades

4 Houses 4 People 4 Days

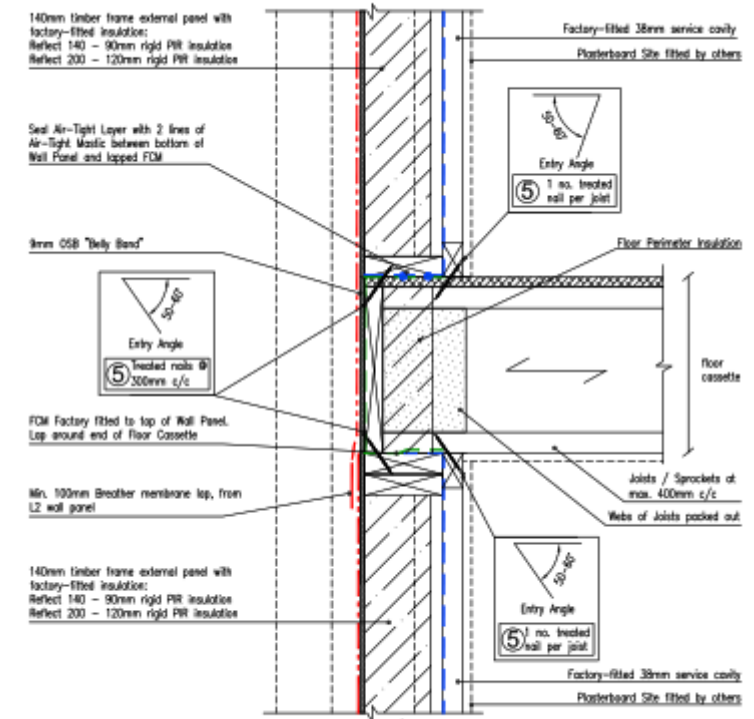
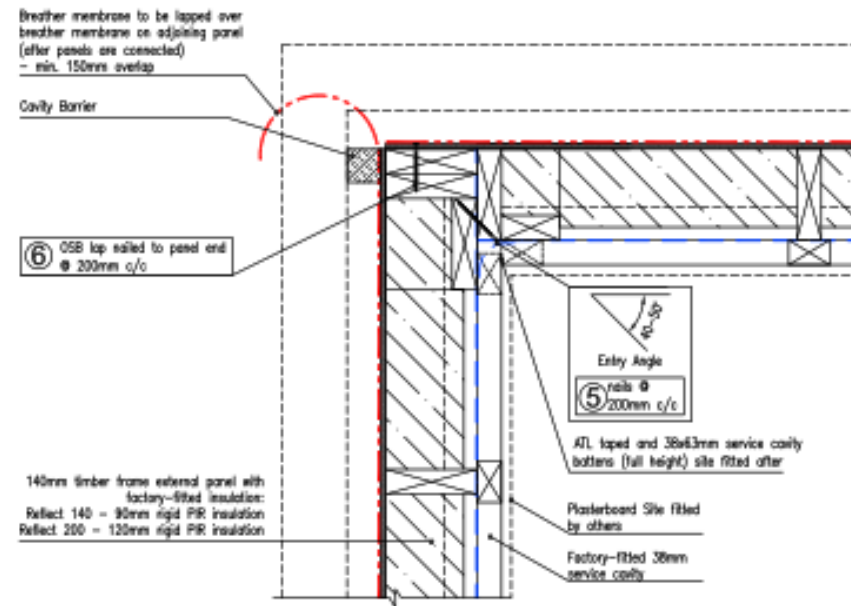
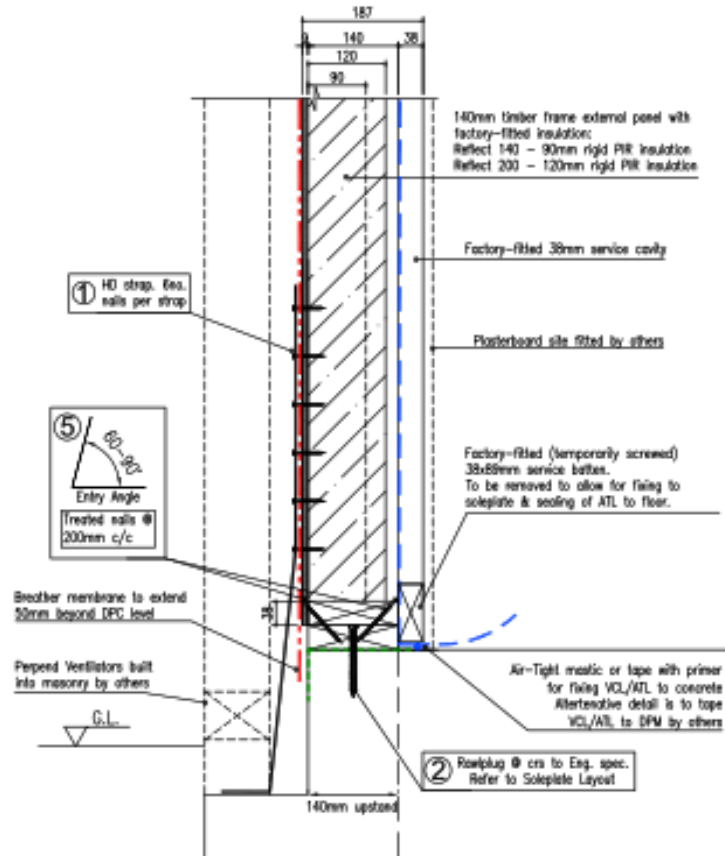


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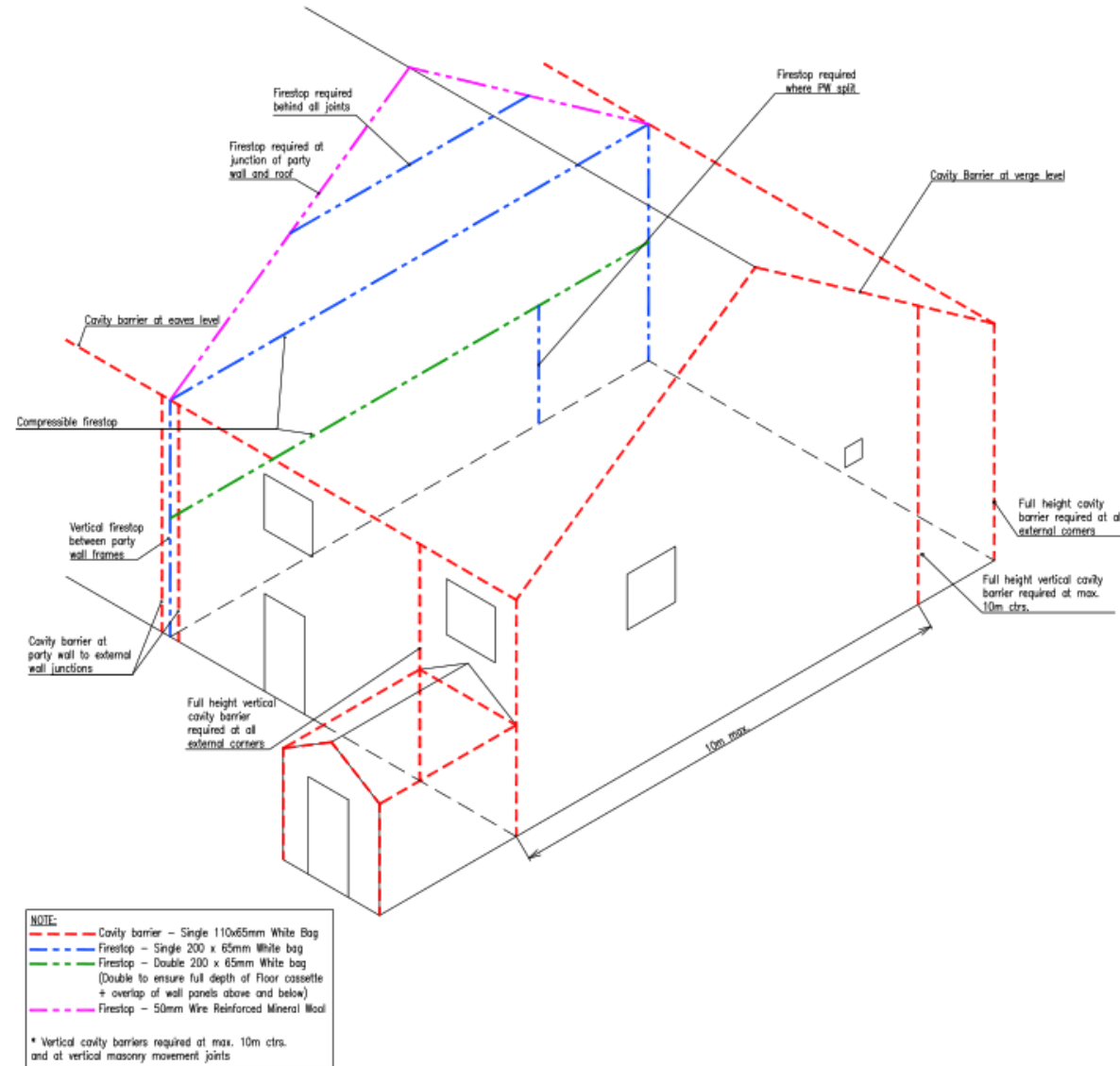


CYGNUM[®]
Building Offsite

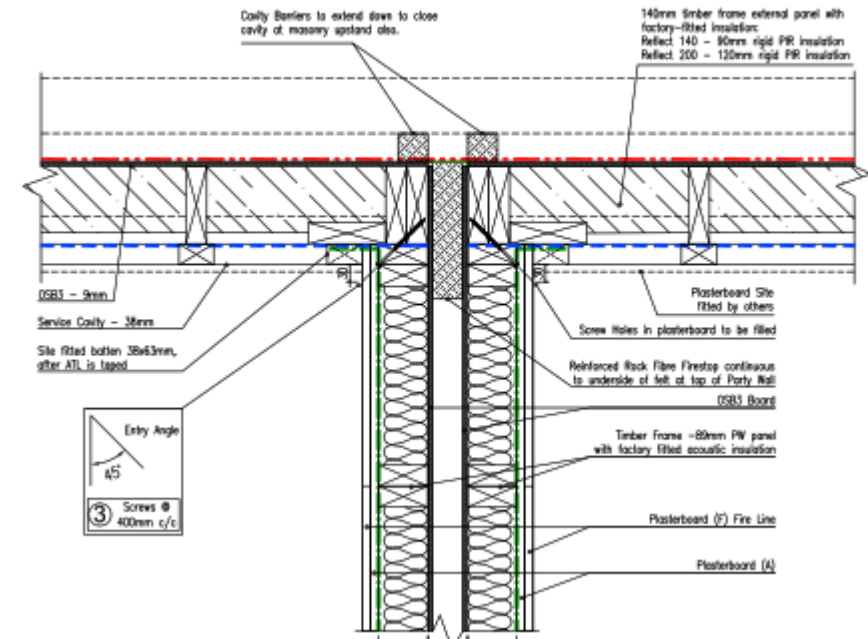
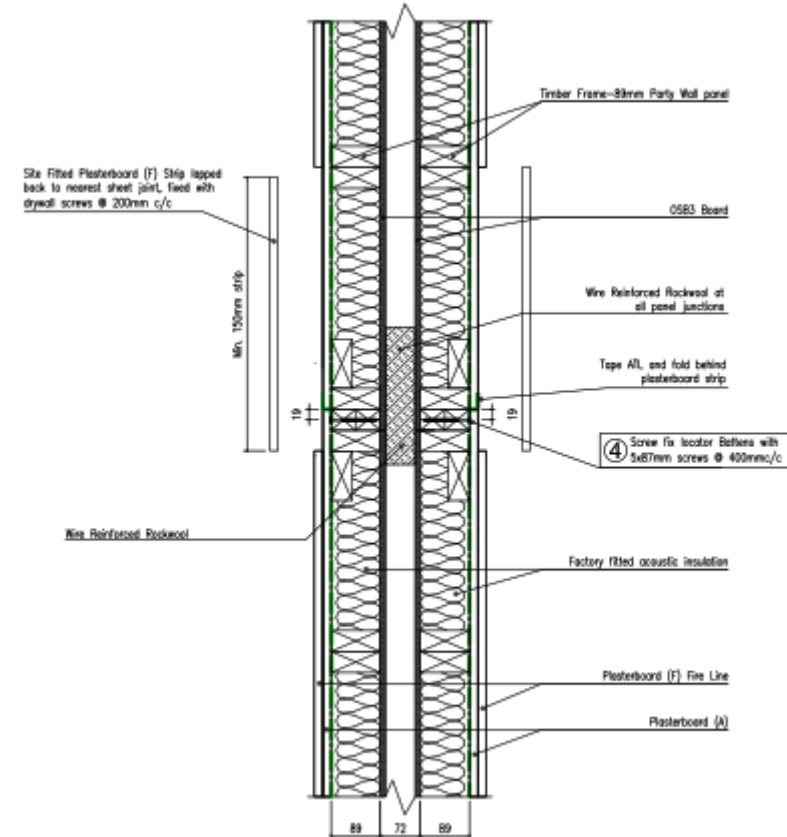
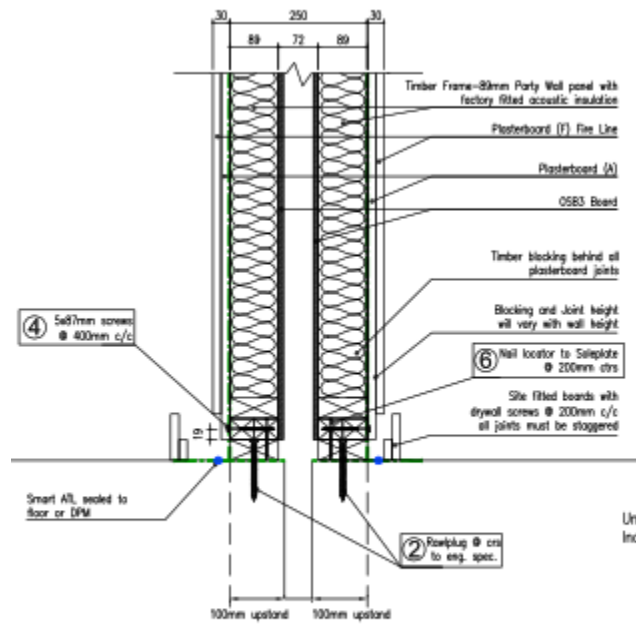
External walls



Cavity Barriers



Party Wall System



Factory manufactured Party Wall System



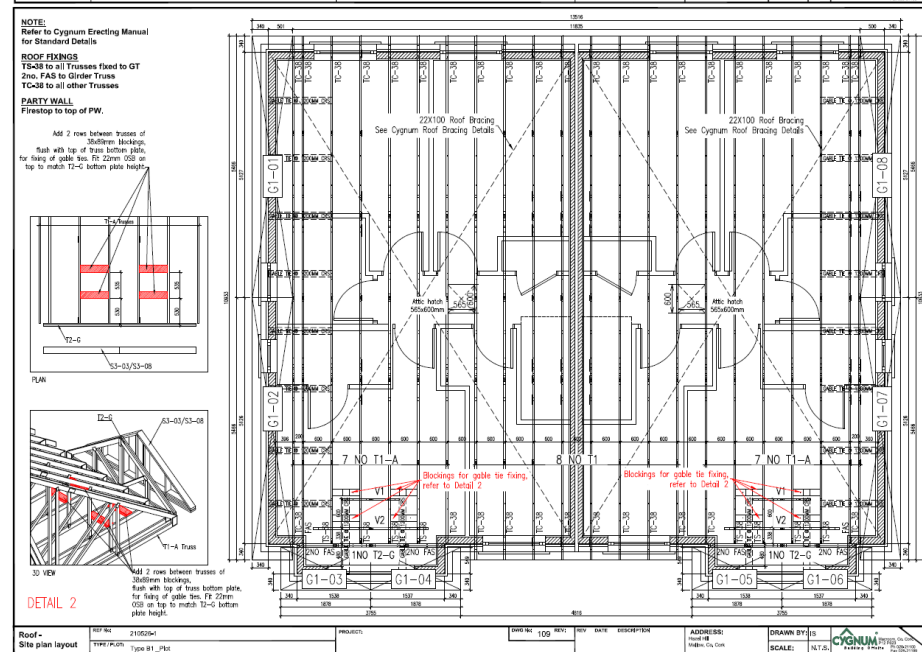
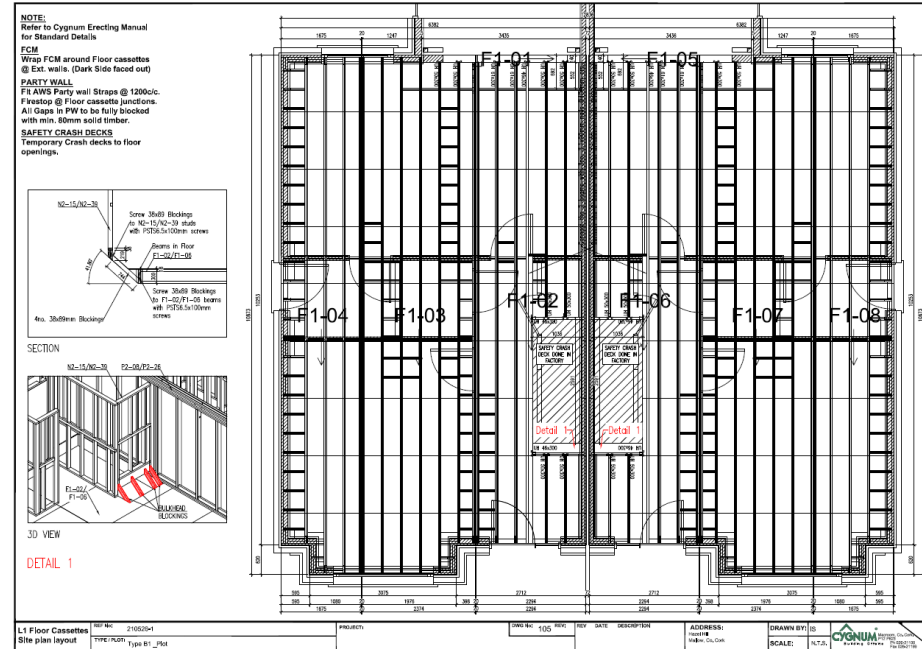
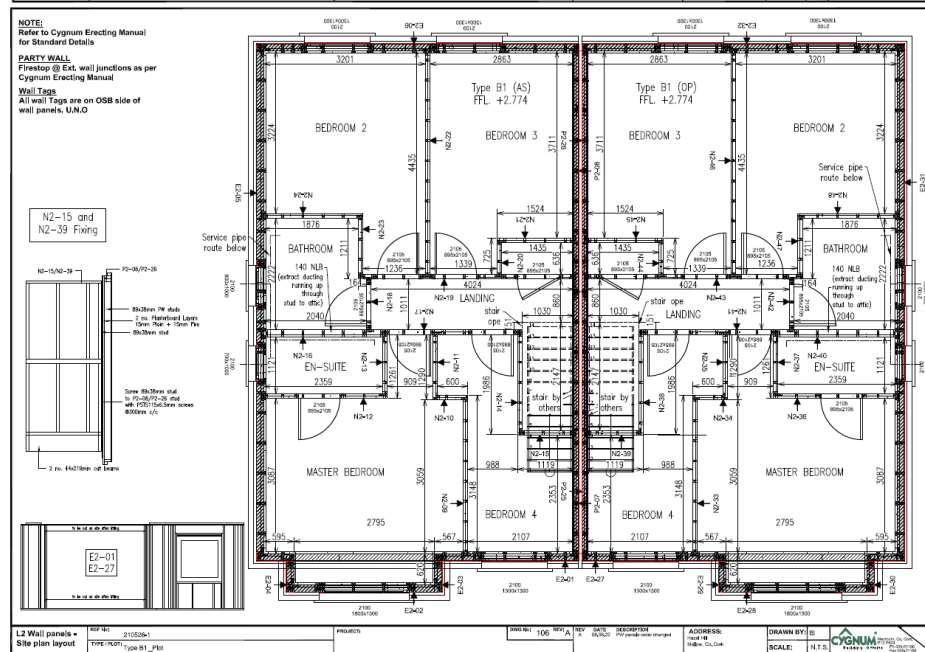
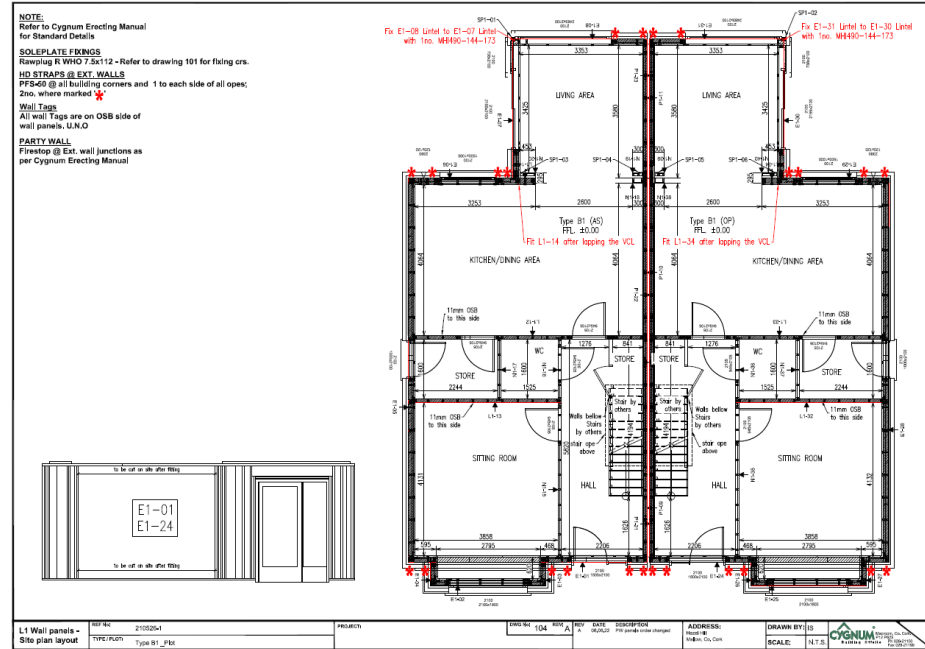
Party Wall System



Site inspections

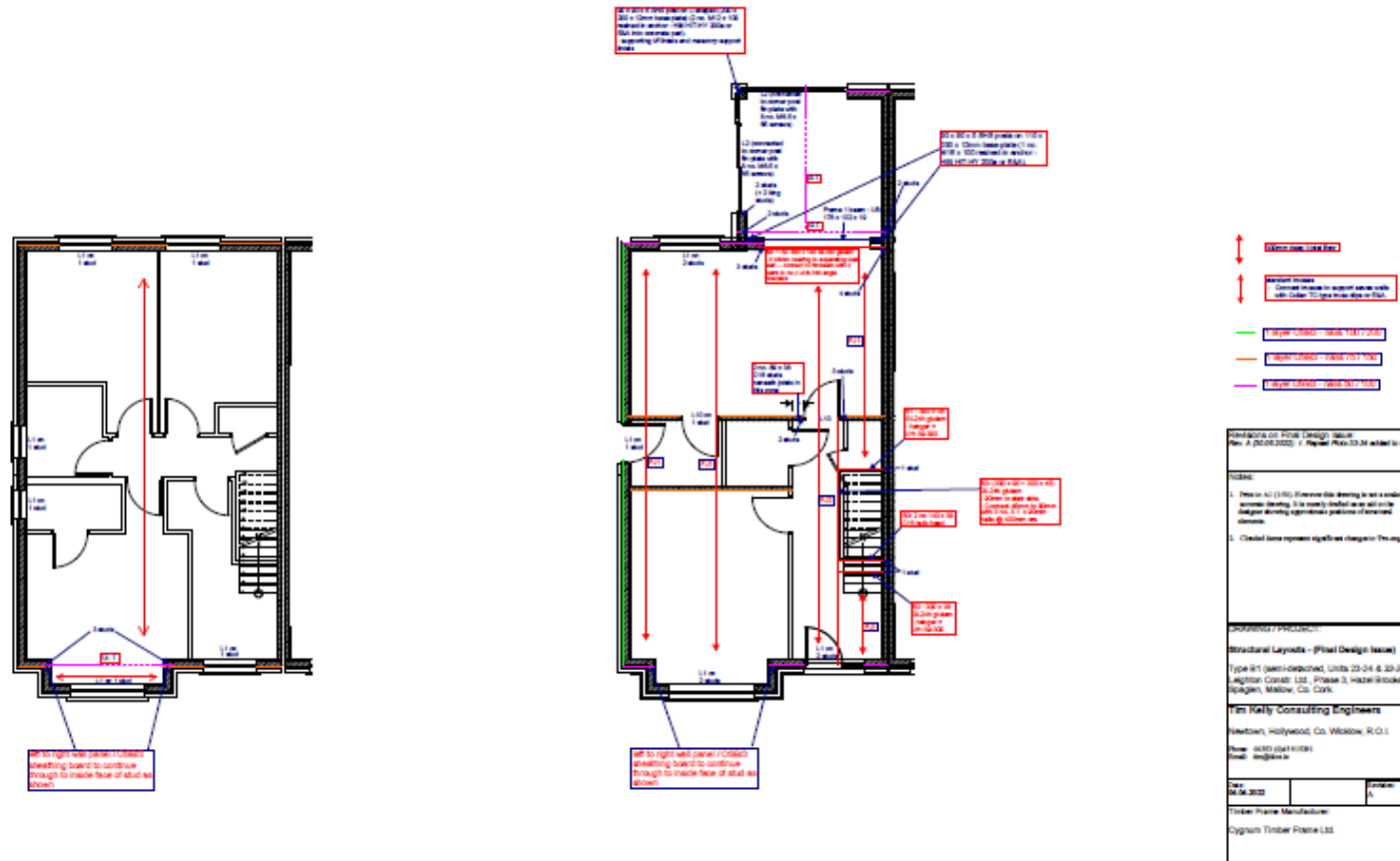


Site inspections

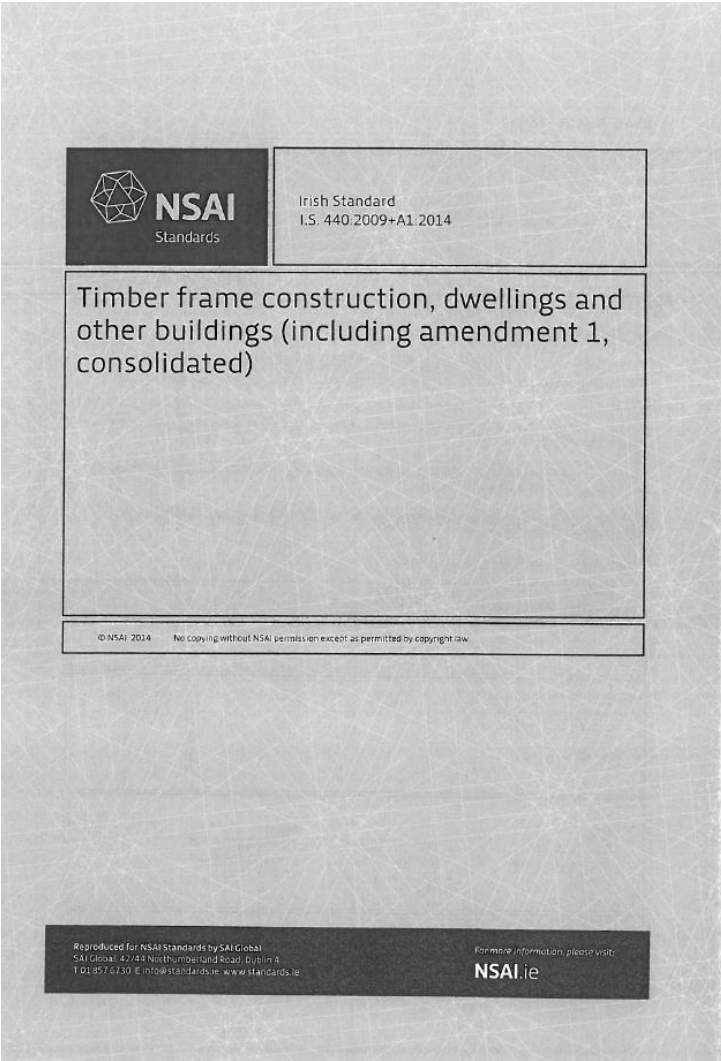


Site inspections

Internal walls (pt) = 100 x 20 x 210 = 420000 sq. ft Internal walls (sq. ft) = 40 x 20 x 210 = 168000 sq. ft Internal walls (sq. ft) = 40 x 20 x 210 = 168000 sq. ft Roof Tiles 1. Design assume head-on or on wind points which are beyond all windward point (N/A for all internal corners)		P-Floor (pt) = 300 x 20 x 210 = 1260000 sq. ft on CRB walls (net leakage of air in/out) = 0 cubic ft (N/A for CRB) P-1 = 300 x 20 x 210 = 1260000 sq. ft on CRB walls (net leakage of air in/out) = 0 cubic ft (N/A for CRB) CRB Details Setting zone and above standard Crgon Details Rate plate for Green Bridge • Ramping (P) 100 x 210 sq ft follows • R1 walls on pink or green = 100000 sq. ft • R1 walls on red = 100000 sq. ft • Internal CRB standard position walls = 400000 sq. ft • Ramping wall on red = 100000 sq. ft Roofs (sq. ft) • Roof P-Floor 300 x 210 = 63000 sq. ft • Roof P-1 300 x 210 = 63000 sq. ft • Roofs for the panel of all building corners and wall ends • Roof for all doors and window openings (no. of doors for building for walls openings) Party Wall Roofs • Roof P-Wall 400 sq. ft, 1200 sq. ft, and 1700 sq. ft Roof for Roofs (Roof measure) • Cubic FT 77000 sq. ft (with applied 3.0 x 1000 sq. ft) • In general = 400000 sq. ft (CRB standard position walls) Double wall on location standard or input Double wall, vertically along opening (width and wall side of internal wall) (ft x 22000 sq. ft)
Roof Tiles 1. Design assume head-on or on wind points which are beyond all windward point (N/A for all internal corners)		CRB Details Setting zone and above standard Crgon Details Rate plate for Green Bridge • Ramping (P) 100 x 210 sq ft follows • R1 walls on pink or green = 100000 sq. ft • R1 walls on red = 100000 sq. ft • Internal CRB standard position walls = 400000 sq. ft • Ramping wall on red = 100000 sq. ft Roofs (sq. ft) • Roof P-Floor 300 x 210 = 63000 sq. ft • Roof P-1 300 x 210 = 63000 sq. ft • Roofs for the panel of all building corners and wall ends • Roof for all doors and window openings (no. of doors for building for walls openings) Party Wall Roofs • Roof P-Wall 400 sq. ft, 1200 sq. ft, and 1700 sq. ft Roof for Roofs (Roof measure) • Cubic FT 77000 sq. ft (with applied 3.0 x 1000 sq. ft) • In general = 400000 sq. ft (CRB standard position walls) Double wall on location standard or input Double wall, vertically along opening (width and wall side of internal wall) (ft x 22000 sq. ft)



Site inspections



Site inspections



DOCUMENT	14:01	ISSUE NO.	1
TITLE	TIMBER FRAME SITE CHECK SHEET	REVISION	1
SECTION	ERECTING	ISSUE DATE	24/07/2022

Sole Plate Levels

Have you got a soleplate / substructure Plan

Underbuilding check

Square	Within tolerance Outside tolerance Reported to client Reported to design
--------	---

Level	Within tolerance Outside tolerance Reported to client Reported to design
-------	---

Upstands	To correct levels Appear structurally stable Concrete where expected
----------	--

Soleplates

DPC to all levels
Installed levels
Installed levels to correct dimensions
Installed levels to correct diagnosis
Fixing to spec
Cut ends treated
Packed at intervals to achieve height

DOCUMENT	14:01	ISSUE NO.	1
TITLE	TIMBER FRAME SITE CHECK SHEET	REVISION	1
SECTION	ERECTING	ISSUE DATE	24/07/2022

EXTERNAL WALLS

External Walls – From Externals

Holding down straps installed to spec
Membranes lapped correctly
Ripped membrane repaired
Cavity barriers installed to correct locations
No gaps in cavity barriers
Stud partitions marked on panels

External Walls – Walls-General

Transported without damage
Panel layout plans received

External Walls – Panel Positioning

Panels positioned per plan
Panels plumb
Panels checked for line
Ope locations per plan
Chimney/stair opes line through

External Walls – Manufacturing

No gaps - studs and rails
Cripples flush with lintols
Studs flush with rails
Bridgings flush with studs
No gaps – insulation and frame
No areas uninsulated

External Walls - Fixings to spec.

Panel to soleplate / floor
Panel to panel
Portal frame to base
Portal frame to timber frame

DOCUMENT	14:01	ISSUE NO.	1
TITLE	TIMBER FRAME SITE CHECK SHEET	REVISION	1
SECTION	ERECTING	ISSUE DATE	24/07/2022

INTERNAL LOADBEARING WALLS

Internal Loadbearing Walls - Manufacturing

No gaps - studs and rails
Cripples flush with lintols
Studs flush with rails
Bridgings flush with studs

Internal Loadbearing Walls - Misc

VCL at junction with ext wall
Steps for service cavity / linings to plan

Internal Loadbearing Walls - Fixings to Spec

Panel to soleplate / floor
Panel to panel

Internal Loadbearing Walls - Load Transfer

Multiple studs under point loads above
Multiple studs under cripples above

RACKING WALLS

Racking Walls - Manufacturing

No gaps - studs and rails
Cripples flush with lintols
Studs flush with rails
Bridgings flush with studs

Racking Walls - Fixings to Spec

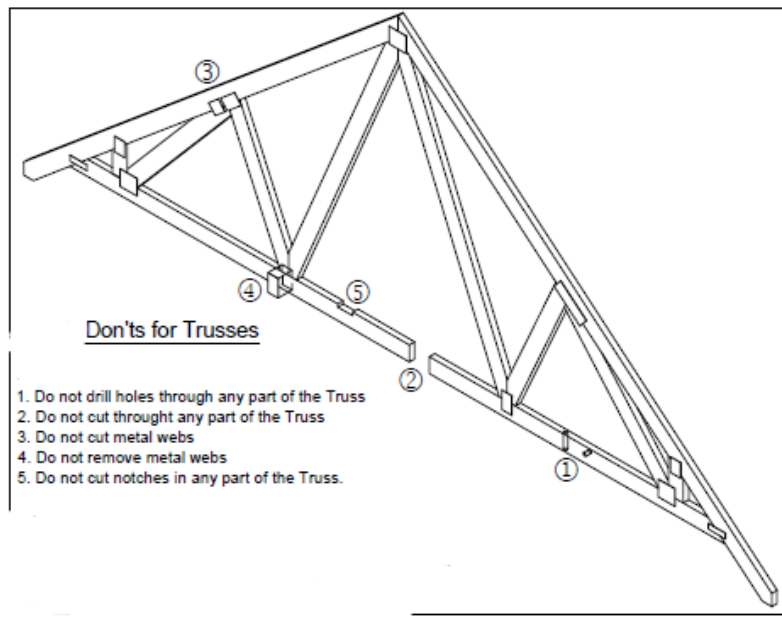
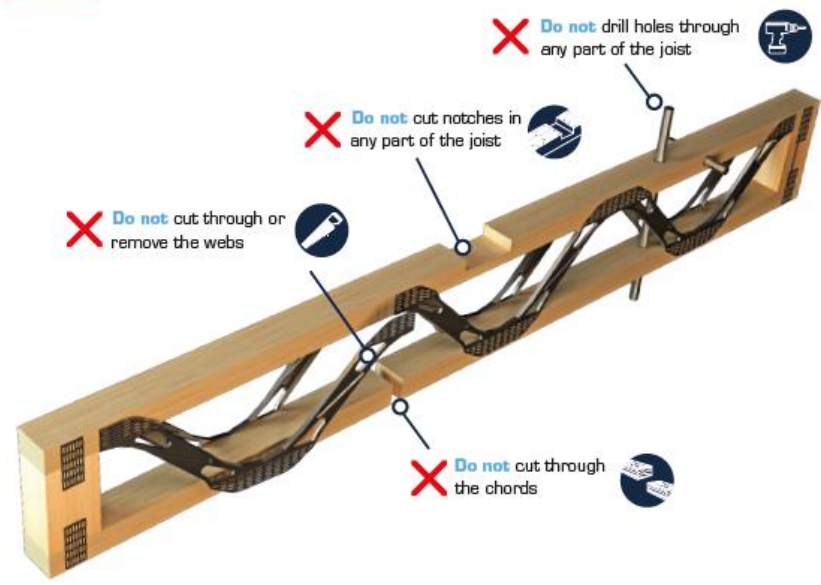
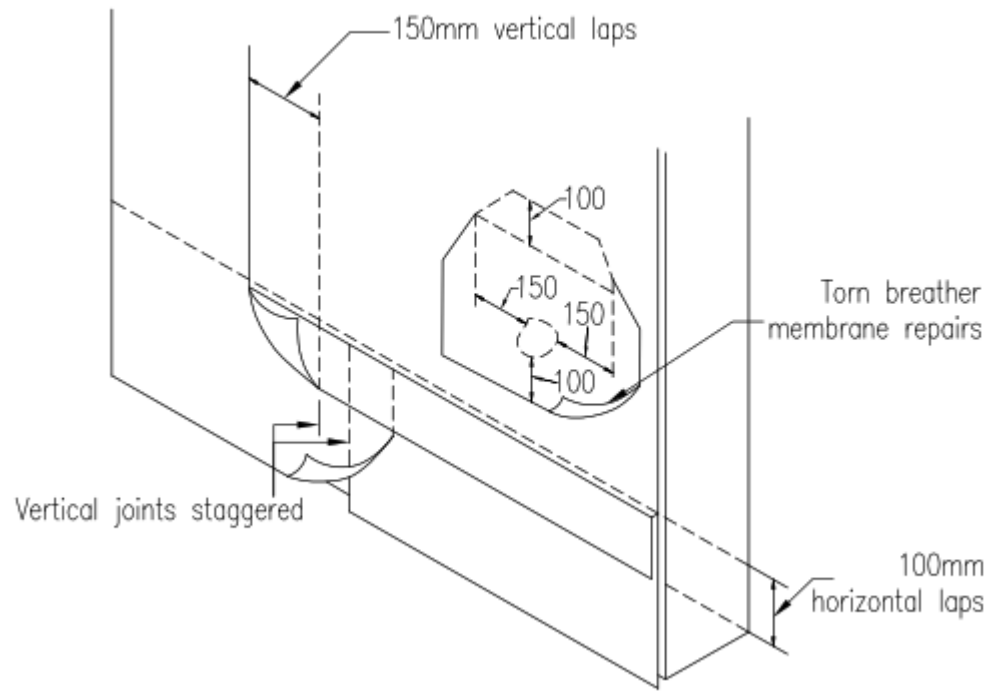
Panel to soleplate / floor
Panel to panel

Racking Walls - Load Transfer

Multiple studs under point loads above
Multiple studs under cripples above



Site inspections



Site inspections

Cygnum Client Site Visit Form

Client	
Project/Site	
Unit Description/Number	
Project Ref	

Visits

Date	Type Of Visit
01.01.2024	☒ Pre Erect ☐ During Erect ☐ Post Erect
01201.2024	☒ Pre Erect ☐ During Erect ☐ Post Erect
03.01.2024	☐ Pre Erect ☒ During Erect ☐ Post Erect
04.01.2024	☐ Pre Erect ☒ During Erect ☐ Post Erect
05.01.2024	☐ Pre Erect ☒ During Erect ☐ Post Erect

Cygnum Erection Snag List

Client	Leigmon Construction
Project/Site	Mallow
Unit Description/Number	P101 29-30 Type B1
Project Ref	210926-1
Date	24/04/2023

Snag List

Description	Completed Yes	No
P101 30 FF Walls to be plumbed and temporary screwed to ceiling Bulkhead detail to be completed in from bedroom Bay window cheeks not square service panens to be backed and made good	☐	☐
P101 30 GF More screws needed in plasterboard cover gria in stairwell may also need for lining through MHE620x150 to be fitted where double joist meet gium in kitchen area Service cavity panens missing rns of window in kitchen area Steel Posts to be bolted to studs Panywall to be screwed on verticals Service cavity panens at skining level not lining through with vertical studs in bay window Rns of doorway emerging living room to be fixed to floor Lns of doorway emerging WC to be fixed to floor Rear Roofs to be completed When block work completed and scaffolding removed Plasterboard to be completed in same area	☐	☐
P101 29 FF Walls to be plumbed and temporary screwed to ceiling Bulkhead detail to be completed in from bedroom Bay windows to be checked for square Airtightness membrane not taped correctly left and right of bay window More screws needed in plasterboard cover gria exceeding 600mm centre's and 200mm centre's vertically Fill gap in plasterboard top of stairwell 2no floor disks missing in from bedroom	☐	☐



Customer	Bridgewater
Site	Anarraig
House/block type	E-C-Q-M-V-V-VM-EM
Project ref:	230124
House number (s)	18-24

Handover Confirmation

Date Of Handover	27-10-23
------------------	----------

Reference to the above project, we hereby confirm that we are handing over the timber frame kit in good condition with effect from the date of handover above.
The ongoing protection and safeguarding of the timber frame works is wholly your responsibility.
In that regard, we refer you to Cygnum sheet 201 that has been sent to you with approval drawings.
Any outstanding contracted works will be carried out following completion of erabling works which are your responsibility.

CYGNUM

Ronan O'Sullivan

Signed Ronan O'Sullivan

Utho

Completion Certificate

Date of final completion	12-11-23
--------------------------	----------

Reference to the above project, we hereby certify that all the works have been fully completed in accordance with the terms of the contract as at the date of final completion above.

CYGNUM

Ronan O'Sullivan 21-12-23





- This certificate relates to the following Building Works:
_____ (project name)
at _____ (address)
element _____ (insert as appropriate)
- This certificate has been prepared in accordance with the Code of Practice for Inspecting and Certifying Buildings and Works (as published by the Minister under section 3(7) of the Building Control Act 1990) or equivalent.
- We confirm that we have been commissioned by _____ (insert as appropriate) to design, in conjunction with others, the works described above in 1 and to certify our design.
- We confirm that we are competent to carry out our design and to coordinate and integrate the design with that of others as (insert specialist skill) _____ based on _____ (insert accreditation and basis of competence)
- We confirm that we have the Professional Indemnity Insurance required in our appointment: the renewal date of this policy is _____ (date)
- We confirm that our plans, calculations, specifications and particulars included in the Schedule to the Commencement / 7 Day Notice to which this certificate is relevant, and which have been prepared exercising reasonable skill, care and diligence, have been prepared to demonstrate compliance with the requirements of the Second Schedule of the Building Regulations in so far as they apply to the building works concerned.
- Under our Conditions of Engagement we are responsible for co-ordinating and integrating within our overall design of designated elements of the works the design of such parts of the works as will be designed to the requirements of our performance specifications by specialist suppliers and/or sub-contractors and our certification is contingent on the design of such parts and proprietary products being in compliance with the requirements of our performance specifications and of the Second Schedule to the Building Regulations insofar as they apply to the elements concerned.
- We certify, having exercised reasonable skill, care and diligence that, having regard to plans, calculations, and specifications which have been prepared by us and having relied on ancillary certificates and particulars referred to at 6 and 7 above, our proposed design of those elements of the works for which we are responsible to the owner is in compliance with the requirements of the Second Schedule to the Building Regulations insofar as they apply to the elements concerned.

Company Name & Address: _____

Date: _____ Tel: _____ Fax: _____ E-Mail: _____
Company or Practice Registration No. _____ (where relevant)

Signature (to be signed by a Principal or Director) Name: _____ Signed: _____



- This certificate relates to the following Building Works:
_____ (project name)
at _____ (address)
element _____ (insert as appropriate)
- This certificate has been prepared in accordance with the Code of Practice for Inspecting and Certifying Buildings and Works (as published by the Minister under section 3(7) of the Building Control Act 1990) or equivalent.
- We confirm that we have been commissioned by _____ (insert as appropriate) to design, in conjunction with others, the works described above in 1 and to certify our design.
- We confirm that we are competent to carry out our design and to coordinate and integrate the design with that of others as (insert specialist skill) _____ based on _____ (insert accreditation and basis of competence)
- We confirm that we have the Professional Indemnity Insurance required in our appointment: the renewal date of this policy is _____ (date)
- We confirm that our plans, calculations, specifications and particulars included in the Schedule to the Commencement Notice / 7 Day Notice and Completion Certificate to which this certificate is relevant, and which have been prepared exercising reasonable skill, care and diligence, have been prepared to demonstrate compliance with the requirements of the Second Schedule of the Building Regulations in so far as they apply to the building works concerned.
- Under our Conditions of Engagement we are responsible for co-ordinating and integrating within our overall design of designated elements of the works the design of such parts of the works as were designed to the requirements of our performance specifications by specialist suppliers and/or sub-contractors and our certification is contingent on the design of such parts and proprietary products being in compliance with the requirements of our performance specifications and of the Second Schedule to the Building Regulations insofar as they apply to the elements concerned.
- We certify, having exercised reasonable skill, care and diligence that, having regard to plans, calculations, and specifications which have been prepared by us and having relied on ancillary certificates and particulars referred to at 6 and 7 above, our design of those elements of the works for which we are responsible to the owner is in compliance with the requirements of the Second Schedule to the Building Regulations insofar as they apply to the elements concerned.

Company Name & Address: _____

Date: _____ Tel: _____ Fax: _____ E-Mail: _____
Company or Practice Registration No. _____ (where relevant)

Signature (to be signed by a Principal or Director) Name: _____ Signed: _____



- This certificate relates to the following Building Works:
_____ (project name)
at _____ (address)
element of work _____ (insert as appropriate)
- This certificate has been prepared in accordance with the Code of Practice for Inspecting and Certifying Buildings and Works (as published by the Minister under section 3(7) of the Building Control Act 1990) or equivalent.
- We confirm that we have been commissioned by _____ (insert as appropriate) to design, in conjunction with others, the works described above in 1 and to certify our design.
- We confirm that we are competent to carry out our design and to coordinate and integrate the design with that of others as (insert specialist skill) _____ based on _____ (insert accreditation and basis of competence)
- We confirm that we have the Professional Indemnity Insurance required in our appointment: the renewal date of this policy is _____ (date)
- Under our Conditions of Engagement we undertook to prepare, in respect of those elements which we designed / specified, an appropriate Preliminary Inspection Plan. We confirm that, taking into account the Code of Practice for Inspecting and Certifying Buildings and Works and exercising reasonable skill, care and diligence, we prepared a Preliminary Inspection Plan which we gave to the Assigned Certifier for inclusion in the overall Preliminary Inspection Plan. We also specified, by reference to national standards or otherwise, for inclusion in the building contract(s), testing to be carried out by contractors/suppliers to demonstrate compliance of building materials, elements and workmanship.
- We now confirm that our Inspection Plan drawn up having regard to the Code of Practice for Inspecting and Certifying Buildings and Works, or equivalent, referred to above has been undertaken by us, having exercised reasonable skill, care and diligence, and/or, where appropriate, by other competent persons, on the basis that all have exercised reasonable skill, care and diligence.
- Based on the above and on "Part A" of the Completion Certificate, and relying on the ancillary certificates submitted and the test results, we now certify, having exercised reasonable skill, care and diligence, that those elements of the project works which we designed/specified are in compliance with the requirements of the Second Schedule to the Building Regulations in so far as they apply to the elements concerned.

Company Name & Address: _____

Date: _____ Tel: _____ Fax: _____ E-Mail: _____
Company or Practice Registration No. _____ (where relevant)

Signature (to be signed by a Principal or Director) Name: _____ Signed: _____

Document: SPECIFICATION Issue No: 1
Title: Ancillary Design Certificate of Compliance: Design. Revision No: 2
Scope of Cert

Section: Spec 6.1 Issue date: 17/12/2015
Approved By: [Signature] Page: 1 of 4

1. Scope
Supporting information which forms part of Cygnum Timber Frames's Ancillary certificate of compliance [design] for the structural timber frame

2. Normative References
1. EN 14732: Timber structures – Prefabricated wall, floor and roof elements – Requirements.
 2. EN 1995-1-1:2004: Eurocode 5: Design of timber structures — Part 1-1: General — Common rules and rules for buildings
 3. IS 440 Timber Frame Dwellings
 4. Building Control Regulations (per list below)

3. Terms and Definitions
Cygnum: Refers to Cygnum Timber Frame Ltd

4. Responsibility
Nothing in the Ancillary Certificate of Compliance: Design or this supporting information document shall be deemed to impose any higher standard of care on Cygnum than the reasonable care and skill to be expected of a properly qualified sub-contractor of the appropriate discipline carrying out works of a similar size, scope, nature, complexity and value as those specified in the sales order in respect of the design obligations.
With reference to Ancillary Design Certificates of Compliance: Design, item 4. the following is an outline of the limits of Cygnum's competence as a timber frame manufacturer under each subsection of the regulations.

4.1 Building regulations part A - Structure

A1 loading
The following codes of practice will be used to design the structural timber frame

- EN1990 Eurocode 0: Basis of structural design
- EN1991 Eurocode 1: Actions on structures
- EN1993 Eurocode 3: Design of steel structures [for any steel design within structural timber frame]
- EN1995 Eurocode 5: Design of timber structures
- IS 440
- Current Irish Building Regulations
- Building Control Regulations 2014
- IStructE/TRADA - PD 6693-1:2012, Guidance to Eurocode 5: Design of timber structures – Part 1:



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is used the masonry is provided stability from the timber frame which are connected [through the external membrane and the stainless steel nails to the timber frame studs. Fixed with stainless steel nails. These are the fixings which must be

ie provision of lateral stability is not provided by the timber frame supply steelwork to carry masonry elements the calculations, drawings for this steelwork will be issued to the clients design of the proposed design. These elements do not form part of the design. show the expected settlement of the timber frame which should be designed.

num's design certification.

ulations the structural timber frame will be so designed to take disproportionate Collapse. and items carried by the structural timber frame will be assessed design. All other items are not included in Cygnum's design

Fire safety

mber frame will be based on the architectural drawings issued to by Cygnum.

gnum have details which are approved by Trada as compliant it within the scope of Cygnum's design certification.

num's design certification.



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num's design certification.

re Service
num's design certification.

eparation of Site & Resistance to Moisture
num's design certification.

Material and Workmanship
I be in accordance with IS440 where appropriate.

ound
gnum have details which are approved by Trada as compliant ens this is not within the scope of Cygnum's design certification.

Ventilation
num's design certification.

Hygiene
num's design certification.

Drainage and Waste Water Disposal
num's design certification.

Heat producing Appliances
imneys, where Cygnum will show the proposed structural drawings for approval and compliance check by the clients design or heat producing appliances unless Cygnum are instructed to through the timber frame to accommodate other heat producing

in the scope of Cygnum's design certification.

Stairways, ladders, ramps and guards
pening sizes for stair openings and show the assumed stair pitch suitable headroom for approval and compliance check by the

scope of Cygnum's design certification.
scope of Cygnum's design certification.



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ervations of fuel and Energy DWELLINGS
eing supplied by Cygnum], Cygnum will confirm the
e of Cygnum's design certification.

ess and use
design certification.



Development Housing:



Development Housing:



Have supplied many Passivhaus projects since including:

The Enterprise Centre, University of East Anglia:





BEST USE OF TIMBER FRAME
CYGNUM TIMBER FRAME



BEST LOW ENERGY PROJECT
CYGNUM TIMBER FRAME









Goldsmith Street 2019 RIBA Stirling Award

100% Passivhaus Certified – 100% Social

UK's Largest Passivhaus Social Housing Scheme

Year project started/ended

2014 – 2019

Number of units/ tenure mix

105 units for social rent - 45 Houses 60 Flats

Contract Type / value

JCT Standard - Traditional Contract £15M

Project Cost incl. Professional Fees / sqm

£2200/sqm (2016)



Thank you for your time.

We will be happy to answer any questions you have.

