ARCH 2020 TDS - Project 3: Revit Drawings Passive House Project

DT 175-02 ARCHITECTURAL TECHNOLOGY

Emma Harrington **12/20/18** **Student Number: C17750321**

List of Drawings

▪ Drawing 300	Site Plan / Location Plan Includes Drainage for Foul Water, Surface Water and Mains Water	(1: 500 /1:200)
▪ Drawing 301	Block (A, B, C & D) – Ground & 1st Floor Plans	(1:50)
▪ Drawing 302	Block (A, B, C & D) – 2nd & 3rd Floor Plans 1st Floor Construction	(1:50)
▪ Drawing 303	Block (A, B, C or D) – Roof & 1st Floor Construction Plans	(1:50)
▪ Drawing 304	Block (A, B, C or D-) – Elevations: North, South & West	(1: 50)
▪ Drawing 305	Section AA- East Elevation	(1:50)
▪ Drawing 306	Section BB – Façade Elevation	(1:20)
▪ Drawing 307	Section CC – Façade Elevation	(1:20)
▪ Drawing 308	Details – External Wall Types & Change of Material (Vertical) Brick, Render, Stone & Party Wall	(1:5)
▪ Drawing 309	Details – Ground Floor Foundations & Cold Roof Eaves	(1:5)
▪ Drawing 310	Details – Window Detail (Cill, Head & Jamb)	(1:5)
▪ Drawing 311	3D Views – North & South Elevations	(NTS)

Student Name: Emma Harrington
Student Number: C17750321

HIGH LEVEL OVERVIEW OF FOUL WATER & SURFACE WATE DRAINAGE - BROOMBRIDGE APARTMENTS

GROUND LEVEL: 36.44
INVERT LEVEL: 33.40

NOTE:
FALL OF SURFACE WATER: 1:80
FALL OF FOUL WATER 1:60

SURFACE WATER DRAINAGE

FOUL WATER DRAINAGE

MAINS WATER H

NOTE: PIPES MUST BE AT LEAST 1M APART

ARMSTRONG JUNCTION 300X 300MM

MANHOLE FOUL WATER 600MM X 600MM

MANHOLE SURFACE WATER600MM X 600MM

Schedule of Drainage Manholes and AJs for Broombridge Development

60

Foul Water Drainage

Site Cover Level:	36,440
Fall of Pipe :	1.60

FW AJ Number	Site Level	Run	Fall	Invert Level (m)	Location
		-			
AJ 1	36.440	-	0.300	36.140	Block B - Unit 1
AJ 2	36.140	6.011	0.100	36.040	Block B - Unit 2
AJ 3	36.040	6.011	0.100	35.940	Block B - Unit 3
MH 1	35.940	7.391	0.123	35.816	Block B - Unit 4
MH 2	35.816	13.463	0.224	35.592	Main Road in front of Block B
MH3	35.592	18.226	0.304	35.288	Main Road in front of Block A
AJ 4	35.780	6.959	0.116	35.664	Block A - Unit 1
AJ 5	35.664	6.976	0.116	35.548	Block A - Unit 2
MH4	35.548	7.257	0.121	35.427	Block A - Unit 3
MH5	35.427	4.400	0.073	35.353	Block A - Unit 4
MH6	35.288	4.206	0.070	35.218	Site Boundary on Barrow Road
MH7				33.440	Main Drain on Barrow Road

Note: Foul Water Drainage to be completed for Block D and C

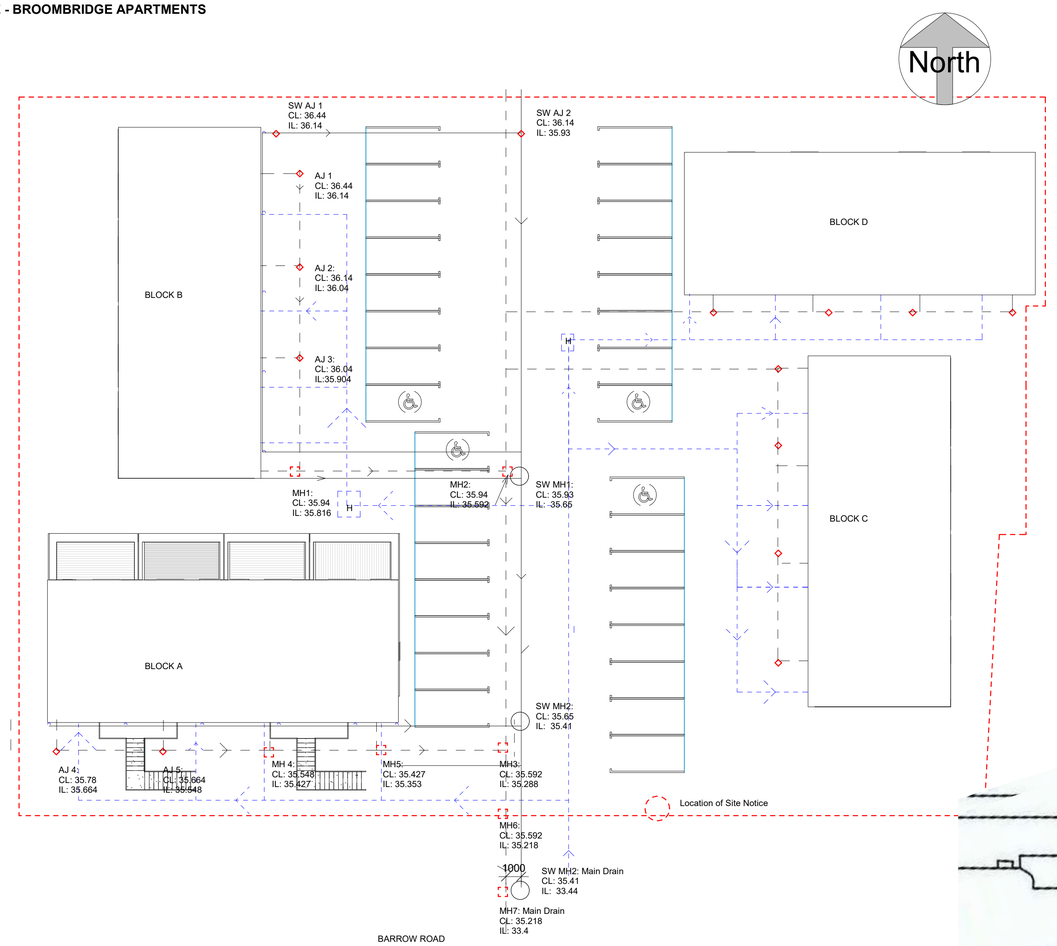
Surface Water Drainage

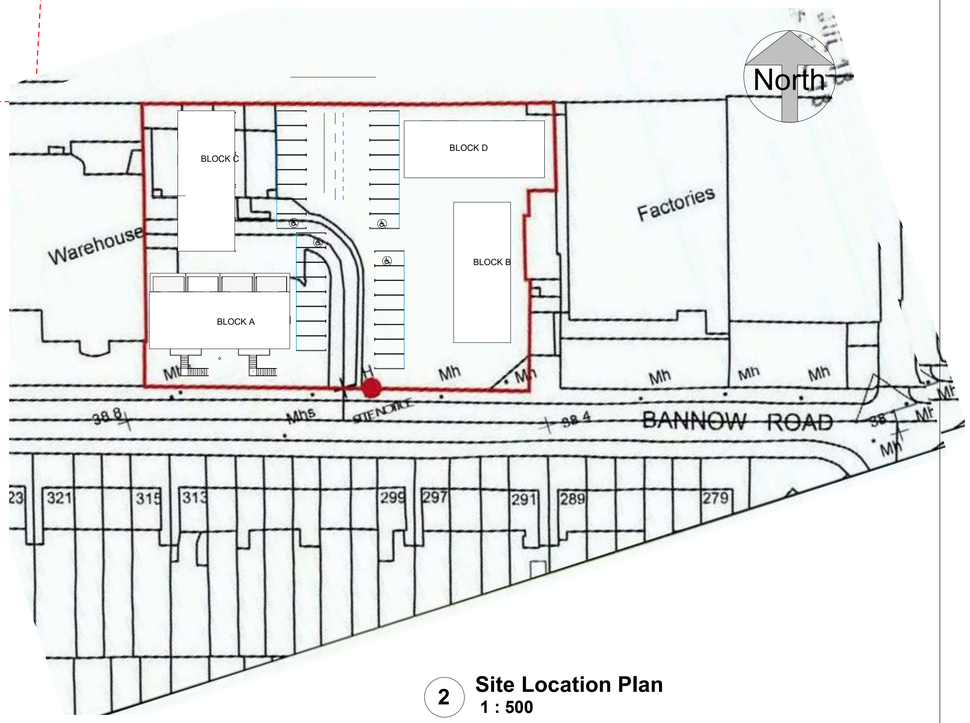
Site Cover Level:	36,440
Fall of Pipe:	1.8

SW AJ Number	Cover/ Ground Level (mm)	Length of Pipe (mm)	Drop (Length / Fall) (mm)	Invert Level (mm)	Locatoin
SW AJ1	36.44		0.30	36.14	Block B - Unit 1
SW AJ2	36.14	16.9	0.21	35.93	Main Road Bottom Right (Block B)
SW MH1	35.93	22.54	0.28	35.65	Main Road Top Right (Block B)
SW MH2	35.65	18.749	0.23	35.41	Main Road Bottom Right (Block A)

Note: Surface Water Drainage to be completed for Block A, D and C

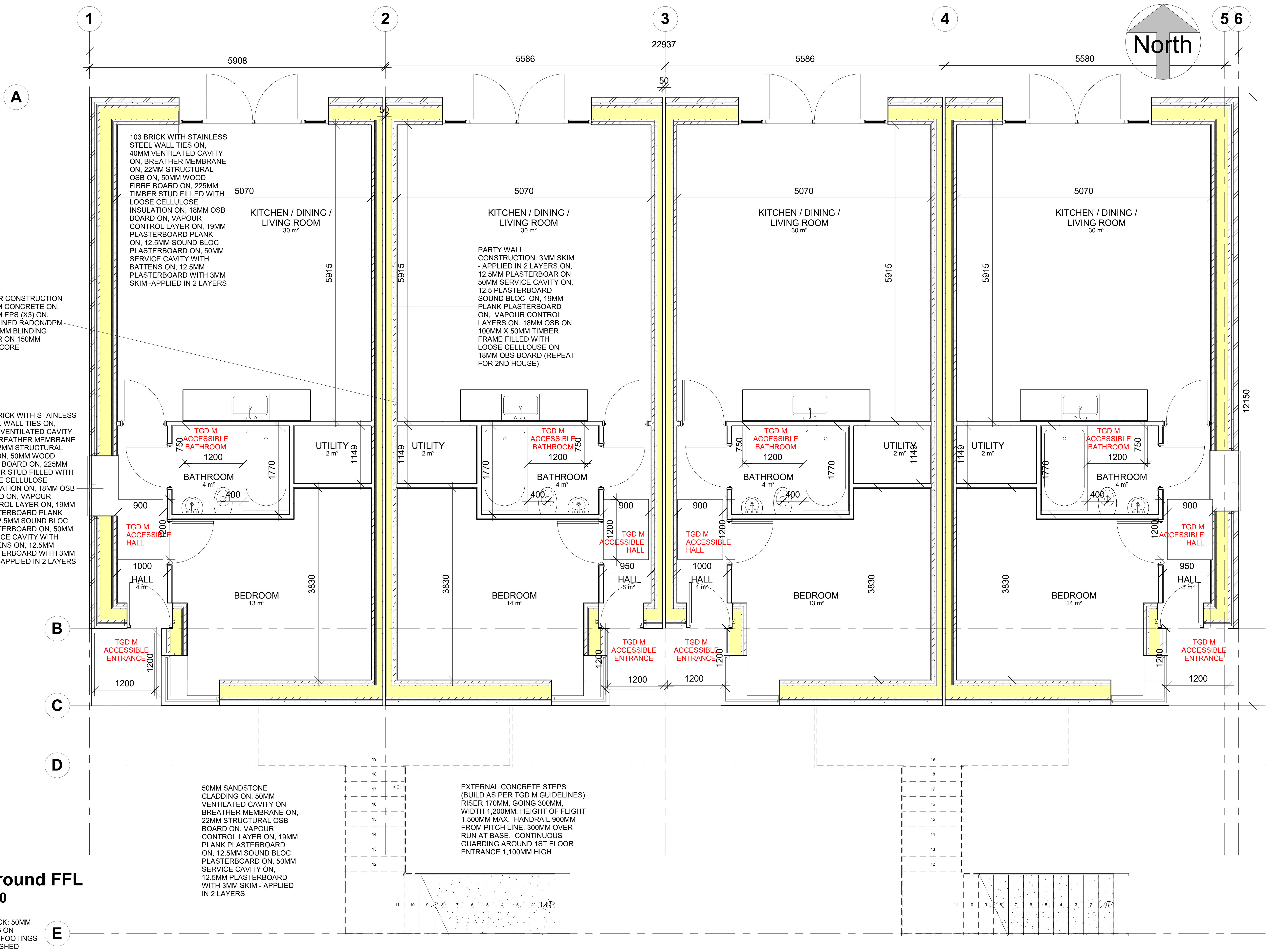
Site Plan with Proposed Drainage
1 : 200





2 Site Location Plan
1 : 500

Organisation Name **DIT**	Client Name **DT175 02**	Scale As indicated	Project number 03	Date 20th December 2018	Drawn by **Emma Harrington**	Emma Harrington DT175-02 2018_19	
Project Name **Passive House**	Sheet Name **Site / Location & Drainage Plan**	Submitted to DT175 02					



103 BRICK WITH STAINLESS STEEL WALL TIES ON, 40MM VENTILATED CAVITY ON, BREATHER MEMBRANE ON, 22MM STRUCTURAL OSB ON, 50MM WOOD FIBRE BOARD ON, 225MM TIMBER STUD FILLED WITH LOOSE CELLULOSE INSULATION ON, 18MM OSB BOARD ON, VAPOUR CONTROL LAYER ON, 19MM PLASTERBOARD PLANK ON, 12.5MM SOUND BLOC PLASTERBOARD ON, 50MM SERVICE CAVITY WITH BATTENS ON, 12.5MM PLASTERBOARD WITH 3MM SKIM -APPLIED IN 2 LAYERS

FLOOR CONSTRUCTION 150MM CONCRETE ON, 100MM EPS (X3) ON, COMBINED RADON/DPM ON 50MM BLINDING LAYER ON 150MM HARDCORE

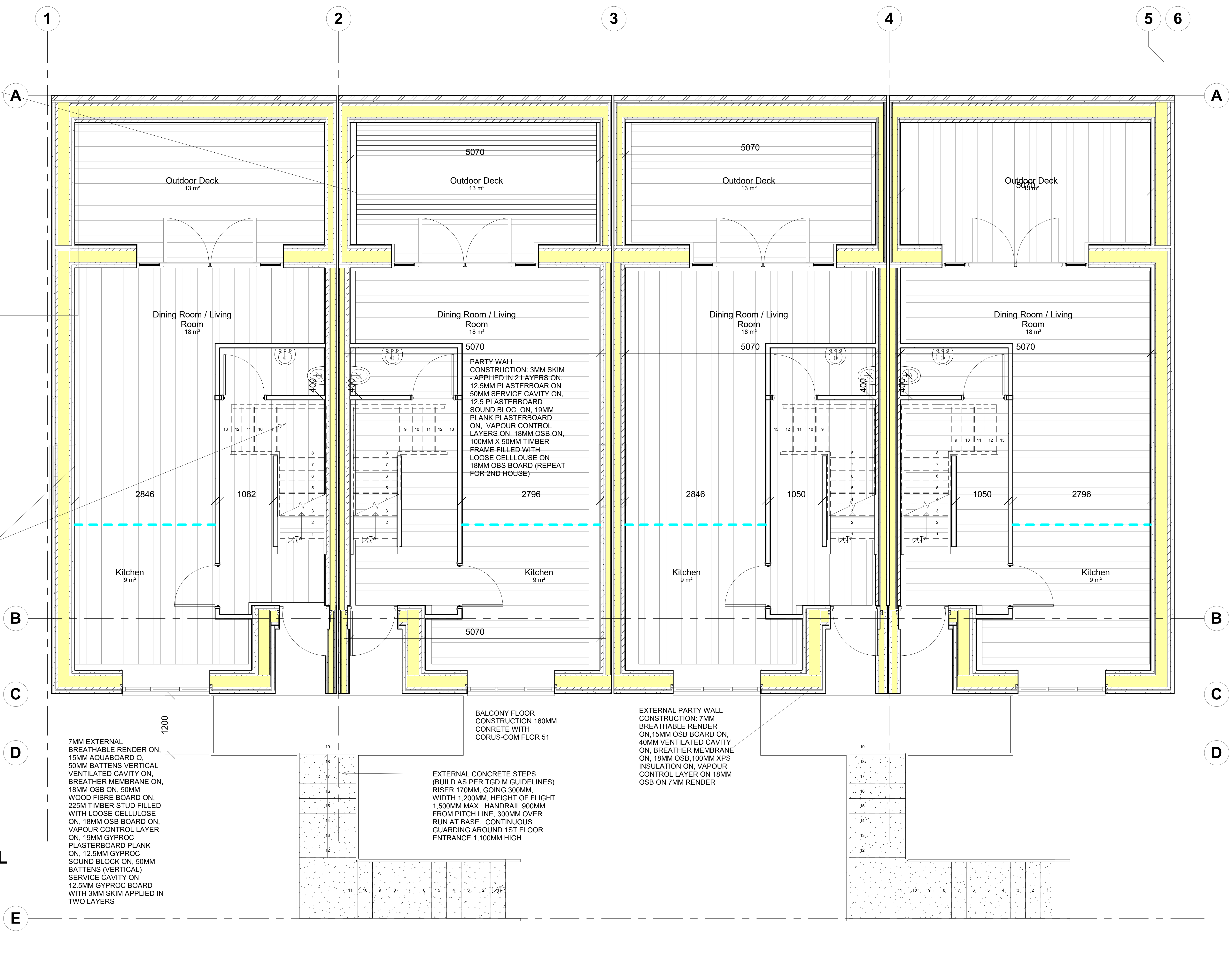
PARTY WALL CONSTRUCTION: 3MM SKIM - APPLIED IN 2 LAYERS ON, 12.5MM PLASTERBOAR ON 50MM SERVICE CAVITY ON, 12.5 PLASTERBOARD SOUND BLOC ON, 19MM PLANK PLASTERBOARD ON, VAPOUR CONTROL LAYERS ON, 18MM OSB ON, 100MM X 50MM TIMBER FRAME FILLED WITH LOOSE CELLLOUSE ON 18MM OBS BOARD (REPEAT FOR 2ND HOUSE)

103 BRICK WITH STAINLESS STEEL WALL TIES ON, 40MM VENTILATED CAVITY ON, BREATHER MEMBRANE ON, 22MM STRUCTURAL OSB ON, 50MM WOOD FIBRE BOARD ON, 225MM TIMBER STUD FILLED WITH LOOSE CELLULOSE INSULATION ON, 18MM OSB BOARD ON, VAPOUR CONTROL LAYER ON, 19MM PLASTERBOARD PLANK ON, 12.5MM SOUND BLOC PLASTERBOARD ON, 50MM SERVICE CAVITY WITH BATTENS ON, 12.5MM PLASTERBOARD WITH 3MM SKIM -APPLIED IN 2 LAYERS

50MM SANDSTONE CLADDING ON, 50MM VENTILATED CAVITY ON BREATHER MEMBRANE ON, 22MM STRUCTURAL OSB BOARD ON, VAPOUR CONTROL LAYER ON, 19MM PLANK PLASTERBOARD ON, 12.5MM SOUND BLOC PLASTERBOARD ON, 50MM SERVICE CAVITY ON, 12.5MM PLASTERBOARD WITH 3MM SKIM - APPLIED IN 2 LAYERS

EXTERNAL CONCRETE STEPS (BUILD AS PER TGD M GUIDELINES) RISER 170MM, GOING 300MM, WIDTH 1,200MM, HEIGHT OF FLIGHT 1,500MM MAX. HANDRAIL 900MM FROM PITCH LINE, 300MM OVER RUN AT BASE. CONTINUOUS GUARDING AROUND 1ST FLOOR ENTRANCE 1,100MM HIGH

1 0 Ground FFL
1 : 50



EXTERNAL DECK: 50MM STONE PAVING ON PROPRIETARY FOOTINGS ON, 50MM CRUSHED AGGREGATE (20-40MM THICK) ON, PLYWOOD BACKED XPS 100MM RIGID INSULATION ON, VAPOUR CONTROL LAYER ON, 30MM OF ASHPALT WEATHERPROOF LAYERS (X2) ON, PROTECTIVE LAYER ON, 18MM OSB BOARD ON,225MM X 63MM JOISTS WITH 225MM MINERAL WOOL INSULATION (BETWEN JOISTS) ON, VAPOUR CONTROL LAYER ON, 19MM GYPROC PLANK PLASTERBOARD ON, 12.5MM GYROC SOUNDBLOCK PLASTERBOARD ON, 50 X 38MM BATTENS (SERVICE CAVITY) ON 12.5MM GYPROC CEILING BOARD WITH 3MM SKIM APPLIED IN TWO LAYERS

103 BRICK WITH STAINLESS STEEL WALL TIES ON, 40MM VENTILATED CAVITY ON, BREATHER MEMBRANE ON, 22MM STRUCTURAL OSB ON, 50MM WOOD FIBRE BOARD ON, 225MM TIMBER STUD FILLED WITH LOOSE CELLULOSE INSULATION ON, 18MM OSB BOARD ON, VAPOUR CONTROL LAYER ON, 19MM PLASTERBOARD PLANK ON, 12.5MM SOUND BLOC PLASTERBOARD ON, 50MM SERVICE CAVITY WITH BATTENS ON, 12.5MM PLASTERBOARD WITH 3MM SKIM -APPLIED IN 2 LAYERS

PARTY WALL CONSTRUCTION: 3MM SKIM - APPLIED IN 2 LAYERS ON, 12.5MM PLASTERBOAR ON 50MM SERVICE CAVITY ON, 12.5 PLASTERBOARD SOUND BLOC ON, 19MM PLANK PLASTERBOARD ON, VAPOUR CONTROL LAYERS ON, 18MM OSB ON, 100MM X 50MM TIMBER FRAME FILLED WITH LOOSE CELLLOUSE ON 18MM OBS BOARD (REPEAT FOR 2ND HOUSE)

PRIVATE STAIRS: (COMPLY WITH TGD K) 900MM WIDTH, 210MM RISER, 250MM GOING. NO MORE THAN 16 STEPS PER FLIGHT. 50MM HANDRAIL - ON BOTH SIDES FOR LESS AMBULANT USERS. (CLEAR AREA BETWEEN STAIRS 800MM). HANDRAIL OVERRUN 300MM AT TOP & BOTTOM OF STAIRS. 400MM CLEAR & UNOBSTRUCTED AREA AT TOP OF STAIRS.

INTERMEDIATE FLOOR CONSTRUCTION: 22MM T&G FLOORING ON, 18MM OSB BOARD ON,225MM X 63MM TIMBER JOISTS @ 400MM CENTERES FILLED WITH 225MM MINERAL WOOL INSULATION ON, VAPOUR CONTROL LAYER ON, 19MM GYPROC PLASTERBOARD PLANK ON, 12.5MM GYPROC SOUND BLOCK ON, 40MM BATTENS (SERVICE CAVITY) ON, 12.5MM GYPROC WALL BOARD

BALCONY FLOOR CONSTRUCTION 160MM CONRETE WITH CORUS-COM FLOR 51

EXTERNAL PARTY WALL CONSTRUCTION: 7MM BREATHABLE RENDER ON,15MM OSB BOARD ON, 40MM VENTILATED CAVITY ON, BREATHER MEMBRANE ON, 18MM OSB,100MM XPS INSULATION ON, VAPOUR CONTROL LAYER ON 18MM OSB ON 7MM RENDER

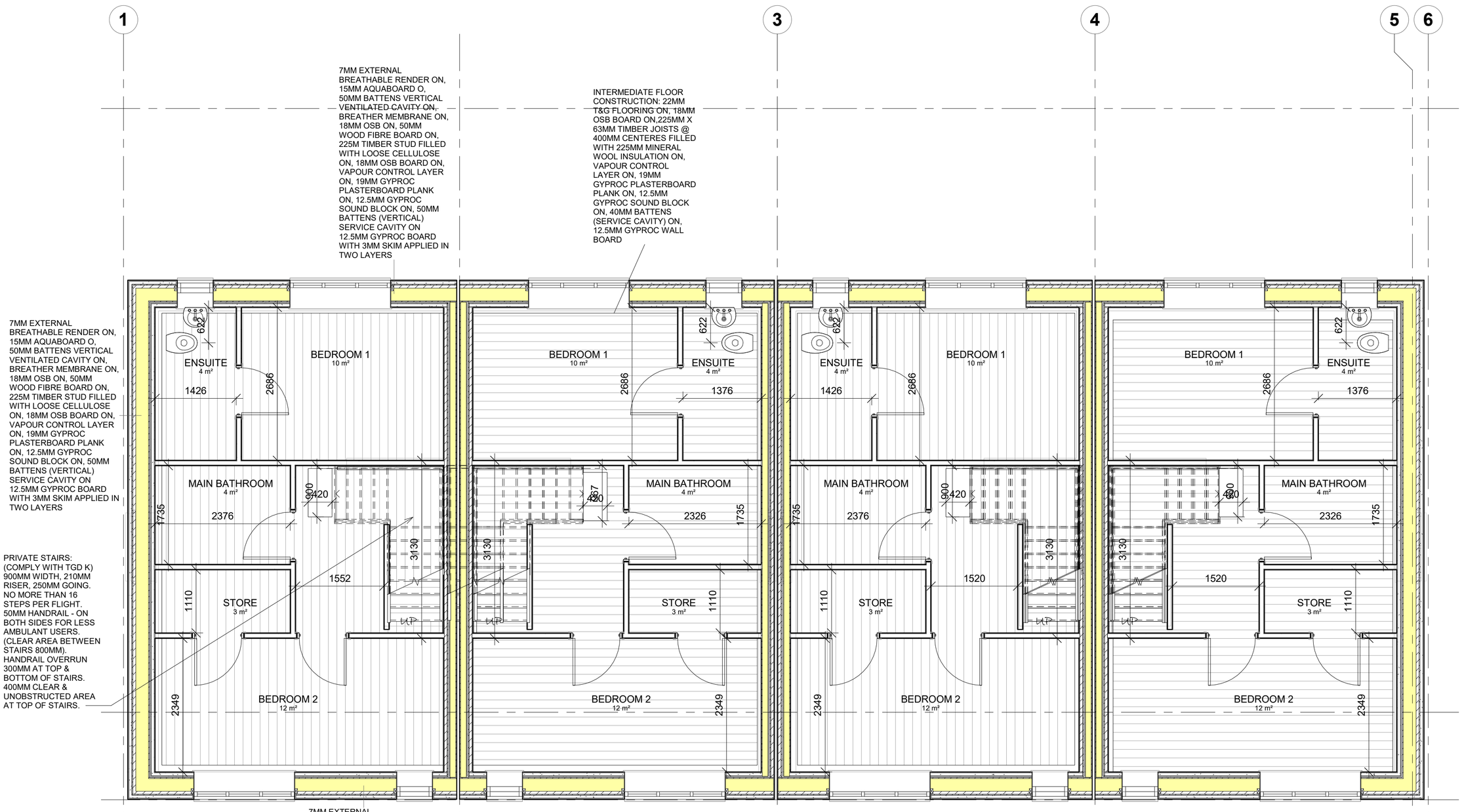
7MM EXTERNAL BREATHABLE RENDER ON, 15MM AQUABOARD O, 50MM BATTENS VERTICAL VENTILATED CAVITY ON, BREATHER MEMBRANE ON, 18MM OSB ON, 50MM WOOD FIBRE BOARD ON, 225M TIMBER STUD FILLED WITH LOOSE CELLULOSE ON, 18MM OSB BOARD ON, VAPOUR CONTROL LAYER ON, 19MM GYPROC PLASTERBOARD PLANK ON, 12.5MM GYPROC SOUND BLOCK ON, 50MM BATTENS (VERTICAL) SERVICE CAVITY ON 12.5MM GYPROC BOARD WITH 3MM SKIM APPLIED IN TWO LAYERS

EXTERNAL CONCRETE STEPS (BUILD AS PER TGD M GUIDELINES) RISER 170MM, GOING 300MM, WIDTH 1,200MM, HEIGHT OF FLIGHT 1,500MM MAX. HANDRAIL 900MM FROM PITCH LINE, 300MM OVER RUN AT BASE. CONTINUOUS GUARDING AROUND 1ST FLOOR ENTRANCE 1,100MM HIGH

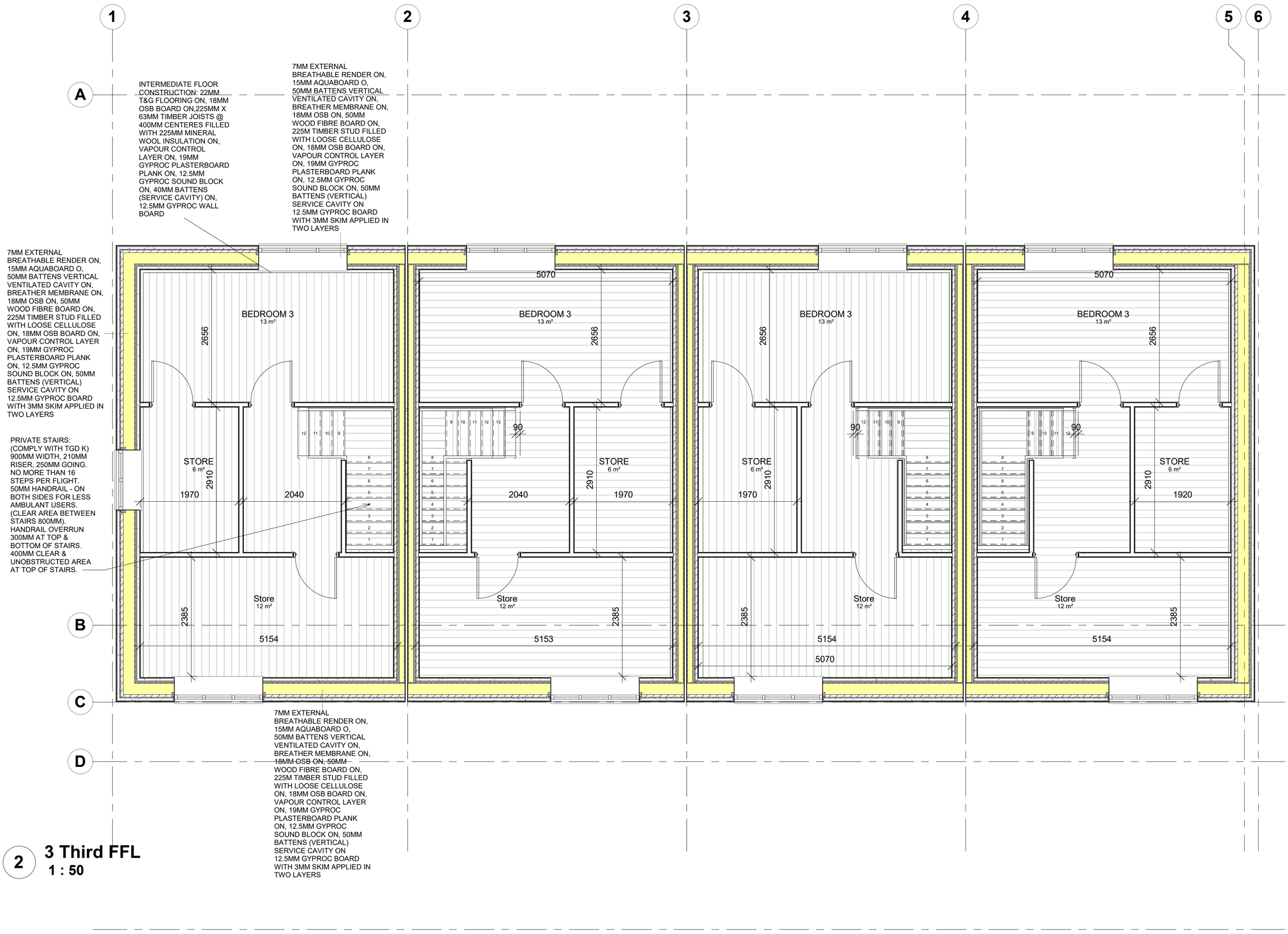
2 1 First FFL
1 : 50

Project Name	Project Number	Client Name	Sheet Name	Sheet Number	Author	Sheet Issue Date
Passive House	**03**	**DT175 02**	**GA - Ground & 1st Floor Plan**	**301**	**Emma Harrington**	**12/19/18**

Emma Harrington
DT175-02
2018_19



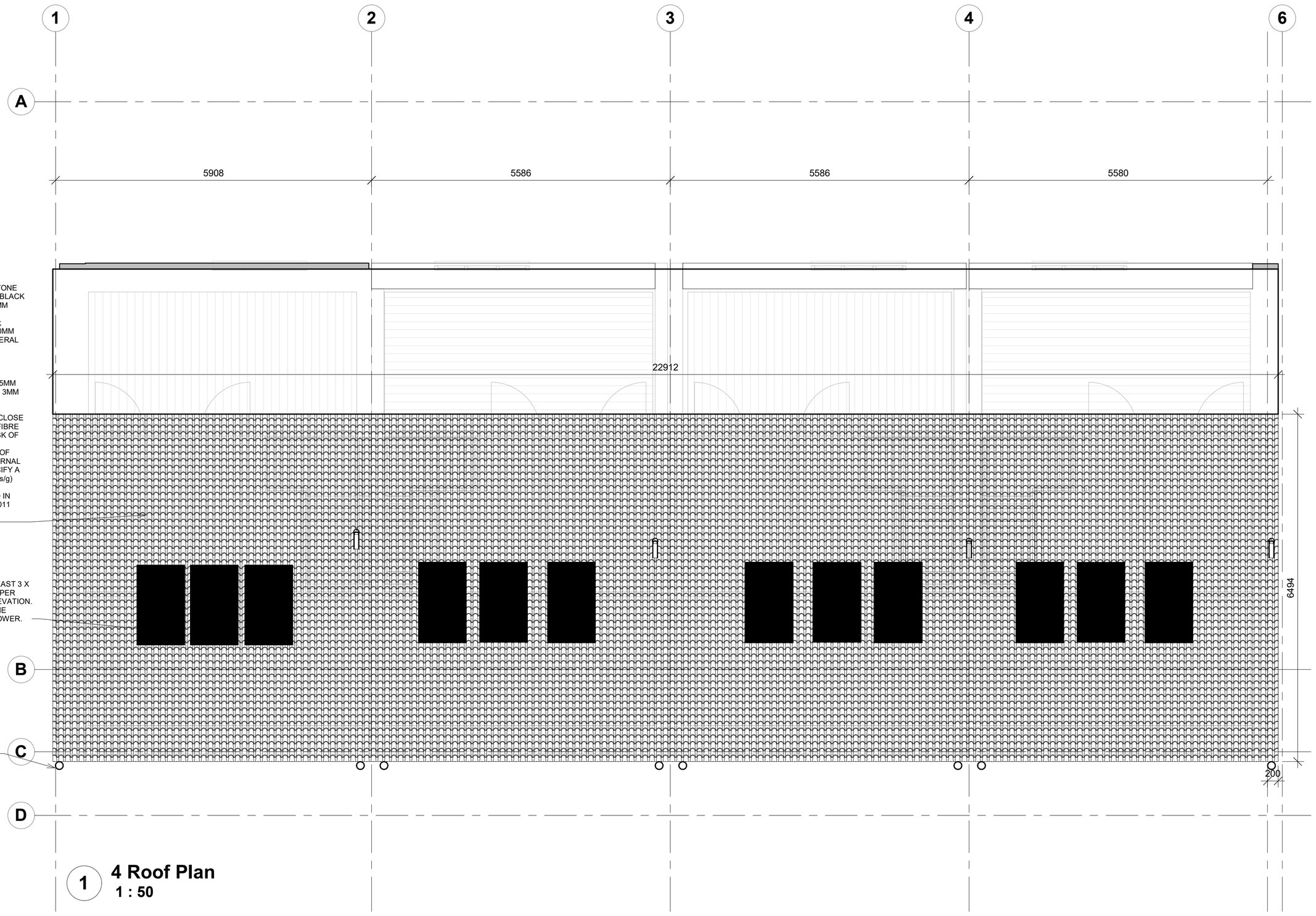
1 **2 Second FFL**
1 : 50



2 **3 Third FFL**
1 : 50

Project Name	Project Number	Client Name	Sheet Name	Sheet Number	Author	Sheet Issue Date
Passive House	**03**	**DT175 02**	**GA - 2nd & 3rd Floor Plans**	**302**	**Emma Harrington**	**12/19/18**

Emma Harrington
DT175-02
2018_19



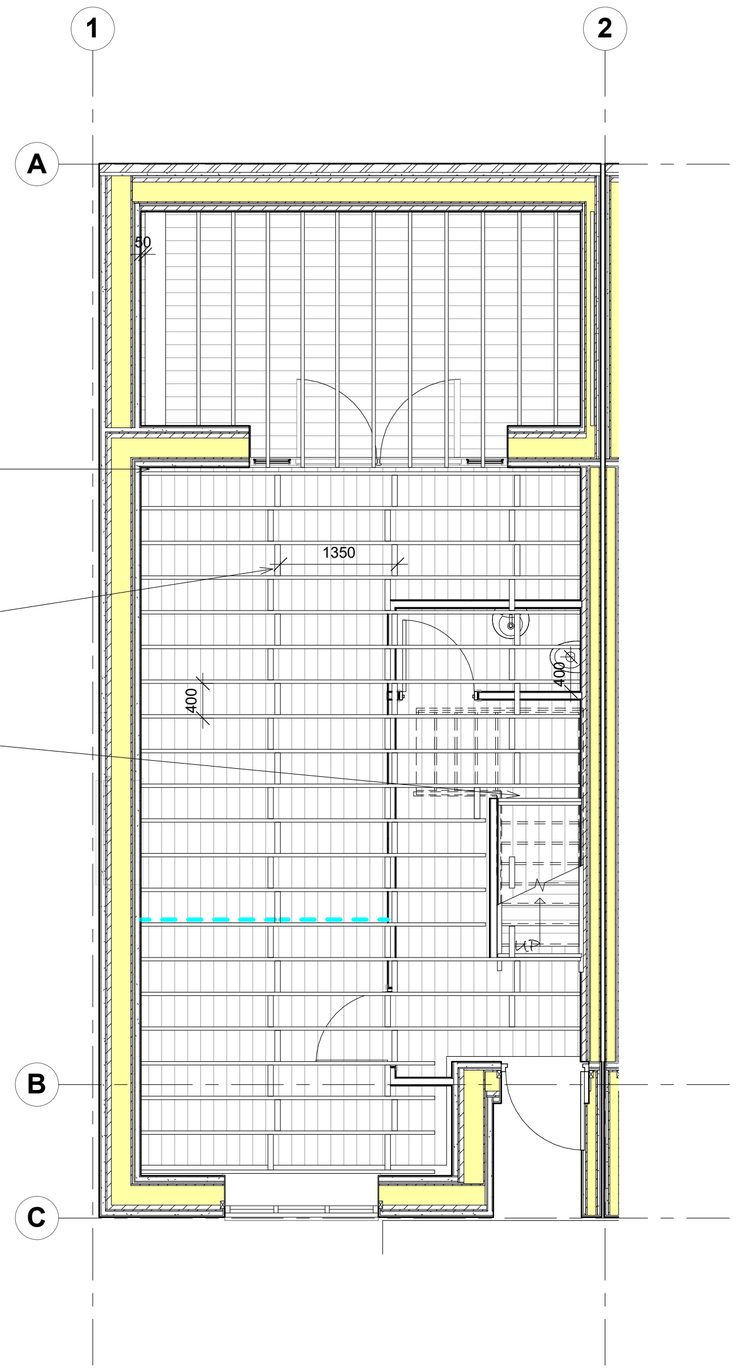
ROOF CONSTRUCTION:
FIBRE CEMENT TEGRAL THRUTONE ENDURANCE TEXTURED BLUE BLACK TILES (600 X 300MM), WITH 9OMM LAP - AS PITCH <35^{0} ON;
50 X 36MM S/F BATTENS @ ON;
150MM X 47MM RAFTERS @ 400MM CENTRES WITH 150MM X 2 MINERAL WOOL INSULATION WEDGED BETWEEN RAFTERS ON;
VAPOUR CONTROL LAYER ON;
50 X 38MM BATTENS ON 19MM GYPROC PLANK BOARD ON 12.5MM GYPROC CEILING BOARD WITH 3MM SKIM APPLIED IN 2 LAYERS

NOTE: WHEN SPECIFICYING A CLOSE FITTING COVERING (SUCH AS FIBRE CEMENT TILES) THERE IS A RISK OF INTERSTITIAL CONDENSATION FORMING ON THE UNDERSIDE OF THE UNDERLAY AND THE EXTERNAL COVERING - THEREFORE SPECIFY A LR (LOW RESISTANCE <0.25MNs/g) UNDERLAY AND ENSURE THE BATTEN SPACE IS VENTILATED IN ACCORDANCE WITH BS 5250:2011 USING A VENTILATED COUNTERBATTEN VOID

PV PANELS:
(AS PER TGD L - ENSURE AT LEAST 3 X PV PANELS (900MM X 1500MM) PER HOUSE ON FRONT / SOUTH ELEVATION. EACH PANEL WILL PROVIDE THE HOUSE WITH 300 WATTS OF POWER.

ROOF DRAINAGE;
(AS PER TGD H - PARA 1.5.1.2) EFFECTIVE ROOF AREA >103M2, THEREFORE THE GUTTER SIZE SHOULD BE 150MM WITH RWO WITH OUTLETS OF 89MM MIN. 2 X RWO PER HOUSE - IN CASE THERE IS A BLOCKAGE IN ONE.

1 4 Roof Plan
1 : 50



SPAN OF FLOOR = 5.07M
SPAN 1/20 = JOIST DEPTH OF 253MM. ACCORDING TO TRADE SPAN TABLES OPTIMUM JOIST TO SPAN 5M+ = 225MM X 63MM/.

ENSURE 1ST JOIST IS 50MM FOR WALL. USE FOLDING WEDGES (50X75MM) AT GABLE / PARTY WALLS AT EACH ROW OF BRIDGING.

BRIDGING / STRUTTING:
1 x ROW OF SOLID BUT STAGGERED BRIDGING REQUIRED FOR SPANS >2.5M.
2 x ROWS OF BRIDGING REQUIRED FOR SPANS >4.5M @ 1.35M CENTRES (max.)
BRIDGING SHOULD BE AT LEAST 3/4 depth of JOIST (225MM X 63MM). NO BRIDGING REQUIRED ON OUTER DECK AS SPAN IS LESS THAN 2.5M

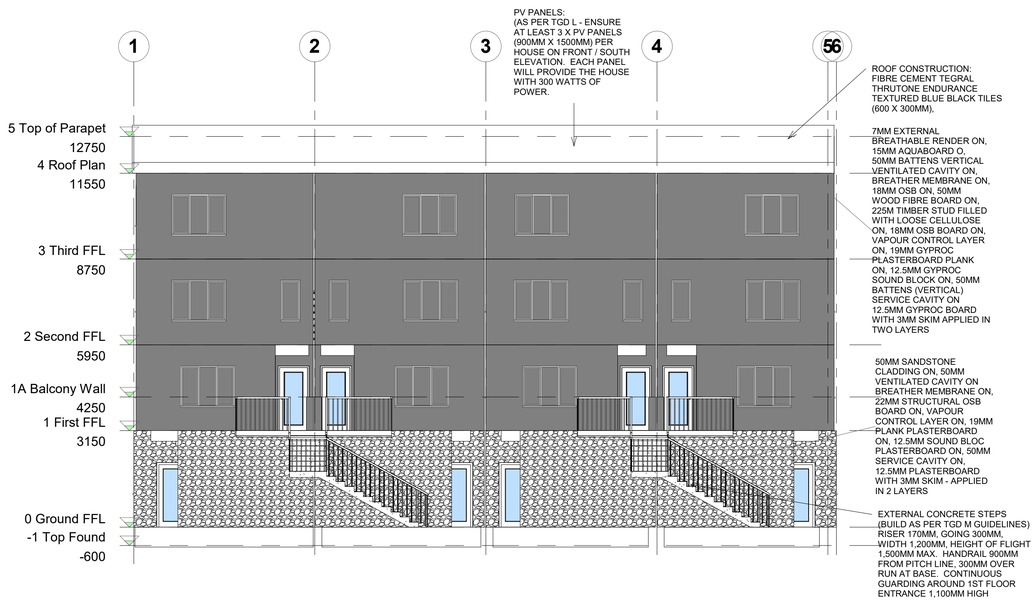
TRIMMERS:
ENSURE TRIMMERS AROUND STAIR OPES (2 X 225MM X 63MM) ON 2ND AND 3RD FLOORS.

DOUBLE JOISTS:
TO BE USED UNDER SANITARY FIXINGS (BATH,SHOWER, TOILET ETC.)
ALSO TO BE USED WHERE STUD PARTITIONS ARE AT RIGHT ANGLES TO THE JOIST

2 1 First Floor Construction Plan
1 : 50

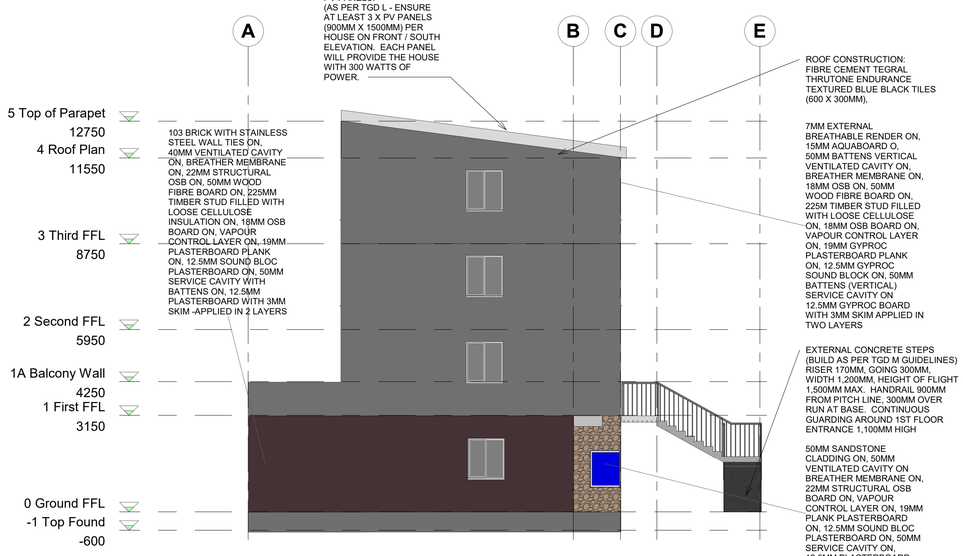
Project Name	Project Number	Client Name	Sheet Name	Sheet Number	Author	Sheet Issue Date
Passive House	**03**	**DT175 02**	**GA - Roof Plan & Intermediate Floor Constrruction**	**303**	**Emma Harrington**	**12/19/18**

Emma Harrington
DT175-02
2018_19



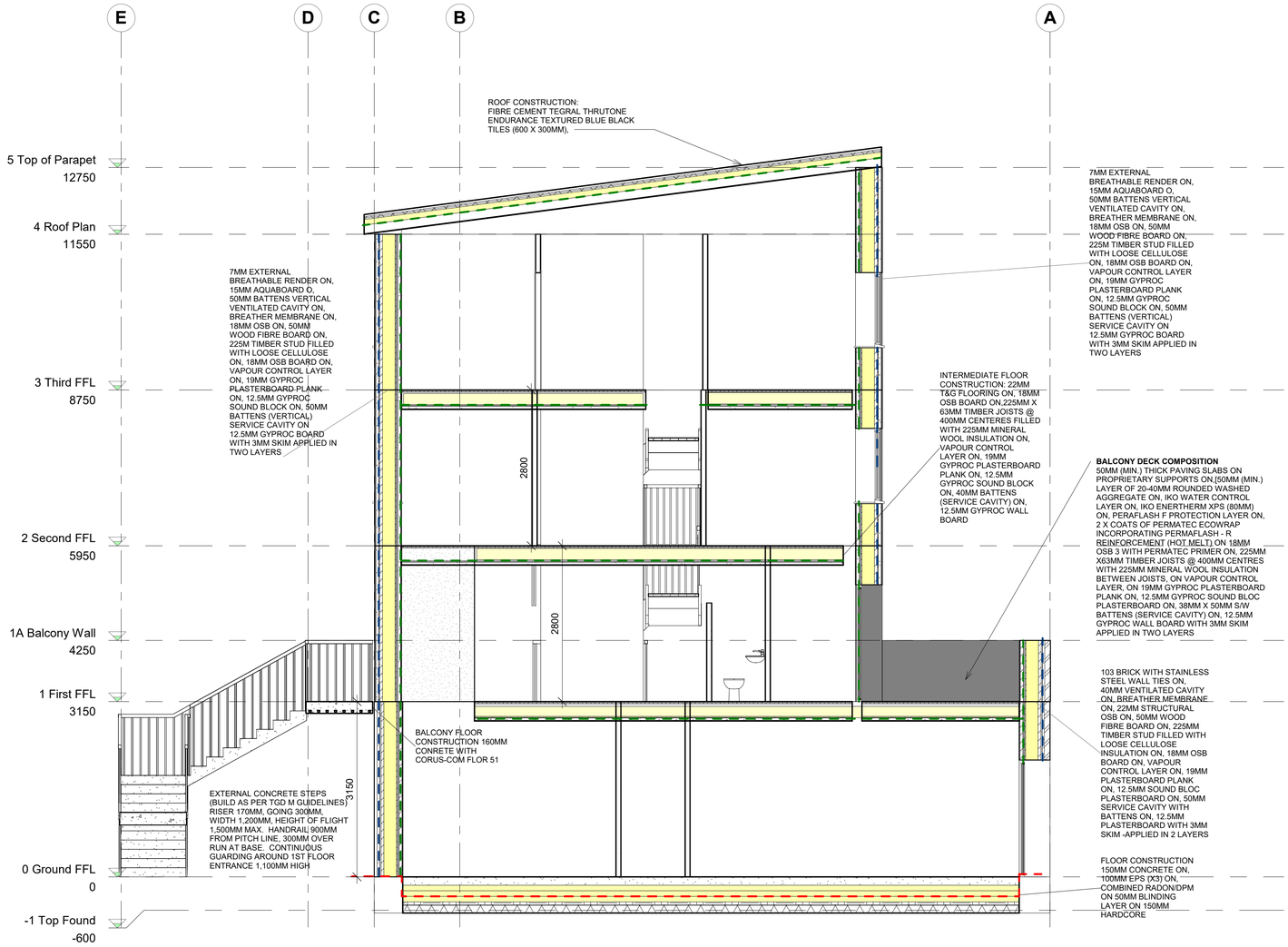
3 South
1 : 100

2 North
1 : 100



4 West
1 : 100

Organisation Name **DIT**	Client Name **DT175 02**	Scale 1 : 100	Project number 03	Date 20th December 2018	Drawn by **Emma Harrington**	
Project Name **Passive House**	Sheet Name **GA - Elevations**	Submitted to DT175 02				



1 East Elevation - Section AA

1 : 50

Organisation Name **DIT**	Client Name **DT175 02**	Scale 1 : 50	Project number 03	Date 20th December 2018	Drawn by **Emma Harrington**		
Project Name **Passive House**	Sheet Name **Section AA**	Submitted to DT175 02					

A

5 Top of Parapet
12750

4 Roof Plan
11550

3 Third FFL
8750

2 Second FFL
5950

1A Balcony Wall
4250

1 First FFL
3150

0 Ground FFL
0

-1 Top Found
-600

PV PANELS:
(AS PER TGD L - ENSURE AT LEAST 3 X PV PANELS (900MM X 1500MM) PER HOUSE ON FRONT / SOUTH ELEVATION. EACH PANEL WILL PROVIDE THE HOUSE WITH 300 WATTS OF POWER.

ROOF CONSTRUCTION:
FIBRE CEMENT TEGRAL THRUTONE ENDURANCE TEXTURED BLUE BLACK TILES (600 X 300MM), WITH 90MM LAP - AS PITCH <35^{0} ON;
50 X 36MM S/F BATTENS @ ON;
150MM X 47MM RAFTERS @ 400MM CENTRES WITH 150MM X 2 MINERAL WOOL INSULATION WEDGED BETWEEN RAFTERS ON;
VAPOUR CONTROL LAYER ON;
50 X 38MM BATTENS ON 19MM GYPROC PLANK BOARD ON 12.5MM GYPROC CEILING BOARD WITIH 3MM SKIM APPLIED IN 2 LAYERS

NOTE: WHEN SPECIFICYING A CLOSE FITTING COVERING (SUCH AS FIBRE CEMENT TILES) THERE IS A RISK OF INTERSTITITAL CONDENSATION FORMING ON THE UNDERSIDE OF THE UNDERLAY AND THE EXTERNAL COVERING - THEREFORE SPECIFY A LR (LOW RESISTANCE <0.25MNs/g) UNDERLAY AND ENSURE THE BATTEN SPACE IS VENTILATED IN ACCORDANCE WITH BS 5250:2011 USING A VENTILLATED COUNTERBATTEN VOID

INTERMEDIATE FLOOR CONSTRUCTION: 22MM T&G FLOORING ON, 18MM OSB BOARD ON,225MM X 63MM TIMBER JOISTS @ 400MM CENTERES FILLED WITH 225MM MINERAL WOOL INSULATION ON, VAPOUR CONTROL LAYER ON, 19MM GYPROC PLASTERBOARD PLANK ON, 12.5MM GYPROC SOUND BLOCK ON, 40MM BATTENS (SERVICE CAVITY) ON, 12.5MM GYPROC WALL BOARD

BALCONY DECK COMPOSITION
50MM (MIN.) THICK PAVING SLABS ON PROPRIETARY SUPPORTS ON,[50MM (MIN.) LAYER OF 20-40MM ROUNDED WASHED AGGREGATE ON, IKO WATER CONTROL LAYER ON, IKO ENERTHERM XPS (80MM) ON, PERAFLASH F PROTECTION LAYER ON, 2 X COATS OF PERMATEC ECOWRAP INCORPORATING PERMAFLASH - R REINFORCEMENT (HOT MELT) ON 18MM OSB 3 WITH PERMATEC PRIMER ON, 225MM X63MM TIMBER JOISTS @ 400MM CENTRES WITH 225MM MINERAL WOOL INSULATION BETWEEN JOISTS, ON VAPOUR CONTROL LAYER, ON 19MM GYPROC PLASTERBOARD PLANK ON, 12.5MM GYPROC SOUND BLOC PLASTERBOARD ON, 38MM X 50MM S/W BATTENS (SERVICE CAVITY) ON, 12.5MM GYPROC WALL BOARD WITH 3MM SKIM APPLIED IN TWO LAYERS

INTERMEDIATE FLOOR CONSTRUCTION: 22MM T&G FLOORING ON, 18MM OSB BOARD ON,225MM X 63MM TIMBER JOISTS @ 400MM CENTERES FILLED WITH 225MM MINERAL WOOL INSULATION ON, VAPOUR CONTROL LAYER ON, 19MM GYPROC PLASTERBOARD PLANK ON, 12.5MM GYPROC SOUND BLOCK ON, 40MM BATTENS (SERVICE CAVITY) ON, 12.5MM GYPROC WALL BOARD

kKINGSPAN RAISED ACCESS FLOOR RG3 (600MM X 600MM) WITH KINGSPAN EUROPED PEDESTAL

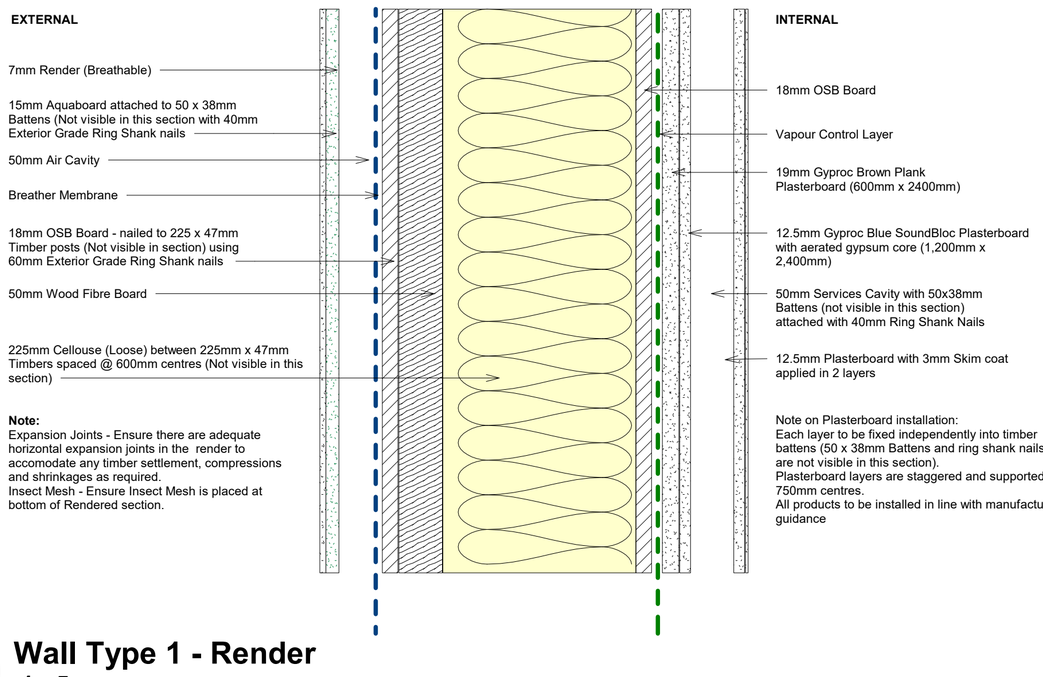
FLOOR CONSTRUCTION
150MM CONCRETE ON,
100MM EPS (X3) ON,
COMBINED RADON/DPM ON 50MM BLINDING LAYER ON 150MM HARDCORE

1 Facade Section BB
1 : 20

Project Name	Project Number	Client Name	Sheet Name	Sheet Number	Author	Sheet Issue Date
Passive House	**03**	**DT175 02**	**Facade Section BB**	**306**	**Emma Harrington**	**12/19/18**

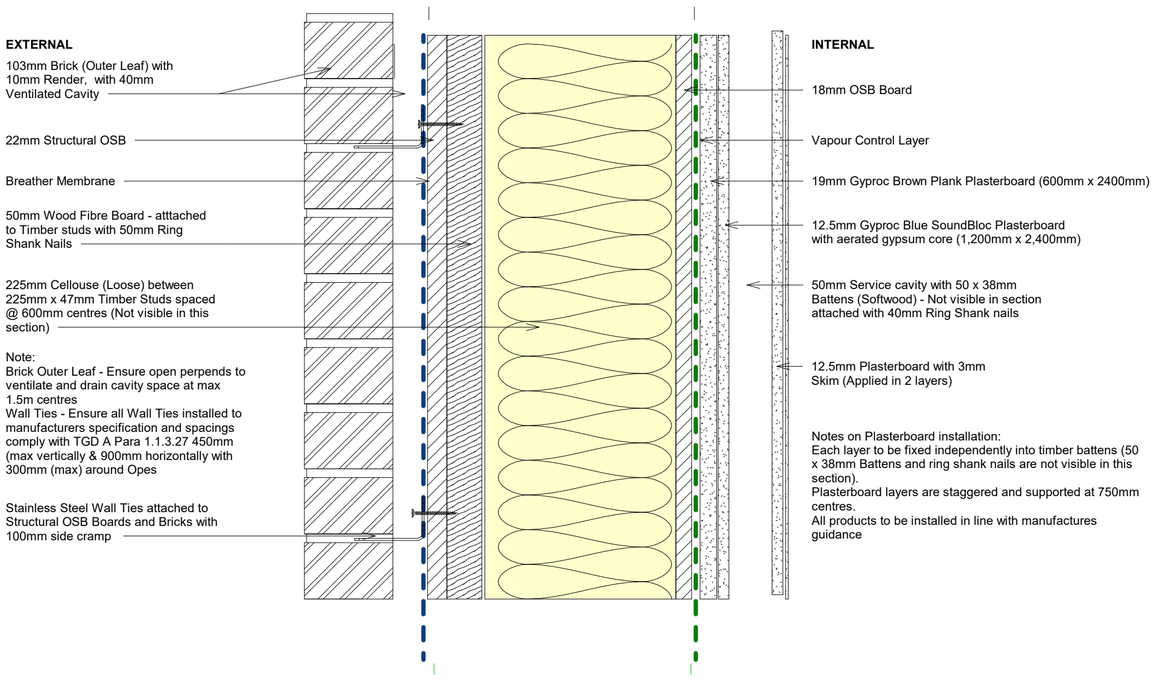
Emma Harrington
DT175-02
2018_19

WALL TYPE 1: RENDER (OUTER LEAF)



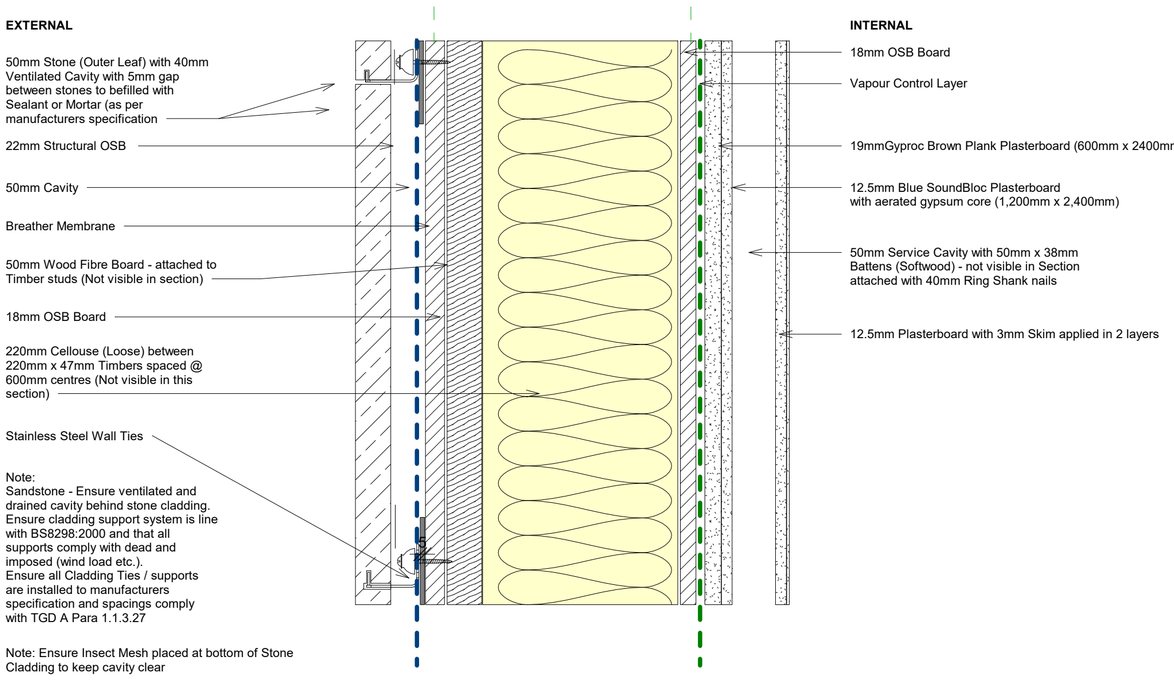
1 **Wall Type 1 - Render**
1 : 5

WALL TYPE 2: BRICK (OUTER LEAF)



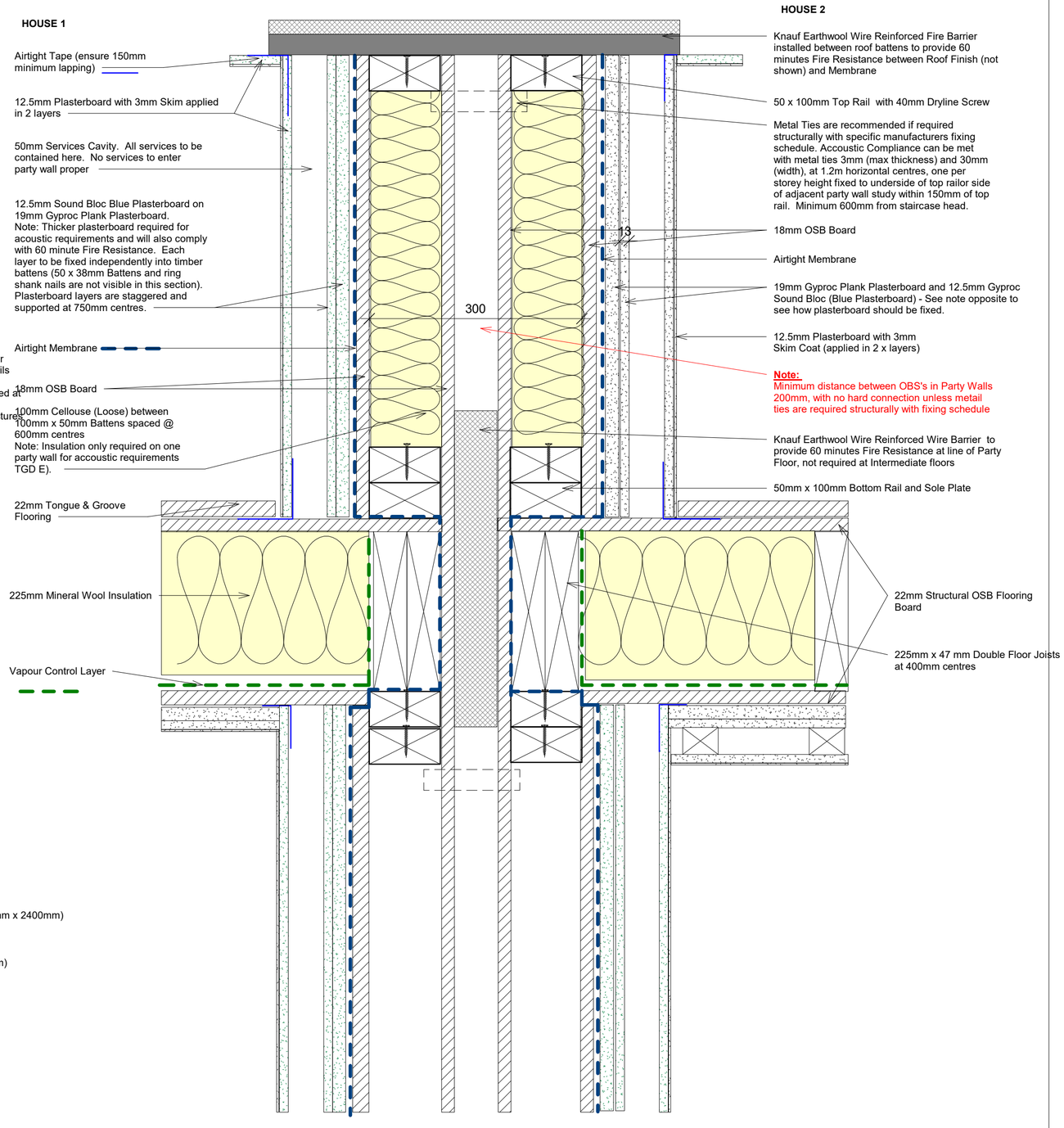
2 **Wall Type 2 - Brick**
1 : 5

WALL TYPE 3: STONE (OUTER LEAF)



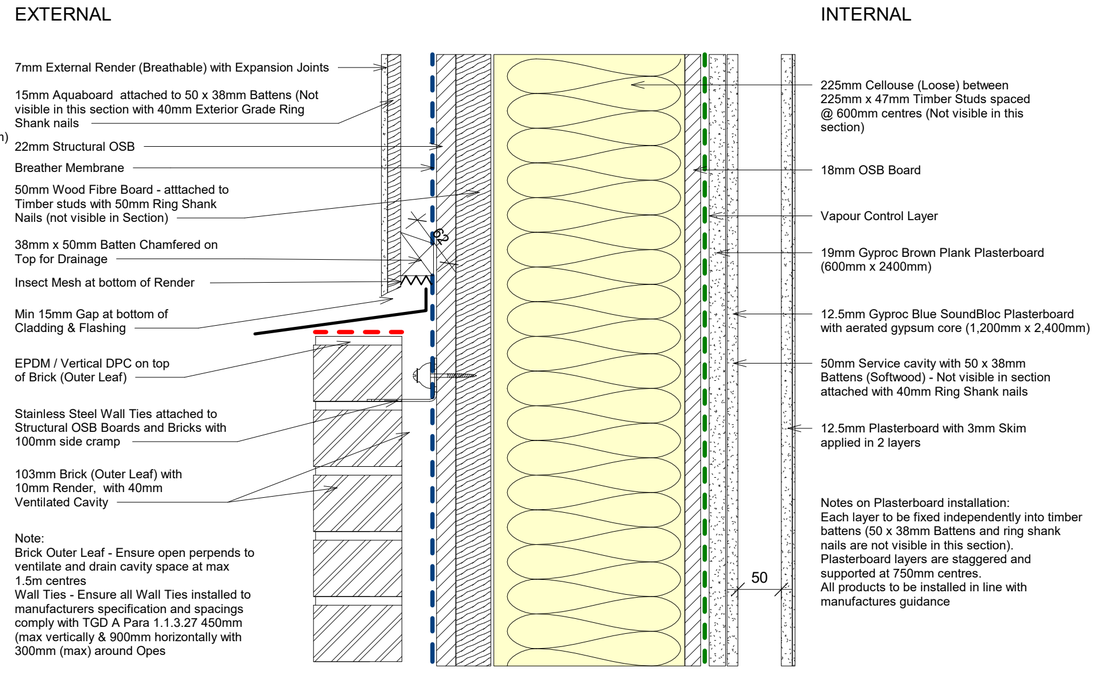
3 **Wall Type 3 - Stone**
1 : 5

WALL TYPE 4: PARTY WALL WITH INTERMEDIATE FLOORS



4 **Wall Type 4 - Party Wall**
1 : 5

CHANGE IN MATERIAL (VERTICAL)

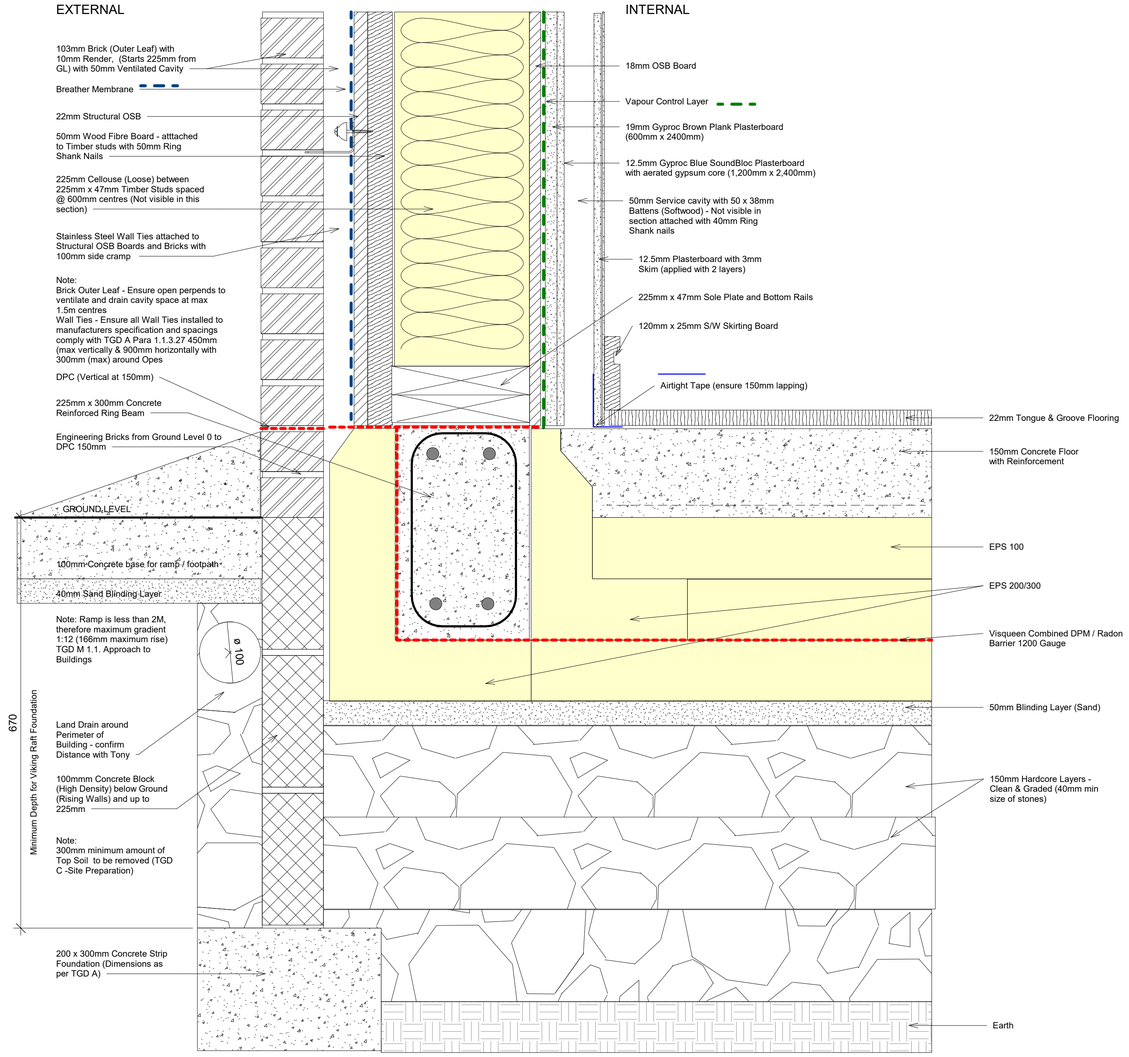


5 **Change of Material - Vertical**
1 : 5

Project Name	Project Number	Client Name	Sheet Name	Sheet Number	Author	Sheet Issue Date
Passive House	**03**	**DT175 02**	**Wall Types & Change of Material**	**308**	**Emma Harrington**	**11/19/18**

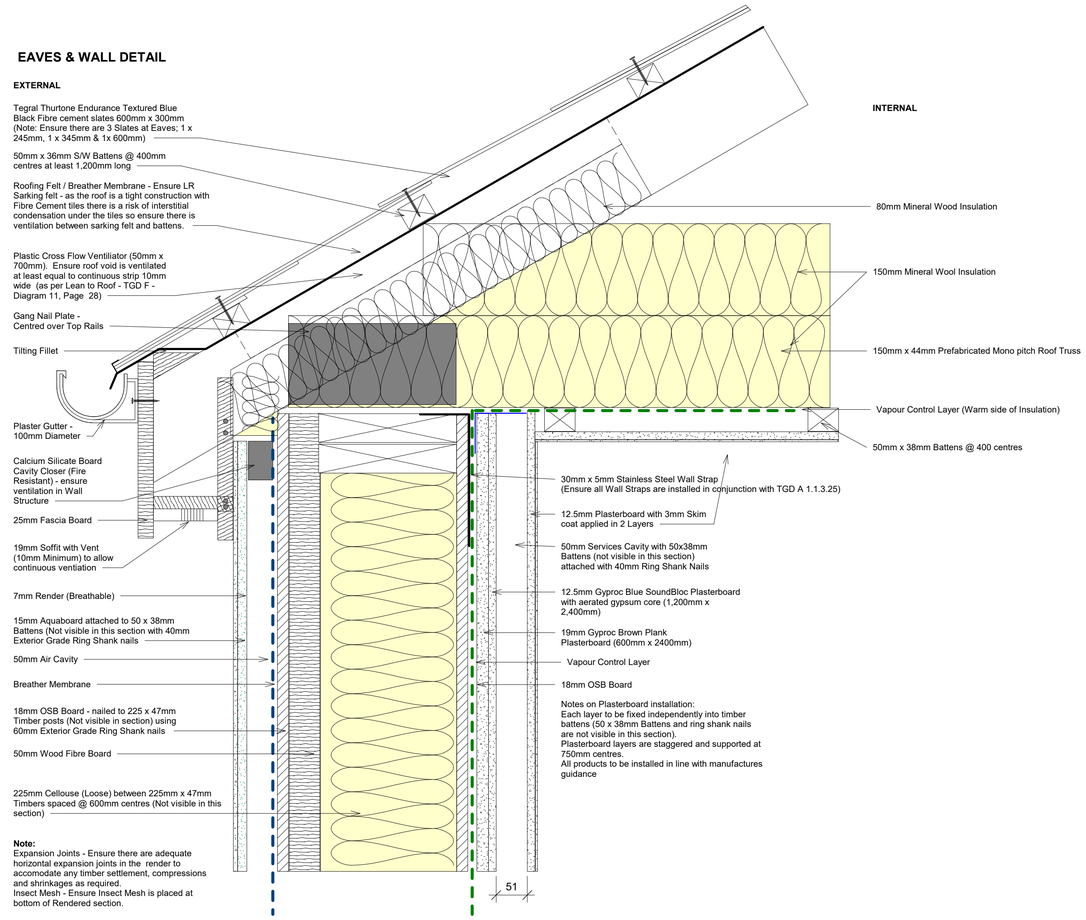
Emma Harrington
DT175-02
2018_19

GROUND FLOOR FOUNDATIONS (VIKING RAFT SYSTEM) & WALL



1 Ground Floor Foundations
1 : 5

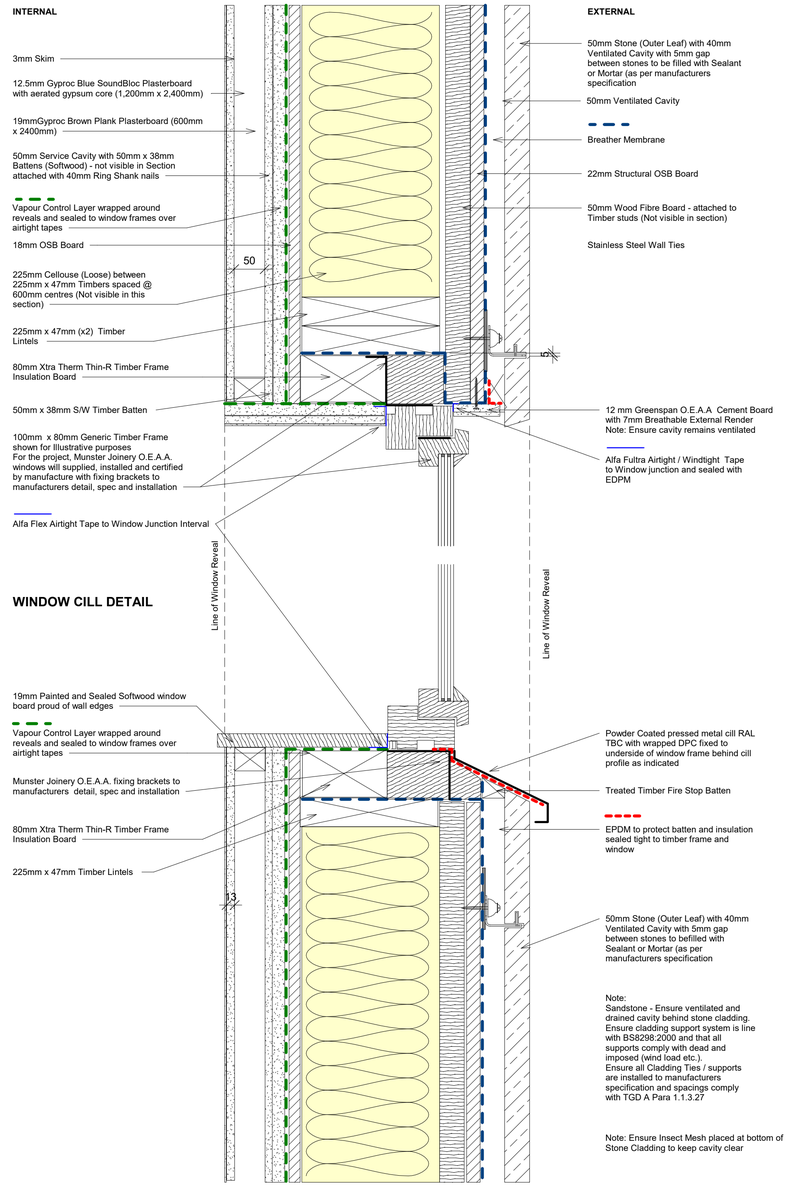
EAVES & WALL DETAIL



2 Eaves / Roof Detail
1 : 5

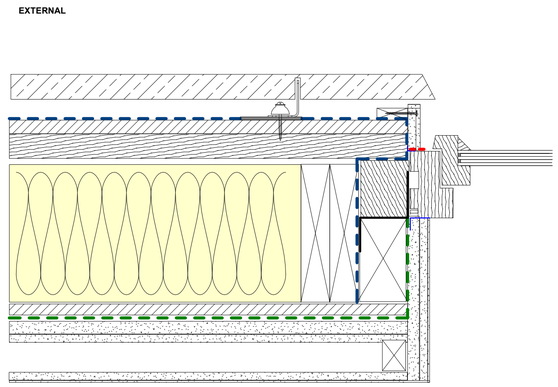
Organisation Name **DIT**	Client Name **DT175 02**	Scale 1 : 5	Project number 03	Date 20th December 2018	Drawn by **Emma Harrington**	Emma Harrington DT175-02 2018_19
Project Name **Passive House**	Sheet Name **Ground Floor Foundations & Roof Eaves**	Submitted to DT175 02				

WINDOW HEAD DETAIL



WINDOW CILL DETAIL

WINDOW JAMB DETAIL



1 **Window - Head /Cill /Jamb**
1 : 5

Organisation Name **DIT**	Client Name **DT175 02**	Scale 1 : 5	Project number 03	Date 20th December 2018	Drawn by **Emma Harrington**		
Project Name **Passive House**	Sheet Name **Window Detail - Head, Cill & Jamb**	Submitted to DT175 02					