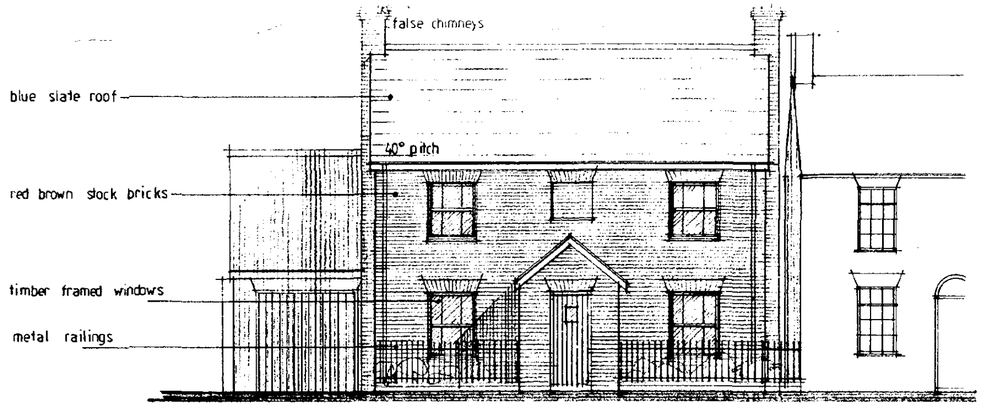
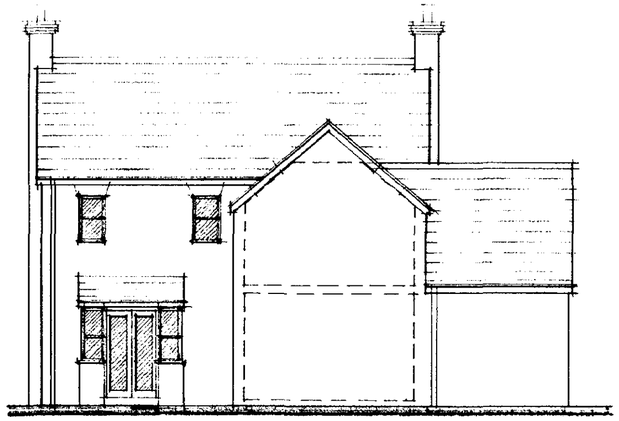
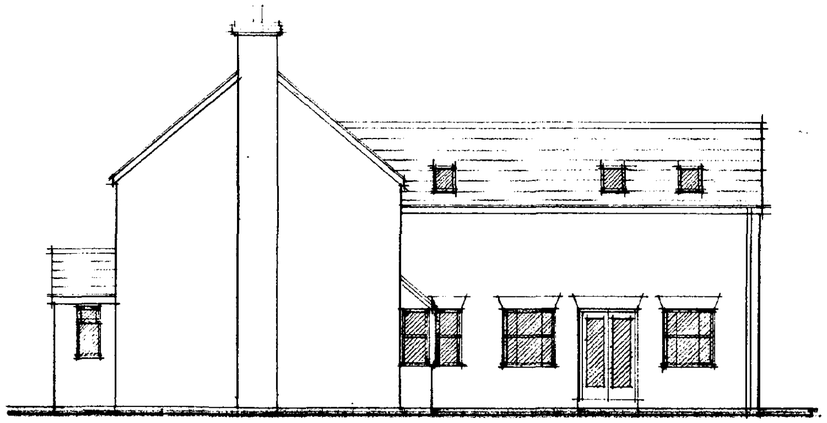


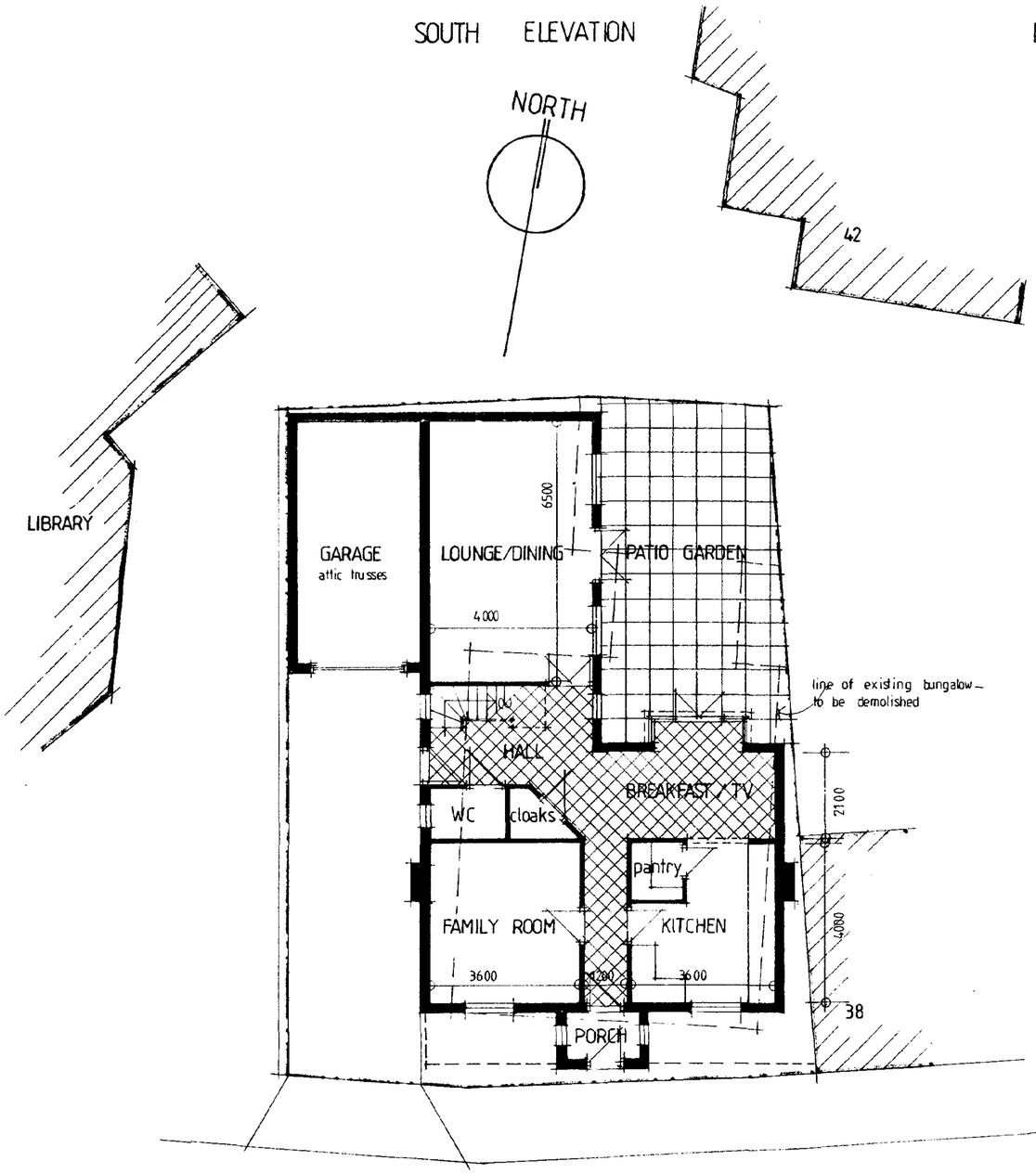
SOUTH ELEVATION



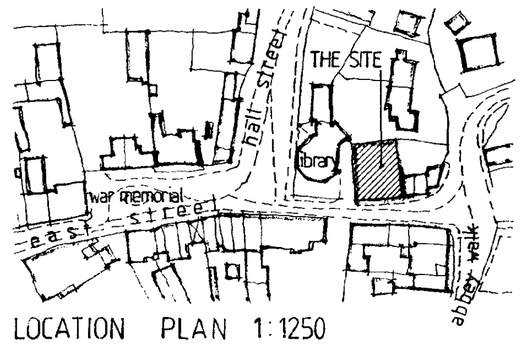
NORTH ELEVATION



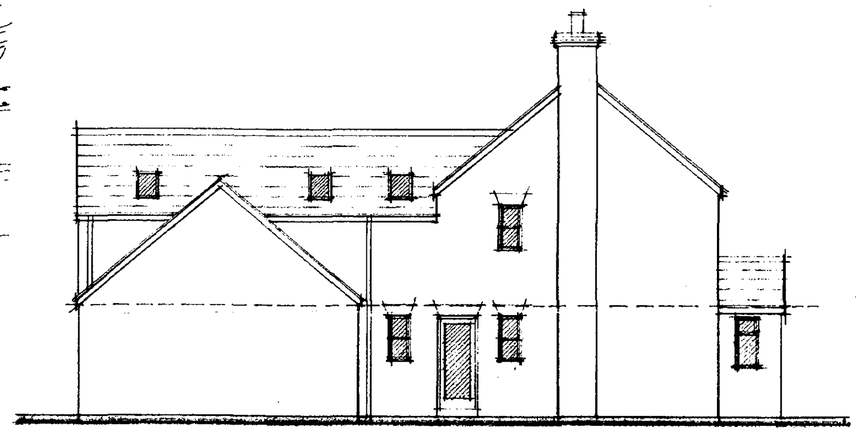
EAST ELEVATION



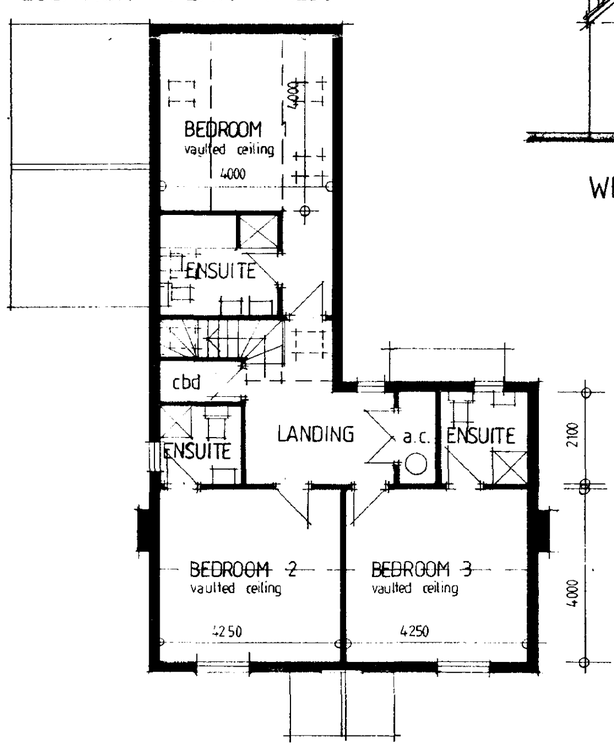
SITE AND GROUND FLOOR PLAN



LOCATION PLAN 1:1250



WEST ELEVATION



FIRST FLOOR PLAN

Rev A: 29 June '02 - Elevations and Location Plan added

TREVOR A CLAY R.I.B.A.
CHARTERED ARCHITECT
14 OLD FENDIKE ROAD
WESTON HILLS
SPALDING
LINCOLNSHIRE PE12 6DD

Project:

PROPOSED NEW HOUSE AT
36 EAST STREET, CROWLAND FOR
MR AND MRS P LEO

Drawing:

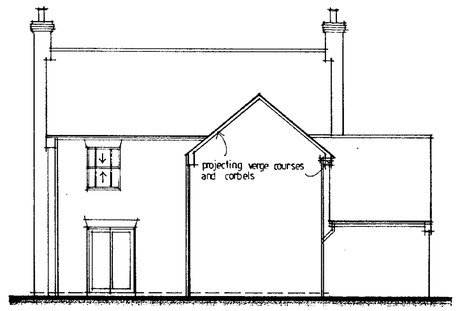
DESIGN DRAWING

Date: 14 Feb 02	Proj No: 01/084/PA	
Scale: 1:100	Drg. No: 001	Rev: A

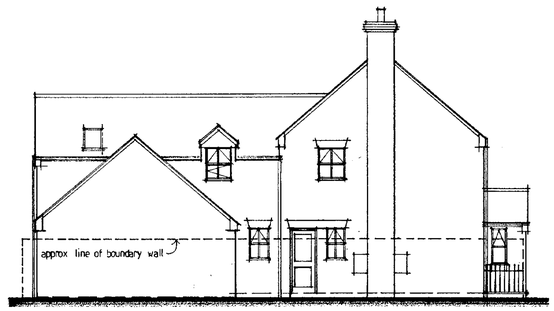
SHDC
Planning & Development
10 JUL 2002
0809/02



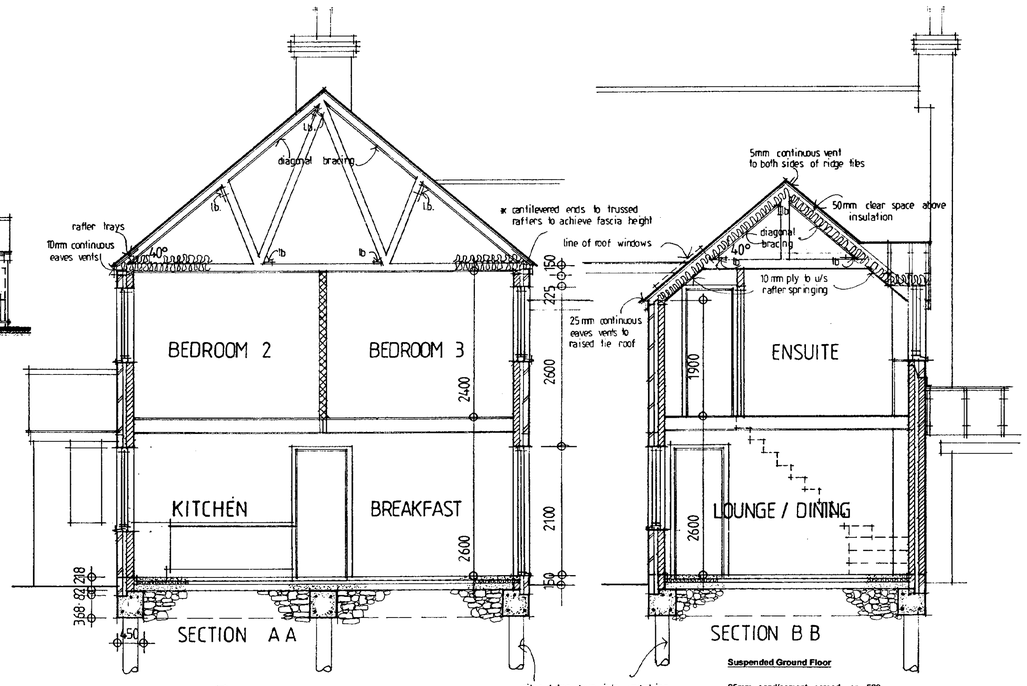
SOUTH ELEVATION



NORTH ELEVATION

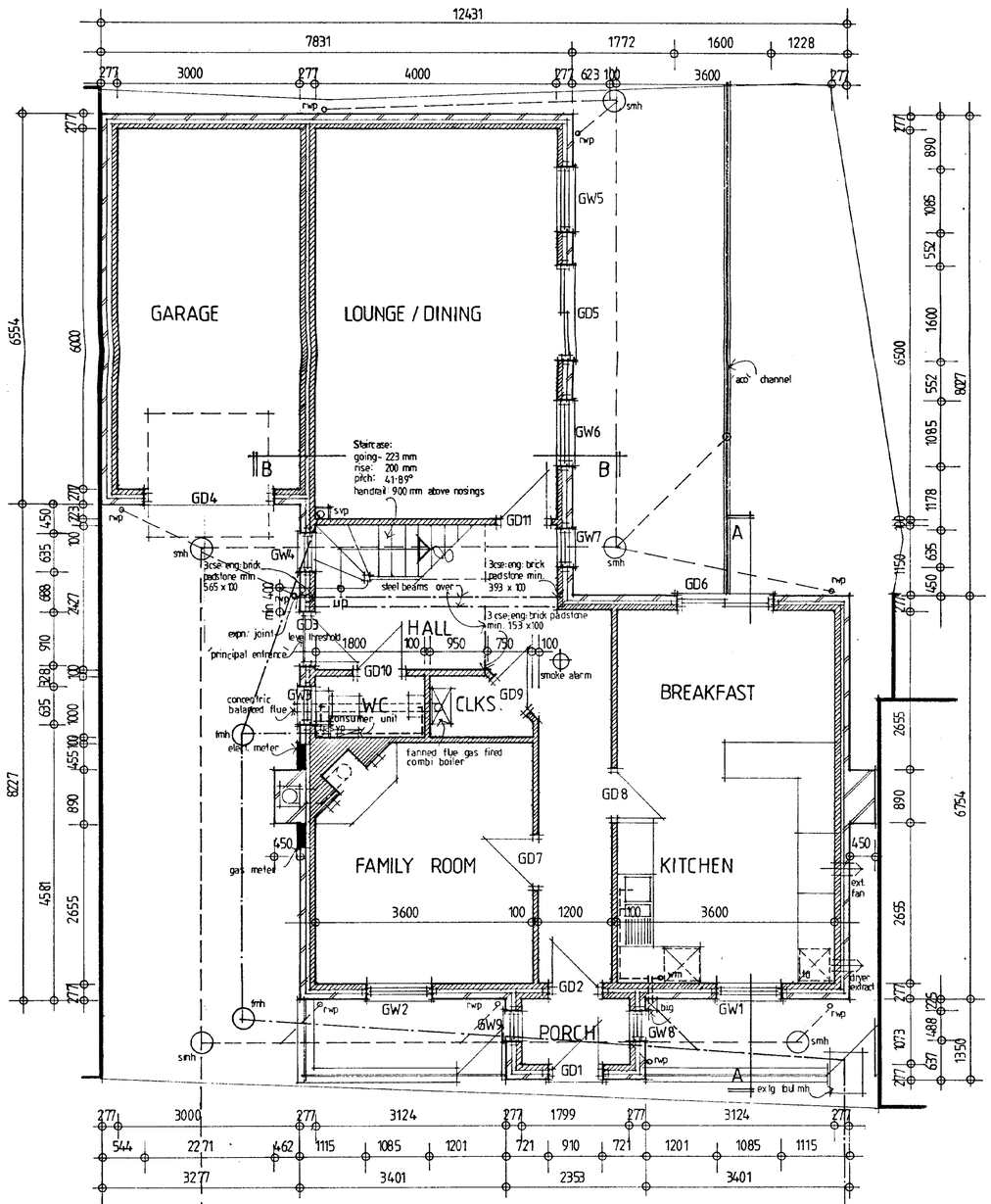


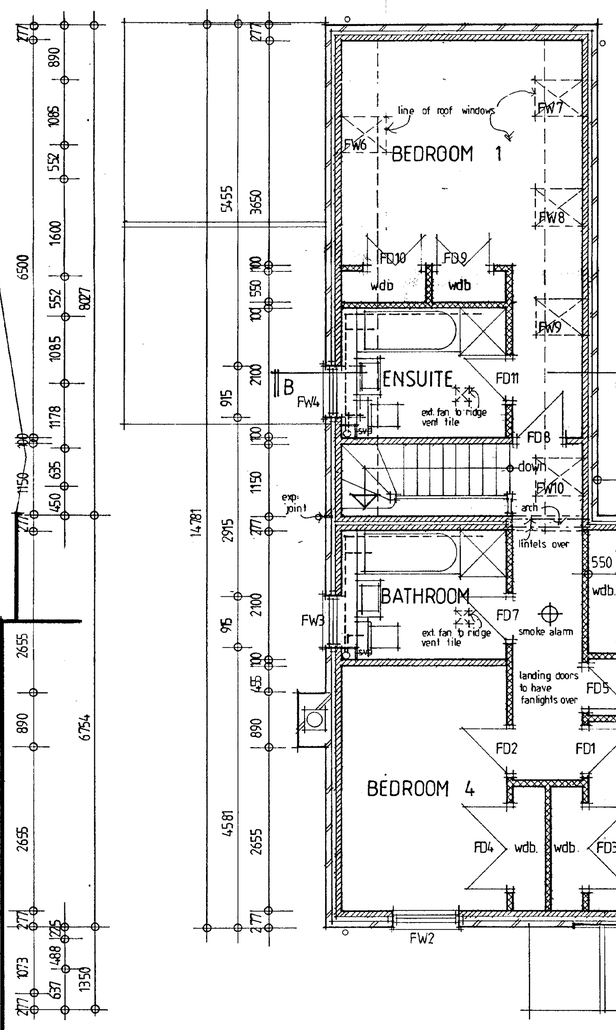
WEST ELEVATION

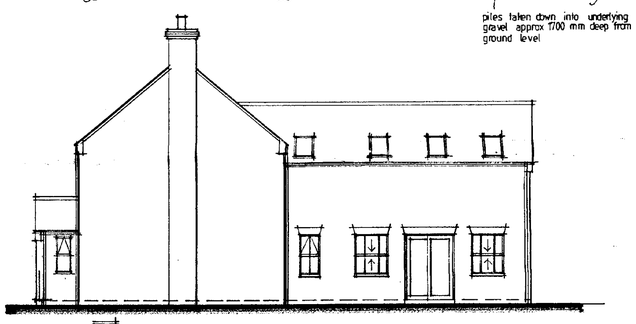


SECTION A A

SECTION B B







EAST ELEVATION

Suspended Ground Floor

65mm sandlcement screed, on 500 gauge polythene vapour control barrier, on 53mm CELOTEX Double R taken up at screed edges together with vapour control layer. Insulation to be place with tight butt joints on 100mm reinforced concrete slab (levelled with a thin layer of sand if necessary to ensure continuous support to insulation boards) spanning across 450mm x 450mm o/a r.c. ground beams on bored piles. The slab is to be cast on a 1200 gauge dpm taken up at edges to lap with dpc in cavity walls. The dpm is to be laid on 25mm sand blinding, on consolidated hardcore

AMENDED PLAN
Ref. A1

SHDC
Planning & Development
23 MAY 2003
Ref 0601/00

1-22 May 03 - Substructure and ground floor construction added to Sections

TREVOR A CLAY R.I.B.A.
CHARTERED ARCHITECT
14 OLD FENDIKE ROAD
WESTON HILLS
SPALDING
LINCOLNSHIRE PE12 6DD

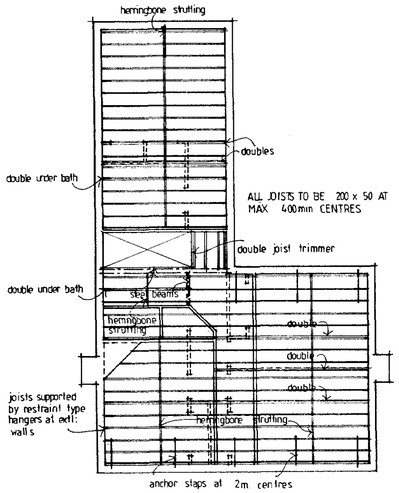
Project:

PROPOSED NEW HOUSE AT
36 EAST STREET, CROWLAND

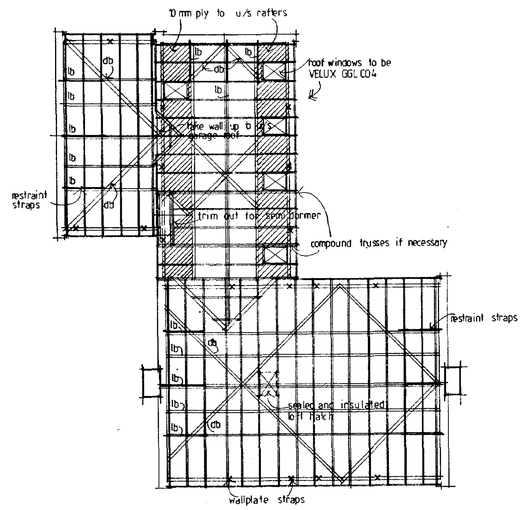
Drawing:

FLOOR PLANS, SECTIONS AND ELEVATIONS

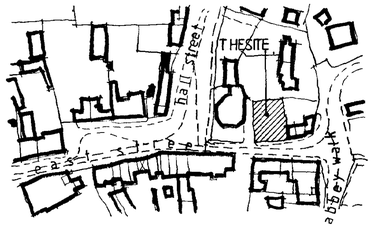
Date: 12 April 03 | Proj No: 01/084/PA



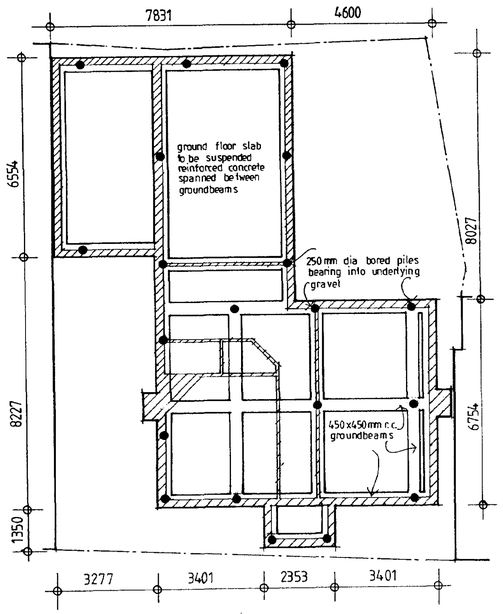
FIRST FLOOR STRUCTURE PLAN



ROOF STRUCTURE PLAN



LOCATION PLAN 1:1250



FOUNDATION PLAN

N.B. detailed substructure and pile sizes+dims. together with reinforcement details to be taken from Structural Engineer's drawings, calcs. and bending schedules

Beam: Short Beam across Hall — Span: 1.000 m.

	Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
U	Total UDL	2.45*2.0/L	0		L	2.45	2.45
					Total:	2.45	2.45

(Load types: U:UDL Load positions in m from R1)

Maximum B.M. = 0.81 kNm at 0.50 m. from R1

Maximum S.F. = 2.45 kN at R1

Total deflection = 0.0638 x 1e8/EI at 0.50 m. from R1 (E in N/mm² I in cm⁴)

Steel calculation to BS449 Part 2 using Grade 43 steel

SECTION SIZE : 152 x 89 x 16 UB

I_{xx} = 838cm⁴ r_{yy} = 2.10cm Z_{xx} = 110cm³ t = 4.6mm D = 152.4mm

L_y/r_{yy} = 1.00x100/2.10 = 48 D/T = 19.8

p_{bc} = 160.0 N/mm² (Table 3a)

f_{bc} = 0.6125 x 1000/110.0 = 5.6 N/mm² OK

f_s (maximum shear in web) = 2.450 x 1000/4.6x152.4 = 3.5 N/mm² OK

Total deflection = 0.064 x 1e8/205.000 x 838 = 0.0 mm (0.0000 L) OK

Bearing details

Factor reactions by 1.55 (user selected value)

Local design strength of masonry (factored) = 0.700 N/mm² (user entered value)

R1 (2.45kN unfactored): Padstone size 153 x 100mm
Factored stress under padstone = 1.55 x 2.45 x 1000/153 x 100 = 0.25 N/mm²

R2 (2.45kN unfactored): Padstone size 153 x 100mm
Factored stress under padstone = 1.55 x 2.45 x 1000/153 x 100 = 0.25 N/mm²

Beam: Beam adjacent to Staircase — Span: 4.000 m.

	Load name	Loading w1	Start x1	Loading w2	End x2	R1comp	R2comp
R	- Wall	7.08*1.52/2.8	0		2.8	7.00	3.77
R	- Roof	14.65*1.75/2.8	0		2.8	16.66	8.97
R	- Landing	0.69*2/1.2	2.8		4.0	0.21	1.17
P	- Beam React:	2.45	2.8			0.74	1.72
P	- Stair Trimmr	1.5*2.0	2.8			0.90	2.10
					Total:	25.50	17.73

(Load types: R:Part UDL P:PL Load positions in m. from R1)

Maximum B.M. = 25.01 kNm at 1.96 m. from R1

Maximum S.F. = 25.50 kN at R1

Total deflection = 41.07 x 1e8/EI at 2.00 m. from R1 (E in N/mm² I in cm⁴)

Steel calculation to BS449 Part 2 using Grade 43 steel

SECTION SIZE : 2No 178 x 102 x 19 UB

I_{xx} = 1,360cm⁴ r_{yy} = 2.39cm Z_{xx} = 153cm³ t = 4.7mm D = 177.8mm

L_y/r_{yy} = 4.00x100/2.39 = 167 D/T = 22.5

p_{bc} = 89.0 N/mm² (Table 3a)

f_{bc} = 25.01 x 1000/2 x 153.0 = 81.7 N/mm² OK

f_s (maximum shear in web) = 25.50 x 1000/2 x 4.7x177.8 = 15.3 N/mm² OK

Total deflection = 41.1 x 1e8/2 x 205.000 x 1,360 = 7.4 mm (0.0018 L) OK

Bearing details

Factor reactions by 1.55 (user selected value)

Local design strength of masonry (factored) = 0.700 N/mm² (user entered value)

R1 (25.50kN unfactored): Padstone size 565 x 100mm
Factored stress under padstone = 1.55 x 25.50 x 1000/565 x 100 = 0.70 N/mm²

R2 (17.73kN unfactored): Padstone size 393 x 100mm
Factored stress under padstone = 1.55 x 17.73 x 1000/393 x 100 = 0.70 N/mm²

BEAM CALCULATIONS

WINDOW / LINTEL SCHEDULE

Window	Location	Struct Opening	Jeld-wen Ref:	Glazing	Lintol (Catnic)	Fire Escape
GW1	kitchen	1085 x 1350	LETVS1013MB	clear	CG70/100/1500	
GW2	family room	1085 x 1350	LETVS1013MB	clear	CG70/100/1500	yes
GW3	wc	635 x 1050	WSRV110	obscure	CG70/100/1050	
GW4	hall	635 x 1050	WSRV110	clear	CN57C/1050	
GW5	lounge/dining	1085 x 1350	LETVS1013MB	clear	CG70/100/1500	
GW6	lounge/dining	1085 x 1350	LETVS1013MB	clear	CG70/100/1500	
GW7	hall	635 x 1350	WSRV113	clear	CG70/100/1050	
GW8	porch	468 x 1200	WSRN12	clear	CG70/100/750	
GW9	porch	468 x 1200	WSRN12	clear	CG70/100/750	
FW1	bedroom 2	1085 x 1350	LETVS1013MB	clear	CG70/100/1500	yes
FW2	bedroom 4	1085 x 1350	LETVS1013MB	clear	CG70/100/1500	yes
FW3	bathroom	915 x 1050	WSRV2N10	obscure	CG70/100/1350	
FW4	ensuite	915 x 1050	WSR2N10FE	obscure	N/A	yes
FW5	bedroom 3	1085 x 1350	LETVS1013MB	clear	CG70/100/1500	yes
FW6	bedroom 1	590 x 1025	velux GGLC04	clear	N/A	
FW7	bedroom 1	590 x 1025	velux GGLC04	clear	N/A	
FW8	bedroom 1	590 x 1025	velux GGLC04	clear	N/A	
FW9	bedroom 1	590 x 1025	velux GGLC04	clear	N/A	
FW10	landing	590 x 1025	velux GGLC04	clear	N/A	

DOOR / LINTEL SCHEDULE

Door	Location	Struct Opening	Leaf Size	Lintol (Catnic)
GD1	porch door	910 x 2100	838 x 1981	CG70/100/1200
GD2	front door	910 x 2100	838 x 1981	CG70/100/1200
GD3	side door	910 x 2100	838 x 1981	CN57C/1200
GD4	garage door	2271 x 2052	2134 x 1981	CN57C/2700
GD5	lounge/patio doors	1600 x 2083	Jeld-wen Ledbury	CG70/100/1950
GD6	breakfast/patio doors	1600 x 2083	Jeld-wen Ledbury	CG70/100/1950
GD7	family room	910 x 2050	838 x 1981	CN5XA/1200
GD8	kitchen	910 x 2050	838 x 1981	CN5XA/1200
GD9	cloaks	750 x 2050	685 x 1981	CN5XA/1050
GD10	wc	910 x 2050	838 x 1981	CN5XA/1200
GD11	lounge/dining	910 x 2050	838 x 1981	CN5XA/1200
FD1	bedroom 2	826 x 2050	762 x 1981	studwork
FD2	bedroom 4	826 x 2050	762 x 1981	studwork
FD3	wardrobe	1438 x 2035	2 @ 686 x 1981	studwork
FD4	wardrobe	1438 x 2035	2 @ 686 x 1981	studwork
FD5	bedroom 3	826 x 2050	762 x 1981	studwork
FD6	wardrobe	1438 x 2035	2 @ 686 x 1981	studwork
FD7	bathroom	826 x 2050	762 x 1981	studwork
FD8	bedroom 1	826 x 2050	762 x 1981	CN5XA/1200
FD9	wardrobe	980 x 2035	2 @ 457 x 1981	studwork
FD10	wardrobe	980 x 2035	2 @ 457 x 1981	studwork
FD11	ensuite	826 x 2050	762 x 1981	studwork
	lintels across landing	1200 x 2050	archway	2 no.CN5XA/1200

NOTE: All specifications & installations are to comply with all relevant Building Regulations, British Standards and manufacturers' recommendations.

These drawings and notes are for the purposes of obtaining Building Regulations approval only, and do not purport to show all distail necessary for construction. No responsibility can be accepted for construction detail not included in these drawings and notes.

Setting Out The Builder is responsible for checking all dimensions when existing buildings are demolished. The building is to be set out in accordance with dimensions shown on drawings, but with such small adjustments as may prove to be necessary. Any adjustments are to be referred to the Architect before proceeding.

Foundations To be as shown on the drawings, and as specified by the Structural Engineer in his calculations and / or drawings. Any conditions on site that differ from those shown on drawings and calculations, or any alterations made, are to be referred to the Architect and Structural Engineer before proceeding.

Walls

Walls to be to dimensions shown and in strict accordance with BS 5628 Part 3: 1985.

Below DPC (in 1:3 cement/sand mortar)

Cavity walls to comprise internal and external skins of THERMALITE Hi-Strength 7 100mm block with 75mm cavity. External skin to terminate minimum two courses below ground level then continue in facing brickwork to DPC. Internal skin (including internal 100 mm walls off foundations) to continue in High-Strength 7 to DPC.
Cavity to be filled to ground level with weak-mix concrete splayed outwards.

Above DPC (in 1:1:6 cement/lime/sand mortar)

Cavity walls to comprise 103mm outer skin facing brickwork, 75mm cavity fully filled with 75mm KNAUFALCOPOR Dritherm, and an inner skin of 100mm THERMALITE Shield blockwork to give a maximum U value of 0.35W/m²K Cavities closed at reveals to openings by closing blockwork onto brickwork, building in HYLOAD vertical DPC with 50mm JABLITE insulation behind. Build in stout stainless steel wall ties at a maximum 900mm horizontally and 450mm centres vertically and

Wall ties and cavity insulation to be built all in accordance with insulation manufacturer's recommendations.
Internal walls to be 100mm THERMALITE Shield blockwork, or 100mm studwork as shown on drawings. Studwork to bathrooms, ensuites and w.c.s to be filled with Rockwool quilt
All facing brickwork to be durability designation FL .

Damp Proof Course. Horizontal DPC to walls to be 2000 gauge polythene to BS6515 and set minimum 150mm above external ground level. 2000 gauge polythene DPCs to all openings in external cavity wall to project a minimum of 25mm into backs of window and door frames. Preformed cavity trays with stop ends to be provided over all external openings with weep holes at min 450mm centres (2 No per opening minimum). Horizontal / stepped cavity trays to be provided to all wall / roof abutments.

GroundFloor Construction To be as shown on the drawings, and as specified by the Structural Engineer in his calculations and / or drawings. Any conditions on site that differ from those shown on drawings and calculations, or any alterations made, are to be referred to the Architect and Structural Engineer before proceeding.

Ground Floor Construction To Garage. To be as shown on the drawings, and as specified by the Structural Engineer in his calculations and / or drawings. Any conditions on site that differ from those shown on drawings and calculations, or any alterations made, are to be referred to the Architect and Structural Engineer before proceeding.

External Windows & Doors. All windows and external doors to be double-glazed and draught sealed. U value of glazing to timber windows and doors not to exceed 2.0W/m²K. Glass to all windows to be low E .05 type, or Pilkington K. Window and door frames to be sealed at perimeter both internally and externally Window opening lights to all habitable rooms to be a minimum of 5% of the total floor area of the room. 8000mm² of secure controllable trickle/ventilation to be provided to all habitable rooms. 4000mm² of secure controllable trickle ventilation to be provided to all non-habitable rooms. All glazing to comply with approved document N. All glazing to windows and screens below 800mm above floor level

and bathrooms, and clear glazing elsewhere.

Escape Windows All habitable rooms without external doors to have a window with unobstructed openable area of at least 0.33m² with a minimum clear dimension of 450 mm in each direction. The bottom of opening is not to be more than 1100mm and not less than 800mm above floor level. Windows must not to be fitted with key operated locks.

Lintels All lintels to external wall openings to be factory insulated CATNIC with stop ends and weep holes at max 450mm centres (min 2 No per opening), fitted in accordance with manufacturers instructions, and with cavity trays over. All internal lintels to be CATNIC box lintels as shown on schedules on drawings

Ceilings 15 mm plasterboard with taped joints and a skim finish. No ceiling to be installed to garage, but wall separating garage from dwelling is to be taken up to the underside of the garage roof and firestopped with Rockwool.

Extract Ventilation
KITCHEN – To extract at a rate of 30l/sec from cooker hood
BATHROOM AND ENSUITE – To extract at a rate of 15l/sec

Roof Construction To be trussed rafters designed and manufactured to BS 5268 Part 3:1985 by specialist manufacturer. Trusses set at 600mm centres. Trusses to be securely fixed to 50 x 100mm softwood wallplate.
100 x 25mm softwood wind bracing to be securely fixed to all members crossed Diagonal bracing to be provided across rafters. Longitudinal bracing to extend the full length of roof and tightly abut gable walls. In the raised tie section of roof over bedroom 1, the underside of exposed rafters is to be lined with 10mm ply in place of the diagonal bracing. The ply is to extend down to wallplate. Truss manufacturer to design and take responsibility for trusses, bracing, cut timbers in roof structure and any supporting timber members.
All timbers to be pressure treated or similar.
All structural timbers to be kept 40mm clear of chimneys/flue blocks etc.

Roof Coverings To comprise concrete interlocking tiles on 25mm x 38mm treated battens, nailed with non-ferrous nails through untearable felt to BS 747 type 1F. All joints in felt both horizontally and vertically to overlap 150mm.
Continuous tilting fillet to be provided at eaves to prevent ponding.
The tile fixing specification is to be in accordance with the manufacturer's published literature with due consideration for site location, wind velocity and roof pitch. Provide lead flashings to roof/wall abutments, taken up wall min. 150mm. Provide GLIDEVALE tile valley troughs to all valleys, overlapped min 150mm at joints, fixed in accordance with manufacturer's recommendations.

Suspended First Floor
To comprise 200 x 50mm softwood joists at 400mm centres with 18mm Weyroc flooring grade chipboard, type V313 throughout. Ends of all joists treated with preservative. Herringbone strutting to centre of spans over 2.5m or at third of spans over 4.5m.
2 No. 200 x 50mm joists nailed together to support non loadbearing stud or Paramount walls

Steel Beams To be to sizes shown on calculations on drawings. The pair of beams alongside the stairs are to be bolted together at 300mm centres, with tubular spacers around the bolts to ensure that each beam sits centrally below the masonry leaf above. The short beam across the hall is to be cleated to the pair of beams, with bottom flanges level. the level of the bottom flanges are to be 10mm higher than the underside of the timber joists, which are to be notched in to the full depth up to the web, and are to be packed apart at this point with timber blocking. Bearings below beam ends to be three courses of blue engineering bricks to lengths shown on the calculations on the drawings.

Noggings
Fix 100 x 50mm noggings between floor joists and trussed rafters to support anchor straps. Fix 50 x 50 noggings around perimeter to support chipboard floor and plasterboard ceilings.

Anchor Straps 30 x 5mm galvanised ms anchor straps to be fixed at rafter and ceiling joist levels where these run parallel to external walls at max 2.0m centres and hooked over inner leaf of cavity wall. All straps to be securely fixed to 100 x 50mm softwood noggins

30 x 2.5mm galvanised ms straps to be fixed at 2.0m centres along wallplate and securely fixed 450mm down face of blockwork.

Roof Insulation 250mm mineral wool insulation at ceiling joist level. Insulation laid in 2 layers, first layer 100mm thick laid between ceiling joists, and second layer 150mm thick laid at 90 degrees to first over ceiling joists. (U value to not exceed 0.16w/m2k). Raised tie roof to be insulated with 130mm CELOTEX Double R, leaving min 50mm clear space above for airflow

Roof Access Construct roof access between trussed rafters as appropriate. Fix 100 x 75mm softwood trimmers to form min 750mm opening to suit fully draught sealed pre assembled loft hatch.

Roof Ventilation Roof ventilation provided by proprietary eaves vents to give 10 mm continuous air gap. Rafter trays to be installed to maintain air gap past roof insulation. Raised tie section of roof to have min. 25mm continuous eaves ventilation and 5mm continuous ridge ventilation to both sides of ridge.

Surface Water Drainage Above Ground UPVC gutters and downpipes, complete with matching offset bends, pipe shoes, support brackets etc. Downpipes to discharge into upturned bends from underground drainage.

Foul Water Drainage Above Ground
Baths, sinks and showers to have 40mm dia waste with 75mm accessible seal trap, if the run of branch exceeds 3m, then an anti-vacuum trap is to be used.
Basins to have 32mm dia waste with 75mm accessible seal trap, if the run of branch exceeds 1.7m then an anti-vacuum trap is to be used.

Underground Drainage To be 110 mm diameter Osmadrain with flexible joints, to a fall of 1:60 on main runs. Drains to be laid on 100 mm imported granular material to be thoroughly compacted and true to gradient. Sidefill 150 mm wide each side of pipe with granular material. Provide min 300 mm compacted 'as-dug' backfill all in accordance with manufacturers recommendations. Pipes under buildings are to be bedded on and surrounded by 150mm granular material. Where drains pass through walls, protect by means of relieving arches, or precast concrete lintels and

less than 600 mm cover they should have concrete paving slabs laid as bridging above the pipes with 100 mm of granular material between the top of the pipe and the underside of the slabs. Where pipes are under drive / traffic areas and have less than a 900 mm cover, reinforced concrete bridging should be used instead of paving slabs.
Inspection chambers to be polypropylene Osma universal, fitted with cast iron cover and frame. Chambers to have a 100 mm bed of granular material. Chambers with grade C covers to have 150 mm concrete around top of shaft to provide bed for frame.
Foul drains to discharge via existing manhole to mains sewer in road. Surface water drains to connect to mains surface water sewer in road.

Heating and Hot Water Heating system to be low pressure wet system with panel radiators. Boiler to be gas fired combi type, with a tanned balanced flue, and to be located in the cloaks cupboard.
Radiators are to be fitted with thermostatic valves, and a room thermostat is also to be wired in to switch off the boiler when there is no demand for heating or hot water.
All pipework in unheated spaces is to be lagged. Efficiency of boiler to be SEDBUK 78%. And is to be commisioned as required by Building Regulations, and a certificate provided to the building owner.

Air Leakage Great care is to be taken to ensure that insulation in all elements of the building meet or lap each with the other at junctions, and the building fabric within this insulated zone is to be airtight except for required trickle ventilation, and air for combustion, to prevent unwanted air leakage. The preferred way of achieving this is to comply with the DTLR Robust Details.

Electrical System To be in accordance with the current edition of the IEE Regulations, and to be carried out by an NICEIC approved Contractor.
All electrical switches, power points etc. to be fitted within a band between 450mm and 1200mm from the floor.
At least four internal light fittings are to be of the fluorescent tube, or compact fluorescent lamp type.
Any external fixed lighting is to be operated by a photo-cell and by a PIR detector.

Chimney To consist of 200mm diameter clay or refractory concrete rebated flue liners installed to manufacturer's instructions and with

within a 900mm x 550mm o/a concrete block / brick stack with internal dimensions of 345mm x 345mm. The space between stack and liners is to be filled with weak insulating concrete consisting of one part Ordinary Portland Cement to six parts vermiculite or ten parts perlite. No timbers are to be built into the stack, and nor should they come closer than 40mm from the outside faces of the stack.

Requirements for the Disabled
Ramp to be provided up to the principal entrance, as shown on the drawings.
All doors to habitable rooms, and WC to be 838mm wide, and the WC door is to open outwards as shown on drawing.
All power points, light switches etc to be located in a band of height between 450mm and 1200mm.

Notices / Logbook

A logbook is to be prepared for the inspection of the Building Inspector, and for transfer to new owners if the property is sold.
This log book is to include full details of the chimney and flue liners together with the type of fire / heating appliance they are suitable for, full details of the package treatment plant, full details of the boiler and a commissioning certificate for the boiler

AMF
Ref. A1

SHDC
Planning & Development
23 MAY 2003
Ref 08/0102

2 - 22 May 03 - General substructure details added.

TREVOR A CLAY R.I.B.A.
CHARTERED ARCHITECT
14 OLD FENDIKE ROAD
WESTON HILLS
SPALDING
LINCOLNSHIRE PE12 6DD

Project:
PROPOSED NEW HOUSE AT
36 EAST STREET, CROWLAND

Drawing:
FOUNDATION, FIRST FLOOR STRUCTURE, ROOF STRUCTURE AND LOCATION PLANS, BEAM CALCULATIONS, DOOR WINDOW AND LINTEL SCHEDULES AND GENERAL NOTES

Date: 12 April 03 | Proj No: 01/084/PA