0 1 2 3 4 5m

LINEAR SCALE 1:50

A1 @ 1:50

Area-Weighted U-Value Calculation

25% of extension floor area plus the area of windows and doors which are no longer exist or are exposed as a result of the extension: 9x25% = 2.25sqm + 3.78sqm = 6.03sqm

actual area of windows and doors: 7.57sqm

Notional

area of external wall: 17.37m²
area of pitched roof: 10.23m²
area of floor: 9m²
area of windows and doors: 6.03m²

[(17.37x0.28)+(10.23x0.18)+(9x0.22)+(6.03x1.6)] = 18.3
/ [(17.37 + 10.23 + 9 + 6.03)] = **42.6**
= 0.43 W/m²K

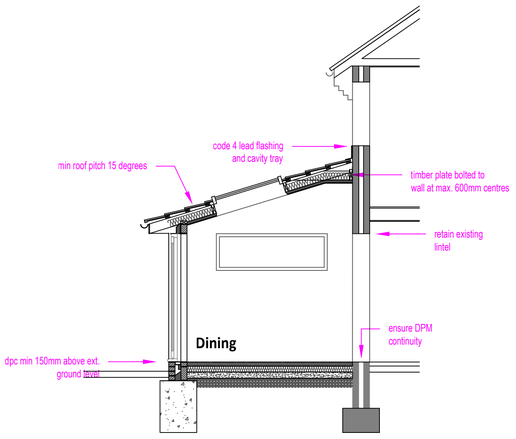
Proposed

area of external wall: 17.25m²
area of pitched roof: 8.78m²
area of floor: 9m²
area of windows and doors: 7.57m²

(17.25x0.28)+(8.78x0.15)+(9x0.17)+(7.57x1.4) = 18.2
/ [(17.25 + 8.78 + 9 + 7.57)] = **42.6**
= **0.42 W/m²K**

Proposed U-Values (W/m2K)

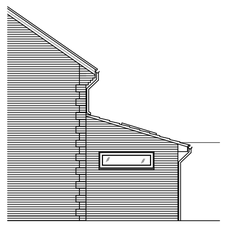
external wall 0.28: 40mm Ceoltex insulation + 50mm residual cavity
pitched roof 0.15: 120mm Celotex between rafters, 40mm Celotex below
floor 0.17: 100mm Celotex under screed
windows, doors, rooflights: 1.4 min.



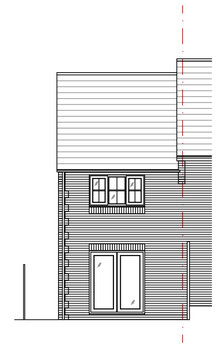
3 Proposed Section A-A
scale: 1:50



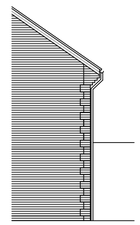
4 Proposed Rear Elevation
scale: 1:100



5 Proposed Side Elevation
scale: 1:100



6 Existing Rear Elevation
scale: 1:100



7 Existing Side Elevation
scale: 1:100



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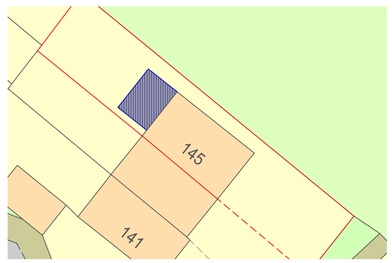
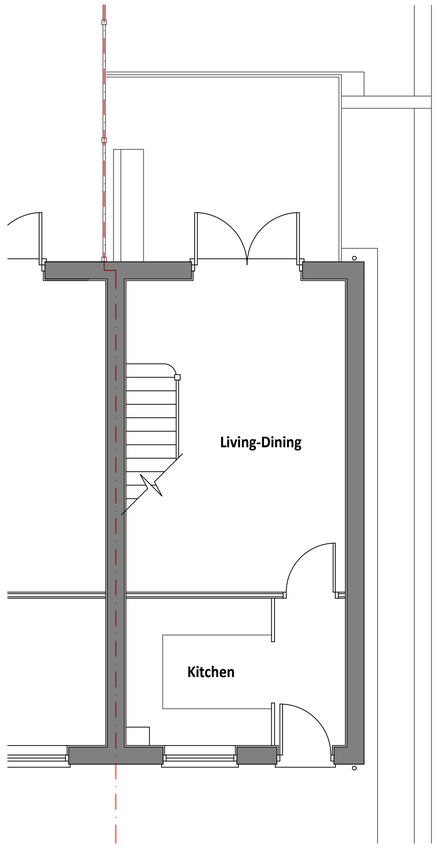
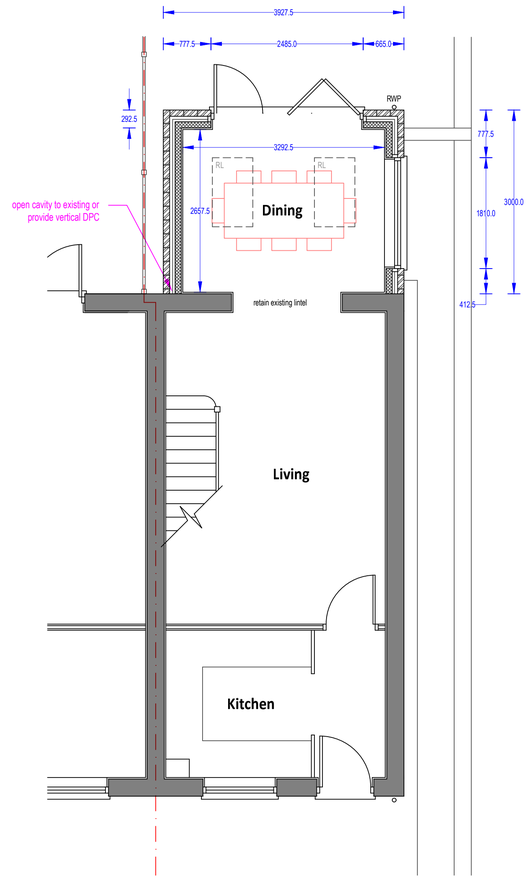
8 Location Plan
scale: 1:1250



9 Proposed Site Plan
scale: 1:500



1 Existing Ground Floor Plan
scale: 1:50



2 Proposed Ground Floor Plan
scale: 1:50

It is the contractors responsibility to ensure adequate provision of structural integrity and stability of the structure during the construction works. All work to be undertaken in accordance with the relevant British Standards and The Building Regulations 2000.

PART A [structure]
Subject to ground and site conditions and exposure of existing foundations - extension foundations to to be strip or trench fill concrete at least 1.0m deep and 0.6m wide. Foundation depth to account for any new or existing drains in close proximity. Consideration also should be given to NHBC Chapter 4.2 in relation to building near trees should sub-soil be shrinkable. Final type of foundation and depth to be agreed in consultation with building control surveyor. Floor slab to be ground bearing unless site conditions dictate otherwise. As an alternative use a suspended beam and block floor to specialist design with at least 150mm vented void.

External Walls to be load bearing masonry construction. Wall ties to be provided at max. 450mm vertical centres and 750mm horizontal centres. Double wall ties at structural openings. Insulated cavity lintels to be suitable for load and span ensuring minimum 150mm bearing each side. External walls to be tied to roof structure with galvanised mild steel restraint straps at max. 1600mm centres. Bond new walls to existing walls using Firfix stainless steel profiles. Maintain cavity with the existing construction or provide vertical DPC.

Roof structure to consist of 150x50mm C16 timber rafters at max. 400mm centres, doubled to trim rooflight openings. Rafters to have birdsmouth connection to high and low level timber wall plates. Eaves wall plate to be anchored using galvanised mild steel restrain straps at max. 1200mm max. centres. Top plate to be rawl bolted to existing external wall at max. 600mm centres.

PART B [fire safety]
All existing elements of structure to maintain at least 30 minutes fire resistance.

PART C [site preparation and resistance to contaminants and moisture]
Site levels to be reduced and all vegetation removed. 1200g DPM to ground floor on sand blinding, lapped with DPC. 500g membrane as separating layer between insulation and screed. DPC to BS 743, minimum 150mm above external ground level, not higher than finished internal floor level. Lap to new DPM and existing DPCs. Reduce external ground level if necessary to ensure 150mm between DPC and external ground level. Maintain ventilation to any existing suspended ground floors.

Outside leaf of 102.5mm facing brick. 90mm cavity partially filled with 40mm thick Celotex cavity wall insulation. Inside leaf of 100mm Celcon Standard blocks or equivalent block of similar compressive strength and thermal insulation. U-value 0.28 W/m²K. Close cavities at roofs, windows and doors using preformed cavity closer such as Thermabate. Fill cavity with lean mix concrete to 150mm below DPC. External walls to have min. 50mm residual cavity

Roof tiles to match existing as close as possible while being suitable for the pitch of the roof. Gauge and head lap should be in accordance with manufacturers guidance. Tiling battens on Tyvek (or similar approved) breathable underlay draped over rafters and installed in accordance with the manufacturers instructions. Absolute minimum pitch for rooflights is 15 degrees.

PART D [toxic substances]
Not applicable

PART E [resistance to the passage of sound]
Not applicable

PART F [ventilation]
New dining room to have openable windows/doors at least equal to 1/20th of the floor area of the combined living room and dining room. At least one window to incorporate trickle vent with minimum area of 8000mm².

PART G [sanitation, hot water safety and water efficiency]
not applicable

PART H [drainage]
New drains to comply with BS 8301 and Part H of the Building Regulations 2000 (as amended). To be agreed on site in consultation with building control surveyor. Drains to be 100mm in diameter and laid to a minimum gradient of 1:40 surrounded in minimum 150mm pea gravel. Where new drains run under the building and are within 300mm of the floor slab, surround pipes with concrete and maintain flexibility by inserting 13mm compressible material such as fibreboard or polystyrene around the pipe joints.

100mm rainwater gutter and 65mm downpipe connected to existing SW drain or new soakaway at least 5m from any structure. Soakaway size subjet to ground conditions, percolation test and design by contractor.

It is the client's responsibility to check for the existence of any existing public sewer and enter into a build over agreement with the local water authority if necessary.

PART J [combustion appliances and fuel storage systems]
Any alterations to any existing gas boiler, flue and heating system to be undertaken only by a competent Gas Safe registered engineer.

PART K [protection from falling, collision and impact]
Glazing to critical locations to be laminated or toughened in accordance with BS 6206 and Approved Document K.

PART L [conservation of fuel and power]
All new windows, doors and rooflights are to be double glazed with a min. u-value of 1.4W/m²K. New light fittings to be suitable only for energy efficient lamps having a luminous efficiency greater than 40 lumens per circuit watt. Extend existing heating and provide radiators to new room with output to suit. All services to be installed and be provided with controls in accordance with the Domestic Services Compliance Guide 2013. Thermostatic valves to be fitted to all radiators. U-values for thermal elements as area weighted u-value calculation.

PART M [access to and use of buildings]
Any existing relevant provision should not be made worse as a result of the work.

PART P [electrical safety]
Electrical installations to be in accordance with BS 7671. Building control body to be satisfied that the requirements of Part P of the Building Regulations has been complied with. BS 7671 certificate to be issued by a person competent to do so.

PART Q [security]
not applicable

Party Wall Act 1996
It is the responsibility of the client to obtain a written agreement with the neighbours prior to commencement of any work which is subject to the Party Wall etc Act 1996.

CDM 2015
The contractor is responsible for compliance with the CDM Regulations 2015

All dimensions to be checked and confirmed on site prior to commencement of building works

Do not scale from drawings

All items to be measured on site before ordering

Any discrepancies on the drawings to be reported

If in doubt, ask

REVISIONS:

Graham King MRICS
Chartered Surveyor
07526 919 752
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Site Address:

**145 Cheltenham Gardens
Hedge End, Southampton
Hampshire
SO30 4UE**

Project:

Single Storey Rear Extension

Drawing Title:

EXISTING & PROPOSED PLANS

Drawn By: **GK**
Date: **May 2016**

Drawing Number:

0032/BR/01

this drawing must not be copied without consent