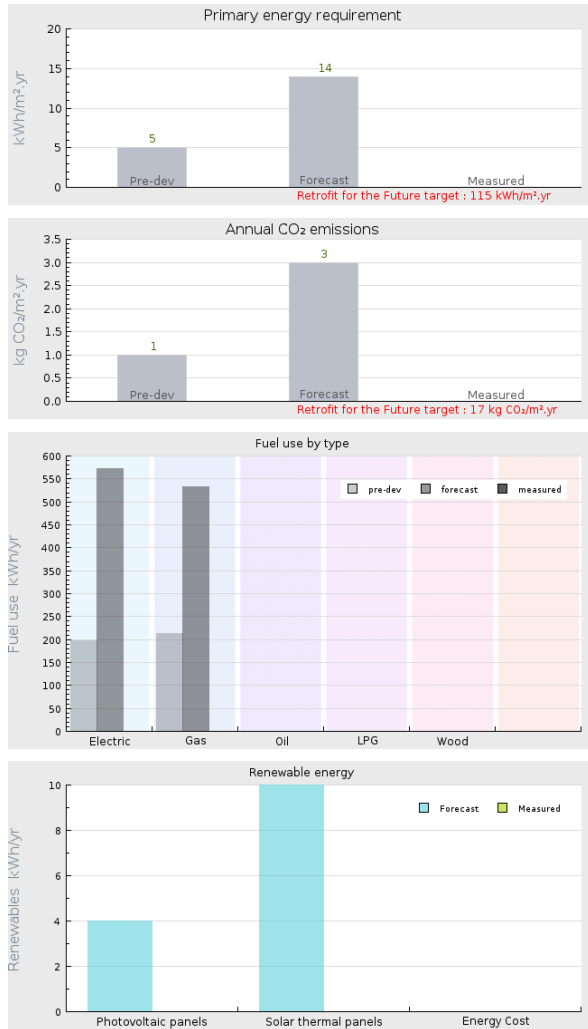


**Project name** A2Dominion- North Harrow

**Project summary** Retrofit of 2 x Semi detached houses via external insulation allowing tenant to remain in residence during construction



**Project Description**

Projected build start date	08 Mar 2010
Projected date of occupation	21 Apr 2010
Project stage	Under construction
Project location	Harrow, London, England
Energy target	Retrofit for the Future
Build type	Refurbishment
Building sector	Public Residential
Property type	Semi-Detached
Existing external wall construction	Solid Brick
Existing external wall additional information	Uninsulated, pebble dashed finish
Existing party wall construction	solid brick
Floor area	144.5 m <sup>2</sup>

## Project team

Organisation	Breyer Group PLC
Project lead	Breyer Group
Client	A2Dominion
Architect	Cole Thompson Anders
Mechanical & electrical consultant(s)	ZBP
Energy consultant(s)	ZBP
Structural engineer	
Quantity surveyor	Breyer Group
Other consultant	
Contractor	Breyer Group

## Design strategies

Planned occupancy	5 x people.
Space heating strategy	High efficiency gas fired boiler
Water heating strategy	As above plus solar hot water panels
Fuel strategy	High efficiency gas fired boiler
Renewable energy generation strategy	Roof mounted PV and Solar hot water panels
Passive solar strategy	
Space cooling strategy	
Daylighting strategy	Glazing position and size as existing
Ventilation strategy	Passivent with trickle vents to glazing
Airtightness strategy	4 m <sup>3</sup> /hr/m <sup>2</sup>
Strategy for minimising thermal bridges	Overlapping insulation. External insulation covering existing building fabric ensures limited thermal bridges
Modelling strategy	SAP
Insulation strategy	External insulation throughout, with ground floor insulation to raised ground floor
Other relevant retrofit strategies	Ready for immediate roll out. No decant required, no planning permission required, no technologies specified with tenant interaction, no specialist materials of limited availability..
Other information (constraints or opportunities influencing project design or outcomes)	

## Energy use

### Fuel use by type (kWh/yr)

Fuel	previous	forecast	measured
<b>Electric</b>	197	572	
<b>Gas</b>	213	532	
<b>Oil</b>			
<b>LPG</b>			
<b>Wood</b>			

### Primary energy requirement & CO2 emissions

	previous	forecast	measured
<b>Annual CO2 emissions</b> (kg CO2/m <sup>2</sup> .yr)	1	3	-
<b>Primary energy requirement</b> (kWh/m <sup>2</sup> .yr)	5	14	-

### Renewable energy (kWh/yr)

Renewables technology	forecast	measured
<b>Photovoltaic panels</b>	4	
<b>solar thermal panels</b>	10	
<b>Energy consumed by generation</b>		

### Airtightness ( m<sup>3</sup>/m<sup>2</sup>.hr @ 50 Pascals )

	Date of test	Test result
Pre-development airtightness	-	-
Final airtightness	-	-

### Annual space heat demand ( kWh/m<sup>2</sup>.yr )

	Pre-development	forecast	measured
<b>Space heat demand</b>	-	31	-

Whole house energy calculation method

SAP Extension for Whole House

Other energy calculation method

Predicted heating load

53 W/m<sup>2</sup> (demand)

Other energy target(s)

## Building services

Occupancy

NULL

Space heating

NULL

Hot water

NULL

Ventilation

NULL

Controls

NULL

Cooking	NULL
Lighting	NULL
Appliances	NULL
Renewables	NULL
Strategy for minimising thermal bridges	NULL

## Building construction

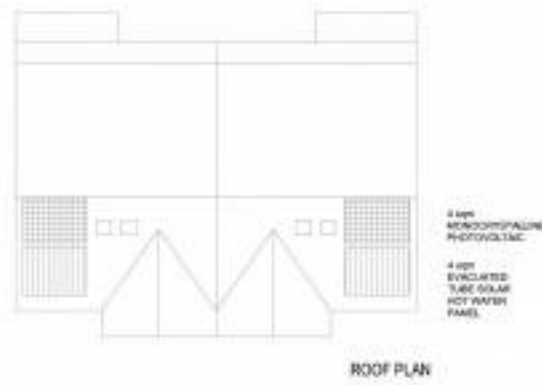
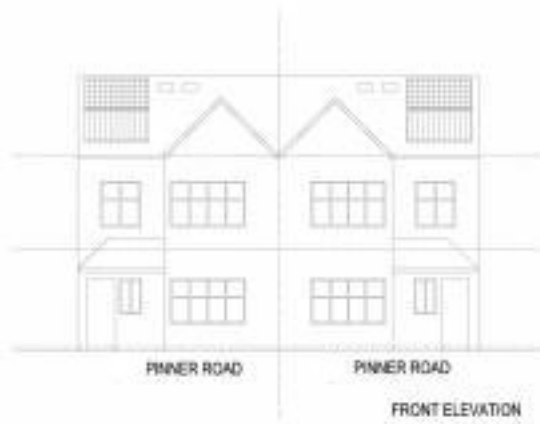
### Storeys

Volume	
Thermal fabric area	
Roof description	NULL
Roof U-value	0.00W/m <sup>2</sup> K
Walls description	NULL
Walls U-value	0.00W/m <sup>2</sup> K
Party walls description	NULL
Party walls U-value	0.00W/m <sup>2</sup> K
Floor description	NULL
Floor U-value	0.00W/m <sup>2</sup> K
Glazed doors description	NULL
Glazed doors U-value	0.00W/m <sup>2</sup> K
Opaque doors description	NULL
Opaque doors U-value	0.00W/m <sup>2</sup> K
Windows description	NULL
Windows U-value	0.00W/m <sup>2</sup> K
Windows energy transmittance (G-value)	
Windows light transmittance	
Rooflights description	NULL
Rooflights light transmittance	
Rooflights U-value	0.00W/m <sup>2</sup> K

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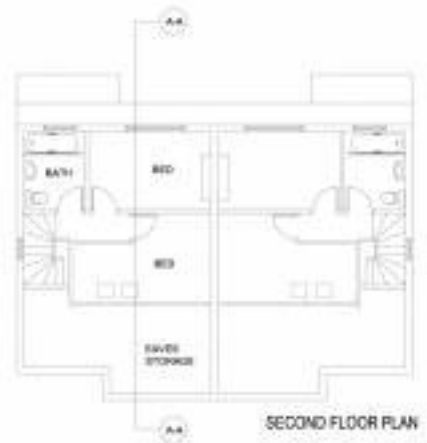
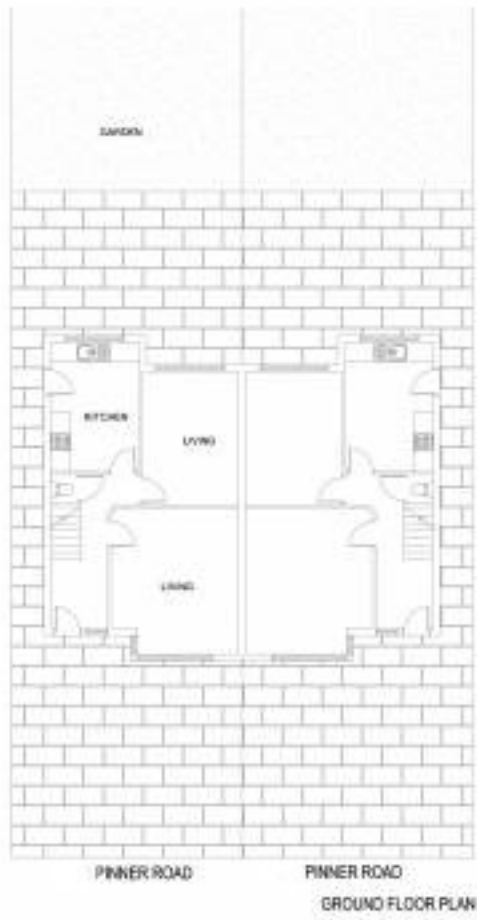
## Project images





SECTION A-A

DATE: 2011-07-11  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 SCALE: 1:50  
 PROJECT: [Name]  
 SHEET NO: [Number]



10. ... ..  
 CLIENT: ... ..  
 PROJECT: ... ..  
 DRAWING NO.: ... ..  
 SCALE: 1:50  
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 CHECKED BY: ... ..  
 APPROVED BY: ... ..  
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