

## IFORE Retrofitting Works – Outreau

Program : 2952  
 Address : Georges Braque Street  
 Building year : 1979

Pre-retrofit Description	
10 cm width concrete paving	5 cm polystyrene insulation under the floor
Floor	Concrete slab
Gable end walls	16 cm width shuttered concrete
Front wall	14 cm reinforced phenolic foam
Exterior render	Sprayed render on front and back walls and painted concrete on side walls
Thermal insulation : <ul style="list-style-type: none"> <li>➤ Garage loft</li> <li>➤ Walls</li> <li>➤ Loft</li> </ul>	50 mm fibrastyrene 5 cm polystyrene + 1cm plaster on front and back walls 7 cm glass wool with moisture barrier
Wood framework	Traditional
Roof	Slate tile
Windows	PVC double glazed windows 4 12 4 on metallic frame
House door	43 mm insulated metallic door
Ventilation	Passive stack Self adjusting air inlets
Heating	Individual gas boiler for space heating and hot water production Steel heating units

### Houses pre-retrofit



## Post Retrofitting Works Specifications

<b>10cm width concrete paving</b>	5 cm polystyrene insulation under the floor
<b>Floor</b>	Concrete slab
<b>Walls</b>	16 cm width shuttered concrete
<b>Wall masonry</b>	14 cm reinforced phenolic foam
<b>Exterior siding</b>	8 mm cement fiber clapboards
<b>Thermal insulation :</b> <ul style="list-style-type: none"> <li>➤ Garage loft</li> <li>➤ Walls</li> <li>➤ Loft</li> <li>➤ Base</li> </ul>	50 mm fibrastyrene Wood frame/Metisse 20cm insulation/rain barrier/siding 16cm cellulose wadding with moisture barrier Roofmate 60+10cm front and back walls
<b>Wood framework</b>	Traditional
<b>Roof</b>	Slate tile
<b>Windows</b>	PVC Paziaud ventilated windows with rolling slat shutters (hidden lintel) Insulated door between the kitchen and the garage
<b>House door</b>	43 mm insulated metallic door
<b>Ventilation</b>	Passive stack Self adjusting air inlets
<b>Heating</b>	Individual gas boiler for space heating and hot water production Steel heating units

### Houses in 2014



## IFORE Retrofitting Works – Outreau

Program: 3591  
 Address: rue du Biez  
 Building year : 1979

Pre-retrofit Description	
10 cm width concrete paving	5 cm polystyrene insulation under the floor
Floor	Concrete slab
Gable end walls	16 cm width shuttered concrete
Front wall	14 cm reinforced phenolic foam
Exterior render	Sprayed render on front and back walls and painted concrete on side walls
Thermal insulation : ➤ Walls  ➤ Loft	4 cm polystyrene + 1cm plaster on front and back walls / 8 +1 on side walls  7 cm glass wool with moisture barrier
Wood framework	Industrial frame
Roof	Concrete Tile
Windows	PVC double glazed windows 4 12 4 on metallic frame with rolling shutter box (external mounted box)
House door	Non insulated wood – thickness 46 mm
Ventilation	Passive stack Self-adjusting air inlets
Heating	Individual gas boiler for space heating and hot water production Steel heating units

### Houses pre-retrofit



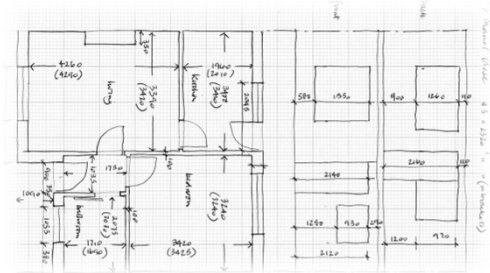
<b>Post Retrofitting Description</b>	
<b>10cm width concrete paving</b>	5 cm polystyrene insulation under the floor
<b>Floor</b>	Concrete slab
<b>Walls</b>	16 cm width shuttered concrete
<b>Wall masonry</b>	14 cm reinforced phenolic foam
<b>Exterior siding</b>	8 mm cement fiber clapboards
<b>Thermal insulation :</b> <ul style="list-style-type: none"> <li>➤ Walls</li> <li>➤ Loft</li> <li>➤ Base</li> </ul>	Wood frame/Metisse 20cm insulation/rain barrier/siding 30cm cellulose wadding with moisture barrier Roofmate 60+10cm
<b>Wood framework</b>	Industrial frame
<b>Roof</b>	Concrete Tile
<b>Windows</b>	PVC Paziard ventilated windows with rolling shutter box (hidden box).
<b>House door</b>	43 mm insulated door
<b>Ventilation</b>	Mechanical ventilation
<b>Heating</b>	Individual gas boiler for space heating and hot water production Steel heating units

### Houses in 2014



# Rushenden IFORE Retrofit

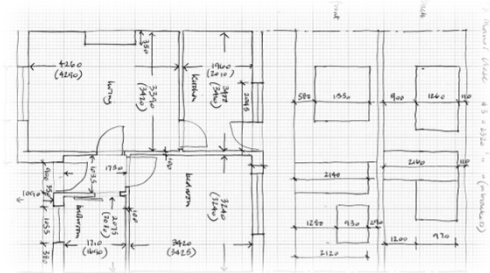
# Type 1 House



<b>Build Type</b>	1945-1964 Bungalow, Masonry Cavity, 1 Bedroom
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Replaced timber front and rear doors with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles.
<b>Gas boiler Upgrades</b>	Most existing combination boilers retained.
<b>Heating Controls</b>	AlertMe smart controller.
<b>Ventilation</b>	Mechanical ventilation with heat recovery.
<b>Solar Thermal System</b>	Not applicable.
<b>Solar Photo Voltaic System</b>	Not applicable.

# Rushenden IFORE Retrofit

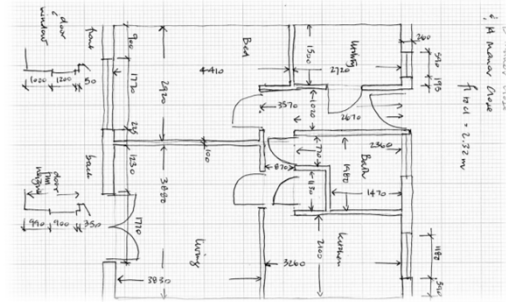
# Type 1 House



<b>Build Type</b>	1945-1964 Bungalow, Masonry Cavity, 1 Bedroom
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Replaced timber front and rear doors with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles.
<b>Gas boiler Upgrades</b>	Most existing combination boilers retained.
<b>Heating Controls</b>	AlertMe smart controller.
<b>Ventilation</b>	Mechanical ventilation with heat recovery.
<b>Solar Thermal System</b>	Not applicable.
<b>Solar Photo Voltaic System</b>	Not applicable.



# Rushenden IFORE Retrofit Type 2 House

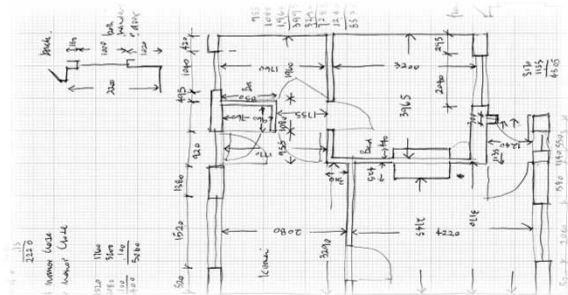


<b>Build Type</b>	1945-1964 Bungalow, Masonry Cavity, 1 Bedroom
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Replaced timber front and rear doors with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles.
<b>Gas boiler Upgrades</b>	Communal ground source (3 properties) and exhaust air heat pumps (3 properties) fitted to replace gas boilers.
<b>Heating Controls</b>	Heat pump controls only.
<b>Ventilation</b>	Mechanical ventilation with heat recovery (most properties).
<b>Solar Thermal System</b>	Not applicable.
<b>Solar Photo Voltaic System</b>	Not applicable.



# Rushenden IFORE Retrofit

# Type 3 House

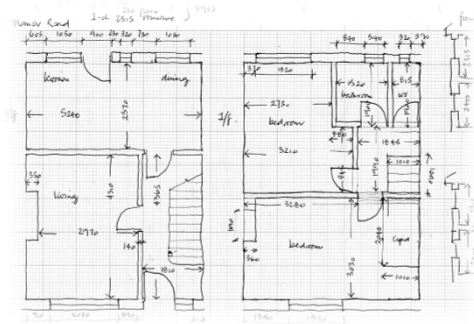


<b>Build Type</b>	1945-1964 Bungalow, Masonry Cavity, 1 Bedroom
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Replaced timber front doors with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles.
<b>Gas boiler Upgrades</b>	Only one combination boiler replaced .
<b>Heating Controls</b>	Most have AlertMe, 1 property with Wattbox smart controller.
<b>Ventilation</b>	Mechanical ventilation with heat recovery.
<b>Solar Thermal System</b>	Not applicable.
<b>Solar Photo Voltaic System</b>	Not applicable.





# Rushenden IFORE Retrofit Type 4 House

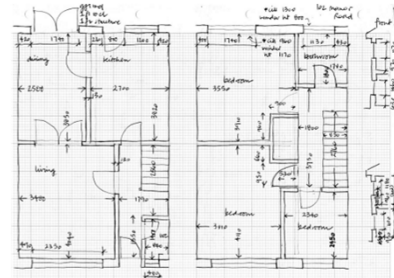


<b>Build Type</b>	1945 – 1964 Terraced House, Masonry Cavity 2 Bedrooms
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Most timber front and back doors replaced with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles.
<b>Gas boiler Upgrades</b>	Most existing boilers upgraded to SEDBUK 'A' rated condensing boiler if Including TRVs with new boiler.
<b>Heating Controls</b>	Most have AlertMe, a couple with Wattbox smart controllers.
<b>Ventilation</b>	Trickle vents mechanically vented kitchens and bathrooms.
<b>Solar Thermal System</b>	Not applicable
<b>Solar Photo Voltaic System</b>	2.5kW Solar PV on south facing roofs including inverter and system controls.



# Rushenden IFORE Retrofit

# Type 5 House

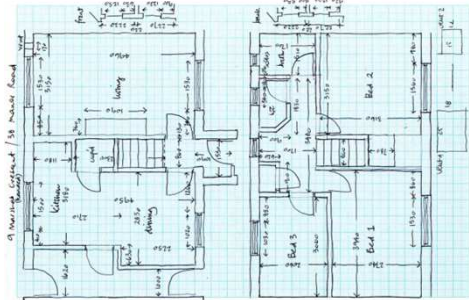


<b>Build Type</b>	1945 – 1964 Terraced House, Masonry Cavity 3 Bedrooms
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Timber back doors replaced with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles some with replacement double glazed units.
<b>Gas boiler Upgrades</b>	Most existing boilers upgraded to SEDBUK 'A' rated condensing boiler if Including TRVs with new boiler.
<b>Heating Controls</b>	Mix of AlertMe and Wattbox smart controllers.
<b>Ventilation</b>	Trickle vents mechanically vented kitchens and bathrooms.
<b>Solar Thermal System</b>	Most have solar thermal collector panels on south facing roofs, including system controls and dual coil cylinder.
<b>Solar Photo Voltaic System</b>	One property has 2.5kW Solar PV on its south facing roof including inverter and system controls.



# Rushenden IFORE Retrofit

# Type 6 House

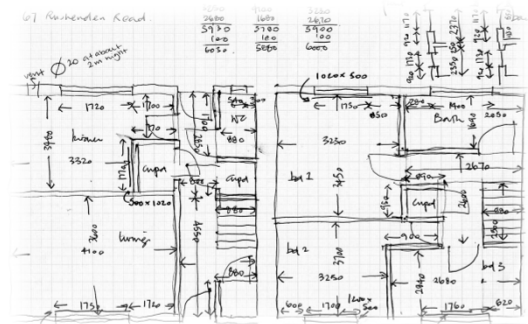


<b>Build Type</b>	1945 – 1964 Terraced House, Masonry Cavity 3 Bedrooms
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Most timber front and back doors and some side doors replaced with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles many with replacement double glazed units.
<b>Gas boiler Upgrades</b>	Most existing boilers upgraded to SEDBUK 'A' rated condensing boiler if Including TRVs with new boiler.
<b>Heating Controls</b>	Most have AlertMe, three with Wattbox smart controllers.
<b>Ventilation</b>	Trickle vents mechanically vented kitchens and bathrooms.
<b>Solar Thermal System</b>	About 50% of properties have solar thermal collector panels on south facing roofs, including system controls and dual coil cylinder.
<b>Solar Photo Voltaic System</b>	About 50% of properties have 2.5kW Solar PV on south facing roofs including inverter and system controls.



# Rushenden IFORE Retrofit

# Type 7 House



<b>Build Type</b>	1945 – 1964 Terraced House, Masonry Cavity 3 Bedrooms
<b>Internal Insulation</b>	Loft insulation topped up to 270mm, cavity walls checked and filled with blown fibre where defective.
<b>External Wall Insulation</b>	60 mm phenolic render finished to resident's colour choice.
<b>Window and Doors</b>	Timber front and back doors replaced with new uPVC doors. Refurbish existing uPVC window seals, gaskets, geometry sets and handles one with replacement double glazed units.
<b>Gas boiler Upgrades</b>	Most existing boilers upgraded to SEDBUK 'A' rated condensing boiler if Including TRVs with new boiler.
<b>Heating Controls</b>	Mix of AlertMe and Wattbox smart controllers.
<b>Ventilation</b>	Trickle vents mechanically vented kitchens and bathrooms.
<b>Solar Thermal System</b>	Solar thermal collector panels on south facing roofs, including system controls and dual coil cylinder.
<b>Solar Photo Voltaic System</b>	Not applicable.