## A DREAM KITCHEN THAT DIDN'T COST THE EARTH

As previously mentioned the budget on this project was tight and we wanted to allocate most of it to energy upgrades so when it came to the kitchen we had to think outside the box. The units were in an L shape around the back wall with an island unit on the right as you enter. On close examination the units and doors were in very good condition so we opted to reconfigure the layout to make the most of the available space. A new worktop was fitted and the doors and units were painted, the tiling on the floor and walls was changed and the lighting was upgraded.

The island unit was moved to the left hand side and integrated into the L shape making it a peninsula instead of an island. On completion of the renovation works the entire area was redecorated and the result is a bright modern spacious area that the owners are delighted with. This project proves that you don't have to invest in a complete new kitchen to get a new look especially if the budget is limited.







Before works



FloElen offers a full range of services which includes, free design consultation, design & build services, planning applications, extensions, new kitchens, new bathrooms, deep renovations, full energy upgrades and a whole lot more. We specialise in everything to do with your home and our aim is always to provide you with an affordable, energy efficient, well designed, beautifully finished home which you will love and be proud of. The home of your dreams!

At FloElen we know that undertaking a home renovation or extension can be very stressful so we have set ourselves the task of ensuring that your project will be stress free for you. It begins with our free design consultation and our now famous element by element quotations. Following our design consultation we will present you with a full range of well thought out options one of which we are sure will suit your budget.

FloElen carries out all our works using our own staff and a very small group of sub-contractors whom we have worked with for many years, this way you know you will be dealing with only one person at all times and you will have no worries trying to co-ordinate many different contractors. Because FloElen is intentionally a small construction company we can guarantee you our full attention during your project with one project manager to ensure you have a stress free renovation.

#### 6 REASONS TO CHOOSE US

**Expert Advice And Design** Value For Money Quality **Reliability Cost Certainty** Hassle Free

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# **1990 E1 Rated Home Gets the FloElen Makeover**



#### Following our energy up-grade and renovation works this warm comfortable home is now B2 rated

In early summer of 2016 our design team visited this Kildare bungalow following a call from its owners. Their brief to us was to try and refresh it but in particular "sort out the conservatory and leave our home more comfortable for our approaching retirement". The budget for the project was limited so we focussed on five elements, converting the conservatory to a sun room, wall & roof insulation, heating system up-grade, installing energy efficient windows & doors and a full renovation of the kitchen/dining room area.

#### **BEAUTIFUL NEW SUNROOM**







We almost completely demolished the conservatory leaving only the floor slab and foundations in place. We installed steel beams so that the new sunroom would be completely integrated into the kitchen/dining room making it one large, bright, comfortable area. We built a new roof on the room and this was highly insulated and was made air-tight with the aim of reducing heat gain in summer and heat loss in winter. The windows and French doors we installed were very energy efficient and A rated which also helped in both summer and winter in the same way that the roof insulation did. The starter walls below the windows were insulated externally with an extra layer added on the inside, thus insuring that this newly converted sunroom is not only a beautiful and cosy space but is also a room that can be used all year round. Following completion of the works we visited on a cold winters evening in December 2016 and the owners were sitting in the sunroom in short sleeves enjoying its beauty and comforts. When we asked was the heating on they said it had been on for about an hour earlier in the day but was off now.

## EXTERNAL WALL AND ROOF INSULATION

Although only built in 1990, this bungalow had very little wall and roof insulation with only 40mm of polystyrene in the walls and 100mm of fibreglass in the roof. Although this amount of insulation had some benefit it is nothing like the level of insulation used today. The wall and roof insulation up-grade represented the biggest contribution to energy efficiency, comfort and cost savings in this project.

For the walls we chose to insulate externally for three reasons, firstly, it causes no disruption to the home as all works are carried out externally, secondly, although it is the most expensive method, there is a very generous grant available from SEAI when you use a registered contractor and finally but most importantly there will be no gaps or what we call "cold bridges" in the insulation making it the most efficient way to insulate existing buildings. FloElen Construction is a registered SEAI contractor and we use the JUB external wall insulation system which is NSAI Certified.





As mentioned above, when insulating, cold bridges are a problem so to eliminate them on the roof we chose to remove the roof tiles, battens and bituminous felt, insert a really good insulation between the rafters, lay another layer of insulation on top of the rafters to eliminate the cold bridges, cover this with a waterproof and breathable air-tight layer and finally re-fit the roof batons and tiles.

The U Value of the completed wall construction rose from a very poor 1.6W/  $M^2$  of energy loss to less than  $0.19W/M^2$  and the U Value of the roof rose from 2.2 W/M<sup>2</sup> to less than 0.15 W/M<sup>2</sup> both of these ratings meet today's insulation requirements for new construction. These two elements were major contributors to the buildings upgrade from a BER Rating of E1 (300KW/m2/year) before the works commenced to a B2 (100KW/m2/ year) Rating following their completion.

### HEATING CONTROLS AND UP-GRADE



By doing this the heating only kicked in when the temperature outside fell and once the desired temperature was reached inside it switched off leading to big savings in fuel consumption from both the controls and the boiler efficiency. In addition, the clients wanted a "real fire" in the kitchen/dining area so we installed a super efficient room heating stove with a thermostatic control in this area so that when they light the fire, the central heating won't come on and overheat the area. The original open fire in this area was closed up and plastered over which had the added advantage of opening up an entire wall for other uses.

The system we installed to control the heating had three zones, one to control the amount of hot water and its temperature, one to control the temperature of the bedrooms and bathrooms and one to control the living areas. In addition to being able to control the temperature in these three zones we also fitted new thermostatic controls on each radiator so that individual rooms could be set to different temperatures if the occupant so desired. SEAI have a generous grant scheme available if you choose to install an efficient heating boiler or heating controls.

Typically, windows and doors represent only 15 to 20% of the surface area of your homes external walls. Despite this small percentage they represent the greatest area of heat loss because of their very poor U Values. A typical U Value for windows and doors installed in the 1990's would be 2.6 to 2.8 W/M<sup>2</sup> which when compared to the surrounding wall built at the same time represents a heat loss more than fifteen times greater per M<sup>2</sup>. Windows installed in the 1990's also presented two other heat losses because of their poor air tightness and large cold bridges where they met their surrounding wall construction.



## ENERGY EFFICIENT DOORS AND WINDOWS



On this project we removed the existing windows and doors and replaced them with new units which have a typical U Value of between 1.3 & 1.4 W/M<sup>2</sup>. These new U Values are twice as good as the originals and more importantly we were able to completely eliminate the air leakage paths and cold bridges because of the installation of external insulation on the surrounding walls and the replacement of the inefficient concrete cills with energy efficient ones. In the average house the windows & doors contribute more than 25% of the total annual heat loss and therefore more than 25% of the annual heating fuel cost. By upgrading the windows and doors and installing them to the highest standards we were able to reduce this figure to

between 10 & 12%.

Home heating systems in Ireland are generally considered to be inefficient and poorly controlled. We either have the system on an automatic timer, regardless of outside temperature or we turn the heating on when we feel cold which is probably too late. In addition, older heating boilers are generally considered to be less than 70% efficient while open fires are less than 30% efficient.

On this project we installed a new oil fired boiler with a seasonal efficiency of 95% and introduced heating controls on both the central heating and hot water supply.