

NORTHERN BUILDER STEPS INSIDE THIS INNOVATIVE HOME LOCATED JUST OUTSIDE OMAGH...

UNVEILING

Northern Ireland's first Passive House.



Overview

CHERRY TREE HOUSE, OMAGH



Energy Minister Arlene Foster (second left) officially opens Cherry Tree House along with (from left) Omagh District Council Chairman, Councillor Errol Thompson, William Moffitt, of building contractors Moffitt and Robinson Construction Ltd and Fiona Brazill, Lecturer in Construction, South West College.



William Moffitt of main contractors Moffitt and Robinson Construction Ltd explains some of the energy saving techniques used at Cherry Tree House to Energy Minister Arlene Foster.



Triple glazing was installed to reduce heat loss.

LEADING OMAGH-BASED CONSTRUCTION COMPANY SHOWCASES ITS ZERO CARBON CREDENTIALS WITH COMPLETION OF RETIREMENT BUNGALOW...

Moffitt and Robinson completes Northern Ireland's first Passive House

It may not have started out that way, but such was the attention to detail and the determination to make Cherry Tree House as energy efficient as possible that it transformed into the province's first Passive House and, at the time of registration, one of only two homes in Northern Ireland to achieve Zero Carbon status. Designed and built by Moffitt and Robinson Construction Ltd, the retirement dwelling is located on the outskirts of Omagh and has become a standard bearer for the low carbon building industry. High quality workmanship has always been at the top of the Moffitt and Robinson agenda but this project offered the perfect

opportunity to showcase the company's talents. As this was the first time the company had attempted a project of this kind, research formed an integral part of the overall process, with Managing Director, William Moffitt, also attending a 'Low Carbon Development' course at South West College to ensure the high standards were met. "Our initial brief was to make the building as energy efficient as possible but as we examined where we could make energy savings we realised that achieving both carbon zero and Passive House status was possible so that is what we aimed for and I am delighted with the final outcome."

Another pleasing aspect of the project was the determination displayed not only by the staff at Moffitt and Robinson but also by the company's sub-contractors. "It was great to see just how determined our staff and sub-contractors were to promote the quality of their workmanship by being part of this project. We had a lot of challenges to meet but the determination displayed by the entire team was key to achieving Northern Ireland's first Certified Passive House." Air-tightness forms the centre-point of the project's success. The bungalow consists of a highly insulated, air-tight timber-frame fabric, with special attention given to critical areas

Northern Ireland's first Passive House - Cherry Tree House.



William Moffitt, Managing Director, Moffitt and Robinson Construction Ltd, with home-owner Violet Crosbie.



The spacious kitchen at Cherry Tree House.



The inconspicuous ventilation system.



The rainwater harvesting system.

Techniques Implemented at Corick House

Moffitt and Robinson Construction Ltd prides itself on being a forward-thinking company and fast on the heels of completing its first domestic Passive House the team is implementing energy-saving techniques on a commercial project. The Omagh-based company, which has been operating for more than 30 years, is currently working on a 24 bedroom extension complete with leisure facilities at the award-winning Corick House Hotel in Clogher. "Energy efficiency is very much to the fore with this project and we have been able to utilise our experience at Cherry Tree House at Corick House," explained William. In addition to this work, the company undertakes all types of construction projects, including new build, commercial, disabled adaptations, projects undertaken from green field site to completion with Building Control certificate issue and works to Listed Buildings.

such as the floors to walls, window to walls and walls to roof. The insulated fabric of the building was combined with triple glazed windows and doors to keep heat loss to a minimum, with the windows also positioned to take full advantage of solar gain. "We felt that the conservation of energy should be the first priority before we looked at introducing renewable technologies, which is why we placed such an emphasis on reducing heat loss," William added. Another aspect of reducing heat loss is the Mechanical Heat Recovery Ventilation (MHRV) system. Air is sourced through an earth tube and then warmed using the heat recovered from wet rooms such as the bathroom, kitchen and utility area. This means that daily activities such as showering, cooking, washing and ironing are actually contributing towards generating heat for the home. This reuse philosophy continues with the addition of low-cost rainwater harvesting system and a system that recovers heat from the grey water. For hot water, Cherry Tree House has two

sources – solar panels on the roof and a wood burning stove. The plumbing system is designed with heat leak radiators in the two bathrooms which feed the MHRV system and helps maintain a lower water temperature, thus maximising the output of the solar panels. In colder weather, the wood burning stove provides a more than adequate back-up, supplying hot water to the radiators. The clever design feature even extend to the drive-through garage that includes a vaulted ceiling complete with clothes line to provide a natural drying area and reduce the need for a tumble dryer. "The feedback from the client has been superb and that has made all the effort worthwhile," added William. "It has been a huge learning curve and we will be able to utilise this experience on future projects. "Low carbon and Passive House is definitely the way forward and we have already witnessed a lot of interest from clients wanting us to apply this knowledge on their projects. It is an area that we will continue to develop and I feel the next challenge will be how we can implement these techniques within the retrofit market."



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Moffitt and Robinson Construction Ltd., 40 Blacksessiagh Road, Omagh, BT78 1SU
T: 028 8224 3656 - F: 028 8225 1174 - E: info@moffittandrobinson.co.uk
www.moffittandrobinson.co.uk



Plumbing & Heating Contractor

CHERRY TREE HOUSE, OMAGH



FOCUS ON AIR-TIGHTNESS AND DEMANDS OF A PASSIVE HOUSE MAKE THIS FAR FROM A STRAIGHTFORWARD PROJECT FOR PLUMBING AND HEATING TEAM...

Ian Short P&H meets a unique plumbing and heating challenge

Ian Short Plumbing & Heating Ltd met the challenges presented by Northern Ireland's first Passive House head on to deliver a mechanical installation of the highest standard. The demands of the overall Passive House installation created some unique obstacles for the dedicated team, with planning and effective communication with the main contractor, Moffitt & Robinson Construction, key to the overall success of the project. "In any other circumstances this would have been a very straightforward project, given the size of the house and what had to be installed but the Passive House aspect put a completely different slant on our role," explained Ian Short, Managing Director. "With such an emphasis on the building being air tight, it meant that we couldn't use the usual routes for pipework, so we regularly had to come up with other options. It was a real challenge overall but definitely worth it." Ian's team installed the overall plumbing

system throughout Cherry Tree House as well as the wood burning stove and the solar panels, which provide all the hot water needs for the home as well as hot water to the radiators. The Kingspan Thermomax solar panels provide hot water most of the year round, with the wood burning stove providing a more than adequate back-up. With this type of technology being installed, Ian Short Plumbing & Heating also worked closely with Copper Industries to supply a specially manufactured MaxiPod hot water cylinder for Cherry Tree House that would make effective use of the heat from the stove and the solar panels. "This was a very interesting project and I think the experience will benefit us going forward, as more and more people are looking to increase their energy efficiency levels," Ian added. "It takes that little bit longer but the energy savings created make

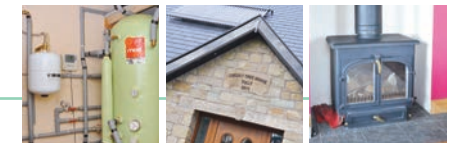
the difference in the end." Following on from Cherry Tree House, the company again teamed up with Moffitt & Robinson Construction to compete a 24-bedroom extension and new leisure facilities at the award-winning Corick House Hotel in Clogher. "This project was another one which had a real focus on energy efficiency and we were delighted to be involved once again with Moffitt & Robinson Construction." Based in Omagh, Ian Short Plumbing & Heating has been in operation for 16 years, employing 12 people. The company is vastly experienced in all types of work including residential new build, retrofit, renovations and extensions as well as commercial projects. The team also has experience in oil, gas and renewable installations. "We work on everything from installing an outside tap to the larger commercial projects such as Corick House Hotel," concluded Ian.

Ian Short Plumbing & Heating Ltd, 124 Moylagh Road, Omagh, BT79 0TQ
T: 028 8284 0779 - M: 07887 878166
E: ianshort@utvinternet.com



Solar PV

CHERRY TREE HOUSE, OMAGH



Shining success by Solmatix

Solmatix is proud of its role in building a more energy efficient Northern Ireland so it is fitting that the leading renewables company was involved with Northern Ireland's first Passive House. The company installed the electricity-generating solar PV panels on farm buildings beside Cherry Tree House which not only generate free electricity for home owner, Violet Crosbie, but also reward her with 17.64p per unit (kWh) for the generation of renewable electricity via Renewable Obligation Certificates (4 NI RoCs). "We are delighted to be involved in this prestigious project," said Frank McCullagh, Business and Product Development Manager. "We are proud of our local roots and our role in highlighting the advantages of renewables in Northern Ireland, so this has been the

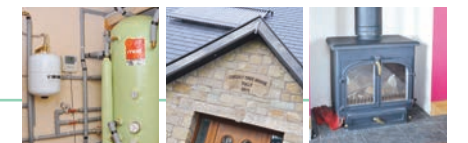
perfect project to be involved in. More and more people are enjoying the benefits of renewable technology and as we move forward we see a growing market for energy efficient and money saving products such as ours." Solmatix is the leading solar panel company in Northern Ireland, with an increasing portfolio of clients and contracts in the domestic, commercial, agriculture and volume housing sectors throughout the UK and Ireland. The portfolio of products is designed for UK and Ireland climate and includes the company's own patented range. This is matched by a dedicated sales and customer service team while the company also has its own team of fully trained roofers, electricians and plumbers, providing complete in-house capability.

Solmatix Renewables, Unit 5, Blaris Industrial Estate, Lisburn, BT27 5QB
T: 028 9260 1449 - E: sales@solmatix.com
www.solmatix.com



Roofing Contractor

CHERRY TREE HOUSE, OMAGH



PERFECT ROOFING INSTALLATION from GA Adams

GA Adams Roofing Contractors topped off Cherry Tree House perfectly by installing the roof on the new retirement bungalow that has become Northern Ireland's first Passive House. With such an emphasis on this project being placed on energy efficiency and reducing heat loss, the roof is an important aspect, particularly as heat rises! The team from GA Adams spent about a week on site completing what proved to be a relatively straightforward project. The Omagh firm has worked consistently with Moffitt & Robinson Construction over the years and was delighted to be involved in this prestigious project.

Gordon Adams, Managing Director, commented, "It is great to be part of such an innovative project and to continue our superb working relationship with Moffitt & Robinson Construction. We have always viewed the roof as being an important part of an energy efficient home so we are delighted that we can demonstrate this by working on Northern Ireland's first Passive House." GA Adams Roofing Contractors has been in operation for over 16 years, with Managing Director Gordon Adams having worked in the trade for over 27 years. The company specialises in the residential sector, providing services for new build projects and extensions as well as repairs.

GA Adams Roofing Contractors, 1 Mullaghmena Avenue,
1 Mullaghmena Avenue, Omagh, BT78 5QH
T: 028 8225 1471 - M: 07703 565239 - E: gaaddams@btinternet.com



Triple-Glazed Windows

CHERRY TREE HOUSE, OMAGH



Swish Windows meet the Passive standard

With air-tightness playing such a vital role in Passive House accreditation, choosing the right windows was an essential element and that is why Swish Windows made such a difference.

Swish Windows are proud to have installed the windows and doors into the first Passive House in Northern Ireland, as Robert Gribbin, Managing Director of the Cookstown-based company, explained. "Passive House requires very specific standards regarding the windows being used and our tripled-glazed windows offer a U Value of 0.8w/m²K for the whole window," he said. "We also provide the fitting service required to ensure these levels are maintained, which again is

another essential element of receiving Passive House accreditation."

Robert sees energy-efficiency as a growing area and feels that Swish Windows is perfectly positioned to continue to deliver the highest standards. "Our double-glazed and triple-glazed windows ensure the highest levels of energy efficiency that provide the balance between value for money and meeting the latest standards," added Robert. "With rising fuel bills more and more people are looking at ways to make their home more energy efficient and that is where we can help."

Swish Windows supplies a range of products including high security, highly insulated composite doors.

Swish Windows, 47b Chapel Street, Cookstown, BT80 8LG
T: 028 8676 6147 – E: robbie@sfg-windows.com
www.sfg-windows.com



Air-Testing

CHERRY TREE HOUSE, OMAGH



Air Testing Solutions ensured that air leakage through Cherry Tree House was kept to an absolute minimum.

Meeting the Passive standard with Air Testing Solutions

The critical issue for any Passive House is air-tightness and, with this in mind, Moffitt and Robinson Construction used the expertise of Air Testing Solutions. The Omagh-based experts worked closely with the main contractor from an early stage to provide advice that would ensure the property met the required levels to reach the Passive House standard.

Gary Fyffe, Managing Director of Air Testing Solutions, explained, "For Cherry Tree House to become a Passive House, the building had to be virtually air-tight with no leakage whatsoever. We provided advice on the design and construction and also provided testing at various stages of the project before carrying out a final round of tests that ensured it met

the highest standards."

Gary established Air Testing Solutions five years ago and has found a growing demand for the company's services in new projects and in older buildings, with services including

- Air testing
- SAP calculations
- EPC calculations
- Smoke tests
- Thermal image cameras
- BINDT Approved

"We carry out services such as this for new build projects but we are also increasingly working on older buildings. More people are becoming energy conscious and our services are helping them ensure they are not wasting energy."

Air Testing Solutions, 35 Archill Road, Newtownstewart, BT78 4JJ
T: 028 8166 1565 - M: 07736 185541/07511 975848
E: fyffe35@hotmail.co.uk

