



THE PASSIVE ROUTE TO NZEB

A SUSTAINABLE SOLUTION TO THE HOUSING CRISIS



INTRODUCTION



We are delighted to welcome you to our Industry Day here in Silken Park Citywest to launch Ireland's largest Passive House Certified development. Building on this great achievement, this Industry Day is focused on creating awareness for new dynamic approaches, including the Passive House standard in order to meet the new NZEB targets and to ensure a high quality housing stock is delivered which creates long term value and a sustainable solution to the current housing crisis.

We would like to share with you our thoughts on why we believe our unique design approach, satisfying the future Building Regulations and Directives is the most cost effective and beneficial housing strategy, not only for the homeowner, but also for the stakeholder, the economy and the environment.

We would also like to take this opportunity to thank all our suppliers and partners for participating in the day as much as they have the delivery of Silken Park.

Patrick Durkan
Managing Director
Durkan Residential







MUNSTER JOINERY

WINDOWS & DOORS



SHOWROOMS: CORK, DUBLIN, GALWAY & BELFAST

At Munster Joinery

we are very proud to have worked with Durkan Residential on their ground breaking Silken Park project. Not alone will it be Irelands first large scale domestic Passiv Haus certified project but it may well achieve NZEB.

We have worked successfully with Durkan Residential on many projects over the years. Silken Park, with its ethos of providing energy excellent housing at affordable prices, is a philosophy that Munster Joinery shares. Both companies have embraced the challenges of making Passive Housing available to all – including first time buyers.

Durkan Residential were able to choose from five ranges of Passive House certified windows at Munster Joinery. This gave confidence that all the groundwork had been done and that all the technical data was readily available to ensure accurate PHPP detailing. The extensive range of window types and RAL colours available allowed versatility in design. The choice of Passive uPVC windows and French doors in chalk has worked well on this project.

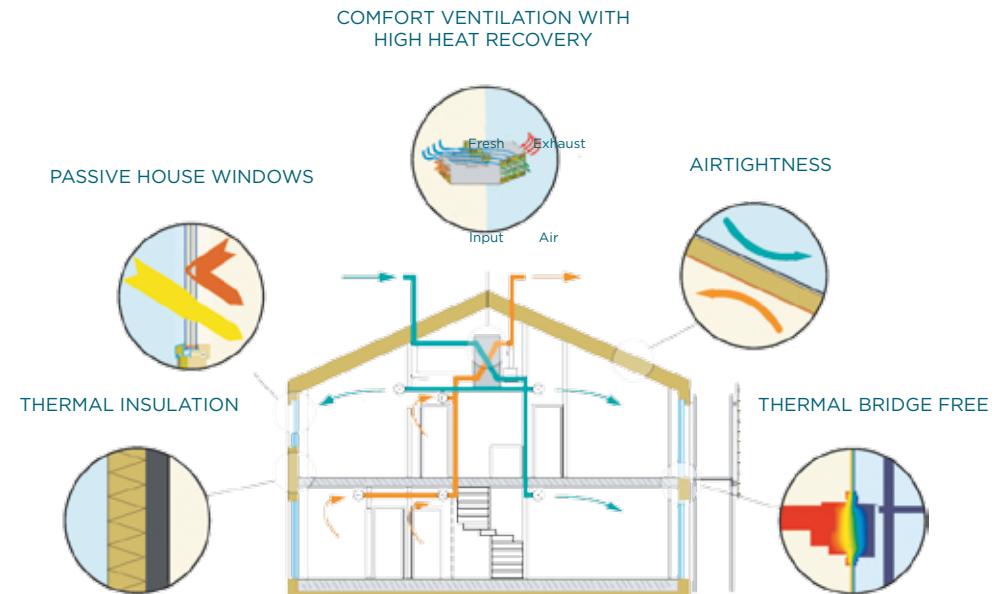
Durkan Residential knew that thermal performance of the building fabric was going to be key to success. They choose their materials wisely, including the rockwool insulation which is breathable, fireproof and dual density. The triple glazed windows gave the optimum balance between heat retention and solar gain. This means that over an average year the windows make a nett contribution to heating the building – bringing in more heat from the sun than they lose.

Durkan Residential set out to control three main elements of this build rigidly – ventilation, airtightness and thermal bridging. A thermal bridge free installation of windows in the insulation layer was critical to achieving this. Testing of the windows had demonstrated excellent air permeability and the use of Intello tape around the openings ensured an airtight installation. This attention to detail is reflected in a measured airtightness rating on site of 0.16ach at 50pa - well in excess of the Passiv House requirement of 0.6ach.

It has been a pleasure to work with Durkan residential on this project.

www.munsterjoinery.ie

THE FIVE PRINCIPLES OF A PASSIVE HOUSE



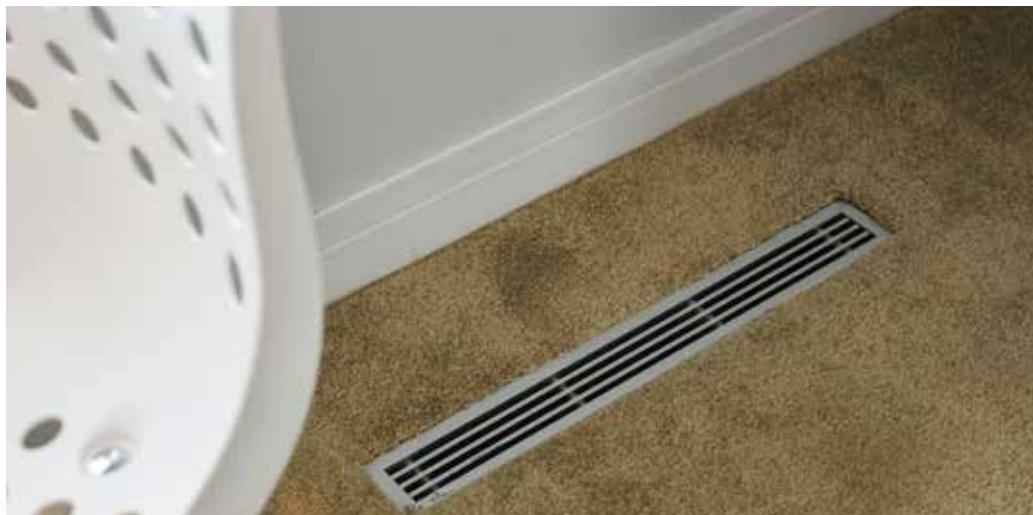
THE PASSIVE ROUTE TO NZEB

The Passive House Standard involves design that takes advantage of climatic conditions in order to maintain a comfortable temperature range in the home while minimising the energy required. Thus the energy from occupants, their activities and appliances as well as the heat gained from the sun by window size and positions minimise requirements from a heating system. Through careful design and attention to the five Passive House Principles, we can create healthy, comfortable dwellings.

The houses at Silken Park are being developed using these principles. Accordingly the external envelope is highly insulated in order to minimise heat loss. Careful attention is paid to wrapping insulation around all junctions of the envelope which, in turn, further reduces heat loss

and eliminates risk of condensation and mould often associated with traditional houses. Highly efficient triple glazed windows and doors are used with careful detailing of their installation and junctions. The air tight envelope effectively eliminates draughts. Finally, this air tightness is best complemented by a highly efficient mechanical ventilation system with heat recovery that provides fresh clean air continuously throughout the entire house which further reduces heating costs.

In essence these houses not only minimise heating costs, but are healthy and comfortable, with even temperatures in all parts of the home through the day and night and all year round without draughts.



Combined with the increased design standards we have focused on the following key strategies :

1. **Understanding of the house as a system and interdependencies** between high levels of insulation, airtightness and a designed ventilation system to reduce the demand for heating.
 2. **Continuous improvement and monitoring from testing:** Airtightness Testing, Thermal Imaging and Acoustic testing during the construction phase.
 3. Implementation of **tailored QA software, Refurbify**, for the highest proven quality levels and evidence of compliance.
-



INTEGRATING THESE STRATEGIES WITH THE **5 PASSIVE HOUSE PRINCIPLES** HAS ENABLED US TO ACHIEVE RECORD LEVEL AIRTIGHT RESULTS OF 0.2 ACH AND ASSIST IN THE DELIVERY OF A PASSIVE HOUSE CERTIFIED DEVELOPMENT AS A COST NEUTRAL PROPOSITION.



3 BED #27 SILKEN PARK FACT SHEET

FLOOR AREA

109M²

NZEB 2021 COMPLIANT



PASSIVE HOUSE CERTIFIED



ALL ELECTRIC



BER

BER A2

AIRTIGHTNESS ACHIEVED

0.2 ACH

TOTAL ENERGY DEMAND

2372 KWH/Y

IRISH GREEN COUNCIL ACCREDITED



PROJECTED ANNUAL ENERGY COST

€770

TOTAL BUILD TIME

12 Weeks

LOW COST. LOW ENERGY.
BUILT TO LAST.



ecofix

“Ecofix are a Contractor providing an Integrated Design and Delivery Service for houses which are built cost effectively, rapidly and to a high standard.”

Jay Stuart, RIBA,
Technical Director

We are continuously researching and improving our construction methods and details to achieve cost effective solutions which ensure healthy, comfortable houses with high indoor air quality and low running costs.

Our senior staff have received training as Passive House Tradesmen and we are continuously working with our subcontractors to provide a high standard of workmanship.

We have developed our own Quality Assurance processes using the Refurbify software platform which automatically manages our evidence that everything is built to specification and meets the Regulations.

We are future-proofing our building methods and design details to meet the new requirements for energy efficiency and renewable energy. We are able to build to the NZEB standard now.

We are very pleased to have worked with Durkan Residential on this, the largest Passive House project in Ireland.





THE 'ALL ELECTRIC HOUSE'

This house has been designed in conjunction with Electric Ireland and promotes the electrification of heat and supports the use of electric vehicles with an EV Charging Station on each house.

Consistent with our design approach outlined above, we collaborated with Electric Ireland to design a house that has a low energy demand and chose appliances and systems which assisted us in delivering a house with a total energy demand for all heating and electrical supply of 2372 kWh/y.

The house has no gas standing charge and a dual tariff meter promoting the use of free off peak night electricity with Electric Ireland, which both reduce the energy costs of running the house.

We have estimated that the average total energy cost of the house will be approximately €770 per annum or only €65 per month.

The house has been 'future proofed' to take solar PV panels and storage batteries in order to become a Net Zero Energy Building with 100% self-consumption and zero energy costs.

**EXCLUSIVE
OFFER***



Smarter Living

**Smarter
Pay As You Go
comes with
free night-time
electricity**

**Call us on 1850 30 50 95 and quote
Durkan Residential Ltd. now.**

* Offer is available to Units 27-85 of Silken Park Avenue,
Passive Homes Final Phase only.

**electric
Ireland**



THE BENEFITS

Low Maintenance

The external façade and envelope of the building is comprised of the highest quality materials including Passive House certified windows from Munster Joinery and a silicone render system from Rockwool. This provides a durable façade which will require little or no maintenance for over 10 years.

The exceptional levels of airtightness achieved in the envelope has allowed us to design the house with the integrated Nilan Compaq P ventilation system which integrates a heat pump and heats water with renewable energy. The ventilation system reduces humidity and virtually eliminates the chance of condensation occurring. As an integrated design we are then able to omit gas boilers, internal radiators, and plumbing

works which not only reduces the cost of construction but reduces the need for plumbing repairs and maintenance.

Rapid Build and Cost Neutral

Combining the Passive House principles and our unique design approach has allowed us to deliver a standard family house of the highest quality. We have achieved these high standards at a cost which has been independently verified as cost neutral to comparable A2/A3 rated houses.

This rapid build solution is adaptable and requires little if no off site pre-fabrication lead in time. It is a conventional masonry build solution which is robust and designed for the Irish climate.



COMBINING THE PASSIVE HOUSE PRINCIPLES AND OUR
UNIQUE DESIGN APPROACH HAS ALLOWED US TO DELIVER
A STANDARD FAMILY HOUSE OF THE HIGHEST QUALITY.





This is ROCK, re-engineered.

ROCK re-engineered to provide insulation solutions for social housing providers and residents. ROCKWOOL insulation can deliver significant improvements in energy, environmental and health performance, which can lead to cost savings and improved living standards. Discover why...

SEARCH **ROCKWOOL INSULATION ORIGINS** 



ROCKWOOL®



THE BENEFITS

Health and Comfort

The efficient mechanical ventilation system with heat recovery provides continuous filtered fresh air which creates a high standard of indoor air quality and thermal comfort.

Low Energy Cost

The All Electric house which has been the result of a unique collaboration with Electric Ireland allows homeowners and stakeholders to enjoy the benefits of the home without compromise due to its low energy demand of 2372 kWh/y costing only €770 per annum.



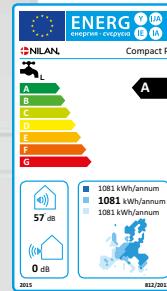
DURKAN RESIDENTIAL ARE PRESENTING THEIR PASSIVE HOUSE CERTIFIED HOUSING SCHEME IN SILKEN PARK CITYWEST

as an exemplar rapid build solution which addresses many of the issues of the current housing crisis. By adopting the internationally accredited Passive House standard we are able to deliver houses which satisfy the Building Regulations and the Irish NZEB (Nearly Zero) standards for 2021.

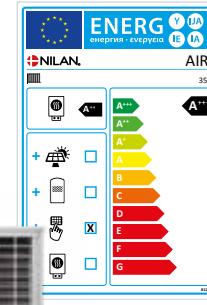


A MODULAR SYSTEM OF SEVERAL SOLUTIONS

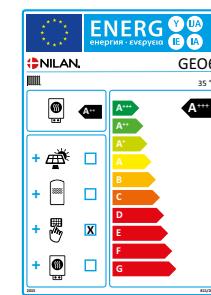
COMPACT P BY NILAN



AIR 9 SCOP
5.11



GEO 3/6 SCOP
5.17/5.15



"The complete Solution" Compact P providing ventilation, heat recovery, air heating / summer air cooling, producing domestic hot water from exhausted air, with optional back up system, Air9 (Air-to-Water) or Geo3-6 (Geothermal heat pump). Providing a customised design and installation to meet your building demands by Nilan Ireland.

Nilan Ireland

Tel. +353 (0)66 7135987 · Mobile +353 (0)87 9798361

maurice@nilan.ie · www.nilanireland.ie

NILAN
OUTSTANDING INDOOR CLIMATE



Browns Barn Wood
Naas Road, Dublin 22



Creston Avenue
Meakstown, Finglas, Dublin 11



Charlesland Court
Greystones, Co. Wicklow



Silken Park
Citywest, Dublin



DURKAN
RESIDENTIAL

Durkan Residential is an established company and a family brand that is synonymous with house building in Ireland since 1971. The main and continued focus for Durkan Residential has been completing residential schemes aimed in particular at first time buyers and owner occupiers, therefore an essential component of our product is one of quality build and design to cater for increasingly high expectations and requirements of today's purchasers.

This approach has allowed us to create homes for living, with modern and high specification fittings as standard, while maximising the space available in each home. Durkan Residential is built on the core values of delivering a quality home and creating a positive experience for each of our buyers, that has been nurtured over the past 40 years and instilled in every member of our staff today.





Harmony Timber Solutions are delighted to work with Durkan Residential on their prestigious Silken Park Development.

By opting to use **Posi Joists**, Durkans design team had the flexibility to manoeuvre their mechanical and electrical requirement without compromising the integrity of the floor structure.

Our **Roof Truss** team working closely with Durkans design team, engineered a roof structure to suit a detail that contributed to a solution to ease the burden of a cold bridge at the wallplate junction.

We are delighted to be associated with this milestone achievement of the largest Passive Certified Development in Ireland.

www.harmonytimber.ie



Sustainable Engineering with Timber



VRM
TECH

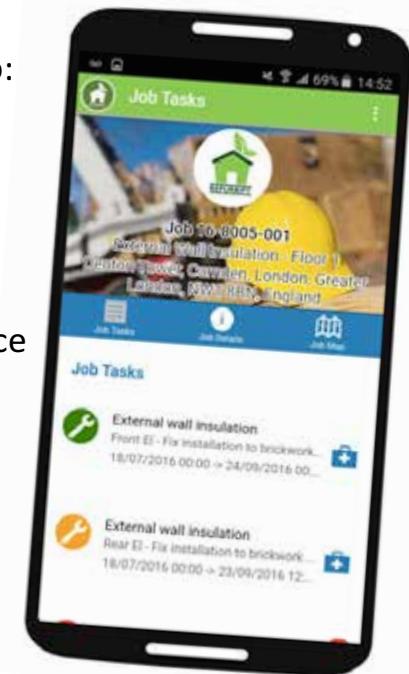


VRM Tech provided Durkan Residential with its cloud based technical monitoring platform, Refurbify. The platform uses mobile devices to manage projects in the cloud - direct from the field, creating a digitised audit trail ensuring all properties are built to Passive House specifications.

Photographs, compliance documents, and air tightness tests were all captured and stored on the Refurbify platform.

VRM enabled Durkan Residential to:

- Reduce snagging by over 30%
- Reduce expert onsite time by 40%
- Increase building performance
- Enforce and simplify the compliance documentation process; saving time during the project and at handover



To request a demo get in touch with
team@vrmtech.co.uk

**AGENTS:**

JLL
Styne House
Upper Hatch Street
Dublin 2
T: 01 673 1600

ARCHITECTS:

BBA Architecture
Eden Gate Centre
Farrankelly
Delgany
Co. Wicklow
T: 01 287 6949

ENGINEERS:

CS Consulting
19-22 Dame Street
Dublin 2
T: 01 548 0863

SHOW HOUSE:

Ventura Design
Unit 12 – 13, Block 8
Blanchardstown
Corporate Park
Ballycoolin
Dublin 15
T: 01 820 8480

SOLICITOR:

AMOSS
Warrington House
Mount Street Crescent
Dublin 2
T: 01 212 0400

Disclaimer: These particulars do not form any part of any contract and are for guidance purposes only. Maps and plans are not drawn to scale and measurements are approximate.

Intending purchasers must satisfy themselves as to the accuracy of details given to them either verbally or as part of this brochure. Such information is given in good faith and is believed to be correct; however neither the developers nor their agents shall be held liable for any inaccuracies therein. Neither JLL or any of its employees have any authority to make or give any representation or warranty in relation to the property. Intending purchasers should check on site for colour and specification of bricks, roof tiles and external wall finishes.



CRL ARRANGE

RELIABLE AND COST-EFFECTIVE

HOUSING ASSOCIATION INSURANCE
THAT HELPS YOU DELIVER A SEAMLESS
SERVICE TO YOUR COMMUNITY



The structural insurance policy provides **Housing Associations** and registered social landlords with up 12 year structural insurance cover on new build affordable housing developments and conversions.

We understand that delivering housing association projects has its challenges, that's why we pride ourselves on being easy to work with. We deliver exceptional housing association warranty coverage that is focused on your needs, ensuring that there's no added pressure on already tight budget margins.

We are delighted to be working with **Durkan Residential** on their **Ascaill Páirc an tSíoda** development.



CALL
**+353 1
685 2043**

WWW.C-R-L.COM

T: +353 1 685 2043

CONSTRUCTION INSURANCE
FOR THE VENTUROUS OF SPIRIT

Alpha Insurance A/S are authorised by the Financial Conduct Authority to write policies in the UK Under Authorisation Number 431621, and in the Republic of Ireland by the Central Bank of Ireland under reference number C55074. BCR Legal Group Limited acts as Underwriting Agent & Scheme Administrator for Alpha Insurance A/S and is authorised and regulated by the Financial Conduct Authority under Firm Registration Number 48059. CRL Management Limited acts as Scheme Administrator and is listed by the Financial Conduct Authority under Firm Registration Number 553321 as an Appointed representative of BCR Legal Group Limited.

KORE INSULATED FOUNDATION SYSTEM

An 'A' Energy Rating Starts with the Foundation

Made from Expanded Polystyrene, the KORE Insulated Foundation System is an essential part of low energy builds. The system wraps the entire foundation in a layer of EPS, eliminating the critical wall-to-floor cold bridge, while providing exceptionally low (Ψ) Psi values, meaning lower overall y-values in your BER or SAP assessment.



The KORE Insulated Foundation will be used for 59 homes in Phase 3 of Silken Park



- Fully engineered & customised for 6 different floor plans
- Meeting the U-values required for 'A' Energy Rated homes
- Part of the largest Passive House development in Ireland
- Tailored to meet Durkan's on-site needs while providing complete technical back up

The Benefit of Using an Insulated Foundation

On-Site Benefits:

- No waste made during the installation process
- Bespoke installation instructions
- Refined Costing
- Reduced quantity of concrete required for the foundation
- Suitable for all ground conditions

End-User Benefits:

- Eliminates the critical wall-to-floor cold bridge
- Reduces underfloor heating loss through rising walls
- Eliminates the risk of condensation, fungus and mould growth behind the skirting board

KORE Insulation
The Green, Kilnaleck, Co. Cavan
+353 49 4336998 info@koresystem.com www.kore-system.com

www.durkanresidential.ie
