

RATIONAL CASE STUDIES

THE COLLECTION OF PROJECT CASES

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FOX BARN PRODUCT DETAILS

Location:	Fox Barn, Lower Chute, Andover
Building Completed:	March 2013
PassivHaus Certified:	August 2013
PassivHaus Certifier:	Warm: Low energy building practice (www.peterwarm.co.uk)
Architect:	Constructive Individuals (London) Ltd (www.constructiveindividuals.com)
PassivHaus Consultant:	Dr Rod Williams (Williams Energy Design) (www.williamsenergydesign.co.uk)
Timber Frame by:	Touchwood Homes (www.touchwoodhomes.co.uk)
Client, designer and Self-builder:	Mr + Mrs Jackson
Windows and Doors:	Rational windows and doors (UK) Ltd (supplied through Input Joinery) (www.inputjoinery.co.uk)
Foundations:	Advanced Foundation Technology (www.advancedfoundationtechnologylimited.co.uk)

PASSIVE HOUSE

FOX BARN

Town Planners, Paul and Lisa Jackson gained consent for a new house designed by themselves, in November 2010. Following a bitter winter paying huge domestic oil bills, they decided the new house should have very low energy requirements. A key driver was that the design should be contextually appropriate to the village set within the Wessex Downs area of outstanding natural beauty. The simple plan and envelope of the house suited the passivhaus approach. A visit to EcoBuild exhibition reviewing whole house solutions introduced the Jacksons to Touchwood Homes, an English company, who create bespoke airtight homes using structural timber 'I' beams. Touchwood Homes brought their familiar team of Architect Peter Smithdale of Constructive Individuals, and Energy Consultant Roderick Williams to work with them on the project. WARM: Low Energy Building Practice have assessed the scheme and the project is now PassivHaus certified. The choice of Rational windows, supplied through Input Joinery, suited the elegant contemporary design approach to the interior. Lisa Jackson runs her own town planning consultancy Jackson Planning Ltd

<http://www.jacksonplanning.com> and is using her experience to persuade clients to consider Passivhaus for any new build projects she is involved with.

Rational AURAPLUS' windows are sleek, elegant and create a beautiful architectural appearance, a perfect solution to match the Jackson's design brief of simple elegance. Timber is the predominant material for these windows, with an exterior aluminium profile, giving a pleasant combination of wood inside and easy maintenance on the outside. The narrow profiles allow for maximised daylight into the house, and stunning views out towards the magnificent surroundings.

Rational AURAPLUS windows provide a positive energy contribution, with up to +31 kWh/m² pr. year by allowing more solar heat into the building than it lets out. This means a much lower heating bill during the winter season and significant CO₂ savings. This also improves the indoor climate for both comfort and health by minimizing drafts and cold spots. The Auraplus units installed into Fox Barn had an average u-value of 0.81, and an average WER rating of 16.3, both very good figures for a Passivhaus project. These triple glazed Rational AURAPLUS windows and doors completed the airtight layer for the building, enabling it to gain full Passiv-Haus certification in August 2013.

"Living in a Passivhaus is very comfortable; it is naturally light with large areas of glazing to the south. The temperature is consistent, there are no draughts or cold spots, the air is fresh and the house is quiet. Equally it does not overheat; triple-glazing prevents significant heat gain in summer. There are no radiators, no boiler and potentially no bills."





WESLEY CHAPEL DANDARA

Enviably addresses don't usually spring from arson attacks on derelict buildings but the stunning '1875' development is certainly one to turn heads. Once a classical Wesleyan Church in Jersey's St Helier region, the destroyed ruin has been, literally, transformed into a thing of beauty by Waddington Architects in conjunction with Dandara Developments.

1875 is a collection of 48 apartments and 9 townhouses, set around a fantastic, art strewn, urban courtyard behind the reclaimed classical portico built at the time of its eponymous name. Waddingtons acted as architects, interior designers and landscape architects to offer a fully integrated service for the contemporary living spaces which, like the Phoenix, has obtained new life by arising from the ashes of its predecessor.

PRODUCT DETAILS

Location:	St. Helier, Jersey
Building Completed:	2014
Size:	48 Apartments and 9 Townhouses
Architect:	Waddington Architects
Contractor:	Dandara
Housebuilder:	Dandara
Windows and Doors:	Rationel windows and doors (UK) Ltd - ALDUS windows and patio sliding door



BELVEDERE DANDARA

The word 'Belvedere' means beautiful view, so Dandara's prestigious and stylish development of luxury homes at Five Oaks, St Saviour, Jersey is aptly named.

Set in a new gated development on the site formerly occupied by Jersey Dairy until 2010, Belvedere comprises 60 exceptional homes which pay homage to the rich historical architecture of Jersey's past. Drawing inspiration from both Regency and Victorian influences, each facade expresses individuality and design differences to suit varying tastes and needs.

Offering space, convenience and style all in one solution, was a key feature of Waddington Architects' Belvedere vision. Constructed to the highest standards for family needs, these character homes combine 21st century convenience with a vestige of romantic latter day looks - truly a Belvedere in the making!



PRODUCT DETAILS

Location:	Princes Tower Road, Jersey
Building Completed:	2014
Size:	1 & 2 Bed apartments and a mix of 2/3/4 bed houses.
Architect:	Dandara
Contractor:	Dandara
Housebuilder:	Dandara
Windows and Doors:	Patus sideguided windows with Georgian bars and sliding patio doors



DERWENTHORPE

Built in partnership with the Joseph Rowntree Housing Trust and David Wilson Homes, The Lotherington Quarter off Temple Avenue in York is one of the first large scale, low carbon communities in the north of England. Named after Elizabeth Lotherington (grandmother to the famous Rowntree confectionery dynasty owner and philanthropist), the sustainable, eco friendly housing development will meet demanding targets for reduced energy and water usage.

By 2015 this initial phase of the development will comprise 120 properties offering a variety of two, three, four and five bedroom houses available as owner-occupied alongside 16 of shared ownership and 28 rentals. Designed to provide communal heating from a central biomass boiler and a guaranteed flood-free drainage system, the Energy Centre also doubles up as an integral meeting place and community centre. Phases 2 and 3 already have planning permission and will eventually boast 540 units in total.

Winner of the Civic Trust Award, 2014 for Phase 1, this is one quarter that Joseph Rowntree Jnr. would definitely have considered to be a sweet treat.



PRODUCT **DETAILS**

Location:	Letherington & Seebohm Quarter, York
Building Completed:	2015
Size:	120 properties on Phase 1, with further properties on further phases totalling 540 units
Architect:	David Wilson Homes
Contractor:	David Wilson Homes
Housebuilder:	David Wilson Homes
Windows and Doors:	Rationel Domus topswing/topguided/ sideswing windows and Domus sliding patio doors/front and panel doors/ rear entrance door.



FORD FARM DEVELOPMENT

Developed in Germany, 23 years ago, Passivehaus technology is set to revolutionise the UK housing market, starting in St Ives, Cornwall with the Aster Homes affordable housing development at Ford Farm.

Sustainably designed by Mitchell Architects, Ford Farm is one of the first Passivehaus schemes in the country. These 20 ecologically responsible, Sarsen Housing Association homes offer their residents a 75% reduction in space heating requirements and a greatly reduced carbon footprint. Offering the best in pastoral living in peaceful countryside, these ecologically responsible dwellings also offer residents warmth and free energy harnessed from the sun.

Each well-insulated home also benefits from the safety and security of triple glazed Rationel Aldus windows and doors, which further enhances the green credentials of the properties.

The Passivehaus construct also incorporates solar roof panels to provide instant hot water; a highly efficient heat recovery system and innovative design which also delivers necessary shade on the sunniest of days.

By embracing new thinking, these state-of-the-art, eco friendly homes are at the forefront of 21st century building technology and will, no doubt, become the blueprint for sustainable design challenges in the future.

PRODUCT DETAILS

Location:	St. Ives, Liskeard Cornwall
Building Completed:	2011
Size:	20 Passivhaus Homes
Architect:	Mitchell Architects
Contractor:	Mansell Construction
Housebuilder:	Aster Homes
Windows and Doors:	Rationel windows and doors (UK) Ltd - Triple glazed Aldus windows and doors





PRODUCT DETAILS

Location:	Claverton. Bath
Building Completed:	2014
Size:	708 bedrooms
Architect:	Stride Treglown
Contractor:	Cowlin Construction
Windows and Doors:	Rationel windows and doors (UK) Ltd - Aldus topswing, fixed lights and louvres



BATH UNIVERSITY

It is a rare occurrence for students to get the opportunity to have a hand in designing their own purpose-built accommodation but that is just what happened for students of Bath University's Claverton Campus. Joining forces with architects Stride Treglown, both students and staff of the university were heavily involved with plans for a prototype bedroom erected on campus.

Built by Cowlin Construction, The Quads provides 708 en-suite bedrooms, divided across 75 flats, with every home-from-home nicety at hand. Housed over two separate buildings, every ground floor bedroom ensures added security via a planting margin. The welcoming flats provide ample study space with built-in infrastructure for the latest technology which every student is bound to need. Equipped with a contemporary kitchen and dining area, each pair of flats shares a communal lounge to encourage student integration from the offset ensuring homesickness never arises. Modular seating and wall-mounted TVs in the sitting room also ensure flexibility and optimum comfort within the space.

Flooded with light, the flats are equipped with floor to ceiling windows to frame the attractive, secure, landscaped outside courtyards, designed as informal 'break out' areas in which to relax, meet or simply chill. Hopefully, this highly successful student collaboration won't deter them from their all-important studies too much!

WINDOWS WITH VISION

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