

# Birchmead Luxury Flats

## Colwyn Bay, Wales

### Description

The Birchmead apartments are a block of six luxury flats, designed to fit in with the surrounding village's architectural style. Each of the six units has its own HRV and heating system, so the block is considered to be six Super E<sup>®</sup> units.



### Setting

Colwyn Bay is a seaside resort of approximately 30,000 on the north coast of Wales. It experiences a maritime climate with cool summers and mild winters. The local area is influenced by so-called Foehn Winds from the south, which bring warm, dry air to the area, thus Colwyn Bay is somewhat warmer than the rest of Wales. Nevertheless, the area experiences frequent high winds and rainfall.

### Super E<sup>®</sup> UK Member

The Super E<sup>®</sup> Member responsible for the project was the architectural firm Colwyn-Foulkes, the builder was Merton Homes. In both cases, the Birchmead flats were their first Super E<sup>®</sup> project.

### Super E<sup>®</sup> Canadian Member

Halifax, Nova Scotia-based Interhabs has constructed the first Super E<sup>®</sup> home in Ireland, the first in Scotland, and this, the first in Wales. Overall, Interhabs has completed dozens of Super E<sup>®</sup> projects throughout the British Isles. Interhabs homes are usually distinguished by large windows and dramatic rooflines, with extensive use of exposed timber for decorative interiors.

# Member Commentary

The Birchmead project is one of the best examples of why every Super E® home is tested. The Merton/Colwyn-Foulkes partnership had never built an air tight, wood frame home before this project, and air tightness testing revealed a number of issues. Most of these issues had to do with detailing around the air and vapour barriers. Once identified, a specialist – Heat Seal Limited of Newfoundland – was called in to correct the situation. Once the problems were corrected, the units were tested again, and received their SuperE® recognition.

To Interhabs' Rob Williams, the process of testing and correcting to ensure the highest quality is very much in keeping with his company's philosophy.

“Our aim is to provide quality houses which are kind to the homeowner and the environment,” said Mr. Williams.

“The Canadian Super E® team adds another dimension to the support we are able to provide the developer and the builder. It's a valuable resource.”

## House Performance

At the time the project was built, there was a new emphasis on carbon reduction in England and Wales. New carbon reduction measures had just been introduced into the building code, so Super E® calculated not only energy performance, but carbon performance.

The Birchmead units are responsible for about 8,000 kg of CO2 emissions per year. If they had been built to the newly-introduced building standard of the time (2006), they would have emitted just less than 14,000 kg.

In terms of energy consumption, all six units together use about 35,000 kWh/yr, about 40 percent less than if they had been built to the building standards of the time.



**The extensive use of interior wood finishings not only adds to the aesthetic appeal of the units, but contributes to good indoor air quality.**



**High quality windows and siding, along with the Super E® approach to moisture control allows a distinctive appearance and large windows – highly appealing with North Wales’ striking scenery.**

## Unique Features

The use of wood – both interior and exterior – is striking in this area of Wales, where houses are usually white stucco. Traditional rendering is used in this project, but it is combined with wood siding.

Wood is rarely used as an external finishing in Wales because of the amount of rainfall it receives. The Cape Cod Wood Sidings Inc. product used in this project was manufactured in a unique way. The company uses a vacuum coating system to infuse colour into the wood, ensuring its colour will last a minimum of 15 years.

In addition, Super E® homes employ a pressurized rain screen technique behind the

finishing to keep wind-driven rain away from the house. A pressurized rain screen employs a small air space behind the exterior finish which traps air. The pressure of the air behind the exterior finish deflects wind-driven rain away from the building. Hence, the walls remain dry.

Wood is also extensively used on the interior of the building. In addition to Interhab’s characteristic exposed wood beams, the units have extensive areas of hardwood flooring. This factory pre-finished flooring enhances in the indoor air quality of the building. Factory pre-finishing ensures the floors will not off-gas harmful fumes from varnishes, and hardwood is less likely than carpet to trap animal dander and dust which could lead to allergic reactions.

# Residents Speak

Comfort during wet and windy weather is a theme for tenants. Tenant Philip Large noted that his first year in the building, Colwyn Bay experienced a particularly stormy winter.

“On one particular day, I was so surprised after opening the balcony door to find it was blowing a gale outside!” he said. “It was so quiet and cosy inside, we had no idea there was a storm out there.”

Rebecca Colton, another tenant, was also surprised by how little heat the unit required.

“The apartment is extremely comfortable and the underfloor heating allows us to place our furniture anywhere we want.”

---

## Services Provided by Super E<sup>®</sup>

Support was evident throughout the process. CMHC International and the Super E<sup>®</sup> Office made presentations to Colwyn-Foulkes, who were initially reluctant to try building in wood frame. On-site testing was undertaken by the Super E<sup>®</sup> Office, and advice provided by members of CMHC International’s International Training Team.

Once the units were completed, CMHC International sponsored a grand opening, which was also attended by representatives of the Super E<sup>®</sup> Office and the Canadian High Commission.

Once the units went on the market, the Super E<sup>®</sup> Office held a training session for the estate agents given responsibility for renting the units.