ZERO CARBON HUB

OCCUPANTS' PERSPECTIVE

Rowner Research Project Phase One

March 2014

First Wessex

Taylor Wimpey

LABC
Delivering building control through local authorities

Technology Strategy Board
Driving Innovation

SAINT-GOBAIN

Homes & Communities Agency

NHBC Foundation

5/5

The Rowner research project was undertaken in Gosport and spanned from 2009 - 2013.

The Project was funded by the Technology Strategy Board (TSB) as part of the Building Performance Evaluation programme (BPE), together with support from First Wessex, NHBC Foundation, LABC, Saint-Gobain, HCA and Taylor Wimpey.

The research project at Rowner investigated the design and delivery of 24 apartments, split equally over two blocks. The developments were part of Phase I of a multi-phased project, the Rowner Renewal project.

The first Block (B) was built to comply with the Code for Sustainable Homes (CSH) level 3 energy requirements, and Block C was built to achieve the Fabric Energy Efficiency Standard (FEES).[1]

This project provided the Hub with the opportunity to investigate the implementation of the FEES in built flats.

The two blocks had different tenancy agreements, with Block B being offered as shared ownership and Block C as simple tenancy.

1. The Fabric Energy Efficiency Standard (FEES) is the proposed maximum space heating and cooling energy demand for zero carbon homes from 2016.

The research project had three phases:

- Design and construction stage
- Post-occupancy evaluation
- And an overheating study

This series of five factsheets cover aspects of the first phase of the project.

This is the final factsheet in the series, covering the occupant's perspective of the Rowner research project.

Subsequent factsheets covering the other two phases of the project, and a case study report including all phases, will be produced by the Zero Carbon Hub in due course.

The factsheets can also be found online at: **www.zerocarbonhub.org**

Information provided to the residents

A review was carried out evaluating the contents and quality of the information provided to the residents at the time of occupation (the handover process), which explained the dwellings and how to maximise the level of comfort.

An occupation process, carried out by the Housing Association, was also observed by one member of the team.

Interviews with the occupants

Informal interviews were carried out with four residents within a month of occupation. Three of the occupants interviewed were from Block C and one was from Block B. The intention of these interviews was to capture initial feedback and impressions of the properties.

The research team also looked into the reasons behind the occupants moving into the new flats and their expectations of the properties.

The interviews also provided the opportunity to explain the research project and address any queries regarding the monitoring equipment installed for the second phase of the research, as well as the heating and ventilation systems and their controls.

Building User Satisfaction survey

Questionnaires were formed according to the Building User Satisfaction (BUS) methodology devised by ARUP. The survey was carried out in March 2012, five months after the first flat was occupied. During the survey the occupants rated various aspects of their flats and their experience of them on a scale of 1-7. Additionally, the opportunity for specific comments was also provided to allow for both quantitative and qualitative feedback to be obtained.

Of the total 24 flats, 19 were occupied at the time of the survey and 10 responses were returned. From the 10 responses collected, 9 were from the flats rented by tenants (Block C), and one from the shared ownership flats (Block B). Another round of this survey was carried out during the second phase of the project in March 2013 and the results will be published by the Hub in the next series of Rowner publications.

Interviews responses & guidance review

Guidance

The information pack from First Wessex consisted mainly of generic information relating to the different tenancy agreements and landlord obligations to the occupants. Contact details specific to the project for various purposes and community facilities were also included.

A Home Information Pack was also provided to all units by the developer, Taylor Wimpey, which included a mixture of generic information on the development and specific information for properties, such as:

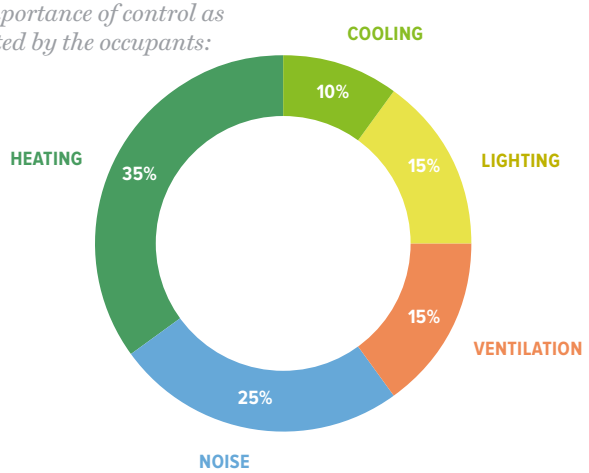
- Instruction Manuals for different mechanical systems and controls.
- NICEIC Domestic electrical installation certificates,
- LABC Warranty guidance and insurance cover.
- Code for Sustainable Homes certificate.
- The Energy Performance Certificate and documents explaining European Eco Label scheme for appliances.

Site specific scheme Information was also provided that included sections on environmental design features, information on recycling and waste, public transport and local amenities.

Interviews

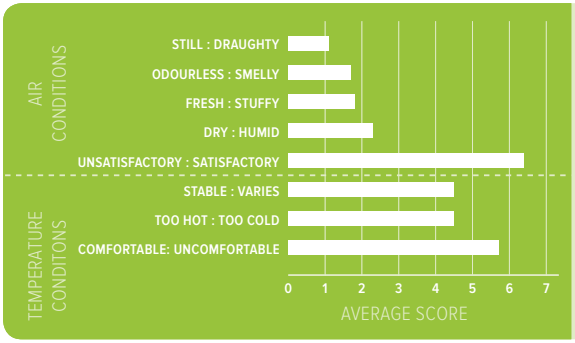
All interviews were conducted in January 2012 and the four residents that participated had all spent at least one month in their new properties. All residents reported that they were feeling very comfortable in the flats and happy with their decision to move in. They also explained that they had been provided with guidance and documents that would assist them in efficiently operating the properties. They appeared to understand that the resource consumption of the flats would be monitored and although some concerns in regards to privacy issues were raised, they were subsequently addressed. Unfortunately the residents did not show a good understanding of the systems installed and they admitted that they had not thoroughly read the documents and guides that were provided to them.

Importance of control as rated by the occupants:



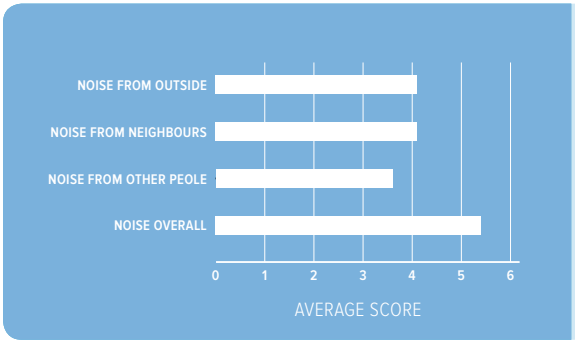
Analysis of the survey results

All data obtained from the responses were analysed by ARUP. Occupant satisfaction appeared to be high for overall comfort and design of the properties. No respondent felt that their needs weren't being met. Positive comments included properties being described as "very comfortable", "very well thought" and having a "good layout". Some main aspects of comfort and performance are shown below.



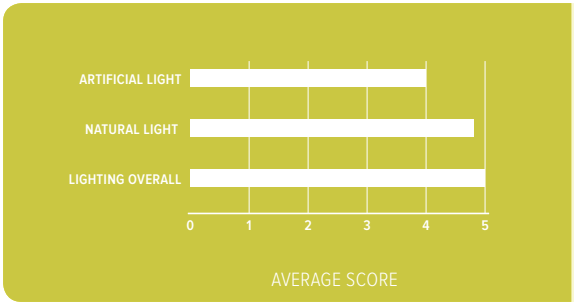
Thermal Comfort

A generally satisfactory level of comfort was reported by all the respondents in regards to indoor temperature and air quality. However it has to be noted that the properties had not being occupied for an extended period before the survey and the occupants had mainly experienced winter conditions.



Noise

Even though both blocks of flats were located along a main road, residents did not find noise levels to be a problem. This is because of well fitted, double glazed windows and the fact that the main window openings for the living spaces were located along the south facade, which faced a large open space.



Light

All the flats were provided with large windows in all rooms and occupants expressed that both the natural and artificial light levels were good. Some residents reported "too much" natural light, however this can be viewed as a positive feature in dwellings.

Observations

- Overall satisfaction at the site appeared to be high, scoring 6.6 out of 7, with residents reporting largely positive experiences of their new homes. However it should be noted that the respondents had only lived in their new homes for a relatively short period (almost 5 months) and only during relatively mild weather.
- It was evident that occupants had varying levels of engagement with the handover process.
- Documents included in the handover pack provided good information on features such as boilers and thermostats, which are systems that occupants are often already familiar with.
- No additional leaflets with simplified information on the ventilation system were provided to the occupants except from the manufacturer's manuals.
- There wasn't adequate understanding amongst the occupants on the use of the 'boost' setting on their ventilation system, especially as a means to expel heat from the flats in the summer. This could contribute to some dissatisfaction with the quality of air within the homes, which was noted as being "too stuffy" and "too dry".
- The occupants appeared to prefer service solutions that would not require a great level of engagement, and which would also be discreet and not visually obstructive.
- Not enough interest was expressed in understanding more about the systems installed in the properties and the way that occupants can efficiently operate them.
- A lot of comments from residents focused on the location and the appearance of the flats, while energy performance was perceived more as an additional bonus.

Recommendations

- The information packs would have benefited from a diagrammatic representation of each flat indicating key information such as the location of the thermostat, MVHR main and boost switches, and the utility meter.
- The handover process would have benefited from an explanation of the different features within the home in context of their influence on energy demand, and consequently the running costs to residents.
- It is important that the estimated running costs of homes are adequately explained to residents, particularly if electricity is being used by MVHR systems running constantly in the background. This will assist them in understanding that the MVHR electricity consumption is almost insignificant and that they should not try to switch off the system because of cost concerns.
- The controls could have been more interactive and intuitive. One resident suggested referencing commonly used systems such as red-amber-green traffic light indicators.
- Even if the systems installed in a property are of complex technology, they need to be simple to use and easy to maintain.
- The occupants appeared to show a greater preference towards systems that are ‘fit & forget’, or systems they already understand and feel comfortable with.
- The general public needs to be better educated on the importance of energy efficiency in homes and how this can have a direct impact on their well being. A good proxy to use, as mentioned before, is predicted bills and energy savings through good operation.
- The properties could have benefited from both smart controls and a smart meter. This would have allowed information to be collected and displayed to the occupants though a visual display.

Zero Carbon Hub
Layden House
76-86 Turnmill Street
London EC1M 5LG

T. 0845 888 7620
E. info@zerocarbonhub.org
www.zerocarbonhub.org