Quinn-lite Blocks at Hook Head

In recent times, labour shortages combined with the need to deliver projects 'on time and within budget' has driven the development of off-site construction methods. Prefabricated off-site construction can deliver real benefits resulting in cost savings and improved quality. However, an alternative to manufacturing off-site is to reconfigure traditional construction materials so as to eliminate the more inefficient aspects of the build. This is the concept behind single leaf Quinn-lite, Aerated Autoclaved Concrete Blocks (AAC) which have superior insulation properties and weigh only 25% of the weight of standard blocks.

The efficiency of this method of construction was recently put to the test in the development of Hookles Village on Wexford's historical Hook Head. Developer M. J. Quay was faced with a very tight construction schedule which local timber frame producers were unable to meet. According to Managing director, Michael O' Donnell, 'no company would commit to supply materials and guarantees that the time constraints could be met. It would have taken a number of companies to supply and dealing with different frame suppliers, as well as the variations in their construction methods, would have been a logistical nightmare'.

From left - Kevin Shannon, Michael Cullen, M.J.Quay Builders, Collete Mc Ahery

Application of Thin Joint Mortar

The first supply of Quinn-lite blocks was delivered in January and the first seven houses were built to roof level in 4 weeks. Only 10 weeks later, a further 66 houses were built to first floor level, leaving ample time to meet the deadline of completing all house to wall plate level by mid June.

Solid Aircrete single leaf wall construction is firmly established in continental Europe, but is less popular in Ireland where traditional masonry cavity construction is the norm.

Solid Aircrete external walls offer several advantages over traditional cavity construction, including significantly improved build times and simplified construction details. Head and sill details are simplified and cavities and cavity ties are eliminated. The use of externally applied insulation is thermally efficient, and 'thermal bridging' is eradicated.

External insulation means a significantly wider bearing for precast floors which can bear on the full width (215mm) of the Aircrete block.

Aesthetically, solid Aircrete can be finished in a number of ways to satisfy planning and customer requirements. The use of externally applied insulation not only permits a variety of finishes but also helps with energy efficiency, by utilising the thermal mass of the blockwork to store heat and reduce unwanted temperature fluctuations. A recent study by Buro Happold engineers showed that the


Quinn-lite Blocks

strategic use of concrete's thermal mass can improve thermal performance by up to 9% in domestic buildings.

There are a number of advantages to using single leaf walls, including the fact that they are quicker to build and more cost effective than cavity walls. Other advantages include the elimination of wall ties and the fact that bricklayers can rapidly complete the installation of the blocks, leaving the installation of insulation to others at a later stage in the construction programme. Scaffolding is greatly reduced since it needs to be erected on one side of the wall only and the installation of lintels is simplified and stepped dpc's are eliminated.

The inherent stability of single leaf construction (215 mm thickness) ensures that delays during construction due to the immaturity of the blockwork are kept to a minimum. Solid AAC walls can be built using conventional or thin layer mortar which further reduces build time and improves overall build quality. The build accuracy' which is a feature of 'thin joint', produces high quality flat surfaces internally and externally which are particularly suited to sprayed surface finishes of minimal thickness. Flat surfaces also allow for insulation to be fitted tightly, internally or externally, thereby improving thermal performance. No special skills are needed to construct single leaf AAC external walls, other than those associated with any type of masonry construction.

Solid Aircrete external walls are a proven technology with a track record of several decades. It is a rapid construction method, suitable for today's housing requirements. Aircrete can be combined with other fast build methods such as thin joint masonry as well as prefabricated floor and roof units. The emergence of proprietary wall plasters and renders, including insulated render systems, provide an almost limitless opportunity to finish AAC walls internally and externally with durable and aesthetically pleasing finishes. Solid Aircrete walls are a well established techonology, with the capacity to meet the requirements of building regulations.

Further information on Aircrete blocks can be obtained from Quinn-lite technical department.

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