

## British Antarctic Survey Summer Accommodation Building

One of the main scientific stations in Antarctica, Halley, was first established by the Royal Society in 1956 and taken over by the British Antarctic Survey in 1959. Five sets of buildings have been constructed at the site over the last 45 years, the first four gradually being engulfed by snow and ice and then abandoned.

When Halley 5, the current station, was built, it was designed to accommodate about 40 people - 20 all-year-round staff and another 20 or so in the summer. In fact, there are frequently more than 20 summer visitors at the station; so steel-framed insulated fabric structures had been used to provide extra accommodation. However, these had a relatively short life and were costly and time-consuming to keep in a usable condition.

In 1994, following the success of a garage and vehicle workshop at Halley that had been designed and built by Bennett Associates and VM Fabrications, the same team was commissioned by the British Antarctic Survey to design and build a permanent self-contained structure with sleeping accommodation and mess-room facilities, complete with power and heating, furniture and furnishings, catering equipment and storage.

The result was the Drewry building, named after Dr D J Drewry, Director of the British Antarctic Survey 1987-94. Like the garage two years before, the Drewry Summer Accommodation Building was to be mounted on a skid base to form an integral towable unit so it could be re-located to avoid the problems associated with snow and ice accumulation around static structures. The complete building, including all fixtures and fittings weigh 45 tonnes, so it can be moved by existing plant at Halley.

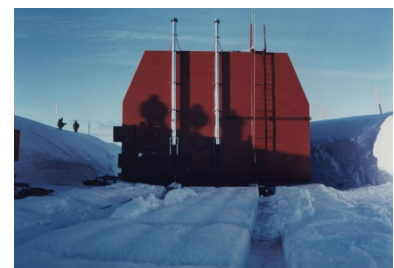
It also had to be delivered in sections for assembly on site and, when completed, suitable to be towed over uneven ground without damage or distortion.

It has now been re-located several times and continues to function well. The skids, have a special low-friction coating, and air-bags are used to break the bond between the skis and the ice before starting to move the building.

The unit was designed to provide accommodation for 30 people on two levels, with the ground floor housing cooking and dining areas, clothing and food storage, toilets, laundry and the plant room, while the bedrooms are on the first floor. The internal temperature can be maintained between 17°C and 20°C, despite external temperatures between -55°C and +5°C.

Because of the difficulty of working outdoors in the Antarctic, ease of assembly without use of special tools was essential, and no single item could weigh more than 1500kg. It also had to be virtually maintenance-free because of the cost of delivering spare parts and materials to the base. The target time for assembly, fitting-out and commissioning was set by the British Antarctic Survey as 14 days, with some 24 hour working possible.

Before the building was packed for shipping, it was fully assembled and approved by the BAS. It was first used during the 1994-95 season.



Bennett Associates (originally founded in 1984) was acquired in 2008 by Atkins; bringing their proven technical expertise to the UK's leading engineering consultancy.

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