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An Explosive Performance

British Builder & Developer takes a look at how a British landmark is protecting itself from the threat of terrorism, By **Keith Lucas**

The benefits of strengthened window film are being used at a number of prominent at-risk locations around the world, including 15 government buildings in Washington DC. As well as bomb protection, strengthened film can be supplied in a range of related benefits such as protection from UV, reduced glare and more comfortable internal temperatures. For more information on protecting your building, contact Peter Reece at Solar Gard on +44 (0) 1905 642 400.

The Royal Albert Hall, in addition to being one of the world's greatest concert venues, is a Grade I listed building that has been in constant use for nearly 140 years. Maintaining such an old building in a modern world is an ongoing challenge, and one major issue is to protect this iconic landmark, its occupants and passersby, against any potential terrorist attacks. In order to meet Home Office specifications for bomb blast protection, the Royal Albert Hall fitted each of its 188 windows with an innovative, strengthened window film that is specifically designed to hold broken glass together in the event of an explosion.

Having a worldwide reputation as an iconic concert venue can have its downside. That kind of profile can also translate into be-

'We had originally installed protective film at the Albert Hall about 12 years ago for bomb blast purposes at the time of the IRA's bombing campaign in London,' said Steve Thompson of Invicta, the company that installed the film. 'This was an upgrade to the new Home Office bomb blast standard specification, which is 175 micron film - the old film was 100 micron. We replaced the film on all the external windows and doors and we also went a stage further and put film on all the internal glass in the corridors.'

He adds: 'If somebody were to bring a bomb into the building, being a contained space it can obviously cause a lot of damage. It's a risk assessment thing. It's less likely these days that you'd get the big vehicle bomb outside - it's more likely to be a case of someone trying to bring in small explosives in a rucksack and explode them inside. Most injuries in a bomb blast are caused by the flying shards of glass and that's something that we can quite easily reduce - the film holds the glass together and stops it spraying around, which is what causes damage. Glass can travel at huge speeds in an explosion and embed itself in walls and furniture, so it's an obvious risk to human life.'

Clearly, installing protective film on this kind of scale was always going to pose logistical problems at a venue as busy as the Hall, but Invicta managed the contract with a minimum of disruption. 'It was a very complex process of planning dates around when the work could be carried out and co-ordinating lots of different departments because we pretty much have a show every day,' says Amanda Squires. 'At the time of installation we had had more than 360 shows, so you can see that we don't get much down time to keep the building looking lovely - and the Albert Hall is not the kind of building you can ever allow to look shabby.'

'We worked around their performances, so if they had a matinee for example we'd work to suit their hours,' says Steve Thompson. 'It was all done over a couple of months with no problem at all. The film comes in a roll and it's cut to just over the size of the glass. The glass is then thoroughly cleaned, the liner on the back of the film is pulled off, it's sprayed with water, positioned, trimmed and affixed. It's a fairly easy process but we have to train teams of installers - it's not a DIY job. It doesn't cause any great disruption to the people in the building, unlike if you were re-glazing, which is a major disruption to the day to day workings.'

'Invicta worked closely with us and came in and did a full reconsultation beforehand,' says Amanda Squires. 'There are 188 windows involved in the project so it's clearly a major job. The work had to be scheduled around performances and meetings, not prove disruptive in any way or interrupt performances or

people's enjoyment of the Hall, because we're here to give people a fantastic show experience.'

'The films have a ten year warranty and are tested at the end of that period to see if renewal is necessary. It means we don't have to worry about it for the next ten years,' says Amanda Squires. 'Once it's been installed - apart from the normal routine of window cleaning - it's very straightforward, so you don't notice it from a maintenance point of view either. It's very easy to maintain - there's no lifting or peeling or anything like that at all. You wouldn't know it was there.'

Perhaps unsurprisingly, there's a large and constant demand for strengthened window film at the moment. 'The demand is across the board, in London and across the country,' says Ian Penfold. 'That's for both government buildings and other major organisations - in fact, the Government has its own standing order.'

So would the Albert Hall install the product again? 'Yes, absolutely,' says Amanda Squires. 'I'd certainly recommend it to other organisations. It's lived up to its expectations, and the installation and ongoing maintenance have been very good. We're very satisfied with the product and very satisfied with the service we had from the installation contractors. We've had no issues at all.'

