



The Arch Never Sleeps
16th Century Extensions

Narrator:

The bottom left corner of the East Wall is also worth examining. The wall and window were extended outwards in the 16th century in order to enlarge a chapel for one Bishop West. To do this the masons of the day had to deal with the downwards thrust of the masonry above.

Jacques Heyman:

Well we're standing here above Bishop West's Chapel, 1530. This chantry chapel was not quite big enough according to Bishop West's ideas. We're right up against the East End of the cathedral here and Bishop West wanted a metre or a little bit more of space down below underneath us. This left a very awkward problem at this corner because this masonry here houses a masonry stair going to the upper regions of the cathedral and we've got a corner which would have gone down the wall which is no longer there. So what the engineers did in 1530 was to put this relieving arch here – rough masonry but perfectly satisfactory for the job – to take the weight of this corner of the stair here. And we can see the new wall, that is the 1530 wall, in the background. In 1898, as we can see from the date, the Victorian engineer thought that this wasn't quite sufficient perhaps, so put in a second arch to help carry this load, and this has behaved as all arches do behave. Because there's been a slight increase in dimensions the masonry has had to adapt itself to that slight increase, it's had to sag a little bit and so the arch has cracked to accommodate that increased span, and you can see the gaps between the masonry and the mortar at this section. What's happened is that we've got a sort of hinge there with the contact maintained at the top and opening up as we go down here. As a result the forces must, of necessity, pass through a region something like that where we've still got contact between the masonry. So the compressive forces can pass between the stones there, but clearly nothing can pass lower down where we've got gaps.

John Trapp:

That's absolutely amazing. I mean they did all that work just to get an extra sort of one metre or so.

Jacques Heyman:

That's perfectly correct, yes.