

## Case: Underwater inspection of trade-yards

Along the walls of the Utrecht trade-yards severe damage is visible in walls and bricks. Underwater the situation is even worse. To inspect divers go into the water. They examine the situation, taking photographs and measuring the damage. A new cheap solution is found in using a camera on a stick. This stick is dipped into the water with its measuring equipment. Now they inspect from dry soil.

Since 1950 the old trade-yards and storage vaults have been renovated and sealed against penetrating water. From that time they are commercially used and have become a major tourist attraction. There's a danger of

decline, coming from below the waterline. One can see long cracks in the brickwork. Some of those cracks are a few metres long. Masonry is severely damaged and bricks disappear from the walls. And this is just what you can see.

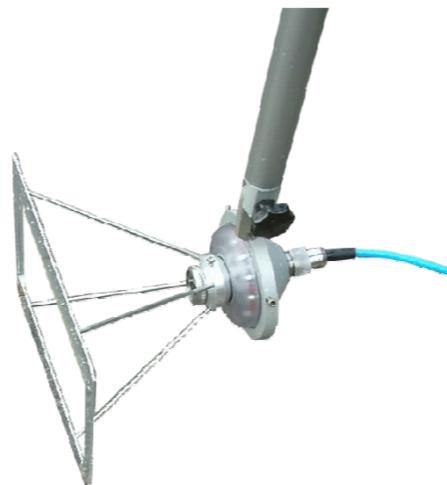
The Utrecht local authorities have allocated money for maintenance and renovation. Special divers go into the water to examine the situation. They inspect the walls, taking photographs and measuring the damage. This way of inspection is quite expensive. Camtronics came up with an idea to reduce costs and a simplified mode of working. A watertight camera with extra lighting was assembled on a stick. A special measuring window was designed to reproduce proportions of filming. On a trolley a monitor and recorder was mounted. Local officials now dip the stick into the water filming cracks and missing bricks. No divers are necessary now and all inspections are done from dry soil.



**Severe damage in walls and bricks at the Utrechts trade-yards**



**Monitor on trolley**



**Camera with measuring window on a stick**

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