

## **New angle on pipe bends - pipe bending angle project highly commended by NPL judges**

The Optical Metrology Centre (OMC) and ITP were highly commended for a project to measure the shape of pipes in the Metrology for World Class Manufacturing Awards in Birmingham on the 12<sup>th</sup> of September 2000. This is the third time in six-year history of the awards that the OMC has figured in the awards with its well known sewer rat (with Thames Water) and measurement guided robot system (with British Aerospace) being winners in 1997 and 1998.

This time OMC have teamed up with ITP group as part of a DTI Smart Award project. The project objective is to measure the shape of pipes that are used in virtually all mechanical systems from cars to aeroplanes. ITP already make a manual pipe measurement system that enables pipe manufacturers to be sure that their pipes are being manufactured correctly. This and other commercial systems suffer from a variety of disadvantages such as high cost or have problems with the greasy shiny pipes that have to be inspected. The OMC/ITP system uses small clips that fix onto the pipe at discrete points. The location of the clip and hence the pipe centre is then measured using two cameras that view a unique array of dots that is visible on each pipe clip. The software decodes the dots to uniquely identify each clip in a similar way to a bar code. Patents for various aspects of the project have been applied for. A key benefit for OMC working with ITP will be the potential to quickly turn this prototype system into a product.



**OMC System in operation**