

## ***High definition digital monitoring of architectural surfaces***

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### ***Abstract***

High resolution digital 2D and 3D recording with a remote controlled minicrane up to a height of 25m. Professional lighting and colour controlled images enable monitoring inside historic buildings.

### **Type of technology/methodology**

High definition digital photography and Laser scanning up to a height of 25m for periodic monitoring of surfaces, without the use of scaffolding.

With a specially adapted mini-crane construction (patent pending) the result of a research project; Reaching recording Standards (RRS) University of Bamberg 2006-2008; a 39 Mega Pixel digital camera and two flash heads are lifted up to take colour controlled images for conservation and monitoring. The whole system is remotely controlled from the ground and can be set up by two people in approximately 1 hour. The compactness of the crane allows the access through standard doorways and use in restricted spaces.

The remote controlled 3D head can hold a payload of 30kg. Further, non contact recording devices, such as a 3D Scanner or an IR Thermography camera for the detection of detached plaster or moist can be attached.

The system will be completed beginning 2009.

The exploitation of the system is carried out by a start up company beckett&beckett photography [www.beckettphotography.com](http://www.beckettphotography.com)



*Image1: RRS System during construction. The tests for climbing inclines in compact Transport modus shows, that the System is able to overcome up to 21 degree on ramps.*



Image 2: The *Unic* Minicrane is the base for the RRS system. It is adapted with a newly constructed 25m boom. On the end of the boom a remote controlled 3D head can hold either the digital camera with the two flash heads or optional various recording systems. The image shows the system while in construction; first tests were restricted to 15m.



Image 3: Remote controlled 3D- head *Pele XL* from *MovieTech*, Munich, Germany with the new constructed bar for the flash heads, during lab tests.