

# New sensors and monitoring systems to advance our understanding of heritage loss

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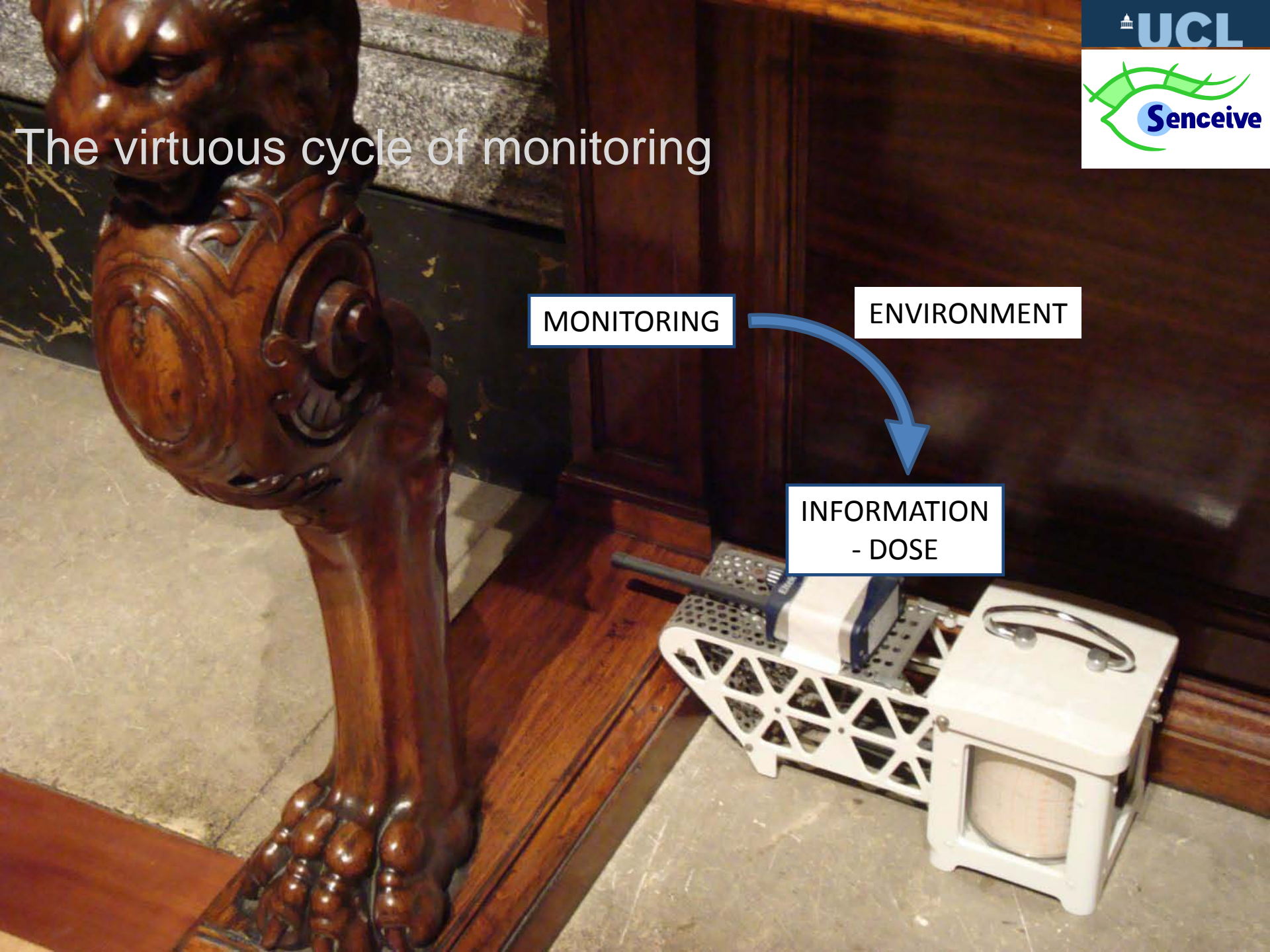
# The virtuous cycle of monitoring

MONITORING

ENVIRONMENT

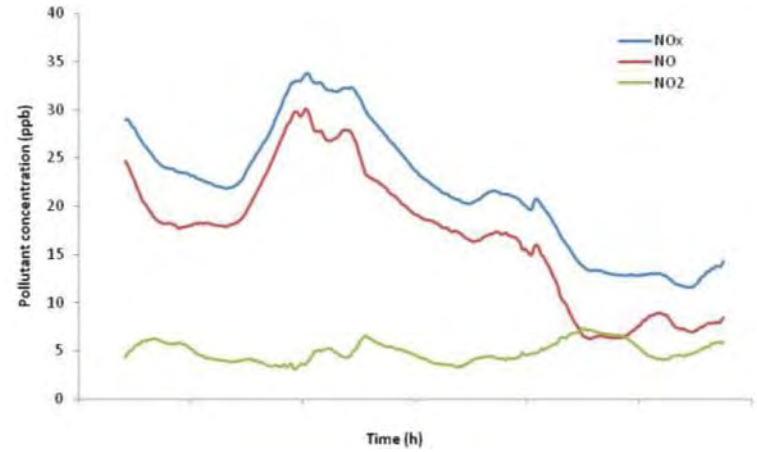


INFORMATION  
- DOSE



# Dose: data reduction

www.raesystems.com



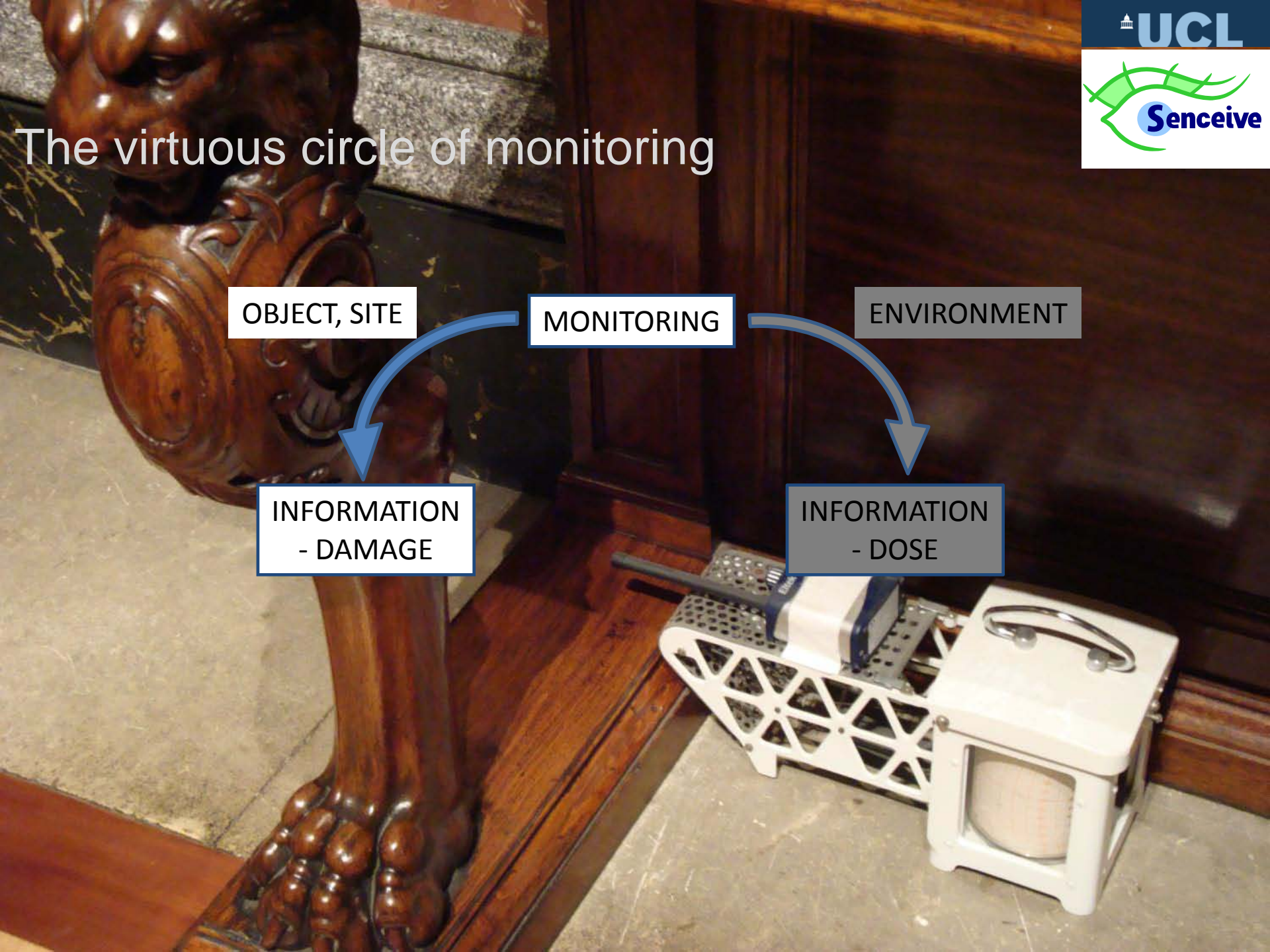
DATA REDUCTION

X

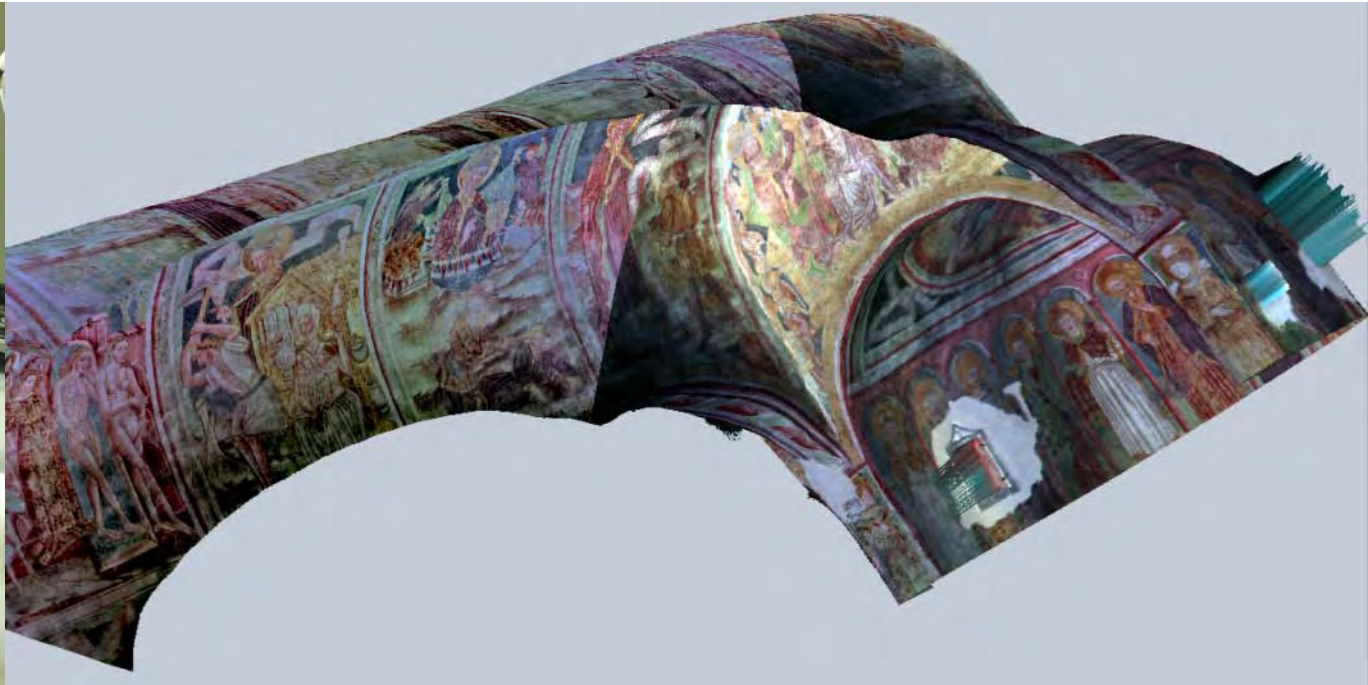
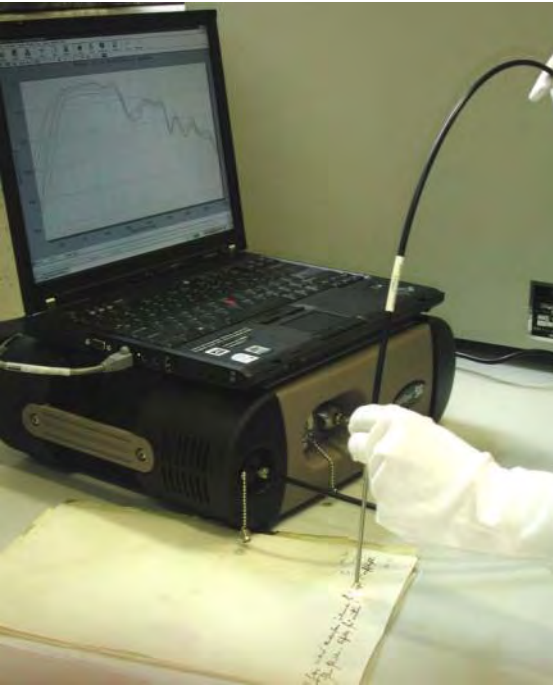
www.skinc.com



# The virtuous circle of monitoring

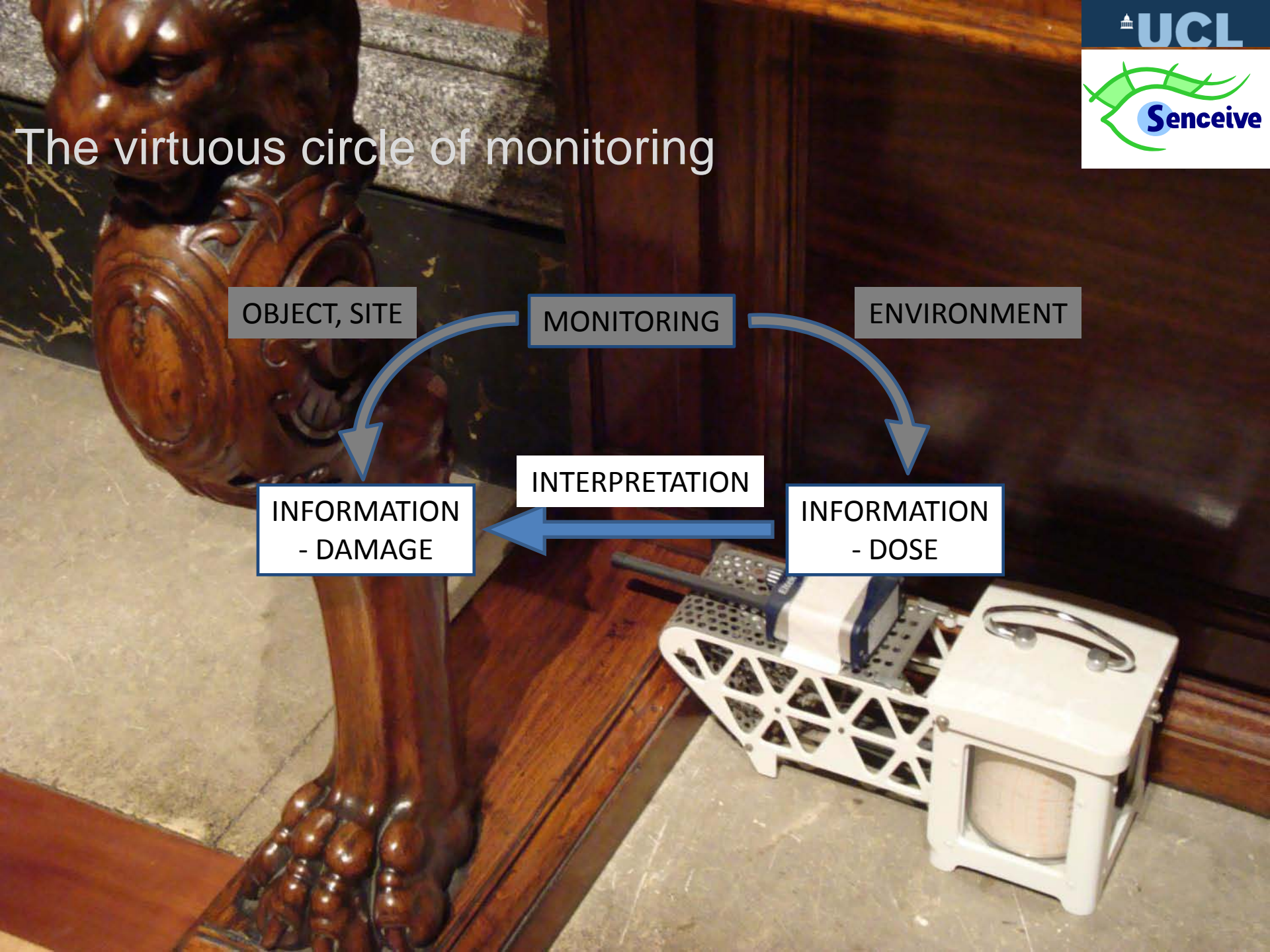
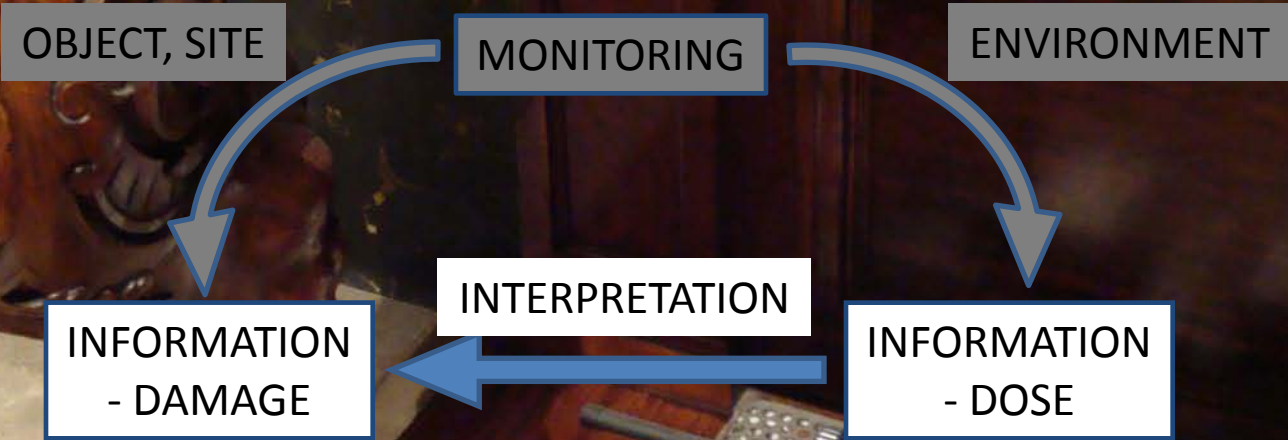


# Monitoring of material change



EUREKA! 3483

# The virtuous circle of monitoring

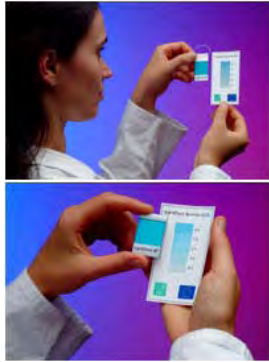


# Dose vs. material change

iaq.dk/mimic



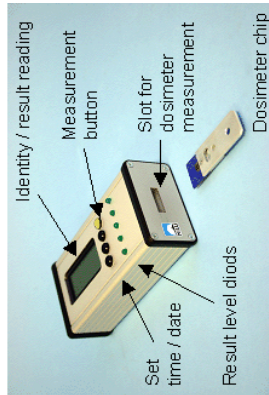
db.re.fh-koeln.de



nature.ca/collections



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Metrics illustrate each major type of deterioration — chemical, mechanical, and biological. A range of graphs and reports are easily produced. The software package includes the newly developed DewPoint Calculator, the Stored Alive interactive storage game, a detailed user's manual and help file, and a downloadable workbook, Step-by-Step: Achieving a Preservation Environment for Collections. \$500 for one installation, \$125 for each additional site license. Ongoing technical support included.

**About IPI**

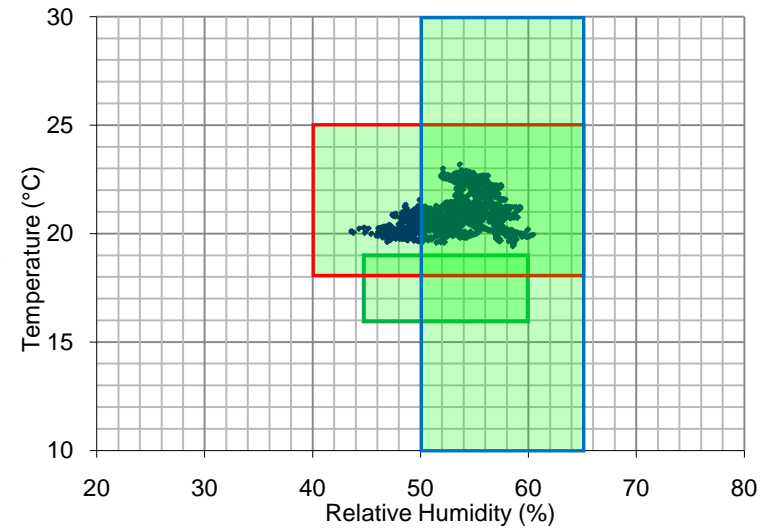
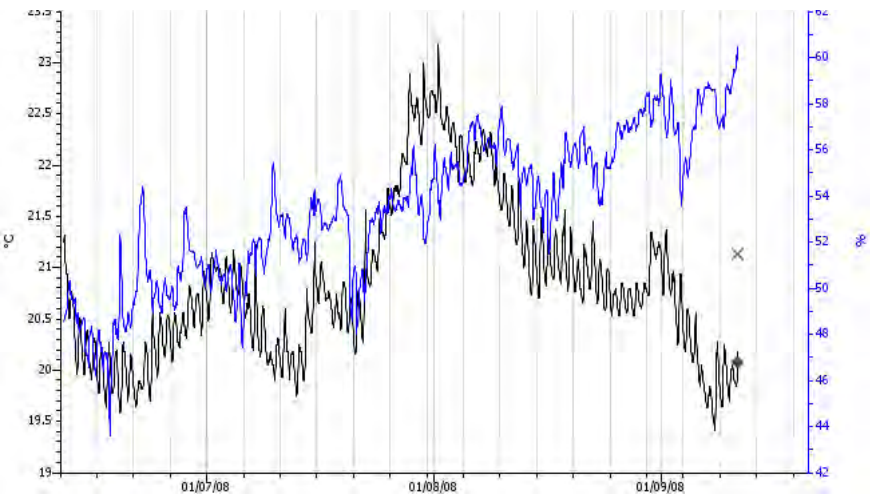
The [Image Permanence Institute \(IPI\)](#) is a university-based, nonprofit research laboratory devoted to scientific research in the preservation of visual and other forms of recorded information. It is the world's largest independent laboratory with this specific

*History Exhibit (Room 5998):  
Collection materials are not at risk.*

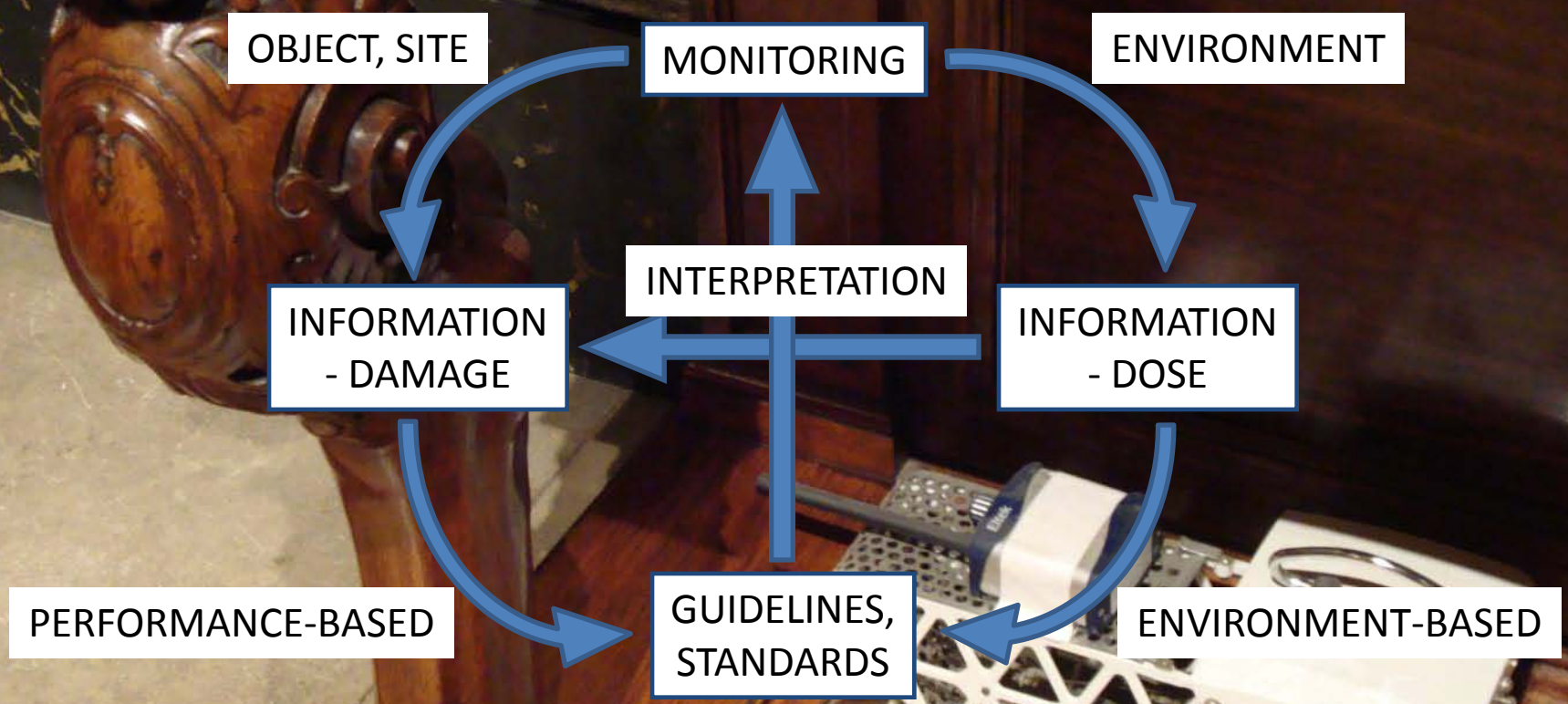




# Monitoring vs. standards/guidelines

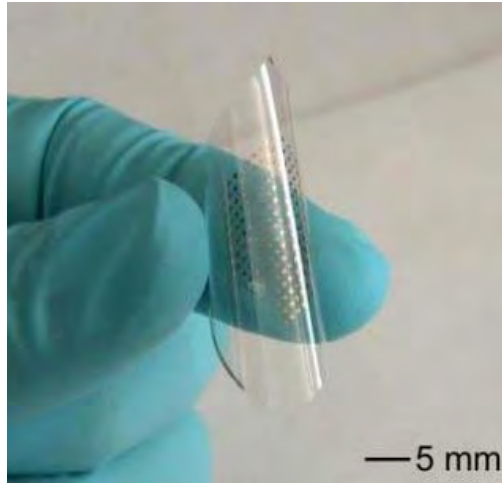
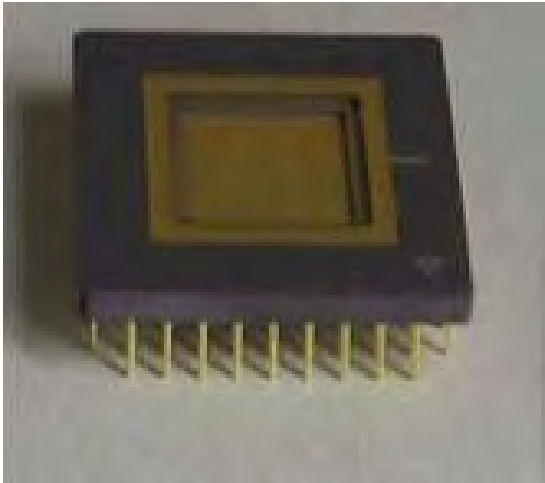


# The virtuous circle of monitoring



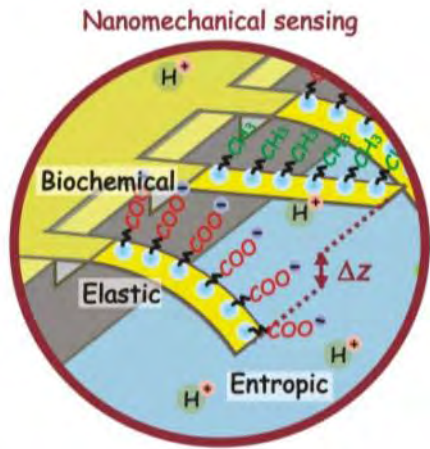
- Numerous parameters are needed to monitor changes of environment and of materials)
- Better understanding of material and environmental change
- Data reduction for informed decision making

# Microelectromechanical systems (MEMS)



[newwavetechnology.blogspot.com](http://newwavetechnology.blogspot.com)

H<sub>2</sub>



[www.london-nano.com](http://www.london-nano.com)



[www.epn-online.com](http://www.epn-online.com)



[www.sensimed.ch/cls.html](http://www.sensimed.ch/cls.html)

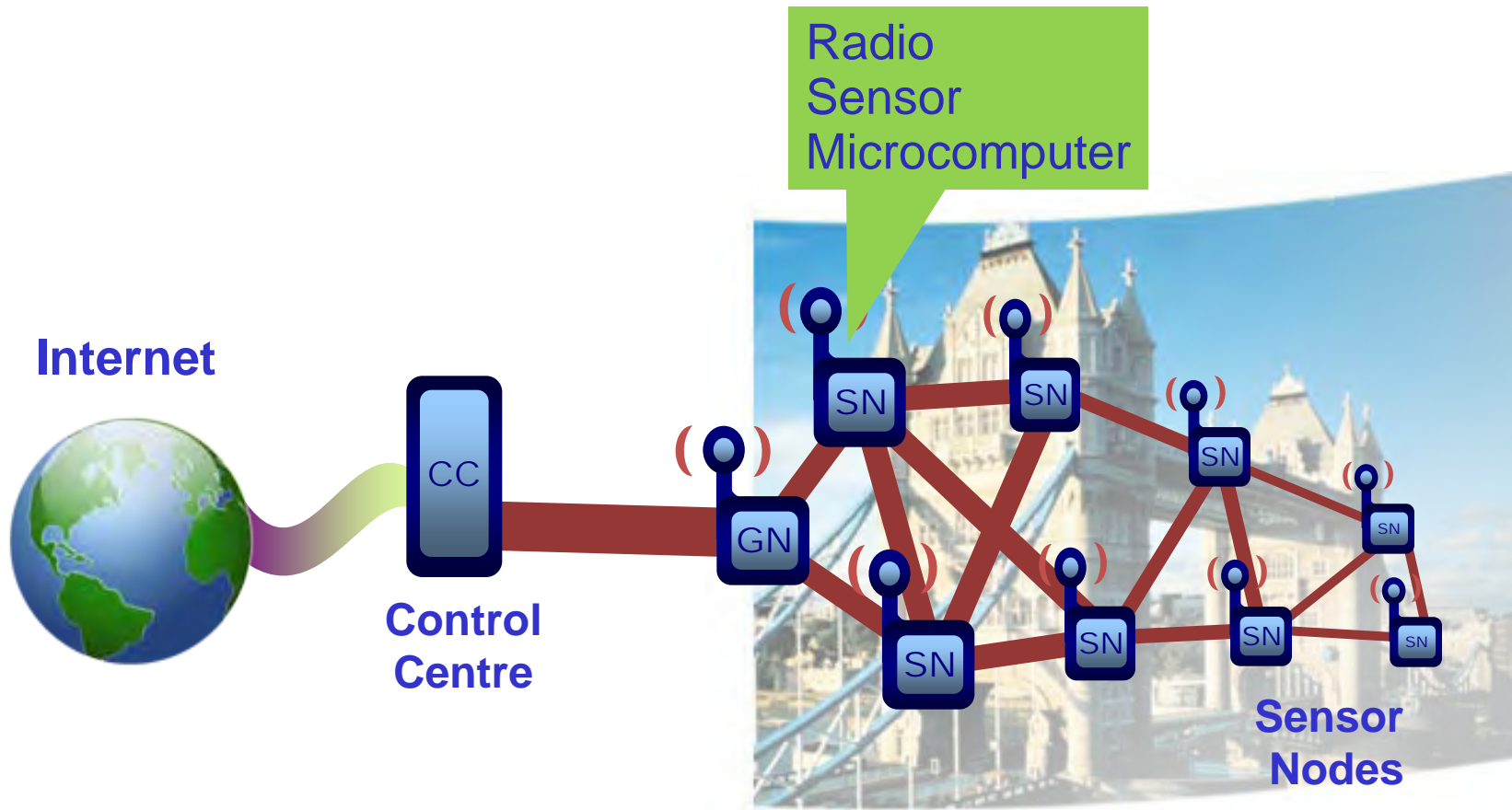
# ‘Heritage Intelligence’

- Backed by the Technology Strategy Board
- Collaborators:
  - UCL Centre for Sustainable Heritage
  - Senceive
  - British Museum
  - Historic Royal Palaces
  - National Trust
  - Hutton+Rostron

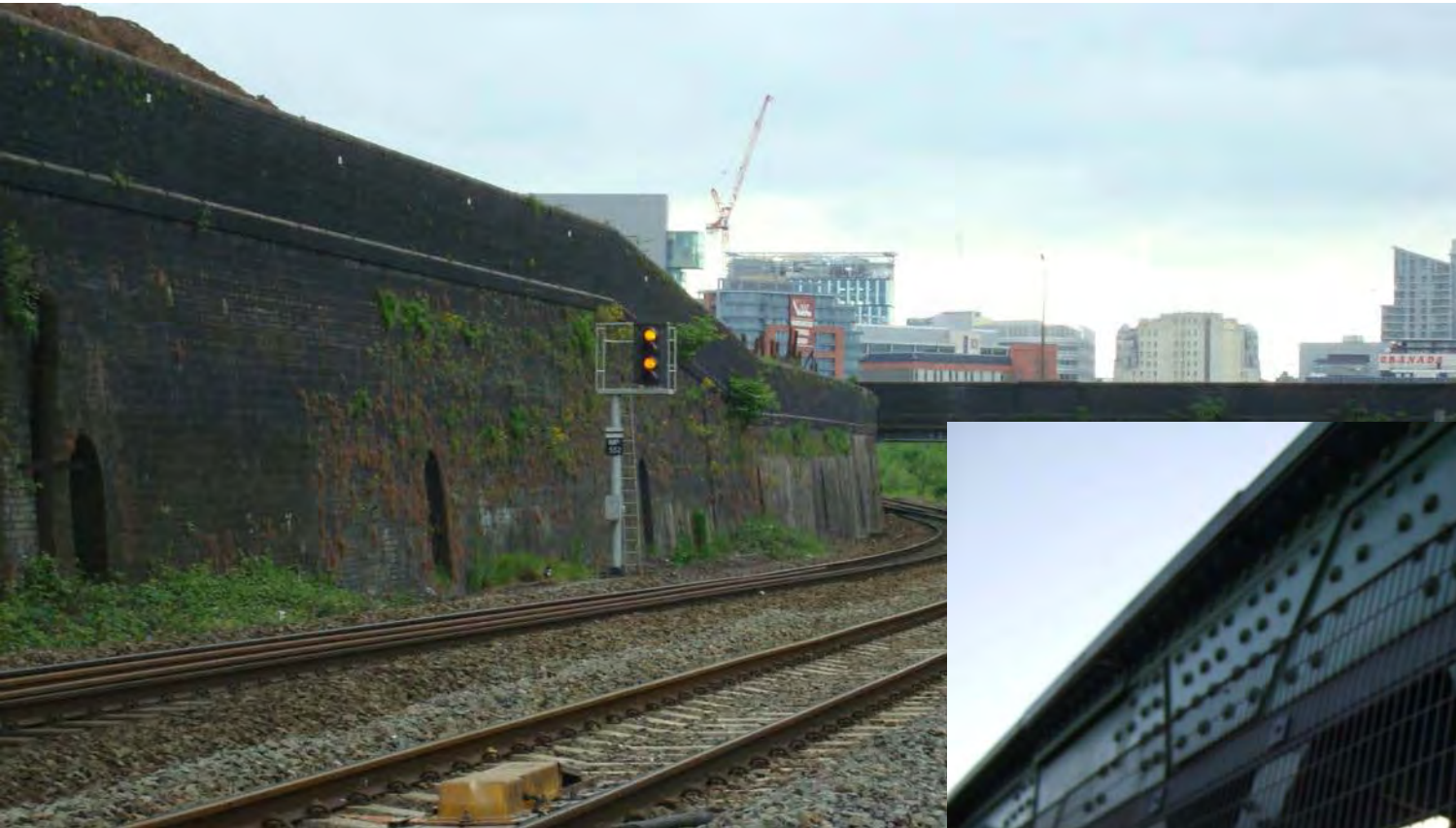
# ‘Heritage Intelligence’

- Mesh: non-hierarchical, self-organising (temporary removal of a node possible)
- Multi-sensor nodes
- Robust, ideal for demanding environments, external and internal
- Detects and predicts distributed events, through peer group collaboration
- The network works intelligently with data from multiple sensors and multiple nodes
- Exploits new types of small, low power sensors

# 'Heritage Intelligence'



# 'Heritage Intelligence'





# ‘Heritage Intelligence’

- A number of case studies planned in collaboration with the end-user partners
- Multisensor approach
- Custom applications:
  - Outdoor
  - Indoor
  - Objects in transit

# Thank you

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