

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

Matija Strlič

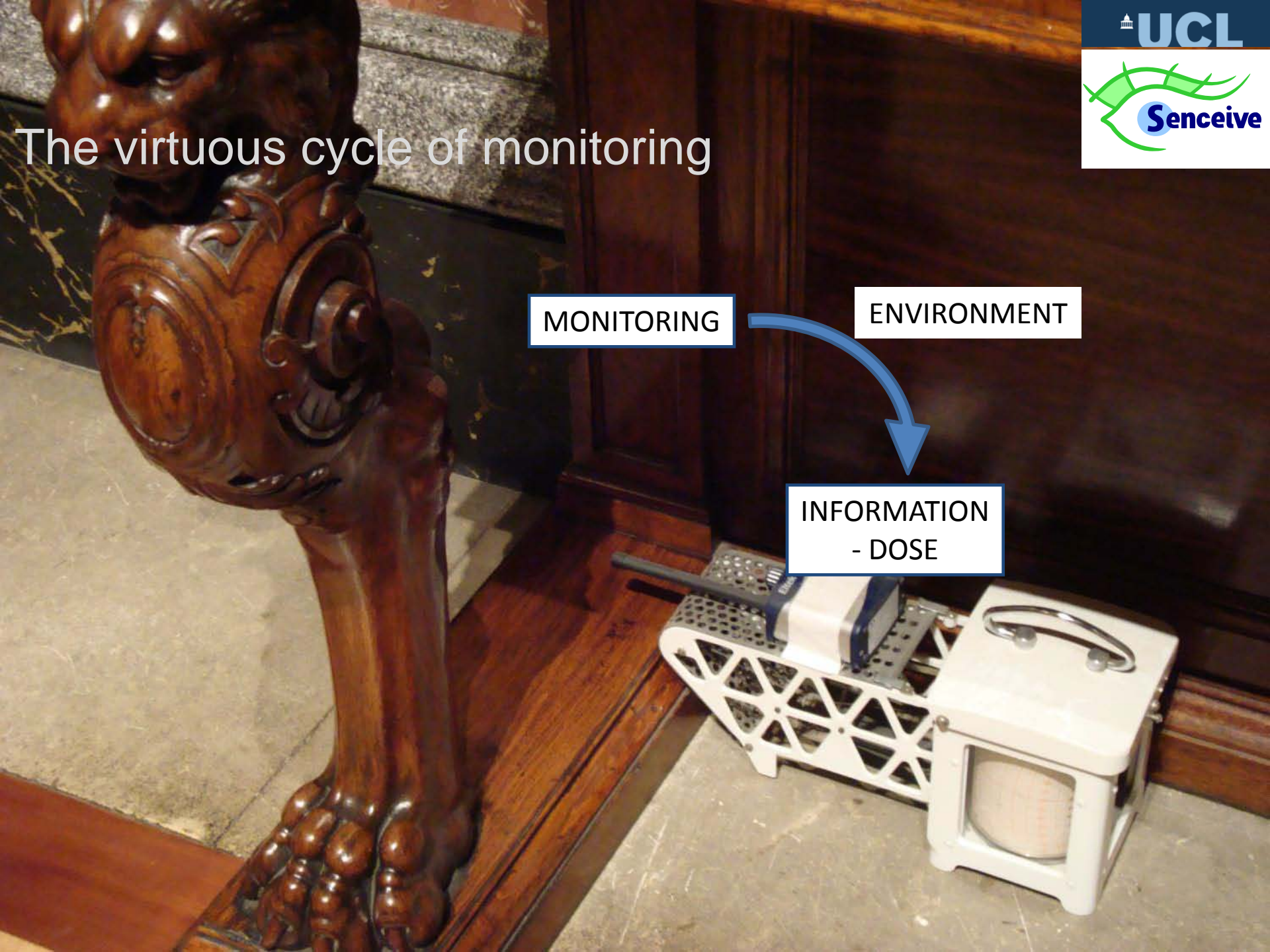
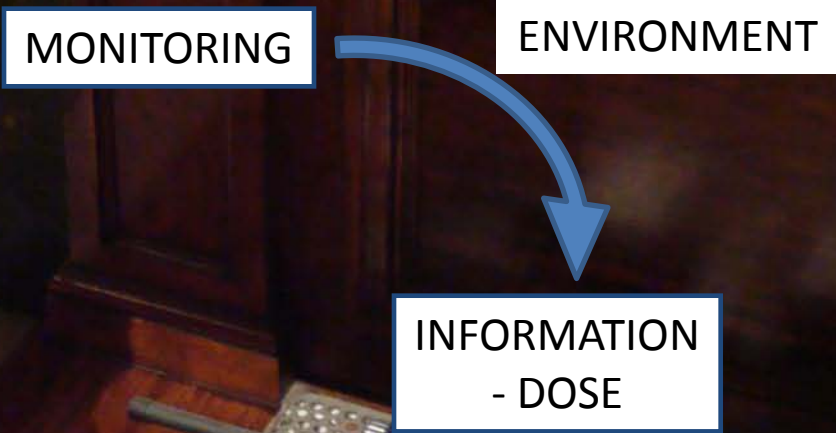
Centre for Sustainable Heritage, University College London

Simon Maddison

Senceive Ltd.

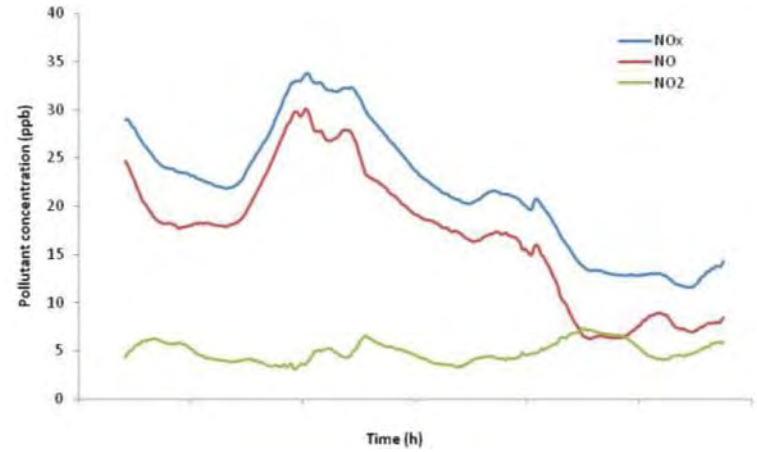


The virtuous cycle of monitoring



Dose: data reduction

www.raesystems.com



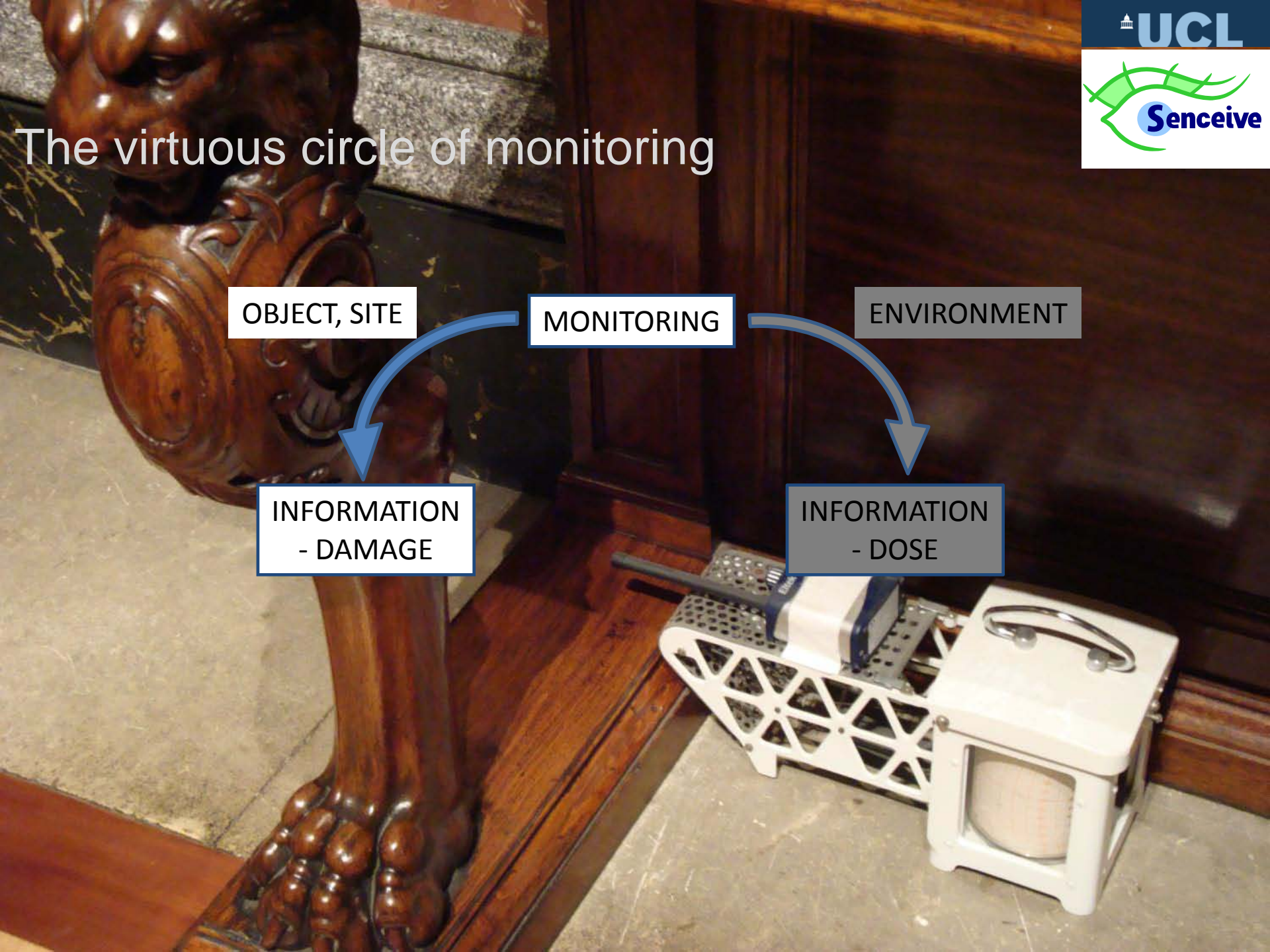
DATA REDUCTION

X

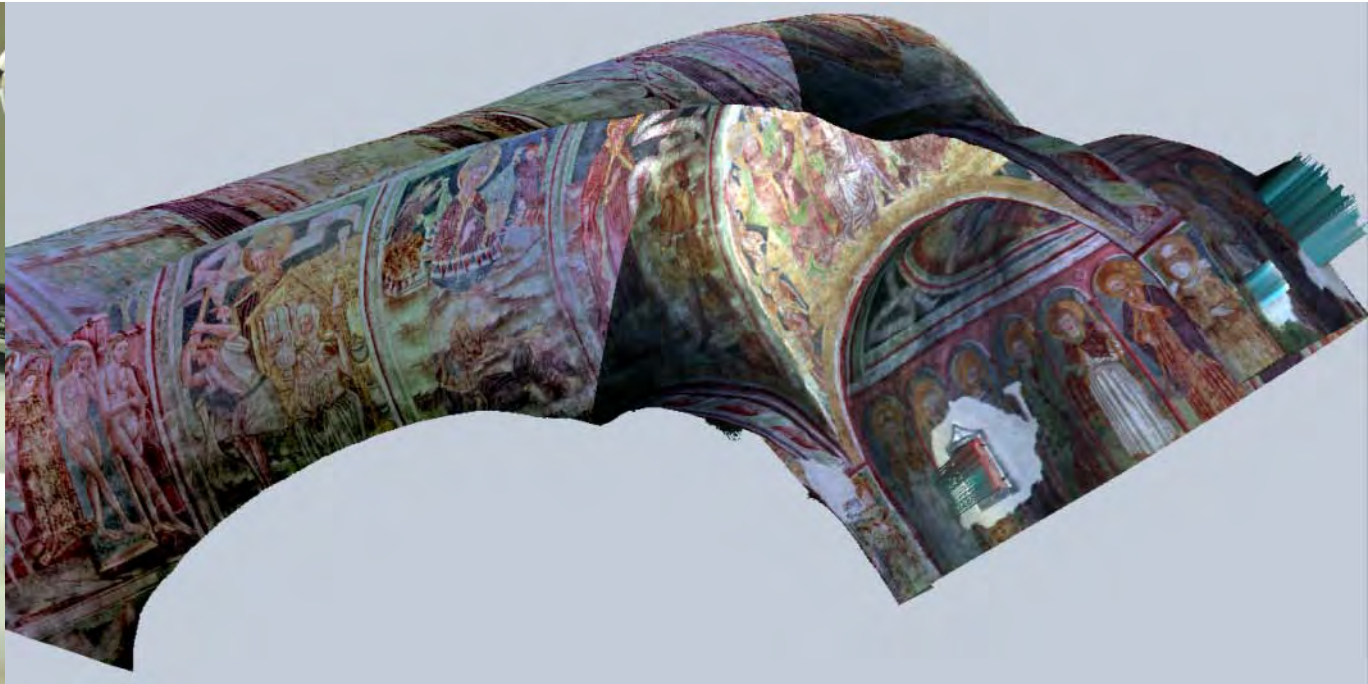
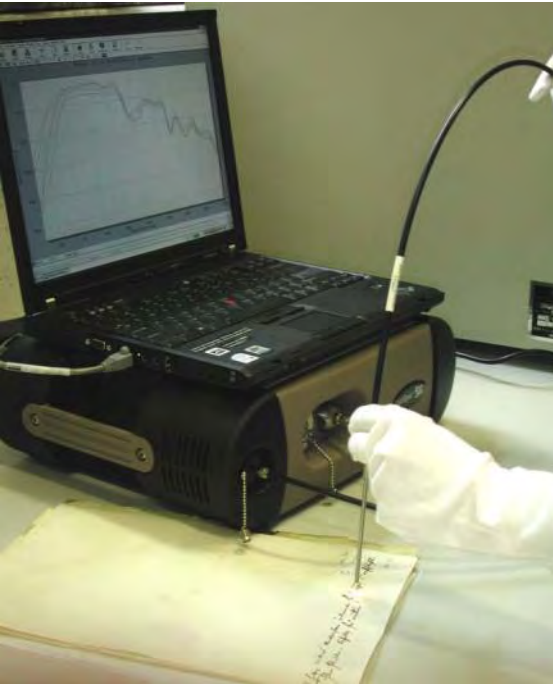
www.skinc.com



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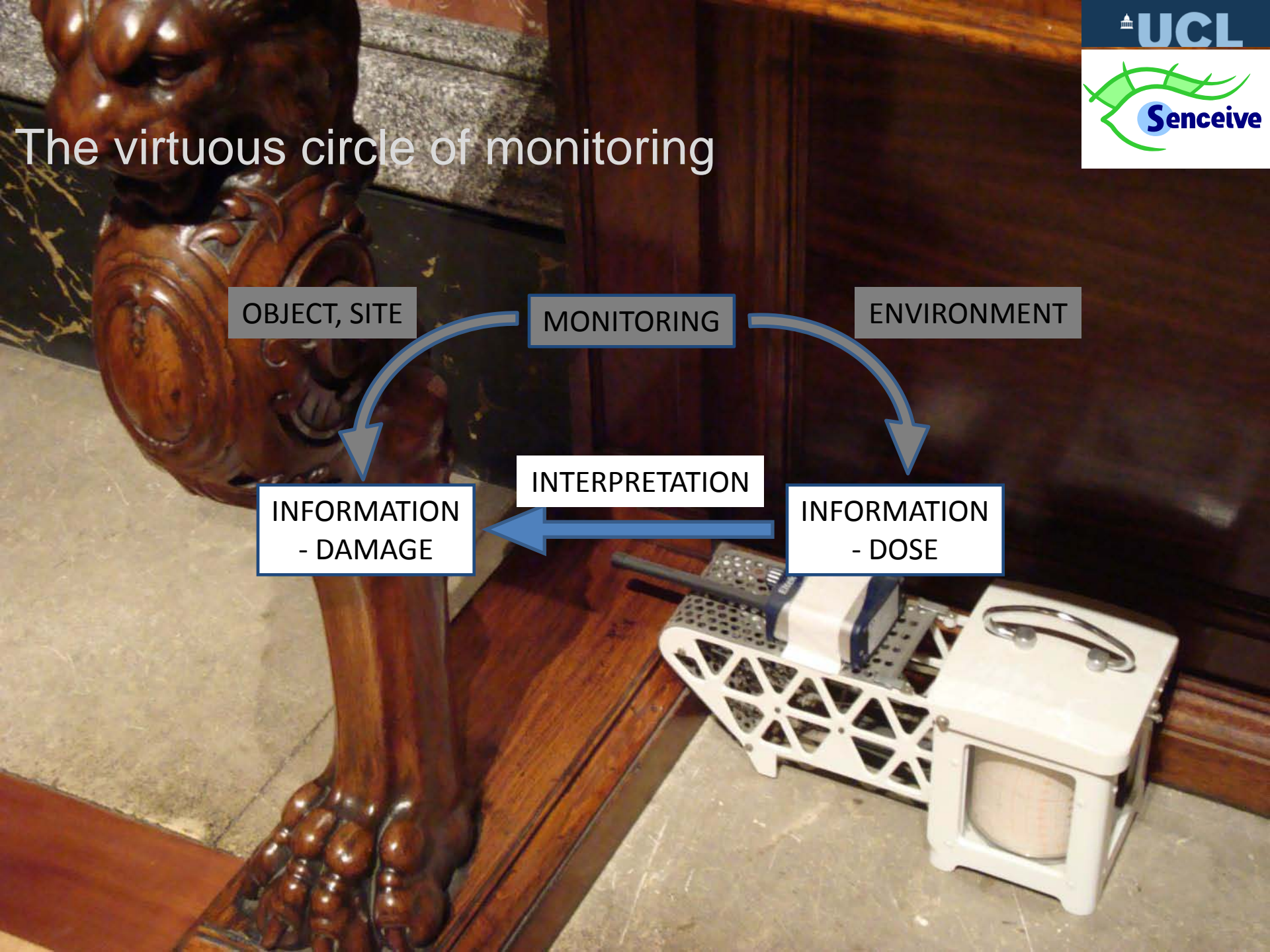
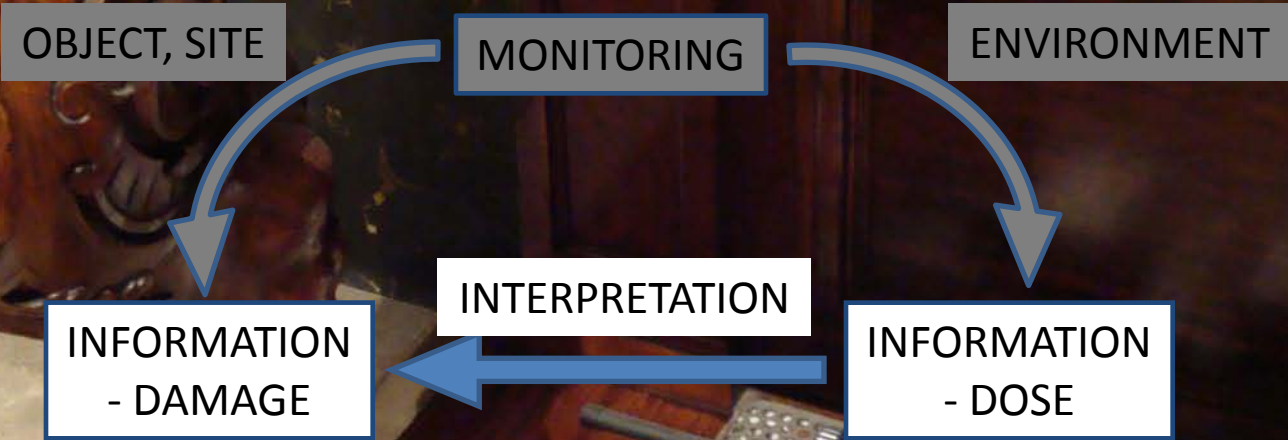


Monitoring of material change



EUREKA! 3483

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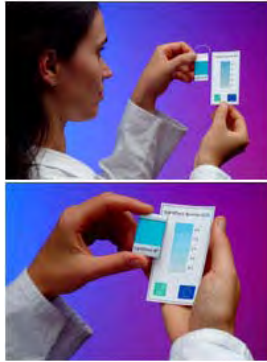


Dose vs. material change

iaq.dk/mimic



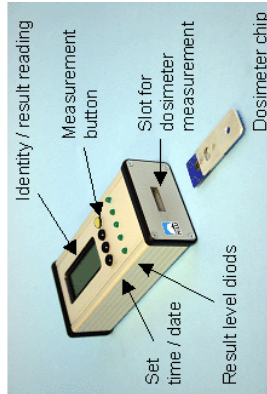
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nature.ca/collections



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

Welcome

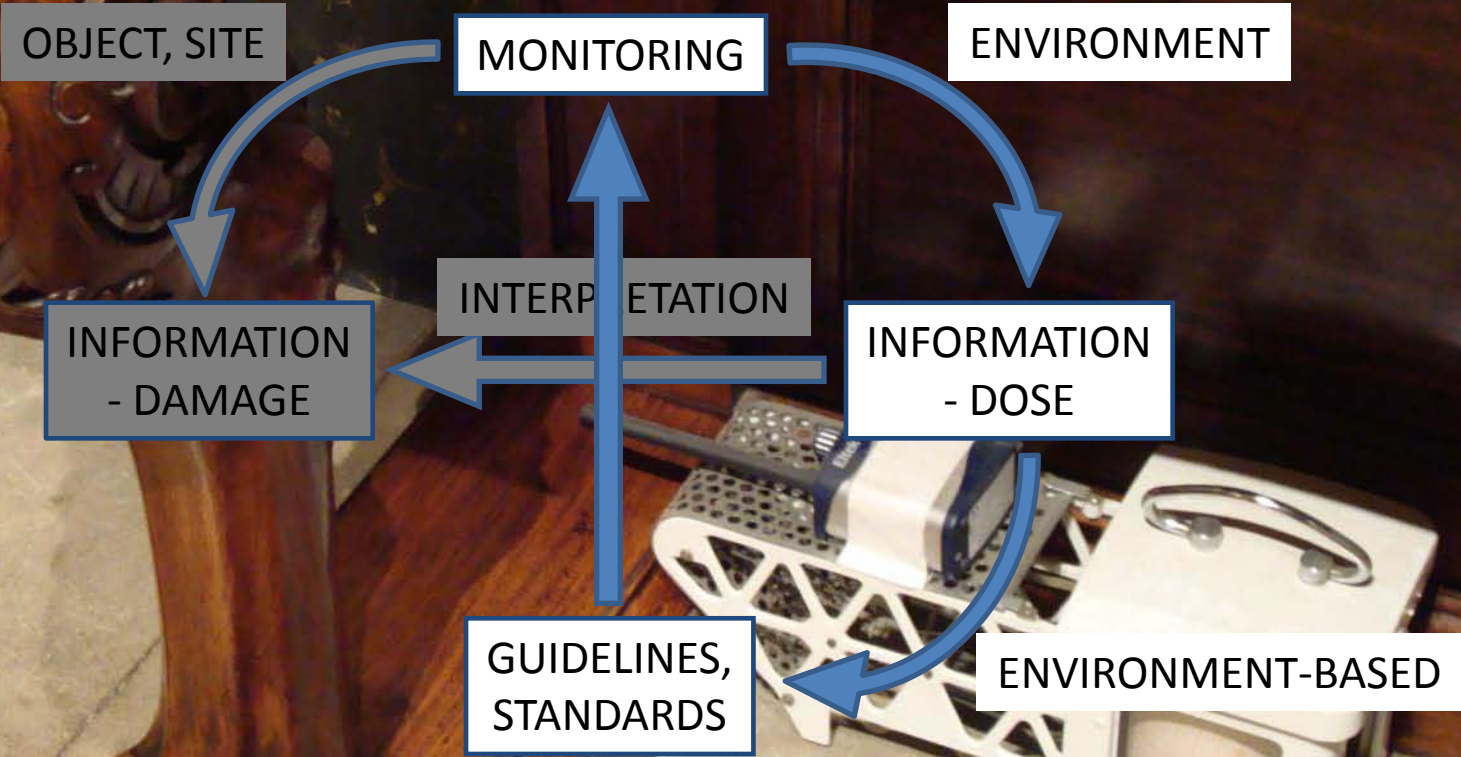
Climate Notebook® is IPI's Windows-based environmental analysis software that lets you organize, track, visualize, analyze, and report on environmental data gathered from a variety of loggers. Climate Notebook was designed by preservation professionals specifically for use in archives, libraries, and museums. The software runs on Windows 98, NT, 2000 or XP. Climate Notebook is not designed to run as a distributed application over a network; it must be installed on the computer you are using. Designed to work with the Preservation Environment Monitor® (PEM®), Climate Notebook can also import data from a variety of sources including ACR®, Spectrum®, Hobo®, Trak-R®, and Rotronic® devices and MS Excel files. Data also may be entered manually. Object-specific analysis explains and documents how different materials are affected by environmental conditions and recommends improvements.

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.

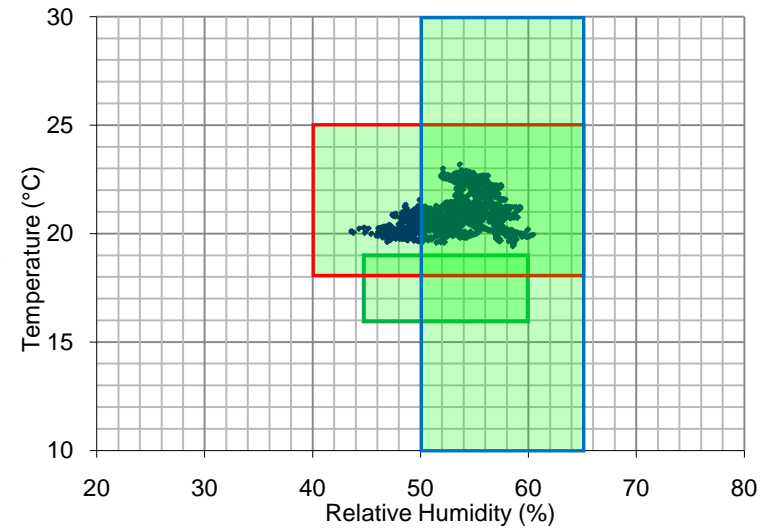
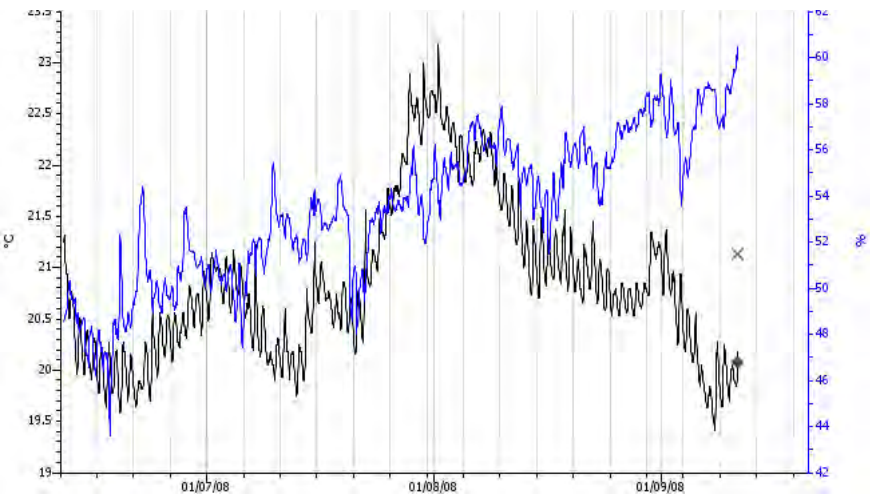
About IPI

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

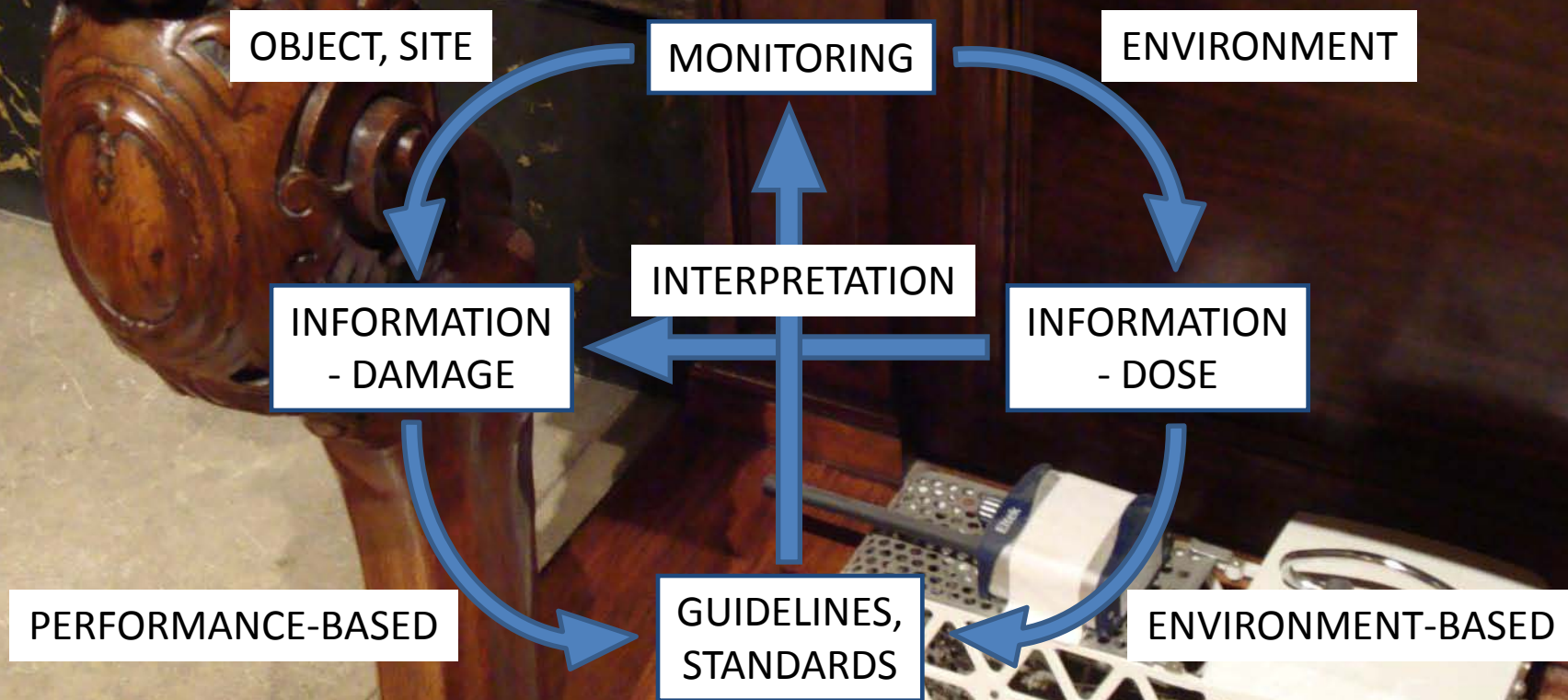
The virtuous circle of monitoring



Monitoring vs. standards/guidelines

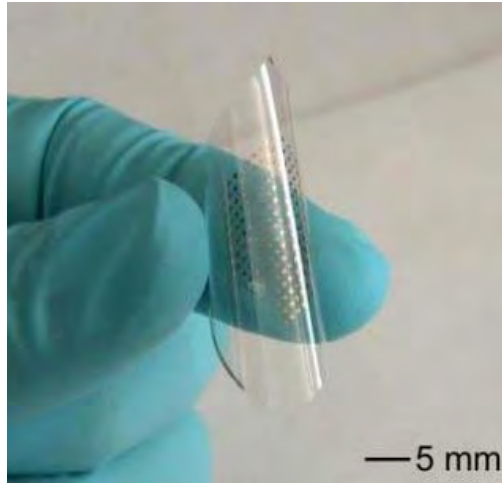
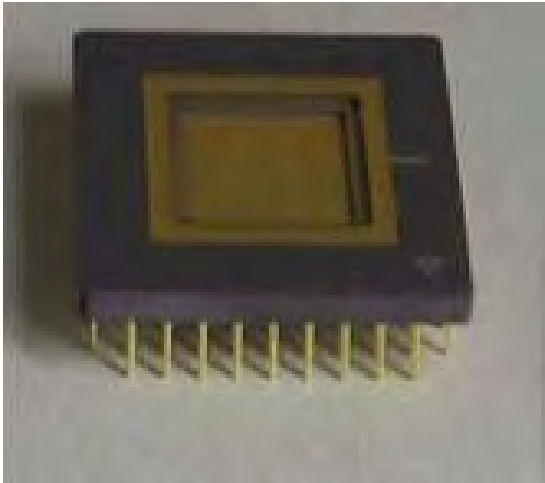


The virtuous circle of monitoring



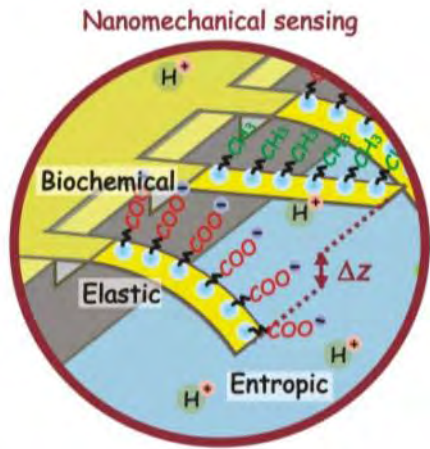
- Numerous parameters are needed to monitor changes of environment and of materials)
- Better understanding of material and environmental change
- Data reduction for informed decision making

Microelectromechanical systems (MEMS)



newwavetechnology.blogspot.com

H₂



www.london-nano.com



www.epn-online.com



www.sensimed.ch/cls.html

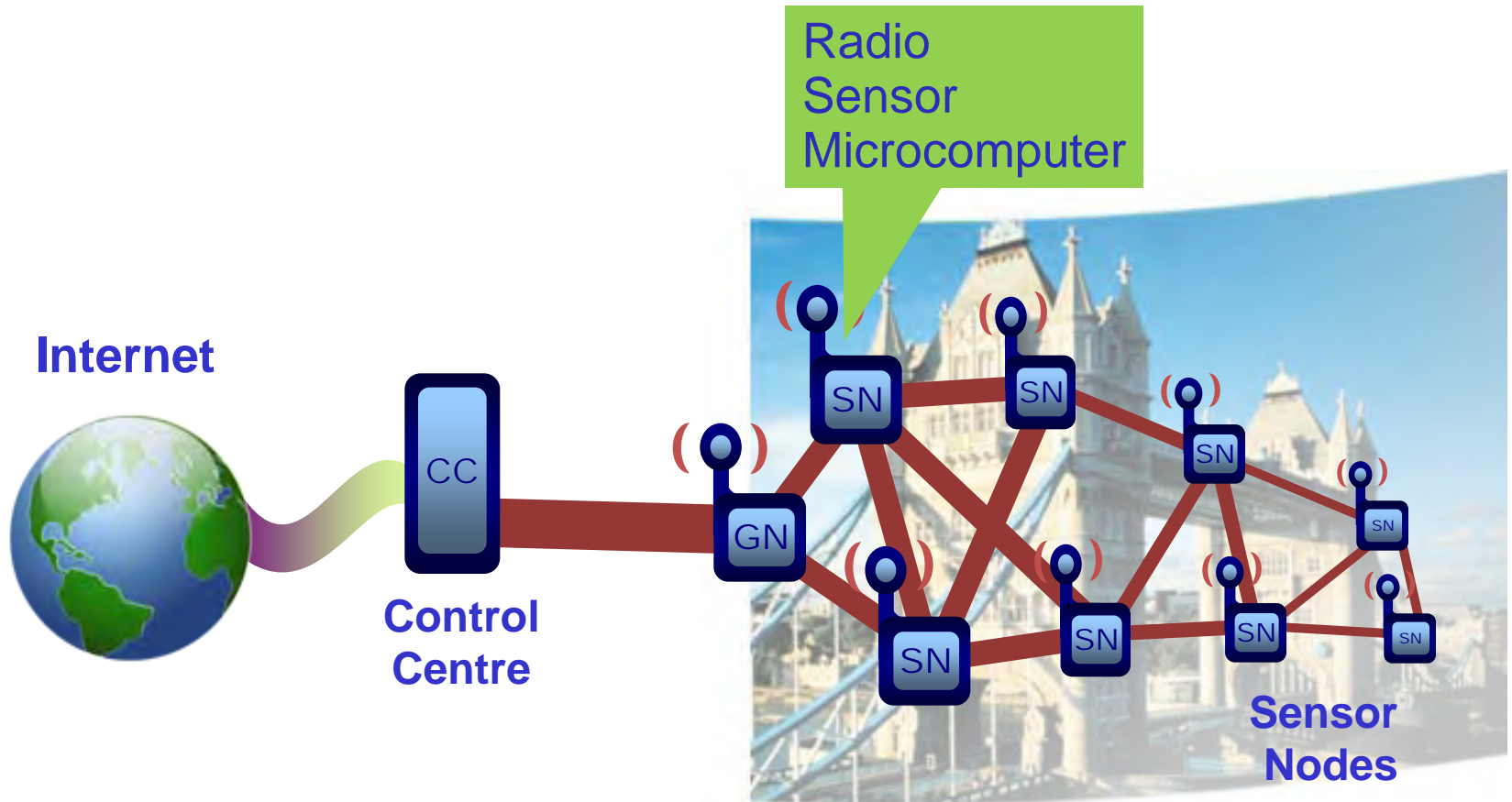
‘Heritage Intelligence’

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

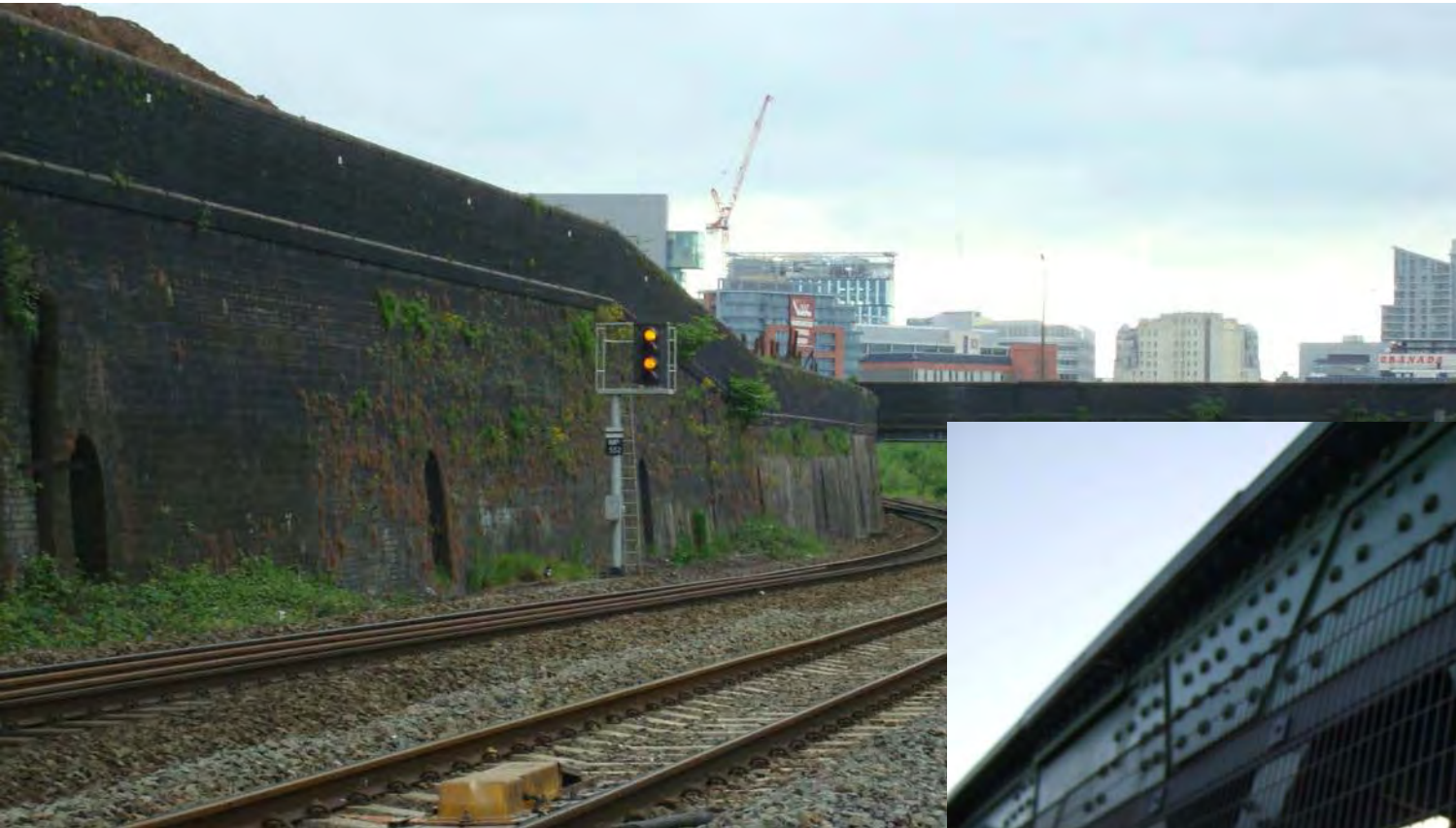
‘Heritage Intelligence’

- 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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