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Workshop Internacional
Arquitetura e Técnicas
Museográficas 2016

AIR CONDITIONING
AND CONSERVATION

LACICOR/CECOR/UFMG experience in
environmental management for temporary
exhibitions; use and application of
preservation metrics for environmental
management of collections

Luiz A C Souza and Willi de Barros Gonçalves
FEDERAL UNIVERSITY OF MINAS GERAIS, BRAZIL





School of Fine Arts

Federal University of Minas Gerais







CECOR – Centre for Conservation and Restoration of Cultural Properties





CECOR -Centro de Conservação e Restauração de Bens Culturais Móveis da UFMG

Teaching: undergraduate, graduate

Research: strictly linked to graduate studies

Extension: specialisation courses,
workshops, services

cecor



Graduate Program in Arts

Specialisation in Conservation-Restoration of Movable Cultural Properties – 1978 - 2006

Master in Arts – started in 1995

Ph.D. in Arts – started in 2008

Undergraduate course in conservation-restoration of cultural properties – started in 2008

[HTTP://WWW.EBA.UFMG.BR](http://www.eba.ufmg.br)

cecor



School of Architecture – UFMG Interdisciplinary Graduate Program

CAPES level 4

Masters and Ph.D (2016)

Built Environment and Sustainable Heritage

cecor





CECOR - Student's laboratory – Final undergraduate works in progress

Conservation Science Laboratory – CECOR – 1st floor





LACICOR – research and graduate's students activities area



- iLAB – Scientific Imaging Documentation Laboratory



CECOR - 1st floor – LABORE – Sculpture conservation laboratory



CECOR

Cultural Heritage Preservation Management Model



30 years of argument...what climate is safe, what is not

Learning on the job – a few

Successful

and

Unsuccessful

EXPERIENCES

LOOKING AHEAD - FACING CONTEMPORARY CHALLENGES

Exhibition Brazil 500 years

São Paulo, April – September 2000

São Paulo Architectural Biennial Building



1. Mapa da exposição, prédio da Bienal.

Thousands of objects, from Brazil and around the world

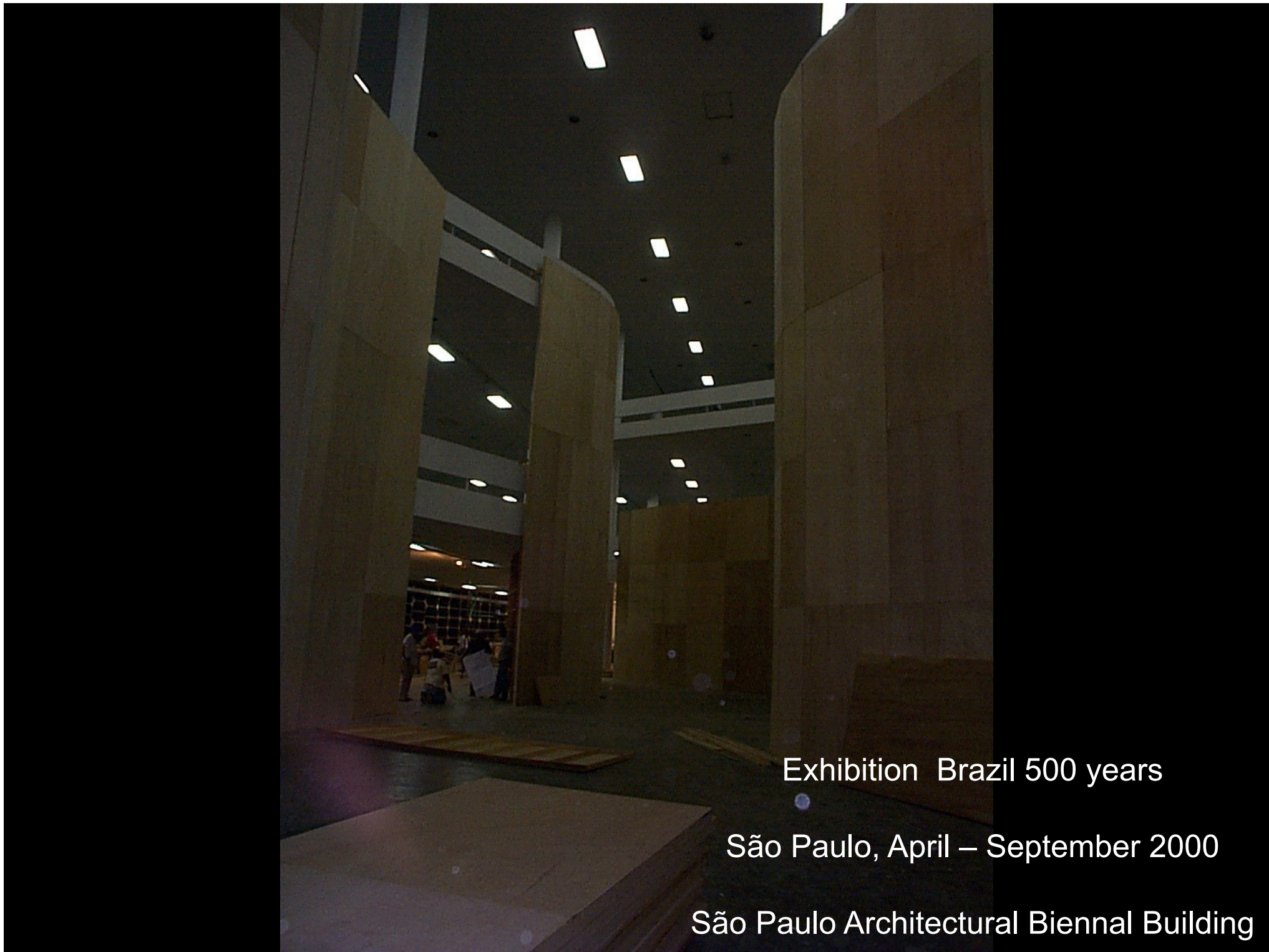


Exhibition Brazil 500 years

São Paulo, April – September 2000

São Paulo Architectural Biennial
Building





Exhibition Brazil 500 years

São Paulo, April – September 2000

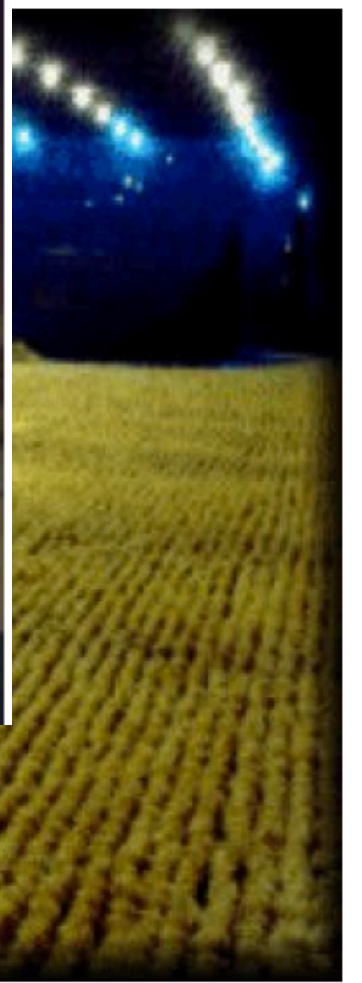
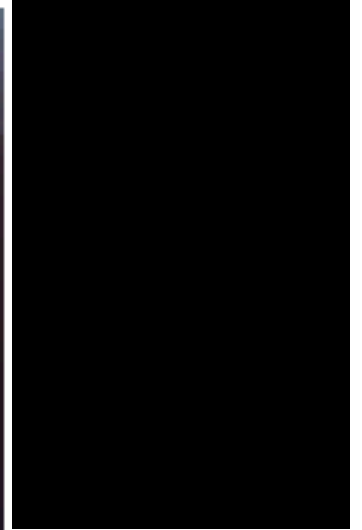
São Paulo Architectural Biennial Building



Exhibition Brazil 500 years

São Paulo, April – September 2000

São Paulo Architectural Biennial Building

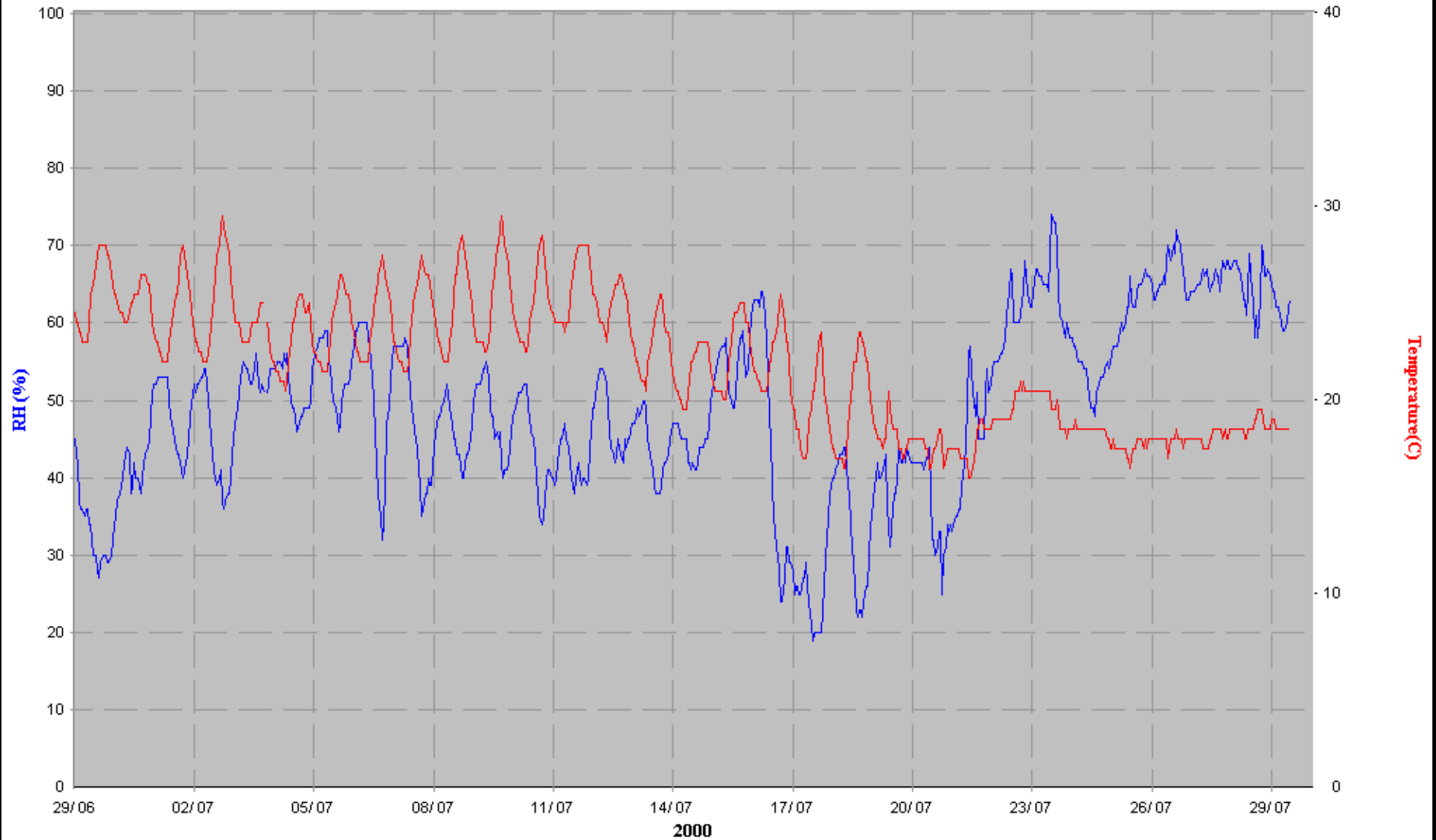


Exhibition Brazil 500 years

São Paulo, April – September 2000

São Paulo Architectural Biennial Building

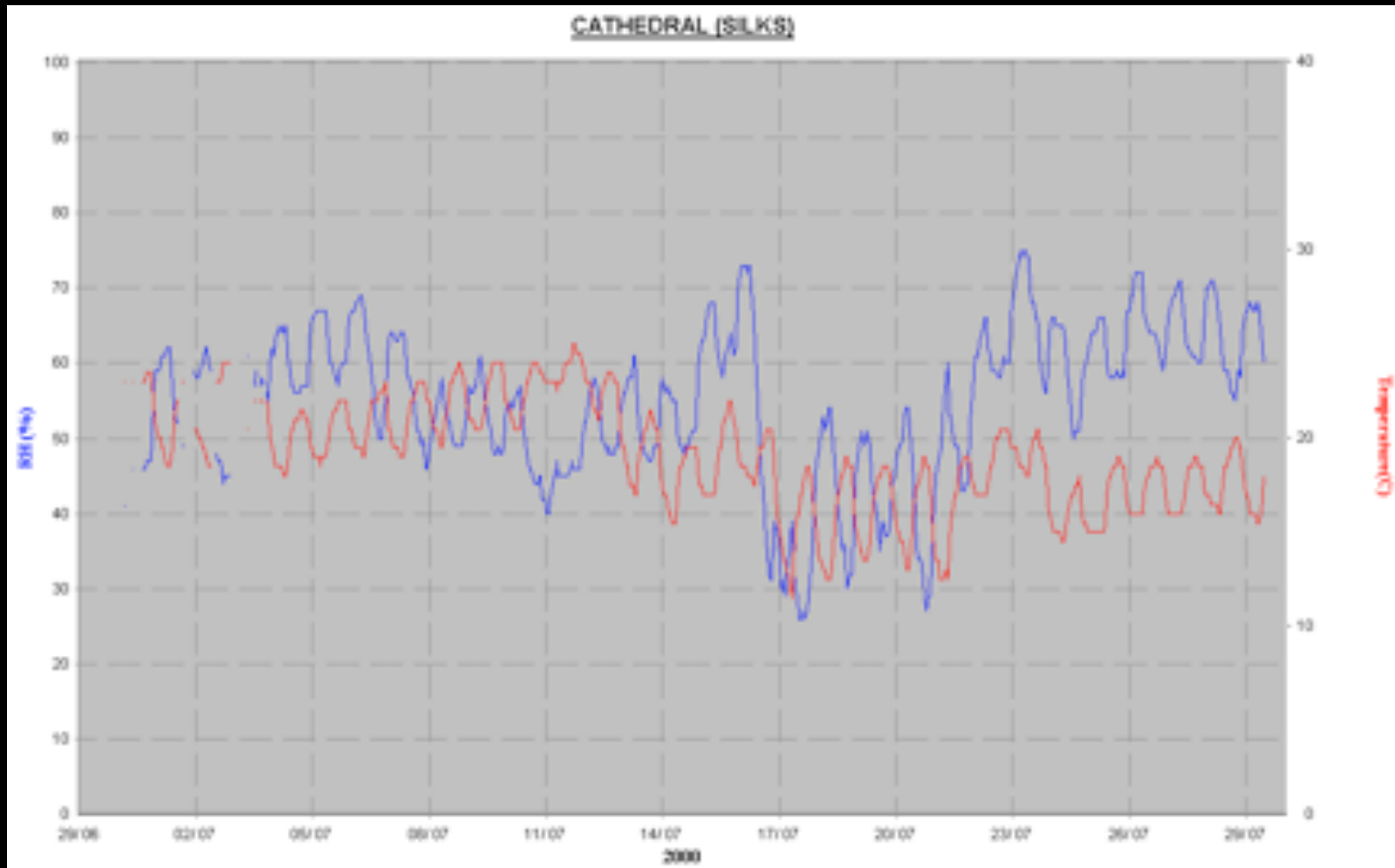
C19TH FAR AREA



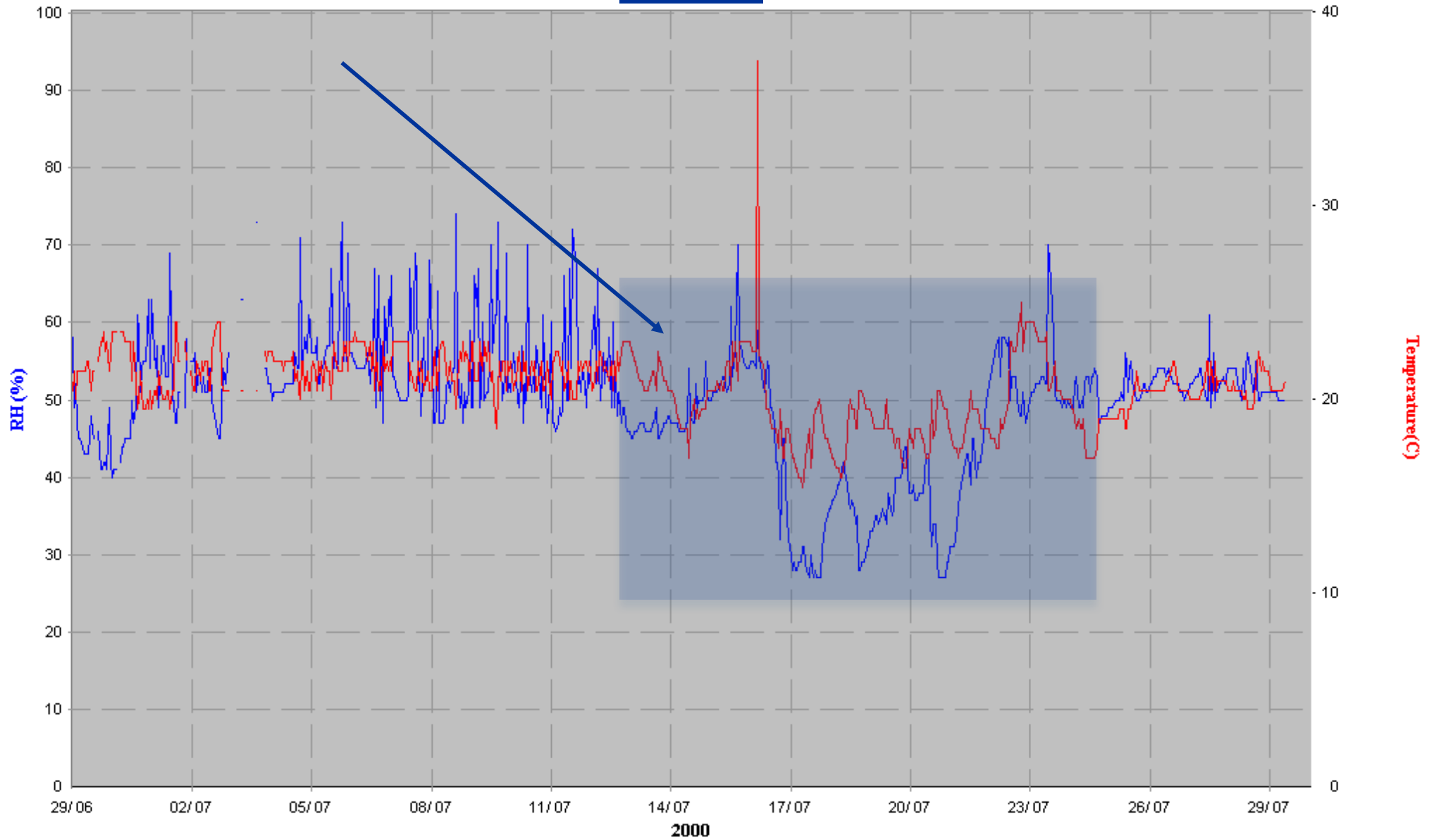
Exhibition Brazil 500 years

São Paulo, April – September 2000

São Paulo Architectural Biennial Building



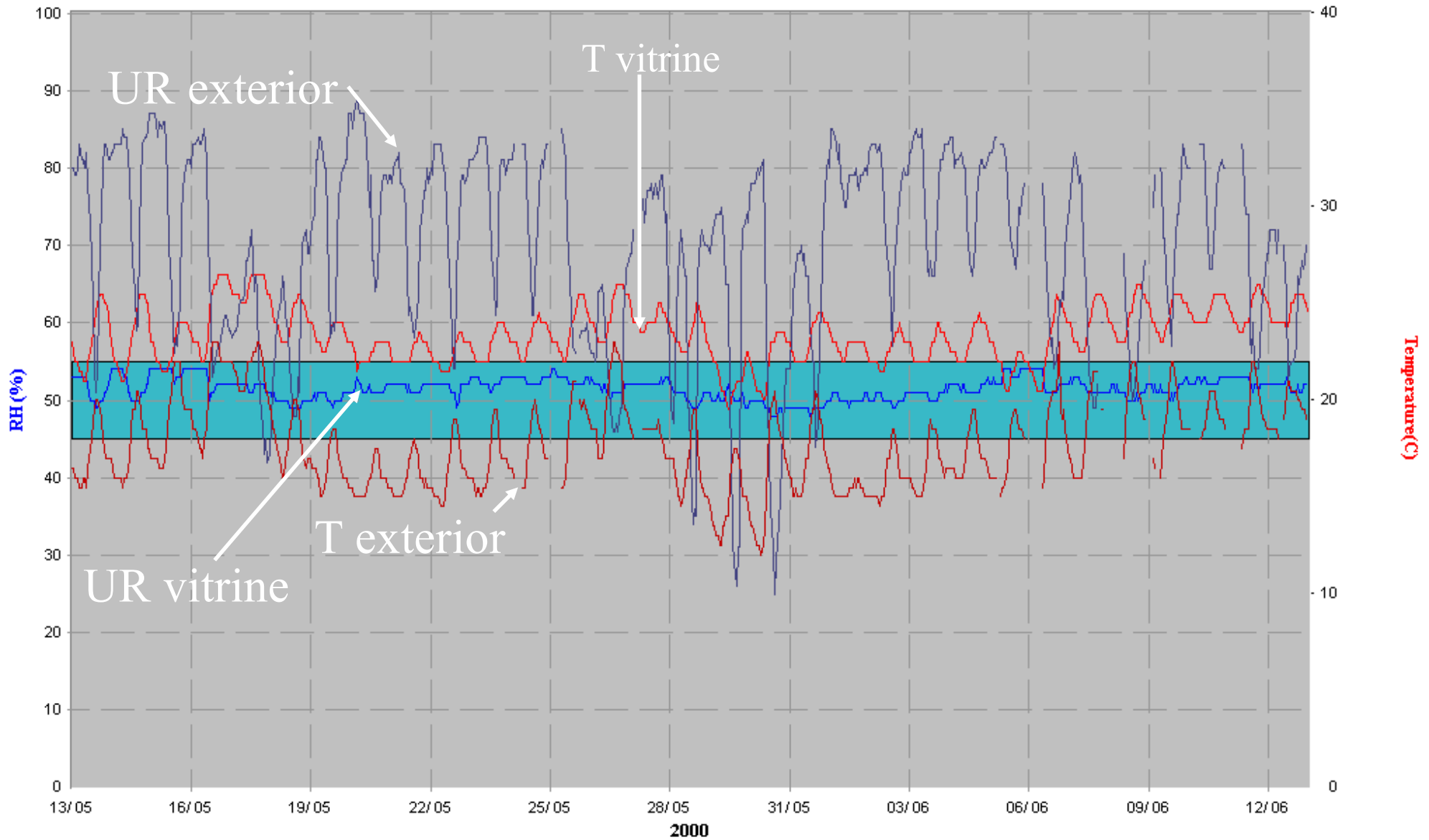
Baroque module



SHOWCASE WITH A BRAZILIAN MODERNIST OIL PAINTING

AR CONDITIONING UNIT WITHIN THE SHOWCASE

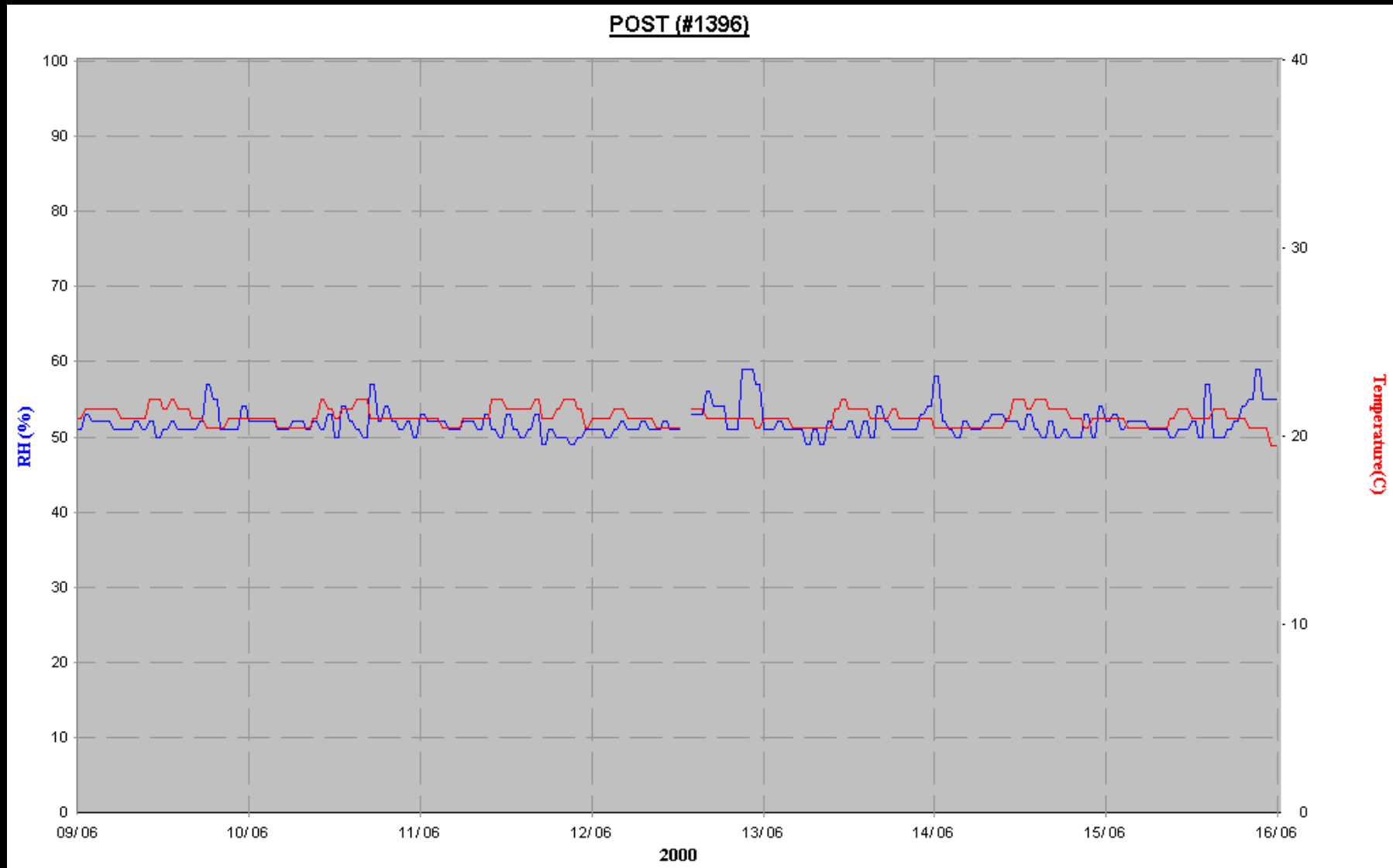
GLASBAU HAHN CASE



LETTER OF PERO VAZ DE CAMINHA – OWNER REQUIREMENTS: RH = 50 +/-5%, T = 20 – 25 C

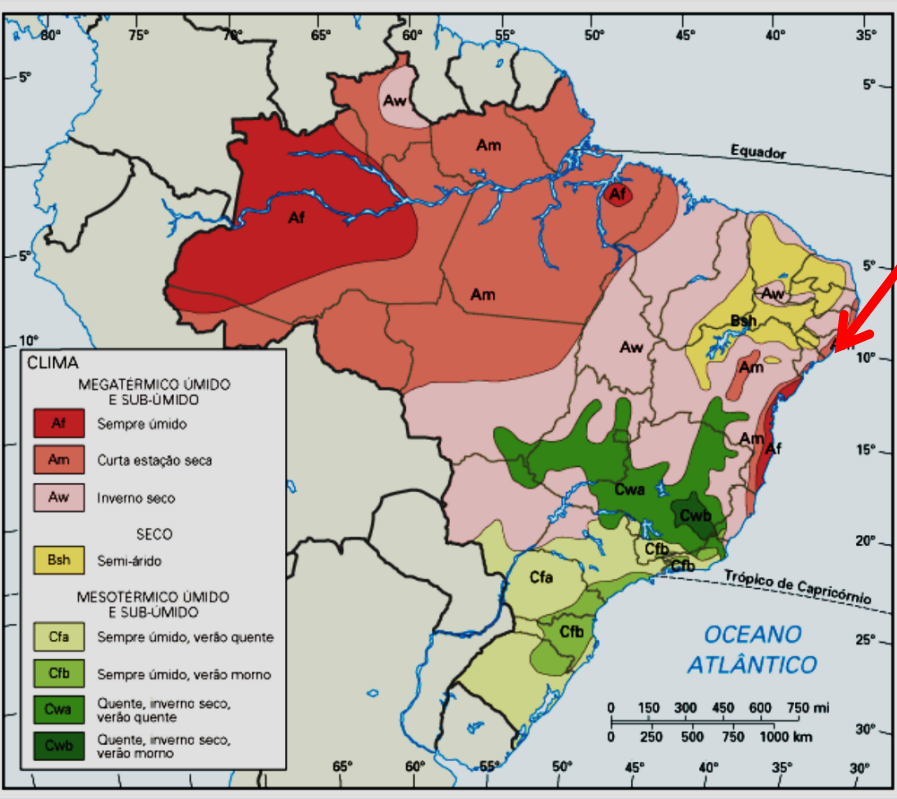
Exhibition Brazil 500 years

São Paulo, April – September 2000



The View from Abroad – Franz Post oil painting

HVAC module for the whole space



RECIFE, BRAZIL

72% RH

New York City, USA



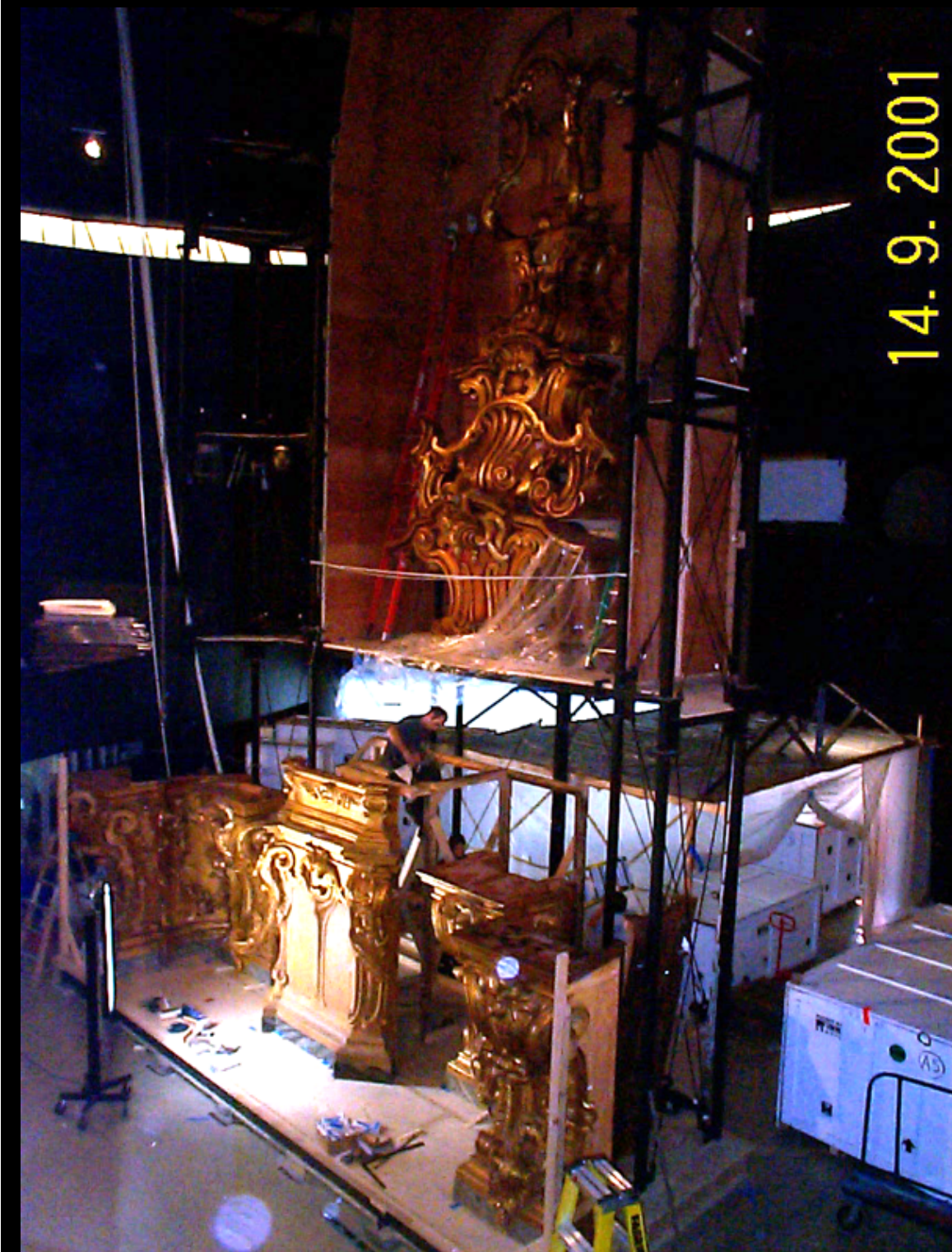
53% RH





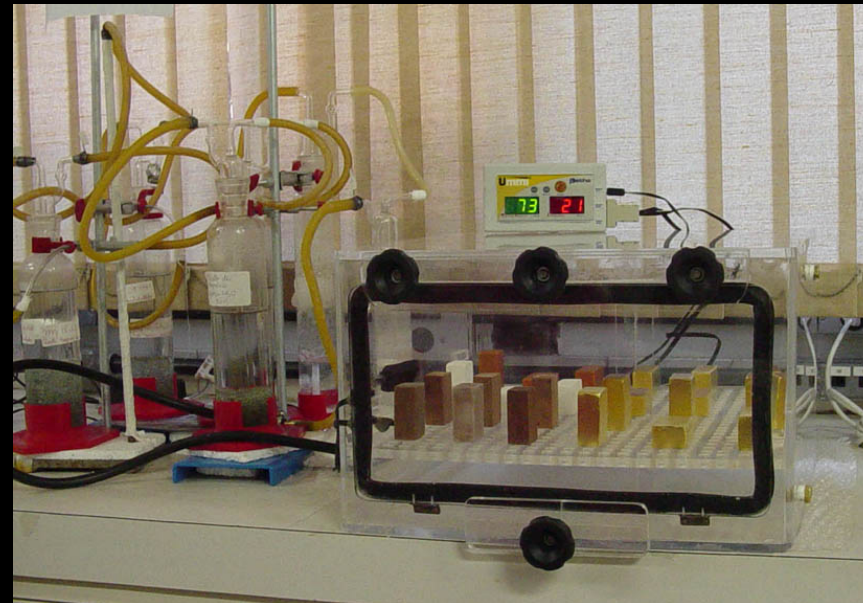
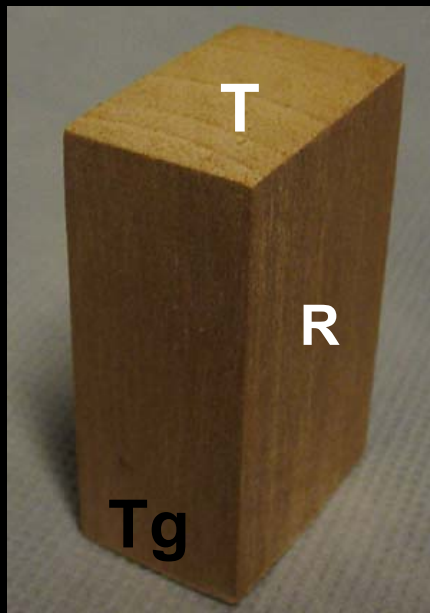
4. 2. 2002

14. 9. 2001



Exhibition/Return

1. Dismounting/Mounting
2. Packing/Unpacking
3. Transportation
4. Climate considerations



Rosado, Alessandra, - Dissertação de Mestrado – LACICOR – 2004, CONSERVAÇÃO PREVENTIVA DA ESCULTURA COLONIAL MINEIRA EM CEDRO: um estudo preliminar para estimar flutuações permissíveis de umidade relativa

Laboratório de Engenharia de Materiais - UFMG

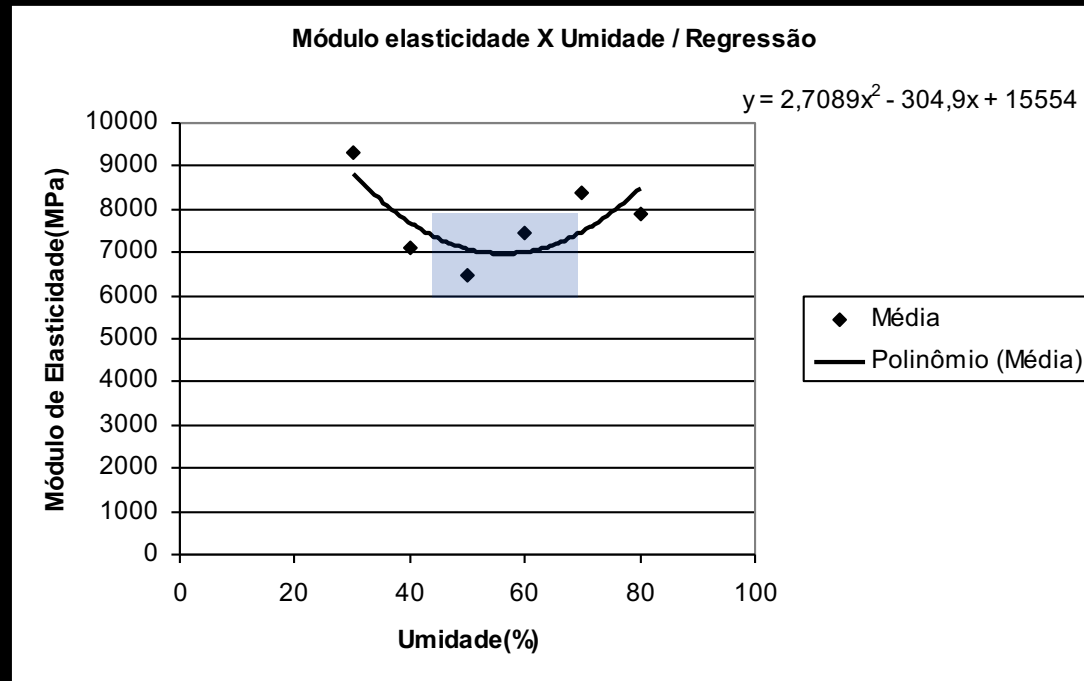


Gráfico 3 - Módulo de elasticidade do cedro

30% 40% 50% 60% 70% 80%



45% a 65%: ZONAS DE ESTABILIDADE

The Climate Control and Parameters Debate

Due to:

- Economic reasons: rising cost of energy
- Sustainability issues: energy savings, carbon footprint, preservation of the environment
- New research;
- Interdisciplinary research and **more realistic approaches**
- Experience based decisions: **conservator's input**

The World Museum community is effectively,
but slowly,
adopting **more flexible and locally adapted**
RH and T fluctuation parameters

A climate rule promoted or ratified by large associations

1999 ASHRAE Museums, Galleries and Archives (and Libraries) chapter: AA, **A**, B, C, D 50% ± 5%RH

2009

International Group of Organizers of Large-scale Exhibitions (Bizot)

National Museum Directors' Conference

American Institute for Conservation

Association of Art Museum Directors

ICOM – Conservation Committee

International Institute for Conservation

2014 40% to 60% RH; 16 °C to 25 °C

All have clauses for: 1. conservator approval, 2. use of microclimates

Environmental Guidelines – IIC and ICOM-CC Joint Declaration Hong Kong and Melbourne, 2014

ICOM-CC
17th Triennial Conference

**Environmental standards for exhibition and
Storage in museums**

Julian Bickersteth
Luiz Souza
Sarah Staniforth

Room: Plenary Hall 1 Chair: Vinod Daniel

Artist: Dhruvawarr Marika, photo courtesy of Rico Adjrún



Julian Bickersteth
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Artist: Dhruvawarr Marika, photo courtesy of Rico Adjrún



Environmental Guidelines – IIC and ICOM-CC Joint Declaration Hong Kong and Melbourne, 2014

← → ↻ 🏠 ⓘ www.icom-cc.org/332/-icom-cc-documents/declaration-on-environmental-guidelines/#.V_6irJMrJPM ☆ 13



International Council of Museums - Committee for Conservation

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Environmental Guidelines IIC and ICOM-CC Declaration

At the IIC congress in Hong Kong and the ICOM-CC conference in Melbourne in September 2014 the delegates discussed and agreed the following declaration:

The conservation profession has come together and agreed a position on environmental guidelines as follows:

Sustainability and management

- The issue of museum sustainability is much broader than the discussion on environmental standards, and needs to be a key underlying criterion of future principles.
- Museums and collecting institutions should seek to reduce their carbon footprint and environmental impact to mitigate climate change, by reducing their energy use and examining alternative renewable energy sources.
- Care of collections should be achieved in a way that does not assume air conditioning (HVAC). Passive methods, simple technology that is easy to maintain, air circulation and lower energy solutions should be considered.
- Risk management should be embedded in museum management processes.

Museum environment

...acknowledged that the issue of collection and material environmental

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RH and T requirements must be based on the objects materials, history and vulnerabilities

Regional and local climate historic must be respected

Climate varies, so as the object's requirements

International Loans

RH and T requirements must be based on the objects materials, history and vulnerabilities

Regional and local climate historic must be respected

Climate varies, so as the object's requirements

National Loans

RH and T requirements must be based on the objects materials, history and vulnerabilities

Regional and local climate historic must be respected

Climate varies, so as the object's requirements

Loans

Two way problem(dry - humid)

Mutual Respect

Requirements and obligations from both sides

Flexibility & **knowledge**

Dialogue

Openness

Before we move to Willi's part of the presentation

- The owners or their representatives
(curators, architects, other museum professionals),

sometimes

may NOT REALLY know what they want – or what the object needs;

- Experience and dialogue counts, indeed;

- Trained and Qualified **Conservators** must be **ACTIVE**
professionals in the exhibition organization, planning and execution