

TERENA Networking Conference and CARnet Users Conference 2003

A Grid for Culture

Zagreb
19 May 2003

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Maastricht McLuhan Institute



1. Technology
2. Scanning
3. Context
4. Universals and Particulars
5. Alternative Perceptions
6. Creativity



Technological Developments



Internet Size

7 million new pages per day

2.1 billion pages on surface web

550 billion pages on deep web



Millions of users

1995 5

2000 200

2003 650

2004 940



	2002	2003
English	40%	35.2
Chinese	9.8%	11.9
Japanese	9.2%	10.3
Spanish	7.2%	8.1
German	6.8%	6.5
Korean	4.4%	4.2
French	3.9%	3.3
Italian	3.6%	3.8
Portuguese	2.6%	2.8
Dutch	2.1%	1.9
Russian		2.7



2003

English 35.2

Chinese 11.9

Japanese 10.3

Korean 4.2

Russian 2.7

29.1

Spanish 8.1

German 6.5

French 3.3

Italian 3.8

Portuguese 2.8

Dutch 1.9

26.6



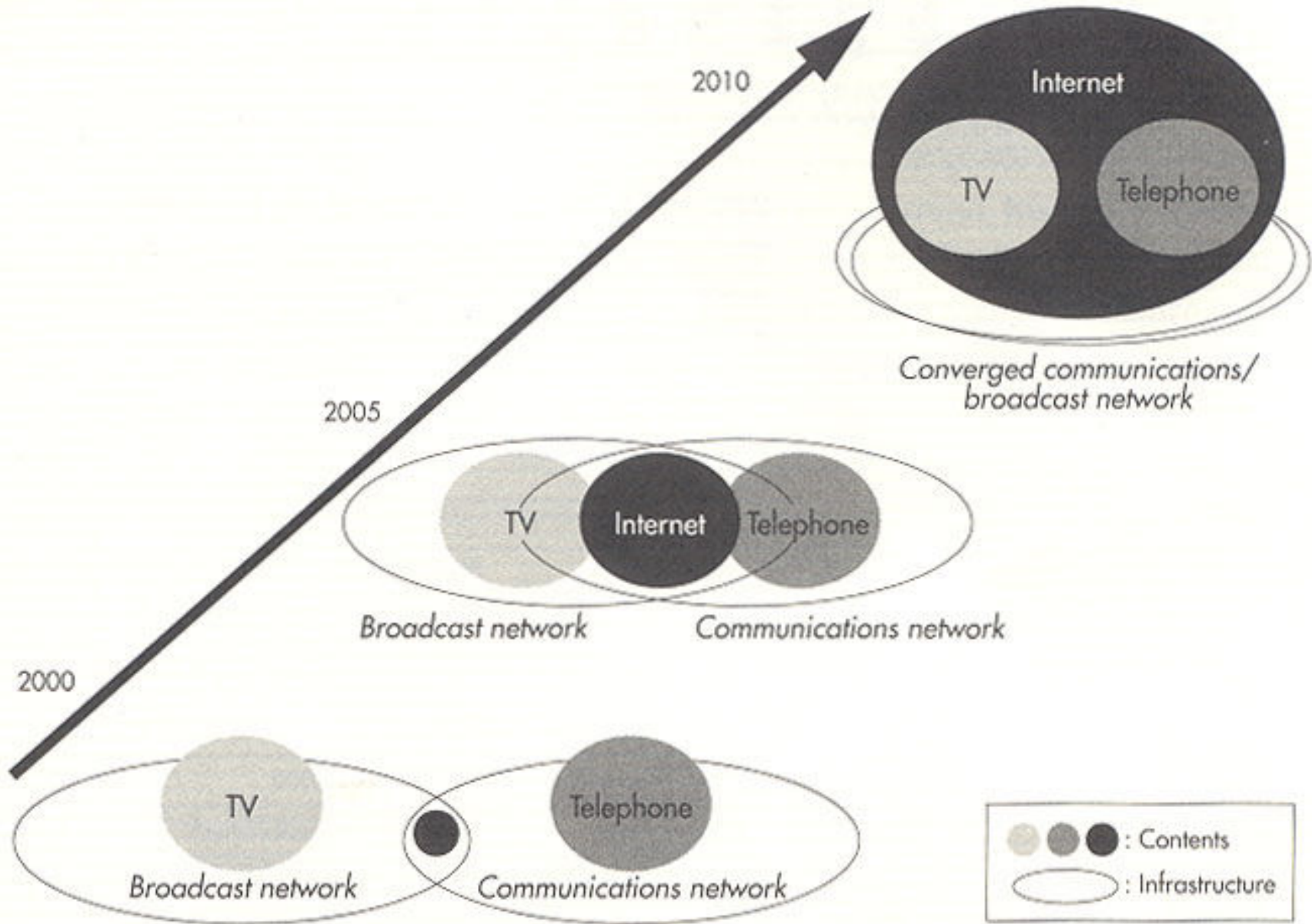


Figure 3. Advancement of network convergence through Internet content

Internet, Broadcast, and Telecommunications Networks



Japan Virtual Reconstruction of Temple, PDA and Nokia Cell Phone



Philips Pre Ambient Intelligence



Philips Ambient Intelligence



Ambient Intelligence Philips

Possible Nanocomputer Technologies

Electronic

*Most promising--
builds upon
existing infrastructure
for microelectronics;
some prototype devices
exist*

Biochemical or Organic

Recent advance
by L. Adleman
at USC--DNA
computation solves
NP-hard problems.

Mechanical

Well publicized
work of Eric Drexler
and Ralph Merkle
proposes miniature
Babbage engines.

Quantum

Technology of the
far-distant future
proposes a
"natural"
massively parallel
computer that takes
advantage of
quantum
interference
-proven able to
crack existing codes

**Topic of MITRE
Review Article
and Modeling
Research**

1gramme of dried DNA can hold as much information as 1 trillion CDs.

DNA takes shape, BBC News ,12 January 2000

Internet Developments

Ambient Intelligence means that every object of culture can have its own “computer” which helps describe its own history.

The Changing World of Scanning



Books are being scanned in at

767 MB per page

1/2 Terabyte for Gutenberg Bible



Fugit epistola ad Pauli
nu presbiteri de omnibus diuine hel
tate libris. Capitulum xxviii.

Tace ambrosius
na michi manifesta
la profecto. Deuote
litas: que a poci
ppia amicitia hie
probat iam hie et ueris amicitie
piterbant. Hec eni illa necessitas e
et epi glunio copulata: qua no uili
tas et familiaris. non ptemo ranti
corpore no subdola et palpas adula
sed dei uinque et diuinau scipuerat
studia conuolant. Regum in ueris
historijs quosda lustralle punitas
nouos aditit ipso. maria trallit
ur eos quos et libnq nonet: coram
q uident. Sic ptagoras mnyph
nos uero. sic plato egypum. et archi
tam ramentu. tamq ora ytalie. que
quosda magna grecia dicitur: labo
rosissime petagoras ut qui athenis
mte epi. et potens cuiusq doctan ad
archademe gignala psonab dr. hie
pregenus atq; discipulus: malens a
lira uerande dicit: q; sua impu
dente ingere. Deniq; eum literas
quali toto cobe fugiens persequitur
atq; a picanis et uenidome. oran
to crudelissimo parat. diutus capi
uis unat et seruus: tamet quia phi
losofhus: malat emere se hie. ad e
uuntiuu. ladro eloquentie fonte ma
namus. de uelamo hispanie galliaru
q; hiebus quosdam uenisse nobiles
leguntur: quos ad contemplationem
sui comia non traxer: uanis homi
nis fama produit. Hieuit illa reo
inductum omnibus seculis. celebru
dumq; miraculum: ut uelam raram

ingressi: aliud eera uerem queream.
Appuloru? hie ille mag? ut uulgus
loquunt. hie plus ut pitagora ita
dunt. inuuit plas. p ratiue ricalu
albano. foitbas. maffigras. opu
lentissimo uidit regna pteruuit: et
ad pteruuit lantimo phison anue
tissimo puenit ad bragmanas: ut
hyerem in throno fedant auro. et
ricali font potantem. inter paucos
discipulos. de uapora. de morib; ac de
nectu dicit et hieci audire doctem.
Hie p riamas. habitonios. chalt
os. medos. allicios. particos. hro
phentes. arabro. palestinos. reu
lus ad alexandria. pterit ad ethio
pian: ut gignoslophitq; et famofilli
nam solis uerfam uidere i solulo.
Inuenit ille uir ubiq; quod dicitur:
lenq; uoluntis. conper se uelut hie
ret. Hecipit sapre hoc ptem hie cito
uoluntibus. phiditatus. **II**

Quid loquar de seculi hominibus:
cum apostolus paulus uas e
lectionis. et magister gentium. qui de
consuetudine tam in se hospino loque
batur. dicens. In epetuumum que
rino eius qui in me loquunt celtus
post donatum arabidq; lustram
noscende iherosolimā ut uideret petu
et maffice apud eum datus quindat
Hec enim uirtus rhdomadis et o
gdadis: hanc? germani predicatoe
mteuribus reat. Rursumq; post an
nos quam iordem assumpto barna
ba et xpo. opposuit eum apostolis ni
augustinum: ne forte i uatuum rerece
aut cucuisset. Hiebet uelao quid la
tendis rerege uir uocis adus: et in
auro discipuli de audoris ore man
fisa: hie? lonat. Unde et eluino cu
rodi epularet. et legret illa uenotio





Incipit epla sci Jeronimi p ad Pauli
nu presbiteru. de omnibus diuine his
torie libris. Capitulum Primum:

Pater ambrosius
tua michi munuscu
la perferetis. Detulit
siml 7 suauissimas
litteras: que a prin
cipio amicitiaꝝ fide
probate iam fidei et veteris amicitie
pferebant. Vera etu illa necessitudo e.
et xpi glutino copulata: qua no utili
ter se familiaris non asertis tantu

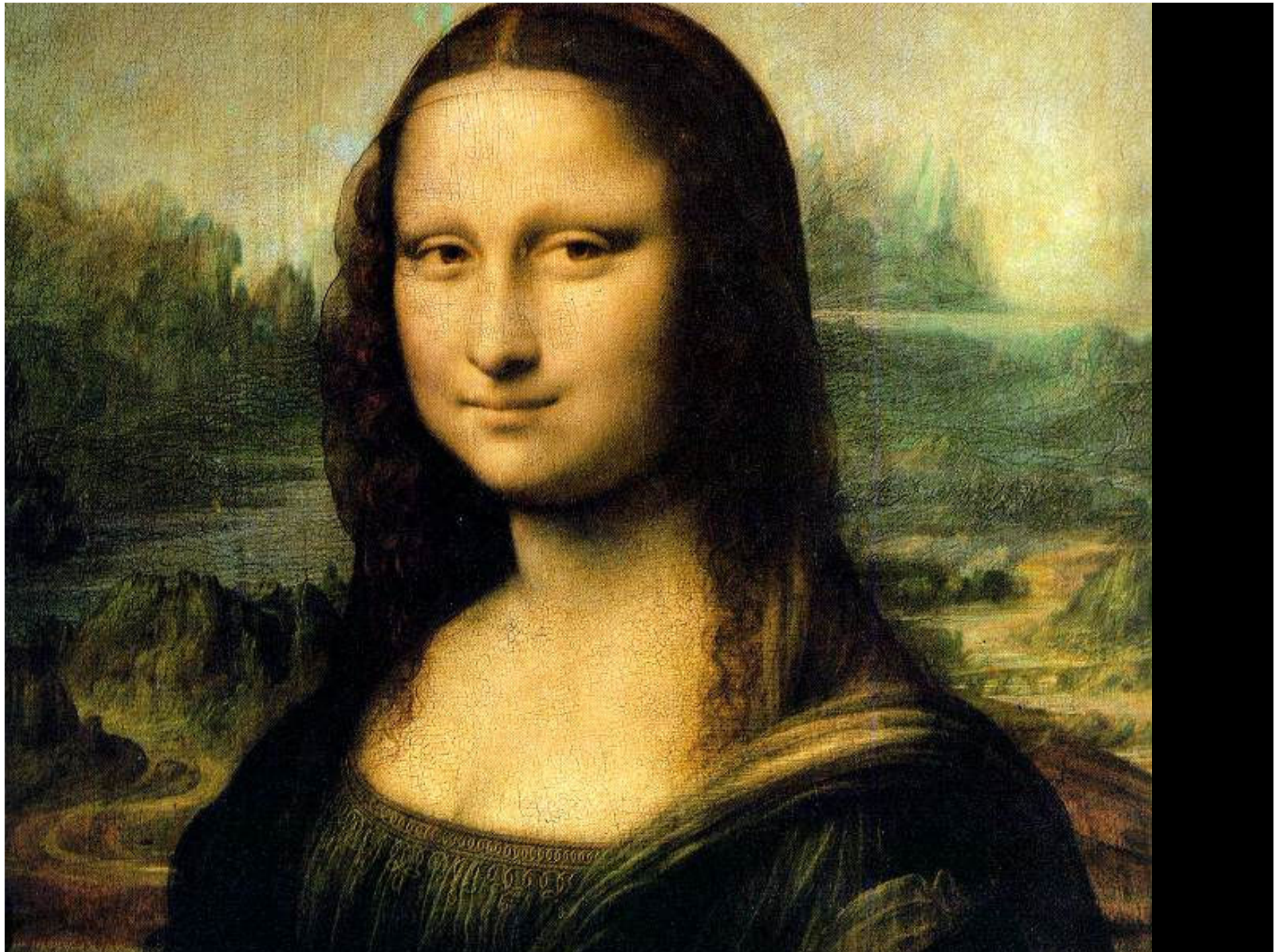
ingressi:
Appollo
loquitur.
dunt. ite
albânos
lentissima
ad extrem
transmisso
hyarcam
tantali fo
disciplos
cursu die
Audet el

Paintings are being scanned in at

30 GB each

in the CRISATEL project (C2RMF)







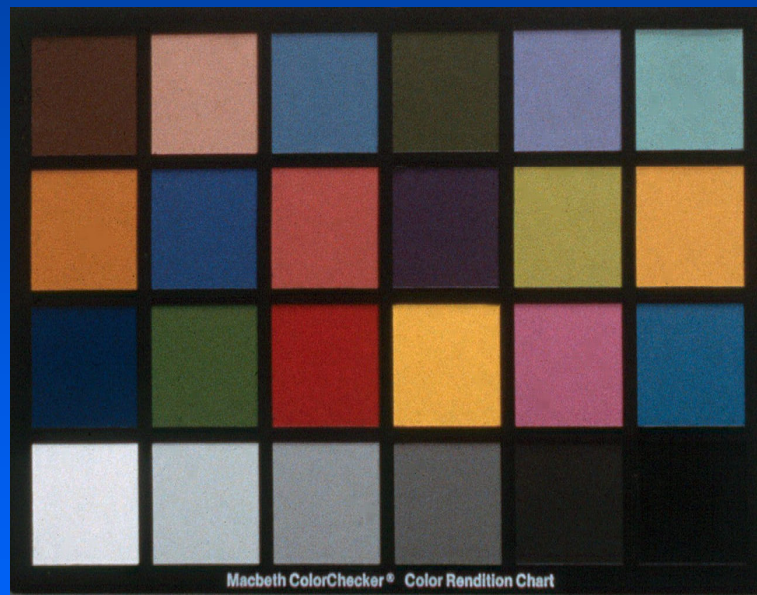
the Thomson flat scanner developed in 1990

140,000 photo-archives
digitised in
6.000 dots x 8.000 lines
in 5 years (1996-2001)

Conservation Restoration Innovation Systems for
Image capture and digital Archiving to enhance
Training Education and lifelong Learning



The first MacBeth colour Chart



The new Macbeth chart



A Polynesian object at the Liais museum in Cherbourg

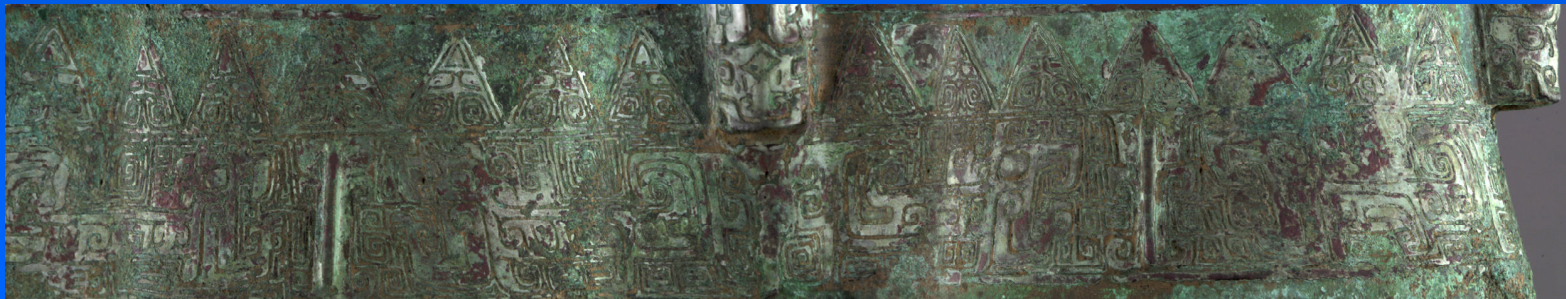




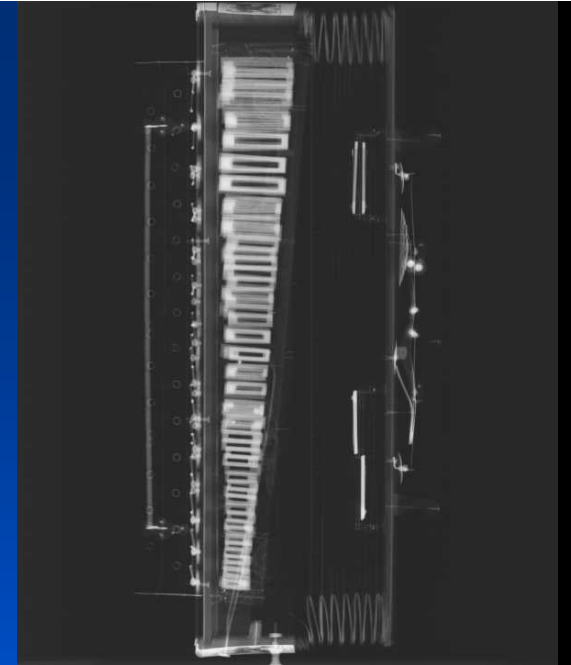
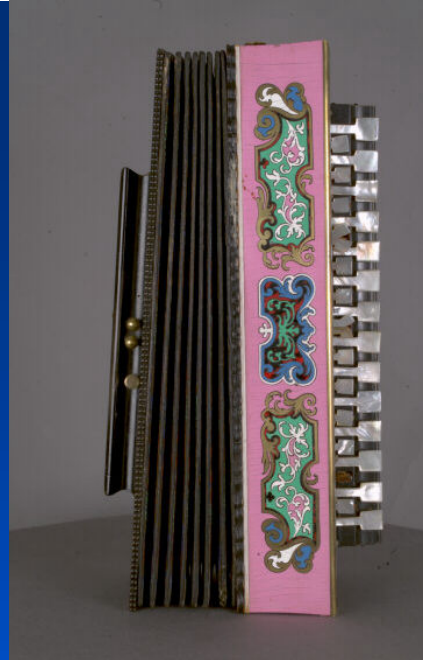
Chinese bronze vase conserved
at the Guimet museum in Paris



24 images per rotation



Computer rebuilding of the engraved design
all around the upper part of the vase



accordéon

Music instruments conserved at the
music museum in Paris

X ray digital moving pictures
for an exhibition



calebasse

Books

Paintings

Reconstructions

1990

1

1 MB

10 MB

1995

100

100 MB

500 MB

2000

100

5 GB

500 GB

2003

767 MB

30 GB

5 TB

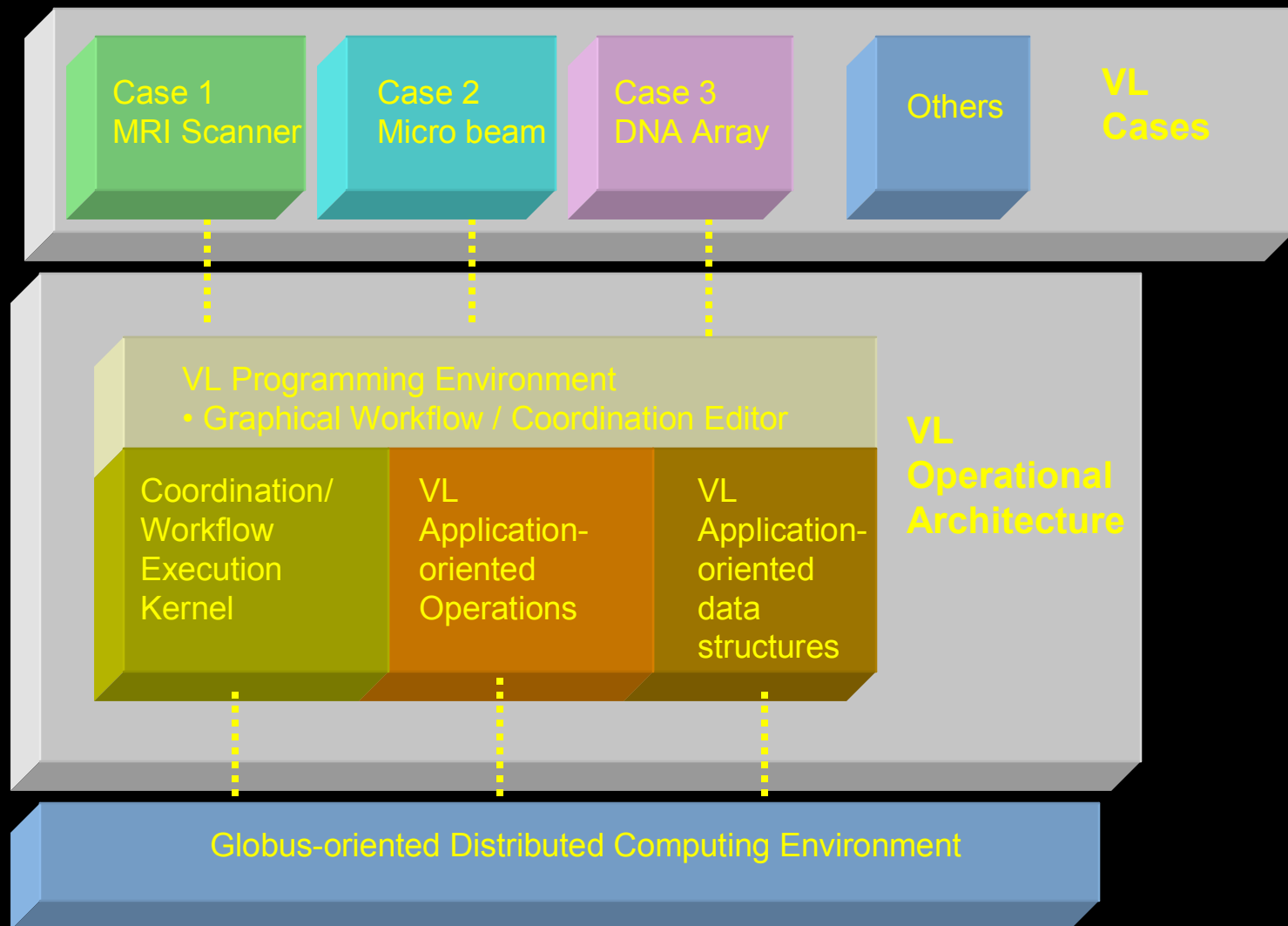


Restoration





Scientific Collaboration



Virtual Laboratory Operational Description FOM

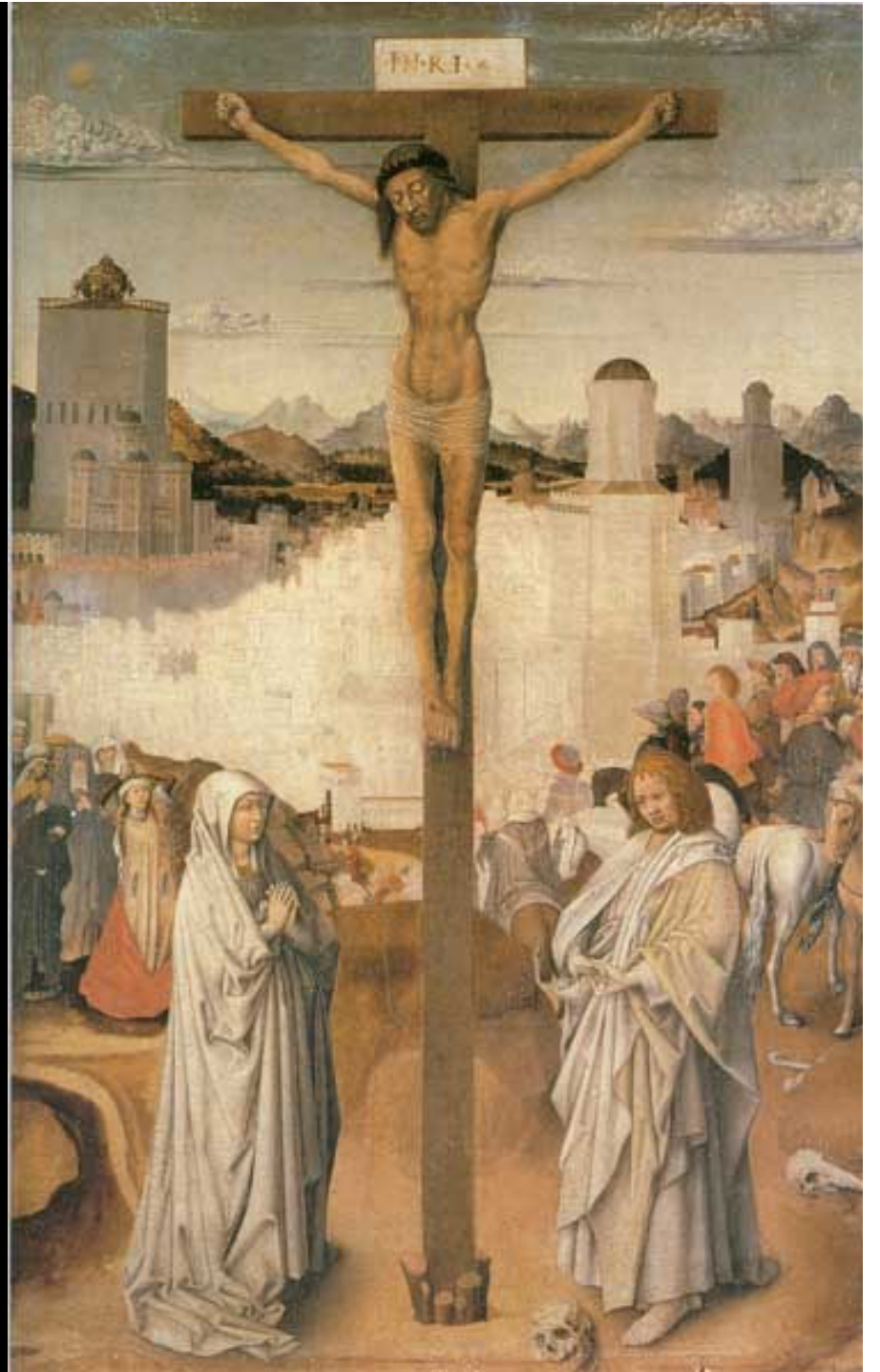
Contextualisation











INVENTAIRE
V. 18203

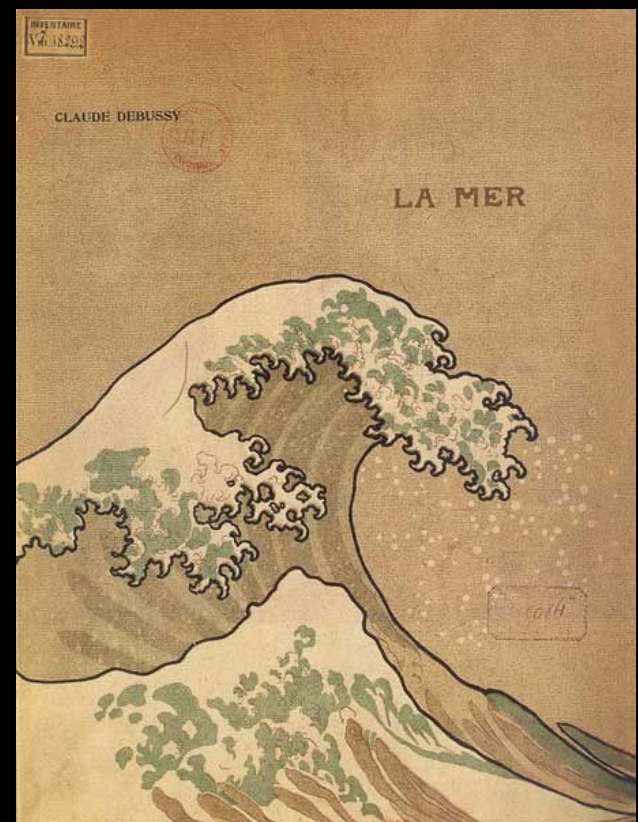
CLAUDE DEBUSSY



LA MER



1014





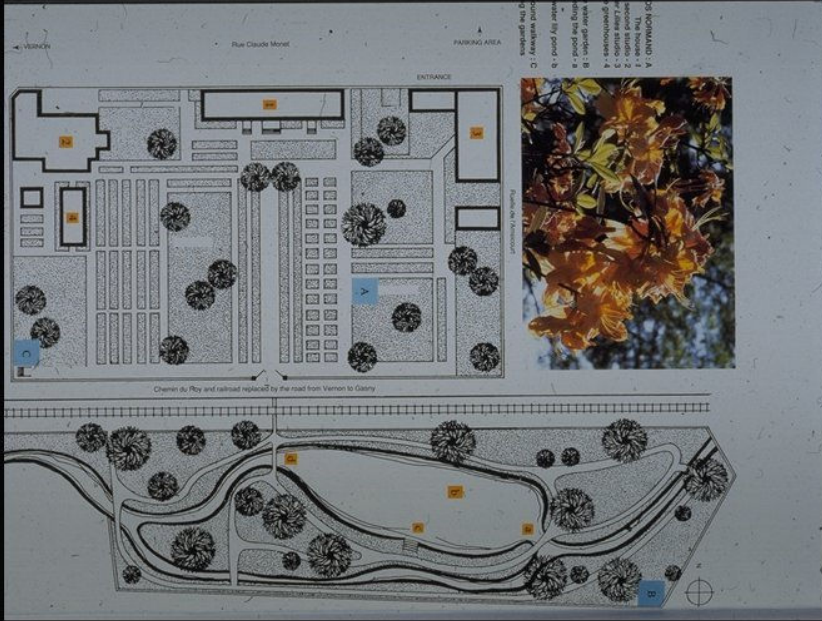


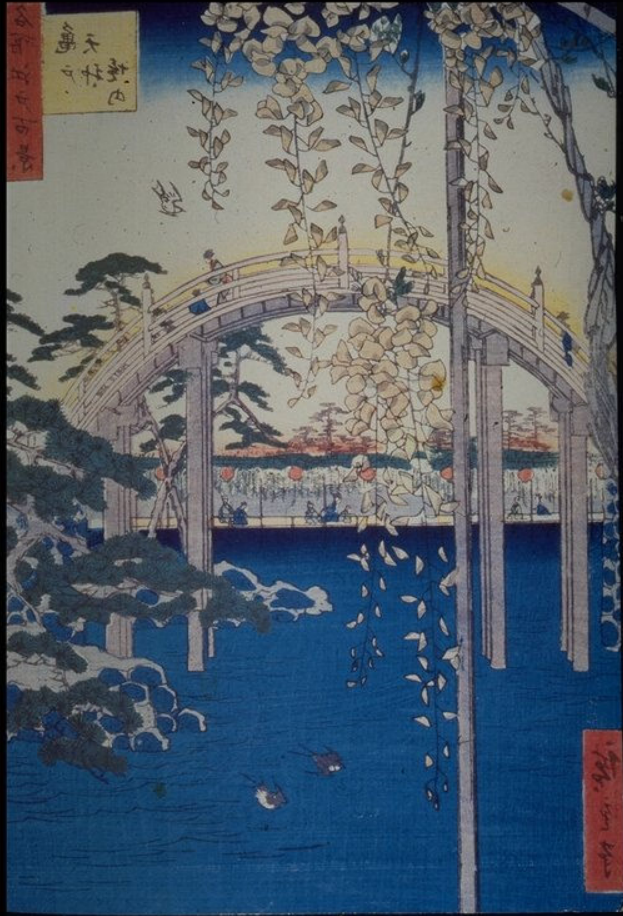
J.M.W. Turner 43

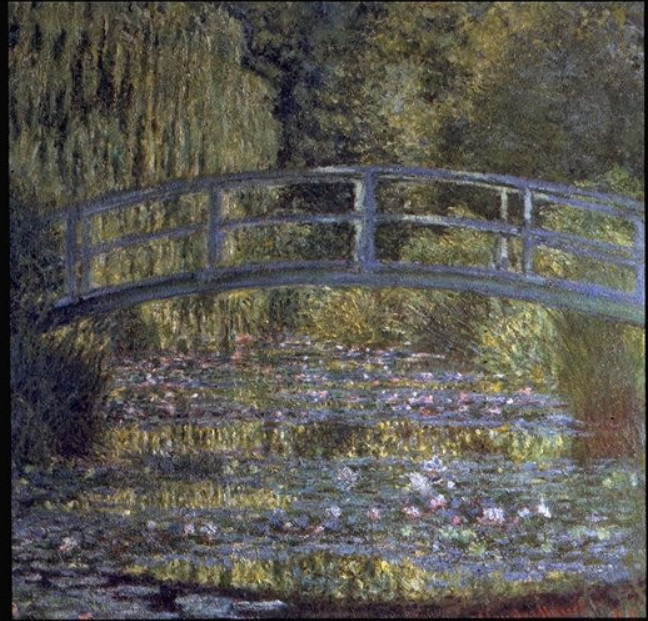


J.M.W. Turner 1844





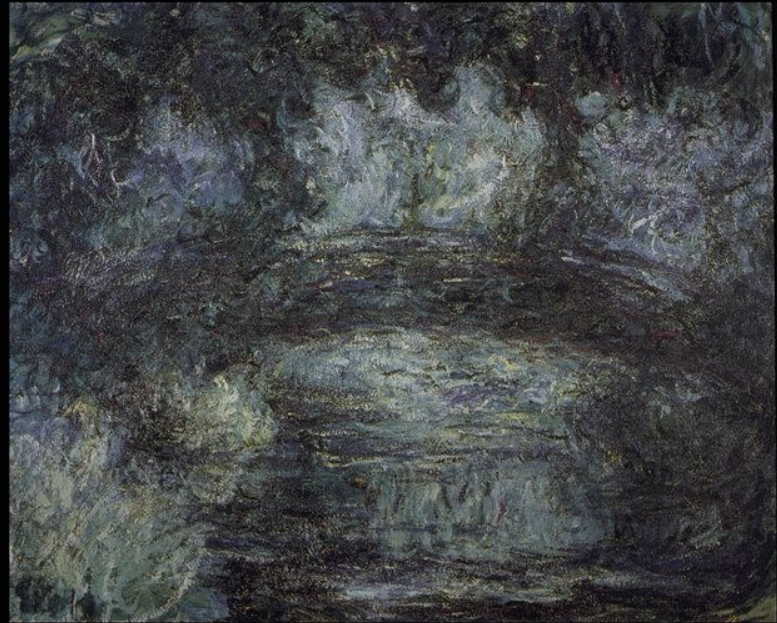


















Stanze Infobyte



Stanze Incendio nel Borgo Infobyte

Reconstructions





1993 Cluny IBM et ENSAM (Centre d'Enseignement et de Recherche, Cluny)



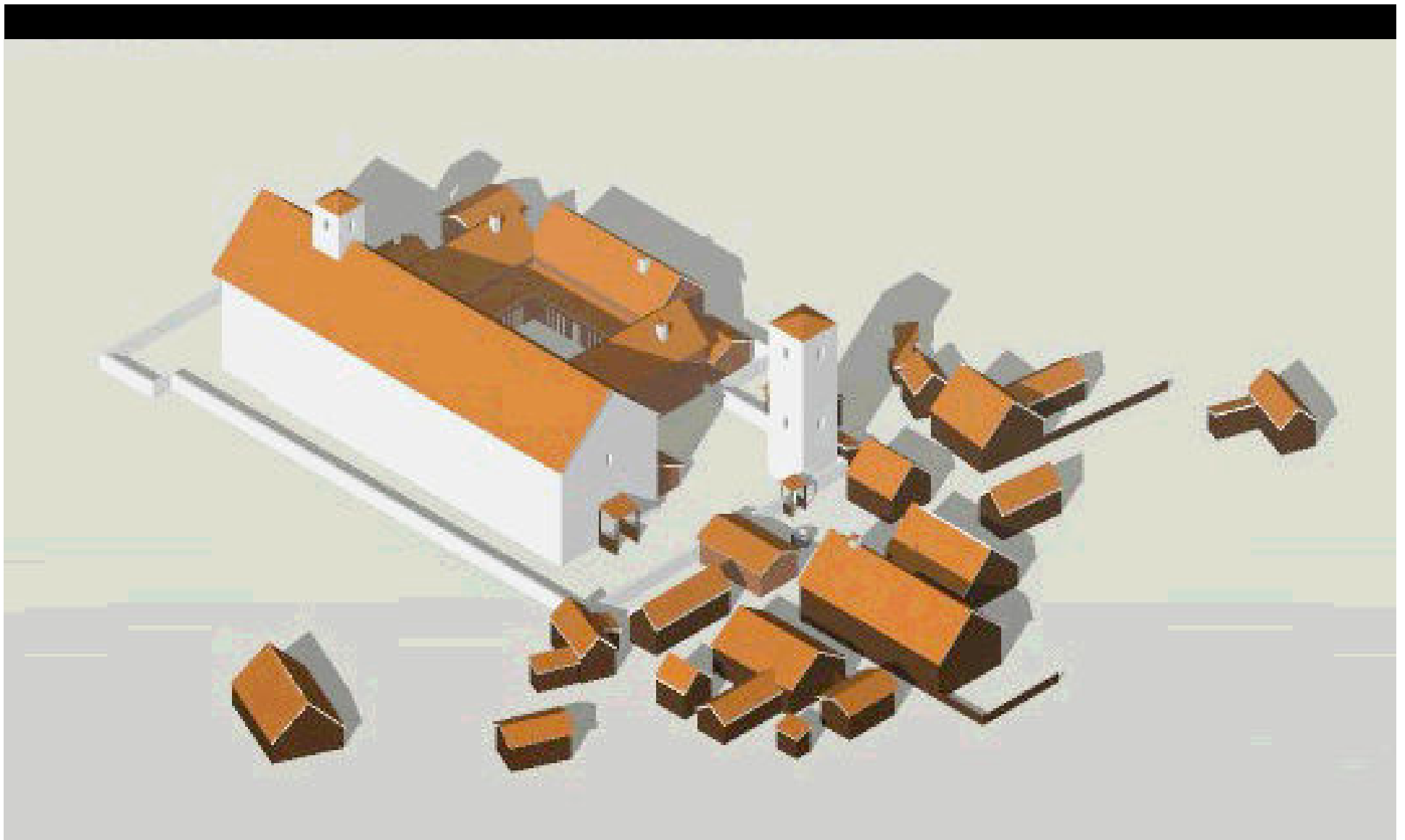
1993 Cluny IBM et ENSAM (Centre d'Enseignement et de Recherche, Cluny)



1993 Cluny IBM et ENSAM (Centre d'Enseignement et de Recherche, Cluny)



1993 Cluny IBM et ENSAM (Centre d'Enseignement et de Recherche, Cluny)



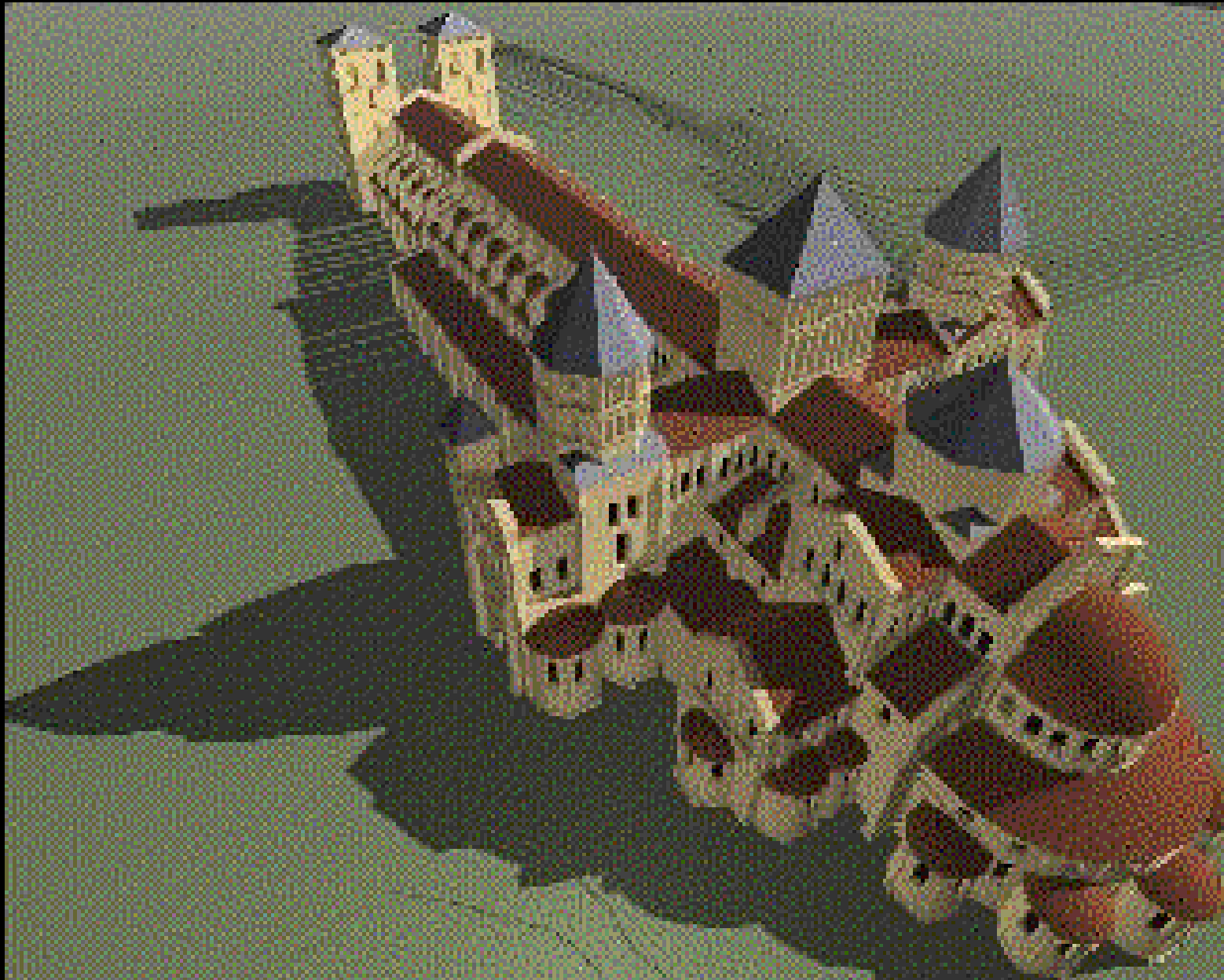
2000 Cluny I and II NÖ Landesregierung, Abteilung Kultur und Wissenschaft



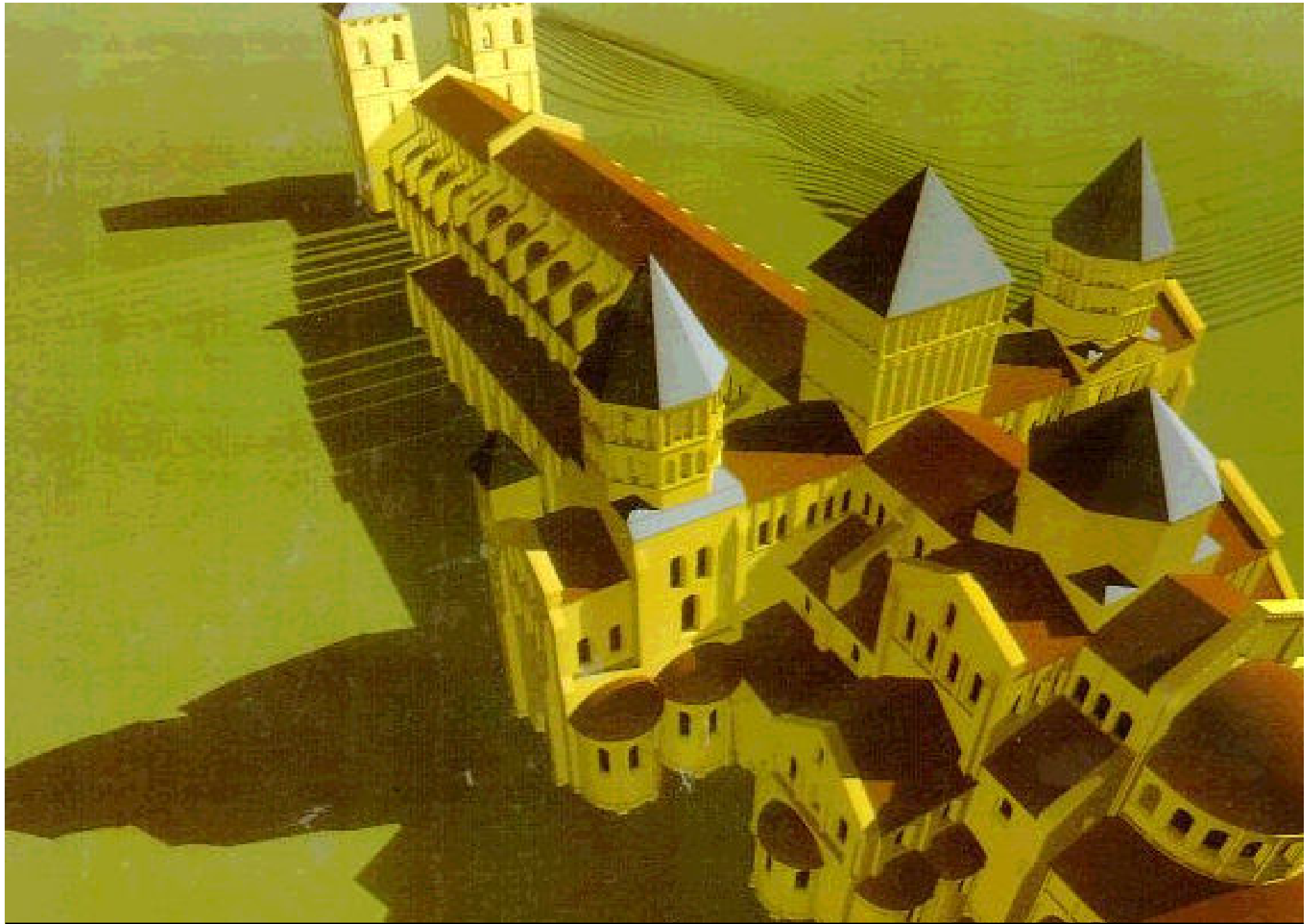
2000 Cluny I and II NÖ Landesregierung, Abteilung Kultur und Wissenschaft



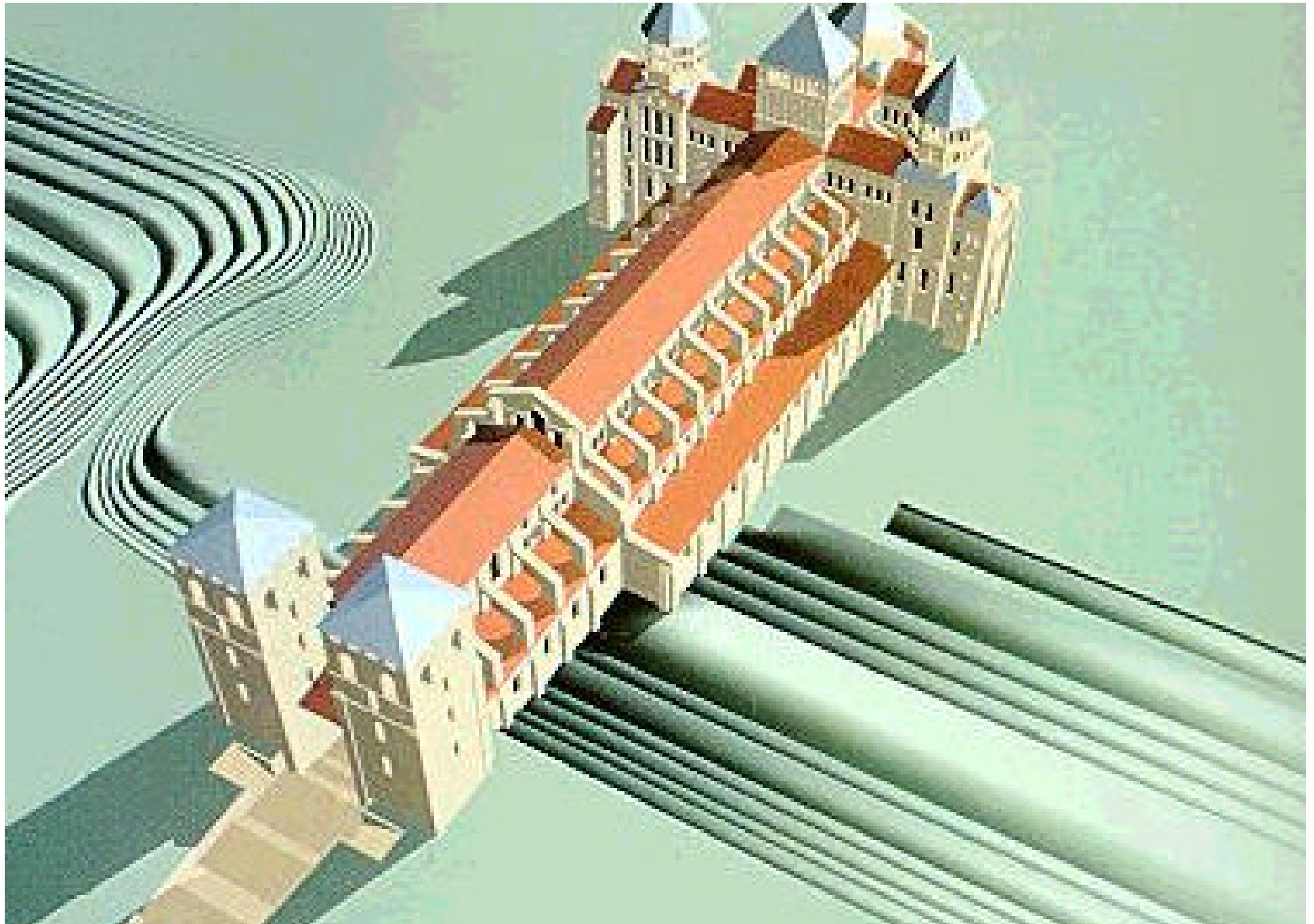
2000 Cluny I and II NÖ Landesregierung, Abteilung Kultur und Wissenschaft



1999 Cluny IV Technische Universität Darmstadt



1999 Cluny IV Walder & Trüeb

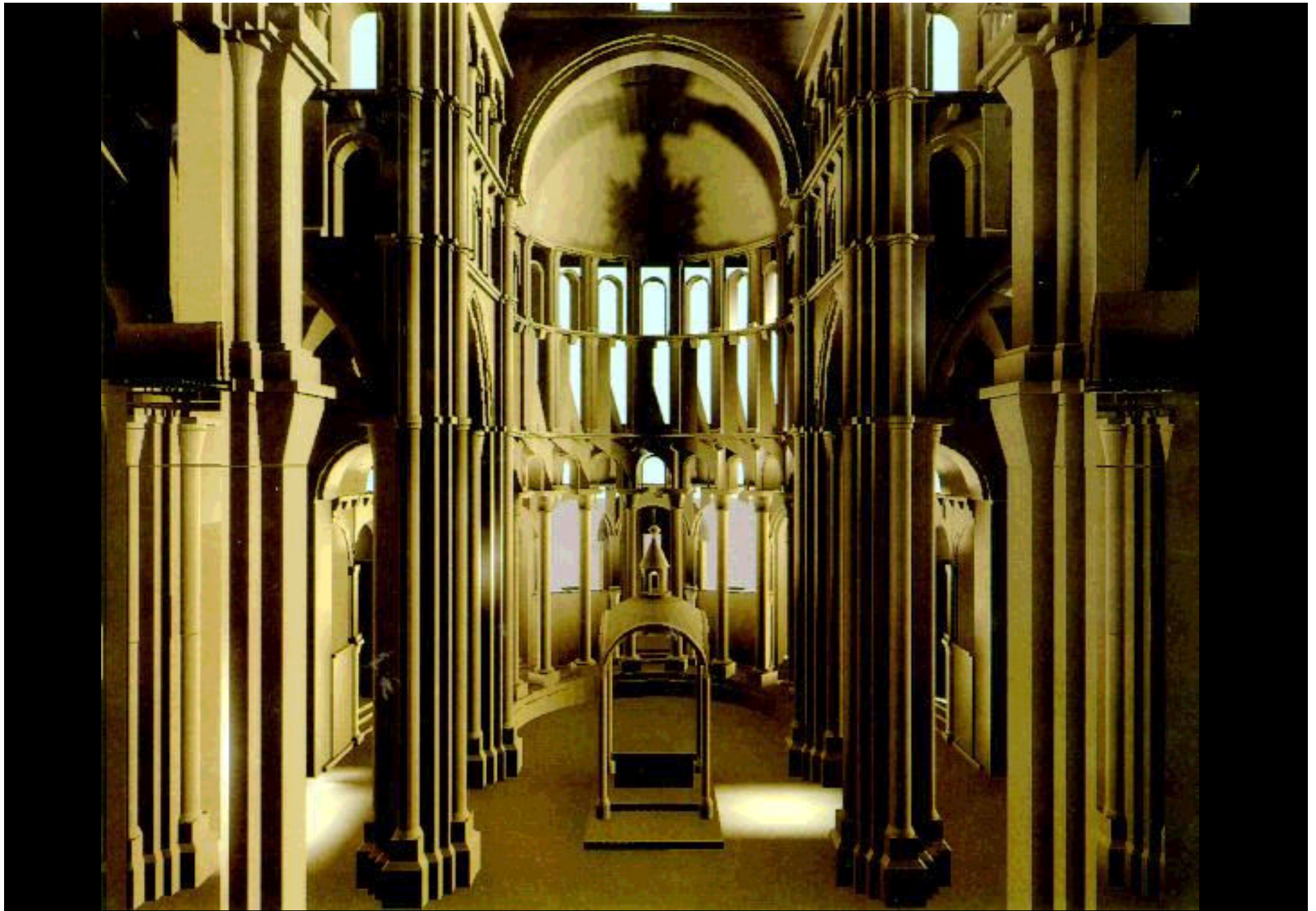


1999 Cluny IV Walder & Trüb

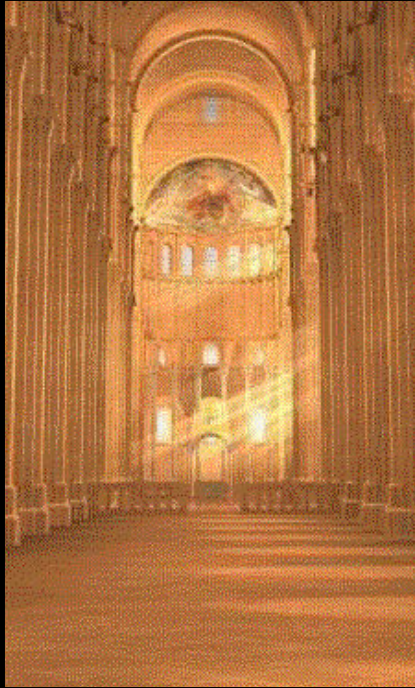


ny IV in Context

Walder & Trüb Engineering AG (RZW)



1999 Cluny IV Walder & Trüb Engineering



1999 Cluny IV IBM and Walder & Trüb Engineering AG (RZW)

Book

1. Book

2. References

3. Bibliography

Electronic Book

1. Book

2. References

3. Bibliography

4. Hardware and Software Parameters

Electronic Reconstruction

1. Demo

2. References

3. Bibliography

4. Hardware and Software Parameters

5. Authenticity and Veracity (Digital Watermarks)

6. Methodological Basis (Theory)



Museo Virtual de Artes El Pais (MUVA) See: <http://www3.diarioelpais.com/muva/>



Museo Virtual de Artes El Pais (MUVA) See: <http://www3.diarioelpais.com/muva/>



Museo Virtual de Artes El Pais (MUVA) See: <http://www3.diarioelpais.com/muva/>



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Museo Virtual de Artes El Pais (MUVA) See: <http://www3.diarioelpais.com/muva/>



Museo Virtual de Artes El Pais (MUVA) See: <http://www3.diarioelpais.com/muva/>



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Museo Virtual de Artes El Pais (MUVA) See: <http://www3.diarioelpais.com/muva/>



Museo Virtual de Artes El Pais (MUVA) See: <http://www3.diarioelpais.com/muva/>

Contextualisation of Space and Time





Mexico Pavillion Expo 2000 Hanover



Kyongju World Culture EXPO 2000, Virtual re-creation of ancient Sorabol

<http://www.sgi.com/features/2001/feb/kyongju/>



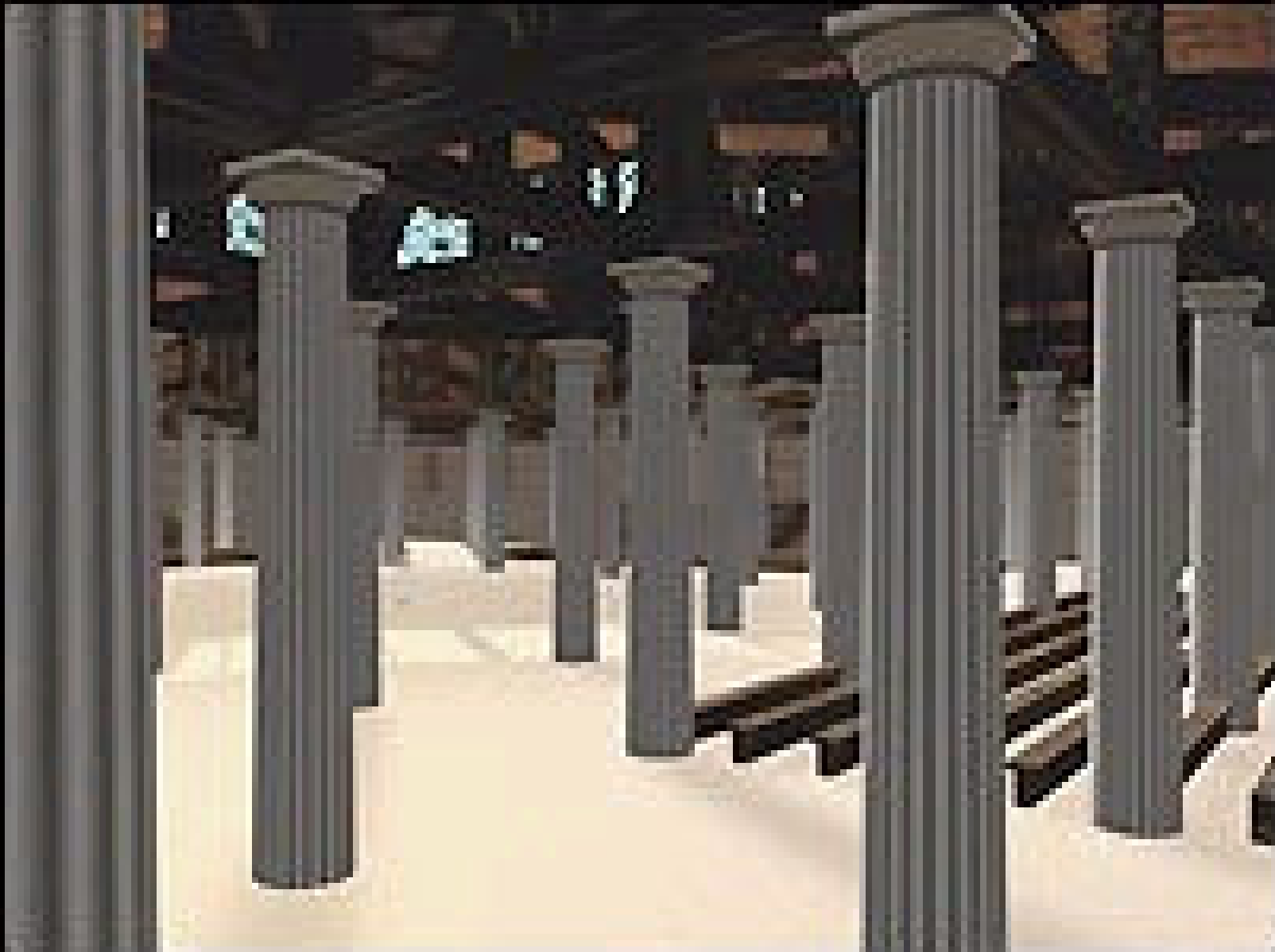
Arup Talao National Centre for Software Technology Bombay



Falun Ancient Mine Centre for Digital Interpretation



Warwick Project: Theatre of Pericles




Warwick Project: Theatre of Pericles

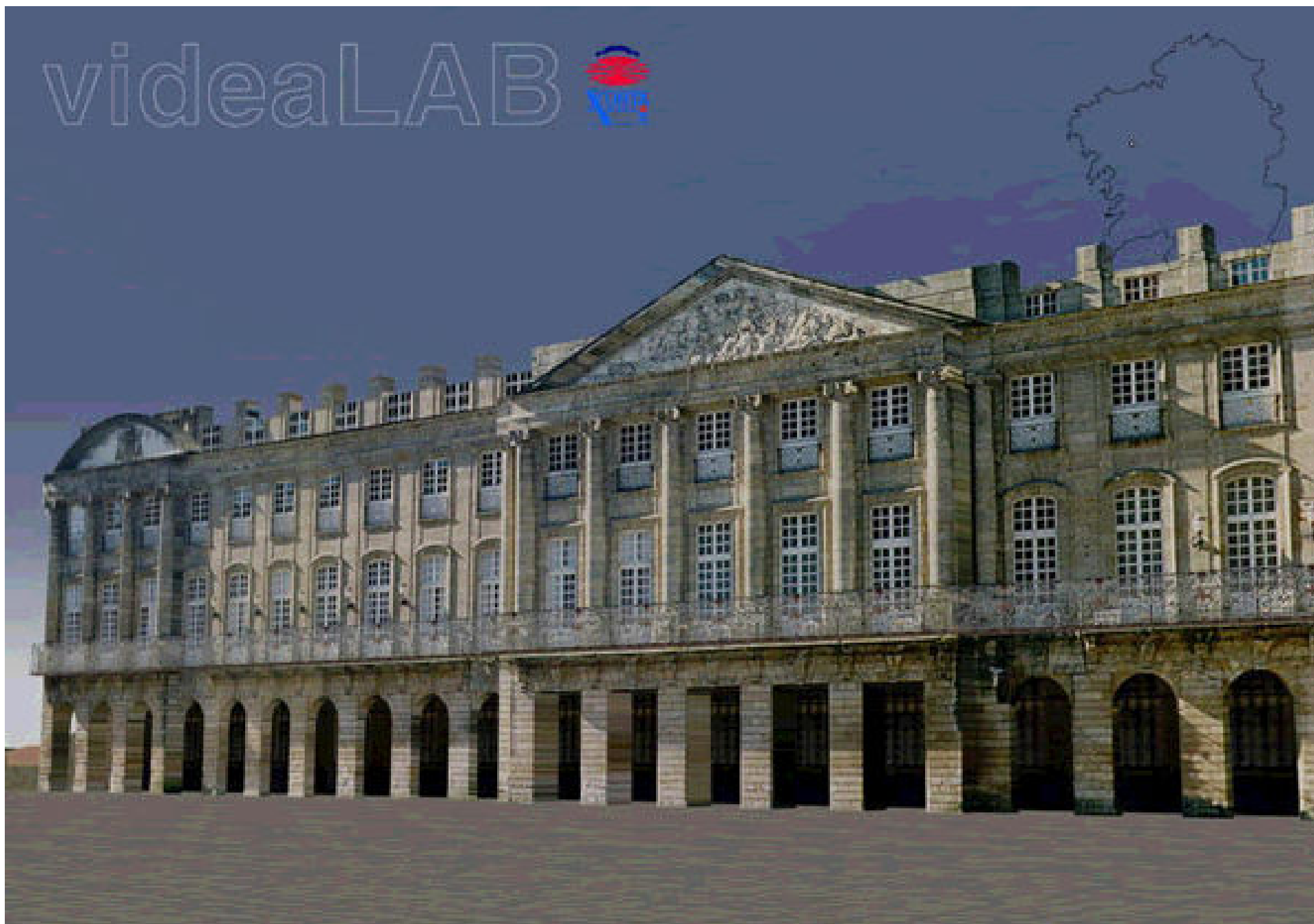


NUME University of Bologna



NUME University of Bologna

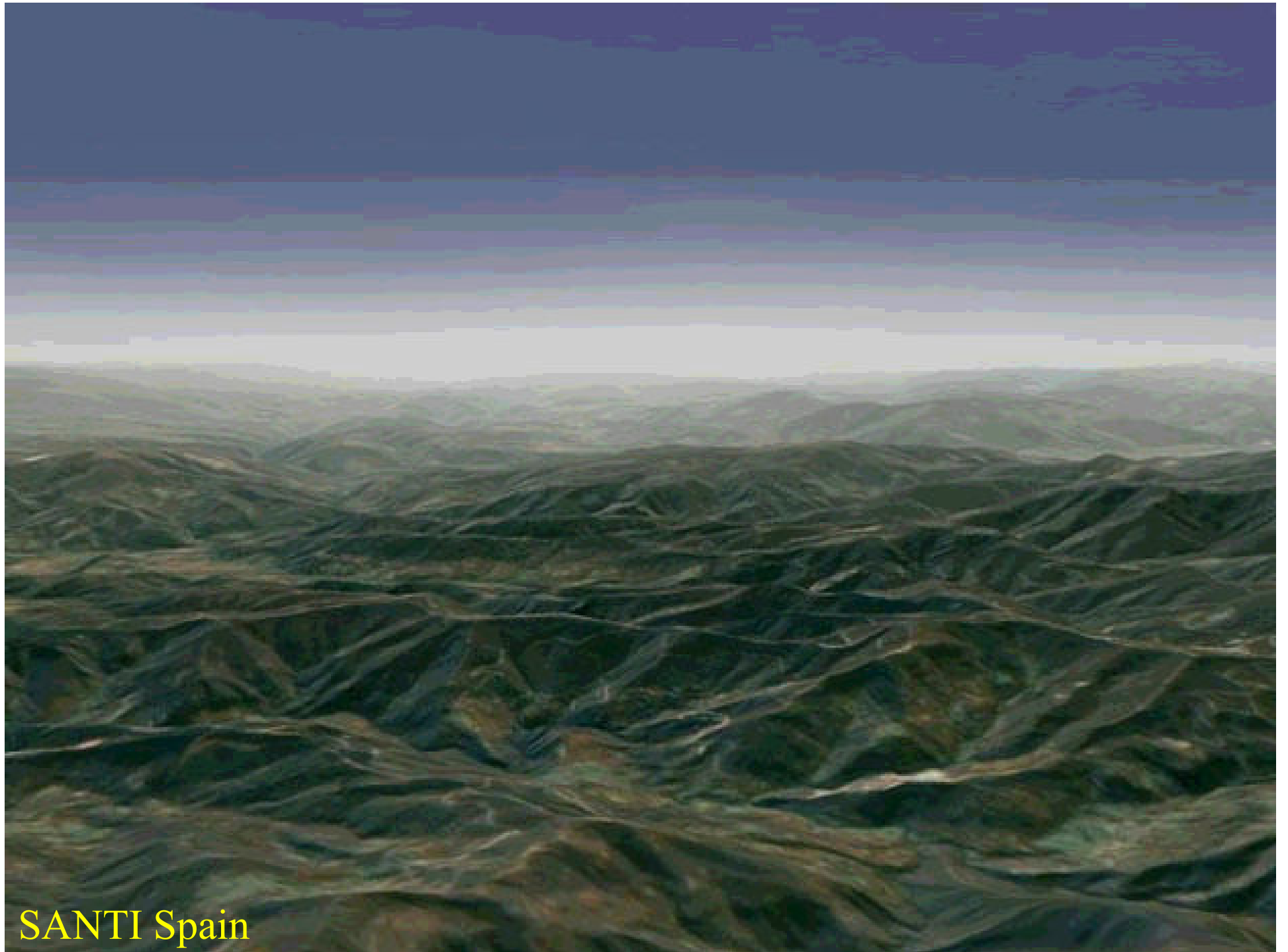
videaLAB 



SANTI Spain



SANTI Spain



SANTI Spain



SANTI Spain



Yellow Mountains White Cloud Stream Scenic Area

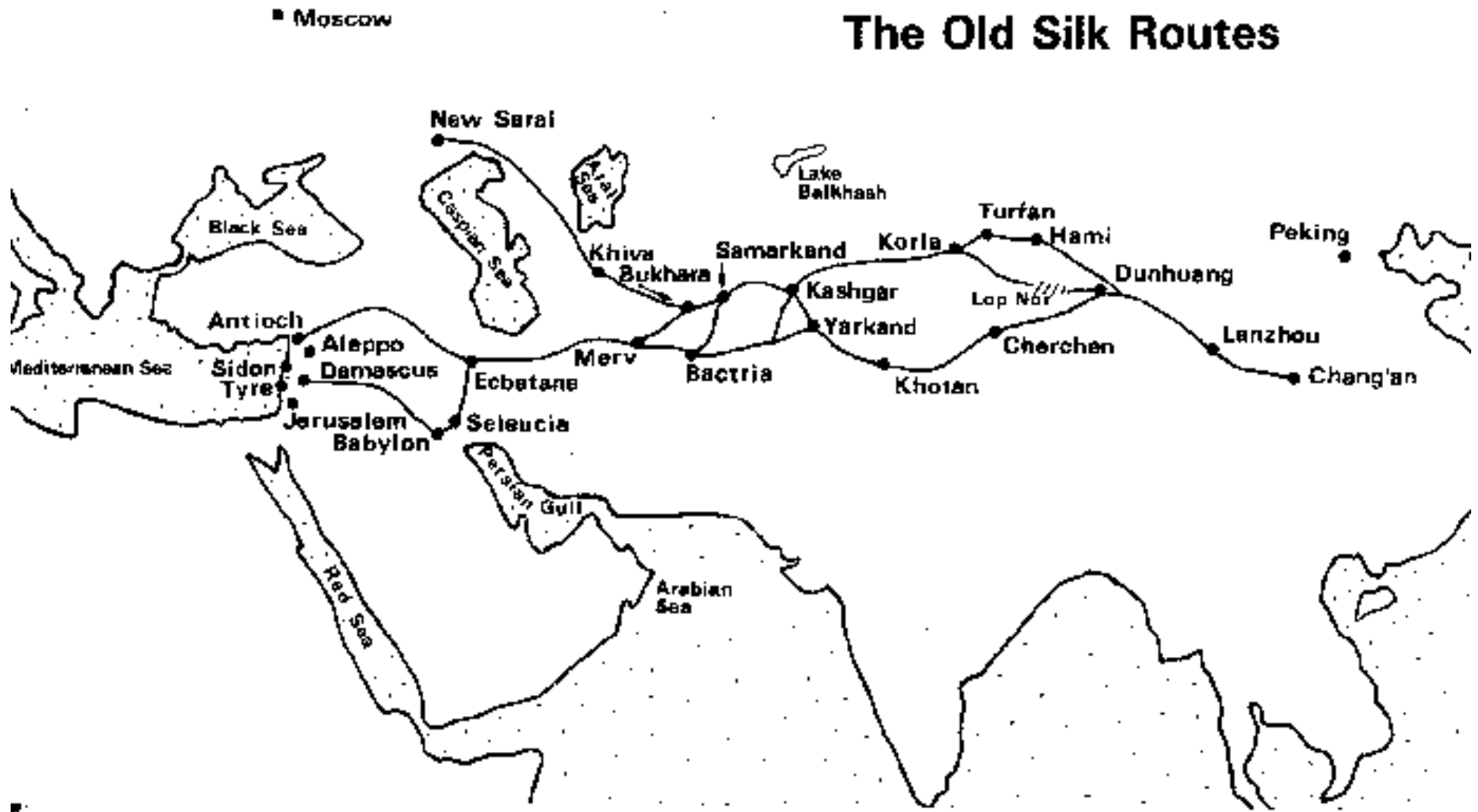


Aboriginal Cultural Landscape Darwin Sound, Canada



Pilgrimage Routes to Santiago da Compostella

The Old Silk Routes



Old Silk Routes and Digital Silk Roads

Alternative Interpretations and World Views





P. OTLET

1936. 10

UNIVERSITY OF TORONTO

ENCYCLOPÆDIA
UNIVERSALIS
MUNDANEUM

UNIVERSITY OF TORONTO

Mac. 711.435
Lieu. (491.)
Temp. "1936"
Per.
Doc. No. 8309

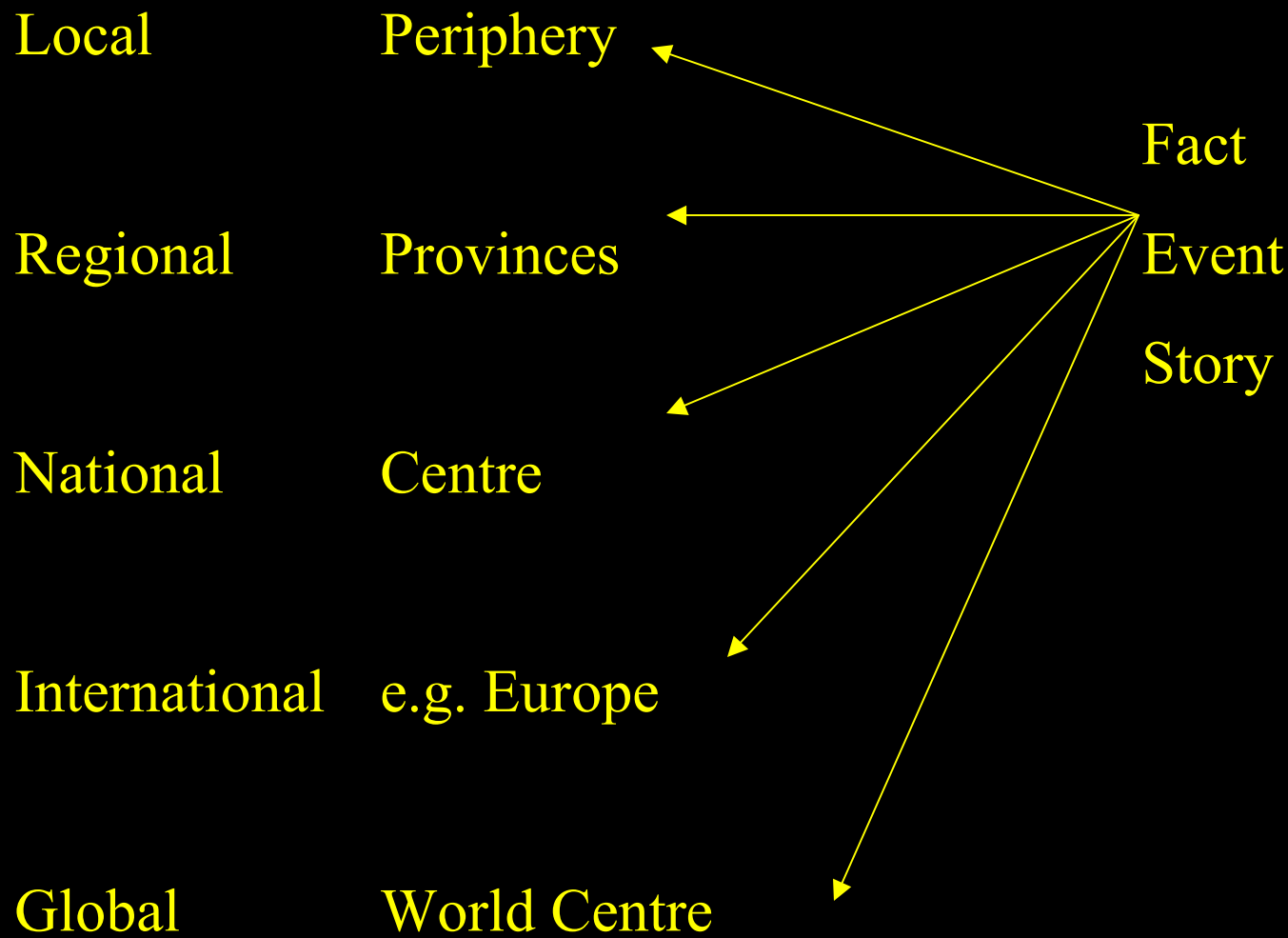
In science laws apply globally

In culture expressions vary nationally,
regionally and locally.



We want not just the official story but
the same story from different viewpoints



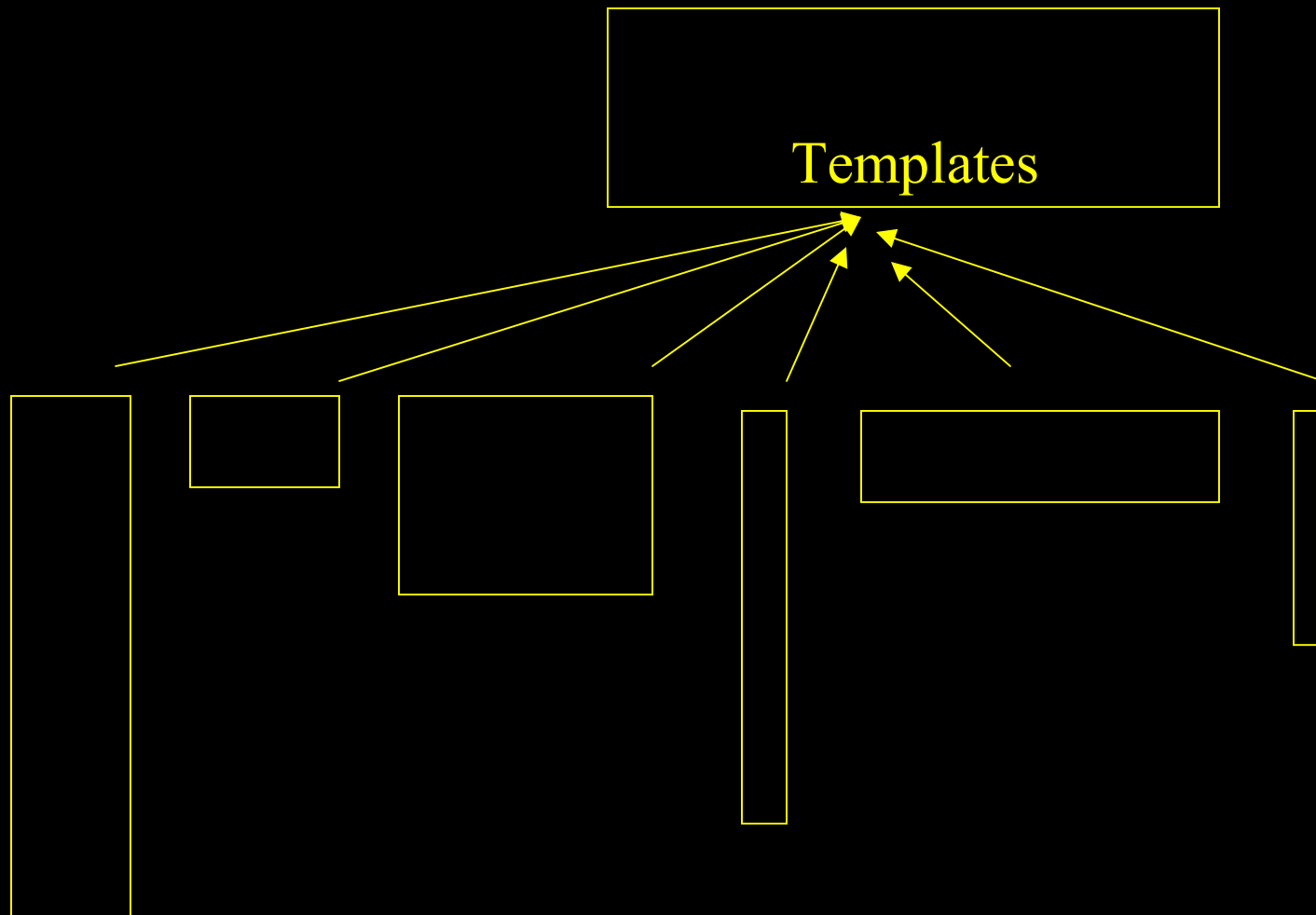


Elements for a New Framework

21st Century Solution

Digital Autonomus Cultural Objects (DACOs)

Use templates for links to different local, regional, national templates:



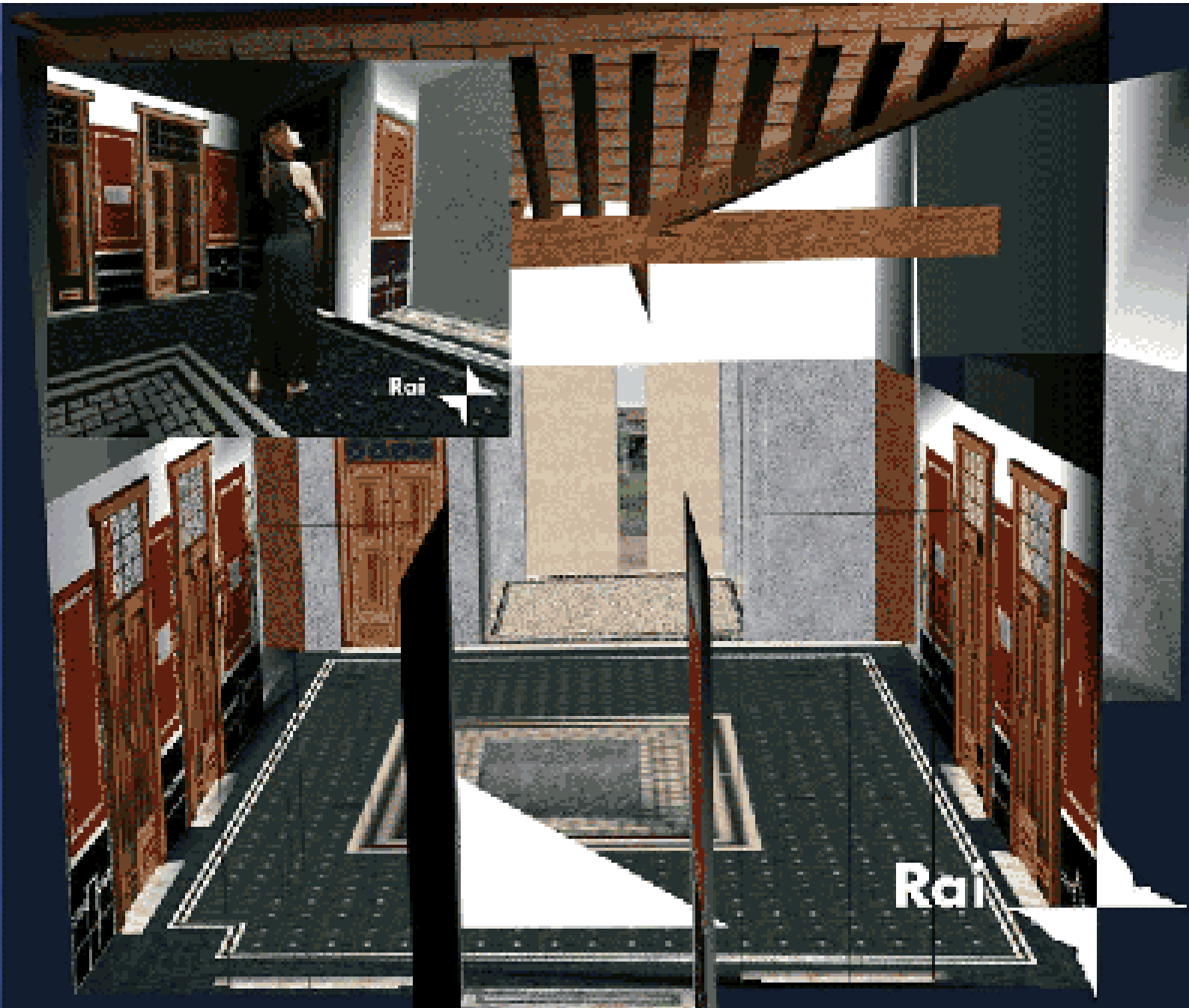




Augmented Reality IBM

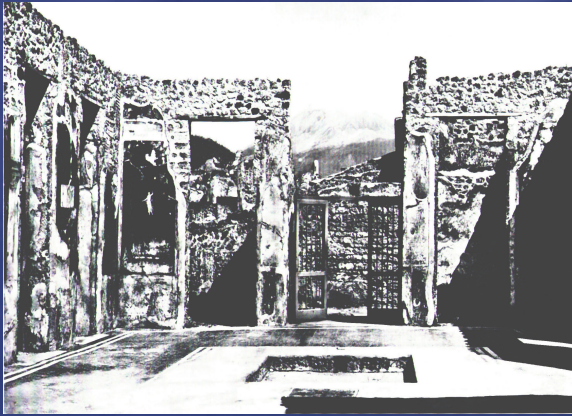


Archeoguide: Reconstruction of Temple of Hera, Olympia



CINECA and RAI: Casa dei Centenarii in Pompeii

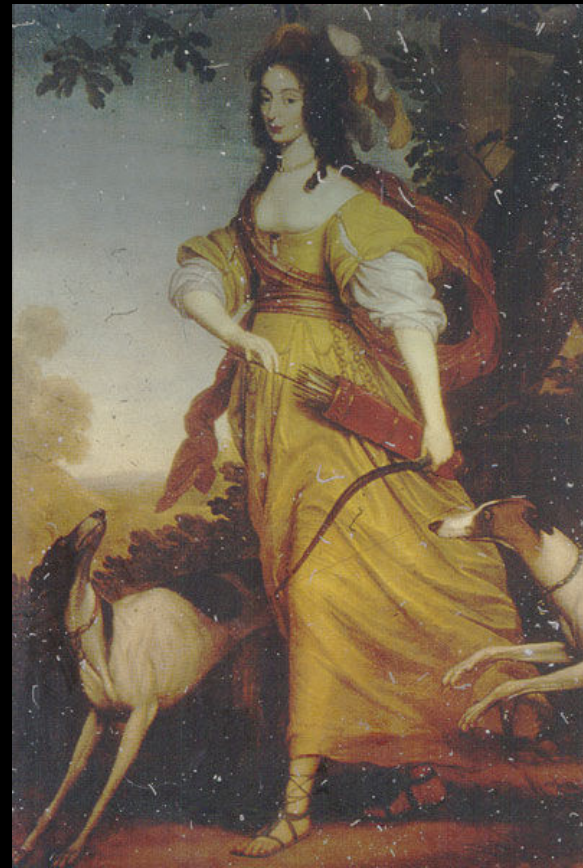
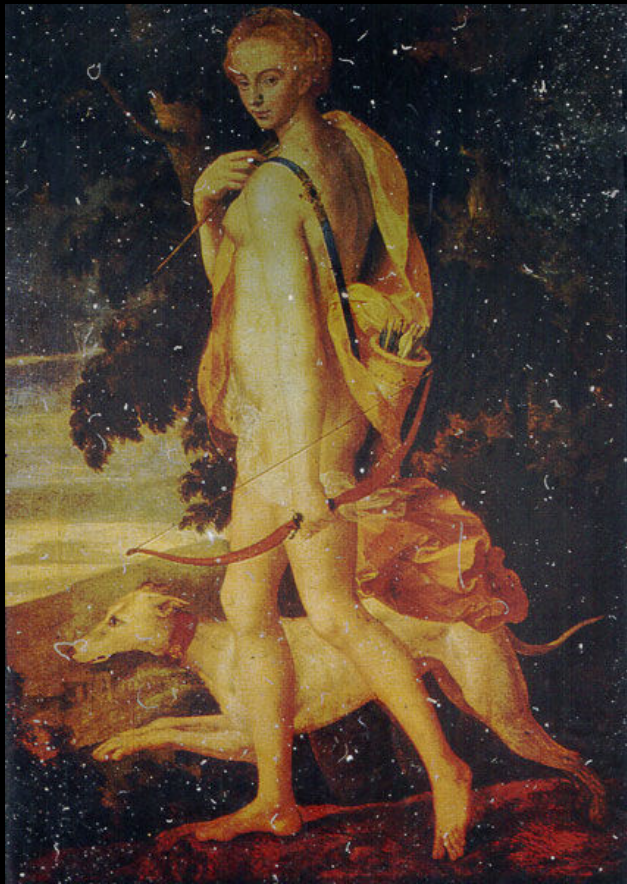


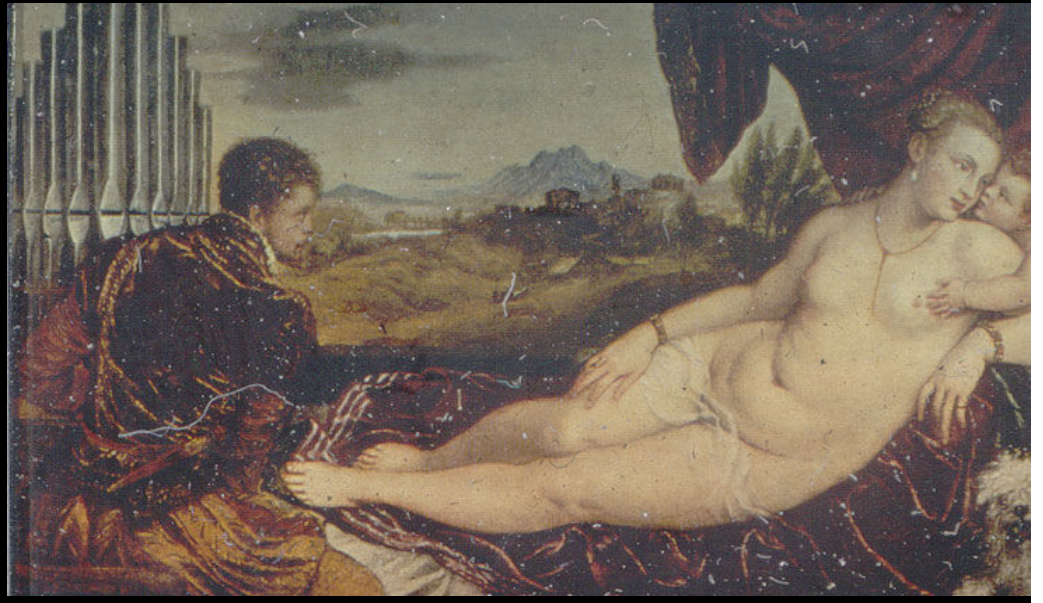
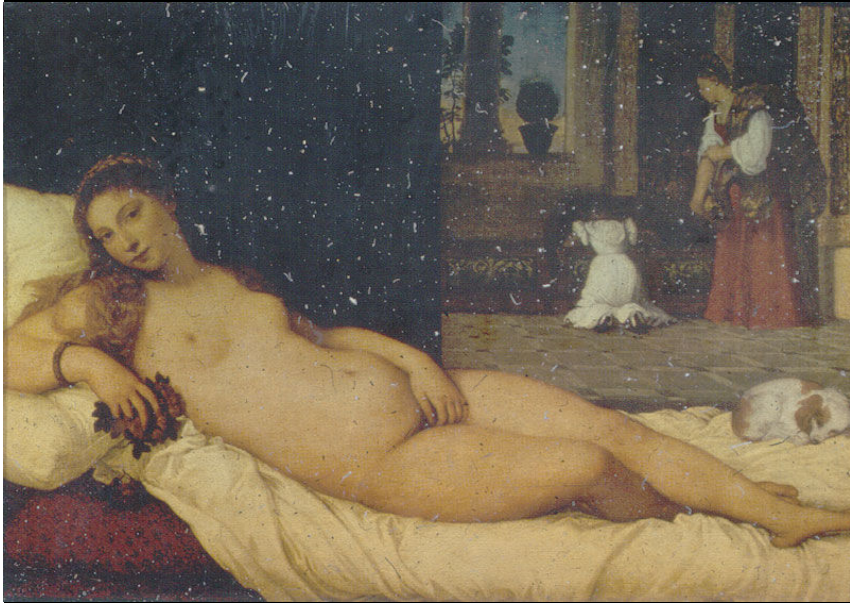


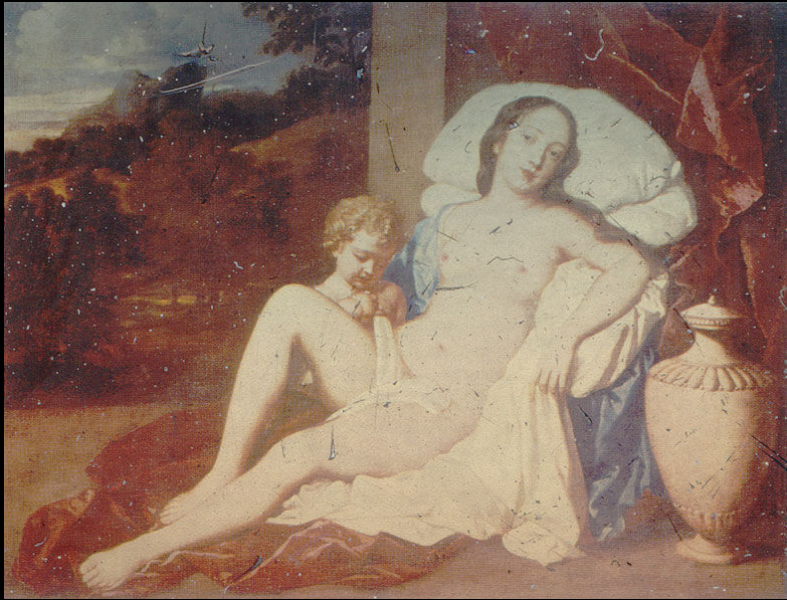
CINECA

Virtual Cultural Heritage refers to the usage of Virtual Reality systems in order to generate, navigate, explore and inquire into reconstructed historical environments.





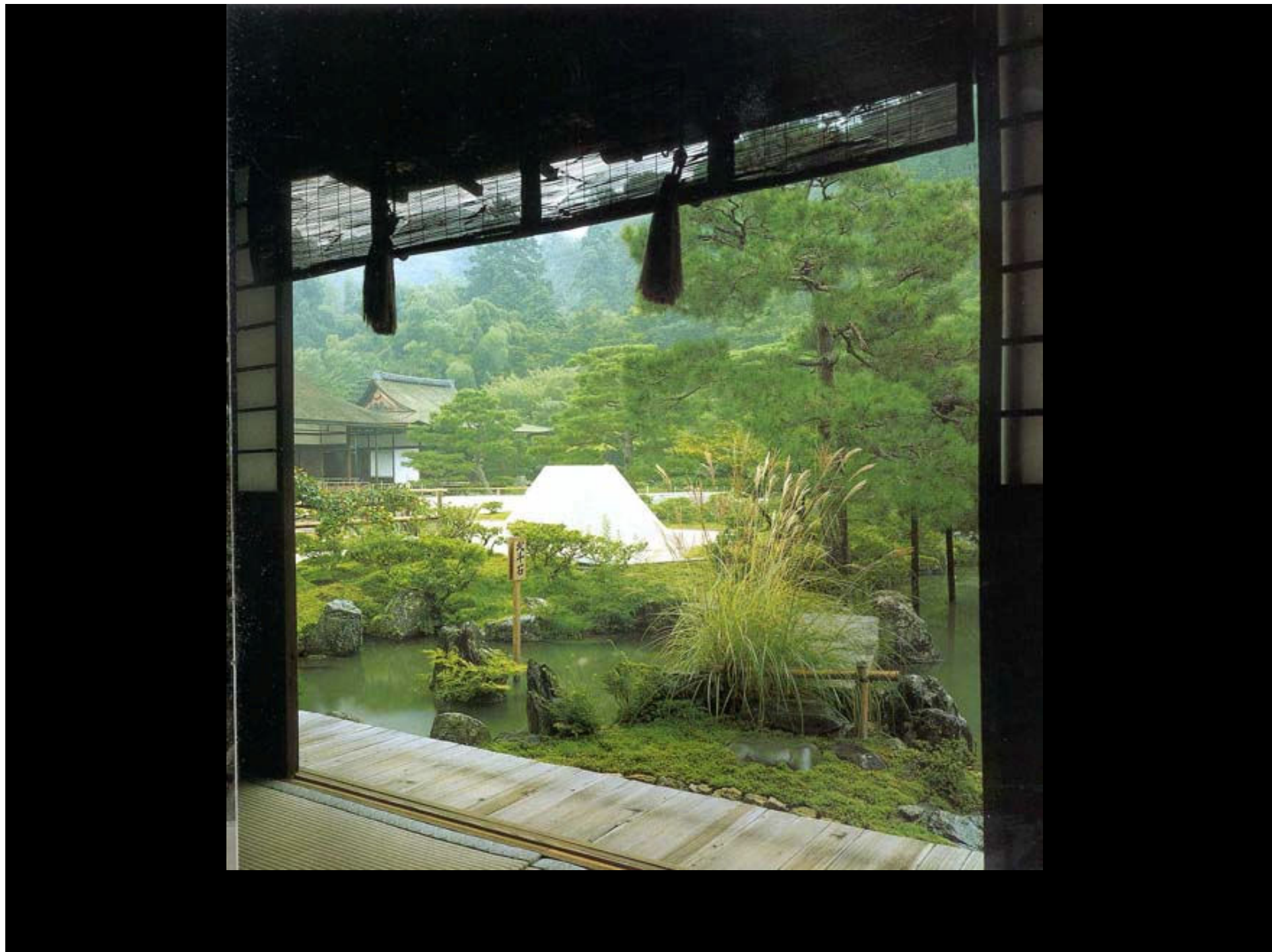




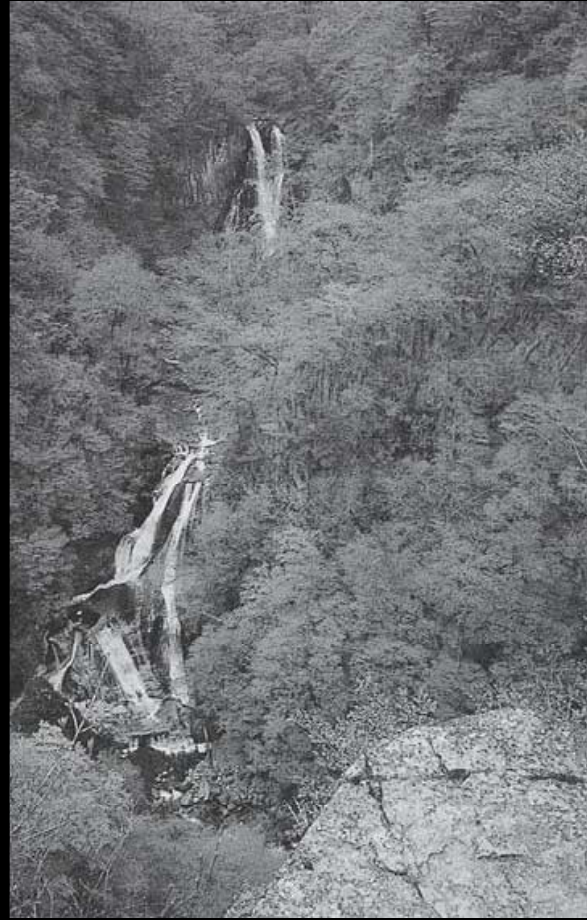












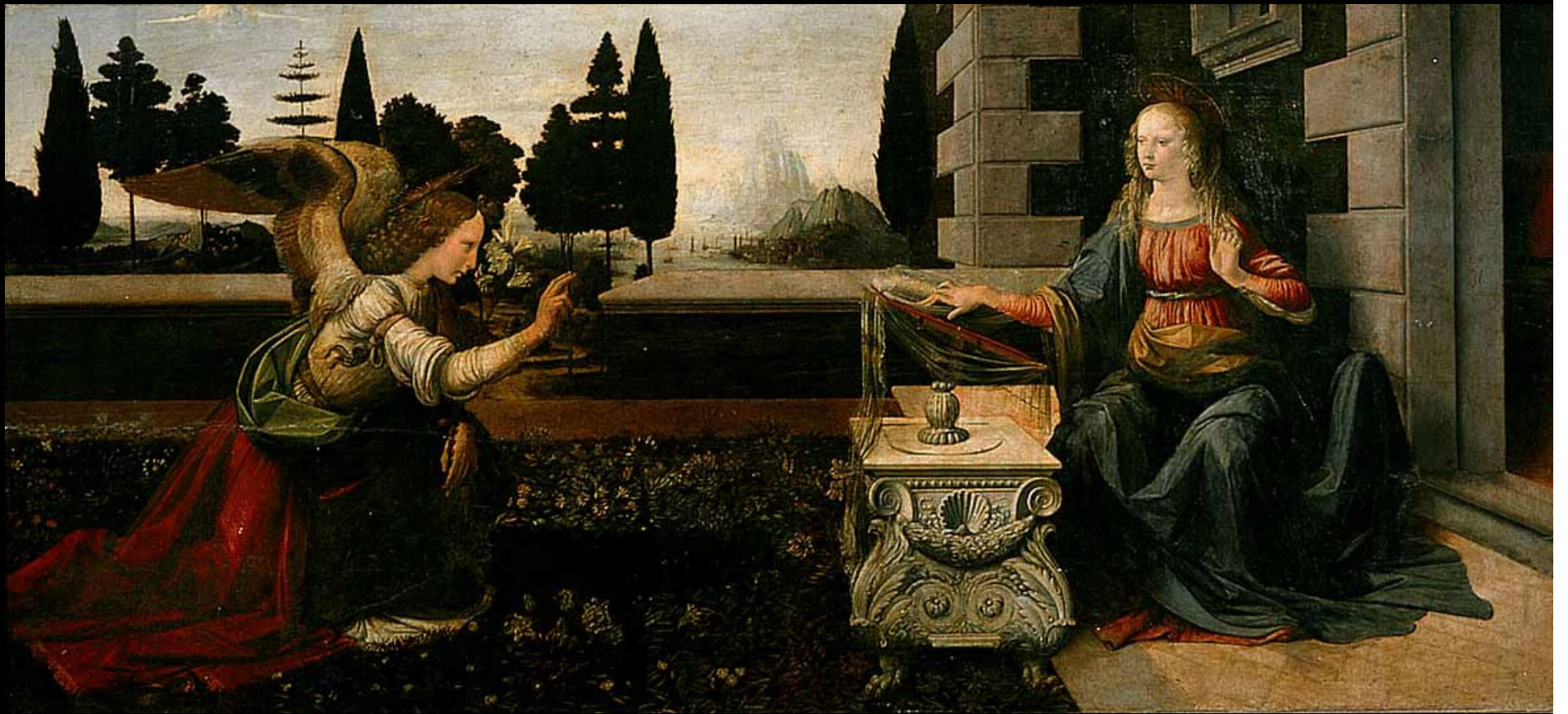
Creativity





Crivelli Annunciation National Gallery London 1486



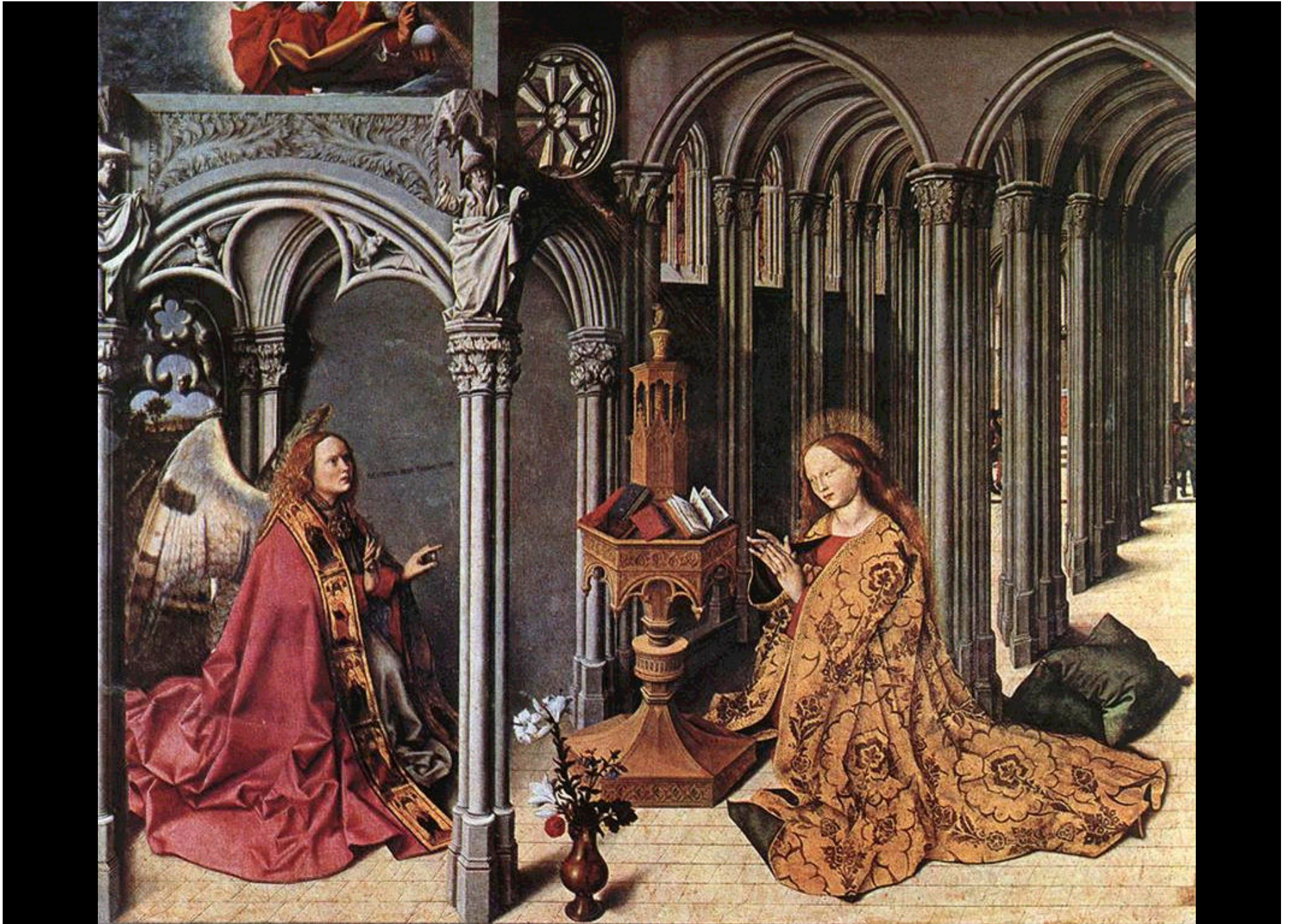




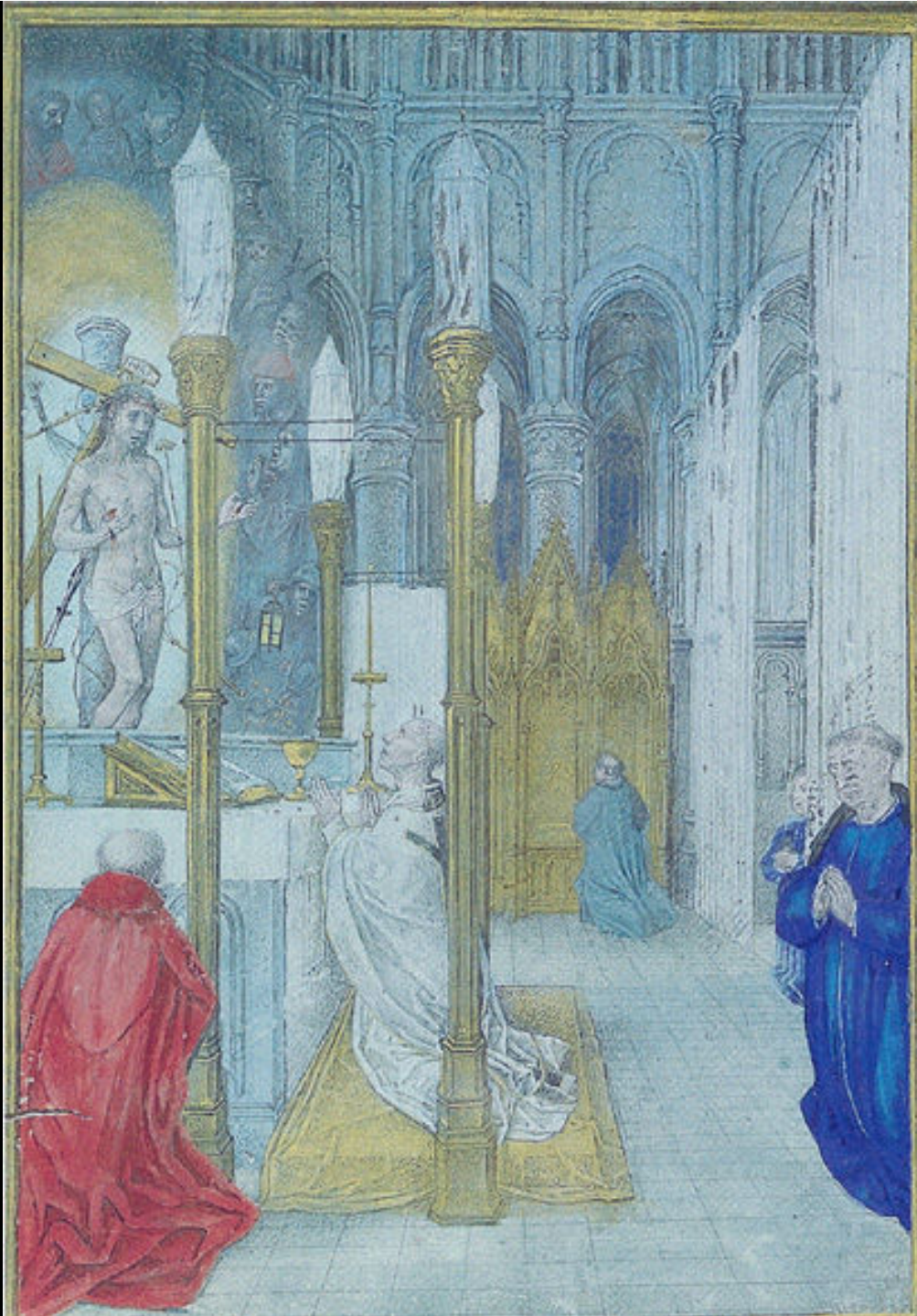


Child, Berlin 1436-1437





Annunciation La Madeleine Aix en Provence 1445







What would have happened to Renaissance art if topics such as The Annunciation were copyrighted?



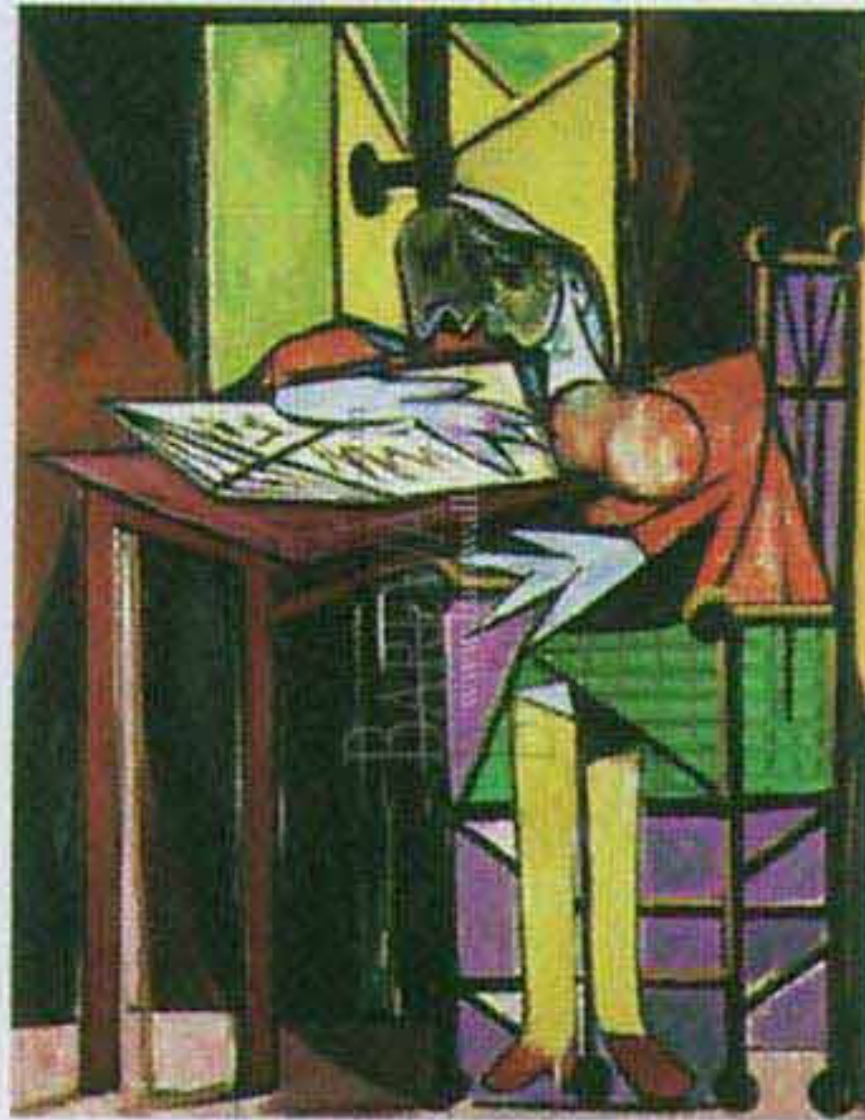


Rembrandt, Titus van Rijn, the Artists's Son, Reading, 1656-1657, Kunsthistorisches



Jean-Baptiste Corot, *A Woman Reading*, 1869, New York, Metropolitan

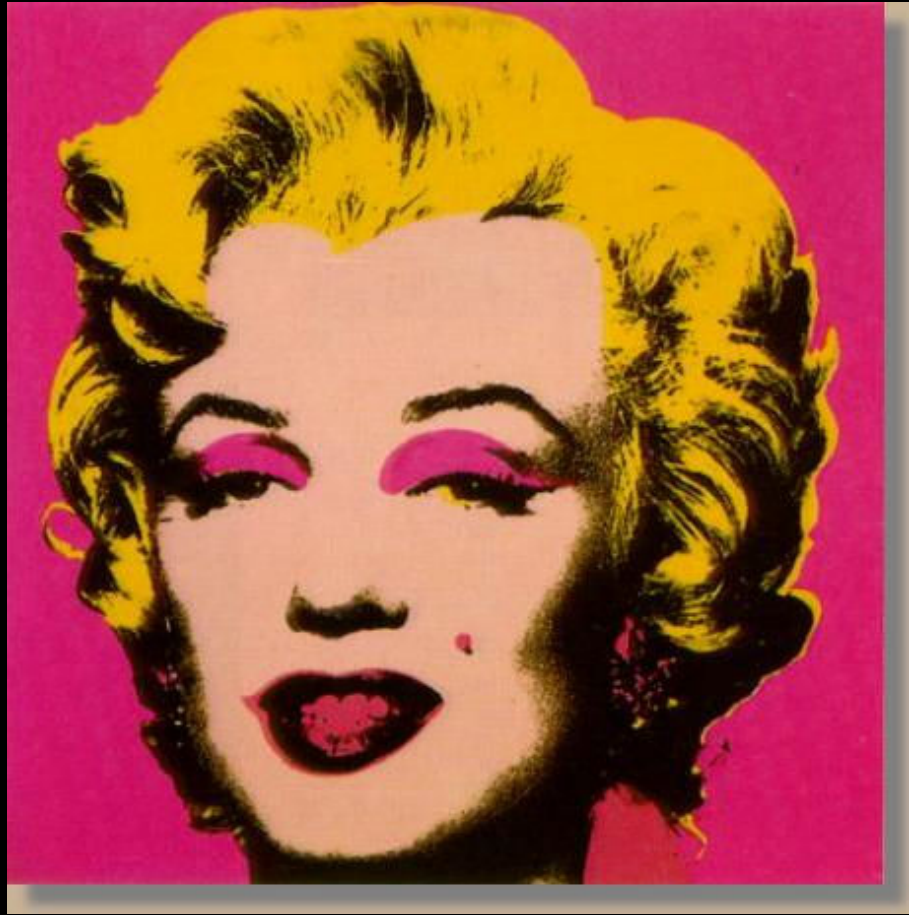




Picasso

Policy Implication

The uniqueness of the European approach lies in a constant interplay between enduring, collaborative and personal knowledge: i.e. using the cumulative effects of existing content as one basis for new content.





<http://images.google.com/imgres?imgurl=etext.lib.virginia.edu/railton/ena>



Virtual Marilyn at Lake Geneva and the United Nations



What happens to modern topics such as Marilyn Monroe if they are copyrighted as virtual thespians?

Knowledge

Enduring

Libraries, Museums, Archives
Collective Memory Institutions

Original - Copy

Broadcast Industry

Content Industry

Collaborative

Draft New - Shared New

Collaborative Design

Manufacturing Industry

Personal

Knowledge

Enduring

Libraries, Museums, Archives
Collective Memory Institutions

Collaborative

Personal

Original - Copy

-

- Shared New

-Personal New

New Creative Industry

To unleash the potentials of E-Content we must keep what was in the public sphere, public and not subject it to unnecessary copyrights.

Universals and Particulars



Global Information Ecology

1
Scientific and technical
knowledge

2
Cultural and historical
knowledge

3

Centre Européenne de Recherche Nucléaire
Industry Foundation Classes
Standard for Exchange of Product Information
Intelligent Manufacturing Systems

(IFC)
(STEP)
(IMS)

Generic

Unique

Universal Laws

Particular, Original

Industry

University

Manufacture “ “

Publishers

Information “ “

Music Industry

Computer “ “

Television, Radio

Welcome to ARROW - Product Selection Demonstrator - Microsoft Internet Explorer provided by Maastricht University

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Edit Discuss

Address http://cig.bre.co.uk/arrow/OSdemo/devVer/mockup/index-frames.html

Home Find Products Help

--+

General Details [Back to Menu](#)

Air Infiltration (l/s m² Pa)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> Volume of air that can pass through the product for a unit area
Finishing	<input type="text"/>			<input type="radio"/> <input type="radio"/> Description of material at the surface of the door
Fire Rating (min)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> Time that the door can hold back flames & hot gases
Generic Door Type	<input type="text" value="AllTypes"/> <input type="text" value="SingleSwing"/> <input type="text" value="DoubleSwing"/> <input type="button" value="(select option(s) from menu)"/>			<input type="radio"/> <input type="radio"/> Generic categories of door, mainly by opening type
Glazing Type	<input type="text" value="AllTypes"/> <input type="text" value="Single"/> <input type="text" value="Double"/> <input type="button" value="(select option(s) from menu)"/>			<input type="radio"/> <input type="radio"/> Types of glazing used in the product (tinted, reflective, etc)
Height (mm)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> Height does not include frame
Light Transmission	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> Ratio of light intensity before & after passing through the glazing
Location	<input type="text" value="AllTypes"/> <input type="text" value="Internal"/> <input type="text" value="External"/> <input type="button" value="(select option(s) from menu)"/>			<input type="radio"/> <input type="radio"/> e.g. Internal, External
Locking System	<input type="text"/>			<input type="radio"/> <input type="radio"/> Type of locking system for the door, e.g. espagnolette
Noise Absorption Coeff	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> Ratio of noise levels either side of the product e.g. 0.4
Performed Functions	<input type="text" value="AllTypes"/> <input type="text" value="Supporting"/> <input type="text" value="Enclosing"/> <input type="button" value="(select option(s) from menu)"/>			<input type="radio"/> <input type="radio"/>
Permeability To Water (Pa)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> A figure representing how well the product resists water penetration
Purpose	<input type="text" value="AllTypes"/> <input type="text" value="Firedoor"/> <input type="text" value="SecurityDoor"/> <input type="button" value="(select option(s) from menu)"/>			<input type="radio"/> <input type="radio"/> e.g. Firedoor, gate
Shading Coeff	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> Ratio of solar heat gain through the glazing compared to 4 mm clear glass
Thickness (mm)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/>
UValue (W/m² K)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> Rate at which heat is lost through the product
Width (mm)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/>
Wind Resistance (Pa)	<input type="text"/>	to	<input type="text"/>	<input type="radio"/> <input type="radio"/> How well the product resists wind pressure

ASC DSC

Volume of air that can pass through the product for a unit area

Description of material at the surface of the door

Time that the door can hold back flames & hot gases

Generic categories of door, mainly by opening type

Types of glazing used in the product (tinted, reflective, etc)

Height does not include frame

Ratio of light intensity before & after passing through the glazing

e.g. Internal, External

Type of locking system for the door, e.g. espagnolette

Ratio of noise levels either side of the product e.g. 0.4

A figure representing how well the product resists water penetration

e.g. Firedoor, gate

Ratio of solar heat gain through the glazing compared to 4 mm clear glass

Rate at which heat is lost through the product

How well the product resists wind pressure

Start Welcome to ARROW ... @Home Nederland - Micro... Internet 21:01





Lavenham and Farnham



Bamberg and Hanover



Marburg and Hildesheim



Wolfenbüttel



Quedlinburg

CNR ITABC Maurizio.Forte : A Network of Virtual Heritage Centres



MAASTRICHT MCLUHAN INSTITUTE



We are putting objects into context so that we see not only the ruin but also reconstructions in augmented and enhanced reality



We need a
Grid for Culture
which builds on the solutions of the
E-Science Grid
where appropriate.



This fits into a vision of e-Europe with
Networks of Excellence
as the basis of a
European Research Area (ERA)



Thank you

Danke schön

Gratias tibi agimus

Merci bien

Muchas Gracias

Mille Grazie

Obrigado

Shukran

Spasibo

