Focus Area Cultural Heritage
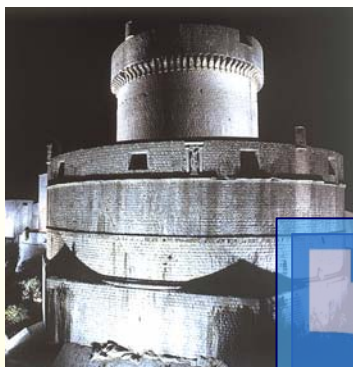
From Vision to Implementation Plan

Roko Žarnić, University of Ljubljana
ECTP SG Memeber & Co-coordinator of
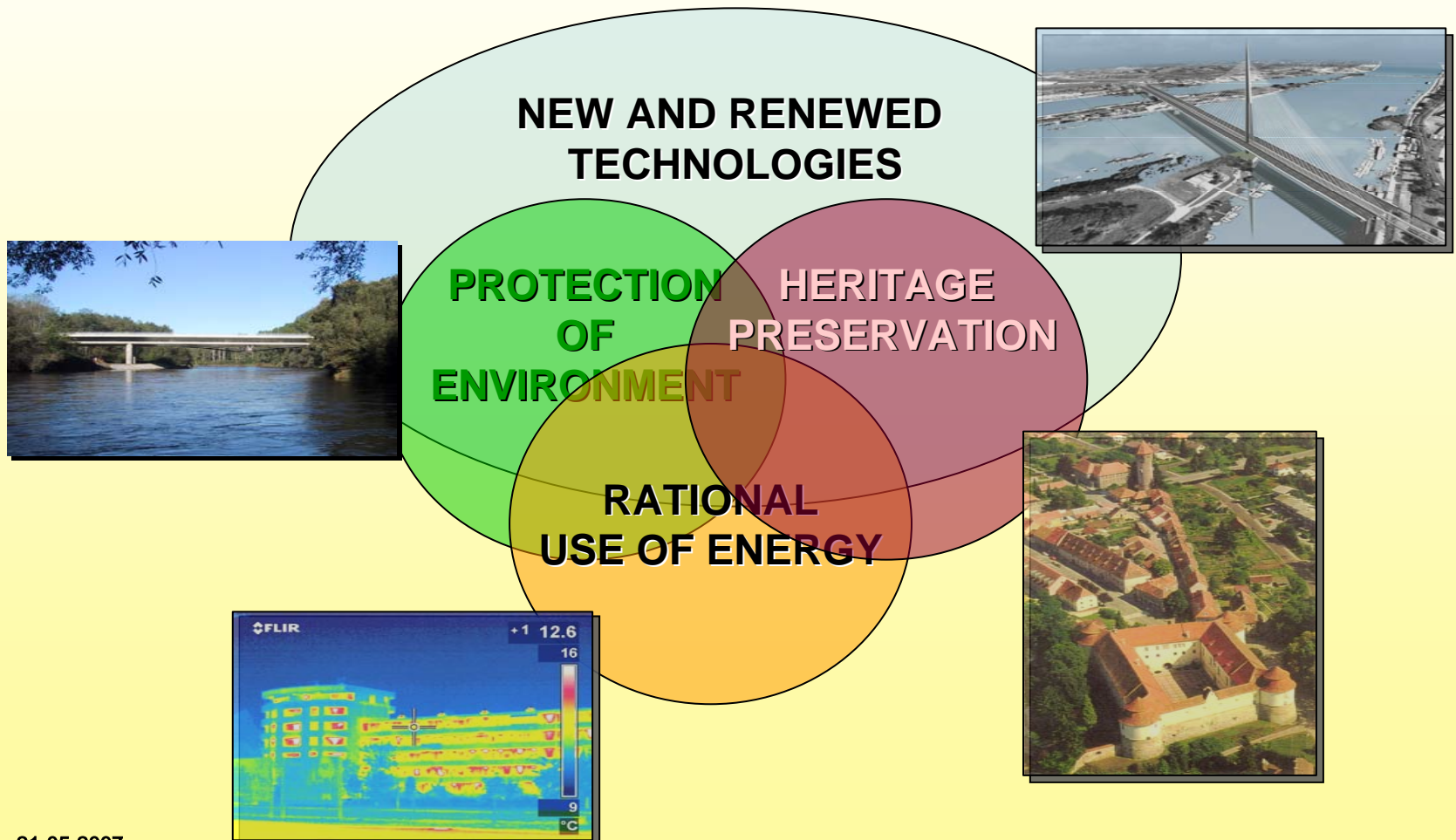**ECTP Focus Area Cultural Heritage**

Focus Area Cultural Heritage

A Living Culturala Heritage for an Attractive Europe

New strategies, concepts, methodologies and techniques for preventive conservation and sustainable intervention in the cultural heritage for increasing the attractiveness of the European territories, cities and buildings

Research interaction in construction sector Slovenian view

NEW AND RENEWED TECHNOLOGIES

PROTECTION OF ENVIRONMENT

HERITAGE PRESERVATION

RATIONAL USE OF ENERGY

CHALLENGES OF CULTURAL HERITAGE

- **Preservation**
- **Rehabilitation**
- **Integration in urban and natural environment**
- **Increase of life quality**
- **Economic promotion**
- **Multicultural tolerance**
- **Spreading of awareness**
- **Knowledge transfer**
- **Other challenges….**

Potential Conflict

Construction activities and heritage preservation needs may lead to conflict situations if their necessary harmonisation is not respected from the very beginning of interventions.
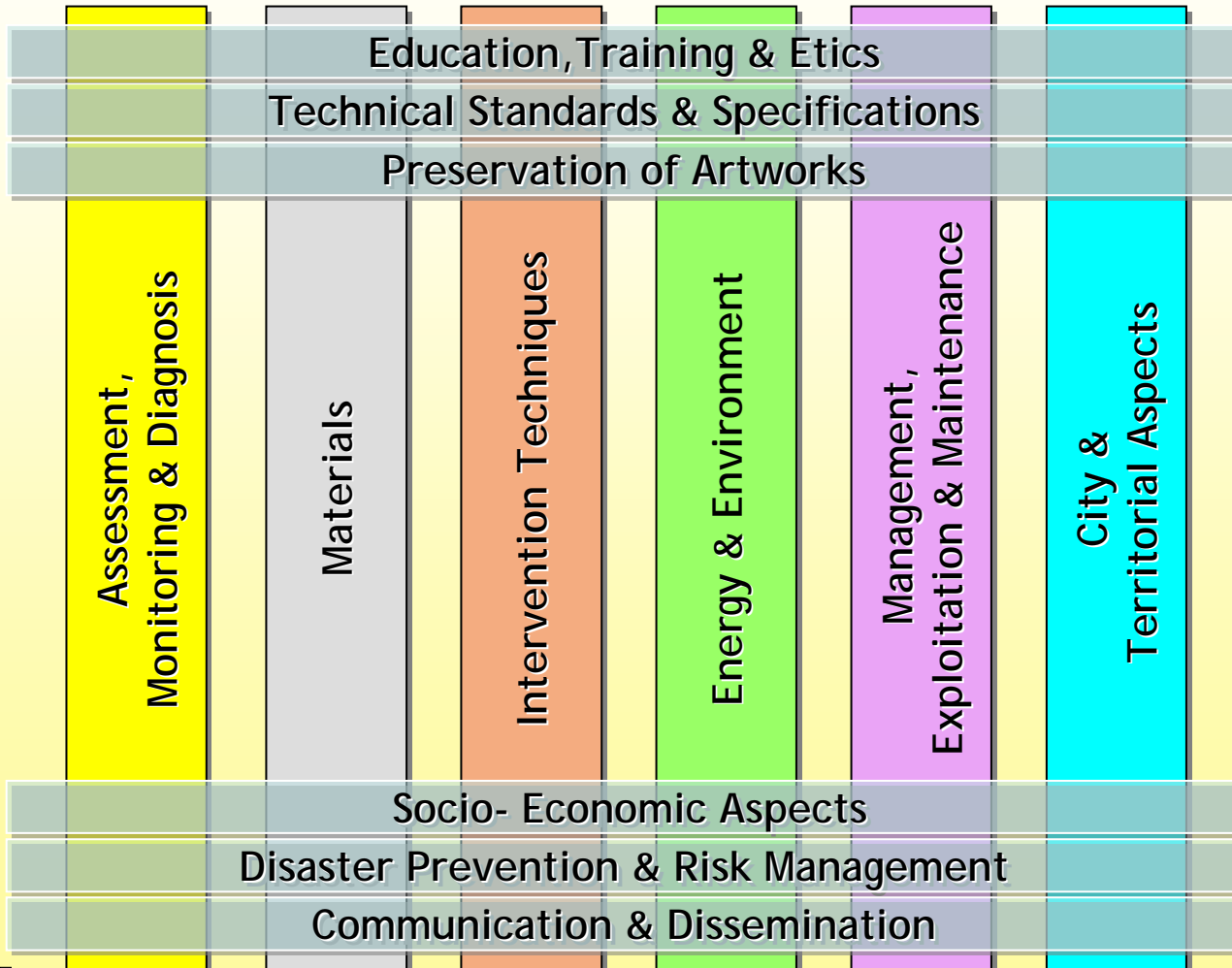
The consequence based approach to cultural heritage safeguarding

- All steps of intervention in cultural heritage should be guided by permanent observation of consequences caused by intervention

- The concept of consequence based approach to heritage safeguarding should be developed

Pillars and Belts of FACH

Education,Training & Etics

Technical Standards & Specifications

Preservation of Artworks

Assessment, Monitoring & Diagnosis

Materials

Intervention Techniques

Energy & Environment

Management, Exploitation & Maintenance

City & Territorial Aspects

Socio- Economic Aspects

Disaster Prevention & Risk Management

Communication & Dissemination

Athens, 21-05-2007

FACH Evolution since October 2004

VISION 2010/20/30
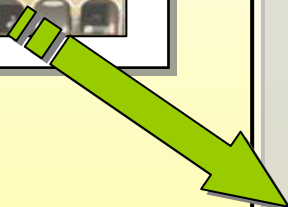
ECTP SRA IMPLEMENTATION ACTION PLAN (DRAFT V04)

CULTURAL HERITAGE

Vision 2030 & Strategic Research Agenda

Focus Area Cultural Heritage

Public Version #2

March 2006

European Construction Technology Platform (ECTP)

Strategic Research Agenda
Implementation Action Plan

Working Version v0.4*

* Figures mentioned in this document must especially be considered as preliminary ones since still under definition.

STRATEGIC RESEARCH AGENDA

The Target of Vision

Integral management of Cultural Heritage and its sustainable interaction with the territory

- **Approaching citizens**

- **Maintaining cultural values**

- **Meeting socio-economic and environmental requirements**

Athens, 21-05-2007

Impact of R & D Activities

- 100% of the information generated during the study, restoration and maintenance process will be available and used for appropriate management and increase of knowledge transferred through the life-long education schemes;

- Service life of Cultural Heritage materials and structures could be predicted with 20% error and will be used to prepare predictive maintenance plan;

- Understanding change in composite materials applied in the forthcoming wider applications in heritage retrofitting over time should be improved by 50% between 2010 and 2030;

Impact of R & D Activities

- At least 25 important EU cultural heritage sites should be assessed using the knowledge gained from FP7 projects and new specifications between 2010 and 2030;

- Enhance the accessibility for citizens to Cultural Heritage of 50%;

- Implementation and awareness strategies to Cultural Heritage preservation addressed to European citizens especially young generations will be achieved at 100%;

- Resolving the decay of Cultural Heritage about 95%.

Research Themes

- Building assessment, diagnosis and monitoring
- Assessment of material decay and development of Cultural Heritage compatible materials
- Low-intrusive retrofit and conservation techniques
- Integration in urban and natural environment
- Rational and long term management processes
- New tools for European citizens interaction
- Knowledge transfer to construction sector and demonstration of the best-practice cases
- Demonstration of knowledge gained from FP7 and other research projects in selected typical CH sites across the EU

Building assessment, diagnosis and monitoring

- Integration of technologies for building assessment, diagnostics and monitoring in the safeguarding; development of efficient assessment tools, standardisation of advanced diagnostic methods and development of embedded intelligent wireless sensors suitable for a long life cycle in the environment of heritage structures.

Assessment of material decay and development of Cultural Heritage compatible materials

- Assessment of the degree of decay of heritage buildings due to the degradation of historic or/and contemporary materials, development of new materials based on nano and other emerging technologies. Research leitmotiv for this area is the long term compatibility of conservation materials.

- Design development and production of smart, memory-capable, self-adjusting, self-cleaning and self-healing materials.

Low-intrusive retrofit and conservation techniques

- Development of new process solutions and low intrusive retrofit techniques, to reduce interventions in cultural heritage with the objective of no negative consequences of the interventions

- All steps of intervention should be guided by continual attention to long-term consequences of interventions using interdisciplinary competences and aiming at preserving the authenticity of the cultural heritage, be it single buildings or complex city fabrics.

Integration in urban and natural environment

- Care for integration in urban and natural environment of cultural heritage, and development of special measures for indoor climate control.

- Improvement of the use of traditional materials and skills, renewable forms of energy, water conservation and the implementation of recycling of materials for sustainable and cost-effective strategies in the adaptive re-use of Cultural Heritage.

Athens, 21-05-2007

Rational and long term management processes

- Rational and long term management process of Cultural Heritage to enable sustainable and cost efficient maintenance.

- Development of pan-European model and strategy for tracking of changes of Heritage building due to natural impacts and maintenance interventions (Heritage Building Identity Card). The model is the starting point for development of maintenance plans for organizing of the long term management process.

New tools for European citizens interaction

- New tools to improve the communication and the public participation in cultural heritage to develop a European citizen interaction.

- Improvement and sustainement of the integration of cultural heritage in the urban and rural settings through remedial territorial planning and rational resource management, using historical urban grid systems, while taking into account the characteristics of historic settlements and cultural assets.

Knowledge transfer to construction sector and demonstration of the best-practice cases

- Proper training of technical and implementing staff as well as of planners and building owners will be decisive for the success of any of the intervention needed in the field of restoration.

- The importance of lifelong education of specialized professionals in SMEs can be easily justified by the market success of SME. Specific support actions for dissemination, education in order to increase knowledge transfer are needed.

Demonstration of knowledge gained from FP7 and other research projects in selected typical CH sites across the EU

- The knowledge and technology development gained from the EU supported research should contribute to the efficiency of investment in immovable cultural heritage protection.

- Comparing the experiences gained from selected demonstration cases common conclusions will be searched in order to generalize as many as possible conclusions.

Estimation of needed budget

Research Themes	FP7							Other Programmes	Σ
	2007	2008	2009	2010	2011	2012	2013		
Building assessment, diagnosis and monitoring	5			15				40	60
Assessment of material decay and development of Cultural Heritage compatible materials		10	10					40	60
Low intrusive retrofit and conservation techniques		8	12		15			50	85
Integration in urban and natural environment		5		5				20	30
Rational and long term management processes		5	5	5	10			40	65
New tools for European citizens interaction				10	5			30	45
Knowledge transfer and demonstration of the best-practice cases		2	3	2	3			20	30
Demonstration of knowledge gained from FP7 and other research projects in selected typical CH sites across the EU						45	45	60	150
TOTAL	5	30	30	35	35	45	45	300	525

All figures are in M€ and correspond to total costs of projects. Internal industrial private projects are not included.

Thank you for attention!

Wellcome to the www.ectp.org