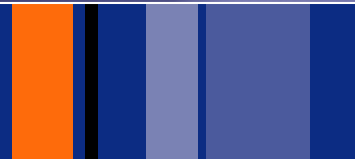


**ECTP – FACH:
framework for common research.**

Priorities in the field of *Materials*

Rob van Hees



WORKING GROUP 2 - Materials

Effective Protection of Cultural Heritage to be based on knowledge that has been produced. Therefore needs to take into account:

i) materials, as composites, the system materials/environment, as dynamic system and materials/structure/environment, as a more complex system

ii) knowledge of historic materials and their performance in historic structures in order to re-engineer the repair materials.

Development of *innovative materials and structural components* for cultural heritage and *learning lessons from the past* are considered the main lines

WORKING GROUP 2 – Materials: research priorities

Development of materials for better preservation of historic materials (use nano technology, principles of self-healing, self cleaning, self learning,)

Better understanding historic materials and technologies

Introduction of innovative and low intrusive intervention techniques including replaceable and supplemental structural components

Evaluation of intervention techniques, conservation treatments, ... used in the past, including criteria for the choice of restoration materials

Reaching better understanding of historic materials and technologies in order to re-engineer compatible repair materials

Development of guidelines for integral diagnosis, stress on multidisciplinary of expertise (architecture, history of art, civil engineering, archeology, chemistry, ...)

Development of decision support tools based upon characterization of materials and study of decay mechanisms

Research priorities, Wg2 materials

explanation of one of the priorities (=research lines)

- Evaluating the effectiveness of interventions in the past, by assessing the performance of conservation treatments, replacement materials, As well as their compatibility with the existing structures and materials. Learning lessons from the past.

Example of case study (n.b. the past interventions)

Overzicht Grote Kerk Breda



1865

*Oudst bekende foto van het exterieur
(Kannemans & Zoon, 1865. Uit: van Wezel,
2003)*



1926

*Tijdens 2^e fase van de eerste
restauratie (RDMZ, onbekend, 1926,
neg.nr. OF-02975)*



1994

*Vlak voor de restauratie door van Stigt
(Verhoef, ≈1994)*



2005

Huidige situatie (Quist, 2005)

Promotieonderzoek Wido Quist

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Evaluation of Past Interventions has relation with Wg2, but also with other Wg's

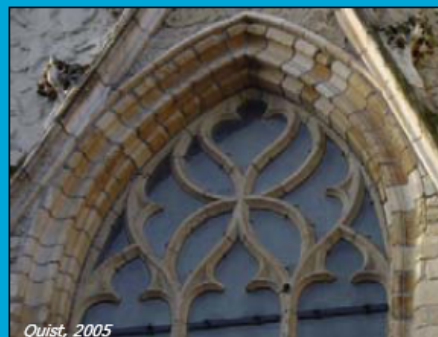
ASPECTS (to be) encountered	SRA / wg FACH
Performance criteria	<i>interventions and techniques</i>
Materials	<i>materials</i>
Conservation treatments	<i>materials</i>
Monitoring	<i>monitoring</i>
Diagnosis	<i>monitoring</i>
Decision support tools	<i>monitoring</i>
Energy efficiency interventions	<i>energy & environment</i>
Value assessment	
Maintenance protocols	<i>management, exploitation & maint.</i>
Management of CH	<i>management, exploitation & maint.</i>

Aspects encountered in this case study

- Choice replacement stone
- Repair mortar
- Techniques of cleaning
- Damage assessment + diagnosis
- Water repellent + anti-graffiti treatment
- Energy saving: glazing
- Maintenance + inspection plan

Apart from technical aspects, also ethical and esthetical aspects are faced

Vb: Dubbelglas



- Spiegeling
- Dof
- Brugstaven
- Duivenet
- Lipjes
- Roest



Promotieonderzoek Wido Quist

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Involved parties in this research line

- Research institutes
- Industry
- Authorities / owners / monument watch