



Conservation Science Consulting Sàrl

# STONY MATERIALS AND CONSERVATION OF THE BUILT HERITAGE

Stony Materials and conservation of the built heritage - Introduction - BR /1



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## Who am I ?

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CSC Sàrl, Rue de l'Industrie 10, 1700 Fribourg – Tél. : 026 422 12 44

### Education

2001 PhD in Geology-petrophysics (University Louis Pasteur in Strasbourg, France)

### Professional experience

2001-2006 Conservation scientist, Expert-Center on the EPFL site (Materials depart.)  
(the "ancestor" was the Lab. de Conservation de la Pierre, EPFL),  
2007-... Conservation scientist, Conservation Science Consulting Sàrl, Fribourg  
(private laboratory)

### Teaching experience

2000-2001 Teaching assistant (T.A) in geology (Strasbourg University)  
2001-2004 T.A. in "Materials and conservation of the cultural heritage" (EPFL)  
2005-... Lecturer in "Stony materials and conservation of the built heritage" (EPFL)  
2011-... Lecturer in "façades en pierre naturelle" (Certificate of Advanced Studies  
"expertise technique dans l'immobilier" EPFL, EIA FR)

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Access to the planning, the overheads and the examination questions: <http://www.cscsarl.ch>

Date	Subject	Description	Teacher(s)
1) 23.9.13	Introduction Natural Stone (or geomaterials)	Aims of the course – Notion of ethics of conservation Minerals, silicates	B. Rousset
2) 30.9.13	Natural stone (or geomaterials)	Rock classification, petrography	B. Rousset
3) 7.10.12	Natural stone (or geomaterials)	Rock classification, petrography	B. Rousset
4) 14.10.13	Mortars and a few geopolymers	Historic mortars and restoration mortars / Handling of samples	C. Bläuer
5) 21.10.13	<b>Natural stone in the field</b>	<b>Observation of the three principal families of rocks and some mortars on the buildings in Lausanne</b>	B. Rousset
6) 28.10.13	<b>Examination subjects</b> Petrophysics	<b>Selected case studies in the region of Lausanne</b> Fluid transfer and mechanical properties of stones	B. Rousset
7) 4.11.13	Petrophysics / soluble salts	Fluid transfer and mechanical properties of stones / problem of soluble salts	B. Rousset
8) 11.11.13	Stone weathering	Why and how stones are deteriorated	B. Rousset
9) 18.11.13	Stone weathering	Why and how stones are deteriorated	B. Rousset
10) 25.11.13	<b>Stone weathering in the field</b>	<b>Identification of the stone deterioration patterns on the buildings in Lausanne</b>	B. Rousset
11) 2.12.13	Methods and materials of conservation of stone	Methods and products used for consolidation, hydrofugation and protection of stone materials	B. Rousset
12) 9.12.13	Methods and materials of conservation of stone	Methods and products used for consolidation, hydrofugation and protection of stone materials	B. Rousset
13) 16.12.13	<b>Oral examination</b>	<b>Selected case studies</b>	B. Rousset

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## INTRODUCTION

### What are the aims this course ?

#### Objectives:

A certain approach to the sustainable development of the stone materials of the built heritage

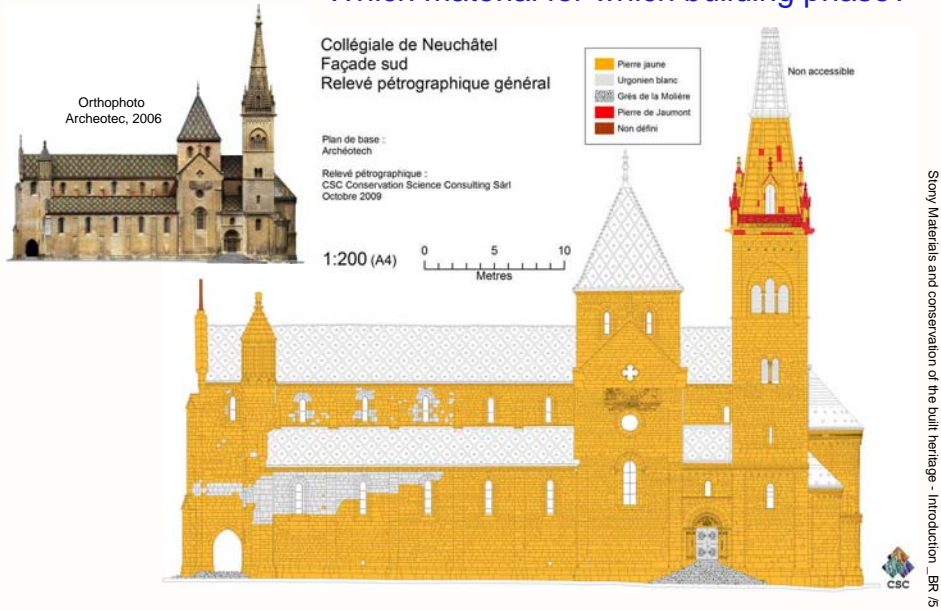
- to identify the stony materials
- to identify the weathered state of these materials
- to identify the reasons of the weathering
- to have a notion of building and conservation materials compatibility

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## Which material for which building phase?

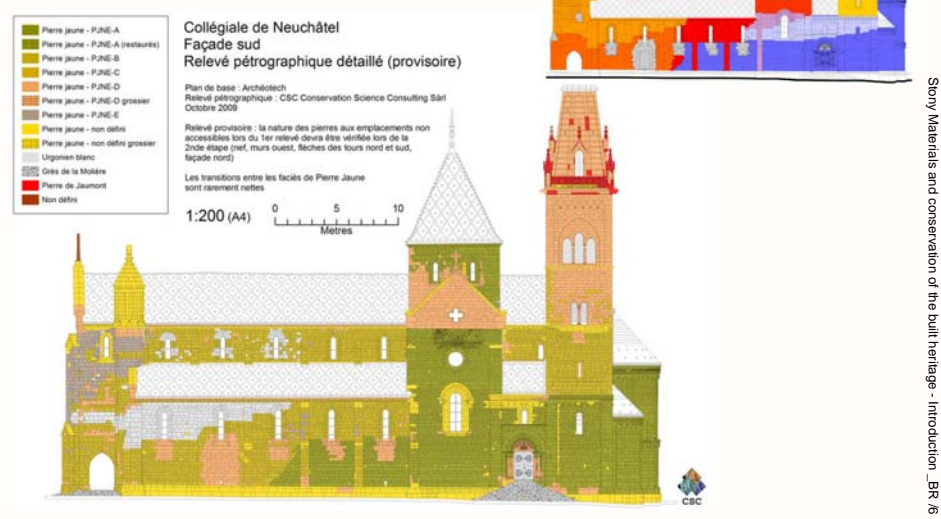


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## Which material for which building phase?



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### Which normal deterioration pattern for which material?



FR, Estavayer-le-Lac, "sentier des dominicaines", 18.09.2008



### Which normal deterioration pattern for which material?



FR, Estavayer-le-Lac, "sentier des dominicaines", 18.09.2008





### Which normal deterioration pattern for which material?



FR, Fribourg, cathedral, 31.07.2010



FR, Fribourg, rampart, 28.03.2007



### Which not usual deterioration pattern for which material? Why?



FR, Fribourg, Rue du Tilleul, 29.05.2008



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Which not usual deterioration pattern for which material? Why?



FR, Wünnewil, church, 04.09.2011

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Which not usual deterioration pattern for which material? Why?



BE, Thun, Schadau castel, 18.09.2008

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Which not usual deterioration pattern for which material? Why?



BE, La Neuveville, 22.05.2009



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Material compatibility?



FR, Fribourg, St Maurice church, 23.05.2008

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## Material compatibility?



FR,  
Mézières castle,  
01.07.2009

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## Which material and deterioration patterns? Why? What can be done?



BE, Berne, 26.03.2009

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## Which material and deteriorations? What can be done?



BS, Basel, Gate of Spalen (Spalentor)  
2010, Erick Schmid



Material and deterioration patterns  
cartography, CSC juli 2011



## NOTION OF ETHICS

### International charters and conventions

- 1931 The Athens Charter / Restoration of Historic Buildings  
[http://www.icomos.org/docs/athens\\_charter.html](http://www.icomos.org/docs/athens_charter.html)
- 1954 Hague Convention / Protection of Cultural Property in the Event of Armed Conflict  
<http://www.icomos.org/hague/hague.convention.html>
- 1964 The Venice Charter / Conservation and Restoration of Monuments and Sites  
[http://www.international.icomos.org/charters/venice\\_e.htm](http://www.international.icomos.org/charters/venice_e.htm)

*ICOMOS: International Council on Monuments and Sites*

www.icomos.org/en/charters-and-texts 27.08.2013

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# ICOMOS

International Council on Monuments and Sites

Home - About ICOMOS - What we do - Network - Get Involved - Support Us

Home > Charters and other doctrinal texts

## Charters and other doctrinal texts

CHARTERS ADOPTED BY THE GENERAL ASSEMBLY OF ICOMOS  
(see also "Monuments and Sites" - vol. I, 2004)

- International Charter for the Conservation and Restoration of Monuments and Sites (*The Venice Charter*) - 1964 [French] [Spanish]
- Historic Gardens (*The Florence Charter*) - 1981 [French] [Spanish]
- Charter for the Conservation of Historic Towns and Urban Areas (*The Washington Charter*) - 1987 [French] [Spanish]
- Charter for the Protection and Management of the Archaeological Heritage - 1990 [French] [Spanish]
- Charter on the Protection and Management of the Underwater Cultural Heritage - 1996 [French] [Spanish]
- International Cultural Tourism Charter - Managing Tourism at Places of Heritage Significance - 1999 [French] [Spanish] [Greek] [Mandarin] [Dutch]
- Principles for the Preservation of Historic Timber Structures - 1999 [French] [Spanish]
- Charter on the Built Vernacular Heritage - 1999 [French] [Spanish]
- ICOMOS Charter - Principles for the Analysis, Conservation and Structural Restoration of Architectural Heritage - 2003 [French] [Spanish]
- ICOMOS Principles for the Preservation and Conservation-Restoration of Wall Paintings- 2003 [French] [Spanish]
- ICOMOS Charter on Cultural Routes - 2008 [French] [Spanish]
- ICOMOS Charter on the Interpretation and Presentation of Cultural Heritage Sites - 2008 [French] [Spanish] [Chinese]
- Joint ICOMOS - TICCIH Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes - 2011 [French]
- The Valletta Principles for the Safeguarding and Management of Historic Cities, Towns and Urban Areas - 2011 [French] [Spanish] [Russian]

RESOLUTIONS AND DECLARATIONS

ICOMOS COSTA RICA 30 YEARS ADVISORY AND EXECUTIVE COMMITTEE MEETING & SCIENTIFIC SYMPOSIUM

Resources

- Documentation Centre
- Members and Expert database
- Charters and other doctrinal texts
- Calendar
- ICOMOS Open Archive
- Publications
- News archives (old website)
- Newsletters archives
- Contact Us
- Sitemap

Electronic Newsletter

Name

E-mail

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www.bak.admin.ch/kulturerbe/04273/04293/index.html?lang=fr 27.08.2013

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OFC - Office fédéral de la culture - Commissio...

Accueil > Patrimoine culturel > Patrimoine culturel... > Commission fédérale...

Recherche dans OFC  Recherche

Recherche avancée

Contacts

Commission fédérale des monuments historiques (CFMH)  
Secrétaria  
Hallerstrasse 15  
3005 Berne  
T +41 31 322 92 84  
F +41 31 322 87 39  
E [Contact](#)

Informations complémentaires

Liste des membres [↗](#)

Rapports annuels [↗](#)

### Commission fédérale des monuments historiques (CFMH)

La Commission fédérale des monuments historiques (CFMH) est la commission consultative compétente de la Confédération pour les questions liées aux monuments historiques, à l'archéologie et à la protection des sites construits. C'est une commission extra-parlementaire. Le Conseil fédéral nomme ses membres et son président pour une période de quatre ans. La durée du mandat est limitée à douze ans. Le secrétariat de la CFMH est géré par l'Office fédéral de la culture.

La Commission fédérale des monuments historiques

- conseille les départements sur toutes les questions fondamentales relatives à la protection du patrimoine culturel et à l'archéologie
- coopère, par ses conseils, à l'application de la Loi fédérale sur la protection de la nature et du paysage (LPN) ainsi qu'à l'élaboration et à la mise à jour des inventaires des objets d'importance nationale
- établit des expertises portant sur des questions de protection du patrimoine et de l'archéologie à l'intention des autorités fédérales et cantonales
- à la demande de l'OFC, donne son avis sur des requêtes d'aides financières dans le domaine de la conservation des monuments historiques
- encourage les travaux de base et suit les nouveaux développements en matière de protection du patrimoine et de l'archéologie
- collabore et entretient des échanges scientifiques avec tous les milieux intéressés.

La publication « Principes pour la conservation du patrimoine culturel bâti en Suisse » contient les principes qui guident le travail de la Commission et a été développée pour devenir une référence au plan national. L'ouvrage peut être commandé à l'adresse suivante :

[Principes pour la conservation du patrimoine culturel bâti en Suisse](#)

Une des tâches de la Commission est de débattre de questions fondamentales touchant à la conservation des monuments historiques. A ce jour, elle a publié les documents suivants:

- [Sécurité sismique des monuments historiques](#)  
Dernière modification: 17.03.2009 | Dimension: 57 kb | Type: PDF
- [Ouvrages souterrains en milieu historique](#)  
Dernière modification: 23.02.2011 | Dimension: 67 kb | Type: PDF
- [Antennes pour la téléphonie mobile](#)  
Version révisée 2008  
Dernière modification: 17.03.2009 | Dimension: 58 kb | Type: PDF
- [Les fenêtres dans les bâtiments historiques](#)  
Dernière modification: 17.03.2009 | Dimension: 68 kb | Type: PDF
- [Les sites historiques des musées](#)

Patrimoine culturel et monuments historiques

- Aides financières de la Confédération
- Le rôle de la Confédération
- Commission fédérale des monuments historiques (CFMH)
- Inventaire fédéral ISOS
- Inventaire suisse des installations à câbles
- Archives fédérales des monuments historiques (AFMIH)
- Bases juridiques, conventions et chartes internationales
- Services cantonaux et communaux
- Logis aides financières et experts fédéraux [E](#)
- Patrimoine mondial de l'UNESCO
- Patrimoine européen
- Musées, institutions culturelles, collections
- Protection des biens culturels
- Patrimoine culturel immatériel
- Transfert des biens culturels
- L'art spolié
- Traditions vivantes
- Métopolitique

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