



August 2017

CIB W080 – Prediction of Service Life of Building Materials and Components

New Joint Commission Coordinators

In July 2017 the CIB Programme Committee appointed Dr Michael Lacasse and Prof Jorge M.C.L. de Brito as new Joint Coordinators of the Working Commission W080 – Prediction of Service Life of Building Materials and Components.

Contact details



Dr. Michael Lacasse

michael.lacasse@nrc-cnrc.gc.ca

<http://www.nrc.ca/>



Prof. Jorge M.C.L. de Brito

jb@civil.ist.ut.pt

<http://www.civil.ist.utl.pt/>

Short CV's

Dr. Michael Lacasse

Dr. Michael A. Lacasse is a building engineer and since 1991 has worked as a research officer in the Construction Portfolio of the National Research Council Canada. His work focuses on the weathertightness of facades and development of methods to assess the long-term performance of building materials, components and wall assemblies.

More recently he has been involved in projects that center on evaluating the hygrothermal performance of wood frame walls incorporating drainage components and developing limits states design methods for estimating the durability of wall assemblies.

He has specific expertise in the testing and performance evaluation of wall cladding and assemblies for water penetration and air leakage. As well he is knowledgeable on the usage, characterization and evaluation of the durability of jointing systems and sealants used in building facades and the service life of related materials and components.

A few of his research accomplishments include:

- Developing methods to estimate the service life and durability of building materials, components and wall assemblies
- Building materials: Durability of sealants and jointing products
- Building Physics: how heat, air and moisture transport through building envelopes affects the durability of wall components and assemblies.

Dr. Michael A. Lacasse has authored or co-authored over 250 contributions a selection of which can be obtained from the following web site:

<http://nparc.cisti-icist.nrc-cnrc.gc.ca/eng/home/>

Prof Jorge M.C.L. de Brito

Prof Jorge M.C.L. de Brito is full Professor at the Instituto Superior Técnico (IST) since 2009. He is also since 1995 member of the CERIS Research center (450 researchers) and is acting as Head for the period of 2017-2018.

The main scientific areas of research are:

- Sustainable construction (recycled aggregates in concrete and mortars)
- Bridge and building management systems
- Buildings service life (prediction)
- Construction technology
- Participation in 21 competitively-financed research programs (4 international), four of which as Principal Investigator



A selection of the Research topics developed so far within the area of Service Life Prediction among other are:

- Service life of constructions: development of methodologies to estimate the durability of constructions elements
- Statistical modelling of service life prediction of façade claddings
- Application of a deterministic and a stochastic approach of the factorial method to service life prediction of buildings façades
- Service life prediction of buildings façades using artificial intelligence models (artificial neural networks)
- Application of fuzzy models, based on expert surveys, for the prediction of the functional service life of cultural and religious buildings
- Development of probabilistic service life prediction models to be used in Life Cycle Assessment and Life Cycle Costs studies

Prof Jorge M.C.L. de Brito has authored or co-authored over 600 papers in journals and conferences a selection of which can be obtained from the following web site:

http://www.researchgate.net/profile/Jorge_Brito5

Updated Commission Description

Vision

To help ensure sustainable building practices, the commission is intent on providing the building (construction) industry with the most recent advances in respect to methods for service life prediction (SLP) and the design for durability of building components and assemblies.

Objectives

The objectives of the W080 are to consider the prediction of service life of building materials and components and assemblies in respect of the need to:

- Identify existing systematic methods for SLP
- Propose improvement of existing and recommend new methods
- Inform on the state-of-the-art for SLP
- Actively disseminate knowledge of SLP through support of the international conference on "Durability of Building Materials and Components" held triennially since 1978

Scope

The scope of the commission includes:

(1) Providing information on and enhancing existing methods for:

- The factorial method of SLP,
- Stochastic methods and reliability-based approach to SLP
- Material and component specific SLP methods
- Design for durability of building (construction) components and assemblies
- Damage and dose-response functions as are used for SLP

(2) Undertaking collaborative projects within the broad community that encompasses both the research and practitioner domains and that help foster the use of SLP methods and methods for design for durability of building components and assemblies.

(3) Actively participate in standards development initiatives that foster extending the use of SLP methods

(4) Actively support the dissemination of knowledge of SLP through support of the international conference on "Durability of Building Materials and Components" held triennially since 1978

It is envisaged that access to research on Service Life and Durability will be offered through the web.

Information

More information on CIB Commission W080 – Prediction of Service Life of Building Materials and Components can be found [here](#).

The W080 Work Programme will have five approved projects, of which four are new. This will be presented in some detail in a separate news article.

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