Preface - Words from the Scientific and Technical Council

> **Emmanuel Ferrier is the president of the AFGC Scientific and Technical Council. He shares with us his foreword.**

Preface

Numerous students, engineers, scientists, and researchers use numerical methods to develop or use software that will solve engineering problems related to construction. These numerical methods rely on FE calculations. The AFGC wished to contribute to the field and has proposed in 2016 the creation of a task force focusing on the FE calculation methods related to the field of construction. The main objective of this task force is to meet a need that is often expressed: to have an educational document, like the former SETRA guidelines, discussing the FE computational modeling (beams, plates, shells,...) of civil engineering structures. This project is aimed towards, among others, young engineers in TP/GC design offices.

The FE analysis is a fundamental subject that all engineers working in major companies and design offices need to understand to create essential designing tools.

This document introduces the FE analysis with an overview of the various concepts and applications. It brings forward the primary concepts of the FE method along with analysis examples using consistent procedures. The FE concepts involving 1D problems are discussed in detail so that the reader can make sense of the methodology and progressively understand to better analyze 2D and 3D problems.

Since this field is in a constant state of advancement, the AFGC did not wish to freeze the document as a set of recommendations like it usually does. Instead, it proposed for the first time a numerical format that is dynamic and evolving with time. Those are, therefore, unlike many AFGC guidelines, not pre-normative recommendations but rather documents to understand and practice FE calculations in the field of construction.

The CST of the AFGC would like to thank the facilitators of the task force, **Claude Le Quéré and Didier Guth, and all the other participants, who rendered it possible through their work to publish this document.**

Emmanuel Ferrier – May 2020

Révision #2
★Créé 18 September 2023 14:28:57 par Paul Terrasson Duvernon
✎Mis à jour 10 October 2023 08:54:17 par Paul Terrasson Duvernon