

TG25 - Facade Systems and Technologies



We are most grateful to Ms. Brenda Apted for compiling the following report of the 2nd Meeting of TG25 which was held at the Sand Key Hotel, Clearwater, Florida, USA on 10th December 1998.

Introduction

Coordinator Stephen Ledbetter welcomed the participants and described the work of CIB and Task Group TG25 which had been set up to study issues of the building envelope that relate to construction from standard components and semi-standard details. It had been agreed that this included most forms of wall except loadbearing masonry, block and stone, although this may be overlaid with metal panels.

Scope of TG25

A lengthy discussion followed about the name of the TG and possible confusion about the word 'facade' which Prof. Burnett said meant only the outer veneer in North America. It was agreed that the name should remain and that facade should be interpreted as the whole wall from outer visible surface to inner lining. This would include stick systems wall, unitised wall, panellised or truss wall, glass screens and metal cladding as siding.

Although the term 'facade' generally implies vertical wall the work of TG25 would also include roof constructions of similar form, for example, slope glazing. Prof. Burnett wished to use the term building enclosure but this could include other forms of roofing or wall and would increase the scope of TG25 such that it would risk duplicating, the work of other CIB groups.

The forms of construction to be considered range widely from fully integrated systems (trusswall) to just wall cladding (siding). However, it was agreed that the use of medium to large size factory-made components in any form of construction have common problems of co-ordination and that many building physics issues are common to the whole range of walls.

Prof. Hens observed that historically there were builders and not architects and that with modern facade

systems it was necessary to revert to an engineering and construction based approach to design. The performance based design approach of structural engineers would be a good model to adopt.

Prof. Hens emphasised the need to integrate building services design with facade design and Prof. Burnett raised the issue of integration of the facade with the rest of the building. Further discussion led to the conclusion that TG25 should initially concentrate on the performance for facade systems. The Coordinator observed that this would fit with other work of CIB and also his own work on performance specifications in the UK.

Performance Definition for Facade Systems

An early task of TG25 should be to establish the fundamental qualities required of a facade. These should be written in such a way that they could be expressed exactly for the purposes of design and verification. In turn this would lead to better design methods.

Performance definition should include: glass selection, fire, security, bomb blast, robustness, aesthetics, vandalism, durability and so on in addition to traditional requirements for wind and weather performance. The Coordinator undertook to draw up a provisional list of performance requirements for future discussion and Prof. Hens agreed to make available the building physics performance requirements for walls drawn up by IEA Task 32, 'Internal Building envelope performance assessment'.

Prof. Burnett referred to work in the US on multi-variant decision-making. Other delegates emphasised the need to move forward a decision-making framework rather than the current culture of changing things only when they went wrong in order to remain competitive in the market place. The Coordinator set out a hierarchy of the importance assigned to decision-making, based on work in the UK. The areas of decision-making in order of importance from the perspective of the wall contractor are:

- Coordination
- Building Physics
- Structural Integrity
- Maintenance
- Weather Tightness
- Durability

Way Forward

The objective of TG25 is to improve the way in which facades are built. This requires a change in our understanding of performance definition, design and verification of performance. It also requires people to take a more holistic view of wall design. Too many people currently take a 'linear' view of the progression of their small part of the whole construction.

Prof. Burnett suggested that each country could study the TG25 list of performance requirements and say where they lead and could contribute where they trailed and needed further information and whether they had climate- or cultural-specific problems.

Dr. Karoly Marolasy highlighted the need also to study the appropriateness of technologies and competing technologies.

It was agreed that the work of TG25 should be based around a website on which papers may be published but that the work should lead to a conference on appropriate wall technologies, design decision-making and competing technologies for walls.

The following meeting was scheduled to be held in Budapest on 12 and 13 April 1999. A report on this will of course be featured when available.