



## NOTES FROM THE GENERAL SECRETARIAT

### INFORMATION FLOW TO MEMBERS

A new Constitution heralded the current Triennium and this in turn ushered in an innovative programme of exciting activities, some of whose origins lie well outside the traditional CIB framework. The Constitution also states that opportunities for relevant collaboration with other organisations will be pursued where appropriate.

It is the policy of the CIB Board and Programme Committee to provide the Membership with full and on-going details concerning all these projects as they develop.

The ensuing dialogue will enable members to take informed decisions on the extent of their direct involvement.

This Article highlights three major components in the current programme. For two, an Introduction has been written to set the scene:

- [Introducing the Pro-Active Approach: CIB and the Pro-Active Approach by Wim Bakens](#)
- [Facilitating Innovation and World Trade - The CIB Proactive Programme in Performance Based Building Codes and Standards by Greg C. Foliente](#)
- [Introducing Technology Watch: In Search of New Technologies by Wim Bakens](#)
- [Technology Watch in the Construction Industry](#)
- [CIB-FIG Project on Performance Indicators at the Urban Level](#)



### Introducing the Pro-Active Approach



## CIB and the Pro-Active Approach by Wim Bakens

- [History](#)
- [Principles of the CIB Pro-Active Approach](#)
- [Three Proposed Priority Themes](#)
- [Priority Theme 1. Sustainable Construction](#)
- [Priority Theme 2. Performance Based Building Codes and Standards](#)
- [The CIB Home Page as the Information Platform](#)

### History

In May 1997 in Pilanesberg, South Africa CIB mounted a Strategic Workshop to discuss the required activities aimed at positioning CIB for the 21st Century through serving better the Organisation's Members' needs.

As well as certain relatively minor proposals for improvements in CIB's structure, culture and programme, the discussions at this Workshop resulted finally, after consultation with the Members, in

some major and far-reaching amendments to the CIB Constitution and By-Laws at the CIB General Assembly at Gävle, Sweden in June last year.

For example, the new CIB Name and the new definition of the CIB Mission Statement, as now incorporated in or which may be derived from the Constitution and By-Laws, reflect the following strategic objectives:

- the replacement of the former terminology "Research and Studies" in the CIB name by the terminology "**Research and Innovation**", which reflects the strategic objective to include explicitly in CIB's Scope aspects related to the implementation and application of Research Results
- it is now an implicit objective in the CIB Mission Statement that CIB should aim at functioning as the world's foremost platform for exchange and collaboration between the global research community and the **Industry**
- in general the aspect of **Collaboration** between CIB and other organisations as a means to achieve the CIB Membership's Objectives, is far more strongly emphasised than it ever was in CIB's past.

For a more detailed report on the results of this Strategic Workshop the CIB Membership is referred to the article entitled [The CIB Strategic Workshop](#) in INFORMATION 3/97.

A pdf-copy of the full text of the CIB Constitution and By-Laws can be [downloaded](#) by CIB Members from the CIB Home Page.

In addition to those amendments to the CIB Constitution and By-Laws the decision taken at the Strategic Workshop which probably entails the strongest impact on CIB's Structure, Culture and Programme, was the decision to explore the potential of the so-called Pro-Active Approach.

To define this Pro-Active Approach a distinction was made between:

- the bottom up or "Responsive" approach, which is traditional within CIB, with CIB Members and CIB Commissions making proposals for new CIB Activities. Those proposals are assessed by the CIB Programme Committee on an ad hoc basis. When it is judged that the proposed Activity would be in the interests of the CIB Membership, a new CIB Activity is established, involving (usually) a new CIB Task Group or (less frequently as start-up) a Working Commission. This new Group has its own agenda and its realisation places complete reliance on the voluntary input of its Membership AND
- the Pro-Active Approach, which was to be organised not instead of but in addition to the "Responsive" approach and which was to be characterised by a more top-down approach. Here steps would include: the selection of Priority Themes by the CIB Board (in communication of course with the CIB Membership), a clear definition of objectives and deliverables for each theme and an approach aimed at achieving those objectives and producing those deliverables which was to be based on trustworthy commitments for all participants.

At the CIB Board Meeting that took place a few days after the Strategic Workshop an Ad Hoc Committee was formed to further elaborate the principles of this Pro-Active Approach. The Committee was asked to formulate recommendations for implementation and to come up with two or three Priority Themes.

The recommendations were thoroughly discussed at the Meetings of the CIB Officers', Programme and Administrative Committees and Board which were held in February 1998 in Gaithersburg, USA. The Principles and Objectives were subsequently adopted by the CIB Board and its Standing Committees.

A first account of the CIB Pro-Active Approach was brought to the notice of the CIB Membership at large through the article entitled [What are we looking for from CIB's Pro-Active Approach](#) in INFORMATION 2/98.

Recently an update as concerns its implementation was included in the CIB Annual Board Report 1998 in the form of an article entitled [The Pro-Active Approach](#) featured in INFORMATION 1/99.

### **Principles of the CIB Pro-Active Approach**



It is envisaged that the CIB Board in communication with the CIB Membership will select themes which will be dealt with as CIB Priority Themes during one or two CIB Triennia.

For each selected Priority Theme a programme will be developed which may include the following components:

- Projects or other activities to be initiated by and executed under the responsibility of CIB's Task Groups and Working Commissions. Such Commission's activities which will contribute towards achieving the objectives as defined in the respective programme, will be accorded maximum support by CIB.
- Collaborative Member Projects which are to be based on firm commitments by those Member Institutes to be involved and for which, where feasible and if required, CIB may help to locate external resources.
- Establishment of the necessary collaboration with other organisations, including the already existing CIB Partner Organisations.

For the development of programme proposals and to coordinate the various activities to be executed in the context of an established programme, CIB may enlist external capacity in addition to the CIB General Secretariat's capacity.

### **Three Proposed Priority Themes**



From its deliberations aimed at selecting Priority Themes, the Ad Hoc Committee distilled and adopted the following tests for possible themes:

- Industry will recognise it as something it wants to support with resources and will want to implement its outcomes.
- CIB will be positioned by the envisaged activity as a leading international organisation for the 21st Century.
- To determine from among seemingly otherwise equivalent possible themes, those which are more obviously based on existing CIB tools without needing to devise new ones, and those with more likelihood of providing evidence to governments of the value of more research in this area, are to be preferred.

In addition the following criteria were applied:

- Themes to be selected must fit the CIB Mission.
- The activity must be Member-led and Member-supported and generally benefit CIB Members.
- The issue must have global - or at least multi-regional - significance and be something beyond the normal scope of a single Member.
- The targets should involve some "stretch", capture the imagination and be achievable in a reasonable term (3 to 5 years at most).

The following three Priority Themes were selected as potentially to be taken up in the context of the

CIB Pro-Active Approach:

### PRIORITY THEME 1

Sustainable Construction (initially entitled "Globally Accepted Sustainability Criteria")

If taken up, the advice of the Ad Hoc Committee was to aim to produce the following deliverables:

- A framework in terms of which the various schemes for sustainability criteria which are being developed may be assessed, evaluated and tested, and to define links from these to other critical measures such as economics and social values.

### PRIORITY THEME 2

Performance Based Building Codes and Standards (initially entitled "Performance-Based Standards")

If taken up, the advice of the Ad Hoc Committee was to aim to produce the following deliverables:

- An annotated inventory of the state of the art of verified models of various aspects of building performance and the critical issues which need to be addressed for them to be available for citation / reference in building performance standards by 2001.

### PRIORITY THEME 3

Business and Process Re-engineering (initially entitled "Construction / Facility Process Re-Engineering")

If taken up, the advice of the Ad Hoc Committee was to aim to produce the following deliverables:

- A set of principles and models for process improvement based on scientific analysis and logistic optimisation and simulation modelling of the construction process.

It was decided by the (then) CIB Board to take up the proposed Priority Themes 1 and 2 already in the CIB Triennium 1995 - 1998 and later in this article a report is given on where we stand at present as concerns the further elaboration and the actual implementation of these themes.

It was also then decided not to take up the proposed Theme 3, but to leave the decision on whether or not to do so later to the next CIB Board. It is to be expected that discussions on whether, when and how to take up this third theme will commence in 2000.

### **Priority Theme 1. Sustainable Construction**



Although at that time the terminology "Pro-Active Approach" did not yet exist, already by the middle of 1995 a special status had been given to the Theme "Sustainable Construction" within the CIB Programme. It was decided to make it the overall theme for the 14th Triennial CIB World Building Congress in 1998 and a number of the then existing CIB Task Groups and Working Commissions were asked to initiate activities related to this theme.

At the Congress over 200 presentations were given on the theme of Sustainable Construction, which are featured in the Congress Proceedings. Included are the presentations of interim or end results of those special activities initiated by the respective CIB Task Groups and Working Commissions. In addition it can be expected that in the middle of 1999 a special issue will be published of the CIB Encouraged Journal BRI - Building Research and Information, which will include selected, previously unpublished key note speeches given at the Congress, summaries of the discussions held at the various symposia which were part of the Congress, articles on selected CIB Projects on aspects of Sustainable Construction and additional special articles on defined aspects of Sustainable Construction, such as on Sustainable Construction in Developing Countries.

The following CIB Task Groups (TG) and Working Commissions (W) may be cited as having a Scope and Work Programme which is completely focused on certain aspects of Sustainable Construction:

- TG16 - Best Practice for Sustainable Construction. This Task Group in fact was terminated in March 1999 after having completed its objective of producing an International Best Practice Report, which is expected to be published in the middle of 1999.
- **TG22 - Environmental Design Methods in Materials and Structural Engineering** (established in 1996 as a joint CIB - RILEM Commission)
- **TG38 - Urban Sustainability** (established in 1998)
- **TG39 - Deconstruction** (established in 1999)
- **W100 - Environmental Assessment of Buildings** (established in 1998 as the successor of the former Task Group TG8)

In addition a number of CIB Task Groups and Working Commissions started projects related to a certain aspect of Sustainable Construction that was consistent with their scope. And some Member Institutes initiated related projects in communication with CIB. Examples are:

- the project "Sustainable Development and the Future of Construction"; carried out by Working Commission W082 - Future Studies in Construction, which resulted in an International State of the Art Report in the middle of 1998, a copy of which is included in a designated web site at <http://bativille.cstb.fr/cib.htm>
- the project "Sustainable Construction and Integral Delivery Systems" by Salford University, UK, about which detailed information can be found at the following designated web site <http://www.surveying.salford.ac.uk/ids>
- the recently established project on Performance Indicators for Sustainability, which also is an initiative by Working Commission W082.

In addition, at present, CIB is engaged in discussions with certain CIB Partner Organisations with the objective of setting up joint Activities in the area of Sustainable Construction. These include the following possible future Activities:

- a project aimed at developing a system for Environmental Labelling, to be set up together with IEA - the International Energy Agency
- a project dealing with the sustainability aspects of Land Tenure, Ownership and Management, to be set up together with FIG - the International Federation for Surveyors.

However, all those Task Groups, Working Commissions and Projects are to differing degrees undertaken in isolation. There is not one consensus based framework or programme in which they can all be positioned and which would facilitate coordination between ongoing activities and a definition of areas of relevance which are not yet covered and in which new Activities should be initiated.

This omission was one of the main reasons underlying the CIB Programme Committee's decision in 1995 to aim for developing what is now entitled as "Agenda 21 for Sustainable Construction".

Since the beginning of 1998 a small group of CIB Members under the leadership of Mr. Luc Bourdeau, CSTB, France in communication with the CIB General Secretariat and with representatives of the CIB Programme Committee have been developing such an Agenda.

It is to be expected that the results of this will be published in the middle of 1999 in the form of a special CIB Publication. The intention is to produce at least 2000 copies of this Publication for free distribution among the CIB Membership at large, and to the various CIB Partner Organisations and indeed in principle to everyone who would be willing to collaborate with CIB in this area of

## Sustainable Construction.

It is to be expected that this Agenda 21 for Sustainable Construction will in fact prove to be the basis for a more formalised CIB Pro-Active Approach aimed at the Priority Theme "Sustainable Construction".

For more information on the objectives for Agenda 21 for Sustainable Construction the CIB Membership is referred to the article entitled [Agenda 21 for Sustainable Construction](#) in CIB INFORMATION 1/99.

## Priority Theme 2. Performance Based Building Codes and Standards

The work on this second CIB Priority Theme in fact commenced in the first half of 1998 with a tender among selected CIB Full Member Institutes for developing detailed recommendations for a CIB Programme in this area. This tender was awarded to CSIRO, the CIB Full Member Institute in Australia.

A team of CSIRO researchers under the leadership of Dr. Greg Foliente subsequently executed an international literature survey and interviewed many experts within and outside CIB and in October 1998 presented its results at a meeting of the CIB Programme Committee in Brisbane, Australia. The CIB Programme Committee adopted the proposed Programme with enthusiasm as an adequate base for a CIB Pro-Active Approach in this area.

For those interested in the detailed Programme proposal by Greg Foliente et al a copy of the report can be [downloaded](#).

In addition reference is made to the article by Greg Foliente which follows on immediately from this one and which in fact is a popular version of the Executive Summary in the Report.

The CIB Board's Ad Hoc Committee for the Pro-Active Approach subsequently analysed the proposed programme in depth. Its recommendation was adopted by the CIB Board at its meeting in March 1999 in Gainesville, USA, that, during the CIB Triennium 1998 - 2001 CIB should focus on the following three priorities:

- To prepare a compendium of validated models of building performance.
- To prepare a report on economic benefits of using the performance approach.
- To prepare a compendium of statements of objectives and functional requirements.

In the discussions it was moreover assumed that:

- Task Group [TG37 - Performance Based Building Regulation Systems](#) and Working Commission [W060 - Performance Concept in Building](#) will play crucial roles in the proposed programme activities which relate to the very principles for and the required system of Performance Based Building Codes and Standards.
- Many other CIB Task Groups and Working Commissions are in the position to provide an active input regarding certain aspects of building that could be covered through performance based requirements.

To give guidance to the execution of the proposed programme, the CIB Board transformed the earlier established Ad Hoc Committee for the Pro-Active Approach into a Steering Committee for the Programme for Performance Based Building Codes and Standards.

This Committee now comprises the following CIB Board Members:

- [Dr. John Duncan](#) (Chairman) - BRANZ, New Zealand

- **Dr. Sherif Barakat** - NRCC, Canada
- **Mr. Roger Courtney** - BRE, UK
- **Prof. Christer Sjöström** - KTH, Sweden
- **Dr. Jack Snell** - NIST, USA
- **Dr. Toshikazu Takeda** - Obayashi Corporation, Japan
- **Dr. Wim Bakens** (CIB Secretary General)

In addition the following CIB Coordinators have been asked to serve as Members of this Committee:

- **Mr. David Stone** - The Scottish Office, UK, TG37 Coordinator
- **Ir. George Ang** - Governmental Buildings Agency, Netherlands, W060 Coordinator

In addition it has been decided by the CIB Board to engage an expert in the area to act as External Coordinator for the execution of the Programme for Performance Based Building Codes and Standards together with the CIB Secretary General. At present the CIB Secretariat is in the process of setting up a contract for this.

In the brief for this External Coordinator, the following priority tasks will be included:

- The External Coordinator is to interact with the Coordinators of relevant CIB activities and assist in the identification of mutual assistance that will be desirable and capable of being mobilised. The person appointed is empowered to identify other CIB activities which should be included, and to organise for their integration into an overall plan for CIB activity.
- The External Coordinator is to interact with potential industry users, and identify what their most pressing needs are in this area, and consequently what issues they would be prepared to provide funding to attain. These users may be individual companies, national or international trade associations, code writing or enforcing agencies, or other bodies.
- Where practicable, the External Coordinator is to facilitate consideration of issues of coordination between performance based codes and the special demands on buildings/building and construction that are derived from the theme "Sustainable Construction", to create a link between these CIB themes.
- The External Coordinator is to identify from discussions in CIB, ISO, ASTM and any other relevant networks, what plans there are to put on individual conferences which are relevant to this subject area during the period August 2000 to July 2001 and to influence the planning processes either to combine them with the CIB Congress in April 2001 (which is CIB's preference) or to ensure that they are so scheduled as not to compete with the CIB Congress.

It is anticipated that the presentation of results from the Programme for Performance Based Building Codes and Standards will be included as a major part of the next CIB Triennial World Building Congress, which will take place from 2nd to 6th April 2001 in Wellington, New Zealand.

### **The CIB Home Page as the Information Platform**



It is envisaged that the CIB Home Page will be the major platform for information exchange to the CIB Membership at large and to anyone else who is seriously interested in results from the CIB Pro-Active Approach and/or in a possible collaboration with CIB on the topics which are part of the Pro-Active Approach.



## **Facilitating Innovation and World Trade - The CIB Pro-Active Programme in Performance Based Building Codes**



## and Standards

by



### Greg C. Foliente

([greg.foliente@dbce.csiro.au](mailto:greg.foliente@dbce.csiro.au))

#### **CSIRO Building, Construction and Engineering, Melbourne, Australia**

The worldwide interest in the development of performance-based building codes is primarily driven by the need to address the difficulties posed by current prescriptive codes and standards to:

- (1) cost-optimize building construction,
- (2) introduce product or system and process innovation, and
- (3) establish fair international trading agreements.

The prescriptive or deemed-to-comply building codes that are currently enforced in most countries around the world are major non-tariff trade barriers that inhibit building and construction trade. To address this issue, the World Trade Organisation (WTO) has included Clause 2.8 of the Agreement on Trade Barriers to Trade (WTO 1997), which states that:

"Wherever appropriate, Members shall specify technical regulations based on product requirements in terms of performance rather than design or descriptive characteristics"  
(italics ours).

Member economies that are signatories to the WTO General Agreement on Tariffs and Trade (GATT) have therefore committed themselves, whether wittingly or not, to the use of performance requirements in evaluating a product's fitness for purpose and in accepting new and/or innovative products in their market, or to state it briefly, to use the language of performance in trade.

Performance-based building standards, i.e., standards that describe the target performance rather than the solution, free the building regulatory system from the limitations described above. The CIB Proactive Programme on Performance Based Building Codes and Standards (PBBCS) builds on CIB's past contributions, and reinforces CIB's reputation and position as the world's leading organisation in this area. The Proactive Programme will facilitate an internationally coordinated effort for information exchange and dissemination, and research and development collaboration among researchers and practitioners in this area. And more importantly, the activity will produce practical recommendations for their possible adoption and application in the development of national building codes and international standards for the benefit of all sectors of the building industry and the general public.

In developing the CIB-PBBCS Programme, we collected together and synthesised the responses to an international call for issues and items, the results of literature review and the additional

information arising from discussions with professionals and experts from selected parts of the world. This led to the proposed Programme outline and framework, described in the CSIRO report to CIB on this topic. Our recommended deliverables were given in the report in a text box, with a brief description of the output, a priority rating and suggested lead group and collaborators.

In the 1998-2001 Triennium, the recommended activities and outputs are:

- State-of-the-art and state-of-the-practice reports on: (1) historical development and integrated concept of performance; (2) relationship and framework of building regulations and standards; (3) application of the performance concept in the design and construction process; (4) experimentally validated evaluation models and tools; and (5) code development and implementation issues.
- Preliminary reports on: (1) writing a compendium of objective statements, performance criteria and evaluation methods; and (2) quantifying the economic benefits of using performance based codes and standards.
- Establishment of one or two new task groups to investigate: (1) identification and translation of user requirements to performance criteria; and (2) applications of probabilistic and reliability concepts in the development of performance based codes and standards.
- Final report of the PBBCS Secretariat about Programme accomplishments and specific recommendations for further work.

The broad and comprehensive look at the issues that need to be addressed so that the performance concept can be applied systematically during the building design and construction process has given us a long list of research needs. Thus, the proposed Programme outline can also be seen as a possible framework of an international research agenda that various researchers, academics and professionals can contribute into.

The primary factors critical to the success of the Programme are:

- The establishment of a central technical coordinating body
- CIB's ability to get the support of its Working Commissions and Task Groups, and
- Availability and/or sufficiency of CIB resources to facilitate collaboration and linkages.

We recommend an implementation strategy that includes:

- The establishment of the PBBCS Programme Secretariat, which will work closely with the CIB Working Commissions and Task Groups (which are leading a priority task), the General Secretariat and a Steering Committee established by the CIB Programme Committee (see Figure 1)
- Active Programme promotion within CIB, and to relevant industry and international organisations (conducted throughout the Triennium)
- Research collaboration through: (1) committed projects by CIB Commissions, (2) targeted partnerships with other organisations, and (3) collaborative CIB Member projects
- Extensive use of Internet facilities (especially the Web, FTP and E-mail discussion list)
- Meetings/workshops and an international symposium

We also highly recommend that the main theme of the 2001 World Congress in New Zealand be about "Accomplishments and Challenges in the Application of the Performance Concept in Building and Construction" or similar. Potential speakers under this theme may include authors of the recommended deliverables/reports, selected users and stakeholders from industry and government, and perhaps the PBBCS Secretariat Coordinator to present the Final Report on Programme accomplishments to 2001 and what needs to be done in the near and medium-term future.



## Introducing Technology Watch



# In Search of New Technologies

by

**Wim Bakens**

In 1998 following lengthy consultation with the Membership CIB changed its name. With the former name we profiled ourselves as an International Council for Research, Studies and Documentation. In our new name we define our scope as being Research and Innovation. There is an unequivocal message in this change.

But first of all, let us be clear as to what it does not mean. This message does not imply that we no longer want to be active in the area of Documentation. The recent establishment of Working Commission W102 - Information and Knowledge Management in Building surely testifies to the contrary. Instead what the message says is that in addition to our involvement in the area of Research, we are looking to play a more decisive role as concerns the implementation and application of Research Results. In other words: CIB wants to be right there when it comes to stimulating and facilitating international exchange and collaboration as they relate to actual Innovations in Building and Construction.

One way of doing this is through our Task Groups and Working Commissions. Already over the past years we have witnessed a shifting emphasis in their Work Programmes, from presenting learned papers only to carrying out projects and organising events in which the focus is placed more on issues related to construction practice in general and to innovations in practice in particular. The CIB Programme Committee and the CIB General Secretariat will continue to seek to catalyse this shift in the Work Programme of those Commissions that have not yet realised this.

### Technology Watch

A second way to stimulate and facilitate this international exchange and collaboration is through certain CIB Activities that lie outside the traditional framework of Task Groups and Working Commissions.

One such Activity is the so-called Technology Watch Project (see [here](#)). This CIB Project is facilitated by the Belgian Building Research Institute. The project enables the CIB Membership collectively to search for new technologies which have been developed and are already applied in other Industries and which, possibly after suitable adaptation, could prove to be of interest to the Building and Construction Industry.

I suggest that the CIB Members should give the most serious consideration to getting involved in this project as actively as possible. And I am prompted to put this suggestion forward not only because I would like to see the project enjoy the success it deserves, but because I am convinced that collaboration in this will be in the best interest of CIB Members, both collectively and as individual Member Institutes.

A milestone in this project will be the CIB-BBRI Conference "Technology Watch and Innovation in Construction" which will take place on 5th and 6th April 2000 in Brussels, Belgium and which will be a crucial platform for presenting the first results of the project and for collectively discussing the

preferred Follow Up. [More](#) about this Conference.

### **Technology Fact Sheets**

Currently, the CIB General Secretariat in collaboration with certain Member Institutes which are represented in the CIB Board, has another Activity under preparation, which also aims at facilitating international exchange and collaboration as concerns Innovation in Building and Construction.

This has as its objective to develop a searchable database as part of the CIB Home Page with so-called "Technology Fact Sheets". A Technology Fact Sheet will describe a new technology for construction which is being developed by a CIB Member Institute. Included will be: a brief description of the respective R&D project, an indication of the technology itself which is the targeted result from the project, an indication of the assumed application of this technology and information on the person to contact either to obtain additional detailed information or to discuss options for collaboration.

At present the format for such Technology Fact Sheets and the first 25 or so examples are being developed. In a future issue of the CIB Information Bulletin this will be featured in detail and the Membership at large will be urged to get involved.



## **Technology Watch in the Construction Industry**



### **Introduction**

The construction industry wants to catch up with other major industries in terms of development and innovation.

It is clear that innovation is necessary. The construction sector must develop in order to accomplish the demands and to respond to the increasing political pressure of the society. Obviously, a more active approach is required from the construction industry not only regarding active development within the sector itself, but also in keeping up to date on developments taking place in other sectors.

A myriad of fields are, and have in the past, been explored by other industries resulting in the development of new technologies covering areas many of which could be of direct interest for the construction industry. Advantage should be taken of these obvious opportunities. However, at present only very limited efforts are being undertaken by the construction sector to actively identify and exploit the existing technologies in other sectors. The process of getting acquainted with the activities in other sectors and follow up on opportunities, which may appear, can be described as Technology Watch.

In other words Technology Watch can be seen as an active "search" in other sectors, the so-called donor sectors, for technologies not yet developed in the construction sector. The newly discovered technologies can be supporting existing technologies, fill in existing well-defined technology gaps or cover new areas not yet thought of in the construction sector.

### **Example**

To illustrate the potential of Technology Watch an example of successful inter-sectorial co-operation and knowledge transfer can be mentioned.

From the chemical industry the use of thermotropic polymers in building has been introduced. Thermotropic polymers belong to the new generation of materials that are often referred to as intelligent materials, i.e. materials that respond spontaneously to the environment without human

interference. Unique for the thermotropic polymers is the relationship between transparency and temperature. The materials are transparent at normal temperatures, but when the temperature exceeds a certain level, light is diffused due to the formation of microscopic areas in the material, size-wise of the same order of magnitude as the wavelength of visible light. A use of such materials in building, e.g. in coating of window glass or for roof elements is envisaged.

A fibre-shaped clay mineral has been utilised for many years in the oil industry as a rheological stabiliser for boring sludge. The technique has by a European Consortium under the European Commission funded research programme BriteEuram, been adapted and applied to stabilisation of the cement paste of self-compacting concretes with good results.

The use of these new, tolerant or stable types of concrete may in the future yield saving in production and maintenance cost of High Performance Structures in the order of 35% of the cost of concrete due to reduction of non-conformance, rejections or increased maintenance costs [BriteEuram BRE2-CT94-0972, Tolerant Concretes Designed for High Performance During Production and Structural Service]

### **CIB and Technology Watch**

In response to the needs for new or alternative technologies and inter-sectorial co-operation an activity on Technology Watch has been initiated within the framework of CIB.

The objectives of this activity, which is in the start-up phase, is to increase people's awareness of the opportunities and possible benefits that can be derived from a structured Technology Watch.

Furthermore, it is the goal to establish contacts between the construction industry and other industries to a larger extent than today, aiming at future more upstream co-operation schemes, which could benefit not only the construction sector but also other involved sectors.

The construction sector covers a very wide field of interests and it is therefore considered necessary to focus the action on a few specific problem areas. Based on the results of a poll, an inventory of the most problematic topics in construction today will be made, and a few topics will be selected according to priorities.

Furthermore, a set of State-of-the-Art Reports will be prepared for the different sub-sectors of construction. These States-of-the-Art will focus on the complex of problems as defined by the poll, indicating gaps, deficiencies and lack of knowledge or technologies. A selection of topics or specific problem areas pointed out in the various States-of-the-Art will be made and a series of confrontation meetings or workshops will be arranged, to which people from the construction industry will be invited together with people from other industries, i.e. potential donor sectors, to discuss and bring forward solutions to the problems and needs which have been highlighted.

Contacts between the construction industry and the donor industries will, in the case of successful technology matching, be sought and established through the Technology Watch co-ordination with the aim to initiate joint research projects and/or close inter-sectorial co-operation.

The illustration gives an idea of the envisaged organisation for the Technology Watch Project.



Click here to download plugin.

### **Envisaged Organisation of the Technology Watch Project**

Additional detailed information on this project, including an electronic reply form for CIB Members who want to get involved in the project, can be found in the project's home page at:

<http://www.bbri.be/technologywatch>

On 5th and 6th April 2000 the BBRI will organise an international conference together with CIB in Brussels on "Technology Watch and Innovation in the Construction Industry".

More information can be found [here](#). As part of this conference various Technology Watch Confrontation Meetings will take place, which will be part of the project.

A further presentation of the results and findings of the project is planned at the 2001 CIB Conference in Wellington, New Zealand.

A Technology Watch website will be set up, where information and progress of the project will be available. The intention is to setup a database where results, information, obtained contacts, publications etc. are accessible from the website in the near future.

The poll previously mentioned would be executed through a distribution of questionnaires and all members of CIB are kindly invited to participate. The questionnaire, which is also available from the Technology Watch website, can either be completed and forwarded to the Technology Watch Co-ordination Group on-line or be printed out and sent by fax or ordinary mail before 6th September 1999 to:

Belgian Building Research Institute  
Violette str. 21-23  
1000 Brussels  
Belgium  
Att: Ms. Ida Henrichsen  
Fax: +32.2.725 32 12  
Email: [technologywatch@bbri.be](mailto:technologywatch@bbri.be)



## **A Collaborative Project with FIG Performance Indicators for Sustainable Development at the Urban Level**



An example of a stronger emphasis on collaboration with other organisations as a - in selected cases - more effective means for achieving CIB's Objectives, is the recently established collaboration with FIG.

In our previous issue we reported on the Memorandum of Understanding which CIB had signed with FIG - The International Federation of Surveyors on 7th January 1999.

Mention was made there of the planned brainstorming meeting scheduled for 7th April 1999.

This duly took place with representation from CIB and FIG. The aim was to discuss options for further collaboration.

The following routes to deepen this collaboration were defined:

1. FIG representatives will participate in and actively contribute to the work of CIB Task Group TG38 - Urban Sustainability
2. CIB representatives will actively participate in a FIG Project aimed at developing general guidelines for dealing with aspects of Sustainable Construction by Surveyors
3. CIB and FIG will aim at initiating a joint Activity, the scope of which will include sustainability aspects of land tenure, ownership and management and the purpose of which will be to contribute to the development of Global Indicators for Sustainable Development in the Built Environment. A preliminary outline of this project is given below.

In May / June 1999 the CIB General Secretariat will be searching for one or two CIB Experts who would be willing to play an active role in this project.

### **FIG/CIB Joint Project on Performance Indicators for Sustainable Development at the Urban Level**

#### **Aim**

The aim of this joint project is to define and promote, for the benefit of the international community, performance indicators to monitor the sustainability of developments in the built environment.

#### **Rationale**

Various organisations and experts around the world have been developing performance indicators for sustainable development, partly in response to the challenges posed by the United Nations Agenda 21 and Global Plan of Action. FIG and CIB wish to apply the particular expertise of their members to this work. FIG has, in particular, skills in land tenure, land administration and geographic information systems while CIB has complementary skills in housing and construction. Both organisations recognise the need to clarify what is meant by sustainable development and the importance of ensuring that projects in which their members are involved meet the needs of the communities that they serve.

### **Terms of Reference**

Each organisation will appoint 2 experts to lead a joint project to:

- a. clarify, from the perspectives of FIG and CIB, the definition of sustainable development
- b. make an inventory of work that has already been undertaken into the development and application of performance indicators
- c. develop a conceptual frame work and basic terminology for the further development and application of performance indicators
- d. prepare an interim report by April 2000, and
- e. make final recommendations for further action by mid 2001.

The experts will involve selected FIG and CIB Commissions in the joint project.

The FIG Bureau and the CIB General Secretariat will monitor the joint project and, depending on the outcome of the interim report, seek additional expert input, channels for dissemination, and financial support from outside bodies such as the UN, the World Bank and the European Commission.

### **Outcomes**

The interim results will be presented at:

- FIG Working Week in May 2000, in Prague, Czech Republic, and
- The joint CIB - GBC Conference "Sustainable Buildings 2000" in October 2000 in Maastricht, The Netherlands

The final results will be presented at:

- The FIG Working Week in 2001, in Seoul, Korea, and
- CIB Triennial World Building Congress in April 2001, in Wellington, New Zealand

Subject to agreement by the FIG Bureau and CIB, the results may be published as a joint FIG / CIB Publication.

