

# PEB *EXCHANGE*

THE JOURNAL OF THE OECD PROGRAMME ON EDUCATIONAL BUILDING

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## The OECD Programme on Educational Building (PEB)

The Programme on Educational Building (PEB) operates within the Organisation for Economic Co-operation and Development (OECD). PEB promotes the international exchange of ideas, information, research and experience in all aspects of educational building. The overriding concerns of the programme are to ensure that the maximum educational benefit is obtained from past and future investment in educational buildings and equipment, and that the building stock is planned and managed in the most efficient way.

Eighteen OECD Member countries and nine associate members currently participate in the Programme on Educational Building. PEB's mandate from the OECD Council to advise and report on educational facilities for students of all ages runs until the end of 2001. A steering committee of representatives from each participating country establishes the annual programme of work and budget.

### PEB Members

Australia	Korea
Austria	Netherlands
Czech Republic	New Zealand
Denmark	Portugal
Finland	Spain
France	Sweden
Greece	Switzerland
Iceland	Turkey
Ireland	United Kingdom

### PEB Associate Members

Albania Education Development Project
A.R.G.O. (Belgium)
<i>Fonds communautaire de garantie des bâtiments scolaires</i> (Belgium)
<i>Ministerium der Deutschsprachigen Gemeinschaft</i> (Belgium)
Province of Quebec (Canada)
<i>Regione Emilia-Romagna</i> (Italy)
<i>Regione Toscana</i> (Italy)
Slovak Republic
Tokyo Institute of Technology (Japan)

# PEB AND OECD ACTIVITIES

## 1999-2000 PROGRAMME OF WORK – PEB Steering Committee

*The need to rethink educational facilities in response to the challenges of the information society and the growth of lifelong learning was seen as a high priority by the PEB Steering Committee at its meeting in June. The Committee adopted a new programme of work for 1999 and 2000 which included the following activities.*

### Work area A: Facilities for the school of the future

This work area is concerned with how education will be provided in future, and the changing role of schools in society.

#### **Theme A1: Schools in the information society**

As low-cost personal computing becomes more widely available, and the Internet offers homes and schools access to information sources which were beyond the reach of even large universities only a few years ago, long-established ways of working in education are being reconsidered. The role and functions of the school library in particular are having to be rethought.

Following on from the publication *Redefining the Place to Learn* published by PEB in 1995, and the experts' meeting on libraries and resource centres in tertiary education held in 1998, PEB plans to analyse more specifically how the use of personal computers is affecting the demand for and the use of space in educational institutions. The work will adopt a case-study approach.

#### **Theme A2: Educational facilities and lifelong learning in the community**

The communiqué of the Education Ministers' meeting in 1996 suggested that schools "should become 'community learning centres' offering a variety of programmes and learning methods to a diverse range of students, and remain open for long hours throughout the year".

In this context PEB will organise a seminar in Spring 1999 to review practice in the provision and management of educational facilities, with particular reference to changes which reflect or seek to respond to the adoption of policies which promote lifelong learning, and the creation of the "information society".

## **Work area B: Tertiary education: coping with demand**

Work in this area is concerned with the response of tertiary education institutions to rapid expansion of student numbers, changes in the delivery of learning and the diversification of course offerings.

### ***Theme B2: Design of institutions for the early years of tertiary education***

*Redefining Tertiary Education* based on a thematic review of the early years of tertiary education in OECD countries was published in June (see page 22). PEB's report *Facilities for Tertiary Education in the 21<sup>st</sup> Century* was published in May. Policy developments and changes in the delivery and organisation of tertiary-level courses have significant implications for the management and use of facilities. In responding to continuing strong growth in student numbers, and diversification of course content and course delivery, institutions are adopting a more client-centred approach. A seminar in 2000 organised jointly with the IMHE Programme will analyse how these changes are influencing institutional design and organisation.

## **Work area C: Strategies for managing the educational infrastructure**

Educational facilities represent a very significant investment of both capital and recurrent expenditure. This work area relates primarily to effective management and utilisation of that investment.

### ***Theme C1: Maintenance and renewal***

The condition of school buildings and their capacity to respond to changing educational demands are under renewed scrutiny in OECD countries. Following the conference on maintenance and renewal of educational facilities which is due to be held in Spring 1999 in the United States, PEB work will include the preparation and publication of a report which will draw mainly on the papers from, and discussion at, the conference, which will focus on the school sector. Later in 1999 the work on maintenance will be extended to the tertiary sector, again in co-operation with the IMHE Programme.

### ***Theme C2: Space management and use in large institutions***

The effective management of university infrastructure is an issue of growing concern to a number of OECD Member countries. A report of the work-

shop on "Strategic asset management in tertiary institutions" in Sydney, Australia, in July 1998 (see below) will be published in early 1999.

### ***Theme C3: Financing capital and recurrent expenditure***

In the pursuit of more efficient service provision many governments are in the process of reviewing long-standing mechanisms of channelling finance to educational infrastructure. Recent analyses by PEB have looked at changing approaches to the governance and management of educational facilities, and at the financing of capital expenditure in higher education. In 1999 PEB will begin a new comparative study of existing and planned approaches to financing expenditure on facilities, including equipment. This work will be closely linked to the outcome of the 1998 joint project with the European Investment Bank on the appraisal of investment in educational infrastructure (see below).

### ***Theme C4: Health, safety and security***

The health, safety and security of the users of educational facilities is of paramount concern to designers and managers of institutions. The PEB seminar in Italy in 1997, and the associated publication *Providing a Secure Environment for Learning* provided a broad analysis of some of this ground. In the year 2000 this work will be supplemented by an experts' meeting which will look more closely at some of the tools and techniques available to facility managers to maximise safety and security in and around educational buildings.

## **Work area D: Improving effectiveness**

This work area is concerned with evaluating how good design and management can contribute to the effectiveness of schools and other educational institutions; and with the relationship between the resources put into them and the outcomes that they achieve.

### ***Theme D1: Improving the effectiveness of schools through design and management***

Work will begin in 1999 on the second compendium of exemplary educational facilities to be published by the OECD. The first was published under the title *Schools for Today and Tomorrow* and concentrated on recently completed buildings, mainly in the school sector. The second will cover all sectors of lifelong learning and will give

greater prominence to the management, use and evaluation of facilities. A dissemination conference will be planned to coincide with publication in 2000.

**Theme D2: Indicators for evaluating facilities and their utilisation**

A joint project in 1998 between PEB and the European Investment Bank will identify issues for work in this area in 1999 and 2000. They are likely to include an experts' meeting followed by publication and dissemination of the outcomes of the project, and closer involvement in OECD work in educational indicators. It is hoped to move forward with the development of a comparative international data-base and performance indicators covering space standards and utilisation, environmental standards, costs and size of institutions.

## 4 STRATEGIC ASSET MANAGEMENT FOR TERTIARY INSTITUTIONS

This PEB workshop held in Sydney in July brought together 40 senior managers from tertiary institutions who discussed the implications for facilities of the changing policy environment in tertiary education: moves to opening the market to third-party access; student-centredness and user choice; the impact of lifelong learning; and the blurring of sectoral differences.

Issues covered included:

- risk management in a business environment – accountability and competition;
- the impact of global information networks on facility planning;
- the changing role of the facilities manager;
- aligning the physical environment with educational objectives;
- total asset management – understanding the real cost of facilities;
- tools of the trade: space utilisation, value management, life-cycle costing, space charging.

A full report will be made available in the coming months.

## NEW OECD SUSTAINABLE BUILDING PROGRAMME

The building and housing sector has a significant impact on the environment. According to estimates, this sector is responsible for approximately 40 per cent of the world's energy consumption when the production and transportation of construction materials are taken into account. Likewise it represents about 40 per cent of total carbon dioxide emissions.

The OECD has carried out numerous reviews of environmental issues over the years. It has addressed pollution of air, water and soil and the impact of many industrial sectors on the environment, i.e. chemicals, energy and transportation. The aim of the Sustainable Building Programme is to identify policy instruments and strategies favouring the adoption of sustainable practices in the building sector, while examining its related links with the broader field of public construction. The project is scheduled to be carried out over a four-year period from 1998 to 2001.

The first step for the Programme is to collect information on environmental policies and practices including construction projects and criteria related to building and housing in each Member country and exchange information between responsible officials.

Next the OECD and experts from various countries will analyse these policies and assess their effectiveness from the following points of view:

- *resource use*: eco-efficiency, life-cycle costing;
- *energy use*: efficient use and conservation of energy, reduction of carbon dioxide emissions;
- *system approach*: system management for the environment, green purchasing.

Workshops will be held once a year to exchange information and opinions, to be followed by an annual report.

The final phase of the project will be the proposal of a variety of environmentally sustainable building policies for OECD Member countries.

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## **INDICATORS FOR EVALUATING FACILITIES AND THEIR UTILISATION (Appraisal of educational investments)**

*A project organised jointly by the OECD Programme on Educational Building (PEB) and the European Investment Bank (EIB).*

Investments in education are key to the development of human capital. All education authorities are faced with having to review their educational provision in the face of changing demand for education, whether it be because of population growth or decline, new educational policies, new technologies or obsolete facilities. The cost of providing, maintaining and running educational buildings and equipment represents a substantial investment of public expenditure in OECD countries. Technical and economic appraisals are some of the means of helping those responsible for the planning and management of educational investments to reach decisions which will lead to making the best use of this money. Appropriate indicators must be selected to make such appraisals effective.

With these considerations in mind, PEB and the EIB have identified the relationship between investments in educational facilities and the quality of education, measured in terms of its contribution to regional economic development, as a priority area for work. They will organise a meeting of experts on 16 and 17 November 1998 at the headquarters of the EIB in Luxembourg to define that relationship more closely.

The primary concern at the experts' meeting will be to consider those physical, environmental and organisational elements which have a direct impact on the performance of educational investments, and to provide elements of measurement of that performance. The group of experts will exchange case studies and review recent developments in the following fields:

- identification of needs;
- management of educational facilities;
- design and equipment of physical facilities for education;
- performance indicators for educational systems;
- cost benefit analysis in educational investments.

Expected speakers are researchers, planners and managers working on educational policies, architects and those responsible for equipment,

financial controllers and performance evaluators of secondary and higher education institutions. Following the meeting, they will participate actively with regular contributions to electronic discussion groups up to the publication of a paper primarily intended for people responsible for improving, appraising or financing facilities for education.

### **About the European Investment Bank (EIB)**

The EIB was set up in 1958 by the Treaty of Rome in order to foster European development.

According to Article 198 of the Treaty of the European Union, *"The task of the EIB shall be to contribute by having recourse to the capital markets and utilising its own resources, to the balanced and steady development of the common market in the interest of the Community. For this purpose, the Bank shall operating on a non-profit making basis grant loans and give guarantees..."*. Loans granted in 1997 amount to ECU 26 billion.

Detailed information on the EIB can be found on the Internet at <http://www.eib.org>.

### **About the PEB-EIB collaboration**

At the European Council meeting in Amsterdam on 16-17 June 1997 one of the main decisions taken by the European Union's heads of state was the adoption of the Resolution on Growth and Employment. In this resolution, the European Council urges the EIB *"to examine its scope of intervention in the areas of education"*.

The EIB performs a triple analysis (technical, economic and financial) of all projects submitted for finance. In this frame, a comprehensive analysis of issues such as planning of educational investments, operational costs and performance indicators is key for a reliable appraisal of educational projects. Given that the OECD and PEB have a large experience in most of these subjects, the EIB approached PEB in search of a collaborative plan for the development of a Guide for Appraisal of Educational Investment.

Agustin Auria, Principal Engineer at the Projects Directorate of the EIB, is on secondment to the OECD for a three-month period to collaborate with the PEB staff on the implementation of this programme. For more information, contact Mr. Auria:

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# MEMBER NEWS

## ICE STORM: REACTING TO A NATURAL DISASTER IN QUEBEC

*When a severe freeze hit Quebec in January 1998, schools and universities were forced to remain closed for up to 23 days. Here is an account of how school authorities handled the crisis and the lessons they learned.*

### The situation

In early January, an ice storm paralysed much of Quebec and knocked out the Hydro-Quebec power plant leaving every educational facility in six regions of Canada without electricity, and preventing 440 000 students from attending school. Unlike other disasters such as explosions or earthquakes, not all of the consequences of the freeze were immediate, which made decision-taking extremely complicated.

### Initial reaction

An assessment was needed of the consequences of the disaster on the educational system. The Ministry of Education's regional office in the worst hit area, Monteregie, undertook to contact local education authorities who in turn contacted their schools' administrations to determine the state of their facilities and the number being requisitioned by civil authorities for public shelters or for use by the armed services. This task proved quite difficult as the majority of those individuals were victims of the disaster themselves. However within a matter a days, pertinent information concerning institutions at all levels of education from pre-schools to universities was centralised and thereafter provided to the public on an almost daily basis.

Under the direction of Ms. Pauline Marois, the Ministry of Education and the Ministry of Families and Childhood (*ministère de la Famille et de l'Enfance*) jointly set up a help centre which provided activities for youth, financed by the Red Cross, and advice to community leaders.

At the request of the Ministry of Education, schools in regions not affected by the freeze offered to welcome stu-

dents from the disaster-struck areas into their classrooms. For the most part however this possibility was not taken advantage of, as parents preferred not to be separated from their children.

Throughout the storm local education authorities were encouraged to consult structural experts to ensure building security, paying special attention to roofs under the weight of ice. On 19 January, the Ministry of Education announced plans to maintain salaries and insure compensation for material damage resulting from the freeze. Forms were sent to the local authorities asking for details of expenses incurred, and the Ministry then began analysing each claim. Of the 1 800 educational buildings in the area which was hit by the freeze, claims relating to 1 046 of them were soon returned, for a total of 38.1 million Canadian dollars.

### Making up for lost time

The freeze had begun while many schools and universities were closed for the end-of-the-year holidays. As the crisis continued, the institutions were unable to reopen as scheduled. For pre-schools, elementary schools and high schools, local education authorities worked with teachers' unions and employee representatives to find ways to make up the missed time without cutting into the spring holidays, because many families had already planned their vacations and it was agreed that the break would be beneficial to students. Solutions included



adding an hour of class at lunch time or after school, cancelling outings or festivals and lightening requirements for certain courses.

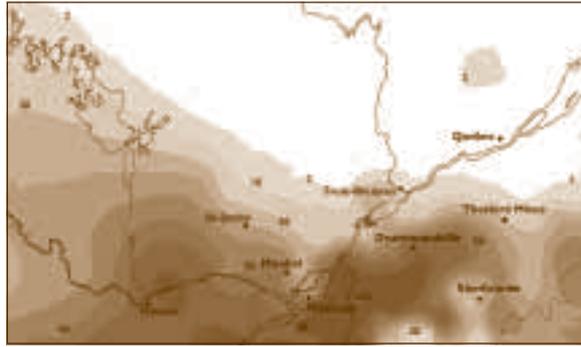
Colleges and universities showed flexibility in adapting their schedules by advancing deadlines such as cut-off dates for dropping classes. Most colleges affected by the ice storm made up lost class time by using the spring break. Universities encouraged students and professors to work

out together how to make up the lost time: some held class on holidays and Sundays, others extended the length of classes from 60 to 75 minutes. Nine of the fourteen universities hit were successful in finishing on the scheduled date; the remainder closed a week late.

### Lessons learned

- While many employees were prevented from reporting to work, others were counted on to provide invaluable help in handling the unusual circumstances. In Canada, human resource management of educational institutions is the responsibility of local education authorities, but the Ministry of Education offered advice as well as technical and financial support where necessary to resolve questions related to work missed during the crisis. There existed no system for compensating people whose services were required by the city or civil authorities in a time of emergency, and this resulted in unfair discrepancies in pay. The Ministry of Education recognised the need to prepare compensation guidelines for such circumstances.
- The Ministry also learned the importance of keeping updated personal address lists of their local education authorities, in the event a crisis prevents contacting them at their place of work.
- The school buildings, centrally located and structurally sound, made for safe shelters for the population. Being public buildings they are subject to national building codes, and the Ministry of Education will take an active part in

### JANUARY '98 ICE STORM



Freezing Rain Accumulations (in mm)

between Sunday, 4 January, 18.00 EST  
and Sunday, 11 January, 8.00 EST

Presentation by Environment Canada for the *Commission scientifique et technique sur la tempête de verglas de janvier 1998*, 5 May 1998

the next revision of those codes.

- Whenever school facilities are requisitioned in the future, the Ministry of Education should be part of any governing bodies involved. It was not invited until well into this crisis to be represented on the Intersectorial and Interministerial Committee (*comité de coordination intersectoriel et interministériel*), which translated into a lack of coordination between authori-

ties. Had the Ministry been given immediate access to all available information such as Hydro-Quebec's schedule for restoring electricity, schools could have prepared for starting classes and rumors would have been reduced. This would also have allowed for the school system and civil authorities to be aware of each other's needs and handle the most urgent ones more quickly.

- Practicing an attitude of transparency proved to contribute to mutual confidence between the Ministry of Education and the school network. It is a policy they will continue to promote.

A detailed account by the Ministry of Education of the events of January and the following months underlines the solidarity, ingenuity and goodwill demonstrated by the numerous individuals who provided their help during the crisis.

The report, published in May 1998, is available in French through the Ministry. Contact:

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## **SURPLUS PLACES IN UK SCHOOLS**

School Standards Minister Estelle Morris is addressing the problem of schools that have more places than they have students. In January 1997, there were approximately 774 000 surplus places in primary and secondary schools in the United Kingdom, just under ten per cent of the total capacity. Some 2 700 schools had a surplus of 25 per cent or more.

At the same time, other schools cannot meet demand in a country where parents have the choice of where to send their children. When the Minister published these figures earlier this year concern was expressed for improving parental choice and boosting standards:

“The focus of all our policies is raising standards. Surplus school places represent a poor use of resources, particularly where schools with surplus places are performing poorly or where parental preference is not being met elsewhere in the authority.

“The supply of and demand for places must be brought more closely into balance so that parental preference can be maximised and that good quality education can be provided in the most cost-effective manner. The Audit Commission has drawn attention to this issue and, with District Auditors, is promoting good practice.”

It is widely recognised that maintaining a higher than necessary level of surplus places wastes resources. Rationalisation offers the prospect of stronger institutions, which provide better education for pupils. Not all these places, however, are removable. Some empty places are needed to allow for pupil growth, particularly in the secondary sector where the number of pupils is expected to increase by 8.7 per cent over the next five years. In the primary sector, places may be required as plans are carried out to reduce infant classes to a maximum of 30 pupils. Maintaining capacity to secure accessibility to schools in rural areas and to meet parental preference for places reduces the possibility of surplus place removal.

*Trading Places*, published by the Audit Commission, focuses on the issues of surplus places. The national report makes a number of recommendations for central and local governments and has been followed up by District Audit studies in each local education authority (LEA) area. It suggests that whilst LEAs might aim for school occupancy levels of between 85 per cent and 105 per cent of capacity, priority

action should focus on schools with 25 per cent or more places unfilled. The report concludes that as much as 40 per cent of unfilled places might be removable over a period of time but understates the difficulties involved.

Some of the measures in the recent *School Standards and Framework Act* give effect to recommendations in *Trading Places* and should facilitate progress towards increasing the rate of removal. Relatively easier removals have now taken place leaving only those that are politically difficult, as is almost inevitably the case with school closures, or technically difficult, because only parts of school buildings can be removed.

Schemes must also be considered for their cost effectiveness. The capital costs of implementing proposals must be measured against recurrent savings to establish whether removal of surplus places is worthwhile. The following calculation can assist LEAs in assessing cost effectiveness:

$$\begin{aligned} & \mathbf{100 \times \text{Recurrent Savings per Year} \div} \\ & \mathbf{(\text{Total Gross Capital Costs} - \text{Capital Receipts})} \\ & \mathbf{= \text{Percentage Rate of Return}} \end{aligned}$$

The recurrent savings in the above test should be based on real and anticipated savings at current prices averaged over five years and include all premises-related costs such as maintenance, cleaning, insurance, heating and lighting. Gross costs are the capital costs of implementing the proposals and should include fees and value-added tax, when appropriate.

Consistent with the *School Standards and Framework Act* and *Trading Places*, the Minister is particularly attentive to schools with surplus whose educational performance is a cause for concern and those where high surplus is matched by pressure for places in neighbouring schools. Whilst this approach focuses on educational benefits, there is a clear capital cost whose effectiveness will not so readily be measured in terms of recurrent savings.

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# PROJECTS

## ARCHITECTURAL COMPETITION FOR A SECONDARY SCHOOL IN SWITZERLAND

### Introduction

The provision of new schools in established urban areas poses specific design challenges that are not common to schools on green field sites: the need to build to high densities to make the best possible use of scarce and expensive land; the desire to conserve the historic urban heritage; the need to enhance the quality of the urban environment; the obligations to respect the rights of adjoining properties to light, access and privacy; and the requirements to protect the users from the noise and pollution of urban transport. Responding to such constraints, in addition to satisfying the exacting requirements of current educational programmes, requires imagination and design skills of the highest order.

Proposals to build a new secondary school close to the busy commercial centre of the city of Geneva posed just such a challenge and to meet it the authorities organised a two stage architectural competition.

The brief for the new school embodies many issues that are germane to the PEB programme of work; demographic change and the need to provide for a rise in demand for student places; the greening of the school site and maximising the potential of school grounds for education and recreation; providing for the community use of school facilities outside of school hours; meeting changes in educational practice and information technology by providing buildings which are flexible and adaptable; and providing a supportive and healthy environment that is economical to run and easy to maintain.

In Summer 1997 an architectural competition was launched in Geneva for a junior secondary school (750 pupils aged 12 to 15), and PEB was indirectly represented on the panel of judges. In the winning design, educational needs have clearly not been compromised by architectural considerations.

### Need for a new school

In quantitative terms, local demographic trends have made it necessary to plan for an additional school by the year 2003. The number of students in junior secondary education in Geneva reached 10 700 at the beginning of the 1991/92 school year. It remained stable until the year 1997 which saw an increase of about 200 students. It is estimated that enrolment will reach 12 000 in 2002 and 13 000 in 2005.

The 16 000 square-metre site is situated near Geneva's main-line railway station and the city centre, on the edge of parkland surrounded by dense housing. Adjoining the site are a massive postal sorting-office within the perimeter of the station, some old blocks of apartments for rent, an imposing turn-of-the-century primary school, and the parkland mentioned above. This is an island of green in a highly urbanised environment and includes some magnificent, protected trees and a large house dating back to 1755, but sadly in need of repair. On the edge of the park are other buildings, all in public use, namely a church, a community centre and a restaurant.

### Junior secondary education in Geneva

Junior secondary education (known as the *Cycle d'orientation*) follows the sixth year of primary schooling and includes the last three years of compulsory education. Its purpose is to prepare virtually all 12- to 15-year-olds for entrance to vocational or academic courses, recommending them for one or the other according to their interests and skills. Junior secondary pupils do not all follow the same curriculum, but may change stream in the course of those three years.

### Traditional junior-secondary school design

The 14 junior-secondary school buildings put up in Geneva from 1962 to 1975 are confined to the basic facilities required for administrative and educational purposes. Rooms open off long, narrow corridors in one or two blocks of three to five storeys. The designs lack imagination and have no "pupil areas" other than classrooms, which are kept locked between lessons. This is the kind of design that is acceptable for a school teaching a rigid curriculum, on a strict timetable, to pupils who will spend the whole year in their designated groups.

## Educational trends

However, a number of constraints have prompted a shift in this traditional teaching environment. Nowadays, school is the first structure called upon to compensate for the decline in the support shown for young people by their families. Rapid economic change is also forcing the education system to look again at how it prepares young people for working life. And the development of information and communication technology (ICT) is contributing to an educational shift towards greater personal initiative and individual creativity.

On a more practical level, secondary education can no longer be confined to a series of lectures, and adolescents are no longer just one of a crowd in class, but increasingly people in their own right, following their course.

In light of this, new educational goals were drawn up for the competition:

- to foster the development of new teaching practices, namely interdisciplinarity, group work and teamwork;
- to incorporate information and communication technologies;
- to encourage pupils to socialise (within the school community) and take part in the life of the school;
- to develop the idea of an educational community (with no strictly compartmentalised functions and activities).

## Prior to the competition

To translate these goals into a programme of specifications for the buildings and other areas, the authorities called in a sociologist and an architect from France, both of whom had already worked on a similar pilot project for a boarding school commissioned by the French Ministry of Agriculture. They began by talking to each user category (management, administrative/technical staff, teachers and pupils) about their future needs, particularly regarding social life within the school. Then they checked their initial findings against a survey of users in similar institutions, before holding discussions with users, teachers and administrative officials, with the process eventually producing a set of specifications for the competition.

The following principles were identified regarding the layout and general organisation of the future school:

1. The need for diversification as regards volume and space, avoiding pupils being crowded in stairways and corridors and encouraging a variety of connecting areas.
2. Activities to be grouped into well-defined areas:
  - Area 1: language, history and geography teaching;
  - Area 2: mathematics and science teaching;
  - Area 3: creative activities;
  - Area 4: sports lessons;
  - Area 5: media library, computing;
  - Area 6: hall and reception areas;
  - Area 7: management, administration;
  - Area 8: cafeteria, "noisy" recreational activities (game room: table tennis, table football, etc.);
  - Area 9: "quiet" activities (reading, resting, private study);
  - Area 10: outdoor facilities.
3. The creation of open social and study areas for private study, group work, or spontaneous recreation and socialising.

## Organisation of the architectural competition

For a variety of local reasons, Geneva's political authorities wanted outside architects to take part in the competition. On the panel, the two foreign judges were Mrs. A. Castro-Rial Garrone, head of architecture and building for the city of Madrid and former Spanish delegate to PEB, and Mr. M. Hacker, from the United Kingdom, former Chairman of PEB. The panel also included two Swiss and eight Genevan architects, a historian, a member of the government, four civil servants and (only) one education official.

One hundred twenty-one architectural firms (eight of them from EC member countries) took part in the first round of the competition, which was judged on how well the school was sited and designed. Seventeen projects were selected for the second round, on the basis of additional functional and organisational criteria as well as architectural and economic factors (construction costs and energy-related operating costs). It is interesting to note that the winning project is the one that comes closest to meeting current educational concerns and likely developments in educational practice in the not-too-distant future.

## Panel's verdict

Although excessively simple in terms of volume, the design clearly fits well into the natural and built environment. It forms a bridging volume between the central post office and the Crompton primary school, while at the same time respecting the existing buildings. Unfortunately it is rather too close to the existing eighteenth century building, the "Villa Roux".

Entrances from the three adjacent roads are clearly defined and the very wide, transversal opening reaching up two storeys highlights the pedestrian path leading from the parks in the west to Rue Montbrillant in the east. The wide porch matches the scale of the building and the project as a whole. However, service entrances are inadequate. Most of the existing parkland within the perimeter has been conserved, as have the mature trees.

The fact that all the outdoor sports areas have been grouped on the roof offers the advantage of allowing all the remaining space to be used for pathways, greenery and recreation areas. However, solutions will have to be found regarding access to these sports areas.

The highly compact architecture includes a wide variety of indoor spaces which, in particular, liven up the layout of teaching areas and other parts of the building. The structure is coherently expressed, but includes some very large spans (15 m and 30 m) that might be expensive to build. The possibility of reducing most of these spans needs to be examined. As recommended by the judges at the close of the first round of the competition, similar disciplines have been grouped on the same floors.

The teaching areas opening out onto the patios are well chosen, in terms of the degree of natural light. The design lends itself to flexibility of use, from the point of view of adapting to changes in educational methods.

Areas open to the public outside of school hours (gymnasium, auditorium, media library, etc.) are grouped to the north. Entrances are clearly defined and can be made independent. Access to the various gymnasia is inadequate.

Given the relatively high (gross) floor area, the project is quite economical, with construction costs



at around the current average. The "loop" layout provides scope for substantial savings on mechanical and electrical services. With its compact design, the building has an excellent energy-efficiency rating.

This simple, traditional building project is suitable for multi-stage construction.

## Construction

A commission is currently working on a final, detailed version of the successful design project. The commission brings together the architects, the owner (Department of Land-Use Planning, Public Works and Housing) and above all (at last), representatives of future users, i.e. teachers and technical officials from the department of public education. In close collaboration with the user groups for each building in the programme, the functional characteristics of each part of the premises are being defined in detail, in conjunction with the building plans and detailed estimates of the cost of the project. Provided that the Genevan authorities vote the necessary funds and that the current tenants (self-employed craftsmen) have left by next spring, building work should start at the beginning of the year 2000 and be completed in time for the school to open in September 2002.

*This article was contributed by Eric Biéler, architect at the Geneva Department of Public Education and member of the PEB Steering Committee, and Michael Hacker, former Chair of the PEB Steering Committee. For further information, contact Mr. Biéler: Fax: 41 22 310 42 90, E-mail: bieler-e@dip.etat-ge.ch.*

## **THE NETHERLANDS' STUDY HOUSE: NEW DESIGNS FOR NEW PEDAGOGIES**

Upon leaving school, many people, despite their years of study, are deficient in basic workplace and tertiary level competencies.

This has been the assertion of Dutch business leaders and tertiary educational authorities for some years (this is by no means restricted to the Netherlands but is a world-wide problem). Consistently, it is suggested that these graduates do not have the ability to work in teams, solve problems, organise their own workload, undertake research or work with limited supervision.

As a result of feedback by employers and tertiary institutions, an innovative form of “learning architecture” is emerging in secondary schools in the Netherlands. Dutch curriculum authorities decided that an entirely new approach was required. Both teachers and learners needed a physical environment far removed conceptually from the traditional classroom, to expose them to new ways of curriculum delivery.

### **The curriculum**

Rather than taking the usual step of trying to adapt existing individual school subject curricula to achieve competency objectives, they have created a new pedagogical approach for *all* subjects which is called the Study House.

The Study House is characterised by attention for common skills in learning, research and reflection. The Study House also means a new way of planning – no longer in fixed weekly numbers of lessons per subject, but in fixed numbers of *study hours* per subject. The distribution of these hours over individual study, group work, workshops, plenary exchanges and lectures is left to the teachers, in interplay with the students.

Offered for two hours every day, the new format requires students to approach their subject material in a completely different way. During the allocated two hours they work in the Study House room on all curricula and subjects but ac-



ording to their own priorities. The students can choose to work in teams, as individuals or indeed in traditional class groups if that is agreed to by the cohort. Teachers move from the traditional role of didactic teaching to that of a facilitator or mentor. Students have access to computers, the Internet and other resource material as needed. This approach will become mandatory in August 1999, but some schools have already begun the transition.

### **Planning**

For this new environment, the formal classroom structure of rows of seats and desks facing the front (a tradition for at least 200 years, or since the advent of the industrial revolution) was considered constrictive and no longer viable. A flexible arrangement of clusters of seating, individual workstations, discussion areas, project team areas and display areas was needed.

Subsequently, an architectural solution was explored to accommodate these new pedagogical ideas. The curriculum designers worked with groups of teachers and students to evaluate scenarios. This process saw the gradual evolution of what is now the Study House solution. Initial outcomes of the planning meetings, held at the Oosterlicht School, just outside Utrecht, resulted in layouts of classrooms and staff offices in clusters.

### **Design**

More than five iterations took place, moving from a clustering of traditional classrooms, to open-ended classrooms facing a common area, to a mix of classrooms and workstation layouts, with the final model being an office landscape environment.

A view of the flexible central space



The innovative Zoo School in Minnesota, USA, conceived by Bruce Jilk, an architect with the Cunningham Group, and Professor George Copa of the University of Minnesota paved the way for the final solution.

To accommodate the three or four classes totalling 120 students (4x30), there are peninsula tables catering to groups of 10 students. Three peninsulas constitute a traditional classroom cohort of 30.

At the end of each peninsula is a computer terminal connected to the Internet together with networked printers and scanners (reflecting the Netherlands' Ministry of Education target for a computer student ratio of 1:10).

Located in the central space is a flexible series of clusters of seats and tables accommodating five or six students and one teacher. These clusters can be used simply by students in groups, or a teacher can join them to provide group instruction. The teacher can also address the group of 30 in the peninsular arrangement.

The final design layout provides:

- large, flexible open spaces;
- plenty of natural light and views;
- a familiarity with the commercial workplace environment;
- a sense of informality with a variety of spaces for students to select from to suit their learning needs.

### Does it work?

When viewed earlier this year, the design and construction were completed but the Study House curriculum and staff development programme for the new initiative were scheduled for the 1998/99 academic year.

A group study arrangement



Computers were still on order – a critical element to the success of the scheme – as technology would empower the individuals to seek their own knowledge to suit their own needs. However, there was a great sense of excitement and anticipation at the prospect of this new initiative. Some senior teachers were concerned that the staff might “sit back and read the paper whilst students got on with student-centred learning”.

Sceptics might ask, “What is the difference between this new initiative and the failed open plan classrooms of the 1970’s?” There is a world of difference. This programme includes integrated curriculum development, information and communications technology, staff training and development, student-centred learning, flexible delivery and industry and tertiary education competencies all within a physical learning environment custom-designed to enhance these initiatives.

In an environment that is far removed from the traditional classroom, the Study House will give students in the public school system the opportunity to work in teams and set their own tasks, preparing them for higher education and the workplace.



The Bear – the result of the art-in-architecture approach in the Netherlands, intended to ground students in the reality of *reflection-in-action*.

*This article was written by Kenn Fisher, recent Acting Head of PEB.*

# TEACHING ENVIRONMENTALLY SUSTAINABLE DESIGN IN SCHOOLS

*OECD Environment Ministers met in April 1998 and agreed on shared goals for implementing sustainable development, expressing “the hope that other Ministers would integrate environmental concerns into their policies”. They outlined a set of priority areas for work for the OECD which includes the development of “effective policy approaches for improving resource efficiency”. The following report provided by John Gelder is particularly pertinent in this context.*

## Introduction

The construction of schools which set out to be models of environmental responsibility – eco-schools – is becoming more common. Some educational jurisdictions have formal programmes for this, such as Ile-de-France’s Ecolyce programme (*PEB Exchange n° 31*). Where there are no such programmes, environmentally-friendly demonstration schools are often built e.g. Essex County Council’s Great Notley primary school, in the United Kingdom (Slavid, 1998), and the New South Wales Department of School Education’s Nemingha Public School, in Australia (Prasad and Fox, 1996).

Such initiatives are to be encouraged. The teaching of design at tertiary level is often aimed at provision of sustainable architecture, after all. But teaching an awareness and appreciation of the issues at pre-tertiary level is a vital part of the process, by developing an informed public.

This article explores three ways in which students may be taught about environmentally sustainable design. The first is through the passive example of the school premises. The second is through architects-in-schools schemes, with reference to the school premises. And the third is through environmental assessment by students of the school premises. Examples are given of how each of these addresses sustainable design and of how they may be combined to do so.

## Environmentally sustainable design

In broad terms, sustainability is understood to mean restoring, preserving and enhancing nature and culture for the benefit of all life, present and future

(RAIA 1995). Environmentally sustainable design of buildings refers to maximising a building’s positive impacts on nature, and minimising its negative impacts, over the whole of its life.

A major component is limiting the use of non-renewable resources, and particularly of fossil fuels, which has the added benefit of reducing greenhouse gas emissions – another major component of environmentally sustainable design.

## Schools as aids for teaching design

PEB encourages the use of school grounds as a teaching resource, generally with a view to raising awareness of the natural environment, its complexity and its vulnerability (*PEB Exchange n° 33*). School buildings, like school grounds, can be designed with this educational purpose in mind. New and refurbished school buildings can be an active part of teaching environmentally sustainable design.

For example, just as exposed building services and structure can assist students in understanding components of the built environment, so exposed features reflecting sustainable design can contribute to teaching it.

Some of these features must be exposed in order to meet their function. Examples include rainwater tanks, photovoltaic systems, solar water heating installations, Trombe walls (for solar heating), sunshading, earth roofs and walls, double glazing, dual-flush toilets, recycling bins and thatched roofing. Other ecological elements that may normally be concealed in order that the building look “normal”, or for functional reasons, can often be exposed too. One example is the “truth window” installed in straw bale buildings, where a section of bale may be viewed behind a piece of glass. Another is leaving adobe or rammed earth walling exposed, and protected by overhangs, rather than having it rendered. Recycled timbers, too, can be exposed (especially if not coloured with preservative).

The concept of a didactic green architecture can be carried further. Permanent graphics identifying building parts, and giving instructions for operation, might be considered. A good example of the didactic approach in sustainable design is the EcoDesign Foundation headquarters in Rozelle, Australia. It occupies a converted school building and, reflecting its educational mission, is quite overt in its sustainability. The double-glazing is screwed onto the old frames inside, the photovoltaic controls are

a glass-fronted feature in the entrance lobby, and materials and components used in the refurbishment are displayed with information on why they were chosen (and where to get them!) (O'Rourke, 1996).

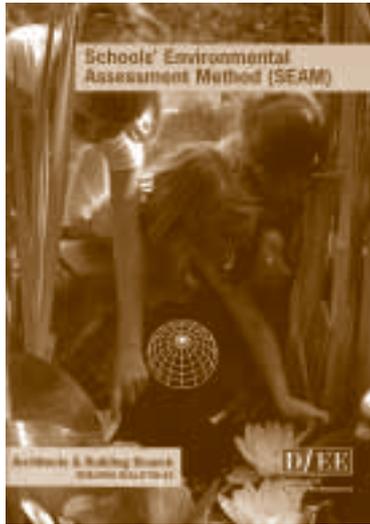
### Architects-in-schools schemes

Through architects-in-schools schemes such as those in the United States and Australia, practising architects can assist in the teaching of sustainable design in schools. These schemes are part of wider educational programmes aimed at pre-tertiary students which are intended to help teachers and students understand the decision-making processes behind the built environment and the roles of the various participants, and to foster demand for quality. The US programme, called Learning by Design, is administered by the American Architectural Foundation (AAF) and co-ordinated by the American Institute of Architects. The Australian programme, run by the Royal Australian Institute of Architects, is known as Built Environment Education (BEE). In both cases the architects-in-schools component involves architects visiting schools and assisting teachers and students with their design curriculum, using resource materials produced by the programme.

Both take advantage of the school premises (e.g. Learning by Design offers activities in which "students explore how [their] classroom works and why"), and both address the issue of sustainability. The AAF Web Site (see references) offers the following:

"The ultimate goal [of Learning by Design] is for every student to develop the ability to live in harmony with the natural environment and the skills to appreciate, evaluate, and contribute to the design of a quality human environment."

BEE has brought the topic of environmentally sustainable building design into secondary schools through its book *The Greenhouse Effect & Built Environment Education*, now being revised. This document emphasises, through a dozen worksheets devoted to different topics, energy conservation lifestyles and the efficient use of energy, and makes reference to school premises. The worksheet "Keeping cool and dry inside" asks students to suggest changes to their school buildings to cope with climate change, and "Moving people" prompts them to look at their school's bicycle-rack provisions.



### Environmental assessment of schools

A third and much more demanding approach to teaching sustainable design using schools is the formal assessment by students of the environmental performance of their school's buildings and grounds. Having assessed one's "ordinary" school, one could then visit a high-scoring eco-school to learn about how the sustainable design of buildings might be improved.

The United Kingdom has two such assessment schemes. The first, suitable for both primary and secondary school students, is the Eco-Schools Award Scheme, part of a European initiative created and co-ordinated by the Foundation for Environmental Education in Europe. The Scheme has been in operation since 1994, and is run by the Tidy Britain Group. It has its own assessment tool, the Environmental Review. Its checklist covers the following:

1. Litter and waste management.
2. Hot water, insulation, radiators, electricity and the heating system.
3. Vehicle use.
4. Washroom taps, toilets and rainwater use.
5. Use of recycled paper and responsible purchasing.
6. Landscape and wildlife features.
7. Environmental education, the school interior and school involvement.

Under each of these headings, the Review asks a series of questions (e.g. does the school avoid purchasing harmful cleaning materials?) and suggests ideas for action. The assessment has an educational function but is intended also to produce direct environmental benefits as schools undertake a programme of improvements under these headings.

The second, more recent, British scheme has been produced by the Department for Education and Employment. It is the Schools' Environmental Assessment Method (SEAM), derived in part from the BREEAM<sup>1</sup> series for offices, factories, shopping centres and homes. The authors of SEAM intend it to be used (1) by designers of new schools, to ensure that their designs are environmentally responsible; (2) by users of existing schools, for environmental

1. Building Research Establishment Environmental Assessment Method.

assessment of their own premises; and (3) as part of the national secondary curriculum.

SEAM covers a wider and more in-depth set of environmental issues than the Eco-Schools Environmental Review. They include the following:

1. Recycling facilities and waste disposal.
2. Energy (CO<sub>2</sub>) rating and energy management. Low NO<sub>x</sub> combustion equipment.
3. Home-to-school transport policy.
4. Water savings and water quality.
5. Environmentally-conscious purchasing.
6. School grounds.
7. School environment policy. Maintenance manuals and caretaker training.
8. Sources of timber and use of recycled materials (new buildings), ozone depleting chemicals, volatile organic compounds, harmful substances and lead-free paint. Lead piping and asbestos in existing buildings.
9. Site selection for new buildings.
10. Ventilation.
11. Integrated electric lighting and day lighting. Lighting controls.
12. Health and safety legislation. Legionnaire's disease.

Most issues apply to both new and existing buildings. All are supported with discussion, data, recommendations and references. Energy rating calculations are discussed in an extensive (if not daunting) appendix, and examples given. All in all, SEAM is a very solid document, and unlike its BREEAM predecessors, is geared to use in teaching.

At the same time, SEAM is sufficiently complex that help from professional building designers would be useful. This brings us back to architects-in-schools schemes. Involving appropriately-trained architects in these assessments would provide an excellent educational opportunity and would ensure that they are done well.

## Conclusion

A passive approach to the teaching of environmentally sustainable design in schools is to allow the school buildings to "speak for themselves", where they have something to say about the issues of sustainable design. But a more active approach, which involves the critical appraisal by students of their school buildings and grounds, and in particular bringing architects into schools to assist students in conducting environmental assessments of their schools, is a powerful and effective way of creating an informed public.

Countries lacking eco-schools, architects-in-schools schemes or environmental assessment schemes may develop them by drawing on the models discussed above. And existing schemes should be enhanced, linked and promoted, with a view to placing environmentally sustainable design very firmly on the educational agenda in the future.

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### Web sites:

RAIA: <http://www.raia.com.au>

AAF: <http://www.amerarchfoundation.com>

*John Gelder is an architect and author currently based in Paris. He was formerly chief editor of Australia's national master specification system. He contributes regularly to the RAI's Environment Design Guide and in June 1998 participated in a symposium for specifiers in Baltimore, Maryland, titled "A Green World". E-mail: [john.gelder@wanadoo.fr](mailto:john.gelder@wanadoo.fr).*

## A VISIT TO THREE PARISIAN SCHOOL LIBRARIES

An architect and a librarian from the Albania Educational Development Program were in Paris for the PEB Experts' Meeting on Libraries and Resource Centres for Tertiary Education. While in town, they visited three public schools – an elementary school, a middle school, and a high school – for ideas on the planning and use of libraries based on French examples. This brief report of their tour illustrates contemporary practice.

### LYCÉE TECHNOLOGIQUE RASPAIL

This technical high school, a new construction on the edge of Paris, opened in January 1996. The school is made up of three parallel, rectangular buildings of three floors each, connected by glass passage ways. Its resource centre, or CDI (*Centre de documentation et d'information*), is located in the heart of the school, in the centre of the middle building.

The CDI is equipped with five computers for student and teacher use and one for library management, two printers and eight very popular CD-ROM readers.

The librarian, or *documentaliste*, was responsible for organising the use of the 340 m<sup>2</sup> space and purchasing the necessary furniture, planning for ten years' growth. Flexibility is ensured in part by the use of different types of tables – square, round and quadrangular ones which can be pushed together into various combinations. One corner of the CDI has sound-insulated hanging partitions to create a separate room for the librarian or a teacher to hold class.

The "cultural corner" resembles a den, with low stuffed chairs around a coffee table. Beneath a wall of windows, the latest issues of the resource centre's 90 periodical subscriptions are displayed on shelves housing the past year's issues. Another wall is reserved for information on cultural activities. Storage rooms on two corners of the resource centre hold archived periodicals and audio-visual material which is loaned to classes.



At the beginning of the school year the librarian gives all students a 90-minute initiation into using the resource centre, including how to use an encyclopaedia and an explanation of the classification system. She said that once they have learned to do research using the system there, they will have the tools they need to be able to use university libraries.

The CDI is open to students and staff throughout the school day till 5:30 p.m.

The school was designed to be robust and able to withstand heavy use and occasional misuse while retaining consideration for comfort and aesthetics. Eight terraces with benches are interspersed around the school. The hallways have anti-graffiti paint on the top half of the walls, and the bottom halves have a rubber-like coating that can be swept or mopped. Doors are of a high-quality to withstand kicking. In the halls are drink machines, and nearby are television monitors suspended from the ceiling, used for announcements. The lunchroom's elegant wooden chairs with carved backs reflect a sense that the students are worth pleasing.

A presentation of the school is included in the 50-page bulletin about the CDI that the librarian updates annually. It provides details of the layout, services and rules of the resource centre.

### COLLÈGE ANDRÉ CITROËN

The *Collège André Citroën* is a middle school which was built in 1989, also on the periphery of Paris. Its resource centre is tucked away at the end of a mezzanine above the school's spacious, glassed-in entrance, opposite the administrative offices.



Like the other two schools visited, the CDI uses a combination of the Dewey system and colour coding to classify its books. Four computer terminals give access to the electronic catalogue and are available to students for word processing; they share one printer. There are plans to network with other schools once their own system is completely functional.

Tables and rows of shelves are interspersed, allowing students to work amongst the books. A central shelf is reserved for new acquisitions which students check out immediately, and their titles are posted in the teachers' lounge. A municipal library nearby brings books for loan every two weeks on a different theme; at the time of the visit it was science fiction. The resource centre has its own budget as does each teacher; materials they buy are generally kept in their classrooms.

The *documentaliste* underlined the importance of working closely with teachers and cited successful examples. The French teacher contacted her before assigning a research project on the Louvre museum; she was able to order in advance the books the students would need that were not already on hand.

For the history teacher's lessons on children's rights, the librarian contacted UNICEF, which complemented the classroom work with speakers and materials. Together the students wrote a text on the subject. A second teacher was then included in the project: the text was given to the computer teacher for his students to work on presentation, making a booklet for distribution. The librarian would like to pursue exploiting the resource centre's capacity as a link between teachers.

## ÉCOLE ÉLÉMENTAIRE

The third visit was to a 100-year-old elementary school, at Odeon in the heart of Paris, with only six classes and 140 pupils.

Their library is the result of eight years' work by the parents' association, and a classroom was sacrificed to make space for it. The State does not provide a budget for libraries in elementary schools, so parents raised the funds for renovation and collected the books. The Government now donates about 50 books a year and pays the librarian's salary. She sees as her role to teach the children that books are not just for studying but are fun, and to judge by the fact that they compete over who gets to spend recreation time in the library, she has been successful.

A small computer room next door is used for word processing by all grades, including the first graders after spending four or five months learning to read. The school's two largest rooms are first grade classrooms; the principal explained that the smallest children need the most space.

Touring the rest of the building, our visitors were impressed by the restrooms adapted to the small users. Above the child-level sinks, a glass wall permits surveillance from a distance. The joints of the stall doors are covered with expandable rubber strips to prevent fingers from getting pinched.

This visit ended, as had the others, with the Albanian visitors remarking the willingness of the librarians and administrators to open the doors of their schools and share the experience and the information they had to offer. The PEB Secretariat would like to thank them.

For further information, contact the PEB Secretariat: Tel.: 33 (0)1 45 24 94 62, Fax: 33 (0)1 42 24 02 11, E-mail: [jill.gaston@oecd.org](mailto:jill.gaston@oecd.org).

# CANADIAN FUNDING COMPETITION FOR RESEARCH INFRASTRUCTURE

Late last year the Canada Foundation for Innovation (CFI) announced the launch of a national competition for funding infrastructure projects in Canadian research institutions.

The CFI emphasises the strategic development of Canadian research institutions and offers four funding mechanisms to help institutions launch new research programmes and strengthen existing ones. To be considered for funding, eligible institutions will have to submit a development plan addressing their priorities for research and the training of researchers. The Foundation will not assess the plans themselves, but will ascertain that reasonable consultation took place with all stakeholders.

**1. The Institutional Innovation Fund** will be the CFI's main support mechanism and will enable eligible institutions, alone or in groups, to strengthen their research infrastructure in priority areas. This mechanism is aimed at enabling Canadian researchers to work on groundbreaking topics, and will promote interdisciplinary approaches and contributions from individuals from a variety of institutions and sectors.

**2. Regional/National Facilities** are designed to encourage institutions to come together in regional or national consortia and to plan cooperatively for the acquisition or development of research infrastructure.

**3. New Opportunities** will provide infrastructure support to new academic staff. This mechanism will help universities attract new faculty members in areas that are essential to the institution's research development

**4. The Research Development Fund** is identical in purpose to the Institutional Innovation Fund and New Opportunities but is specifically designed to help eligible smaller universities strengthen their research infrastructure.

The CFI is an independent, not-for-profit corporation established in May 1997 with a contribution of C\$800 million from the Government of Canada. The Foundation's mandate is to invest in infrastructure for research and development in Canadian universities, colleges, hospitals and other not-for-profit research institutions. The Foundation's investments will be made in partnership with the private and voluntary sectors as well as with all levels of government. Through these partnerships, the CFI has the potential to trigger about C\$2 billion in investment in research infrastructure.

The CFI's policies and funding mechanisms will support the strategic development of research at Canadian institutions. They have been designed to:

- build capacity for innovation;
- strengthen research training of Canadians for research and other careers;
- attract and retain able research workers in Canada;
- promote networks and collaboration among researchers;
- ensure the optimal use of Canadian research infrastructure by promoting sharing within and among institutions.

The CFI will support infrastructure projects that meet its criteria for eligibility and assessment, regardless of the disciplines or areas of interest of the researchers who will use the proposed infrastructure.

The Policy and Program Guide is available at the CFI Internet site at this address:

<http://www.innovation.ca/english/programs/index.html>.

For further information, contact the Canada Foundation for Innovation:

CFI  
350 Albert Street, Suite 1510  
P.O. Box 77  
Ottawa, Ontario, K1R 1A4  
Canada

Tel.: 1 613 947-6496,  
Fax: 1 613 943-0923.



# USEFUL WEB SITES FOR EDUCATION IN GOVERNMENTS



**Australia** – <http://www.deetya.gov.au/>  
Department of Employment, Education, Training and Youth Affairs



**Austria** – <http://www.bmuk.gv.at/>  
Federal Ministry of Education and Cultural Affairs



**Denmark** – <http://www.uvm.dk/eng.htm>  
Ministry of Education



**Finland** – <http://www.edu.fi/e/oph/>  
National Board of Education



**France** – <http://www.education.gouv.fr/>  
*Ministère de l'Éducation Nationale, de la Recherche et de la Technologie*



**Ireland** – <http://www.irlgov.ie/educ/default.htm>  
Department of Education and Science



*Ministerie van Onderwijs, Cultuur en Wetenschappen*

**Netherlands** – <http://www.minocw.nl/english/index.htm>

Ministry of Education, Culture and Science



**New Zealand** – <http://www.minedu.govt.nz/>

Ministry of Education



**Province of Quebec (Canada)** – [http://www.meq.gouv.qc.ca/GR-PUB/m\\_englis.htm](http://www.meq.gouv.qc.ca/GR-PUB/m_englis.htm)

*Ministère de l'Éducation*



**Spain** – <http://www.mec.es/>

*Ministerio de Educación y Cultura*



*Utbildningsdepartementet*

**Sweden** – [http://www.sb.gov.se/info\\_rosenbad\\_eng/ministries/education.html](http://www.sb.gov.se/info_rosenbad_eng/ministries/education.html)

Ministry of Education and Science



**United Kingdom** – <http://www.dfee.gov.uk/>

Department for Education and Employment



# BOOK REVIEWS

## Fundamentals of Educational Planning

### *Physical Facilities for Education: What Planners Need to Know*

John Beynon, reviewed by Michael Hacker

There are many differences between educational systems in different parts of the world. Differences that reflect variety in social structures, cultural diversity and levels of economic development. The school buildings provided to house these different systems of education reflect this variety and there are no universal solutions to the wide range of demands that these buildings have to satisfy. But whilst individual school buildings differ from country to country and from region to region, there are many common aspects of planning, design, construction and management that are of general interest to those responsible for educational facilities.

It was the recognition of these common areas of interest and the benefits to be gained from the international exchange of information and experience that led to the establishment of UNESCO's programme of activities related to educational buildings and furniture. John Beynon was closely associated with these activities for 32 years, working with over 60 countries as an architect and educational planner, including a period as Director for the Regional Office for Asia and the Pacific.

John Beynon's tightly packed booklet is based on his wide ranging experience. It contains a wealth of information and soundly based recommendations that will be of interest and value to those concerned to ensure the provision of educational facilities that are: "...functional, economic, structurally sound and attractive". Few would disagree with his contention that: "The art of good physical planning is to maximise the quality of the facilities whilst keeping resource expenditure to a minimum".

The booklet is targeted primarily at developing countries, but it clearly demonstrates that in the field of educational building, though there are wide differences in degree and scale, developed and developing nations share many common concerns and interests over a wide range of issues: providing new accommodation to meet the rapidly growing demand for education, adjusting the capacity of existing accommodation to meet demographic change; maintaining older buildings and updating them to meet developments in education and information

technology; providing a safe and healthy environment; making school buildings available for adult and continuing education; and harnessing developments in planning and building technology to obtain the best possible value from the limited resources available.

The author summarises the objective of the booklet as twofold; to distil the experiences of the last decades in a concise form that will be useful to the variety of planners dealing with education, and to map out how current trends may affect the future of educational facility planning.

The booklet is illustrated by extracts and examples from a variety of case studies and research projects. It sets out a number of broad guidelines covering such topics as: the assessment of educational need; the determination of area and expenditure limits; the preparation of schedules of accommodation; the setting of targets for the intensity of space utilisation; the definition of environmental, health and safety standards; the design and procurement of furniture for the different age groups; the needs of the physically disabled; the provision for maintenance and building-related recurrent costs; and the establishment of interdisciplinary decision-making structures in which administrators, building professionals, teachers, students and the community can all contribute to the cyclic process of planning, implementation and evaluation.

The booklet draws heavily on the work of UNESCO, but it also acknowledges the contributions made by international agencies such as the OECD and the World Bank, as well as the work of many other organisations and individuals. A useful list of references and further reading is included.

This booklet will be of interest to both school planners and school building professionals. In a period of widespread administrative change and decentralisation, it will be of particular interest to those charged with new and unfamiliar responsibilities for the planning, provision and management of educational buildings.

### *Physical Facilities for Education: What Planners Need to Know*

John Beynon, UNESCO: International Institute for Educational Planning, Paris 1998  
ISBN 92-803-1167-0 98 pages  
price FF 50

Copies are available from:  
United Nations Scientific and Cultural Organisation,  
7 place de Fontenoy, 75700 Paris, France.

A French edition is planned.

## European University Libraries

The French Ministry of Education has published an informative brochure on European university libraries. A first section presents the state of university libraries in France today, their role and the services they offer. It includes photographs and designs of some of the 60 buildings that were built or enlarged between 1991 and 1997 under the University 2000 programme. A second section offers advice on designing a library building that successfully responds to the users' needs. The final section provides details and illustrations of several exemplary libraries around Europe which can serve

as a reference for different aspects of architecture, layout and the use of information technology.

Free copies of the brochure *Bibliothèques universitaires... ..nouveaux bâtiments, nouveaux services* are available from:

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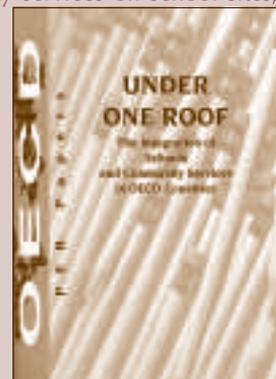
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OECD code: 95 98 03 1 P, ISBN 92-64-16110-4, July 1998, 65 pp.

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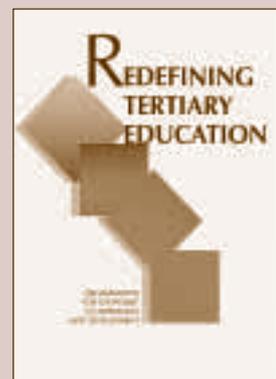
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Contact: GBC '98 Secretariat  
Fax: 1 613 996 9909  
E-mail: gbc98@nrcan.gc.ca

**31** – The 2<sup>nd</sup> International Conference on Sustainable Construction organised by the International Council for Building Research Studies and Documentation (CIB) will take place in Los Angeles, California.

Contact: Dr. Charles J. Kibert, Univ. Florida, M.E. Rinker Sr. School of Building Construction,  
Tel.: 1 904 392 7502  
Fax: 1 904 392 9606  
E-mail: kibert@nervm.nerdc.ufl.edu

## November

**16-17** – Appraisal of Investments in Educational Facilities. PEB and the European Investment Bank will host this international conference in Luxembourg. See page 4 for additional information.

**30 Nov. - 5 Dec.** – The 23<sup>rd</sup> Session of the World Heritage Committee will be held in Kyoto, Japan.

Contact: UNESCO  
Tel.: 33 (0)1 45 68 10 00  
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# PEB WEB SITE

## Libraries for Tertiary Education

A report on the PEB/IMHE Experts' Meeting on Libraries and Resource Centres for Tertiary Education is now available on the PEB Web Site ([http://www.oecd.org/els/edu/peb/els\\_pebn.htm](http://www.oecd.org/els/edu/peb/els_pebn.htm)). The document presents the principal conclusions of the March '98 meeting, excerpts from case studies, as well as numerous recommendations for those involved in building and managing higher education libraries and resource centres. Emphasis is placed on the impact of information technology and distance learning. A section is devoted to each of the four main topics of discussion: the future role of libraries, libraries and learning, managing libraries and architectural solutions. The report may also be obtained by contacting the Secretariat:

Tel.: 33 (0)1 45 24 94 62, Fax: 33 (0)1 42 24 02 11,  
E-mail: jill.gaston@oecd.org.

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