

PEB *EXCHANGE*

THE JOURNAL OF THE OECD PROGRAMME ON EDUCATIONAL BUILDING

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FUTUROSCOPE, POITIERS, FRANCE



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 over-riding 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.

Nineteen 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.

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PEB & MEMBER NEWS

UNITED KINGDOM – EDINBURGH: SURVEY OF EDUCATIONAL BUILDINGS

The City of Edinburgh Council is to instigate a major survey of all its educational buildings – nursery, primary, secondary, special education, and community education facilities. This will total in excess of 320 buildings, or groups of buildings. The intention is that all data would be provided in electronic form with a paper based report provided as backup and for immediate viewing.

The proposed data items for collection currently number seventy-one and include: details of site plans, furnishings, room usage, site constraints/opportunities, building standard regulations, hygiene regulations, security standards/issues, disabled access/facilities, ex-curricula use, range of facilities, etc. Finally, a brief description of the property is requested, giving general condition and feel, together

with a summary of requirements and measures within property for water management, i.e. taps, cisterns, etc. For further information, contact:

S. Henderson; fax: 44 013 529 7467

UNITED KINGDOM – GLASGOW: THE LIGHTHOUSE PROJECT

Glasgow's year of celebration as the UK City of Architecture in 1999 has given the city the chance to create, in one of Charles Rennie Mackintosh's earliest public buildings, the first example of a new kind of cultural institution, one that will galvanise the intellectual life of the new city at all levels, and which will prove influential in other cities around the world. The Lighthouse will be a centre for excellence in the study and interpretation of architecture, design and the nature of the modern city. Its focus is the cultural exploration of those three closely related but different areas, through a programme of exhibitions, events, publishing, conferences and the establishment of a permanent collection of artefacts and drawings. It will be aimed at a wide general audience, but it will seek to establish significant programmes tailored to appeal to schools, colleges, the professions and the business community.

The conversion of the interior, and the associated new extensions designed by award winning Glasgow architects Page and Park, will set new standards in contemporary architecture and design – while respecting and deferring to Mackintosh's work. As important as bringing back to life a Grade A listed masterpiece is the range of activities that will take place inside it.

There will be two prime gallery spaces showing a dynamic programme of

exhibitions, a permanent collection dealing with contemporary industrial design and its origins, a permanent exhibition on the making of the city of Glasgow from the middle ages to the present, and on its future. It will include a 100 seat conference room for public use, a children's gallery, and an education suite. There will be a roof top viewing platform. For further information, contact:

Stuart McDonald, Education Director, Glasgow 1999 UK City of Architecture and Design; fax: 44 141 248 8754.

GREECE - ARCHITECTURE AND DESIGN FOR A LEARNING SOCIETY

A Seminar on the Design of Facilities for Vocational Education and Training, Thessaloniki, 13-14 October, 1997

CEDEFOP, the European Union Centre for Vocational Training, conducted a two-day seminar and exhibition in Thessaloniki, in collaboration with the OECD Programme on Educational Building and "Thessaloniki: The Cultural Capital of Europe, 1997".

The seminar was attended by more than 60 participants from over a dozen countries, with 8 case studies presented and 12 projects displayed in the poster and multimedia exhibition.

The seminar was opened by Molsosa Puja, Head of Unit, DG XXII, European Commission, who provided an overview of trends in vocational education and training. Key points raised included the rapid emergence of increased co-operation between



education, training and industry in both teaching and learning; the need, through the agency of shared experiences, to combat the trend towards isolation resulting from the impact of technology; and the fact that designs of buildings should not overglorify technology which should be seen as a tool and not as an end in itself.

The Principal Administrator of the OECD/ CERI project *Schooling for Tomorrow*, David Istance, spoke to the gathering about recent trends and projects underway in the OECD Education Division. Some studies on vocational education (VOCED) have shown that facilities are seriously neglected and that their design can be a barrier to increased participation. David Istance raised four key questions: how can we generalise about the effects of facilities on learning outcomes? With technology in schools difficult to keep updated, the changes in job types and the impact of women re-entering the workforce, where should VOCED take place and for whom? With the increasing focus on pathways and partnerships what sort of goals should VOCED aim at in a rapidly changing world? Finally, increasing exclusion and drop out rates pose the question of the kind of place where people learn.

David Istance noted that these questions would be addressed in another CERI project, on the theme *Schooling for Tomorrow*. One of the most important factors to be considered is, notwithstanding the multitude of successful pilot projects observed: how can these projects ultimately be introduced into the main stream?

For further information contact the PEB Secretariat.



SOUTH AFRICA - SCHOOL REGISTER OF NEEDS SURVEY

For the first time in the history of education in South Africa, the Department of Education has a comprehensive database of every school in the country, its exact geographic location and the extent of the physical facilities, the condition of school buildings, services provided, equipment and resources available.

The School Register of Needs Survey, which was conducted throughout 1996, constitutes one of the most extensive data gathering and information analysis projects in the country. 32 000 education institutions in the country were located, visited and mapped. Every single school in the country was surveyed for its physical facilities, services, equipment and resources. The database will aid in planning the optimal use of facilities, the allocation of resources and the addressing of historical backlogs in physical facilities. It will also provide maps of school provision for planning the delivery of education.

Maps of school information from the survey have been produced on Geographic Information Systems computer technology. It is the first time the Department of Education has been able to harness this technology and it will be developing new planning methodologies that enable more effective targeting of facilities and resources. The Department will link this database to other databases such as Census 97, the annual school survey and the university entry examination results. This will allow the spatial mapping to be linked to related issues of social context and learning outcomes.

For further information contact:

Henrik J. van der Linde, Research Institute for Educational Planning (RIEP), University of the Orange Free State, South Africa.

THE AUSTRIAN CENTRE FOR TRAINING FIRMS

Austria introduced a new curriculum for training in 1996. In concert with this introduction it has also set up the Austrian Centre for Training Firms (ACT) as a means of linking this new training approach to business realities and requirements. The philosophy is embodied in the slogan "Practice firms - gateway to Europe - gateway to the world". In delivering services to support this slogan, ACT is now an international advisory organisation located in Brazil, Bulgaria, the Czech Republic, Germany, Poland, Romania, the Slovak Republic and the USA. ACT is part of the Austrian Ministry of Education and Cultural Affairs – General Directorate for Technical and Vocational Education. ACT departments include project management, administration and public relations, simulations/market situations/authorities, counselling and international affairs.

Its advisory services are focused on a variety of industries. For example, it has released a number of publications on how to implement curricula for secondary and post secondary commercial colleges. One such publication is entitled *Furnishing and Equipping a Centre for Applied Economics*. This booklet assists college directors to establish the physical infrastructure needs for such a programme. The booklet includes details on the requirements of centres of applied economics, the planning approach, the

classroom design, furniture needs and layout, financial requirements, and a model floor plan. Further, it includes a recommended equipment list for IT and other technology requirements. For further information contact:

Manfred Hinum, PEB Steering Committee Member for Austria, fax: 00 43 1 531 20 44 82 or the PEB Secretariat.

UNITED STATES - NATIONAL CLEARINGHOUSE FOR EDUCATIONAL FACILITIES

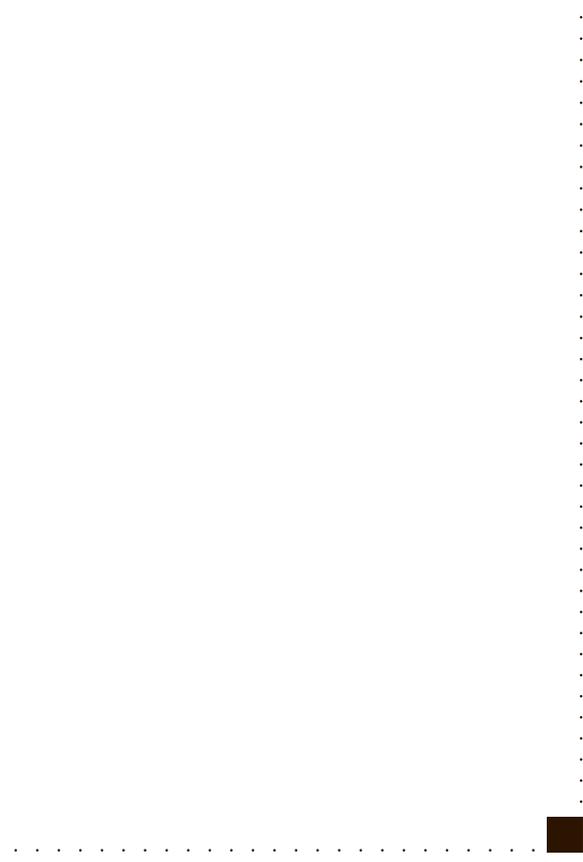
The Department of Education and the National Library of Education in the United States have recently initiated sponsorship of the National Clearinghouse for Educational Facilities (NCEF). The NCEF is committed to ensuring that all school buildings present a functional, healthy, and inviting learning environment. Such facilities will assist learners in developing a strong sense of self-worth and instil in students and teachers alike that the community values them as important. Decisions made by school facility practitioners, school administrators, school boards, and governmental bodies to address school facility issues should be based on relevant research and findings as well as the best practices in the field.

The NCEF revolves around four key components: planning, design, construction, and operations/maintenance. The NCEF offers the collective expertise of subject experts and a strong technical assistance programme via a toll-free reference service. NCEF will serve as a depository of such knowledge that can be easily obtained by practitioners in the field and anyone interested in educational facilities. To support this plan, the NCEF

will be identifying, gathering, and abstracting, according to the Educational Resources Information Centre (ERIC) guidelines, relevant data and information about school facilities. The NCEF will also be conducting a series of workshops and mini-conferences to promote the interaction and development of educational planners and practitioners.

NCEF's Web site will be available in January 1998, with useful information and research related to educational facilities such as links to the ERIC system, technical assistance sites, and helpful professional organisations. For further information on the NCEF, contact :

1750 Kraft Drive, Suite 2200
Blacksburg, Virginia 24060
Toll Free: 888-552-0624.
Fax: 540-231-2901
Email: ncefinfo@edfacilities.org



The Innovative Pilot High School at Poitiers

FUTUROSCOPE: 10 YEARS ON - THE INNOVATIVE PILOT HIGH SCHOOL

The Innovative Pilot High School is part of the *Futuroscope* complex near Poitiers in the Department of Vienne, eastern France. Designed and financed by the Department, the *Futuroscope* is the only complex in Europe based on creating a synergy between the activities of leisure, work, technology, training and education. The concept of a theme park, surrounded by a high technology development, unlike any other, was first conceived in mid-1983.

Since then, the Department of Vienne has invested (and is still investing) 1.6 billion francs in the project. This investment, and the success of the enterprise,

has attracted an equivalent investment from the State, European authorities and private enterprise, leading to the development of high-level education, training and research facilities, and significant investment in associated areas, such as hotels and office complexes.

Construction work commenced in December 1984. The park was first opened to the public in 1987 with an initial total of 225 000 visitors. At that stage, it included only the *Futuroscope* pavilion and the Innovative Pilot High School, which opened its doors to students the same year. Over the past 10 years, the

Futuroscope's training, forecasting and communications area gathers several teaching and research institutions.

- *The Innovative Pilot High School/University Overlapping Project involves total co-operation between a high school and a university (from 0-level year through to the fifth-year university level).*
- *The National Correspondence School (CNED) makes the Futuroscope a centre in France for the development of teaching by correspondence.*
- *The International Prospective Institute organises symposia and conferences for managers in the fields of economics and social sciences.*
- *The National School of Advanced Mechanics and Aerotechnical Science (ENSMA) is a major engineering school specialising in the fields of aeronautics and space technology.*
- *The Engineering Science Laboratories house research facilities devoted to the study of the mechanics of liquids and solids, physical properties of materials, electronics and chemical kinetics.*
- *The Poitiers University and CNRS (National Centre for Scientific Research), in partnership with ENSMA, form the foremost teaching and research centres in France for the engineering sciences.*
- *Juripole, the Law and Media Centre (International Legal Information Centre) represents a service centre unique in Europe in the field of European and international law.*
- *The Higher School of Management Staff in the National Education System will provide initial training and further education for inspection and management staff in the French Ministry of Education.*

Futuroscope has continued to expand and has become a major attraction with 2.8 million visitors in 1996.



Futuroscope site had an architect-director who controlled the whole project with the separate building projects having individual architects.

WHY AN INNOVATIVE PILOT HIGH SCHOOL?

The Innovative Pilot High School (High School and University) is a unique project, with both institutions being located in the same building. The university occupies the top two floors. This system offers students access to educational training which includes the high school years plus five years of university-level training. After completing their high school education, students are able to make a seamless transition to university studies.

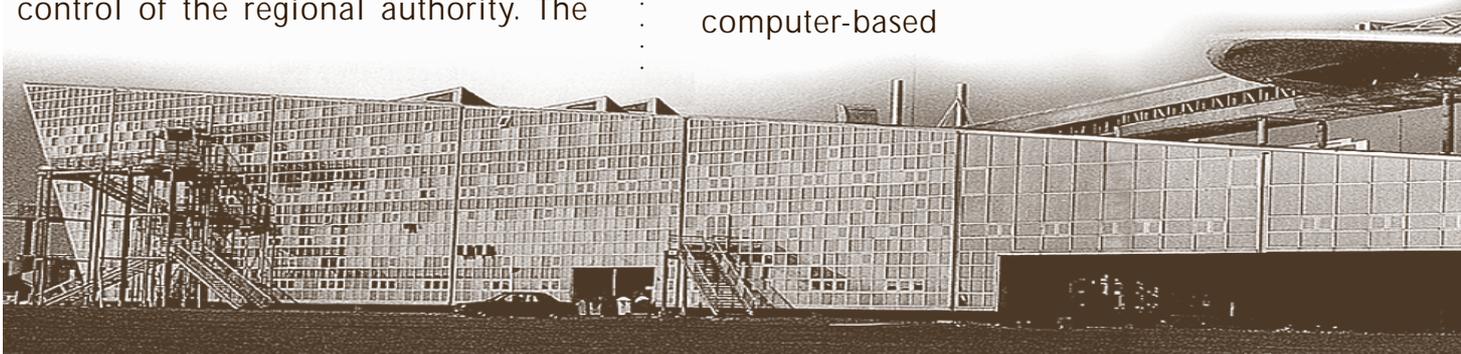
The facility attracts students who wish to specialise in the fields of technology and communications. The university courses focus on the training of industry professionals and offers three specialist areas: communications/law; science/communications; psychology/ law.

The idea of the *Futuroscope* was initiated in 1983 by the Minister of Education. It opened in 1988 and was designed for traditional pedagogy and was the first school to be decentralised under the control of the regional authority. The

INFORMATION TECHNOLOGY AND COMMUNICATIONS (IT+C) STRATEGY

At the regional level, the authorities are now trying to organise an Intranet site for 120 high schools, in order to enable students to communicate among themselves. It will then be linked to a national-level Intranet site including administrative staff. All high schools will be given full access to the Internet at the price of a local call.

There are currently 300 computers available for the 500 pupils. At present, because of difficulty with cabling (cables installed 5 years ago are not adaptable to new technologies), there are no computers with access to the Internet. However, there are plans to develop a separate room, specifically cabled for 25 computers, which will provide access. There is a Centre for Information and Documents which can be accessed by computer. Students are not required to have their own computer, as most computer-based



homework or work assignments are carried out within school hours. Boarders at the school have full access after hours. 200 out of 500 students are boarders, but current facilities are not adequate to meet the demand for places. Parents may contribute towards costs.

HAS IT BEEN SUCCESSFUL?

Demographic Changes since 1987 and the Regional Development Plan

The number of young people in the region is decreasing but this is, to some extent, compensated for by the increasing length of time that students remain at school. Thus, the role of the schools in the Region will change to meet changing needs. The Region is therefore moving into long-term training and learning and is looking at ways of opening up to and increasing the amount of resource sharing with the community.

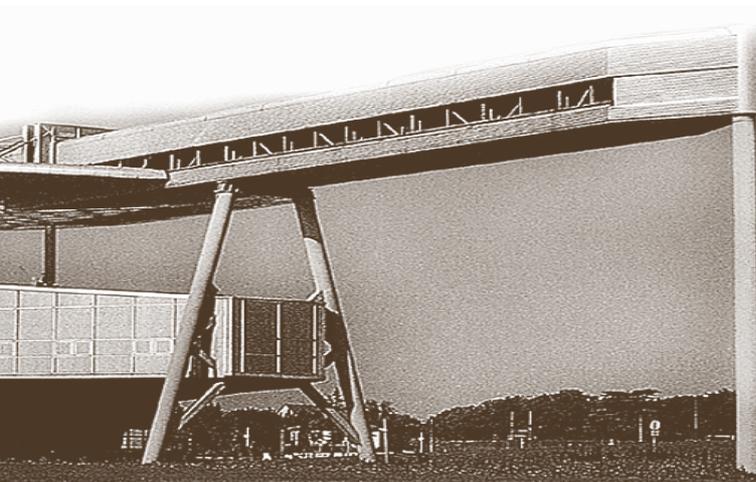
The Region is also examining the role of the high school as an economic generator for the Region by acting as a resource centre for local business and innovative transfer of technology

(e.g. testing new products etc.). However, this concept does not yet work perfectly because the high school is still separated from the university with each having different administrations. The compartmentalised education system at the various levels, and the necessity to have the support of the school principals (who are funded according to national priorities) at local level to agree on Regional strategies and needs, have posed some difficulties.

A rapidly emerging approach is the idea that training and schooling are for lifelong learning. The Regional Development Plan - which includes a 5-year plan for training - promotes relations with the professions (commencing an ongoing dialogue) and with the aim of assessing needs (i.e. what exists and what is needed). But it has proven difficult to anticipate developments as businesses generally have only 6-month cycles. Maximum flexibility of the facilities is seen to be the solution to this problem.

THE DESIGN AND FLEXIBILITY OF TEACHING SPACES

The academic building, now 10 years old, was originally designed for a traditional pedagogy, with large groups of pupils in each classroom. The majority of classes still have at least 30 pupils, although 20% to 30% of classes are now taught in smaller groups. While there is a need for smaller rooms, rather than the traditional classroom, the building itself as with most schools does not have the flexibility in terms of design or construction to respond or to meet this demand. This is also a problem with accomodating newly evolving pedagogy.



The high school was already modifying buildings that were only 2 to 3 years old. It seems to teachers that pedagogical requirements were not getting through to the designers. It now needs flexible buildings so that groups can divide into a variety of smaller spaces.



The information technology and communications focus has lent itself to much project based learning activity. On a Sunday, as the school was open for a European Union wide Internet demonstration day, groups of students were demonstrating and actively involved in projects which used the Internet to develop cross-cultural project based activities. One group was working on the Internet in the Chinese language with the assistance of their Chinese language teacher! Others demonstrated a three-dimension computer animated fly-through model of the Futuroscope site complete with music. Viewers were able to be taken through the inside of buildings as if in a miniature flying vehicle. This demonstration software was entirely prepared by the students.

The high school is open for continuing education, but only to a limited extent at this stage – the safety of pupils is paramount. There is only one entrance to the building at present because of the need to limit access to certain areas. If it were to be opened more extensively to the public, the centre would require some redesign - i.e. public/shared/private areas which would have three levels of access – student access being the first priority. Additionally, with the expensive equipment in the centre, the school needs to control access. Sharing with the community works well with the sporting facilities, where there is special access for the community and different access for students.



CONCLUSIONS

Having started this initiative a decade ago, the school is well on the way to solving many of the technology infrastructure, software, support and teacher training problems now being experienced in other schools and in other countries. The Regional authorities, in association with the school, the educational precinct, the technology park, Futuroscope and the clustering of information technology and communications related activities, have developed a national and international identity in what is a very special Region of France.

Two major features are the project based learning activities and the sharing of specialist teaching spaces by both the high school and the university. Quite well appointed and equipped laboratories are available for both types of students, with project-based experiments in progress.



SCHOOL GROUNDS

A PEB conference on the use of school grounds for learning – “Grounds for celebration” – in association with Learning Through Landscapes and the UK Department for Education and Employment (DFEE), was held in Winchester, UK, September 1997.

(Editor's note: This is an edited version of the background paper prepared for the seminar, with some of the key findings included)

WHY SCHOOL GROUNDS?

This is the first time that the topic of school grounds has been selected for an OECD seminar in the Programme on Educational Building (PEB). Indeed, it is probably the first time that an international event has been wholly devoted to this important area.

Recently, notably at the Bologna seminar in May 1997 (see also PEB Exchange 32), the OECD drew attention to the risks faced by schools from outside elements. In France and other OECD countries this has resulted, in some cases, in the erection of protective security fencing around and, sometimes, within school sites. At a stroke the school is

separated from the outside world which is perceived to be a risk to the vulnerable young people within its care.

In some countries, most notably England, Scotland, Canada and Sweden, concerns about an increasingly unsafe society have produced very different responses. Schools see community education as part of the solution rather than the problem. They conclude that, if it is increasingly difficult for young people to roam outside in the places where they live, then it is essential that they redress this fact.

The environment provided by the school, in particular its grounds, becomes a very precious space. In it pupils can experience the wonders of the natural world; they can explore aspects of science, geography and environmental education which need to be learned outside; they can play creatively and enjoy, with the local community, the opportunity at first hand of developing their grounds. In this scenario school grounds become protected places, cherished by the very communities which others seek to exclude.

There are, however, even more fundamental issues at stake. It has been said that you can tell much about a civilisation from the state of its prisons. The same is also true of school grounds. Indeed, many share characteristics with the prison yard, damaging those doing time in them, albeit in less obvious ways.

That there is a direct effect between the way school grounds are designed and managed and the behaviour and attitudes of the pupils who use them has been comprehensively described in *Special Places; Special People*, by Wendy Titman¹. Prior to this study,

1. *Special Places; Special People*, Wendy Titman ed., Worldwide Fund for Nature/Learning Through Landscapes, 1994.

there had been remarkably little research about children and school grounds and almost none which involved children in the research process. It follows that the science of understanding the relationship between school grounds and their users is a comparatively recent one.



THE LEARNING THROUGH LANDSCAPES TRUST

In the United Kingdom, a comprehensive attempt has been made to promote all aspects of the use, design, management and maintenance of school grounds. After a three-year research project, an

independent organisation, Learning Through Landscapes (LTL), was launched in the early 1990's. Significantly, the research was supported by the UK government, through the Department of Education and Science and the Countryside Commission, and by a consortium of local authorities, including Hampshire, one of the co-hosts of the conference in Winchester. LTL maintains a close working relationship with the Department of Education and Employment (as it is now called), and collaborated on the production of a new Building Bulletin, *School Grounds; a Guide to Good Practice*² (see Book Reviews, p. 20).

During the last decade, there has been a growing interest in environmental education in schools. This has become more rigorous in many countries, following commitments made at the Earth Summit in Rio in 1992, relating to Agenda 21, biodiversity and sustainable development.

In many countries there are regulations or guidelines relating to the design of the land around schools, although the reality is often different with unattractive, cramped, and overcrowded sites. While almost all school buildings throughout the developed world have some land around them, they vary hugely in size from a few square metres to many hectares. The importance attached to these environments varies enormously. For many of the architects who design new schools the surrounding grounds are often an afterthought in the design process. In some cultures there are strongly developed notions of outdoors teaching, while in others, school grounds are used simply to allow pupils to let off steam and teachers to retreat to their staff room.

The organisation of the school day is another influential factor. Schools which cover most of their academic work in long morning sessions leave little chance for pupils to explore the informal learning opportunities of mid-morning and lunch time breaks.

LTL has established the range of services which schools require to enable them to use and develop their grounds. These include advice and information, a substantial range of publications providing technical, curriculum and other support, training and, very importantly, the evidence of research into best practice gathered from the thousands of active UK schools. In addition, LTL has undertaken a necessary advocacy role to counter a general view in society that buildings are more important than landscape. It has also created structures to support and co-operate with a wide range of agencies

2. *School Grounds; a Guide to Good Practice*, Learning Through Landscapes, ed., Department for Education and Employment, 1997.

and professions involved and interested in school grounds.

In the last decade there has been an explosion of interest internationally in schools grounds. This led to the creation, in 1995, of the first International School Grounds Day. On 3 May, 1997, thousands of schools in 11 different countries celebrated this event.

In parallel, exciting initiatives to support school grounds developments have also emerged at national, regional and local levels in both developed and developing countries world-wide. While children and young people remain the ultimate focus of concern for all these agencies, their nature, structure and scope is wide and varied. This mirrors the range of issues which school grounds involve and the fact that the work has relevance for education-ists, architects, landscape architects, environmentalists, planners, parents and local and national governments.

Grounds for Celebration was the first international opportunity for people from these professional backgrounds to meet, exchange information, identify and debate common issues and consider strategic approaches to achieving change

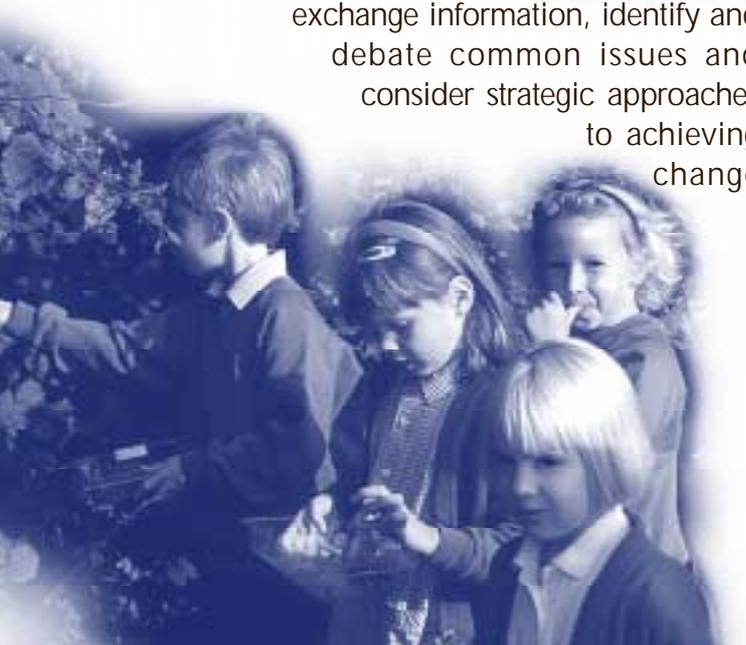
and improvement. The programme was designed to meet two main objectives: a celebration of what has been achieved and the identification of effective strategies for the future.

Workshop presentations provided an opportunity for participants to learn more about developments in Canada, America, Sweden, Bermuda, the UK and Boston, USA. Clearly, every country was different but through this diversity it became clear that there were common needs in relation to training, support structures and services. The three conference themes were explored through workshop presentations and discussions, so that all participants could consider the complex relationships between design, pupil behaviour, delivery of curriculum subjects etc., and identify the common benefits which result from using and developing school grounds. The study tours provided opportunities to meet children and hear and see examples of what some schools in the UK are achieving.

CONFERENCE OUTCOMES

A full report of the proceedings will be published shortly. However, some of the key findings included:

- student behavioural improvements are seen most clearly through reduced vandalism and abuse of the grounds and schools;
- an evidence of changing relationships between teachers, students, parents and the local community. The integrated process breaks down some of the barriers between races, abilities and generations;
- the fact that children involve a developed sense of pride, ownership and identity in a space that is very



important to them, and that they have a role in developing and caring for, is seen as very empowering;

- school grounds became an aid to developing a different pedagogy, one that enhanced the relationship between the head and the heart;
- government policy is changing through the non government sector advocacy work – increased funds for local advocacy, teacher training policy makers, fund raising, grants, resources etc. Once the community is convinced, resources are made available;
- the close relationship between the built and natural environments was demonstrated, although this is different from country to country;
- outside support agencies, partnerships, outside networks and responsibility for schools grounds differ from country to country.

This conference and the subsequent report provide a unique and exciting opportunity to advance the cause of school grounds improvement world-wide. This stimulating and thought provoking meeting, which is an important landmark, will help to ensure that future generations of children will no longer be educated in the inadequate school grounds of the past.



Environmentally Sustainable Design

World's 'Smartest' House Created By CU-Boulder Team

A former schoolhouse, more than 90 years old, is now what may be the world's 'smartest house', a dwelling whose environment is controlled by a computer system that learns the occupant's daily habits and preferences. The structure was purchased in 1991 by Associate Professor Michael Mozer of the University of Colorado at Boulder's Computer Science Department. It was then renovated and retrofitted with high-technology hardware. Using data gleaned by sensors installed by Mozer and his students, the computer system essentially 'programmes itself' by observing his lifestyle and habits over time, eventually learning to anticipate and accommodate their needs.

Mozer and more than a dozen graduate and undergraduate students have installed 75 sensors and nearly five miles of conductor in the home, as well as actuators to control lighting, ventilation and air and water heating. The sensors continually monitor temperature, ambient light, sound and motion in each room, the opening of doors and windows, outdoor environmental conditions, boiler temperature and hot water usage.

Many homes can be programmed to perform tasks like watering lawns or turning on televisions, but programming a home is a complex and difficult task that few homeowners are interested in doing. The twist is that this house programmes itself

by observing inhabitants as they live. The system is based on neural networks, which are learning devices inspired by the working of the human brain. The human brain relies on billions of neurones constantly communicating with each other as they acquire knowledge and form memories. In Mozer's house, artificial neural networks consisting of hundreds of simple, neurone-like processing units interact to predict and control the environment.

The system predicts behaviour and movements, including which rooms will be occupied at what times, when people leave the house and return, and when hot water will be needed in the boiler. The system infers rules of operation and adapts to the lifestyle of the inhabitant, maximising comfort by setting appropriate temperatures and light levels while minimising energy consumption.

In Mozer's house, anticipating and carrying out the wishes of the inhabitant and conserving energy sometimes conflict. So Mozer and his colleagues at the Institute of Cognitive Science of the University of Colorado devised mathematical techniques for translating discomfort to a cost in dollars that can be weighed against energy costs. One technique, based on an economic analysis, depends on the loss in productivity that occurs when the system ignores the inhabitants' desires. Another technique adjusts the relative importance of the inhabitants' desires based on how much they are willing to pay for gas and electricity.

Even if the inhabitants do not have a particularly regular schedule, there are statistical regularities in their behaviour that the system can exploit. For example, if Mozer is not home by 3 am, he likely

will not be home by 4 am and therefore the house does not need to be warmed up. Mozer demonstrated the bathroom light, which turned on to a low intensity as he entered. The system picks the lowest level of the light or heat it thinks it can get away with in order to conserve energy, and occupants need to complain if they are not satisfied with its decision. As an example to express discomfort, a wall switch when operated causes the system to brighten the light and to 'punish itself' so that the following time the room is entered, a higher intensity will be selected.

The house has been the source of a dozen student research projects and two masters theses, and is a good testing ground for undergraduates who have never built anything in the real world. Much of Mozer's neural network research has been funded by the National Science Foundation. For further information, contact:

Michael Mozer: (303) 492-4103 or
Jim Scott: (303) 492-3114;
e-mail: mozer@cs.colorado.edu ;
<http://www.colo.edu>

Energy Consumption in Schools

In May 1997, the Ministry of Education of Quebec published the results of a survey on energy consumption in schools for the year 1996-97. Data concerning 94.8 per cent of the total surface of public schools real estate were provided, reflecting 91.3 per cent of the total number of schools.

Major conclusions of the study were:

- there has been an increase of energy consumption of 4.0 per cent in comparison with the previous year;

- the total cost of energy increased by 4.6 per cent over 1994-95, from Can\$ 149.0 million to 155.9 million, in spite of a 3.5 per cent decrease of the cost per unit (\$ per GJ);
- electricity in bi-energy mode is 15 to 20 per cent less expensive than other fuels;
- the number of buildings heated with electricity changed very little. On the other hand, about 150 buildings that used to be heated with oil are now gas-heated;
- electricity still represents the most commonly used form of energy (50.7 per cent), whereas gas represents 40.7 per cent. Oil consumption has been decreasing since 1992-93 and currently represents 8.6 per cent of the total. Other forms of energy (propane, etc.) represent only 0.02 per cent of the total;
- thanks to energy savings expenses have slightly decreased in 1995-96.

Detailed data are included in the report *Bilan 1995-96 concernant la consommation énergétique du réseau des commissions scolaires*, published by the Ministère de l'éducation, direction générale du financement et des équipements, Direction des équipements scolaires, 1035, rue de la Chevrotière, 14ème étage, Québec (Québec) G1R 5A5; fax: 418 643 9224.



WEB LINKS USEFUL WWW LINKS FOR EDUCATIONAL BUILDING



APPA – The Association of Higher Education Facilities Officers –
<http://www.appa.org/>

Information Services – Main aim: To develop and disseminate data and information relative to higher education facilities management.



SCUP – The Society for College and University Planning –
<http://www.scup.org/>

Organising principle: planning is essential to improving and maintaining the fitness, vitality, and quality of higher education. The Society has created its home page and its links in order to make higher education planning-related resources more widely available.



IFLA – International Federation of Library Associations and Institutions –
<http://www.nlc-bnc.ca/ifla/home.htm>

IFLA was created to provide librarians with a forum for exchanging ideas world-wide, promoting international co-operation, research and development in all fields of library activity.



CEDEFOP - the European Centre for the Development of Vocational Training –
<http://www.cedefop.gr/index1.html>

CEDEFOP (the Centre européen pour le développement de la formation professionnelle), although independent from the European Commission, its analysis and research activities complement and link in with other parallel EU activities.

Focus of activity: promoting vocational training research in order to facilitate analysis and understanding of the working of the European labour market.



CEFPI – Council of Educational Facility Planners International –
<http://www.cefpi.com/cefpi/>

The mission of CEFPI is to promote creative and responsible planning, design, and construction and/or renovation of facilities which will provide the best learning environment for all students.



ASBO – The Association of School Business Officials International –
<http://www.asbointl.org/international.html>

Mission: to provide programmes and services to promote the highest standards of school business management practices and professional growth, and the effective use of educational resources.

Goals: to enhance the professionalism of school business management executives, to improve the performance of the public and private school districts in which they work, and to assist these administrators and their districts to deal effectively with the changing environment in which schools operate. Another goal is to provide a forum for the exchange of information and ideas among professionals.

Main objective: to keep legislative bodies, governmental agencies and other members of the education community informed of the Association's position on key issues relating to the administration of the educational enterprise.



EDRA – Environmental Design Research Association –
<http://www.aecnet.com/edra/home.html>

Purpose: the advancement and dissemination of environmental design research, thereby improving understanding of the interrelationships between people, their built and natural surroundings, and helping to create environments responsible to human needs.



IAPS – International Association for People-Environment Studies –
<http://www.tue.nl/bwk/iaps/>

Objectives:

- to facilitate communication among those concerned with the relationships between people and their physical environment;
- to stimulate research and innovation for improving human well-being and the physical environment;
- to promote the integration of research, education, policy and practice.

CONFERENCE NEWS

AUSTRALIA - AUSTRALIAN TERTIARY EDUCATIONAL ADMINISTRATORS (ATEM) AND AUSTRALIAN TERTIARY INSTITUTION FACILITY MANAGERS (AAPPA) JOINT CONFERENCE, SYDNEY, 16-17 SEPTEMBER 1997

The conference was attended by approximately 500 people from Australia, New Zealand and Papua New Guinea, with a small number of visitors from other countries, notably Joe Spoonmore of Washington State University representing the AAPPA American parent body.

The conference, consisting of plenary and special interest sessions, included key note speaker Roderick West, Chairman of the Commission of Enquiry into Higher Education. He gave a wide-ranging and at times passionate insight into his own views on higher education. Other plenary speakers produced more or less stimulating variations on the theme: 'the world is changing fast and higher education is going to have to change with it.' Deryk Schreuder, Vice-Chancellor of the University of Western Sydney, and shortly to move to the University of Western Australia, was perhaps the most focused on medium-term implications of change. He quoted extensively the OECD Tertiary Review country report on Australia.

The special interest sessions were split into six concurrent strands – Student and Faculty Administration, Human Resources, Legal, Research Administration and International, Facilities Management 1 and Facilities Management 2. There appeared to generate a lively interest in

space management amongst the professionals, and a good deal of scepticism amongst the academics, which underlines the suitability of work in this areas for joint PEB/IMHE activity. For further information, contact the PEB Secretariat.

A CONFERENCE ON *BUILDING AND ENVIRONMENT* IN PARIS

Almost 300 scientists coming from all parts of the world participated in the second international conference on building and environment, June 9-12, 1997, held in Paris. Over four days, scientists examined recent developments in the field of environmental impact of buildings. The conference was organized by the CSTB (*Centre scientifique et technique du bâtiment*) within the framework of the activities led by the International Council on Buildings (CIB) working group on the Environmental Evaluation of Buildings.

The conference tackled the questions of environmental evaluation methods concerning materials, buildings, natural resources and environmental management throughout the construction life cycle. National objectives, strategies and indicators for sustainable development were also debated.

The conference assessed the situation on actions undertaken to evaluate the environmental impact of construction materials. Most of the proposed methods are based on the analysis of the building life cycle. Efforts have also been made to inform professionals from the construction industry on the environmental impact of

materials. Thus, in different European countries, detailed information is circulating in the form of guide books, identification cards, brochures, etc.. A method adjustable to different countries was discussed, which will be on the agenda of the Green Building Challenge conference to be held in Canada in October 1998.

Tools and experimentation on the evaluation of inside environmental quality were also presented. Environmental management of operations concerns the whole construction process, from the planning stage to construction, management, renovation and demolition. Concrete examples were presented, illustrating, in particular, the planning phase. The question of the renovation of existing buildings in the perspective of environmental constraints was also examined.

Constructing 'green' buildings is on the policy making agenda in some European countries as well as in North America. There are numerous projects whose main targets are: eco-construction, eco-management, comfort and health. Studies have illustrated the theme of sustainable development of the city, focusing on urban planning and environmental issues (energy, pollution), as well as on some urban climatic aspects or other problems such as noise.

Specialists from western countries, eastern Europe and developing countries agreed on common objectives as well as on the specificity of environmental approaches, both on the national and regional levels. In eastern European and developing countries, the control of energy is the principal objective.

For more information or to order conference proceedings (available in French and English), contact: tel: 33 1 64 68 84 36; fax: 33 1 64 68 84 78.



BOOK REVIEWS

Ecodemia: Campus Environmental Stewardship at the Turn of the 21st Century

Ecodemia is the National Wildlife Federation's guide to how campuses are 'greening' their operations – largely through various facilities management areas – to support the environment. The book is loaded with case studies and includes chapters on virtually every facet of campus operations, including procurement, dining services, landscaping, and energy. The profiles include numerous demonstrations of various campus populations – students, faculty, and staff – working together to pursue the goal of heightened environmental sensitivity.

Ecodemia: Campus Environmental Stewardship at the Turn of the 21st Century, by Julian Keniry, is published by **APPA Publications**, P.O. Box 1201, Alexandria, VA 22313-1201. Fax: 703-549-2772 or online at <http://www.appa.org/publish/order.htm>

Physical Facilities for Education: What Planners Need to Know

Do educational spaces contribute to more and better education? Where should they be located and when will they be needed? How do you look after ageing and vandalized school structures? What do you do with surplus space when the local demographics reduce the school age population? These and other questions are addressed in *Physical Facilities for Education: What Planners Need to Know*, the latest of a series of booklets published by the International Institute for Educational Planning at UNESCO. The publication provides practical guidelines to help planners to better communicate with building designers, and to help both overcome the tendency to function as individual experts rather than as members of a team.

Physical Facilities for Education: What Planners Need to Know, by John Beynon, is published by **UNESCO**. Available from: fax: 33 1 45 68 56 29; e-mail: l.ferrera@iiep.unesco.org; tel: 33 1 45 03 77 70.

DFEE Building Bulletin 85 - School Grounds - a Guide to Good Practice

School grounds are a valuable resource. Their size and design, the features they contain, how they are used and the way they are managed can have a significant effect on the life and work of the school and on the quality of education its pupils receive.

The last decade has seen an upsurge of interest in school grounds. As horizons have been extended, however, the consequent pressures of competing claims on the grounds have intensified. The smaller the site and the more limited the financial resources, the greater the need to enhance the quality of the existing grounds and ensure they are used to best advantage.

Recent changes in the management of schools and the role of Local Education Authorities (LEAs) have significantly shifted responsibility for school grounds, their use and management, from the LEA to the school's own governors and headteacher. This has focused attention on the need for efficient financial management and the strict ordering of priorities. At the same time it has given schools greater flexibility to deploy available resources as they choose, and to involve parents in this process more closely.

One practical outcome of the growing interest in school grounds was the setting up, in 1990, of the Learning Through Landscapes (LTL) Trust, a national charity addressing all aspects of school grounds. This was a natural progression from a research project which had started four years earlier. One of the research recommendations was that official recognition should be given to the wider educational use of the grounds and making due allowance for a greater variety of outdoor resources to support the whole curriculum. It was further proposed that a comprehensive guidance document should show in more detail how this might be achieved.

In 1991, the Department commissioned a preliminary research programme into outdoor resources in school grounds. This enabled them to draw on the experience of schools which had improved their grounds and on the advice of teachers, advisers, LEAs officers, landscape architects and managers. This and other contributions, together with the detailed measurement and description of outdoor resources, have helped to frame the guidelines for the planning and design of existing and new school grounds which are contained within this documents.

The changes made to The National Curriculum (1995), and to The Education (School Premises) Regulations in 1996, make it timely for the Department to publish guidance on good practice in the use, design, development and management of school grounds. This is an advisory publication. Its purpose is to help all schools understand more about the range of issues affecting school grounds and to interpret them according to their own school's circumstances and priorities. It is particularly aimed at headteachers, governors and all those within schools and LEAs who have a management responsibility for school grounds.

It is not a detailed guide to the process of school grounds development, although it has been possible to include some technical information, especially that relating to Building Bulletin 28, Playing Fields and Hard Surface areas, HMSO 1982 (now superseded). This information is contained in a section called Understanding Technical Requirements and in a separate reference section. Outline guidance on the main issues in the choice and design of school sites and area guidance is separately given in Building Bulletin 82, Area Guidelines for Schools, HMSO 1996.

The advice contained in this publication takes account of The Education (School Premises) Regulations 1996. It amplifies messages contained in Building Bulletin 71. The Outdoor Classroom, HMSO 1990, and it provides advice in the context of the broad approach advocated by LTL. The contents include: understanding the issues; managing school grounds development; surveying the grounds; providing for the formal curriculum; providing for the informal curriculum; understanding the hidden curriculum; understanding technical requirements; maintaining the grounds; and planning for changes.

Edited by **Learning Through Landscapes**, Published by **HMSO**, September, 1997 (100 pages approx.). Available from the HMSO, London, fax: +44 171 873 8200 or <http://194.128.65.2/publicat/obtain/mailord.htm>

Crisis Management in Schools

When a Crisis Hits, Will Your School Be Ready? contains all the necessary components for a school's administration to become proactive in its quest to develop a comprehensive crisis management plan. It demonstrates that the building administrator is not the only person to be involved during a crisis, but that teachers, staff, other administrators, community patrons and local community agencies all play an important part in providing assistance when a crisis hits.

Similar conclusions were reached during the seminar organized last May in Italy by PEB in co-operation with the Italian regions of Emilia-Romagna and Tuscany, *Providing a Secure Environment for Learning*, although from the very different perspective of prevention. The final report, which will soon be published, demonstrates very pertinently that providing safety and security in schools implies various forms of partnership.

This 'how-to' book presents a wide range of solutions to dealing with crises in schools and takes the reader through a step-by-step process to building a crisis management plan that works. The many examples given provide a guide for clarity, and developers can use the examples to check the school's existing plan

to see if it is complete. *When a Crisis Hits, Will Your School Be Ready?* also aims at helping to minimize the risk of administrators, faculty or staff making 'fatal errors' during or after a crisis.

Chapter one sets the stage for the whole process. It shows that developing a policy and understanding the philosophical underpinnings is where a school building needs to begin.

Chapter two answers questions such as: Why is a crisis management plan needed? Who needs to be involved on a crisis team? What are the components of a crisis plan? Many examples are given to assist the reader in the variations that can be developed in a possibly unique situation.

Chapter three is devoted to the function of the crisis team. It examines the questions of its purpose, of the procedure to follow given a crisis situation, of what follows a crisis situation. It seeks to enable the practitioner to anticipate and respond to questions that faculty, community, and others may have as the plan is being developed.

Chapter four provides help to identify concerns and potential problem areas, in order to put a plan together. Chapter five covers the special needs of individuals who are coping with grief and possibly resolving a loss.

Chapter six identifies areas in which training needs to take place. Classrooms, hallways, cafeterias and parking lots are now used for more than just educational experiences. Proper supervision, not only by administrators, is needed to reduce the amount of vandalism and crime that may be occurring.

Chapter seven is critical to the administrators who find themselves in the midst of vandalism, crime and violent behavior. It provides the administration with help in guiding the community, and, more closely, parents, in identifying and dealing with potentially difficult and explosive situations. It also examines how administrators can develop a positive and proactive way of connecting to the community and with the parents of students.

Chapter eight clarifies the area of conflict management and how it can be incorporated into a school setting. This chapter identifies skills needed to become a conflict mediator and how students can assist in keeping the building and campus peaceful and productive. It considers that managing conflict before it becomes a crisis is an important process that schools need to develop and implement.

Chapter nine, considering that many communities, whether urban, suburban, or even rural, are concerned with gangs and gang development, helps the reader become aware of gang development and activity.

Although this last threat in particular, but others described in the book as well, might not be relevant in all countries and contexts, this is a useful book about different possibilities of dealing with emergencies going from bomb threats to fires, floods, kidnappings, shootings, suicides and tornadoes.

When a Crisis Hits, Will Your School Be Ready?, by Robert H. Decker, is published by **Corwin Press, Inc., a Sage Publications Company**, 2455 Teller Road, Thousand Oaks, California 91320. E-mail: order@corwin.sagepub.com; fax: 805 499 0871. It can also be ordered from Sage Publications Ltd., 6 Bonhill Street, London EC2A 4PU, United Kingdom.

OECD PUBLICATIONS

Education Committee Newsletter

The OECD publishes an education newsletter three times per year. In the latest issue are articles on: Russia – education policy review; Reviews on policies for education – follow-up; Parents as partners in schooling; Sustainable flexibility; and a listing of PEB and other seminars. Contact the PEB Secretariat for more information.

Programme on Institutional Management in Higher Education Newsletter

IMHE regularly publishes a newsletter. The latest issue covers the topic: Internationalisation – The Quality Issue. The increasing global interdependence of national economies and the growing importance of international contacts in all fields continue to drive and deepen international orientations at institutions of higher education. The work of the IMHE Programme in this area began with two seminars aimed at helping administrators better understand the implications of this expanding dimension in higher education (Helsinki 1991 and Paris 1992). Based on the outcomes of these seminars and in parallel with activities undertaken by the Centre for Educational Research and Innovation (CERI), IMHE launched a project in 1994 entitled Institutional Strategies for Internationalisation. Seven seminars have been organised to date within the framework of this project:

Washington, DC, 1994; Monterey, CA, 1995; Melbourne, Hong Kong and Budapest, 1996; Wellington and Fiji, 1997.

Recent work focusing on the Asia Pacific has resulted in two publications: *Strategies for Internationalisation of Higher Education: A Comparative Study of Australia, Canada, Europe and the United States of America* (1995), published by the European Association for International Education (EAIE) in co-operation with the Association for International Education Administrators (AIEA) and IMHE, and *Internationalisation of Higher Education in Asia Pacific Countries* (1997), published by the European Association for International Education (EAIE), in co-operation with IDP Education Australia and IMHE. To order books, contact the EAIE Secretariat, Van Diemenstraat 344, 1013 Amsterdam, The Netherlands.

The Employment, Labour and Social Affairs Division

ELS regularly publishes a newsletter. The latest issue covers: Employment Outlook 1997: Trends and prospects; Earnings mobility; Economic performance and collective bargaining; Trade, earnings and employment; and Is job insecurity on the increase?

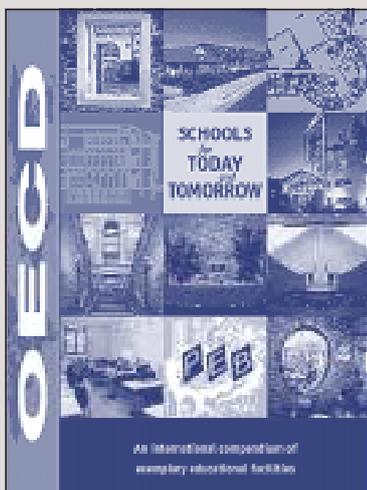
Contact the PEB Secretariat for further information.

Schools for Today and Tomorrow

What makes a good school building? This unique, full-colour book brings together photographs and descriptions of forty-six fine schools selected by an international jury from across the OECD area. These schools exemplify what is best about recent educational building design and management. The schools described range from major new buildings to small-scale adaptations and include educational facilities for all ages. Some are in city centres, others in rural villages; they cover the latest in educational technology and the best in sensitive restoration of historic buildings. This book will give a wealth of valuable pointers to those involved in designing schools of the future.

OECD code: 95 96 05 1,
ISBN 92-64-15291-1, Sept. 1996, 144 pp.
FF 200 US\$ 40 DM 60 £ 26

A full listing of OECD Education publications can be viewed on the WWW at URL:
<http://www.oecd.org/publications/catalog/education.html>



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PEB DIARY

FEBRUARY

23-24 February – Experts meeting on *Libraries and Learning Resource Centres* – organised by PEB in co-operation with the OECD Programme on Institutional Management in Higher Education (IMHE), OECD, Paris.

APRIL

23-24 April – *National and Regional Support and Incentive*, a seminar on the response of higher institutions to regional needs, Lyon, France; organised by the OECD Programme on Institutional Management in Higher Education (IMHE), in co-operation with local authorities and higher institutions of the Rhône-Alpes Region.

OCTOBER

LETA 1998 – The Learning Environment Technology Australia 1998 or LETA 1998 invites PEB members to its third conference which is to be held in early October. The focus will be on the built environment of learning and ways in which technology can be incorporated to enhance learning and improve administration. Practical examples will be discussed in workshops and demonstrated on site. For further information, contact the PEB Secretariat or Ann Gorey, e-mail: goreya@ws.ssa.sa.gov.au

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