Some conclusions:

the different political, legal and financial
the management of future projects. Despite
'best practice' methods, to help improve
causes of such problems and established
developments. The research identified the
often experience delays, cost overruns
research institutes. Infrastructure projects
studied in depth during a two-year research
investment of more than EUR 50 billion were
15 infrastructure projects with a total
Europe, in Turin, Italy.

The Florence Institute of Design International will offer a new type of boutique academics focused entirely on international students providing Interior Design, Graphic Design and Architecture programmes with both master and undergraduate levels available, as announced by Founder and Creative Director, Architect Marc DiDomenico.

As the city of Florence has become
an international crossroads for design
students. The Florence Institute of Design International will build upon this rich history of art, culture and design, while providing students with a unique international learning experience where methodology and curriculum is designed for the broad and diverse set of students and focused on personalisation of studies. Boutique by design, the Institute’s philosophy is to provide a first-class facility offering the highest level of education and resources to design students around the world.

‘The key to this institute is the diversity and understanding of the student set,’ said DiDomenico. ‘By expanding to encompass students from all over the world, the multi-cultured backgrounds of the students create an elevated level of complexity and need for varied methods of teaching. As most applicants to the Florence Institute have studied at the finest schools in their own countries, we strive to create the same level of academic excellence, offering the highest standard in design education abroad. We look forward to providing the design

O

pening in the historic centre of
Florence, a new international school of design will welcome students from all
over the world to commence its first full
session on 19 January 2009. The Florence
Institute of Design International will
foundation to lead this next generation of
international designers.’

Set within the hills of Tuscany, Florence has
long been known as an ideal destination for
design students due to the rich patrimony
of Renaissance works. Its modest scale and
pedestrian friendly environment make it an
ideal place to study design. The Florence
Institute is located in the historic centre of
Florence, Italy, within historic Baroque
palazzo.

The Florence Institute’s courses teach the
foundation of Italian design by combining
modern technologies with Italy’s imaginative
culture. Through combining tradition
and technology the programme gives a
detailed understanding of the Italian
creative process. The course format is
inspirational rather than institutional in the
way it juxtaposes the concepts of new with
traditional to stimulate thinking about how
different periods can be integrated.

Each student is treated like a client and
colleague. Class sizes are intentionally
limited to create a more dynamic design
studio environment. In addition, students
are encouraged to undertake independent
studies, to explore more personal interests
in the field of design. Professor to student
relations are approached as an exchange of
ideas where students learn equally from the
instructor and from each other:

• Further information from the
Florence Institute of Design Intl,
Borgo Ognissanti 9, 50123 Florence,
Italy. Tel: +39.055.23.02.481.
Fax: +39.055.53.70.739.
Web: www.Florence-Institute.com

major research into transport infrastructure projects

T

he Netlipse consortium presented
the results of major research into the
management and organisation of 15 large
transport infrastructure projects (LIPs) in
Europe, in Turin, Italy.

15 infrastructure projects with a total
investment of more than EUR 50 billion were
studied in depth during a two-year research
period, by a consortium of private, public and
research institutes. Infrastructure projects
often experience delays, cost overruns
and face challenges with technological
developments. The research identified the
causes of such problems and established
‘best practice’ methods, to help improve
the management of future projects. Despite
the different political, legal and financial
frameworks, the Netlipse consortium found
that many projects have similar, if not
identical, problems.

Some conclusions:

• managing the ‘hard’ factors is of equal
importance as the ‘soft’ factors, such as
cooperating with stakeholders
management and political influence;
• project organisations often focus on
the building phase rather than on the
larger scope of the project and the very
purpose of their construction.

Marcel Hertogh, Netlipse Project Manager:
‘An enormous amount of research material
has been obtained resulting in numerous best
practices and lessons learnt that could be
of benefit to other projects. However, our
research shows that projects do not focus on
learning from others. A shame, because these
lessons could help improve the management
of these projects.’ Netlipse offers valuable
experiences, as well as an active network
to exchange knowledge. He added ‘we look
forward to discussing and expanding this
work in the next phase: Netlipse II.’ This
will also involve the completion of the ‘Infra
Maturity Tool’, for evaluating and monitoring
LIPs.

The European Commission alone plans
to invest many billions of Euros in new
transport infrastructure in the near future.
Guidance to all those involved in the
task is vital. During the Turin meeting, Mr
Karel Vinck, ERTMS co-ordinator of the
Trans European Networks (TEN) in Brussels,
acknowledged that a very professional
research task had been completed. He saw
the potential need for a second phase and
development of the ‘Infra Maturity Tool’.
Mr. Scheele, EU Director of Transport Logistics,
TEN-T and Co-Modality, DG Energy and
Transport, considered that Netlipse could
play an important role in contributing to
future projects. Work on the ‘Infra
Maturity Tool’ will start this summer as soon
as financing is completed.
GLOBAL INFRASTRUCTURE PROJECT SCOOPS PRESTIGIOUS AWARD

South Africa’s Gautrain Rapid Rail Link Project – for which leading project and cost consultancy Davis Langdon provided PPP advice and acted as commercial auditors – scooped a prestigious award at last month’s Public Private Awards in London.

The project, which won ‘Best Global Project to Sign’ is the most ambitious PPP project ever undertaken in South Africa and is currently the largest rail infrastructure project under construction in the world, with a capital investment of approximately US$4 billion.

‘Our congratulations go to Gautrain and the whole of the team on this very fitting accolade. This was a great opportunity to demonstrate the strength of Davis Langdon’s global reach and collaborative approach on projects,’ comments John Alcock, Partner at Davis Langdon. ‘By utilising both our London rail/infrastructure and South African teams, we were able to draw on our global experience on similar projects and help deliver a highly successful outcome.’

Gautrain Rapid Rail Link is an 80km high-speed link that will connect Sandton, Johannesburg, Tshwane and the OR Tambo International Airport (formerly Johannesburg International Airport). The project has been the subject of extensive planning, following feasibility studies in the late 1990s to produce the first plans for a north-south and east-west rail route serving the Gauteng Province.

The geology and topography of the Gauteng Province has resulted in a number of challenges and technical issues to overcome but the project is on track to complete on time. The Sandton to OR Tambo link and the link between Sandton and Midrand will be completed and tested in time for the 2010 Football World Cup whilst the remaining five stations, linking Sandton with Johannesburg Park station and Midrand with Hatfield, will be completed in 2011.

Davis Langdon’s infrastructure team is working on a number of major projects currently including: Brisbane PPP Tunnel; Infrastructure Ontario and the East London Line.

ENTRIES FLOOD IN FOR THE INAUGURAL WORLD ARCHITECTURE FESTIVAL

The World Architecture Festival (WAF) has reported that over 100 projects have already been entered into the awards since the call for entries opened in mid-April 2008. Architects from 40 countries across Europe, Asia, North America, South America, Oceania and Africa have entered their buildings into the inaugural awards programme.

The annual event will celebrate the work, concerns and aspirations of the international architectural community. The Festival, which will take place in Barcelona, Spain, over three days, from 22-24 October 2008, includes the biggest architectural awards programme in the world and will be held at the Centre Convencions Internacional Barcelona (CCIB).

The international architecture community is invited to enter their projects into the prestigious awards show until 20 June 2008. The simple entry procedure starts at the website www.worldarchitecturefestival.com and finishes with a submission via hard copy. Entrants will be able to track their submissions via the website as well as buying Festival visitor tickets, and managing their bookings.

The Awards

The inaugural World Architecture Festival awards will showcase, compare and contrast an outstanding range of completed buildings created by a profession which has always looked beyond national borders to the wider world of architectural culture.

Headed by Lord Foster, the international judging panels will comprise architects, allied professionals, clients and critics, including a ‘super-jury’, who will decide the ‘best in show’ prize – the first architectural ‘Prix de Barcelona’.

Following the closing date of 20 June, shortlisting will then be carried out by an international jury during July. At this stage, 16 buildings will be shortlisted in each of the competition’s 16 categories (i.e. 256 buildings in total). All shortlisted architects will then present their work live to juries and audiences at the Festival, competing against each other to become category winners.

All entries will be exhibited at the Festival in a huge gallery modelled on the Barcelona grid, and after the Festival all entries will be permanently available on-line, on the WAF website.

The 16 awards categories are as follows:

- Civic
- New & old
- Culture
- Office
- Energy, waste & recycling
- Pleasure
- Health
- Production
- Holiday
- Religion & contemplation
- Home
- Shopping
- Learning
- Sport
- Nature
- Transport

The Exhibition

The aim of the World Architecture Festival is to reflect the increasingly international nature of architecture, while also celebrating its regional roots.

In addition to the awards competition and gallery, other elements of the Festival will include: a thematic exhibition, a live ideas charrette for architecture schools, a curated exhibition of architect-nominated building products, city tours and social events and plenary lectures.

- For further information, please contact: Rachel Knowles, FD Tamesis. Rachel.knowles@fdtamesis.com
  Tel: +44 (0) 20 7 269 9353
  Web: www.fd.com

SPRINKLER REQUIREMENTS IN LITHUANIA

The new building code requirements to fit sprinklers in new buildings in Lithuania is now available to view on www.eurosprinkler.org

Sprinklers must be fitted to:

- places of assembly with more than 1,000 people
- shopping centres larger than 1,500m²
- warehouses larger than 2,000m²
- factories larger than 2,000m² which store combustible goods
- hotels higher than 9 storeys or 26.5m
- office buildings higher than 15 storeys
- apartment buildings more than 6km from the fire brigade
- and underground car parks.

There are now details of similar requirements for 20 European countries on the website. Visit www.eurosprinkler.org
LEADING ARCHITECTS KEEN TO ENTER PRESTIGIOUS EMMIRATES GLASS LEAF AWARDS

Hundreds of leading and up-and-coming architects from all over the world are currently submitting entries for the prestigious Emirates Glass LEAF Awards 2008.

Now in their fifth year, The Emirates Glass LEAF Awards have rapidly become the most prestigious worldwide architectural prize, recognising excellence in architectural design and build.

The Emirates Glass LEAF Awards 2008 have eight categories covering aspects of building design.

1. best structural design of the year
2. best sustainable development
3. commercial building of the year
4. international interior design of the year
5. mixed use building of the year
6. new innovation of the year
7. residential building of the year
8. young architect of the year.

Plus the grand prix winner.

Entry is open to all architects with an office in Europe and buildings can be anywhere in the world.

Winners will be judged by a panel of distinguished experts from the architectural sector. They will be announced at a spectacular Awards dinner on 23 October 2008.

For an entry form and details of how to enter please visit: www.leaf-awards.com or e-mail: simonakastly@spgmedia.com

Closing date for entries 27 June 08

NEW EDITION OF ASTM STANDARDS IN BUILDING CODES NOW AVAILABLE

The 45th Edition of ASTM Standards in Building Codes is now available from ASTM International in print, DVD and online. The Building Codes contain more than 1,300 ASTM construction standards to give you the tools you need to design and construct buildings that satisfy the international code requirements established by the International Code Council® (ICC).

ASTM Standards in Building Codes provides easy access to the latest versions of ASTM standards referenced by:

- The International Codes published by ICC®;
- National Building Code of Canada—National Research Council Canada;
- Uniform Plumbing Code and Uniform Mechanical Code—International Association of Plumbing and Mechanical Officials;
- MASTERSPEC®;
- BSD SpecLink®;
- NFPA5000™ – Building Construction and Safety Code™; and
- SPECTEXT® Master Guide Specifications.

Copies of ASTM Standards in Building Codes, 45th Edition, are available in three different formats:

1. Online Subscriptions
   - Online Basic – $1,313 for individual user (stock #BLDGVC); $3,400 for two to five users (single site, stock #BLDGVCX); and $4,225 for six to ten users (single site, stock #BLDGVCXL)
   - Online Plus—$1,576 for individual user (stock #BLDGVCR); $4,080 for two to five users (stock #BLDGVCRX); and $5,070 for six to ten users (stock #BLDGVCXLR)

2. DVD
   - Individual Workstation – $1,050 for Basic (stock #BLDGCD); and $1,260 for Plus (stock #BLDGCDR)

3. Printed Books
   - Four volume set – $948; 8,700 pages; 1,300+ standards; soft cover: 8.5 by 11"
   - Orders can be placed by contacting ASTM Customer Service. Tel: 610-832-9585.

MOMENTIVE PERFORMANCE MATERIALS CONFIRMS ITS COMMITMENT TO PROVIDING A COMPLETE RANGE OF LEADING SILICONE SEALANT SOLUTIONS

At the 2008 World Adhesives Conference Expo in Miami, Florida in April, 2008 Momentive Performance Materials (Momentive) demonstrated its latest generation of SPUR+ prepolymers. This new technology for developing fast-cure sealants and clear sealants based on its SPUR+ prepolymers, can provide excellent primerless adhesion to a wide range of substrates, including glass, concrete, granite and steel, with great flexibility and weather resistance. Momentive, the world’s second-largest producer of silicones and silicone derivatives, is already well known for its comprehensive selection of organofunctional Silquest® silanes, which allow customers to achieve adhesion over the entire spectrum of sealant formulations and applications.

‘Commitment to our customers is the key for Momentive to build on our highly respected position in the market’ stated Kasper van der Heijden, Commercial Leader RTV & Sealants in Europe. ‘Our products are well known and we are proud of our very extensive product range. Our commitment is to continue to deliver products at the forefront of silicone sealant technology and quality and to meet the ever changing needs of our customers and their applications’. Silicone Sealants are revolutionising the technology of adhesion and opening up advanced design technology, which in turn is delivering improved performance and simplified assembly operations.

Industries such as Construction, Transportation, Aerospace, Sports and Leisure, Medical and Electronics are reliant on Silicone Sealants for an extensive range of applications and end-uses. Momentive have used its pioneering and broad technological back-ground to innovate, develop and refine its solutions to meet today’s customers needs.

Momentive offer a wide range of versatile products that combine high quality with value-added performance. These products are characterised by:

- excellent weathering properties
- excellent movement capabilities
- excellent adhesion performance
- excellent temperature resistance
- excellent elastic recovery
- extrudable at various temperatures
- UV resistant.

* SPUR+ and Silquest are trademarks of Momentive Performance Materials Inc.
Marquis, the award-winning 67-story luxury residential condo tower with an onsite boutique hotel overlooking Biscayne Bay is set to become the crown jewel of Miami, Florida in the United States. With dazzling ocean and city views, Marquis will bring a luxurious new lifestyle to Miami’s cultural epicenter.

Alan Krause, vice president of construction, noted, ‘The window wall and elevators are racing to the top; the garage structure and pool amenities are near completion and construction is now beginning on the town houses. We have also begun the lobby build out and are completing all mechanical, electrical and plumbing as we move on to finishes.’

Leviev Boymelgreen Marquis Developers, LLC hosted the ceremonial placing of a tree at the pinnacle, and held a formal event with city officials in April to celebrate various milestones including the sales centre relocation, model residence and double win at The Developers & Builders Alliance’s 2007 Community Advancement Awards. The developers also announced the recent partnerships it has established with area arts organisations. And, in a show of community spirit, the event featured a silent auction with commemorative gift items from the Adrienne Arsht Center for the Performing Arts, MAM and other emerging artists, with all proceeds benefiting Papanicolaou Corps for Cancer Research at the University of Miami/Sylvester Comprehensive Cancer Center.

In addition to its soaring height, striking architecture by Arquitectonica, original artwork on display throughout and opportunities to engage in the rich arts and culture of Miami through unique partnerships distinguish Marquis. The building will house 306 ultra luxurious residences as well as a 56-key luxury boutique hotel operated by RockResorts. The hotel will feature a world-class signature spa and fitness centre spanning 10,000 square feet on two levels as well as bars and restaurants, all open to residents of Marquis. Unparalleled services and amenities also include smart building technology and a view-commanding sky pool deck with a sunrise lap pool and lagoon-style sunset pool.

Accessed via the fastest private high-speed elevators in the southeast, each grand home is directly accessed and will be outfitted with gourmet kitchens featuring all Viking appliances, spacious master baths with Duravit and KWC fixtures, eight-foot deep private balconies and 10-foot ceilings. Prices range from the $1 million to over $15 million.

Located across from the American Airlines Arena, and five minutes from the beaches, shopping, and major hot spots, Marquis is set to become the Crown Jewel of Downtown Miami. Its location in Park West puts residents in the heart of a dynamic urban community home to well heeled professionals and frequented by the hip social set that parties after dark at the nightclub hotspots.

The project is on schedule for completion, slated for spring 2009. For more information, visit www.marquismiami.com
INTERNATIONAL FIRE SPRINKLER CONFERENCE IN COPENHAGEN
24-25 June Copenhagen
The International Fire Sprinkler Association and European Fire Sprinkler Network are jointly hosting an International Conference and Exhibition in Copenhagen, Denmark. The speaker programme brings together leading experts from around the world to present the latest developments in sprinkler technology, codes and standards. Partners are also welcome and there is a full programme of visits to sites in and around Copenhagen, a beautiful city which will be at its very best in late June. Please see www.eurosprinkler.org to download the registration form.

LAUNCH OF CONSTRUCTION SECTOR TRANSPARENCY (COST) INITIATIVE
A global partnership scheme to tackle corruption in the construction industry backed by £4.4 million from the UK Government was launched today in Tanzania, working alongside the governments of Tanzania, Zambia, Vietnam and the Philippines. Many countries face real problems of corruption in construction, which costs taxpayers billions of dollars per year, leading to shoddy and unsafe infrastructure. The Construction Sector Transparency (CoST) Initiative is a two-year pilot scheme in partnership with governments, private sector and civil society. CoST aims to make sure that government funded construction projects are delivered on time, at high quality and at a reasonable price. Parliamentary Under-Secretary for International Development Gillian Merron said:
‘Construction is a $1.7 trillion global industry annually, with billions per year lost due to corruption. By participating in this initiative, governments are sending a clear message to the construction industry that they are committed to strengthening transparency and accountability and stamping out corruption within the industry. This will lead to better quality infrastructure, which in turn will help economic growth and reduce poverty.’
The design for the CoST initiative followed a consultation process with developing countries, civil society and industry. the Department for International Development (DFID) along with the World Bank and the CoST Secretariat led by PricewaterhouseCoopers LLP, will support pilot countries implementing the scheme.

ATKINS UNVEIL SUPER SLIM DESIGN
Leading international architecture and engineering firm, Atkins is designing a super slim tower which gives the illusion of constantly changing its appearance with the movement of people and the sun.

Located on the city’s main artery, Sheikh Zayed Road, the Atkins designed ‘P-17’ makes another strong statement in adding to both Atkins’ and Dubai’s growing portfolio of landmark buildings.

Standing tall at 379 metres, the tower’s darker front façade rises from the ground and twists slightly in a striking glass and steel design. Behind the elegant form, increasingly taller blades gently splay outwards, conveying the appearance of layered planes which dynamically move sideways to produce a challenging, gravity-defying form.

‘This design intends to integrate contemporary architectural thought, with innovative engineering solutions,’ says Joe Tabet, Head of Architecture for Atkins in Abu Dhabi.

At the mid-building level of the 77-plus storey tower, an angled atrium cuts straight through the tower filling a void over several storeys. This atrium serves the five-star business hotel above, and hosts a group of supporting amenities for the 18 floors of offices underneath. Seventy-five serviced apartments will be operated by the hotel to cater for the varied clientele. The top 19 floors of the tower are all residential apartments, enjoying incomparable views of Dubai.

FAST FACTS
- Client: Tasameem Group
- Location: Sheikh Zayed Road – Dubai
- Facilities: Mixed use (17 office floors, five star hotel, 74 serviced apartments, 176 residential apartments)
- Total built-up area: 165,327 m²
- Height: 379 metres
- Tower: 81 Storeys (3B + 1 + 77 floors)
- Car parking block: (3B + G + 10 floors)
- Status: Preliminary Design Stage
- Construction start: November 2008
- Expected completion: November 2011.
ORE SOLBERG REPORTS FROM NORWAY THAT ON 31 MARCH AT 09:57 THE POLICE IN BERGEN RECEIVED AN AUTOMATIC FIRE ALARM CALL FROM THE ASTVEIT CARE HOME. THE FIRE BRIGADE ARRIVED WITHIN FIVE MINUTES AND FOUND THAT A SINGLE RESIDENTIAL SPRINKLER HAD EXTINGUISHED THE FIRE. THE SEVENTY-YEAR-OLD WOMAN WHO LIVED IN THE CARE HOME APARTMENT HAD MANAGED TO WALK OUTSIDE AND WAS SAFE. THE FIRE HAD STARTED IN HER BEDROOM. THANKS TO THE RAPID EXTINGUISHMENT BY THE SPRINKLER THERE WAS LITTLE DAMAGE.

In 2007 Norway installed over 70,000 residential sprinklers, protecting over 20% of all new dwellings. In total Norway installed over 500,000 sprinklers, or one for every eight Norwegians.

NEW CERTIFICATIONS TEST FIRE EQUIPMENT TECHNICIANS

The International Code Council and the National Association of Fire Equipment Distributors (NAFED) are joining forces to develop new certifications for fire equipment technicians. The Code Council/NAFED Technician Certification Program combines the organisations’ technical and exam preparation expertise to meet industry standards for testing programs. When complete, the groups will offer Fire Extinguisher Technician certification and Pre-Engineered Fire Extinguishing Systems Technician certification.

To be sure that fire extinguishers serve the functions intended by the International Codes, it is necessary that they be maintained by qualified individuals. The new exams and joint certifications will be available from 1 July. All individuals currently certified by NAFED will receive new certificates with the Code Council and NAFED endorsement.

• www.icsafe.org

TIMBER TRADE FEDERATION MEETS CHINESE PRODUCERS

Getting credible evidence on the origin of timber and timber products was a key message to Chinese plywood and flooring producers at a recent six-day European Timber Trade Federation Road Show to Shanghai and Pizhou. The Road Show, sponsored by the UK Departments for International Development (DFID) and Environment, Food and Rural Affairs (DEFRA), was designed to give Chinese producers a better understanding of the requirements of European markets. At the same time the visit allowed European and Chinese trade associations to discuss how better co-operation and knowledge transfer could help their respective members benefit from opportunities in the environmentally discriminating European arena. At a series of factory visits and one-to-one meetings with European buyers, Chinese suppliers heard first-hand what environmental steps they needed to take to ensure market access and to gain better prices. These included ensuring that plywood face veneers sourced from Russia or tropical countries were, at the very least, coming from known sources. They were encouraged, by using such programmes as the Timber Trade Action Plan (TTAP), to obtain credible verification of the legality of the source; and ultimately progress towards sourcing certified sustainable timber. The Tropical Forest Trust (TFT) China team played a key role in organising the event and sharing their experience to date with legality verification in China.

Progressive Chinese companies were also able to demonstrate the significant steps they had taken to source their products from known legal sources. They also demonstrated the environmental qualities of plywood core material such as fast-growing poplar and eucalyptus, now growing in vast quantities across the Chinese countryside.

• More information about the Tropical Forest Trust can be found at www.tropicalforesttrust.com
• More information about the Timber Trade Action Plan can be found at www.timbertradeactionplan.info

SPRINKLER SAVES ELDERLY RESIDENT

SANTA FE INTERNATIONAL CONFERENCE ON CREATIVE TOURISM, “A GLOBAL CONVERSATION,” BRINGS THEORY TO LIFE DURING CONFERENCE ON DEVELOPING CREATIVE RESOURCES. REGISTRATION IS NOW AVAILABLE ONLINE AT WWW.SANTAFECREATIVETOURISM.COM FOR THE SANTA FE INTERNATIONAL CONFERENCE ON CREATIVE TOURISM; THE FIRST UNESCO® CREATIVE CITIES CONFERENCE OF ITS KIND IN NORTH AMERICA. THIS INTERNATIONAL GATHERING, TAKING PLACE SEPTEMBER 28 OCTOBER 2008 IN SANTA FE, NEW MEXICO, WILL BRING TOGETHER THE FOUNDERS OF THE CREATIVE TOURISM MOVEMENT WITH LEADERS OF CREATIVE INDUSTRIES AND REAL-WORLD PRACTITIONERS IN AN EXPERIENTIALLY-BASED LEARNING ENVIRONMENT. THE GOAL OF THE CONFERENCE IS TO TEACH PARTICIPANTS HOW TO DEVELOP CREATIVE TOURISM AS AN ECONOMIC ASSET IN THEIR COMMUNITIES.

Learning printmaking at Paula Roland Workshops

Delegates will spend their mornings in conversation with industry leaders while afternoons are reserved for participating in a variety of activities that characterise Santa Fe’s culture and exemplify exactly how creative tourism is implemented on a local level. Preparing local cuisine at the Santa Fe School of Cooking, making adobe bricks to be used in the restoration of the San Miguel Mission in Santa Fe, turning clay into art at the Heidi Loewen Porcelain Gallery, creating pastel and watercolour paintings in workshops led by the Georgia O’Keeffe Museum, and exploring the historic weaving communities of Northern New Mexico and practicing traditional fibre art techniques are a few examples of what is in store. Workshop instructors and presenters at the conference include a who’s who of leaders in contemporary community development, including the founders of the creative tourism movement, Greg Richards and Crispin Raymond, international authority on creativity Charles Landry, executive director for HandMade in America, Becky Anderson, founder and president of Partners for Livable Communities, United States, Robert McNulty, and many more.

Work in progress at Española Valley Fibre Arts Centre

Broadly defined as engaging travelers in a community’s traditions through active participation, creative tourism provides a means for economic growth to destinations offering visitors an authentic experience through personal involvement. Participative learning in the arts, heritage, or special character of a place provides a connection with those who reside there and create its living culture.

The conference has been developed specifically for those wanting to increase economic development, job growth, and cultural preservation by actively engaging visitors with their destination’s creative resources. Creative entrepreneurs, city and urban planners, tourism professionals, community leaders, municipal economists, creative industry developers, educators, cultural experts, and artists will all benefit from the skills learned during this unique participative conference. Register now and join us in Santa Fe to learn how your community can make the most of its creative resources.

The Santa Fe International Conference on Creative Tourism is organised by the City of Santa Fe in collaboration with the UNESCO Creative Cities Network.

• For Information from Sandy Vaillancourt. Tel: 505-577-2472. E-mail: sandy@recursos.org

CREATIVE TOURISM CONFERENCE EXPERIENTIAL LEARNING IS KEY TO UNESCO
ENVIRONMENTAL SUSTAINABILITY ISSUES IN THE EDUCATION OF BUILT ENVIRONMENT PROFESSIONALS AT THE UNIVERSITY OF MALAYA

By Assoc Prof S P Rao, Prof Ezrin Arbi, Ms Helena Hashim, Ms Aniza Aziz & Ms. Norhayati Mahyudin

Abstract

The built environment is an integral part of the infrastructure necessary for human survival. Current concerns over the environmental sustainability of our biosphere for future generations are being scrutinized on the fringes of higher education. What role does higher education play in creating a more environmentally sustainable future? How much does the curriculum focus on these relationships? and, therefore, how many graduates leave the University of Malaya environmentally literate? How will they function when they leave and face the real world? What will they take with them to teach their clients, colleagues, their own children and grandchildren about environment sustainability?

Having all these questions, it is seen that these relationships present a challenge to the educationist as well as to the students of Built Environment to reconcile the environmental aspects as part of the built environment. How then might we in the higher education address these concerns?

The focus of the paper is mainly on the teaching approaches of academics of a public university in Malaysia, specifically on the integration of environmental sustainability into the subjects offered. This relates to the development of the student’s awareness, perceptions of environmental sustainability and the issues at stake with the intention to set a structured integration of environmental sustainability through subjects related to the various aspects of the built environment education.

Keywords

Environmental Education, Sustainability, Built Environment, Malaysia

1.0 Introduction

As the world’s population increases, the energy and other resources found on earth will be in short supply. Unwarranted energy wastage, global warming and green issues are matters of serious environmental concern to all. Unfortunately, negative impacts on the ecosystems now play a vital role in the decision-making of the Construction Industries. In nearly all environmental contexts found on earth, the built environment is an essential part of the infrastructure necessary for human survival. All buildings professionals, architects, planners, building surveyors and engineers work with such as mechanical and electrical engineers and others in the building industry should be involved in issues relating to the environmental sustainability. The activities of the members of the building profession are both part of the problem – encouraging premature product obsolescence, product proliferation, material consumption and associated pollution, and part of the solution – proposing more efficient products and services, community regeneration and individual empowerment.

Architects, in most areas have a crucial role in managing their design process and phase by taking consideration of all environmental issues and how to respond to them [1, 2,5,17,18]. Thus, the potential for the building professional to effect positive change is significant and widely acknowledged.

Unfortunately, this has remained largely untapped both within the construction industry and education, with students rarely introduced to environmental sustainability during their higher education experience [1]. The common dilemma for us now is whether Malaysian universities, are actually preparing the next generation of building professionals with the required skills to deal with the new demand and how best they can manage to balance the interconnections between ecological considerations and man-made development? While information on design for environmental sustainability does exist, it is in general, abstract, limited, dispersed and not in a language accessible to the building professionals.

There are several areas of emphasis in most definitions of sustainability: long-term views and a balance between environment, social justice and economy. However, current concerns over the environmental sustainability of the built environment for future generations of humans are being scrutinised on the extremes of the higher education complex. How much of the education syllabus focuses on these relationships, and, therefore, how many of the graduates are environmentally literate? What role does higher education play in creating a more environmentally sustainable future? What responsibilities do educationists have for the current decline in ecosystems around the globe?

Like environmental issues, architectural education is by nature interdisciplinary. When ‘interdisciplinary’ studies exist they are frequently among different disciplines within a larger field [8]. Therefore, those challenges cannot be met by peering through the lens of any single discipline.

How then can the educationist in higher education address these concerns? Thus, through all the questions posed and the interrelationships, present a challenge to the educationist and the students of building professional to reconcile the environmental aspects as part of the built environment context.

2.0 Sustainability as an interdisciplinary approach

Boundaries between disciplines are breaking down. One must realise that most of the trouble stem from neglecting the interconnectedness of knowledge and the interdisciplinary character of all real-world problems.

One of the unique features of the Building Profession is its interdisciplinary nature, ranging as it does through so many aspects of built environment studies civil and structural design, construction, materials engineering, building services, environmental control issues, urban planning, financial considerations, historical rebuilding and preservation, landscaping, social and environmental issues, building profession education and research, as well as all sorts of creative links with the arts, communications and entertainment.

Another dominant feature is its inherent ability to provide a necessary interface between human activity and the physical environment. These features have contributed to making the building profession studies a productive ground for the application of recent pedagogical and technological trends and innovations of sustainability issues in environmental design.

The students of the building profession should learn in such a way that they come to understand the interdependency of all fields and are capable of working within a complex and changing profession for the betterment of the built environment. For example, design for environmental sustainability crosses various disciplines. In an environmental sustainability context, building professional’s potential contribution is an unified theory of human settlement that relates to all scales – large scale bioregions, cities, neighbourhoods, urban fabric and ultimately to individual buildings and open spaces.

The compartmentalised world of different disciplines and different systems works against the notion of an integrated theory. People who work on human settlements should have a common core design education, before specialising in various disciplines. Common core design education participants would include architects, building surveyors and engineers working on transportation, soils, hydrology or civil engineering; landscape architects, planners, and natural scientists or environmentalists. As Stanford Anderson points ‘we need not expect or look for absolute, positive bases for environmental knowledge, providing an intellectual foundation of sufficient breadth requires integration with other departments and fields’. It is to be understood that
architectural education should start with liberal education and with people learning not specifically architecture as a trade, but understanding the economic, political, social and cultural context in which they exist. To accomplish this, the main focus of a building profession education program should not only provide students with the ability to solve task-oriented and highly specific problems because design itself is not a plug-and-chug activity. There are no pre-set rules and there is no one ‘right’ way to design. Students will have to think for themselves by providing them with a rigorous intellectual foundation. The building profession students should become a ‘generalist’ with the ability to make connections between the many facets of architecture.

To accomplish this, one must have a broad educational background that covers a wide range of topics and disciplines. As such, educationists should strive to create programs of building professions with a broad foundation in the liberal arts and sciences. Students can then bring what they learn in their general education classes and apply them to their studies.

Also important is the need to integrate the coursework into design activities. Taking architectural programme as an example, studios can no longer stand alone as the keystone of the programme. Students do not use the studio as the place to bring together all the information that they have gained in other courses. Educationist cannot expect students to integrate what they have learned when the educators themselves, fail to emphasise the importance of developing an integrated design process. Educators will have to encourage their students to be more concerned with ‘mundane considerations’ such as: How much does it cost? How will it affect its users? Will it stand up? How does it relate to its surroundings? What is it made of? What impact does it have on our environment? These questions cannot be ignored but to focus on creating a curriculum, which is a ‘well-designed package of integral components each of which serve in the capacity of the others. Educationists must adopt a model of a building profession education in which the sustainability issues are presented in terms of their theoretical foundations and their architectural significance in a manner that is integral to the rest of the curriculum’.

3.0 Environmental education
It is estimated that construction, habitation, maintenance and demolition of buildings account for almost 30 per cent of all energy consumed in Malaysia. The ecological health of our environment is profoundly affected by the design of our built environment [16,18]. Despite the obvious need for more environmental education in the schools, many building professional faculties simply do not care enough about the issues or cannot find ways to integrate a new pedagogical focus into the education syllabus. Students should start to develop their fundamental understanding about sustainability on the environmental aspects in the early stage of education. Bringing environmental education into the education syllabus cannot be fully accomplished without a commitment to achieve an understanding of environmental sustainability itself, what it is and how the educationist can contribute to it.

The understanding of environmental sustainability moves beyond merely training professionals to design buildings, to train the whole new groups of students as it were, from ground up and examine the role of building professional education in the process. In other words, the awareness of the environmental sustainability should be instilled and inculcated to each and every student in order to achieve the best.

Basically, the idea of environmental sustainability is to leave the Earth in as good or in a better shape for future generations than we found it for ourselves. However, by looking into Malaysian environmental picture, several incidents have clearly shown that the catastrophic consequences of all the environmental problems due to the imbalance development growth can cause devastation to the environment and brought miseries for the people and landscape.

See Table 1: Dimensions of Sustainability

Mitigating all these negative impacts on the environment has proven to be costly and in some cases the damage was beyond repair and they became the hidden cost to loss of productive time and a threat to general health of the residents. Therefore, it is the educationist collective responsibility to instill awareness to all students with the intention that they can preserve the environment, and therefore, there can be a balance and harmony between nature and human beings. This should be reasonable enough for educationists, students and those outside who are involve in the construction industries to be aware of the impact on our environment and health brought on by the current practice of technology. Thus, change in human attitudes, foreseen by the acceptance of the concept of environmental sustainability and sustainable development, depends on a vast campaign of higher education for the students of architecture.

4.0 Integrating Environmental Sustainability into the Education of Building Professionals
Vision 2020, the ultimate dream for Malaysia to be a fully developed country, puts emphasis on environmental sustainability requiring Malaysia to ensure that valuable natural resources are not wasted. Nonetheless, Malaysia has served for a closer match between the needs of the environment and those of development. Therefore, the integration of environment and considerations in development planning must go beyond the rhetoric. Prone to this, the environmental considerations must increasingly be integrated with development planning and design as well as with the building professional education syllabus planning [24].

However, to design a structured syllabus with these goals in mind is not an easy or simple task. At this point of time, the students might not have the capability to truly build sustainably, but they can begin to ask the right questions and to factor more information into their decision-making process. To meet structured architectural education syllabus requirements and at the same time focus on a broad range of environmental impacts, we need to think strategically.

Building education has often emphasised economy of means with emphasis on elegance, beauty and balance. Now this approach must expand to include design for living within means of understanding environmental aspects mentality and ethic.

<table>
<thead>
<tr>
<th>Economic dimensions of sustainability</th>
<th>Environmental dimensions of sustainability</th>
<th>Social dimensions of sustainability</th>
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</thead>
<tbody>
<tr>
<td>Creation of new markets and opportunities for sales growth</td>
<td>Reduced waste, effluent generation, emissions to environment</td>
<td>Worker health and safety</td>
</tr>
<tr>
<td>Cost reduction through efficiency improvements and reduced energy and raw material inputs</td>
<td>Reduced impact on human health</td>
<td>Impacts on local communities, quality of life</td>
</tr>
<tr>
<td>Creation of additional added value</td>
<td>Use of renewable raw materials</td>
<td>Benefits to disadvantaged groups e.g. disabled</td>
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<td></td>
<td>Elimination of toxic substances</td>
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Table 1: Dimensions of Sustainability
For that reason, a studio based learning should not be the be-all and end-all of an education system. The ultimate goal of the building professional education system should not be to merely train the students, but to help students see the vast potential for interrelations between ideas and disciplines, to encourage them to confront all new problems of design, to generate a spirit of cooperation and intellectual respect for others (environment, social and economy), that will ultimately help them work in professions that require collective input [12].

Apart from that, the concept of educating is not just teaching and explaining, it is the contents taught that is of utmost importance. The educationist need to educate design students not only in the technical skills essential to the practice of their profession, but also to induce an understanding of a greater goal that must eventually be shared by the whole culture – that of creating an environmentally sustainable society. The educationist has to allow for such a mindset that it has to prepare younger designers to accept the need to aim for environmental sustainability as a basic design requirement for products and processes.

We now live almost totally in a designed environment [1,19]. As stewards of this environment, architects [2,5] are urgently needed as intellectual leaders who might help formulate new visions of place, and clarify the actions that will preserve the nation’s quality of life for generations to come. It should be imperative to create one or more subjects that would introduce the beauty of architectural ideas in terms of environment and the underlying philosophies that will later affect all their design work.

5.0 Teaching of Sustainability to Architecture students in the University of Malaya
The architectural curriculum in the University is based on Design as a vehicle for integration of all the taught subjects. During the first three years of their course the students are given inputs on environmental physics, building structures, building materials, and construction as well as building services. The Faculty is implementing problem based learning in most of the subjects. As part of this exercise, students are set to solve practical problems, which would involve environmental sustainability issues. The students are encouraged to be proactive in their research and presentations. The students are taken on field trips and practicing architects are invited to the studios to show how they tackle sustainability issues. The Faculty are fortunate to have Prof Ken Yeang and Dr Hijjas Kasturi, who are noted for their ecological and environmentally sustainable buildings.

The University’s research facility on renewable energy is to be used as a test bed to test new ideas in the future. The facility is being used at present to monitor the performance of some of the building integrated photovoltaics. The students are encouraged to have meaningful discourses in the studio setting for achieving an environmentally sustainable building.

In year three one of the assignments encourages the student to include the passive and active architecture aspects in their design showing the cause and effect of the sustainable features chosen to the occupant by doing virtual studies of their proposal. They are also exposed to site visits to the internationally known Low Energy Buildings.

6.0 Building Analysis & Report
One of the strategies adopted by the Department of architecture in its effort to achieve integration is through the introduction of a special subject called ‘Building Analysis & Report’ in year three, which is introduced in semester six, the last semester of the first tier programme. As expressed in the name, it consists of two parts combined together in our effort to maximise the possibility of fulfilling the overall goal of integrating the various subjects.

To achieve the goal, this subject has been formulated with two objectives:
1. to train students in making critical assessment of an existing building from various aspects, covering site suitability, structures, environmental physics, method and detail of construction, use of materials, building services, landscape, etc.
2. to give guidance in the preparation of a technical report that will accompany their Comprehensive Design Project, covering all the above aspects.

In consonance with the objectives, the subject combines the following two components:

Component I
This component is a group work, for which students are divided into several groups, each comprising 4-6 persons. The formation of the grouping takes into consideration ethnic, gender and individual performance of the student to ensure that all the groups are more or less of similar composition and strength. Every group is required to select an occupied building of not more than four storeys high of acceptable complexity, which must have been in use not less than one year, since brand new buildings are considered unsuitable for this exercise. After their choice has been approved, students have to make a critical analysis of the building, covering all the above mentioned aspects.

As a general guide to write the report, they should respond to the following questions and instructions, which by no means exhaustive:

- Explain briefly the function of the building you have chosen.
- Is it appropriately located on site in term of orientation and context?
- Look at pedestrian movement, car parks and landscaping and give comments.
- How does the building respond to the tropical climate?
- Is the structural system suitable for its function?
- What do you think of the construction of the building?
- How about the choice of materials?
- Study the engineering services used in the building including plumbing, electrical, mechanical, fire prevention and fighting systems etc., their strength and weaknesses?
- What would you suggest to improve the sustainability of the building?
- Do you find any serious defects on the building? Is it because of the inappropriate choice of materials or faulty detailing?
- Generally, give your suggestion to improve this building.

The ‘Building Analysis’ exercise requires an holistic and comprehensive approach, which will inevitably touch on design issues. However, it is not meant to be a design analysis per se.

Students’ progress is monitored through weekly seminars and they are required to submit their report at the end of the seventh week. The product of this exercise will be in the form of a detailed report containing the building records, such as drawings, photographs, sketches, and an analysis that critically describes the co-ordination and integration of various aspects of building with the plans and elevations.

Students are also required to give suggestions for the improvement of construction details that they consider to have caused problems or undesirable effects to the building performance and users. The analysis should contain not less than 5,000 words, complimented with pictures and sketches with proper annotations. The powerpoint version of the report will be used by each group in presenting their work in a series of seminars conducted during the second half of the semester.

Component II
This is an individual piece of work in the form of a Technical Report that every student shall prepare during the second half of the final semester and hand in at the end of the 15th week. Having gained experience from the preparation of ‘Building Analysis’ previously, he/she is expected to be able to write the report that will complement his/her Comprehensive Design Project (BAAE 3276) which is meant to be the culmination
of his/her project solving ability at Part I LAM level.

The report shall contain:

- Site analysis and site studies;
- Project brief/Client brief;
- Compilation of initial sketches, concept/ intention, massing and photos of initial models;
- Summary of relevant clauses in Uniform Building Bye Laws related to your building needs;
- Building purpose group, travel distance, DEL, fire fighting appliances, etc; and
- Local Authority’s guideline concerning planning, plot ratio, plinth areas, parking requirements;
- Calculation of plot ratio, plinth areas and parking requirement of your project;
- Land use diagram, site planning and landscape;
- Building services: water, electricity, and electronic, sanitary, telephone, lift and escalator, solid waste disposal system, etc.(Drawings must be in ACAD).
- Structure and Elevation studies;
- Interior design;
- Photos of final model in context.

7.0 Recommendations

Malaysian Higher Institutions need to prepare new professionals who are able to feel comfortable in a multi-disciplinary framework. Such an approach would enable the building professional graduates to apply their learning to the needs of real world problems as well as to the people. Cross-disciplinary education enhances the student’s awareness of issues and methods beyond their own disciplinary enquiry, enabling them to explore the interrelations of these issues and methods, and encouraging students to regard their own studies in a broader social and ecological perspective.

Therefore, it is important to make students aware that their profession is responsible for the environmental problems and that they can contribute to a healthy global environment by practising sustainable design.

The critical moment for a student is the first day of study, the time when the mind is open and receptive to new ideas, before stagnation gets in. Therefore, the educationist should get to the students minds first before anyone else, so that the student can be encouraged to develop their creative imaginations and sensitivities. It is much easier to install an environmental consciousness at the formative stage of education rather than in the later stages.

The educationists too, need to create an understanding of how buildings can be ‘designed for the environment’. For this purpose, a building should be understood as an ecosystem through which natural and manufactured resources continually flow. It is important to understand that a building affects and pollutes the environment on both the input and the output side.

Case studies of representative buildings, both successful and unsuccessful, can be effective teaching tools to enrich students learning. For example, choose case studies that illustrate:

- A range of different building types designed under different physical and social context
- The ways fundamentals principles of design have an impact on the environment
- Original design concepts, procurements of building materials, consideration given to the construction process and various building performances during operation.

Apart from that, students should have the skills and knowledge bases to seek and find sustainable design solutions. It also introduces methods and techniques ranging from vernacular architecture, site planning, building design and specification of materials to the recycling and reuse of architectural resources in design. Rather than teaching a set of specific skills, educators need to develop the student’s abilities to explore, assess and pursue various alternatives for environmentally sustainable designs.

Therefore, environmental education should provide experiences of problem solving, decision-making and participation, with considerations based on ecological, political, economic, social, aesthetic and ethical aspects. It should also promote changes in attitudes and behaviour that might help solve existing problems relating to the environment and to avoid generations of new ones. The ultimate aim is for students to have a responsible attitude towards the environmental sustainability of the Earth, an appreciation of its resources and beauty and an assumption of an environmental ethic.

Furthermore, it has been suggested on a wide global scale that in order to achieve this aim; every educational institution needs adequate arrangements for planning and implementing coherent and progressive programs of work with appropriate teaching and learning tasks.

8.0 Conclusions

Students from the built environment faculties live and work in a world where information from several disciplines must be integrated. Therefore, a new approach of education system must prepare a student in multi-disciplinary thinking and application to guarantee more sound problem-solving based upon an individuals ability to relate multiple and related issues. The university has a responsibility to increase the awareness, knowledge, technologies and tools to create a more environmentally sustainable future. Undeniably, integrating environmental concerns into the building professional education system is a difficult process, but awareness on the importance of the environment is highly needed. Deliberately, no human activity can occur without some connections to the environment. For that reason, the higher institution must take a long-term view of thinking far into the future and environmental consequences.

9.0 References


How can solar-active building skins be used? What are the benefits of triple glazing in modern office buildings? An exclusive preview of the future of glass technology and its use in architecture will be provided by the Special Show glass technology live presented as part of the international trade fair glasstec from 21-25 October 2008 in Düsseldorf.

At this early stage over 30 renowned architects’ offices, companies and research institutes have already confirmed their participation at the Special Show with many more to follow. They will be showcasing the latest product developments, manufacturing processes and technologies and exhibiting current research results and forward-looking architectural projects in the areas of glass and solar technology. The spectrum ranges from visionary studies to solutions ready for mass-production. The Special Show was initiated and will be implemented by Stefan Behling, Professor at the Institute of Building Construction and Design of the Stuttgart University.

The focal theme of this year’s glass technology live will be Glass and Energy, subdivided into the four exhibition areas Photovoltaics, Solar-Thermal Systems, Thermal and Solar Protection and Light and Transparency. Climate efficiency and environmental protection are topics ranking high on the global agenda, so the demand for innovative solutions is, therefore, correspondingly high. Thanks to its unique combination of function and design glass offers tremendous potential as a construction material. The Special Show glass technology live offers architects, façade producers and engineers, in particular, a whole host of ideas and practical assistance for their projects. By way of examples the exhibition will demonstrate possible applications for innovative glass products in energy-efficient and integrated façades and building skins. The “Lehrter Bahnhof” station realised by architects Gerkan, Marg & Partner and the Monument to the Victims of M11 in Madrid, planned by the Spanish architect FAM and the engineering office Schlaich Bergermann & Partner, are just two of the highlights of the extensive exhibition programme.

Held in parallel with the Special Show will be a high-calibre technical symposium with lectures and presentations by researchers and practitioners.

Another highlight at glasstec will be the International Architects’ Congress held on 24 October 2008. First launched at glasstec in 2006, it will be organised in co-operation with the Architects’ Chamber North Rhine-Westphalia and TU Delft. The title of this year’s event is “Transparency! Glass and Façade Technology”. Companies in architecture, engineering, planning and façade construction will lecture delegates on the latest development in the areas of design, construction, research and climate design.

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