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# The Outcomes and Achievements of the Urban Design and Education Programme

**Andrew Olszewski & Zenon J. Pudlowski**

*UNESCO International Centre for Engineering Education (UICEE)*

*Faculty of Engineering, Monash University, Clayton, Melbourne, VIC 3800, Australia*

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**ABSTRACT:** The paper presents a comprehensive overview of the structure and achievements of the Urban Design and Education Programme (UDEP) established at the UNESCO International Centre for Engineering Education (UICEE) in collaboration with the Victorian Government's Department of Infrastructure (DoI). It airs issues and challenges concerning a new approach to planning, design, implementation and management of urban projects. Under this scheme the UICEE/UDEP has undertaken five specific projects. The key objectives of these projects have been to carry out research and development, promote world's leading ideas and improve education and training in the area of urban design and sustainable development. A new strategy to improve the education of urban designers has been developed, which includes the conduct of so-called design studios, as well as two highly specialised continuing education courses, especially tailored for specific professional needs of personnel of councils, government units and industry. The aims, objectives and achievements of the individual projects and the way in which they may impact on the professional development of individuals involved in urban design, planning, development and management, are presented and discussed in the paper.

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## INTRODUCTION

The UNESCO International Centre for Engineering Education (UICEE) at Monash University and the Department of Infrastructure of the State Government of Victoria established a UICEE Urban Design and Education Programme (UICEE/UDEP) in June 1999. This is an independent programme for the research and promotion of world-leading ideas in urban design and sustainable development, and to develop a better understanding globally of issues of engineering, planning, architecture and urban design [1].

The UICEE is the world's first and only such centre for engineering education, focusing on human resources development within the engineering academia and industry. The UICEE/UDEP has been a logical extension of its commission, focusing on the quality of engineering outcomes as they relate to urban design and sustainable development, as well as the education in this important area.

At this stage, the programme concentrates mainly on issues of importance to the Australian state of Victoria. The key objectives of the UDEP include:

- Improvement of the urban design skills of designers, developers, planners, infrastructure agencies and community representatives.
- Development of innovative urban design processes and tools.
- Enhancement of public awareness of urban design issues and opportunities [2].

The programme comprises five projects that address issues of critical importance and developing tools relevant to the project's objectives. These UDEP projects are:

- Design Assessment Criteria and Methods for Outcome-oriented Planning.
- Design Mediation and Community Consultation.
- Urban Design Tools.
- International Urban Design Fellowship Programme.
- Urban Design Training Courses.

The programme is intended to support positive urban development activities locally and globally through:

- education;
- development of improved practices;
- advice to governments;
- exchange of staff and ideas;
- demonstration projects.

The Urban Design and Education Programme uses Australian development models as a starting point for global action. Also, one has to recognise the fact that there exists a high level of conflict within the planning and development realm. To meet local needs and challenges, five exciting projects have been formulated with the Victorian State Government's Department of Infrastructure.

### **THE NEED FOR A PROGRAMME IN URBAN DESIGN AND EDUCATION**

In common with many countries, planning and development in Australia have undergone radical reforms in recent years. Basically, these reforms amount to a lessening of the regulatory and reactionary approach in favour of a performance-based system.

The performance-based approach provides much greater flexibility and opportunity for developers willing to engage with the system; it should also provide the community with many benefits, including more innovative design outcomes, a better use of available resources and much shorter time lines.

However, as we have seen with the introduction of *The Good Design Guide for Medium-Density Housing*, a performance-based approach is very dependent on all parts of the industry having an appropriate degree of skill [3]. This includes not just the designers and developers, but also the planners undertaking assessments; the infrastructure agencies responding to new ideas; and the community representatives communicating the potential benefits and providing a strategic framework within which better proposals can be developed.

We are presently in danger of losing the benefits from planning reform with a retreat to regulation and control caused mainly by a lack of skill and preparedness to engage with a performance-based system. This is leading to a situation in which more and more projects are waiting on an appeal, and appeal delays are extending as the issues become more complex. In Victoria alone it is estimated that the value of projects currently waiting on appeal exceeds three billion dollars and is growing daily.

### **AIMS OF THE UICEE/UDEP**

The aims of the UICEE/UDEP are to provide material and information of practical value to the

community, state and local government authorities, developers, engineers, designers, academics and students to promote leading edge and world best practices in the field of urban design and planning. For the purposes of UICEE/UDEP, urban design includes the physical design, management, planning of relationships and uses and activities in and around buildings and landscape, and their interaction with the public realm.

### **BASIC OBJECTIVES OF THE PROGRAMME**

The UICEE/UDEP endeavours to develop and promote international standards in urban design education and practice, with particular emphasis on the practical implementation of design-based planning and development. It undertakes research, develops curricula and provides technical expertise in the following areas:

- ecologically sustainable development;
- urban design;
- engineering design;
- urban development;
- performance-based planning;
- economic indicators of planning;
- quality issues.

### **Functions**

The following functions of the programme were envisaged:

- To be an independent source of policy and project advice.
- To stimulate, promote and carry out practical research in the area.
- To be a focal point for research and transfer of information on relevant research.
- To formulate and deliver educational courses for local government and the development industry.
- To formulate international courses which will be delivered electronically and through franchised educational institutions.
- To publish and distribute materials promoting research, development and education in the area.

Moreover, it was expected that the project would establish standards and protocols for:

- The implementation of performance-based systems.

- Guidelines for generic issues.
- Continuing education in urban design and sustainable development.
- Undergraduate education in urban design and sustainable development.
- Postgraduate education in urban design and sustainable development.

## PARTICIPATION IN THE PROGRAMME

It was envisaged that the UICEE/UDEP would be funded from a range of sources, spreading the cost fairly across the major beneficiaries. However, this was not the case and the Department of Infrastructure (DoI) provided the financial resources required for the programme. It should be mentioned at this point that the programme, as an extension of the UICEE, was developed quickly as an active working resource for the development community.

The membership arrangement was that new members could elect to join the UICEE via the urban design programme. Existing UICEE members could also elect to be registered with the programme as an addition to their normal membership and activities. However, the programme's paramount aim was to extend the range of activities for the UICEE members so that they can benefit from the opportunity of participating in this programme.

### Stakeholders

The UICEE/UDEP has demonstrated that it has provided wide benefits for all major players in the development industry since its actions have encouraged more efficient processes, higher quality outcomes and outcomes that are related to measurable benefits. It is believed that the local and international communities have benefited from the improved standards of urban design and management and the better quality of development worked out and proposed by the programme.

**All levels of government** have benefited from the availability of an independent source of advice, training, standards and techniques.

**Developers** have benefited through the availability of proven techniques that are designed to complement the latest trends in planning and development. Moreover, it is anticipated that they will benefit more in the longer term as government planners and engineers become more skilled in urban design through the implementation education and training component of the programme.

**Educators** have benefited from the UICEE/UDEP programme by taking part in research and education

activities carried out under the programme. They have been able to take advantage of the developed tools, designed curricula, training and education programmes, as well as from the information published so far.

Moreover, the UICEE/UDEP has become a powerful advocate of performance-based planning and development processes, and will act against regulatory backlashes. It is hoped that the UICEE/UDEP has provided important benefits to the wider community as it has advocated for modern techniques to help communities to:

- Explore and understand their future potential.
- Identify and maximise the benefits of change.
- Identify and protect significant aspects of existing culture and the environment.
- Achieve a higher level of certainty about the future of urban environments.

The activities of the Urban Design and Education Programme of the UICEE are supported by an Expert Committee, consisting of leading local and international professionals and academics in the fields of architecture, urban design and planning.

The UDEP was delivered in close association with all relevant stakeholders through the:

- activities of the Expert Committee;
- education courses;
- joint DoI/UICEE projects;
- public and professional forums, conferences and seminars;
- publications.

Figure 1 illustrates the various alliances developed in order to further the Urban Design and Education Programme nationally and internationally.

## DESIGN ASSESSMENT CRITERIA AND METHODS FOR OUTCOME-ORIENTED PLANNING

The way planning applications are assessed at local government has been changing with the introduction of a new planning system. Prescriptive controls that previously guided decision-making have been replaced with outcome-oriented objectives. Design and development assessors are now required to consider how an application is likely to perform against criteria.

This aim of the project was to offer greater consistency and confidence to the planning and development industry by providing a standard assessment method. The general perception was that setting criteria would enhance the quality of decision-

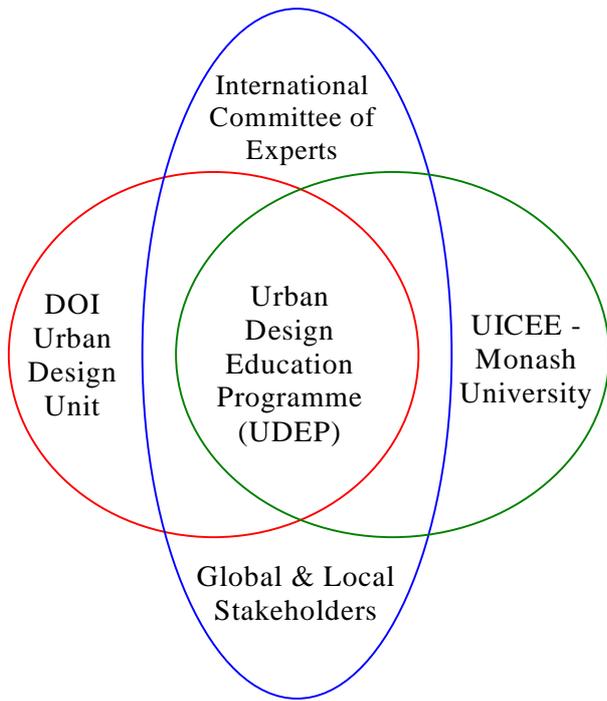


Figure 1: UDEP's alliances.

making. Also, to improve the quality of urban developments in Victoria through better standards in design assessment practice at the local government level within the planning process was an important aim of this project.

A wide range of more specific objectives of the project was identified. These include the following:

- To review and analyse current practice in assessing design issues within the planning process.
- To establish areas of concern that require improvement.
- To review national and international assessment models.
- To establish design assessment criteria and objectives in planning.
- To develop options for design assessment processes.

The project outcomes include a comprehensive set of design criteria related to:

- topography;
- climate;
- local heritage and culture;
- ecological sustainability;
- users and activities;
- infrastructure and transportation;
- pedestrian environment;
- functionality;
- urban forms and architecture.

## DESIGN MEDIATION AND COMMUNITY CONSULTATION

The aim of this project was to investigate how best to achieve quality design outcomes and the types of services that can be provided by local government, through the investigation of appropriate design mediation processes for the planning system. Another aim of the project was to resolve more development applications at an early stage and improve the quality of the design, and to establish a role of the Victorian Civil and Administrative Tribunal (VCAT) as a place of appeal and not as the normal process to achieve design assessment mediation and final decisions. The more specific objectives of the project were:

- To investigate the reasons and issues, which result in a high number of appeals to the VCAT.
- To research on design mediation processes used locally and internationally.
- To develop and verify options for the design mediation process.

The main outcome of this project is the development of a proposal for a new phase of planning processes aimed at an early conflict resolution through design mediation. The proposed mediation phase suggests active involvement of all parties to the planning conflict in a workshop-like activity led by an experienced design specialist. Under such conditions some appropriate design compromises could easily be reached without time delays and costs associated with an ordinary court case.

## URBAN DESIGN TOOLS

The Urban Design Frameworks document includes a formalised planning and urban design approach and methodology used in the preparation of strategic physical planning documents, as well as the Urban Context Reports, which includes a formalised approach to the preparation of the urban design submission in support of a development proposal. These are important urban design tools developed by the Department of Infrastructure [4][5].

The aim of the project was to review how the Urban Design Frameworks and Urban Context Reports are used as tools for managing change. To investigate the possibility of establishing a standard method for delivering Urban Context Reports and Frameworks plans in Victoria was also an important aim of the project. The more specific objectives of the project were as follows:

- To research on the range of urban design tools used locally and internationally.
- To review the practice of using the Urban Design Frameworks and Urban Context Reports.
- To develop a set of recommendations for minimum standards for preparing Urban Design Frameworks and Urban Context Reports.
- To provide suggestions and recommendations for model processes for Urban Design Frameworks and Urban Context Reports.

The Urban Design Tools project produced, with the active participation of many Councils in Victoria, a set of important proposals in relation to several established, as well as contemplated, urban design techniques. In particular, several improvements have been suggested in relation to the two most commonly used tools, namely the already mentioned Urban Design Frameworks and Urban Context Reports.

## **INTERNATIONAL URBAN DESIGN FELLOWSHIP PROGRAMME**

An important component of UDEP is the Visiting Fellowship Programme. The aim of this project is to present the best international practice in the field of urban design by inviting leading international designers, planners and engineers to Victoria. The visits would provide opportunities for local professionals to be exposed to the best international practice. The specific objectives of the programme are:

- To establish a network of international experts in the urban design field interested in participating in this project.
- To inform public urban design debate through showcasing international examples by visiting fellows.
- To improve local urban design expertise through professional seminars and other projects involving international experts.
- To improve urban design advice provided to Local and State Government.

Visiting international professionals are expected to undertake a number of activities, including:

- public forums;
- media debate and interviews;
- conferences and seminars;
- design workshops;
- lectures;
- leadership of design studios.

It was envisaged that through the programme of visiting fellowship Melbourne would strengthen its state and national role as an urban design centre in Australia and globally, and it is hoped that this aim has largely been achieved [6]. Funding arrangements with other Victorian stakeholders will be made to extend visits by international experts and maximise this programme's effectiveness.

## **Design Studio Concept**

Apart from generating exciting design ideas, design studios also offer an effective model of education. Currently used in architectural and other design based education, this approach has been formalised in recent years under the title of *Problem-Based Learning* (PBL). The essence of problem-based learning is the setting of a problem and allowing students to direct their own learning through seeking solutions to the problem. They engage in a search for solutions, learning not only the facts of the situation and the solutions, but also the process [7].

The design studio also introduces participants to the social roles that are represented in a typical design process. Students learn that design occurs not in a vacuum but within a broad network of participants, including professionals such as architects, engineers and consultants, as well as non-design professions, such as clients, bankers and users.

The design studio is an activity that stimulates creativity and problem solving. It can be an effective technique when used to resolve difficult urban problems.

Generally a design studio will be undertaken in a short period of time focusing intensely on a selected area or site. What makes this an effective effort is that the individuals participating are arranged into multidisciplinary groups, ensuring that the knowledge and skills required to resolve the issue at hand are present around the table. It has been observed that...

*Social, technical as well as other scientific and art branches are characterised by two controversial problems in this century: a significant professional atomisation, and thrive for interdisciplinary approach to certain scientific tasks. It also stands for the development in architecture and urban planning [8].*

## **Urban Design Studio – UDEP General Process**

Generally, a design studio will be undertaken in a short period of time focusing intensely on a selected area or

site. What makes this an effective effort is that individuals participating are arranged into multidisciplinary groups, ensuring that the knowledge and skills required to resolve the issue at hand are present around the table.

Usually, the design studios undertaken through UDEP include three phases. These are:

- Pre-studio
- In-studio
- Post-studio

#### Pre-studio

Pre-studio activities occur in preparation for the design studio itself. A broad analysis of the selected node or site and its urban context is undertaken with key stakeholders. Following the analysis, a studio agenda and brief are formulated to provide information and parameters for the exercise.

#### In-studio

The in-studio phase is made up of a number of distinct activities. Firstly, multidisciplinary groups are formulated and briefed. Group work commences, with each group undertaking a design analysis and developing design options. Groups will present their work to an audience consisting of state and local government representatives, stakeholders and private industry.

#### Post-studio

The post-studio stage usually includes the production of a report or publication of the studio results and some form of public and professional debate. The studio could also result in great community interest leading to more detailed work such as establishing a *public brief* (a functional and design expression of community aspirations for the given urban node), as well as an urban marketing process preparing for the project's implementation [9].

### Educational Benefits and Values

The educational benefits and values of an urban design studio include:

- Exposing leading local professionals and educators to the methods used by a Visiting Fellow in their current practice overseas.
- Dialogue between the Visiting Fellow and the local participants and critique of local practice based on best international examples. Many examples used by recent Visiting Fellows had not

yet been published, giving the local participants privileged access to that information.

- A large multiplying effect stemming from the involvement of educators in the process.
- Involvement of students from planning, engineering and design fields in group activities.
- Lessons from the studio processes are being used as case studies for the training undertaken by UDEP.
- Post-studio presentations offer a wide range of professionals an opportunity to update their knowledge in the urban design field as an element of continuing education.
- All participants in the studio benefit from practical multidisciplinary cooperation.
- Public awareness and understanding is enhanced through presentations and ultimately publication of the studio results.

### Case Studies

To facilitate the conduct of the design studios, the UDEP has undertaken three specific case studies since the programme commenced in June 1999. They were:

- *Reinventing St Kilda Junction.*
- *Young Designers Explore the Future of Melbourne's West.*
- *Redevelopment of the Richmond Station Precinct.*

The case studies listed above have been led by internationally renowned professionals, including such architects as Prof. Wolf Prix (Vienna), Prof. William Alsop (London) and Prof. Hani Rashid (New York). The hypothetical studio format allowed the groups of local designers and students to review design and development opportunities of some of the most neglected parts of Melbourne.

The outcomes of the case studies proved to be very useful for local Government in pursuing real design solutions for the selected locations.

Moreover, these case studies have provided useful information, highlighting their educational and problem solving potential. The individual studios provided a point of comparison. Although aiming to achieve similar objectives (re-positioning an urban area), the approach and focus of each case study was slightly different.

### URBAN DESIGN TRAINING COURSES

The existing urban areas of our towns and cities experience major social change, which manifests

itself in decreasing household sizes. This de-population of urban centres and the combined ecological and economic cost of urban sprawl are behind the government policy of urban consolidation and new performance-based planning system. The resulting re-urbanisation of our suburbs requires a new set of design-based skill from all parties involved in the process.

The aim of this project was to improve design assessment skills in relation to development proposals within existing urban areas. Whereas the more specific objectives were as follows:

- To provide training opportunities that explore urban management techniques to achieve vision, introduce public communication concepts and explore the issues of the re-urbanisation experience and planning reforms.
- To provide training and professional development to improve design assessment skills in relation to development proposals in existing urban areas.

The more specific project objectives are to:

- Explain the nature of re-urbanisation, experienced by Victoria and the objectives of planning reforms.
- Develop skills in setting environmental and built form visions.
- Explore urban management techniques to achieve visions.
- Outline innovative administrative structures.
- Improve design assessment and mediation skills.
- Introduce a number of public communication concepts.

Two comprehensive courses, one for Councillors and Chief Executive Officers within local government, and the other for Council Officers and Private Practitioners, have been developed and delivered by leading practitioners in the field [10][11].

The first course targets councillors and chief executives within the Local Government. It is particularly intended for the Local Government sector and top practitioners and specifically for those whose decisions impact on the built environment and the location of activities. The course was conducted at the Monash Conference Centre on 7 April 2000 and was well attended by several top practitioners, decision makers, as well as private sector representatives in the State of Victoria.

The main objective of the course is to introduce a structured approach to the process of managing the urban environment in consultation with the community - *place management*. Furthermore, the course

introduces an innovative approach to urban design by organising so-called *design studios* and placing emphasis on their role in the urban management process.

The practitioners-level course was conducted in collaboration with the Urban Design Unit within the Department of Infrastructure and the City of Port Phillip between 10 and 11 August 2000 at the St Kilda Town Hall in Melbourne.

The paramount objective of the course was to complement the executive course by concentrating on the needs of practitioners from Local Government and private industry in relation to utilising urban design in order to achieve better development outcomes for local communities. The course attracted over 40 participants, representing various local and state government organisations, as well as the private sector, all from such fields as architecture, town planning, statutory planning and landscape architecture.

It is envisaged that the course material will be developed in the near future and be published in book form for a wider distribution to professionals and practitioners working in this field of human endeavour.

## CONCLUSIONS

The paper presents a new and unique approach to assisting engineers, developers, designers, assessors and community representatives in making use of procedures and techniques in sustainable development in general and in urban design in particular. Work is in progress to develop a more strategic approach to solving problems in urban design, planning, development and management, which is based on the concept presented in *Designing Competitive Places* - a policy on urban design for local governments in Australia [12].

Through the five specific projects indicated in the paper, the Urban Design and Education Programme endeavours to change the way in which urban design and management has been carried out so far.

The development and introduction of new approaches to education and training into the UICEE/ UDEP, and in particular the engagement of international Visiting Fellows, has proven to be an excellent vehicle for the transfer of knowledge and skills, as well as for the promotion of best practice in urban design, planning and development. The studios received a high degree of support from local government, and are seen as a catalyst for further action. The design studio technique, devised and introduced in the management of three Melbourne-based case studies, has shown to be an efficient method in

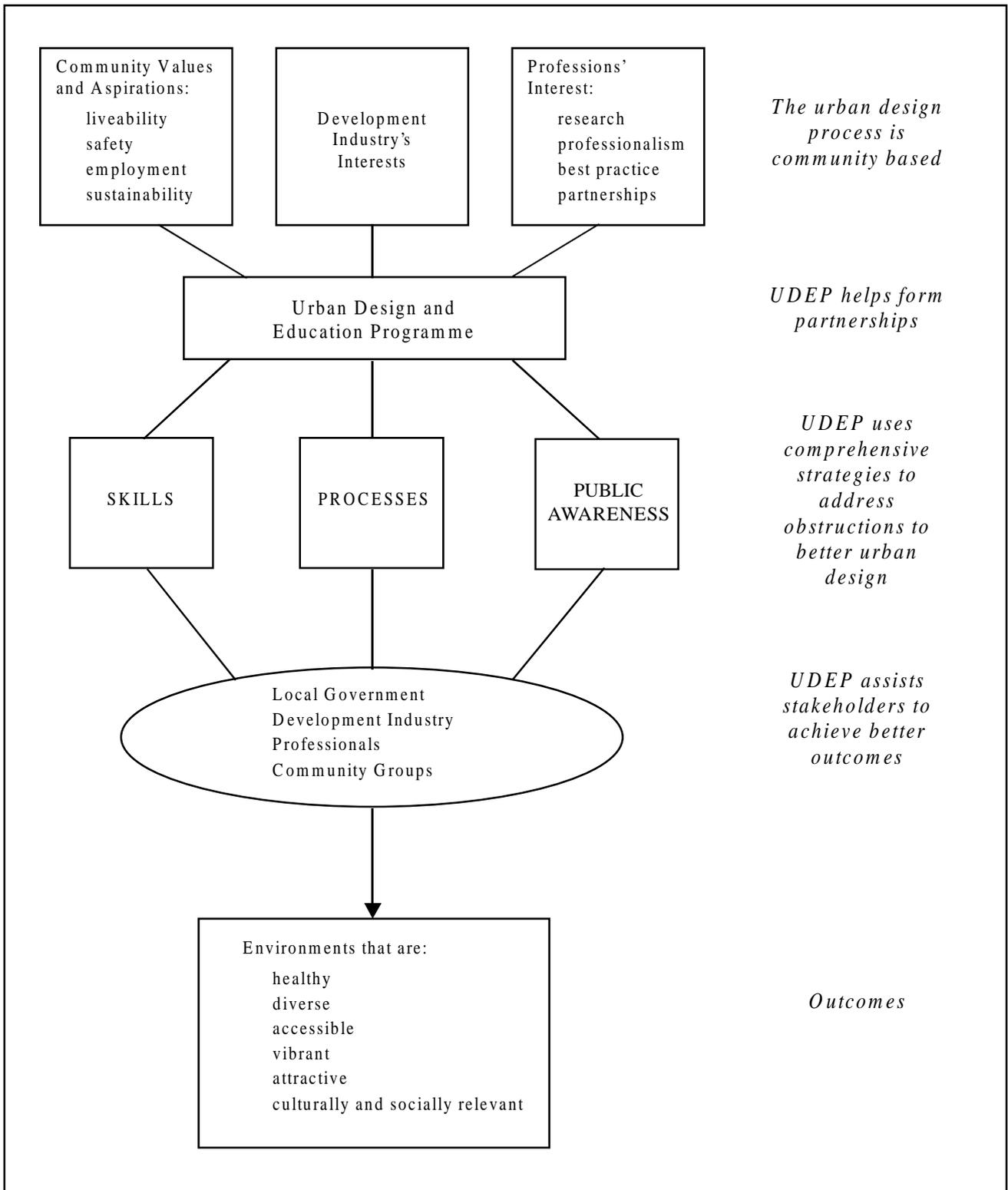


Figure 2: A UDEP summary chart.

the education and training of urban designers and planners. The UDEP intends to develop this educational method further as it demonstrates several advantages and benefits.

It is hoped that the established programme, as a whole, can be seen as the right vehicle to promote

and develop performance-based systems which, in turn, would be an important step toward resolving the present high level of conflict within the planning and development realm.

The context for the UDEP may be summarised in the chart presented in Figure 2.

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## BIOGRAPHIES

Andrew Olszewski received his Diploma of Architecture and Master of Science in Urbanism from Cracow, Poland. He is registered as an architect in Victoria, Australia, and has 25 years of experience in architecture, urban planning and urban design. Originally from Poland, he honed his professional skills in



cooperation with influential European architects and planners from Italy, France, Finland and Germany.

Until late 1986, Mr Olszewski worked as an architect with one of the leading Australian development companies on several major commercial projects including shopping centres, offices, private hospitals, and office and tourism developments. Following his success in 1986 in a national design competition called *Adelaide 2000*, he joined the Victorian Department of Planning and Development where he has promoted a broader European approach to urban planning and design. Projects such as *Arts Village* and *Dandenong District Centre* have helped to re-define the practice of urban design in Victoria beyond its traditional focus on environmental improvements to include issues of transport, economic activity, architectural modelling and community building. He has played a key role in the development of urban design guidelines for Central Melbourne and made an important contribution to the *Capital City Policy*. He has continually promoted the idea of strategic coordination of land uses with infrastructure provision as one of the critical conditions of long-term development sustainability, and has contributed these ideas to projects of state significance such as *City Link*, *Habitat* and, most recently, the *Southbank Structure Plan*.

His leadership in the field of urban design is best illustrated by his involvement in writing the national urban design policy for local government titled *Designing Competitive Places* (for the Commonwealth Government and Australian Local Government Association). In 1996, he coordinated the work of an Australian Federal Government Urban Planning Delegation to China, which developed an urban design framework for the Eastbank precinct of Tianjin's CBD.

He joined the UNESCO International Centre for Engineering Education (UICEE) as the Programme Director of the Urban Design Education Programme (UDEP) in February 1999, seconded from the Department of Infrastructure of the State Government of Victoria. Mr Olszewski is also currently a Director of Urbis, which is a national consulting property advisers company, which has its headquarters in Melbourne.

He has several publications and has presented many papers at international conferences relating to urban design and place management.



Zenon Jan Pudlowski graduated Master of Electrical Engineering from the Academy of Mining and Metallurgy (Cracow, Poland), and Doctor of Philosophy from Jagiellonian University (Cracow), in 1968 and 1979 respectively. From 1969 to 1976, he was a lecturer in the Institute of Technology

within the University of Pedagogy (Cracow). Between 1976 and 1979, he was a researcher at the Institute of Vocational Education (Warsaw), and from 1979 to 1981, was an Adjunct Professor at the Institute of Pedagogy within Jagiellonian University. From 1981 to 1993, he was with the Department of Electrical Engineering at The University of Sydney where, in recent years, he was a Senior Lecturer.

He is presently Professor and Director of the UNESCO International Centre for Engineering Education (UICEE) in the Faculty of Engineering at Monash University, Clayton, Melbourne, Australia. He was Associate Dean (Engineering Education) of the Faculty of Engineering between 1994 and 1998. His achievements to date have been published in close to 300 publications, such as books, manuals, refereed journal and conference papers.

In 1992, he was instrumental in establishing an International Faculty of Engineering at the Technical University of Lodz, Poland, of which he was the Foundation Dean and Professor (in absentia) (1992-1999).

He was also appointed Honorary Dean of the English Engineering Faculty at the Donetsk State Technical University (DonSTU) in the Ukraine in 1995.

Professor Pudlowski is a Fellow of the Institution of Engineers, Australia. He is a member of the editorial advisory boards of many international journals. He was the 1<sup>st</sup> Vice-President and Executive Director of the AAEE and the Editor-in-Chief of the AJEE since its inception in 1989 until 1997. Currently he is the Editor-in-Chief of the *Global Journal of Engineering Education*, and is the Foundation Secretary of the International Liaison Group for Engineering Education (ILG-EE).

Professor Pudlowski has chaired and organised several international conferences and meetings. He received the inaugural AAEE Medal for Distinguished Contributions to Engineering Education (Australasia) in 1991 and was awarded the Order of the Egyptian Syndicate of Engineers for *Contributions to the Development of Engineering Education on both National and International Levels* in 1994.

In June 1996, Professor Pudlowski received an honorary doctorate from the Donetsk State Technical University in the Ukraine in recognition of his contributions to international engineering education, and in July 1998, he was awarded an honorary Doctorate of Technology from Glasgow Caledonian University, Glasgow, Scotland, United Kingdom. In 1997, he was elected a member of the Ukrainian Academy of Engineering Sciences. In early 2001, he received the Gold Medal of Honour from the Russian Association of Engineering Education (RAEE).

Outcome-based education or outcomes-based education (OBE) is an educational theory that bases each part of an educational system around goals (outcomes). By the end of the educational experience, each student should have achieved the goal. There is no single specified style of teaching or assessment in OBE; instead, classes, opportunities, and assessments should all help students achieve the specified outcomes. The role of the faculty adapts into instructor, trainer, facilitator, and/or mentor based