Architectural Education for the New Millennium
Issues, Innovations and Tradition
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**Transforming Architectural Education in Developing Settings -
Amidst' Global Stresses and Contextual Limitations.**

Dr. Sayed M. Ettouney   Dr. Nasamat Abdel Kader
Professor of Urban Design,   Professor of Housing
Department of Architecture, Faculty of Engineering
Cairo University, Cairo, Egypt.

- Abstract:
Architecture is the true image, reflection and material realisation of societal features and community cultures. In developing countries, the built environment and human settlements collectively suffer from a severe chain of lacks and context's deficiencies, physical and otherwise. Topmost among which are; deteriorating and underdeveloped urban, social, economic and political structures, as well as clashing cultures. Confused architectural expressions and deteriorating urban environments are synonymous with cultural conflicts and contextual deficiencies and transformation.

Furthermore, the so-called "Globalisation" phenomenon, conceptually and physically overwhelms the setting in developing countries. Adding to the problems of; scarce resources poor management and planning, the will and ability (or lack of it) to act and to meet the challenges of transforming existing conditions, to attain societal goals and objectives.

"Globalisation" is arguably a "game", its rules are constantly invented, changed and set by the powerful-few to their advantage; leaving the weaker, poorer and underdeveloped with no option but to join in (or perish), as the disadvantaged party.

Architectural products and developments, practice and education; collectively bear the said conflicts to its core, and display it in its features and outcome.

Architectural schools in developing countries, Egypt included, followed Western models, structure and details, from the outset. Most are still attempting to keep up the pace and to stay tuned to current trends and changes.

In Egypt, Architectural schools' programmes and curricula are invariably influenced by European and North American pedagogical philosophies, dogma and practices.

Despite the growing awareness among the middle and younger generations of local academics, of the relative importance of the issues of; contextuality, identity, independent development, responsibility towards and committed design for local communities (mostly the poor and silent majority) - the education forum is overwhelmed by global doctrines, and Western structures, contents and distorted statutory regulations. Collectively producing architecture graduates; geared to work in developed settings, for "other" communities, with richer resources and fewer limitations and constrains. Their "products" are invariably divorced from the real world, designed for "virtual" (imagined) communities and predominantly faceless, mediocre and alien to development contexts.

The prevailing political structure and practice; together with societal traditions, values and cultures; negatively add to the burdens of architectural education; enforcing non-democratic monologues, suppressing analytical criticism and critical thinking and stifling creative and innovative skills, abilities and intellectual search.

The present discourse points-out the impossible task of transforming architectural education in the problem laden developing contexts. It highlights the conflicts between the ambitious progressive aspirations and endeavours within the bounds of academia (with references from and views towards the developed world) and the real world surrounding it; as well as the resulting alienated architects and products.

The discourse comprises three parts, namely:
1-   An Introduction; On Architectural Education; Transformation in Development.
2-   Three interludes:
       2/1- Architectural education; existing conditions, aspirations and challenges.
       2/2- Architecture, culture and development context, problems and limitations.
       2/3- "Globalisation"; added stresses.
3-   Six propositions; for effective transformation of architectural education in developing settings.

> **"The rich may do anything for the poor except get off their backs."**
>
> **Tolstoy**

> **"Don't walk in front of me, I may not follow,**
> **Don't walk behind me, I may not lead,**
> **Walk beside me and be my friend."**
>
> **Albert Camus**

1- An Introduction; On Architectural Education; Transformation in Development

- Architecture, the realm and product, practice and the path to, architectural education, are all related to development; societal and comprehensive, in 3rd World countries.
- Architects and designers provide the setting for all development activities; the physical expression and realisation; housing, community facilities, work places and linkages.
- The limited success of development drives, may partly be attributed to architects; educators and professionals; they share in the grim present and bleak future of Developing nations and environments.
- Architectural Academia is relatively divorced from reality. The time lag between graduation and effective contribution to actual/real and effective development adds to the separation. !
- Architects, unlike politicians are answerable to none, always hiding behind, technocrats, politicians, decision makers, developers and clients.
- The need for changing and transforming architectural education is related to the growing need for a different architect; suitable to the new World Order and current pressures coinciding with the dawn of the new millennium.
- The direction of the needed transformation and change (regarding the needed architect) are disputable;
  - Do we need a community oriented architect, contextually aware, committed and responsible; bare footed if need be, (are these slogans of the past?).
  Or,
  - An architect without boundaries/borders, belonging to the global village, equipped to work almost anywhere, and to move and serve "other" communities, physically or via the electronic web; a technical freak and computer wizard; conditioned to

expected licence and permits' granting, bye-laws and regulation changes.

- In other words a good architectural graduate is that who can satisfy international criteria and standards, if and when available.
- Architects, architectural practice, hence architectural education should be multinational, intra-regional and continental.

- Architectural education and related institutions felt and experienced the pressures of the conflicting demands of contextuality and local pressures on the one hand and global appeal and challenges on the other.
- All accentuated and stressed by the soaring advanced communications and information flow.
- Education goals and objectives were and still are influenced by the glorified references from the 1st (rich & developed) World,
- Ignoring the means to achieve them, which were (and still are) invariably an obstacle - scenarios and strategies were formulated (to secure set objectives) and to breach the gap between the backward (or lagging) and the developed.
- The resulting product is an "embryo" graduate; an architect hardly suitable for meeting local challenge and limitations, and at odds with the wider realm.
- Architectural Institutions thus repeated the pitfalls of executive and political establishments; i.e. where transformation and development were/are regarded as a drive to Westernization, in the wake of the 1st World.
- Transformation can not be divorced from the related context (immediate, local and regional).
- Transforming architectural education in development settings should cover: objectives, briefs and programmes, plans and means (all contexts related).
- Three critical aspects are closely related to serious transformation; namely:
    - Roles and responsibilities; i.e. who defines, evaluates and decides?
    - Adopted references, determinants and criteria,
    - Relation to the development context, culture and society.

- Development (comprehensive and societal) is indeed the framework for architecture, architectural development, practice and Education.
- The declared or hidden conflicts between local (independent) development and global pressures, deeply influence and affect architectural education in development.

Within the bounds of space and time, we will attempt to address this controversial issue, and to formulate a loose structured rationale to face it. It comprises the following three interludes (stops) and the concluding epilogue (propositions). The interludes and propositions collectively highlighting the complex and defiant nature of architectural education in development settings; and pointing-out the challenges of its transformation and development, amidst the conflict between Developed and Developing (world) orders. Putting forward minimalist propositions to enable transformation drives.

2-   Three interludes:

2/1   Architectural education; existing conditions, aspirations and challenges

- Architectural education current status in Egypt, as most developing nations is characterised by a multitude of problems, and challenges; including:
- Soaring numbers of students,
- The high rates of increase of architecture students numbers (population),
- Limited numbers of faculty and assistants,
- Distorted faculty distribution and structure, lecturers, associate professors and professors,
- Gap between formal and real faculty numbers; unlimited leaves of absence to teach at local and regional universities, part-time teaching permits to local universities, informal and formal professional practice (full and part time),
- Limited full time commitment of faculties, inefficient monitoring and attendance enforcement,
- Poor management of human resources in terms of: organisation, assignment-distribution and responsibilities,

- Low faculty – student ratios; formal and real,
- Limited communication between faculty and students, in terms of duration, continuity and quality,
- Quality gap between older and new schools and departments of architecture, in terms of: faculty, space and facility, research and experience,
- Lack of identity and differentiation; similar/identical curricula and contents,
- Unbalanced structure (of curricula and contents); emphasis on the narrative, data based, void of analysis and criticism, interaction and dialogue,
- Dominance of traditional, conventional approaches, one way monologues,
- Resistance to change and experimentation,
- Restricting statutory regulations (legal framework), enforcing and supporting stagnation, limiting mobility and interchange, hindering effective selection of faculty and assistants,
- Deficient procedure for filling heads of schools positions; based on service duration, age and superficial seniority, rather than background, potentials, ability and competence,
- Limited material resources (free tuition, state sponsored higher education), restrictions on and difficulties of fund raising,
- Distorted budget distribution; most goes to (the relatively low) salaries of faculty, assistants, administrative staff and labour force, the limited rest is thinly channelled to cover facilities, fabric, research, etc.,
- Central control of (the limited) available resources, no or limited access to funds and material resources to lower levels (departments),
- Low salary scales for faculty and assistants (amounting to some 10% to 20% of faculty salaries at local private and regional universities),
- Physical problems; Limited space (internal and external), inadequate facilities (labs, workshops, library, web-access, etc.), facilities to work at school/ studios, student base provision, in terms of quantity and quality,
- Absence of critical evaluation and cumulative monitoring of the various aspects of the education process (tools and mechanism); faculty and assistants, students' performance, curricula, units, products, development plans,
- Relative limitations on selection and choice; e.g. electives, interdisciplinary mix, open learning,

- Negative attitudes, among faculty and students; including: alienation, opportunism, minimal effort and maximum return, deteriorating values and ethics, plagiarism, poor references, acceptance and glorification of mediocrity,
- Poor recording, dissemination and exchange of the various aspects of the education process, objectives, methods, teaching responsibilities, evaluation records, assignments, comparative analysis,
- Lack of faculty internal and external mobility, cross- subjects and levels, between institutions,
- Dogmatic stagnation, resistance to change and sensitivity to criticism; regarding: objectives, curricula and contents, tools and methods, interaction (internal and external),
- Absence of criticism, critical thinking, discourse and dialogue; in terms of tools, opportunity and venues,
- Superficial democracy, dominance of patriarchal and hierarchical values, on the various levels of decision making,
- Revival of reactionary and fundamentalist outlooks in form, appearance and substance,
- Architectural education development endeavours' concentrated on paper work, statutes, procedures, curricula, devoid from execution and implementation, quality, roles and monitoring, graduates follow up,
- Higher education policies, features and processes, architectural education included, is strongly influenced by state policies and central government decisions; which have a direct impact on education quality, concepts, methods and techniques.
- In most universities decisions related to the increase of the intake of fresh students is carefully taken, such an increase may vary between 5 – 8 % in a single year. Special measures are enforced to manage the planned increase well ahead of implementation,
- The national (state) universities, in Egypt, are confronted with yearly fluctuations and growing numbers and rate of fresh students' intake. In 1995, an increase in the fresh students' intake of 100% was implemented to meet earlier changes in basic education state policies The rate of fresh student growth in the following years was of the order of 10 – 15 %.
  This posed (and still is) an immense pressure and added burdens on the resources of higher education institutions. Departments of architecture had to seriously review (and stretch to the limits) their limited resources, physical and non physical.

- Limited role of students in architectural education processes; as regard: effective participation, faculty and assistant's evaluation, policy and objectives formulation, development scenarios, resource management,
- Isolation from society and local communities,
- Limited community oriented work and research,
- Poor Societal integration and limited deployment of development plans in architectural education,
- Absence of serious market research, local and regional, to determine, needs and requirements, value management, in the light of development priorities,

Current efforts to develop and transform architectural education present conditions, performance and product, aim primarily at:
- Reaching and maintain international architectural education standards.
- Satisfying recent criteria set by International bodies and Institutions, e.g. UNESCO and the U.I.A.
- Producing graduates fit primarily for local, regional and lately for international demands' requirements.

2/2 Architecture, culture and development context; problems and limitations

- Comprehensive Development is synonymous to survival in Third World countries, the South, or (arguably) the less developed nations.
- It is the process and means through which transformation in the cultural, economic, political and physical structures could be realised, without sacrificing identity, compromising local resources and clashing with context,
- Development is both the means and an end to achieve societal goals, a process and an ultimate end,
- Development can't be borrowed, copied or "ecclected"; a unique, creative and private process, its success depends on; congruence and appropriateness to society and context in question,
- The process is characterised by the skilful management of three key components, namely; goals (definition, appropriateness & acceptance), resources and context's Determinants,

- Development and transformation are very much dependent on the deployment, mobilisation and release of human resources, the top-most of communities' potential,
- The failure of development ambitions and transformation drives may be attributed to: underestimation and misunderstanding of its complexities and distorted emphasis on selected aspects (of it); e.g. economic growth, as well as the lack of community acceptance and participation,
- Development is not synonymous to Westernization. It is in essence an inward oriented, self-reliant and sustainable process. It needs not be closed to the outside world, as it could benefit from true partners; i.e. regional and international developing countries.
- Architecture, human settlements, and man-made environments are the true expressions and manifestations of community culture and values. A live registration of societal endeavours to develop, satisfy basic and complex needs and to achieve their goal and aspirations.
- The physical expressions of societies and the closely related physical aspects of comprehensive development are of crucial importance to the success or otherwise of development drives. It comprises, housing and shelter, community facilities, work places, linkages and physical setting,
- Hence the important role of architects, urban designers and planners, being the manipulators and shapers of the physical aspects of communities and development.
- The limited success of developing countries, during the past five decades; to achieve development goals and to secure societal basic needs, pointed-out the responsibility of the professionals; architects (et.al.), as well as the processes producing and directing professionals; architectural education included.
- The architects and planners of the developing nations are expected to face and alleviate the dehumanising conditions of the masses (the poor and low income majority), through creative manipulation of resources to solve the complex problems of housing, community facilities and the built environment at large.
- The scale and nature of the problem on the one hand and the relation between the architect/designer and the community on the other proved not only a challenge to the profession (and the path to, i.e. education) but also a real threat to its status, value and prospects.

- Extreme views call for the elimination of the need for architects in developing settings; on the grounds of minimising development costs and saving limited resources.
- There are also the growing doubts about professionalism, architects and designers attitudes towards communities and participation, and their ability to positively enrol in the development drive.
- Professionals are trained to solve stereotype problems in stereotyped manners, hence having a vested interest in the continuation of those problems. Many claim that professionals can not be trusted because they are answerable to none, shut from the real world; working according to their own perceptions of the conditions, needs and priorities of communities and development contexts.
- The essence of any meaningful change or redefinition of the architect's role in development is to positively transform the profession, to reshape the relationship between the community and the architect, and to critically review the process producing architects; architectural education in developing countries.
- In other words rephrasing the role of architects and urban designers in development; from producers to enablers,
- The architect as an enabler means: a professional participant in local development. His role is not to design (and produce) buildings, physical environs and complete packages but to design processes as well as loose, incomplete and open ended physical settings, to formulate means of gaining access to and utilising resources, to stage and to implement development according to community needs and priorities.
- It may also mean the end of professional practice in its traditional sense, as it is likely to affect every aspect of the process, from brief formulation, to communications' media, deliverables, relations between the involved actors, etc.
- Thus the extents and repercussions of the architects' role changes on the learning and educational processes on the one hand and professional practice on the other has yet to be fully understood, applied, monitored and tested.
- In Developing countries architects to be, should be taught how to work with people as enablers.
- This is rather difficult and will surely pose a real challenge to academia.
- In real terms the realisation of architects as enablers requires radical transformation of architectural education; with changes extending to

conceptions and philosophy, objectives, curricula, methods and products.

2/3   "Globalisation"; added stresses

- Globalisation is much discussed and debated term, accepted and hailed by most, both as a must and a fate, not to be escaped or avoided.
- It is the law of the day, dictated by the mighty: "follow and join the Globalisation caravan"; no choice but to!
- A dream coming true, a barrier-free cosmos, encompassing: free trade, movement, services, information and thoughts,
- All has to sign the multitude of related pacts, treaties protocols and agreements; who can afford to be lonely? ; to be not among the best, richest, powerful-most and developed,
- The dream is well marketed; thoughts, achievements and knowledge, the fruits of civilisation are accessible, free for those who dare, who care to know, to switch on and log into,
- Most architects and academics in the realm of architecture, accepted the premise of Globalisation, the barrier free notion and the New Order promise;
- Aspiring to follow; and sincerely advocating: conference learning, shared curricula and contents, virtual design studios and abandoning the local conventions to the advanced high tech., virtual reality and the rest,
- Standards, evaluation criteria and references are borrowed and goals are re-set to fit, the advanced West (et al.), the custodians of wisdom and delineator of the New Order,
- Globalisation is a heavily loaded notion, vague and open ended, ready to encompass an array of meanings and intentions, to reflect shifting values and ethics,
- Though in essence Globalisation was always there (dare we say), the exaggerated emphasis is a part of recent power shifts and global role changing.
- Media wicked collaboration, wilful insistence, forcing the term, repeating and glorifying it, till it sinks deep in the conscience of all, laypersons and intellectual elite. Forcing it, till it becomes the respected sole context and the only course, for each and every action, endeavour and move.

- Globalisation is that polished conception of a virtual dream world, where all are partners, equals, enjoying democracy, equity, access to information, technology and resources, and environmental quality and fairness to all, irrespect of gender, belief or origin, even to the poor and the needy,
- The global paradise in reality has borders and fences, movement and flow to is restricted, filtered and processed; this applies to everything: thoughts, products and humans,
- The rules are tailored to the benefit of the creators, inventors and manipulators, indeed not to the receivers and followers,
- But the ingenious Order was accepted and swallowed by the majority in the South, believing that they are partners, allowed to fully join in, to sit at the round table and to delineate the future of mankind,
- Globalisation can only work if we all are true partners, with equal rights and responsibilities, which indeed is not the case in this new Order and setting, so why insisting that we are, zealously advocating the game and rules,
- Is this note/view merely pessimistic or sourly realistic; why we hardly hear these days about the premise of Regionalisation (the alliance of equals) instead of the continuous calls for abandoning the old & traditional alliances (mostly in the South) to dissolve into the new Order,
- Are we outside the scope of the congregation or our discourse (Transforming Architectural Education), hardly; are not we addressing the issues of; appropriate: context, references, tools and methods as well as access to resources, information and means, which collectively are all what education is about,
- The same applies to architecture education and practice; accreditation and underlying thoughts and priorities, will soon to be agreed on by World Community, levels and standards adhered to; only the mighty may defer opt out or refuse to sign,
- Even if one is aware of the false premise of Globalisation, could it be avoided,
- We should critically question and challenge the notion of Globalisation, the rules and products of the promised "virtual" paradise; (at least as a mental exercise),
- Regionalisation (between equals), protectionism, introversion, limited accessibility, lower and appropriate references and standards, slower transformation, and adherence to contextuality and independent

development are neither reactionary nor obsolete. On the contrary, all should be welcomed, researched, revitalised and cherished.

- It is again not out of the present discourse to point out to the course followed by the prospective new polar force in the new millennium (China), since 1949 and till the mid or late 1980's or even till the present,

- This is not an outcry for blind rejection of the notion of Globalisation. It is only a mere reminder that; true "Globalisation" is an arena for qualified "Global" partners and actors, if you are eligible enjoy it, if you are not go for "Regionalisation", and confine to your local and regional settings and equals first,

- The said statement fully applies to architectural education (and practice); will be rephrased in the following propositions.

3- Epilogue; Propositions:
Six propositions; for effective transformation of architectural education in developing settings.

The previous course, the introductory note and three stops/ interludes, delineated a structure and a rationale to deal with the issue of architectural education and its transformation in developing settings. It highlighted our views, understanding and biases. It also hinted at and paved the way to our minimalist propositions for effective transformation of architectural education in Egypt, and in most developing countries.

Before putting forward the set of propositions, let us reiterate the obvious, namely:

Why transforming architectural education?

Our answer is;

To produce graduates, architects, capable of satisfying the needs and aspirations of their society and local communities, equipped to meet the challenges of independent (and sustainable) development and ready to stand to (and face) the stress and pressures of Globalisation, clear and in disguise.

Our propositions are flexible and open-ended; they suggest courses and point-out possibilities, accepting and operating within contextual limitations, in most developing countries, Egypt included.

Six in all, presented in a determined sequence, but may be dealt with separately and independently.

3/1   On Globalisation

- In transforming and developing architecture, education and practice, critically question and resist "Globalisation" both as a notion and a course of action; join only as a partner, not a follower nor a mere spectator. Resist for as long as you can, don't break nor abandon the pencil or tools you make, till you can produce the alternative, albeit a computer or a web.
- Look into localities and regions for aspiration, design for limited access and controlled flow till you are ready to mix and influence.

3/2   Integration into Development

- Architectural education transformation should be closely geared to and integrated into (societal and comprehensive) development drives (actions, plans and strategies).
- It should carry the features of healthy development, i.e. independence, sustainability and community based and oriented Transformation objectives, evaluation criteria and courses of action should be formulated and selected accordingly.

3/3   Enablers not Producers

- Architecture students should be (educated) guided, trained, evaluated and monitored as enablers and not producers, capable of working for and with (local and regional) communities.
- Aim at an intellectual, committed and technically capable architect, rather than a self-centred technician and an introvert professional.

3/4   Contextual Awareness and Minimalist Appreciation

- Respect and accept context limitations, turn it to merits and distinct features of community oriented architectural education,
  Accept difference, aspire to a "minimalist", unpretentious, glamour-free settings, simple and different from the flamboyant set references.
- Accept and aspire to face the challenges of educating architecture to the masses, improve and develop large-scale architectural institutions.
- Re-examine Western (Developed and 1st world) models, at least from the viewpoints of appropriateness of the resulting graduates to the real (local and regional) context.

3/5   Low - Cost Internal Action
     (Within Architectural Education Institutions)

A chain of possible, feasible and cost effective actions, including:

- Critically question the "Other" standards and game rules and inherent dogmas and biases.
- Resist imitation or replicating international western schools, critically examine underlying philosophy, objectives methods and procedures.
- Differentiate as much as possible between learning nature and vocation and practice requirements,
- Encourage differentiation and Identity, aspire to different and not analogous departments and schools of architecture,
- In teaching architecture to the masses (large number undergraduates) liberate and "enable" students to self-learn, search for information, to acquire knowledge, to innovate and not to imitate, to share in evaluation, etc.,
- Scale-down design studios into mini-studios, within the allocated space, maximise faculty-student contact, and better define responsibilities,
- Readdress "formal" creativity as a hailed merit and an end, as it mostly amounts to the ability to copy and publicise thoughts, trends, approaches and "formal expression", discreetly or daringly,
- Readdress structure and organisation hurdles and issues, including: faculty selection, evaluation, tenure tracks, chairs appointments procedures and criteria,
- Effective transformation could be secured through; true democracy and dialogue, flexibility, process- (not production) focussed, analytic and innovative learning,
- Fight and eliminate mediocre and corrupt resource management,

3/6 Low - Cost External Action

(Outside the walls Architectural Education Institutions)
- Move towards free and Independent Institutions.
- Resist "cocooning" the profession and academic institutions, develop Architectural schools (without walls), with less barriers to the outside, i.e. accessible to other specialsations, non-government organisations and to the society at large.
- True dialogue and effective criticism (of architectural education & institutions) is only attainable, through societal and interdisciplinary interaction; hence should not be confined to specialists' circles (architectural academics and professionals),

- Basic and secondary education (pre University) is an effective means and venue in the development (and transformation) of architectural education.
  Media and informed public, flourishing of architectural culture and appreciation are effective means in the transformation drive.
- Legal framework and creative new legislation is the key to secure effective change and transformation of architectural education, (internally and externally).

Architectural Education Transformation is indeed possible, low cost, cost effective and attainable to the Developing Community; but only if We Dare, and if only In Ourselves We Trust.

- **Selected Sources**
- Ismail Abdallah, "Independent Development: An Attempt to Define the Conception", Independent Development Symposium, Oman, Jordan, 1986. (Arabic)
- Reynar Banham, "Alternative Networks for the Alternative Culture", Nigel Cross (ed.), "Design Participation", Academy Editions, London, England, 1972.
- Charles Correa, "Urban Housing in the Third World: The Role of the Architect", Architecture and Community, Aperture, NY., USA, 1983.
- Sayed Ettouney, "The Designer in the Development Labyrinth - An Investigation into the Architects' and Planners' Roles in the Physical Development Process, in Developing Countries, with Emphasis on Housing", IAHS/FIU World Congress on Housing, Miami, Florida, USA, 1986.
- Sayed Ettouney Nasamat AbdelKader, " On Change and Development – Sorrow and Anger", Year Book No.7, Department of Architecture, Faculty of Engineering, Cairo University, Cairo, Egypt, 1989. (Arabic)
- Sayed Ettouney Nasamat AbdelKader, " On Silence and Participation - Notes on Students' Role in the Architectural Education Process in Developing Countries", Year Book No.8, Department of Architecture, Faculty of Engineering, Cairo University, Cairo, Egypt, 2000. (Arabic)
- Sayed Ettouney Nasamat AbdelKader, "Architectural Education Challenges in the Populated University", Working Paper, The First Scientific Congregation, Department of Architecture, Faculty of Engineering, Cairo University, Cairo, Egypt, 2000. (Arabic)
- Robert Goodman, "After the Planners", Penguin Books Ltd., Middlesex, England, 1972.
- Irina Lambert (ed.), "The Architect as Enabler of User House Planning and Design", Karl Kramer Verlag, Stuttgart, Germany, 1985.
- Martin Pearce Maggie Toy (ed.), "Educating Architects", Academy Editions, Academy Group Ltd., London, England, 1995.