Built Environment Education Guidelines

2nd edition (June 2008)

UIA Architecture & Children Work Programme

Contents

Preamble

"As professionals, architects have a primary duty of care to the communities they serve."

These are the very first words in the preamble to the *UIA Accord on Recommended International Standards of Professionalism in Architectural Practice*. Architects are dedicated to standards of professionalism, integrity and competence and bring to society unique skills and aptitudes essential to the sustainable development of the built environment and the welfare of their societies and cultures. Their rules of ethics have as their primary object the protection of the public, caring for the less powerful and the general social welfare, as well as the advancement of the interests of the profession of architecture.

Beyond their personal interests and the interests of their clients, architects are asked always to "thoughtfully consider the social and environmental impact of their professional activities."

Similarly the *UIA Accord* Guidelines on the role of organisations and associations that represent architects place consumer and public interest ahead of that of their architect members. They are asked to promote architectural and urban quality by any means, and to encourage architects to contribute to the development of architectural culture and knowledge as well as the society they serve. Architectural associations should promote the awareness of architecture, and "facilitate the acquisition of architectural knowledge by competent authorities, as well as by the public and other professionals, to enhance their ability to assess architecture."

It is this context that the UIA Architecture & Children Work Programme has developed this 2nd edition of the *UIA Built Environment Education Guidelines*, which are designed to help architects and their associations, in partnership with others, contribute to the architectural knowledge of one particular section of that public: the young people who will be the citizens of the future.

Introduction

"Architecture is the will of an epoch translated into space."   Mies van der Rohe, Architect.

"I want my children to understand the world, but not just because the world is fascinating and the human mind is curious. I want them to understand it so that they will be positioned to make it a better place."   Howard Gardner, Psychologist and Educator.

Of all of the arts, Architecture probably has the most direct and unavoidable impact on our everyday lives. We can ignore painting, sculpture, theatre, music, literature; we can't escape architecture. The built environment – our buildings, villages, towns, cities and landscapes - provides the framework for all human activity and interaction. We give it form and it forms us. And the future quality of that environment will be determined by the children of today. Their ability to make sound decisions will depend on the knowledge, skills and abilities they gain in the course of their education.

Architecture is a political art. It asks each individual to take a position, because it is a real art as well as an art of the imagination. It affects mind, spirit, body, the ways we move from place to place and the people that we meet. It involves collective, social, often critical, action. Through symbolic, significant, public and private structures and spaces it represents the values of a community in concrete form.

The creation of architecture is an exercise of the imagination. It begins with design, the development of a concept based on the brief for the project but drawing also on humanity, culture, heritage, history, and a critique of what exists. Change presents a challenge. But good architecture and a good environment, produced in genuine dialogue with the community it serves, can reduce feelings of disconnection and contribute to a more harmonious society where citizens feel empowered and heritage and creativity are reconciled.

Home, school and neighbourhood send a message to children about their place in the world. For good or ill they provide the context, the 'cadre de vie' which so affects the physical and psychological quality of their lives, and in which they start to grow into their future roles as citizens. If they can acquire a language and an understanding of the concepts and reference points of architecture, heritage and environment, they will understand the reasons for buildings, their functions, forms, materials and meanings and become more alert to the sensations induced by forms, volumes, materials, colour and light.

Not only will this enrich their personal development and bring the joy of personal discovery, but also give them a grasp of the consequences of architectural choices for our everyday lives. Analysis of the built environment allows young people to orient themselves in space, to re-appropriate their environment, understanding that in a short time it will be they who will have the right and the responsibility as active citizens to take initiatives to create a sustainable future.

That is why we advocate the inclusion of architecture in the education of our children and young people. It is not a matter of introducing a new and separate discipline, but of putting in place a set of imaginative, integrated and educational initiatives which gives them a perspective on what architecture is about. It should inculcate identification, curiosity, respect, familiarity, and a desire to participate in the complex and magical process that constructs the house, the town and the region with an architecture that is not esoteric or facile but provides a sustainable context for living, created through the effort which is due to any task undertaken on behalf of mankind.

The UIA Architecture & Children Work Programme has produced its *Built Environment Education Guidelines* to enable architects, teachers and others to combine their professional knowledge and skills in programmes designed to help children develop such a critical appreciation of the built environment and of the processes that determine its form and its quality.

The *Guidelines* are generic in nature, because every region has different educational, cultural and socio-economic demands which must be addressed if built environment education is to be successfully integrated into the education of our children. As with all *UIA Guidelines,* these recognise the sovereignty of each UIA Member Section, and allow flexibility to allow for local conditions, regional expression and cultural identity.

Architectural education for our young people should be an element of any new Government Policies on architecture and Architects professional bodies in each country should try to ensure that this is so. Even where no such policy exists, Member Sections, with their skills and their local knowledge, can do a great deal to support their own members and form links and networks that lead to the development of programmes, materials, resources and constructive partnerships.

Programme Objectives

In simple terms the immediate objectives of a built environment education programme may include giving young people:

- Sensory awareness of the spaces – public/private, interior/exterior - that they move and live in
- Awareness of roles, rights and responsibilities in the creation of the built environment
- An appreciation of their architectural heritage and of contemporary architecture
- An understanding of the relationship between the built and natural environment and of the link between sustainable development and quality of life
- The vocabulary they need to discuss the qualities of buildings and places and how they relate to the life of a community.
- Experience of the analytical and problem-solving methods of the design process
- The capacity to work in a team, to observe, to identify problems and find creative solutions
- The opportunity to experiment with techniques, forms and materials
- The capacity to exercise sensitivity and imagination, taste and critical judgment
- The discovery that architecture is a creative intellectual task of research and design that draws on humanity, culture, heritage, nature and society.

Architecture, Education and School

Our 'environmental education' begins at the moment of birth. We get our first spatial and social impressions in the circle of parents and family, in our houses, schools, shops, parks, neighbourhoods. We learn to see, to hear, to feel, to understand and to communicate. Playing, we gather experience about nature and the built environment. We learn to move in this world. Contacts in the neighbourhood, friends, school and, increasingly, electronic media, widen this experience.

Schools play a central role in environmental education. They convey the accumulated knowledge and experiences of many generations in a concentrated, systematic fashion. They can transmit the rules for living in an intact, sustainable environment by demonstrating its qualities, contradictions and conflicts. Students gain a standard of values which enables them to judge with increasing independence and to develop their own activities in shaping their environment. So the injection of built environment education into the mainstream school curriculum, if it can be achieved, will have long term effects on a society's understanding of good architecture and a good environment.

Because of its scope, Architecture presents endless possibilities for learning experiences for students of all ages, from the very youngest to those who are about to enter the adult world.

Architecture uses the knowledge of history, geography, sociology, psychology, science, mathematics, semantics, literature, painting, sculpture, music and technology, and in turn irrigates and stimulates these disciplines. The creation of a building involves the skills of documentation, organisation, analysis, critical thinking, communication, decision and imagination as well as design sensibility. Architectural thinking is integrated, visual and non-linear, and work on architecture-based projects contributes to generic skills such as communication, problem solving and research, which students use in other areas of their studies.

So built environment topics make excellent vehicles for educating and motivating students in a wide range of subjects and present exciting possibilities for collaboration between teachers from different disciplines. Critical thinking, sensibility, spatial awareness, imagination, responsible citizenship, cultural literacy, social relevance and environmental sustainability all can be addressed using issues of the built environment to teach new and traditional school subjects.

Ideally architectural education for children should be part of the central, normal, educational system and *Architects associations should work* with the authorities to achieve this. Some countries are fortunate in having highly developed Programmes, and even schools, that specialise in teaching children about architecture. But most do not, and generally environmental teaching is done by teachers in the ordinary schools that children attend every day. The participation of architects in school-based projects offers the most intense experiences for students, but it is often not possible for architects to be directly involved in this way. So two other things are necessary: teachers who are well-trained in built environment education and suitable resources for them to use.

In later sections these *Guidelines* offer some brief advice on Architects in Schools Programmes, Teacher Training, and Resources.

Partnership

Many teachers feel ill-equipped to teach students about architecture, and it is not easy for them to grasp the concepts of space, form, function and meaning that are so important for the quality of the built environment. Architects, in turn, must come to understand the educational objectives of teachers and the constraints of time, funding and administrative procedures within which they work. Developing original or experimental projects, events or materials will involve working with teachers, artists and other professionals. There may be also social, political, educational or cultural agendas of government, community and parents to be accommodated.

Working together will not always be easy, and may require sustained commitment on all sides. But architects work every day in interdisciplinary teams and are skilled in reconciling the requirements of clients, briefs, programmes, systems and budgets. If a partnership is successful it will generate programmes of high quality that are welcomed by schools and teachers and transmit to their students a vivid sense of what architecture is all about.

At the earliest stage of any project it is worth establishing links with the people who are involved in the delivery of education to children at each age level. These may include individual teachers, school principals, school management boards, national or local education authorities, curriculum development agencies, teachers' associations and parents' representative bodies. Other agencies, such as arts councils, libraries, architectural associations and museums may also play a role in the educational system.

The important things to discover are:

- who has the interest and the skills to collaborate in developing Programmes?
- who has the power to make decisions/grant approval on what is taught to children?
- who may contribute to funding the development of Programmes or to the costs of using them in schools?
- who is in a position to promote the use of the Programme when it are completed?

It should then be possible to select partners for collaboration, and decide on a strategy for development and dissemination of a programme.

Architects in Schools Programmes

'Architects in Schools' Programmes, where architects and teachers combine their professional knowledge and skills in interactive, school-based exercises, provide engaging, imaginative and deeply educational experiences for young people.

A programme can involve a team of architects and several schools, one architect appointed to work with several schools or, at its simplest, an individual initiative by one teacher and one architect working together.

Management and Funding
Arrangements for management and funding will depend on the circumstances.

Where the programme is part of the official education system the administrative arrangements, payment of teachers and architects, and the costs of materials and programme activities will be the responsibility of the educational authorities.

If it is an extra-curricular initiative, and particularly if there are to be several schools involved, there will be a need for a committee, or perhaps a co-ordinator, to organize the programme, select participating schools and architects, seek resources and funds, and administer the relationship between architects and schools in the programme.

Selection of Architects
The criteria for participating architects should include:

- an interest in education
- an ability to listen
- an ability to relate to young people
- an ability to communicate with teachers, parents and administrators
- strong organizational skills
- energy, enthusiasm and imagination

Experience as a practicing architect may be desirable but is not essential

In every case the selection process should follow carefully any laws or procedures for child protection that apply in the region concerned and should observe particularly the international standards set by the *UN Convention on the Rights of the Child.*

Ideally architects should receive some training in preparation for this role, but at the very least they should receive a thorough briefing and the opportunity for dialogue between architects and teachers before the project begins.

Planning the Programme
The nature of the programme is best decided by teachers and architects together considering the educational objectives and agreeing on the most effective ways to use the skill and knowledge of the architect. The architect should, as in any other professional situation, provide objective expert advice.

Programmes may be of long or short duration; integrated with the normal curriculum or non-routine interventions. They may be set within the context of one school subject or involve several disciplines in a cross-curricular exercise. Whatever the structure, they should be designed to be

attractive, engaging and exciting for the students. Wherever possible they should be planned in such a way that they can become a continuing element in the school system, not just a once-off event that cannot be sustained over time.

There are many models for built environment education projects in schools. Some of these can be discovered through the UIA BEE Network at http://www.uiabee.riai.ie/ .

Whatever programme is proposed the planning must be thorough and complete. This does not mean that it should be inflexible, or risk crushing creativity, but that all of the steps should be thoughtfully considered and agreed by teachers, architects, school management and any others whose support is necessary to ensure that the project runs smoothly and successfully. Practical matters such as budget, timetable, lines of communication, health and safety issues and insurance must all be confirmed.

At the end of a programme a report describing its activities and outcomes should be prepared. It should include evaluations of the programme by the teachers and students themselves.

Sharing Experience
Exhibitions and publications or seminars, where students and/or teachers present the work and explain the problems and achievements, should be promoted as widely as possible so as to share the benefits with the rest of the school, the parents and the broader community.

This also provides a valuable opportunity to introduce potential sponsors or funding authorities, such as education departments, to the objectives and results of the programme.

The potential of electronic communications and the World Wide Web should be fully exploited. However, it is essential to ensure that the consent of the children's parents is obtained before this is done.

Occasional Support from Architects in Practice
Even where a structured 'Architects in Schools' programme is not in place the occasional contribution of a practicing architect can be of great assistance to a teacher who is running an architectural project. For example, an architect might:

Give a talk about architectural practice, what an architect does, architecture, designing buildings, building types, architectural drawings, or any other topic relevant to the teacher's programme.
Present the history of a project done by his/her office.
Act as guide on a site visit to one of their own buildings
Act as adviser to a teacher running an architectural programme
Act as critic during a design or study project or as assessor at the end of it.
Allow groups of students to visit his/her office.
Act as a guide on 'promenade urbaine'

Teacher Training

Because they play such a critical role in preparing children to take their place in society as responsible and capable adults, schools have a duty to provide them with knowledge about the processes which create or transform the built environment and so affect the quality of our lives. This requires committed teachers who can engage with the complexity of architecture, but many of them feel ill-equipped for the task.

They need to develop, through their training, a critical view of the problems of the spaces we inhabit and some understanding of the concepts of space, form, function and meaning that are so important for the quality of the built environment. They should be able to combine the themes of architecture and the environment with the traditional elements of the curriculum so that they can transmit essential facts about the built environment in a coherent and imaginative form.

Architectural associations should seek to engage with the educational authorities and with training organisations, and offer their support in the development of suitable training strategies. The successful addition of architectural topics to teacher training is best achieved by professional collaboration between teachers and architects, and may involve discussion and agreements with many partners: state or local governments, universities, academies, organisations responsible for teacher training, and teacher's associations.

Training Structures
The structure of teacher training varies. Generally state or regional governments hold the responsibility; sometimes it is entrusted to private educational institutions. Primary and Secondary teachers may get different training and qualifications in different kinds of institutions. The balance between formal academic education and training in the classroom varies. The initial formation and the continuing education of teachers may also be delivered by different institutions.

So, in any initiative to influence teacher training, the first step is to discover:

- How teacher training is organised in the country / region
- The structure and content of the teacher training programmes at each level
- Which people or agencies have the power to make changes in these programmes.

Training Programmes
Many training programmes already have some architectural or environmental content to meet the educational agenda of the primary and secondary school curriculum. In teacher training for 'Art', the fine arts, artistic techniques, art history and the history of architectural styles tend to predominate. Training for subjects such as Technology, Crafts, and Civic or Environmental Education sometimes includes architectural or related topics but may emphasise the more technical and scientific issues. In the interest of a broader approach to understanding our built environment both of these one-sided tendencies should be avoided.

Content
Teacher training courses about architecture should include:

- a basic conceptual framework for architecture
- an overview of the history of architecture
- an overview of the roles and responsibilities of all of the actors in the development of the built environment
- an approach to current architectural issues
- the nature of the design process
- the vocabulary of architecture

- the development, through sensory experiences, of a feeling for the values of space.

Strategic Interventions

Most training programmes already have very full curricula and the opportunities for inserting new themes may be limited. Periodic revision of school curricula may present a good opportunity for influencing the content of training programmes. In this way architectural issues may be fully integrated into the formation of young teachers or the continuing education of experienced teachers who will be teaching the new curriculum.

The experience of the teacher-trainers should be valued. Methods already used in training teachers in other subjects may be effectively adapted for architectural topics. Interdisciplinary projects or continuing education courses in 'Architecture and the Environment', involving teachers who teach different subjects, are often valuable. In this way teachers, and afterwards their pupils, learn about the built environment from various points of view, so gaining a richer appreciation. This may also support new methods of subject-integrated and cross-curricular teaching.

Interventions can be short, focused and intense. Real learning is an emotional not just an intellectual experience. This is as true for teachers as for their pupils. Something that engages the emotions and imagination of teachers will be most effective, because then they will want to convey the excitement of their own experience to their students. Then it will be remembered. Good examples, descriptive materials and practical, achievable and imaginative exercises will support this objective.

Resources

Most teachers are unfamiliar with the concepts and terminology of architecture; and few architects have been trained to teach young people. Both are helped by having access to good resources designed for the purpose – printed materials, film, databases, toolkits, games, websites and networks. Lesson plans, worksheets, suggestions for topics, advice on surveying, drawing and model-making adapted for children, can all be useful. It is best if architects and teachers develop these together and Architectural associations should help promote partnerships of this kind.

Context
Developing resources demands effort and investment, so it is important to understand the context. If they do not convince teachers or the school authorities that they are educationally valuable, and practical to implement, resources will not be used. Consider the

- Objectives of the National/Federal/Regional/Local education policies
- Administrative and funding structures of the education system
- Structure and content of the existing school curriculum
- Social/economic/cultural background of teachers and children
- Existing pressures and demands on the education system.

These vary greatly around the world and will help determine what general strategy to adopt. Then, at a more detailed level, for what age groups should materials be designed? What are the students' academic and practical abilities? How much time is available? Is it to be structured in short intense blocks of learning or a continuing programme spread out over the school year? What are the architectural and environmental issues that most need addressing in the particular community?

Many schools and communities will already have access to some resources. What is available should be established early in the process; there is no point in replicating work already done.

Teaching Strategy
Architecture and the built environment lend themselves to a very wide range of classroom activities, either as part of dedicated sessions or as vehicles for teaching other subjects. If the resource is designed for integration, first see where the built environment is already addressed in the curriculum and build on that. Then look for opportunities where architectural topics can be used as the vehicle for activities in other subjects. The architects in the team will be able to see connections between architecture and other school subjects that may not be apparent to the teachers.

The use of all of the senses in learning is good practice for any subject, but particularly for understanding architecture and the environment. Most students are motivated by activities that allow them freedom to design or to be involved in "real" world experiences such as visiting a building site, looking at design and construction drawings and meeting an architect or a builder. Some learn best from playful activities; others enjoy the challenge of rigorous intellectual exercise. There are differing models for the concept of 'multiple intelligences': Verbal-Linguistic, Logical-Mathematical, Musical, Bodily-Kinesthetic, Spatial, Inter- and Intra-personal, Naturalist, Moralist and Existential. But resources that are positive, attractive, imaginative, and involve all the intelligences should be the objective.

It is important to start with what is familiar. Students will understand and appreciate the subject matter best when it can be related to their own experiences. For example, they can grasp the concept of plan, elevation and section more easily when given the opportunity to study a familiar place. Their homes, the school and its grounds, the local neighbourhood, are all valuable resources to be exploited.

Format

Resources in the form of advice, materials, tools, teaching kits may be in written, electronic or physical format. Which is most suitable depends on funding, the scale of the programme, the nature of the exercise and the facilities available. Whatever the format, any resource will be more popular if it is well-structured and well-indexed, so that teachers and architects can easily find their way round it and adapt its contents to the educational system in which they are working.

Good quality presentation is a priority. This does not mean the use of costly images or processes, but that illustrations are well-considered, informative and exciting.

Remember also that architectural projects always provide great scope for using re-cycled materials.

Copyright

People involved in the enterprise of teaching children about architecture tend to be generous in sharing their knowledge and experience, but in preparing new resources one must respect the intellectual property rights of others. Concepts or materials originated by others cannot be used without their consent. If they are being referred to in new materials, always identify and list the people or organisations that developed them.

TOPICS

The theory and practice of architecture encompass a very wide range of topics that can themselves be the focus of study or can be integrated into mainstream education for children and young people. The tables that follow are intended to help architects explain to others the potential of architectural topics for interdisciplinary projects and to enrich the school curriculum.

Conceptual Framework for Architecture	
Some concepts are timeless; some have particular relevance in the 21st century. But in every case the regional and local characteristics caused by landscape, climate, history, culture and society must be taken into account.	
Architecture and Environment	relation between the natural landscape and the built environment; meaning of town and countryside, sustainability, ecological footprint.
Architecture and History	continuity and change in the structure and form of buildings and settlements; historic buildings as evidence of their period; development of different building types.
Architecture and Society	the culture of construction; the influence of the economy, political system, technology and social conditions on architecture;
Architecture and Function	functional requirements of activities housed in a building; use and experience of architecture; implications for building type;
Architecture and Housing	housing as a basic need; various forms of housing; social-spatial qualities; changing ways of life.
Architecture and Structure	construction as a precondition of architecture; general principles of structure; traditional and modern building structures and techniques.
Architecture and Technology	Mathematics, natural sciences, materials and technology
Architecture and Aesthetics	the ideal function of architecture; aesthetics; perception and shape of buildings; forms and meanings
Architecture and Design process	the task of architectural design; purpose of plans, drawings and models; the actors in the design process

Working Fields of the Architect
The central tasks of the architect usually involve:
the provision of professional services in connection with town planning and the design, construction, enlargement, restoration, or alteration of a building or group of buildings. These services include planning and land-use planning, urban design, provision of preliminary studies, designs, models, drawings and specifications and technical documentation, coordination of technical documentation prepared by others, construction economics, contract administration, monitoring of construction and project management.
Related disciplines in which many architects play a role include: Town Planning, Structural Design, Interior Design and Landscape Architecture
As part of the design process the architect works in a team with specialists in many areas including: Technical Engineering, Structural Engineering, Statics, Dimensioning, Building Materials Processing, Heating, Ventilation and Sanitary Installation, Electric and Electronic Equipment, Solar Installations, etc.

Current Issues	
These contemporary architectural issues effect what gets built today and are the focus of much architectural and public debate. They are common to many countries, but here it is particularly important to focus on issues that are relevant, timely and appropriate for the specific region or locality.	
Architecture and Urban Design	importance of urban design; organisation of urban space; preservation of landscape space; settlement as designed form
Heritage and Modernity	value of architectural heritage; relationship to new use and to modern architecture; criteria for objective debate and evaluation of old and new architectural forms
Construction & Design Quality	industrialised production and „genius loci"; individual design and prefabricated houses; qualities of good architecture
Modern Forms and Materials	meanings of the materials steel, glass, concrete, wood, stone, brick; traditional or modern processes; new characteristics of materials

Economy and Ecology	building costs and sustainability; use of renewable natural resources; structural maintenance (value of the existing building stock)
Social Factors / Needs	adequate shelter for all (Habitat II); individual and social needs; universal access; public, community and privacy
Participation / Involvement	self-build housing (as economic necessity or self-realisation); involvement in planning personal and public environment

School Subjects

The range of school subjects to which architecture can contribute is wide and the list below is not exhaustive.

Mathematics; Physics ; Chemistry ; Biology; Environmental Studies; History; Geography; Social, Political, Civic and Environmental Studies; Classical studies; Religious studies; Psychology; Health & Safety; Aesthetics; Art and Design ; Photography; Languages; Literature; Music; Crafts; Technology; Technical drawing; Construction Studies; Computer studies; Media studies; Business studies.

The Vocabulary of Architecture

When architects talk among themselves they use a specialised vocabulary that is not easily understood by non-architects. In collaborating with teachers architects must strive to communicate in a clear and generally understandable way. The teachers themselves will need this 'everyday' vocabulary to communicate architectural concepts to their pupils. This is where discussion between architects and teachers should start.

Plan, section and elevation; Shelter; Use; Plane; Space; Light; Colour; Scale; Facade; Materials; Structural systems; Building types; Evolution of design ideas; Vernacular and formal architecture; Building regulations; Site design; Settlements; Urban design; Streets, squares and public spaces; Axis and vista; Urban and rural landscape; Communities and change; Planning laws; Conservation and innovation.