



Educate
Together

School Design - a Patron's view for the 21st Century

Royal Institute of Architects of Ireland, June 30th 2011
Paul Rowe, CEO, Educate Together

Introduction

Before I start, I would like to thank the RIAI for the opportunity to talk to you today and how privileged I feel to be here. Educate Together has an enormous interest in school design and has been extremely fortunate to have worked with outstanding Irish architects in bringing forward new school buildings over the past 28 years. Some of those architects are here today and I would like to pay tribute to them and their skills and commitment.

During that period, Educate Together, supported by the Department of Education has built or taken delivery of a number of school buildings that have proved to be significant to our thinking on school design. Some of these have also been singled out for major awards by the architectural profession. Three are the subject of posters around this hall.

The list includes:

- **1983** Dalkey School Project National School
A&D Wejchert and Partners 1983
A very small site, the use of polygonal class plans to create a homely, varied and interesting space on different levels for children with intelligent use of roof space and central hall. Experimented with shared spaces between pairs of classes, this was later reversed.
- **1998** Ranelagh Multi-denominational School
O'Donnell Twomey Architects
Awards: RIBA, RIAI, Mies, RIBA, Downes Medal
Another very small site, clever use of window recesses to control noise in classrooms immediately adjacent to a busy road, roof garden space for infant children and a design sensitive to local architectural style.
- **2003** North Kildare Educate Together NS
Grafton Architects
Downes Bronze medal. RIAI Award. OPUS special mention
An open site, relocation of classroom storage to corridors to provide additional 'den' space in each classroom with integrated outside gardens, internal courtyard for sensory garden and integrated autism unit.

- **2004 Griffeen Valley Educate Together NS**
Coady and Associates - 2006 OECD list of Schools
Laminated timber frame construction, exemplary handling of acoustics in classrooms and general purpose hall. Gentle child-friendly finishes on walls, light wells, balcony-type internal corridors and the provision of social spaces in corridors
- **2004 Galway Educate Together NS**
Simon J. Kelly + partners
The use of composite panel roofing to give greater flexibility in internal wall configuration. Rotation of classroom 'boxes' to give both secluded external open-air classroom and internal display and interaction space outside each class doorway

Educate Together's experience of the school design process mirrors the changes that have taken place in the funding of school buildings over the past 30 years. Up until 1999, patrons of schools were obliged to provide the sites for school buildings and contribute 15% of the cost of the construction project. Obviously, the financial burden this imposed on a community based initiative such as Educate Together was significant. However, it did ensure that the patron was considered the client, that there was a significant lead in to a project and time for the school community to be involved in the design process. With the commencement of State provided sites, the elimination of the 'local contribution' to buildings on such sites and the growing pressure to provide schools in very tight time envelopes, the opportunity for local involvement in the design process has diminished.

Educate Together believes that with the better forward planning of new school provision that is now possible with the Department of Education's GIS system, the opportunity to re-engage the local community in the design process should be grasped. We believe that such engagement will produce better and more efficient schools and that this can be achieved at no additional cost to the State.

The Patron's view

Under our current legislation, the patron of a school is the only body with the legal standing to decide issues relating to buildings and sites for schools, or to enter into lease arrangements for them with the State or private landlords. We find that architects sometimes do not understand this and presume that by consulting the board of management or principal of a school they are engaging with the decision-makers in the process.

I'd also like to point out that the views I am presenting here today are the views of Educate Together as a patron of schools. Currently there is no joint organisation for all primary school patrons and I cannot allow you to assume that the views I am expressing are views held in common by all Irish school patrons. Having said that, I am reasonably sure that many of the views and concerns this paper expresses about school design will be shared across all patrons.

Key issues

From a school providers point of view, probably the most important factor driving our thinking about new schools is that of the demographic environment. Ireland's population today is but 58% of her 1800 population. In the past 200 years, most European countries have either quadrupled or

quintupled their populations. As the most recent statements of the CSO reveal, Ireland is in an historic period of population growth. Despite our current downturn, it is reasonable to assume that our population will approach 25 million by the end of this century. This means that there will be a need for a consistent expansion of our housing supply and schools in the next 90 years.

Over the past 20 years, the fundamental problem with providing new schools in Ireland has been that of planning. We believe that there has been and still is an unanswerable case for the introduction of legislation to require the builder of new housing estates to provide schools and community facilities as a condition of zoning or planning permission and that this provision should be provided at little or no cost to the State. This would allow schools to be designed as an integral part of a development, set properly as a hub of the community with due regard for traffic, cycle and pedestrian routes. It would also ensure that schools would be available when families need them and may indeed result in developers vying with each other to offer the best designs and added value. What is certain is that if the provision of a school was 'in the big spreadsheet from day one', it would probably not result in any significant impact on the price of housing.

Key planning issues

Over the past 11 years, Educate Together has taken possession of 28 new State-owned buildings. Some of these have been designed in the traditional way, more recently they have been 'generic repeat designs', 'rapid', 'design and build' or 'fast track projects'.

Considering this experience, we would like to highlight a series of key planning and design issues.

In the planning area, the issues are:

Open space

We are concerned that many recent developments in urban areas have not paid sufficient attention to open space adjacent, close or as part of the school grounds. Although there have been very significant financial pressures as a result of the cost of land, we believe that this pressure is now much less. The provision of open space available to schools is a long-term investment and should be seen as a critical planning objective. Schools with good access to green spaces, trees and landscape can derive very significant added educational value.

Safe cycle and walking paths

We live in a world in which a staggering number of parents drive their children to school, in which we are facing an uphill struggle to promote active lifestyles for young people and in which many communities are condemned to 'gridlock' twice a day during the school year. Planning school sites so that pupils can safely be encouraged to 'park and stride', cycle or walk to school should be an important planning objective for local authorities.

Green areas for sports and play

Our school leaders are becoming increasingly concerned that school sites are being planned without access to soft or grass play and sports areas. This effectively means that children cannot play contact sports because they only have access to hard play areas. We believe that this has educational as well

as sporting and health consequences. Pupils need to learn how to fall, to have the courage to stretch themselves and to take risks as part of their education. Contact sports in which children can fall onto a soft grass area are an important part of generating this competence and set of skills. In city centre areas, consideration should be made in the provision of public parks or transport arrangements to playing pitches away from the school.

Integration with community facilities

The recent pressure on site prices caused a welcome focus on the possibility of planning schools in conjunction with community facilities. The concept of a local authority pooling the funds allocated to community resources with the Department of Education's budget for a school in order to provide enhanced facilities is a good one. However experience has shown that great care needs to be taken to ensure that there is a proper management agreement between the bodies sharing the facility and that real boundaries of responsibility are appropriately reflected in the design.

Shared facilities and joint campuses

A similar concern has emerged with sites that are planned to accommodate a number of schools. Educate Together is very much in favour of joint campuses and increased co-operation between schools of different types. This is because schools can always achieve more by working together than they can in isolation. However, it is essential that clear boundaries of responsibility are set and the impact on local traffic and transport is properly accommodated at planning stage.

Key design issues

Acoustic performance

If there is one point that you take from this presentation, I would like it to be the question of acoustic performance. It has been quite remarkable to me that - in relation to most of the new schools Educate Together has taken possession of in the past six years - many of the buildings have required expensive retrofitting of acoustic treatment. Shortly after we took delivery of Griffeen Valley ETNS, which has exemplary acoustic performance, and which teachers regard as a space of delight in which to teach, I was astounded to hear that acoustics had not been regarded as a prime design criteria for Irish primary schools. This must be corrected. A school - especially a primary school - is essentially a holder for a complex relationship between children, teachers and parents. This relationship overwhelmingly takes place through the spoken word. If a classroom, a general purpose hall, a corridor or office has a strong standing echoes, it damages that communication. If a teacher has to strain her or his voice to be heard over ambient noise, that strain is communicated and it changes the tone of the interaction, is transferred to the class and induces fatigue. For a teacher, the voice is the most important instrument, if it is worn out or damaged, the performance suffers. For the child, the ability to hear clearly is critical. Young primary school children are constantly training and tuning the sound and language centres of their brains. Most of language acquisition is based on the ability to distinguish subtle differences in frequency, modulation and texture of sounds. This applies to all children but is even more significant where there may be slight or non-diagnosable hearing deficiencies and in particular where a child is rapidly acquiring a new language that is not the language of their home.



2004 Griffeen Valley Educate Together NS
Coady Partnership
 2006 OECD list of Schools



Light, *Darkness* and Ventilation

Recently, architects and builders have become almost fixated with air-tightness. At the handover it is always the figure that is highlighted to indicate the quality of the job done. This is great and leads to significant savings in heating costs and carbon footprint. However, we need to balance this with an equal regard for air quality in the classroom.

We continuously see the welcome attention to natural light and control of artificial illumination in school designs. This is an area in which Irish architects are very articulate and comfortable. However, I would like to draw your attention to the need

for occasional darkness! Nowadays when almost all classrooms have a large screen and a digital projector of some type including interactive whiteboards, we now often have difficulty in darkening the space in order to achieve good contrast in the projected image. Children see very high quality digital images at home on TV, computer and their personal devices. They expect a similar level of image at school and can lose interest in and regard for content that is poorly presented. We anticipate that, as real-time interaction between schools and events increase, there will be a growing need for easily adjustable blinds or shutters for classroom and hall windows.

Surface treatment - sensory elements - smell, taste and touch

In this paper, I am making an appeal for architects to become more child-centred in the way that they think about school buildings. Architects are very articulate with space, light, structure, sustainability and regulation. Children are aware of space and light and atmosphere and are particularly alive to and

imaginative with the full range of senses. Colour, sound, touch and feel, smell, taste. We would like architects to think about how a stairwell sounds, how a classroom wall feels and how the air in an entrance space smells. Children also hear value in what we provide for them. A school building that is predominantly painted blockwork may say to a young child that society gives their school the same value as an industrial unit and far less value than their home or a hotel. Increasingly, primary schools



1998 Ranelagh Multi-denominational School *O'Donnell Twomey Architects*
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are finding great educational value in presenting children with a rich sensory environment. Internal courtyards allow schools to invest in sensory gardens and place valuable interactive objects in them. The best examples provide a wide range of tactile surfaces, herbs and vegetables, musical and visual elements and have artwork and interactive science features. Most of these have been undertaken through a voluntary community initiative in which local parents, supporters and artists work with children. It is important that an architect sees that such initiatives are possible and that space is allowed in the design for such projects. Other internal and external spaces should also be seen to have such potential.

Integration of special needs

In Irish education, we are probably near the half-way mark in our efforts to produce a system that appropriately integrates children with special needs. From the early experiments in the 1980s we now are at a stage where most primary schools are becoming competent in this area. The impacts on school design are that we have more staff in our schools and these staff must be catered for in

staffroom and storage space. There is an increase in necessary administrative overhead and there are specific design requirements. All new schools conform to the rules for public buildings and I am not going to dwell on more generic matters such as wheelchair access. I notice that it is now a requirement for all applicants for new schools must be prepared to accommodate a special needs unit as part of the school plan. The provision of such units is one area in which there must be greater engagement with school providers. As a patron body that has a very high proportion of schools with autism or assisted learning units, we have already a range of concerns that should be of interest to anyone commencing a design. We have a group of principals who meet regularly to review such matters. To give one example, we have found that great care and attention should be paid to how children enter and exit units and to providing a way in which they can enter or leave the unit when distressed or embarrassed that is sensitive, protects their privacy and minimises upset or speculation amongst other children.

Regard for child-height sight-lines

Another strong point I would like to make today is to ask you all to get down on your knees when designing or evaluating the design of a school. Irish primary schools start with 4 year olds and go up to 13 year olds. Most of your clients have a height around 1m and the most impressionable less than that. The classroom may have an wonderful view of the sea or mountains to the teacher, but it may be that this view can only be seen by children in the last year of their life in school. Please be aware that children spend a lot of their time looking up and that the ceiling detail that you think is generally ignored in the adult sight line may be the daily image of your work for most of your clients. This is a general comment. Please apply it widely, if you have young children bring them in to evaluate the spaces. Head height and inquisitive fingers are important. It applies to a number of issues of detail. For instance, in a number of the recent new schools we have seen a repeated issue of crush danger to little fingers in storage units and razor sharp edge detail left uncovered on external window sills.

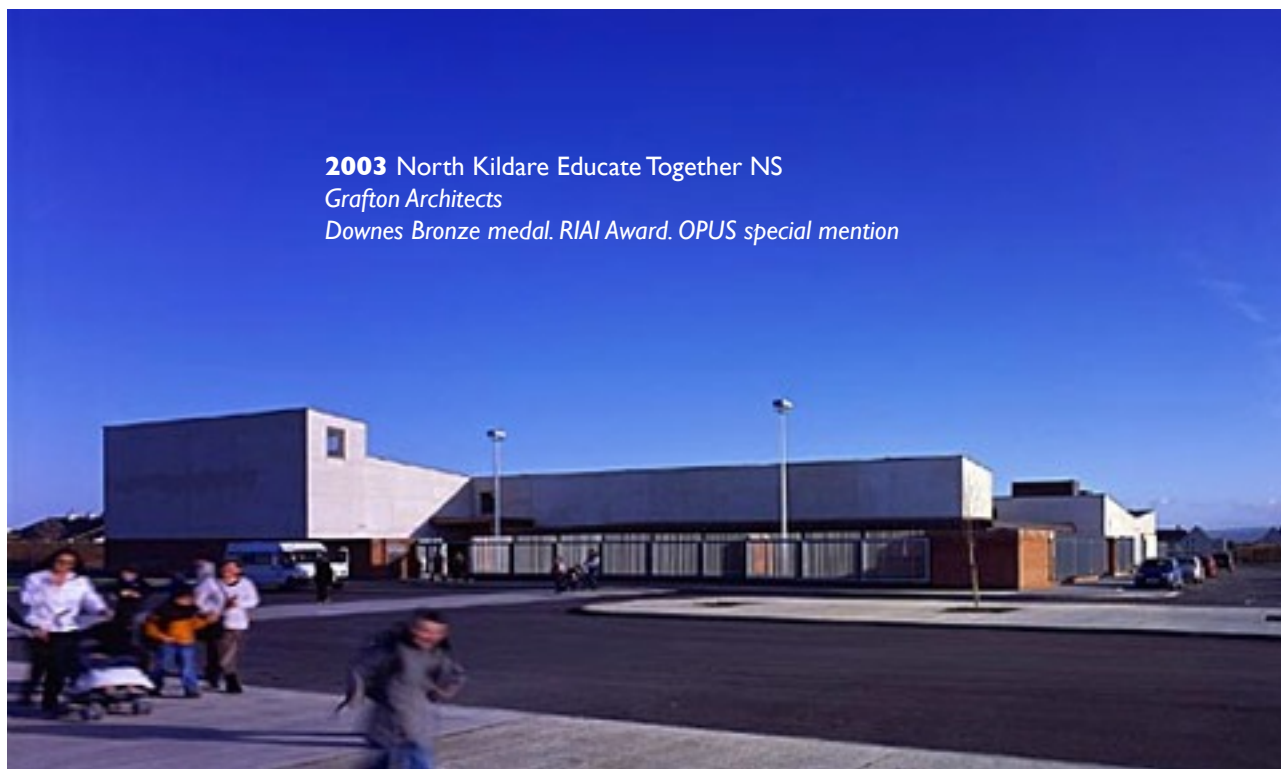
New learning paradigms - integration of ICT - different learning styles

The learning environment in schools is changing and will continue to change rapidly. This is partly because we are increasingly teaching to all the human intelligences and have recognised the necessity to address different styles of learning. It is mainly due to the impact of ICT. ICT is now becoming a ubiquitous part of life and society. Schools are still trying to catch up. Even children in disadvantaged neighbourhoods tend to have more powerful computers on games consoles and mobile phones than they do in school. We have gone from the idea of a computer room (if we the school could afford it) a school server, through laptop carriages and interactive whiteboards and are now in the era of the personal device.

The acquisition and retention of factual knowledge is becoming less important than the acquisition of the skills to process, manage and live with the vast amount of information that is now available to all of us.

ICT will become a ubiquitous part of school life and will be personal and mobile. It will blur the barriers between school and schools, home and the community. Children today may be taught a lesson in real time together with a class of children in a different country or even continent. Homework will be an

active interaction between teacher, parent and child. Science projects will involve other schools or universities and will need high levels of audio and visual communications. If a primary school child discovers a species that cannot be identified in the school, the digital microscope image will have to be sent to the second-level school up the road or a zoology department of a university for analysis. Consideration will be required to the darker and quieter spaces that will be necessary for this type of interaction to happen effectively.



Learning centres rather than classrooms

Classrooms will continue their transition from the traditional box with teacher and board at the head of ranks of children at tables towards become learning centres in which children are using a range of spaces and technologies to explore their subjects. This is becoming a really important issue in the planning of second-level schools as the curriculum and methodology in that sector undergoes change. It is certainly a major issue for Educate Together as we plan our first second-level schools and we even have a national working group on the 'built environment' as part of this project. However it is still an issue in primary education. Children will need more flexibility in the use of spaces and in our opinion, rethinking the indoor and outdoor spaces outside the classroom offers many benefits.

Relationship between internal and external space

A well-run Irish primary school that is implementing the revised curriculum and is availing of all the extra resources available to it from its community, local and national government and the EU is a



2004 Galway Educate Together NS
Simon J. Kelly + partners

vibrant and exciting place. Irish primary school children are engaging in diversity of culture, religion and language, in a range of sports, in arts and performance, in science and enquiry and the entire area of responsibility for community and the environment as never before. Schools are full of interaction and artwork from different cultures, international days, human rights discourse. Primary school children are participating in national and international competitions in science and technology; are competing in a wide range of competitions including Tidy Towns and competing for Green Flags and now even Yellow Flags. Schools are linked with other schools within the EU through the Comenius programme.

From a design perspective, there is a need to ensure a spacial scaffolding to allow all this dynamic activity to occur. We believe that a new way of looking at circulation space, corridors, library areas and external spaces would be very helpful.

Typically an urban primary school will be expected to have a recycling programme based in the school, raised beds and even polytunnels for practical horticulture, space for wind energy and other experiments, chicken runs, nesting boxes, different soils and habitats. We believe that if we can find ways of providing an external classroom as an extension of the standard classroom this can be achieved at very low cost and with very significant added value.

Possibility of rotating the standard box classroom

Doubling the teaching space by opening a classroom wall to the outside is naturally much easier in a single story configuration and we acknowledge the challenge of doing so in a two or three story building. However, the best example we have is the Simon Kelly design of Galway Educate Together

National School in which the conventional classroom box has been rotated along the corridor axis, thus creating a natural and secluded patio area outside each classroom. Other designs can simply provide a door to the outside with a rectangular area marked out. The advantage of the Galway configuration is that each external space is visually isolated from the next so that children can 'do their own thing' without this being immediately observed by a more senior or junior class.

A further advantage of rotating the class box is seen in the impact this has on the internal corridor or circulation space.

Circulation areas and spaces for group work

In the Galway example, each internal wall of the classroom butts into the traditional corridor at an angle and so creates a series of triangular free spaces outside each class. This then can be utilised as a display area or quiet zone particular to each class. Current projects can be displayed for all the school to see, comment boxes can be provided for feedback, chairs can be provided for a small group to work on a project on their own when the outdoor space cannot be used due to the weather. Any concerns for supervision can be allayed as all spaces can be easily monitored from one end. This design complied precisely with the DES schedule of costs so it is our view that such innovations can be achieved within the current tight funding envelopes.

Some general points

System build appears to offer great benefits to the end-user but reduces involvement at the design stage

There has been much controversy amongst patrons and school communities about the recent versions of Generic Repeat Design, and the more recent rapid and fast track schools. System building offers dramatic benefits to end users. The schools are built to very high tolerances, are built dry and delivered on time. Delivering the schools in planned phases allowed the Department to intervene to provide a high-quality start up building very efficiently indeed. During the crisis period we are now coming out of, some system built schools were operating as fully functional schools four months from breaking ground.

The downside of this performance has been the lack of time to consider design elements and to adjust the buildings to the local conditions. Now that we are moving into a phase in which the Department has a GIS that is predicting demand for schools with increasing accuracy, we would like to see the combination of the efficiency of system build with the involvement of the local school community at the early stages of the design process.

Educate Together believes that school prosper the better they engage and involve pupils, staff, parents and the community in the learning process. The school design and building process should scaffold this engagement and allow it to flourish. It should also scaffold the considerable social capital that is released if the school is considered as an integral and central part of the community. The Irish national school system is one of the most efficient systems of public service delivery in the world. It is managed by 24,000 volunteers, its management costs the State €1.47 per pupil per annum. It is a

fantastic example of social capital or active citizenship. One of the consequences of this dynamic is that schools can regularly access resources and goodwill that our State can no longer afford.

We believe that if the primary school is thought of as a community investment, benefiting not just the families of the children who attend but also the community as a whole, through joint use of halls, the provision of sports, cultural and social courses and opportunities, language courses, adult education and pre-schooling, then this goodwill and sense of ownership can be leveraged to finance features that may otherwise be outside the budget.

The example I have in mind is a school that would like to have a grass roof and could see many educational uses of such an ecological feature. The school could not afford it but funds it by asking local businesses to sponsor it square metre by square metre. The planting and preparation could be supervised by the local Grow It Yourself group who could use the school building out of hours for their talks and who could help out with the horticultural parts of the school programme.

The potential for such initiatives and partnerships with local clubs, associations and businesses including public bodies and local government should be borne in mind at an early stage of the design process.

Conclusion

In conclusion, Educate Together is trying to run schools that inspire and empower this generation of children to be active, responsible, kind and caring citizens who contribute to themselves, their family, community and world through good social and thinking skills. We want to prepare them as well as we can so that they can deliver their best in a vibrant, challenging and diverse world. We would like the design of our schools to reflect these values and to provide a supportive scaffold for our work. The built environment should reflect the educational aims or 'ethos' of the school, which in our case involves a great appreciation of the natural world, the environment, human dimensions of equality, rights and justice; ideas of sustainability, appropriate challenge and collaboration and rich spaces for imagination, reflection, experiment, performance and display.

As I mentioned at the beginning, we have had wonderful results working with Irish architects and the Department over many years. Educate Together looks forward to working with the RIAI to further the discussion on school planning and design and looks forward to working with architects to produce many more buildings whose function is to inspire.

Paper expanded from short presentation to the RIAI Colloquium, Dublin, June 30, 2011

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