

Changing Spaces, Changing Places

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The last five years have seen a revolution in the way that space and time are used in many organizations. New ways of working have allowed organizations to integrate the physical work environment into the business process in new ways, creating effective work environments that encourage interaction and communications.

Information technology has played an essential role in the transformation, allowing organizations to integrate a wider range of urban, suburban and rural work settings into their workspace strategies as mobile communications and ubiquitous access to high speed broadband networks, fixed or wireless, allow most people to work anywhere, any time. The need for building or space ownership becomes less significant as space is purchased on demand, on an hourly, daily or monthly basis, or as non-owned spaces such as hotels, airport lounges, and clubs become a standard part of many people's working week. *The city is the office.*

The future will see even greater challenges: both at the level of the individual trying to use the scarce resource of time more effectively and at the level of the organization trying to manage a dispersed workforce while creating the spirit and teamwork necessary for organizations to continue to generate new ideas and thrive. Public and private organisations will increasingly move outside of the physical container of their own buildings into larger organizational networks incorporating both owned and shared spaces that may be located across cities, countries, or anywhere in the world.

With distributed work forces accessing buildings only periodically, the role of buildings is shifting dramatically. If work can take place anywhere, why should someone come to the office? The office is increasingly an opportunity to express the culture and reinforce the values and beliefs of an organization rather than as a container where all the individual, concentrated work takes place. The physical work environment and the opportunities it provides for interaction and collaboration aid knowledge transfer and communication and will form the infrastructure for learning organizations.

Many people are also experiencing the blurring of boundaries between living, working and learning, again facilitated by information technologies. Mobile communications and global business practices mean that people can remain connected 24 hours per day, 365 days per year and engaged in their work activities whether at home, on holiday or while traveling. The ipod, for example, is a device that was designed to deliver music to an individual listener but it is now also used for delivering learning at schools and universities, transferring digital x-ray and other medical information within hospitals and for delivering business presentations and news via podcasts. The person sitting on a train with headphones on could be learning a new language or new skills rather than just chilling out to music.

The future will be about options, about choice for individuals, groups and society. It will be about constructing and managing one's personal, academic and professional life out of a potentially bewildering set of options. It will be about using the city and technology in new ways to make the most effective use of limited time or resources. Sustainability should be thought of in terms of providing effective living and working environments that are able to meet the needs of both these contexts while minimising the use of non-renewable resources.

Resource use will become an increasingly important issue that will come to dominate discussions when considering the construction of new buildings or how buildings should be used over time.

For a century the strategies of zoning, reducing density and dispersal of the population have been used to improve the quality of overcrowded 19th century industrial cities. The success of these strategies has engendered a whole new breed of problems. The modern city that is the legacy of this hundred year campaign is dispersed, thinly occupied, impermeable, wasteful of resources, inconvenient and expensive.

Buildings have more impact on the environment than any other energy consuming device. The current focus on designing green buildings ignores the much greater impact of the cost of construction and the use of what we build. Fifty percent of energy consumption in the UK is bound up in the construction, operation, renovation and demolition of Buildings (Institute of Civil Engineers). Office buildings are typically only used to about 30-40% of their capacity during their core operating day and utilization rates of teaching spaces at universities are even lower at around 18- 21%, with specialized science laboratories and other facilities sometimes dropping to 5-10%. While schools are more heavily utilized during their core teaching day, the lack of use over the full 24 hours they are available as a community resource or during holiday periods reduces overall school utilization to about the same level as universities (18%).

Despite the poor utilization of existing buildings the pressure mounts for the construction of new buildings in virtually all sectors of the economy with the consequence that it is forecast that 6800 hectares of countryside will be urbanized each year over the next twenty years. With a scenario like this, do we really need more real estate or do we need to use our existing building stock and infrastructure in radical different ways, constructing new building only when appropriate rather than the norm?

In the United Kingdom, zoning strategies should be reviewed to see how they could be used to increase the density of occupation of buildings and urban space to make optimal use of city infrastructure. The abandonment of rigid zoning, combined with a new understanding and acceptance of density, will give communities, architects, property developers and real estate advisers opportunities to encourage and support occupiers in using space better. The increasing mobility and intense interaction which are key characteristics of the knowledge economy will demand more permeability and more crossing of boundaries between functions and organisations, not separation and exclusion, and the future city needs to provide this through a richer mix of buildings that can accommodate different uses at the same time or transform easily between uses over time, driving the base building infrastructure harder.

Some possible implications for education.

1. Schools as part of mixed use developments

Schools could be integrated into other building types such as office buildings, sports and community facilities or may become part of an integrated learning environment that could include universities, colleges or cultural institutions such as museums or libraries in order to share resources and intensify space use over time.

2. Extending 'Extended Schools'

Extended schools initiatives currently focus on bringing community functions into the school and the use of school facilities out of normal school hours. A more radical approach in the future could be to think of a school as a 'social enterprise' where one of the 'business streams' was learning and where the school was also used for a wide range of other activities during core school hours as well as out of hours. The library/ resource centre could also be a neighbourhood work centre, office space could be rented to small

businesses or local government and the school's sports facilities could also function as a community health centre.

3. Creation of distributed schools utilizing existing facilities

Rather than creating new, stand alone schools, it may be more resource efficient to reduce the school footprint to a minimum and make better use of existing city facilities or pool resources between a number of schools to avoid duplication and under-utilization of specialist facilities such as university science laboratories and other facilities, sports centres, vocational training and skills centres or IT/ advanced visualization centres.

4. Use of technology as the fixed/ stable part of the school experience

With increasingly distributed learning taking place virtual learning environments are likely to become a fundamental part of the learning experience, acting as the 'glue' in the learning experience, accessing learning resources, providing personalized learning journeys and facilitating communications between students and teaching staff. The form of these environments is likely to change from being flat '2D' document repositories to being '3D' representations of learning environments in Second Life-type virtual places, mirroring the shifts occurring in the commercial workplace and society in general where 80% of the adult population are likely to have some form of virtual representation/ avatar by 2012 (Gartner,2007).

5. Creation of learning-centred communities

The blurring of boundaries between living, working and learning may provide the opportunity to create community hubs that blend learning, working and leisure activities in new ways, perhaps integrating a range of general learning spaces for school, college and HE use with library, IT resources centres and work centres supporting individual and group working.

Research Challenge

Research hypothesis:

Information technology will facilitate the creation of new types of physical and virtual learning spaces that can be integrated into the community in new ways, providing opportunities for effective, supportive and sustainable distributed learning in shared, mixed use facilities.

Research stakeholders:

A key element of this hypothesis is that the future will be about the blurring of boundaries between living, learning and working and that this will result in the creation of new multi-use spaces that can accommodate all of these activities, allowing more effective and sustainable use of space and time at both an individual and community level. Therefore it will be necessary to engage with a wide range of stakeholders from across the education sector plus elements of the supply chain for commercial offices and housing. The range of organizations that would be engaged with during this project are listed below as potential interviewees.

Research method:

1. Desk research/ case studies

Desk research into innovative, multi-function community learning, leisure and work centres including schools and university based learning centres, libraries, museums, local government centres. This could include mixed use learning spaces such as Discovery in Christchurch, New Zealand (a school above a Department Store), Idea Store in Hackney, the British Library work zone and informal work settings such as The Hospital and the Wellcome Club.

2. Interviews/ focus groups with stakeholders

Additional interviewees will be identified during the initial desk research phase of the research project but interviewees could include the following:

1. Partnership for Schools/ DCSF
2. British Council School Environments
3. Commission for Architecture and the Built Environment
4. Peabody Trust
5. Commercial developers (e.g. Igloo, Stanhope, Barratt)
6. University VCs (e.g. Prof. David Chiddick, University of Lincoln)
7. Learning Skills Council
8. Chartered Institute of Library and Information Professionals
9. British Council for Offices
10. Professor Stephen Heppell

3. Write key findings short report identifying themes and issues from the case studies, interviews and focus groups.

This report will be distributed widely for comment across education and real estate sectors.

4. Stakeholder event: one day workshop reviewing key findings and identifying three to four possible new learning centre opportunities that may meet user demands and be commercially viable and sustainable.

5. Development of learning centre options

Development of strategic briefs and concept designs for learning centre options including generic space budget, descriptions of learning settings and the creation of use scenarios for each of the options.

6. Presentation of learning centre concepts and options at a one day conference.

Resource estimates.

It may be possible to partner with one or more universities or use a freelance researcher for some elements of the project to manage costs or increase the depth of research and number of interviews etc.

One possible collaboration partner would be Professor Virginia Gibson, Professor of Corporate Real Estate at the University of Reading who has undertaken considerable research into new workplace models and the supply chain for corporate workplace.

This research project should also interface with the **Learning Landscapes** research project, funded by the UK HE funding councils, which will be exploring the leadership and governance implications of a learning landscape approach to the HE estate – including the blurring of boundaries between HE and other learning and the workplace. This project will start first quarter 2008 and DEGW is the researcher leader for the project.

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