



Space for change: *educational transformation and Building Schools for the Future*

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DEGW
OFFICES IN EUROPE, ASIA-PACIFIC AND THE AMERICAS

Context: work is changing

- Shift from paper processing to knowledge brokering
- Open and non-hierarchical organisations
- Value in ideas not the manufacture of product
- Work when we like, where we like, how we like
- Organisation mixture of “core staff”, “freelance staff” and “partners”



New paradigms of space ownership



CORE SPACE

- icon and image space
- long lease/freehold
- prime location
- highly serviced



FLEXI SPACE

- shorter leases
- administrative or
- sales space
- conference/training space

AVIS

PAY-AS-YOU-GO

- licensed or pay for use
- shared/ borrowed from partners

“Company’s assets are ‘know how’, not physical assets”

The distributed workplace

VIRTUAL ← → PHYSICAL

Knowledge Systems
e.g. VPN/Intranet
The Hive BP



private
protected access
individual or
collaborative workspace



e.g. Home/office

Knowledge communities
e.g. IM, project extranets
video conference



privileged
invited access
collaborative project
and meeting space



e.g. clubs,
airport lounges
(‘baby’)

Internet sites
e.g. public chat rooms,
information sources,



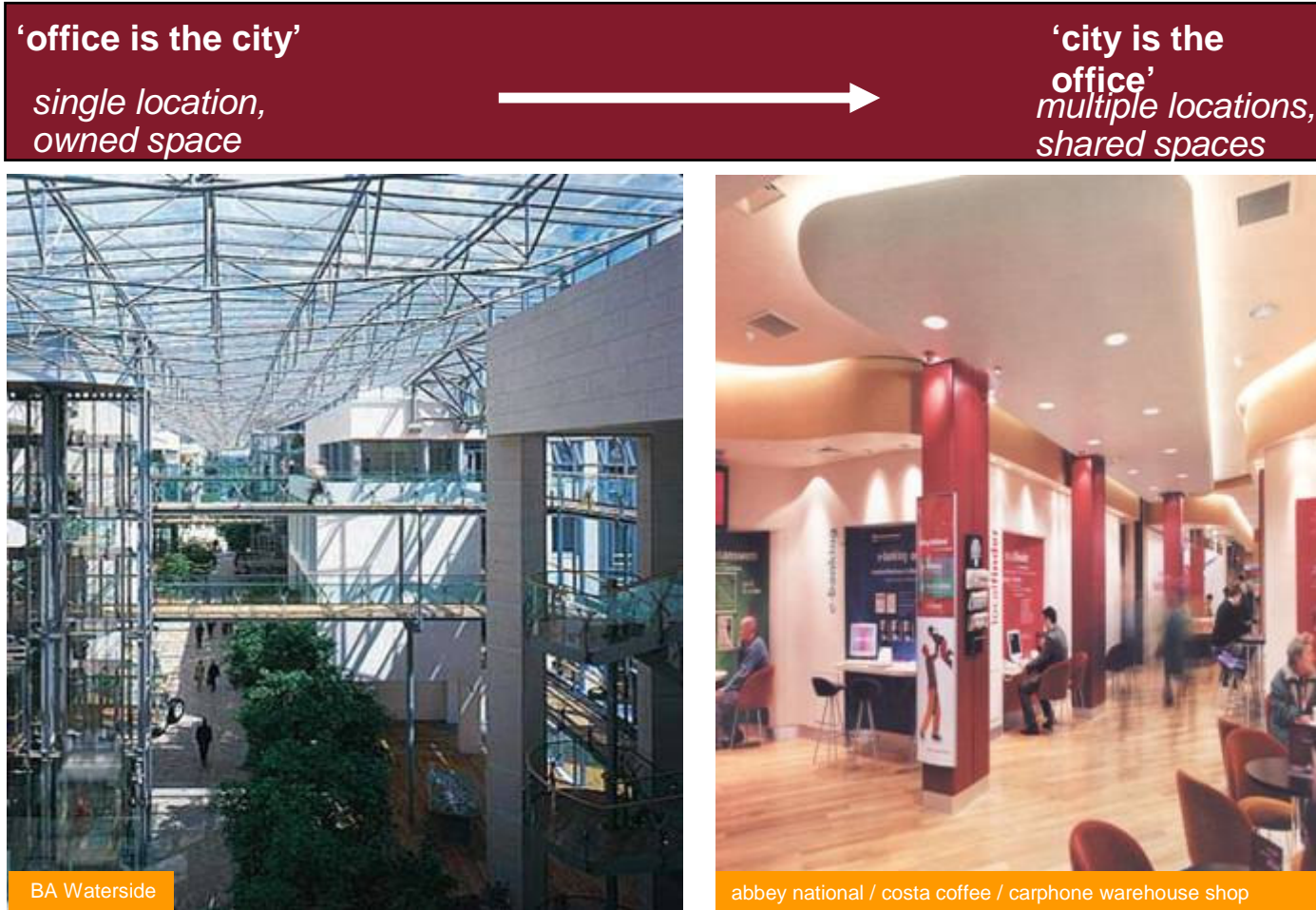
public
open access
informal interaction
and workspace



e.g. café, hotel
lobbies
airports
(Bryant Park
New York)

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The city is the office



Increased use of distributed, shared workplaces
Move from fixed to variable costs



Department of Children, Schools and Families, London

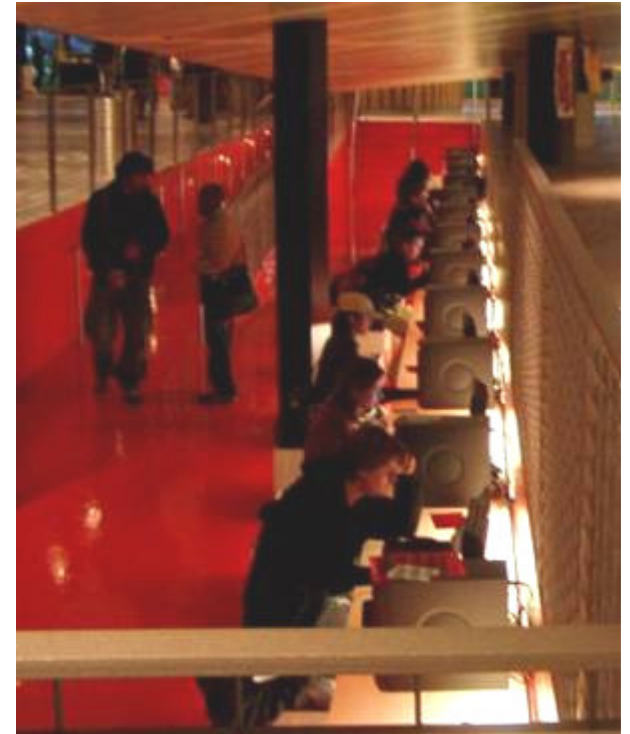




Is a similar transformation occurring in education?

The rules are changing.....

- The internet has changed notions of place, time and space
- Emerging new methods of teaching and learning based on an improved understanding of cognition and advances in technology
- Effect of demographic changes on learning population
- Changing financial context for education: increased competition, pressure on resources
- Impact of changes in government policy: role of schools in the community, increasing participation
- Blending of living, learning and leisure
- Life-long learning



Where does learning take place in the UK?

Some numbers.....

The floor area of maintained primary and secondary schools in England is in the order of **60 million sqm**, with a replacement value of around **£130 billion**

Source: DfES 2006

Publicly funded Scottish schools comprise **8 million sqm** of space on a site area of 51 million sqm, with a replacement value of **£7.7 billion**

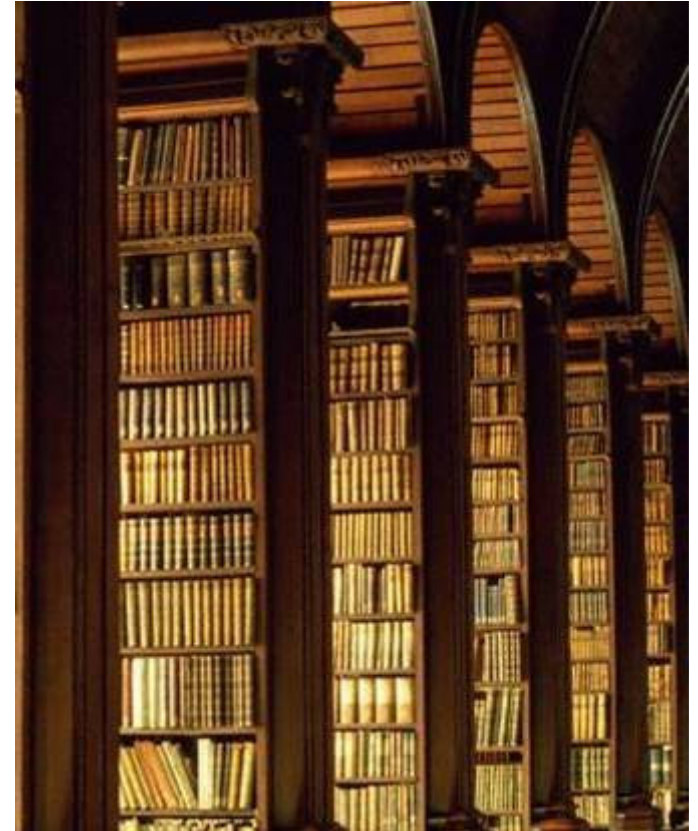
Source: Scottish Executive Statistics 2005/2006

The UK Higher Education estate comprises **24.9 million sqm** of gross space with a replacement value of **£38.9 billion**

Source: AUDE review 2005/2006

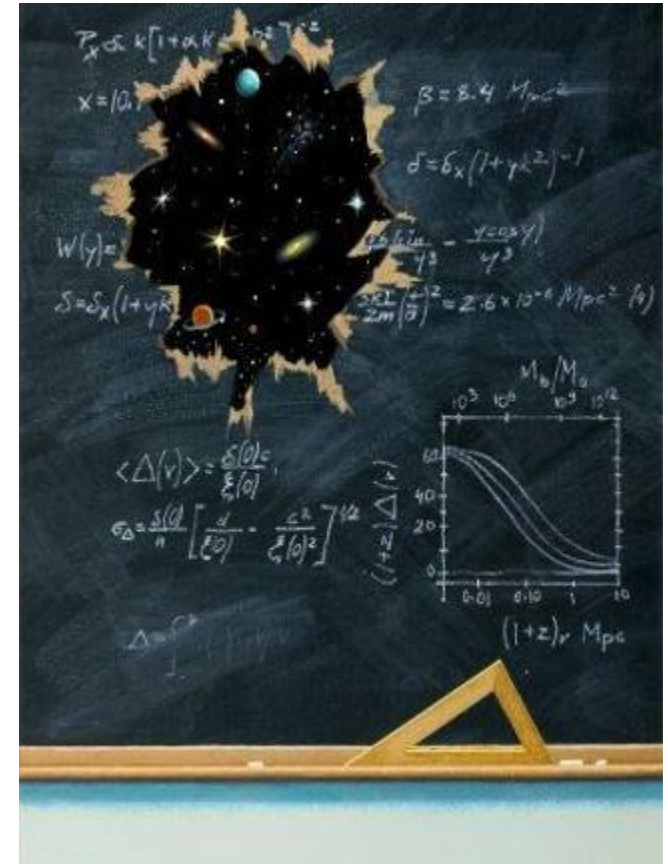
Utilisation of educational space

- School classroom utilisation approx. 80% during core day
- Schools currently only used for about 18% of the total time available
- Utilisation rates of 15% - 20% still common in UK universities
- Little attention paid to utilisation of library and social spaces
- Use of space out of core hours and term time is increasing
- Scope for major rethinking of use of space and time in education across schools and further and higher education



Building Schools for the Future (BSF)

- Major investment underway across all areas of education:
 - Refurbishment or replacement of every secondary school in England
 - £60 billion+ investment in England over 15 years
 - £5 billion -10 billion spend on IT
 - a new school every 3.5 days for 15 years
- Additional investment programmes for primary schools, Academies, plus Scotland/ Wales/ N. Ireland
- **Revolution not evolution** in education practice - rethinking education process, use of space, time, and technology



Government view of BSF

- “BSF aims to create learning environments which inspire all young people to unlock hidden talents and reach their full potential; provide teachers with 21st century work places; and provide access to facilities which can be used by all members of the local community.”

Source: Partnership for Schools website

- “Ministers expect local authorities to use BSF to deliver a step change in attainment levels by increasing school diversity and enhancing parental choice in their areas “

- Source: Partnership for Schools Guide to the BSF Programme 2008



Good press

- First new build BSF school reports "best ever" GCSE results
- The percentage of students achieving top GCSE grades has almost doubled at the first new build Building Schools for the Future (BSF) school.
- Bristol Brunel Academy - one of 13 BSF schools now open, and the first to be delivered by a Local Educational Partnership - is today celebrating the fact that 34% of students were awarded five or more GCSEs at grades A* to C including English and Maths, up from 19% last year.

Source: P4S Press release 21 August 2008



Bristol Brunel Academy

"Whenever I visit new or refurbished BSF schools, teachers, students and their parents tell me what a difference the new environment is making, and independent research is starting to confirm this as well.

Young people feel safer, they feel proud about their school and want to go there every day, and most importantly they feel inspired to learn."

Tim Byles, Chief Executive of Partnerships for Schools, the government agency delivering the BSF programme



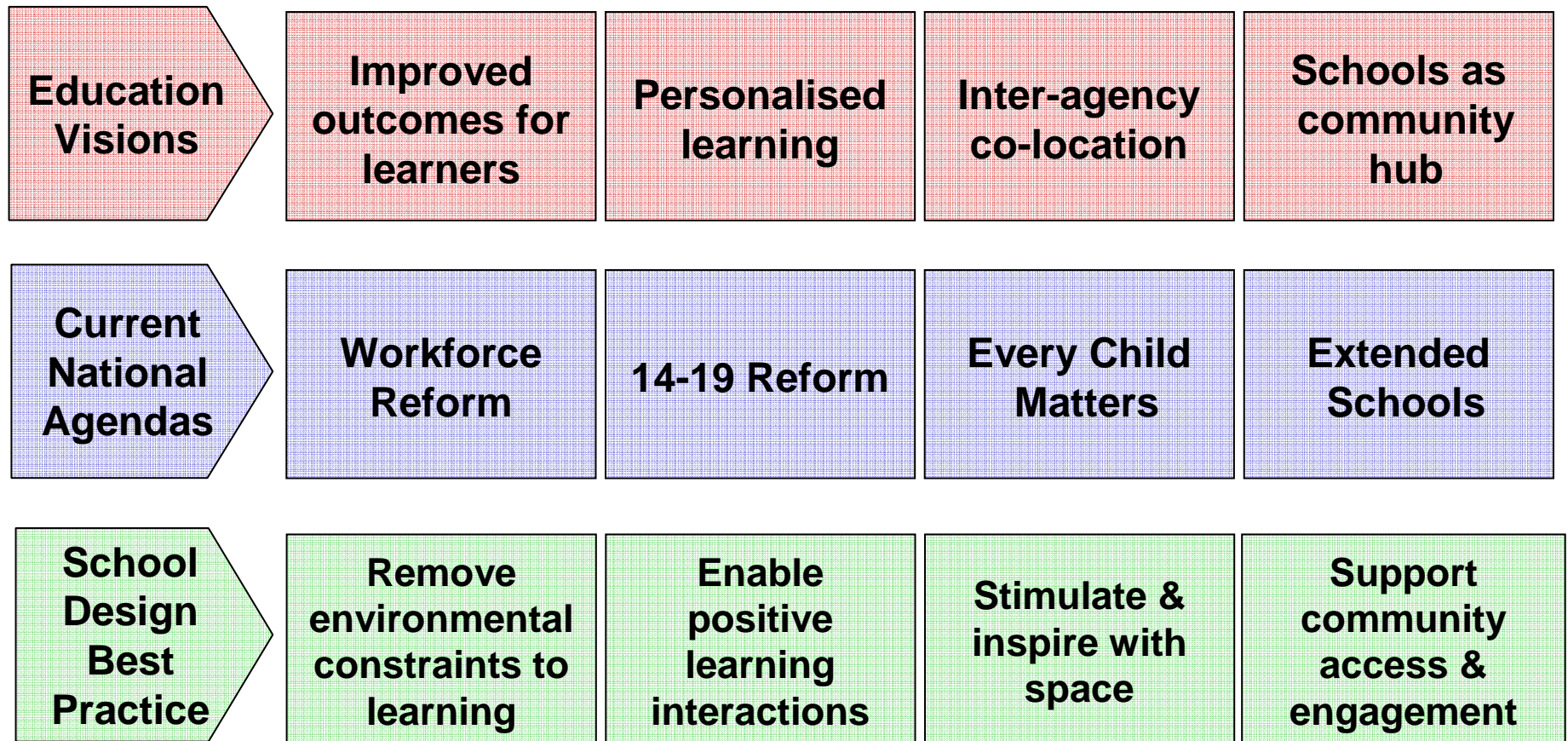
Beware of the Hawthorne Effect....

- Research into the effects of the school environment on young people's attitudes towards education and learning
- Students felt safer and enjoyed school more in their new BSF school.
- The proportions of students who said they :
 - felt safe at school most or all of the time increased from 57% to 87%
 - felt proud of their school increased from 43% to 77%
 - enjoyed going to school increased from 50% to 61%
 - expected to stay on in the sixth form or to go to college increased from 64% to 77%.



Source: National Foundation for Education Research

Delivering 21st century schools



Every Child Matters: physical implications of policy

- Every child to have the support they need to:
 - Be healthy
 - Stay safe
 - Enjoy and achieve
 - Make a positive contribution
 - Achieve economic well-being
- Organisations involved with providing services to children will be teaming up in new ways, sharing information and working together
- Creation of personalised learning and support programmes for each child
- Spaces to support individual and small group learning
- £800 million committed so far to implement Extended Schools programme across the UK



Extended Schools

- Extended Schools provide a range of services and activities to help meet the needs of children, their families and the wider community
- Services may include childcare, adult education, parenting support programmes and community-based health and social care services
- Increased use of the school beyond the normal school day
- Boundaries between the school and the community are dissolving – the locked school gate will be a thing of the past



Personalised Learning

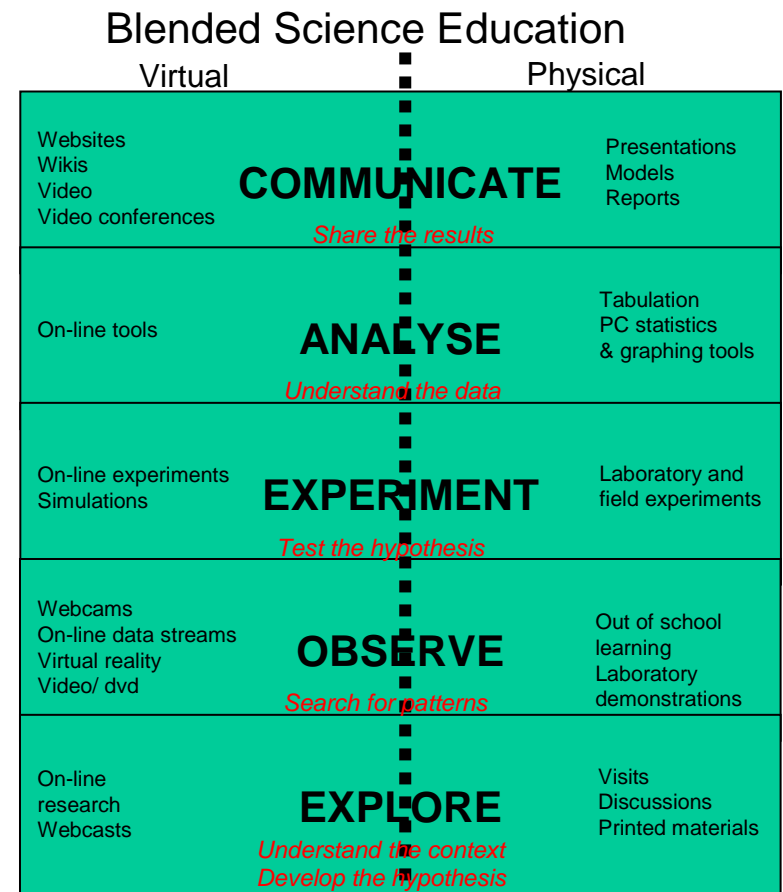
- Key driver of the Government's transformational education agenda and it is also central to the DCSF's Children's Plan.
- Taking a highly structured and responsive approach to each child's and young person's learning, in order that all are able to progress, achieve and participate
- 'Space for Personalised Learning'
 - DCSF funded, DEGW led \$7 million research project 2008 – 2010
 - explore the implications of personalised approaches to teaching and learning for the design and use of space
 - new-build and refurbished primary and secondary schools.



Project Faraday: rethinking science education

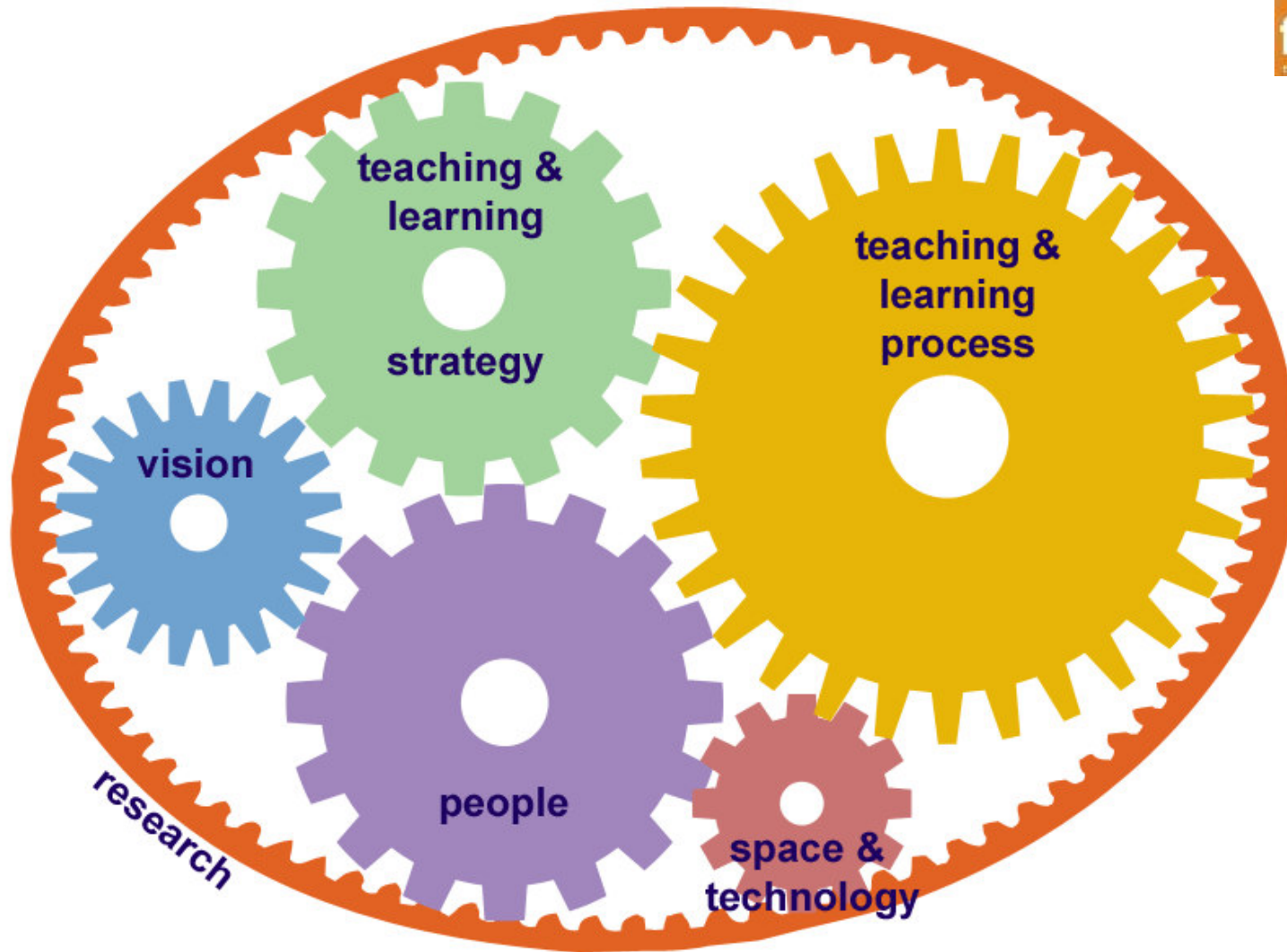


- Poor quality science spaces seen as major factor in reduction of science student numbers in HE
- Re-invent science spaces and the school ‘science experience’
- Make science more attractive to students
- Linked to changes in education policy – students as consumers of science rather than producers
- Achieve transformation within existing space and cost guidelines (BB98)



© DEGW 2006

The Faraday Process









BSF procurement process

- 10 waves of local authorities scheduled for BSF programmes over next 10+ years
- Redevelopment/ remodelling of all secondary schools in the area (50% remodel, 50% new build)
- Key role of 'Strategy for Change' documents at school and local authority level
- 'Streamlined' procurement process 26- 30 months to construction
- Bid costs for a BSF project £3 million - £4 million
- Selection of development consortia based on small number of sample schools
- Delivery of remaining schools through a Local Education Partnership (LEP)
 - thin LEP
 - fat LEP
- Demonstrated regeneration benefits of BSF programme may move a local authority up the queue

Building Bulletins 98 & 99: setting the limits

- The floor area for schools is calculated using the national space guidelines for secondary schools in DCSF Building Bulletins 98/ 99 based on 10 year pupil number projections
- The floor areas for each type of space are totaled and a standard cost allowance applied at new build, major refurbishment and minor refurbishment rates.
- The notional space breakdown within BB98 is often used as design guidance by architects and local authorities – results in conventional school designs
- **BB98 is a financial allocation and planning tool not a design tool**
- Educational transformation is possible within the constraints and boundaries of BB98/99

LOCAL AUTHORITY TASKS

LOCAL AUTHORITY SCHOOL INTERACTIONS (HEADTEACHER & CHAIR OF GOVERNORS)

PROJECT STAGE

ESTIMATED TIMELINE

DATES

SCHOOL TASKS (HEADTEACHER & BSF TEAM)

TIME COMMITMENT

BIDDERS SCHOOL INTERACTION

BIDDER TASKS

LOCAL AUTHORITY TASKS	1.1 INFORMATION GATHERING AND BSF STRUCTURE AND PROGRAMME	2.1 CREATE STRATEGY FOR CHANGE PART 1	3.1 CREATE STRATEGY FOR CHANGE PART 2	4.1 PREPARE PROCUREMENT DOCUMENTATION	5.1 LONG AND SHORT LISTING	6.1 DESIGN DEVELOPMENT	7.1 DETAILED DESIGN DEVELOPMENT AND FINANCIAL CLOSE	8.1 CONSTRUCTION	9.1 MANAGEMENT OF SCHOOLS WITH LSP
	<p>1.1.1 Gather information on BSF</p> <p>1.1.2 Identify the programme, planning and delivery approach</p> <p>1.1.3 Identify the BSF team and governance structure</p> <p>1.1.4 Identify the BSF team and governance structure</p> <p>1.1.5 Identify the BSF team and governance structure</p> <p>1.1.6 Identify the BSF team and governance structure</p> <p>1.1.7 Identify the BSF team and governance structure</p>	<p>2.1.1 Develop a vision and strategy for change</p> <p>2.1.2 Develop a vision and strategy for change</p> <p>2.1.3 Develop a vision and strategy for change</p> <p>2.1.4 Develop a vision and strategy for change</p> <p>2.1.5 Develop a vision and strategy for change</p> <p>2.1.6 Develop a vision and strategy for change</p> <p>2.1.7 Develop a vision and strategy for change</p>	<p>3.1.1 Develop a vision and strategy for change</p> <p>3.1.2 Develop a vision and strategy for change</p> <p>3.1.3 Develop a vision and strategy for change</p> <p>3.1.4 Develop a vision and strategy for change</p> <p>3.1.5 Develop a vision and strategy for change</p> <p>3.1.6 Develop a vision and strategy for change</p> <p>3.1.7 Develop a vision and strategy for change</p>	<p>4.1.1 Develop a vision and strategy for change</p> <p>4.1.2 Develop a vision and strategy for change</p> <p>4.1.3 Develop a vision and strategy for change</p> <p>4.1.4 Develop a vision and strategy for change</p> <p>4.1.5 Develop a vision and strategy for change</p> <p>4.1.6 Develop a vision and strategy for change</p> <p>4.1.7 Develop a vision and strategy for change</p>	<p>5.1.1 Develop a vision and strategy for change</p> <p>5.1.2 Develop a vision and strategy for change</p> <p>5.1.3 Develop a vision and strategy for change</p> <p>5.1.4 Develop a vision and strategy for change</p> <p>5.1.5 Develop a vision and strategy for change</p> <p>5.1.6 Develop a vision and strategy for change</p> <p>5.1.7 Develop a vision and strategy for change</p>	<p>6.1.1 Develop a vision and strategy for change</p> <p>6.1.2 Develop a vision and strategy for change</p> <p>6.1.3 Develop a vision and strategy for change</p> <p>6.1.4 Develop a vision and strategy for change</p> <p>6.1.5 Develop a vision and strategy for change</p> <p>6.1.6 Develop a vision and strategy for change</p> <p>6.1.7 Develop a vision and strategy for change</p>	<p>7.1.1 Develop a vision and strategy for change</p> <p>7.1.2 Develop a vision and strategy for change</p> <p>7.1.3 Develop a vision and strategy for change</p> <p>7.1.4 Develop a vision and strategy for change</p> <p>7.1.5 Develop a vision and strategy for change</p> <p>7.1.6 Develop a vision and strategy for change</p> <p>7.1.7 Develop a vision and strategy for change</p>	<p>8.1.1 Develop a vision and strategy for change</p> <p>8.1.2 Develop a vision and strategy for change</p> <p>8.1.3 Develop a vision and strategy for change</p> <p>8.1.4 Develop a vision and strategy for change</p> <p>8.1.5 Develop a vision and strategy for change</p> <p>8.1.6 Develop a vision and strategy for change</p> <p>8.1.7 Develop a vision and strategy for change</p>	<p>9.1.1 Develop a vision and strategy for change</p> <p>9.1.2 Develop a vision and strategy for change</p> <p>9.1.3 Develop a vision and strategy for change</p> <p>9.1.4 Develop a vision and strategy for change</p> <p>9.1.5 Develop a vision and strategy for change</p> <p>9.1.6 Develop a vision and strategy for change</p> <p>9.1.7 Develop a vision and strategy for change</p>
	PRE-PROJECT	STRATEGY FOR CHANGE: PART 1	STRATEGY FOR CHANGE: PART 2	OUTLINE BUSINESS CASE AND PREPARATION TO PROCURE	QJEU TO INVITATION TO PARTICIPATE IN DIALOGUE (ITPD)	INVITATION TO CONTINUE DIALOGUE TO INVITATION TO SUBMIT FINAL BID	ITSFB TO FINANCIAL CLOSE (FC)	CONSTRUCTION	OCCUPANCY
	01	21	71	141	181	281	301	421	ONGOING
	1.2 INFORMATION GATHERING AND BSF STRUCTURE AND PROGRAMME	2.2 SCHOOL VISION AND STRATEGY FOR CHANGE	3.2 SCHOOL VISION AND STRATEGY FOR CHANGE DEVELOPMENT	4.2 PREPARE PROCUREMENT DOCUMENTS	5.2 ASSESSMENT AND INITIAL SELECTION	6.2 DESIGN DEVELOPMENT	7.2 DETAILED DESIGN DEVELOPMENT	8.2 SAFETY AND CURRICULUM EMPLOYMENT	9.2 OPERATION AND TSM 2020
	MEDIUM	HIGH	HIGH	LOW	LOW	MED/HIGH	MED/HIGH	LOW	LOW
				AS CREATES BIDDING TEAM	6.2 PROJECT UNDERSTANDING AND TENDERING TO QJEU	6.3 DESIGN DEVELOPMENT	7.3 DETAILED DESIGN DEVELOPMENT AND FINANCIAL CLOSE	8.3 CONSTRUCTION	9.3 FACILITY BSF MANAGEMENT
				6.2.1 Develop a vision and strategy for change	6.2.1 Develop a vision and strategy for change	6.2.1 Develop a vision and strategy for change	6.2.1 Develop a vision and strategy for change	6.2.1 Develop a vision and strategy for change	6.2.1 Develop a vision and strategy for change

BSF STEP BY STEP GUIDE

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Bad press

- The majority of secondary schools being built under the Building Schools for the Future (BSF) programme are 'mediocre' in design.
- An estimated eight out of 10 designs' for BSF secondary schools were 'not yet good enough' and less than a fifth were considered to be 'good' or 'excellent'
- Pressure to build new schools quickly and cheaply has dominated at the expense of making sure classrooms work for lessons.

Source: Commission for Architecture and the Built Environment 2008

- The BSF programme involved... a 'narrow approach to procurement' in which design was left out of the bidding process.'

Source: Royal Institute of British Architects 2008

- The government's target of having 100 BSF schools open by the end of the financial year 2008-09 looks highly unlikely to be met, with only 13 schools having opened so far

Source: CBI 2008

Wolverhampton BSF programme

- Application of the Faraday process within the BSF programme
- 27 schools being developed during the next five years
- DEGW supporting the local authority with client design advisor and technical advisory role
- Working with schools to develop their strategic visions
- Helping the 27 architects to understand the spatial implications of teaching and learning transformation
- Change management support for schools to help them achieve their vision

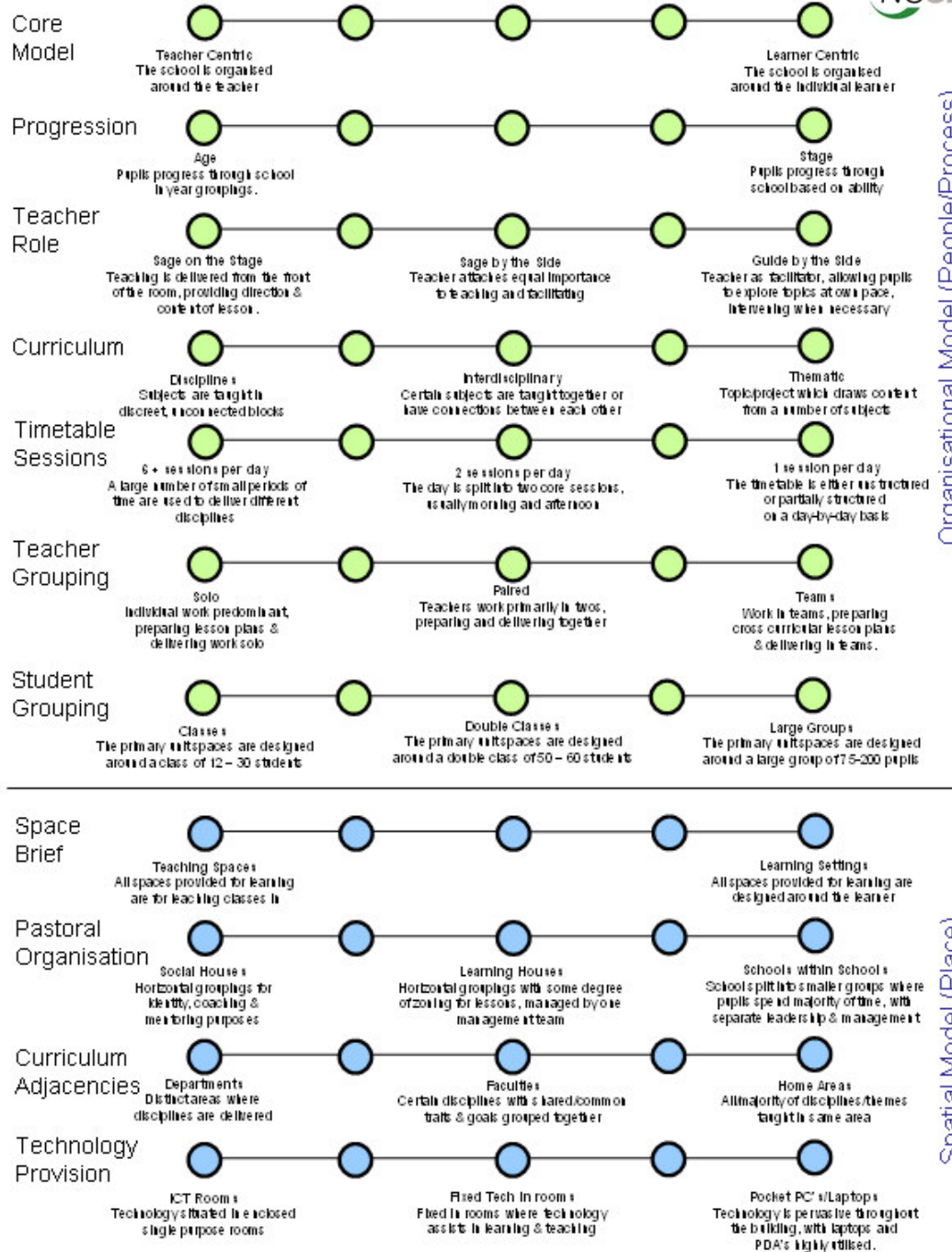


KEY

- Secondary Schools
- Special Schools/PRUs
- MAST Areas (1-5)
- New Area Boundaries Line
- New Area Boundaries Line (Cross-over)
- LAPS Boundaries
- Wolverhampton North East Conurbation
- Wolverhampton South East Conurbation
- Cross-over Area
- Proposed BSF Pedestrian Area
- A Roads
- B Roads
- Railway Lines
- Metro Line
- Canals & Waterways
- Wolverhampton Boundary

Schools

- 1 Alderley High (Technology)
- 2 Corbin Hill Community (Language)
- 3 Coppice Performing Arts
- 4 Deanfield High (Creative Arts)
- 5 Hoare Park Business & Enterprise College
- 6 Highfield Science Specialist
- 7 Newson Community (Technology)
- 8 Nessley Park (Technology)
- 9 Our Lady & St Chad RC Sports College
- 10 Parkfield High (Creative Language)
- 11 Parkfield High Modern (Full Service Divided School)
- 12 Redstone Business & Enterprise College
- 13 St Edmund's Catholic (Maths & Computing)
- 14 St Peter's Collegiate CE (Technology)
- 15 Seawood (Sports)
- 16 The Kings CE (Arts & Sports)
- 17 The Horticulture (Maths & Computing)
- 18 Wolverhampton High College (Engineering)
- 19 Wolverhampton Girls' High (Language)
- 20 Birmingham Special History
- 21 Cross Park Specialist
- 22 New Park Special
- 23 Park Fields Special
- 24 Park Hill Special (SPS)
- 25 Tidemill Wood Special
- 26 Westcott Sport & Vocational College
- 27 The Kingston Centre
- 28 The Millpool Centre
- 29 The Eyrebrook Centre
- 30 The Orchard Centre Home & Hospital

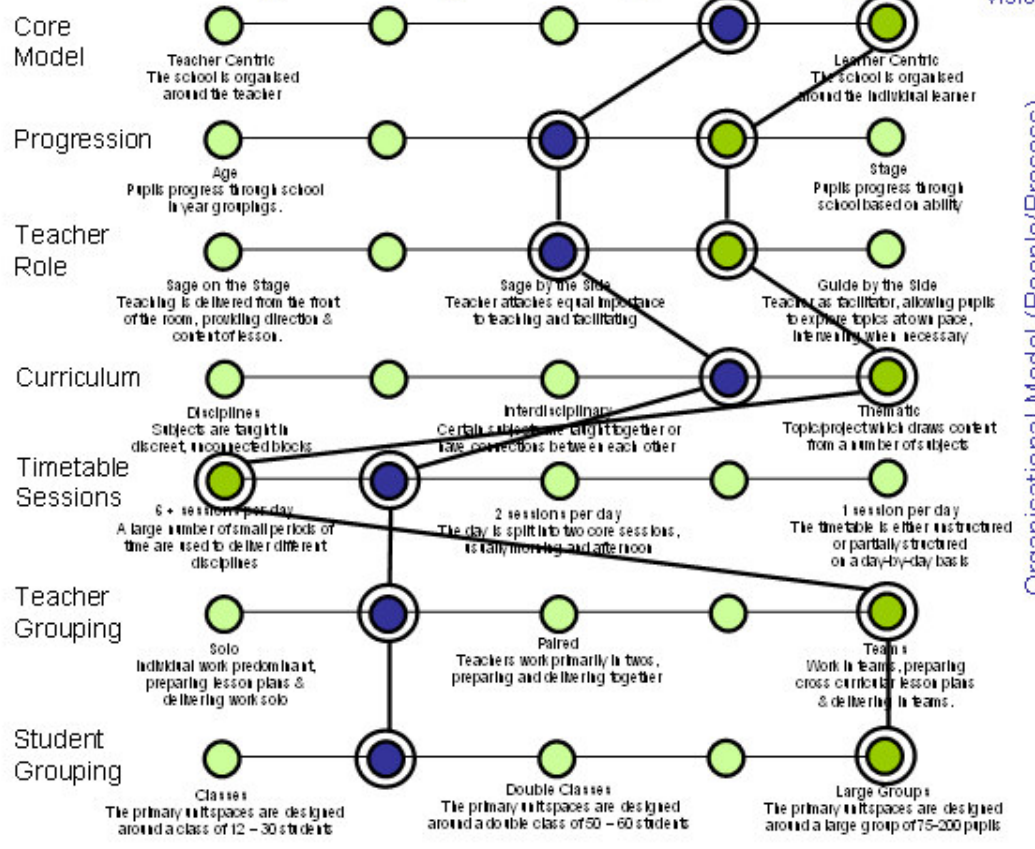


Organisational Model (People/Process)

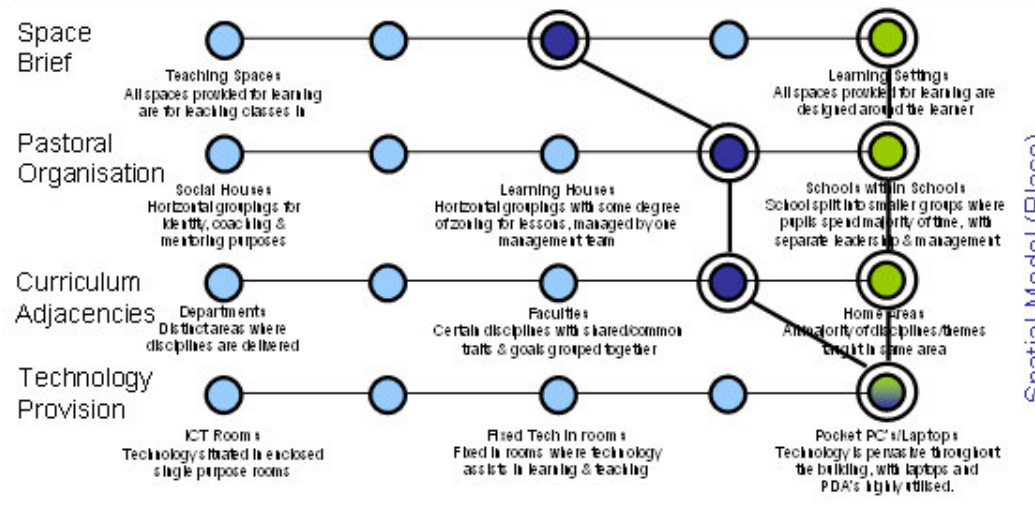
Spatial Model (Place)

DEGW Learning & Teaching Models

Potential Future Vision



Organisational Model (People/Process)



Spatial Model (Place)

Supporting change: developing a change management strategy

Exploring



Embracing discovery

- Shared risk taking
- Revolutionary rather than evolutionary change
- Prepared for failure/ mistakes

Creating



Embracing the vision

- Importance of co-creation,
- Celebration of journey as much as the destination
- Hands-on involvement in process
- 'Emphasis is on the result, clean up the studio later'

Building



Embracing the process

- Systematic or modular approach to change
- Co-operation and interaction between sub-projects
- Risk assessments before the change begins

Investigating



Embracing the evidence

- Use of precedent to justify the change
- Wide consultation
- Controlled experimentation
- Measurement of results at each stage

The evolving school

<i>Pastoral care</i>	House system	Peer to peer support	Mentorship
<i>Pedagogy</i>	Full didactic	Group learning	Personalised learning
<i>Curriculum</i>	Structured curriculum	Project based curriculum	Unstructured curriculum
<i>Service hours</i>	9am – 5pm	7am to 7pm core access	24/7 access
<i>Management paradigms</i>	Head teacher	School Board	CEO not from teaching
<i>Staff structures</i>	Teachers	Coaches	Facilitators & professionals
<i>Learning locations</i>	Learning on site	Physical core, virtual anywhere	Anywhere, any time



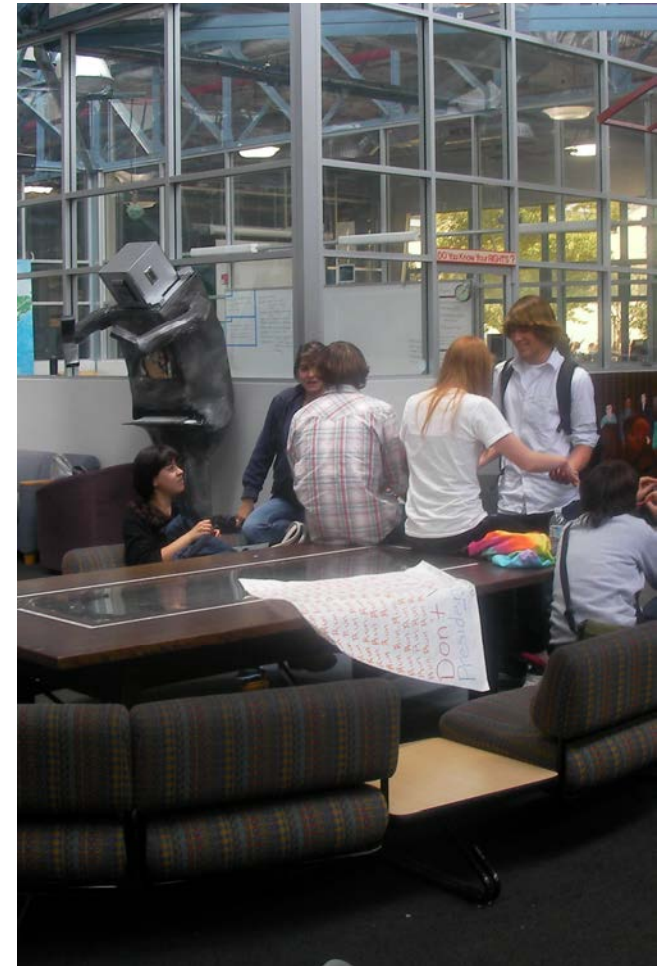
Hellerup, Denmark

- New-build school in Copenhagen
- Central functions are located around the stairs in the middle of the building, also known as the *Colosseum*, used for circulation, teaching and large-scale presentations, group work and lunch breaks.
- Nine 'home areas' , 330 to 400 m², which hold several classes at once and consist of a mixture of small and large rooms. Using mobile cabinets, bookcases and screen walls, the home area can be divided into smaller units as required.
- Learning Team Approach with personal learning plans and project based learning



High Tech High

- Charter school in San Diego, California
 - 2,500 pupils
 - 6 schools
- Remodelled Naval Training Base/ new-build
- Small School model based around:
 - *Personalisation,*
 - *Adult world connection,*
 - *Common intellectual mission.*
- Thematic project based learning delivery model
- No distinction between vocational and academic education
- Peer assessment and public display of work.
- Paired classrooms around shared open space



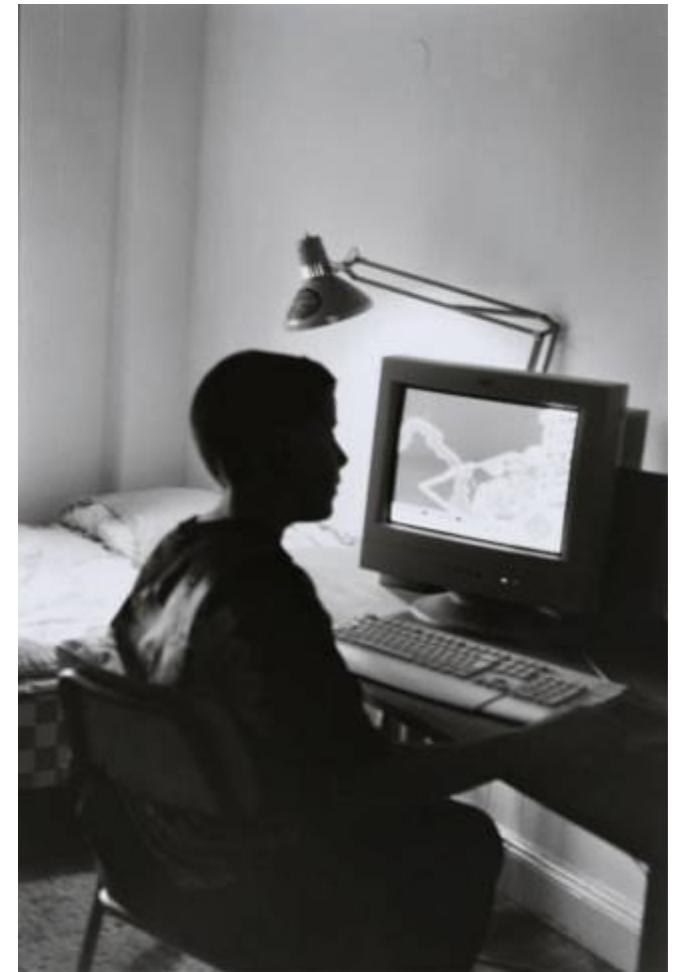
Discovery 1/ Unlimited, Christchurch, New Zealand

- Primary School and High School located in redundant space above department stores
- Students directing and managing their own learning based on their interests
- Learning occurring anywhere without restriction of curriculum, place, time, style or subject
- Home bases for 18 – 24 students of mixed ages, students can also work at home
- Use of community mentors and businesses to supplement learning resources
- Use of city facilities for sports, libraries, recreation



Notschool.net

- Notschool.net is specifically aimed at those for whom traditional alternatives such as home tutoring have not worked
- Learners are called 'researchers' and the teachers are 'mentors'.
- Researchers provided with computer, webcam and scanner
- Subject 'experts', 'buddies' (undergraduate or post graduate students who offer support) and 'governors', prominent people who did not get on well at school.
- 50% and more attain five GCSE A*-C equivalents, many go on to further and higher education; others become employed.



Some big questions to explore

- **What will a 21st century 'school' look like?**
- **How do we get long term value out of the massive investment that is being made in education?**
- **How can such a radical change be achieved so quickly?**

Transformation not extinction: new space models

- **Traditional categories of space are becoming less meaningful as space becomes less specialized,** boundaries blur, and operating hours extend toward 24–7
- **Space types designed primarily around patterns of human interaction** rather than specific needs of particular departments, disciplines or technologies
- **New space models focus on enhancing quality of life** as much as on supporting the learning experience

*redefining 'balance'
space
circulation as glue*



*circulation as
event space*



*more freely
available space
group project work,
solo work*



Where do we go from here?

- Wider engagement on the implications of educational change for social and urban change
- Schools as providers of workplace, health and social services and leisure facilities for the community
- School as social enterprise
- Exploring integration of learning settings across schools, vocational and higher education
- Creation of learning centred communities



DEGW