


Building Scale (2)
**The evidence base for building performance
/ added value in schools**

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The evidence base for building performance/added value - schools

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Key areas of learning environments research

○ Physical environment

- Lighting
- Heating, ventilation and air quality (HVAC)
- Noise
- Decoration/ colour
- Furniture
- Classroom organisation
- Display/ storage
- Other school build features

○ Systems and Process

- Class size
- Staff roles
- The Design Process



Key areas of learning environments research

○ Communication

- ICT
- Signage
- Links to parents
- Links to the community
- Links to business


○ Products and services

- Catering
- Cleaning



Possible impact areas

- Attainment
- Engagement
- Affect (including self esteem and mood)
- Attendance
- Well-being



Distinctions to be made about impact evidence

- Evidence that negative environments have detrimental effects
- Evidence which is mixed, contradictory and inconclusive
- Evidence that improving negative environments has positive benefits
- Evidence that improving functional environments has positive benefits



Physical environment - Lighting

Attainment	linked to the 'daylight standard'
Engagement	preferred lighting improved work rate
Affect	no link found between mood and light
Attendance	mixed evidence
Well being	eyestrain, headaches, fatigue



Physical environment - Noise

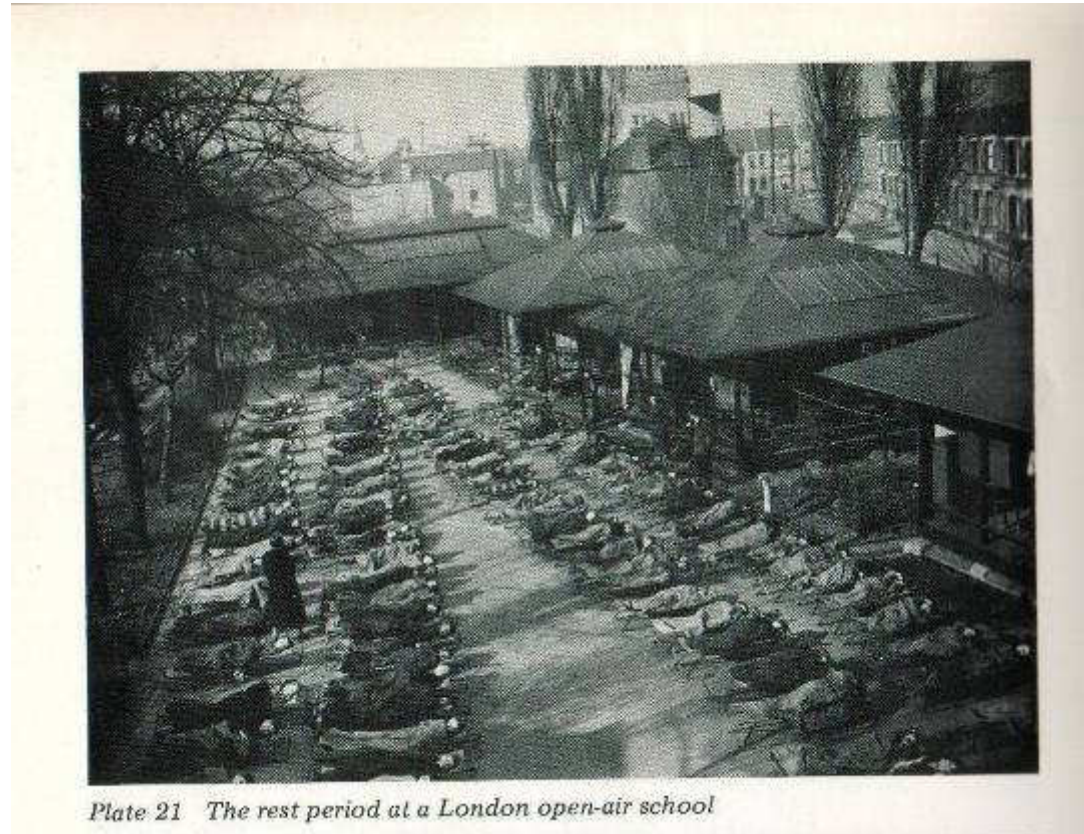
Attainment	positively affects reading scores positively affects general attainment
Engagement	impact on attention that is task and context dependent
Affect	noise annoyance is not linked to actual noise levels
Attendance	No evidence
Well being	Evidence only at extremes



Physical environment - HVAC

Attainment	rated very important
Engagement	un-circulated air causes drowsiness air-conditioning noise distracts
Affect	use of soft furnishings for cosiness
Attendance	cleaner air linked to less absenteeism
Well being	Ventilation counters asthma, allergens, airborne bacteria 'Fleecing' holds dust and allergens

Open air schools



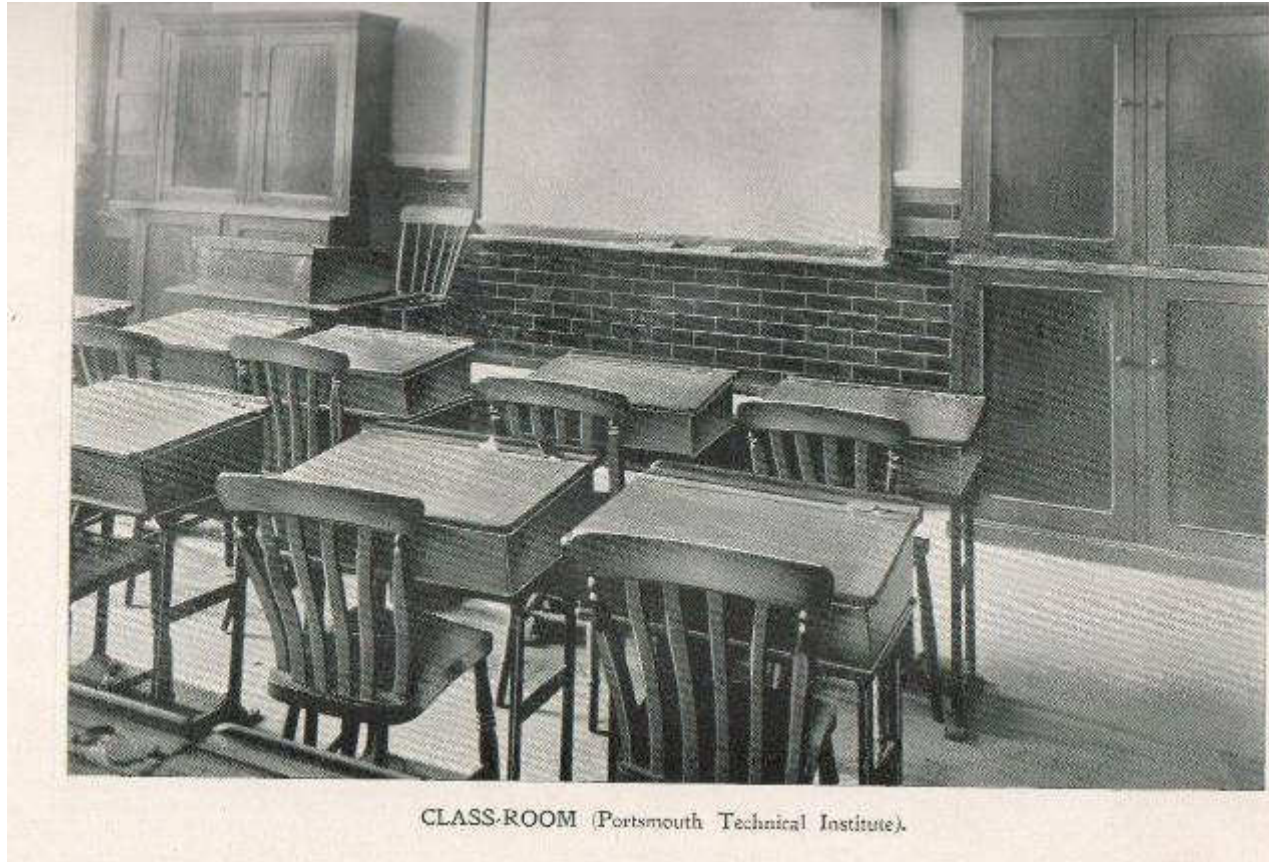
From Seaborne and Lowe (1977) *The English School* vol II



Physical environment - furniture

Attainment	no evidence
Engagement	more on-task once novelty wears off action zone and questioning
Affect	preference for ergonomic chairs innovative classes preferred
Attendance	innovative classes better attended
Well being	back ache gender/ height differences

Before ergonomics?



From Robson (1911) School Planning



Physical environment

○ Decoration/ colour

- Fabrics and carpets cut down internal noise but hold dust and allergens
- Children prefer bright colours, adults like magnolia. Gender differences variable and unproven.

○ Display/ storage

- Display of students' work increases 'ownership'
- Accessible materials increase on-task time

Children like colour...



Plate 4 The sweet school (Rebecca, 8, Coventry)

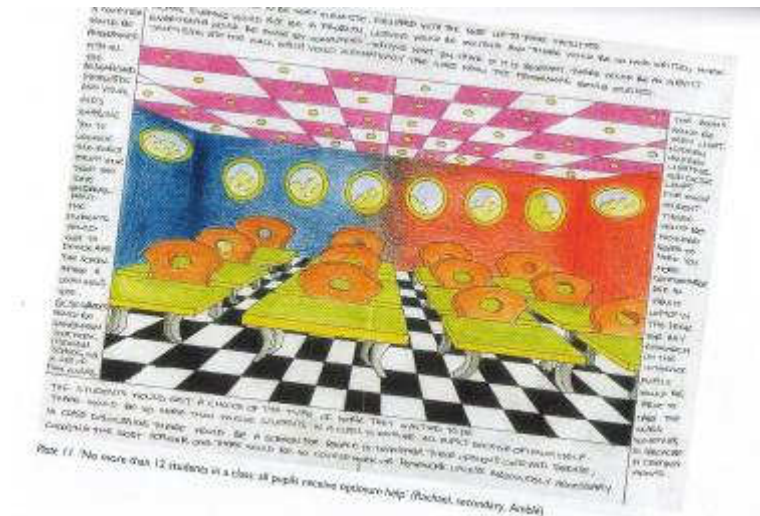
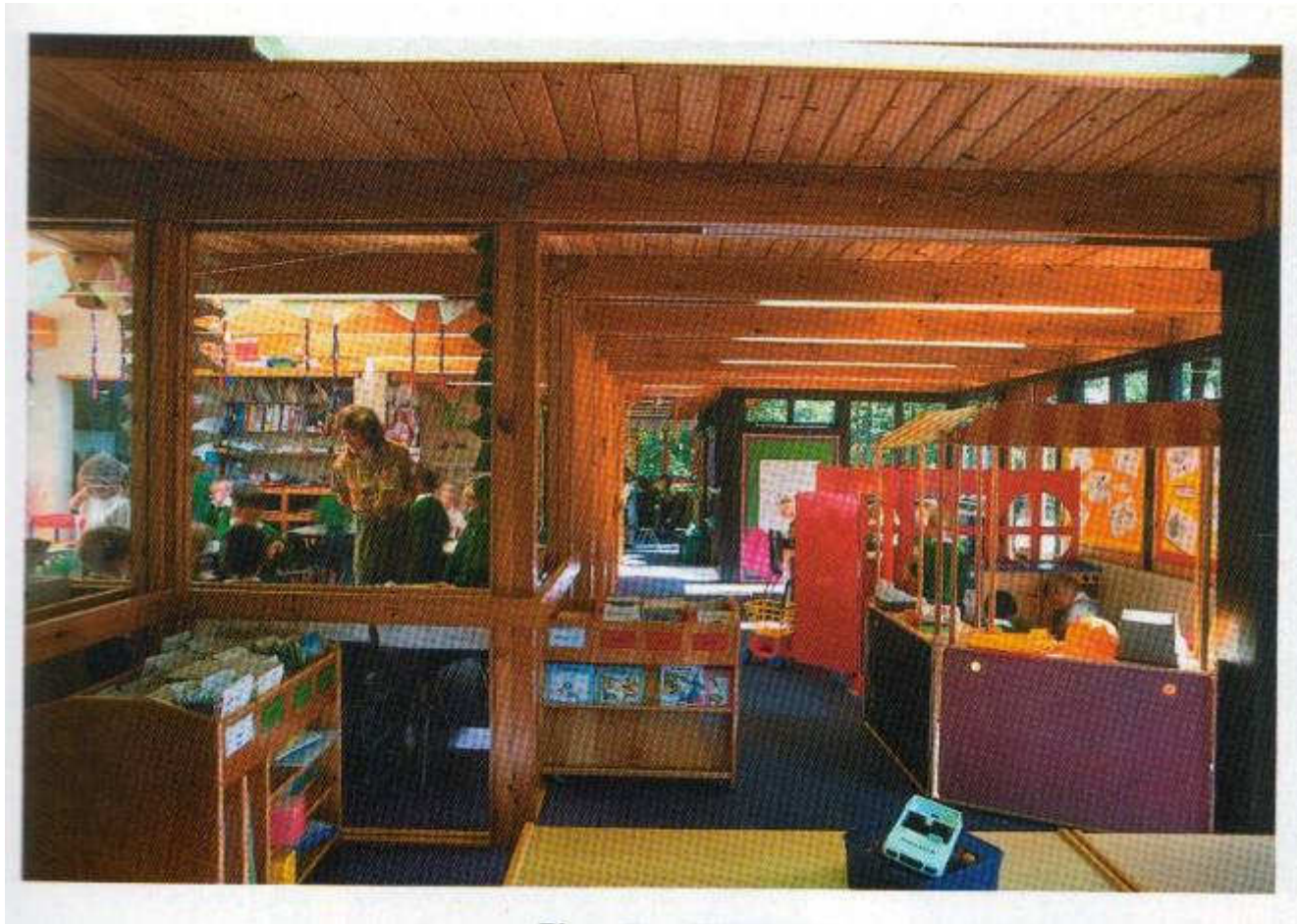


Plate 11 No more than 12 students in a class all pupils receive attention help (Rachel, secondary, Avon)

From Burke and Grosvenor (2003) 'The School I'd Like'

Access to materials and private spaces



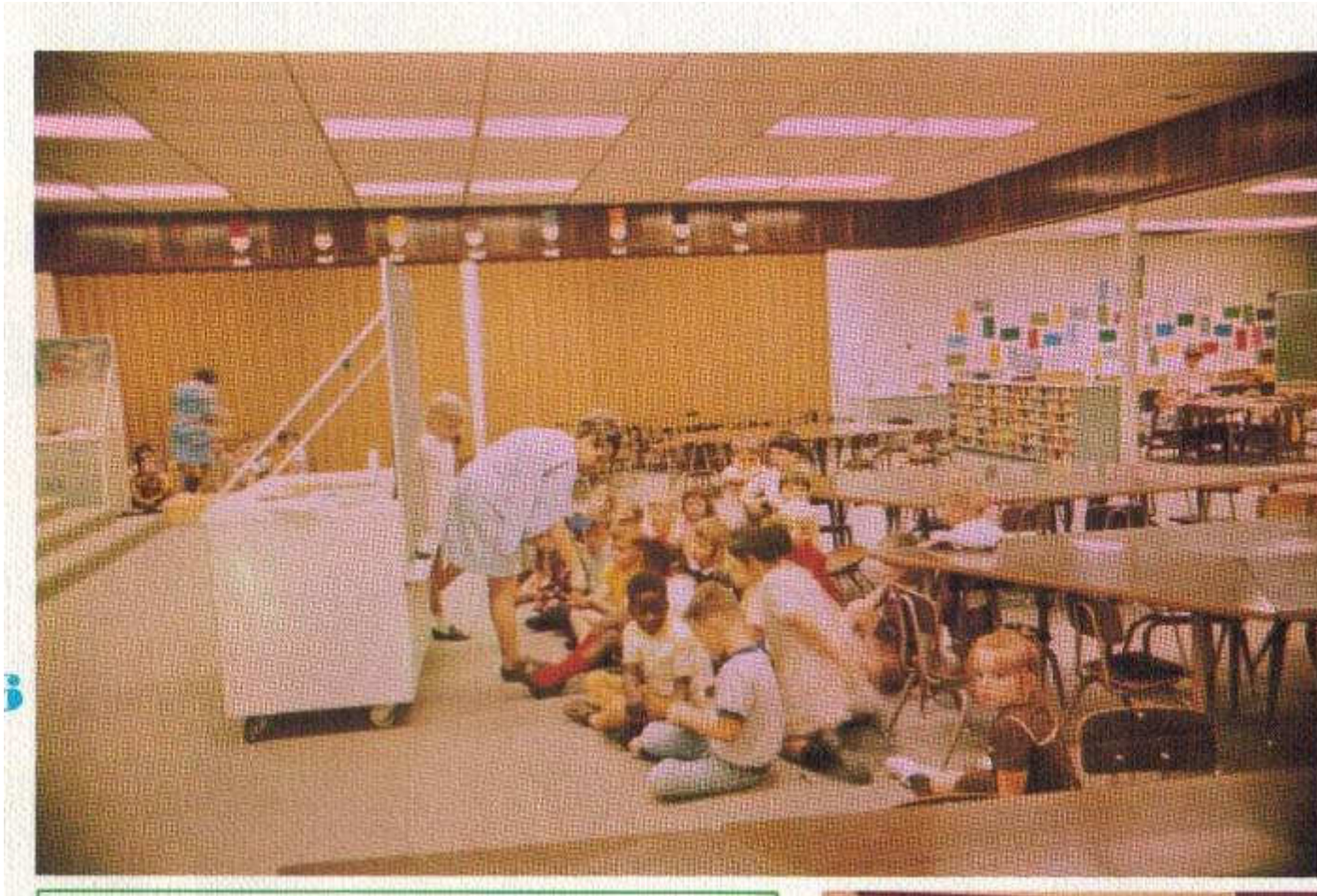
From Dudek (2000) Architecture of Schools



Systems and processes

- **Class size**
 - Research on attainment effects variable
 - Physical limitations increased by larger classes
- **Teacher role**
 - Style of teaching and room organisation are linked
 - Unless space is 'owned' teacher behaviour tends not to change
- **The 'Design Process'**
 - Excellence in environment is strongly linked to other quality indicators
 - Involvement in change needs to be a staff ethos

Open plan – closed organisation?



From 'The Open Plan School' (1970)



Communication

○ ICT

- Wow factor: provision also associated with success
- Can work against innovative teaching strategies
- Teachers' affect is variable (technophobia)
- Computer glare

○ Parents and the Community

- Extended schools
- Access, signage, varied communication strategies



Products and Services

- Catering

- Healthy Schools Initiative
- Breakfast clubs
- Tuck shops and vending machines

- Cleaning and maintenance

- Combating allergens and airborne bacteria
- Maintaining flexible furniture and room arrangements



Messages from the literature

- Multiple effects and confusion
- The situated and contextual nature of learning environments
- Change as a catalytic process
- Ownership and engagement