CONSERVATION OF FABRIC AND COLLECTIONS IN CATHEDRALS: ENVIRONMENTAL FACTORS

TOBIT CURTEIS ASSOCIATES LLP
CATHEDRAL EXHIBITIONS/ DISPLAYS DIFFER FROM OTHER BUILDINGS

- The building is part of the exhibit
  - Building must not be compromised for the sake of the display
  - Limitations on how displays can be laid out and narrative developed and where sensitive materials can be placed (may not be popular with exhibition designer)

Drawing: Purcell UK
Rochester Cathedral: Crypt

Drawings: Land Design Studio Ltd
Winchester Cathedral: Kings & Scribes

Drawing: Studio MB

Drawing: Nick Cox Architects
The building envelope must function correctly

- Damage to the building envelope and rainwater disposal system must be addressed if suitable environmental/conservation conditions are to be achieved inside.
THE BUILDING IS AN ACTIVE ENVIRONMENTAL CONTROL – NOT A BOX

- Huge advantage for passive control over modern buildings
- Advantages
  - Thermal buffering (massive structure)
  - Hygral (porous) buffering
- Disadvantages
  - Roofs – heat
  - Windows – light/ heat
  - Doors – air exchange (undermine any environmental control)
  - Pre existing heating systems
  - Exhibition is not primary aim in most cathedrals
Winchester Cathedral: Triforium
Peterborough Cathedral: South west door
Limits to the way you can change the building envelope

- Insulation of building itself – can be effective but condensation risks such as ULC/stone deterioration.
- Window shades – visual impact
- Room within a room – possible but visually intrusive
- Substitute non porous coatings for porous (lime plaster/limewash/distemper)
Canterbury Cathedral
Underside lead corrosion
Limit to Level of Environmental Control That Can Be Safely Achieved

- Background environmental control limited because of sensitivity of building fabric
- Museum standards (BS5454) cannot usually be achieved without risk
- HVAC systems are generally inappropriate (why heat/water input)
- Conservation heating is best active control
  - Control heat to control RH
  - Sacrifice comfort for conservation
  - Reduce heat input/cost
  - Limited level of control possible – possibly supplement with dehumidification
- Limitation on loans (what do you actually want to borrow)
Durham Cathedral: Great Kitchen, Open Treasure

Drawing: Purcell UK
Drawing: Purcell UK
CASE DESIGN AND LIMITATIONS

- Cases generally not designed for highly uncontrolled environments
- Active or passive cases?
  - Passive may be safer but not designed for long term conditions outside ambient
  - Both require considerable management/staff time
- In complex areas design to allow retrofitting
- Case testing ACR rate
- Work closely with designer/manufacturer to ensure that they understand the demands of the site
Survey (Monitor/Measure) Existing Conditions

- Identify safe aspects/ current defects/ future problems
- Design controls – look secondary (unanticipated) problems
  - Many variables so models imprecise – testing is the only safe way
  - Most background control achieved through building repairs
  - Test cases/ mechanical control systems
- Evaluate exhibition design as it develops (work with designers and project team)
- Monitor results (diagnostic – consultant)
- Long term monitoring (consultant or in house)
Exeter Cathedral: Bishop’s Throne
KEY POINTS

- Understand environmental (and conservation) issues/limitations at beginning of project before exhibition narrative is established.
- Cohesive design team. Environmental/conservation advisors should be in close discussion with project manager/lead consultant at the concept stage.
- Building envelope/rainwater disposal must be in good condition.
- Building is an active influence on display conditions.
- Most of the limitations associated with display of sensitive artefacts in a cathedral can be designed around, with careful planning.
- Management of display is a considerable long term staff time/cost.
- Good design minimises conservation & management costs.