ADDITIONAL STORAGE PROGRAMME

R Aspey, Manager, Additional Storage Programme

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The programme has three main objectives

- To provide space for collection growth.
- To enable the Library to increase the proportion of the collection held in controlled conditions.
- To enable the Library to achieve operational economies by:
  - Vacating leasehold buildings at Woolwich, Micawber Street and Colindale 120.
  - Rationalising the location of collections, storing high-use reference material in St Pancras and nil-to-low use material remotely at Boston Spa.
The programme has had a long gestation. The need to plan for additional storage was identified in 2002, while planning and design completed in 2006.

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Outline funding allocated</td>
<td>November 2002</td>
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<tr>
<td>Commenced feasibility</td>
<td>January 2003</td>
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<td>Commenced design</td>
<td>August 2004</td>
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<tr>
<td>Obtained Planning Permission</td>
<td>April 2005</td>
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<td>Started on site</td>
<td>September 2006</td>
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<td>Building complete</td>
<td>September 2007</td>
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<td>Automation installation</td>
<td>September 2007 – October 2008</td>
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<td>Book moves into storage</td>
<td>November 2008 – March 2011</td>
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<td>Steady state operation</td>
<td>April 2011 onward</td>
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The programme is organised and managed as five projects, each focused on a particular area. The five projects are:

**Construction and Automation Project – Boston Spa**
- Building design and procurement
- Building Construction
- Automation installation and commissioning

**System Integration Project – Boston Spa**
- Developing BL’s computer systems and designing new systems to run ASP in conjunction with the Automation supplier.

**Collection Preparation and Moves Project – London & Boston Spa**
- Identifying, preparing, recording and moving collection material

**Delivery Services Project – Boston Spa**
- Planning, recruiting and training staff to run the new ASP facility
- Operating the new facility and put in place the logistics to supply St Pancras with reading room requests

**Building Disposal Project - London**
- Completing any dilapidations work and handing back leasehold buildings in London to their respective landlords
The ASP building is located at the western end of the Library’s Boston Spa campus. It can be seen here *in situ*
The building’s external cladding has been chosen to blend into the sky line. The four external plant towers each have a unique design.
The ASP building has two parts: the main storage repository and an office support building

- The main repository will contain
  - 262 linear kilometres of steel racking
  - 7 Select and Retrieval Machines (SRM) or cranes
  - 140,000 plastic containers
  - It is split into two separate fire compartments.

- The support building is on two floors.
  - The ground floor for delivery of material, material handling and plant rooms
  - The first floor for materials processing, conveyors and 6 workstations.
The building design includes a range of innovative features which combine to make the ASP unique.

1. 70 year design life

2. Controlled Internal Environmental
   - The repository will have a precisely controlled stable internal environment that complies with BS 5454:2000, the national standard for the storage of Archival Material.
   - Temperature in range 16 ± 1°C (60.8 ± 1.8 °F); and
   - Relative Humidity range 52.5% ± 5%

3. Building Fabric
   - The building is highly insulated and all external walls provide a minimum 4-hour fire protection
   - Detailed thermal modelling was carried out during the design phase.

4. Stringent Air Tightness
   - The repository has a ‘close to airtight’ construction
   - Air Leakage Index (ALI) 0.5 m³ hr⁻¹ m⁻² at an air pressure of 50 Pascal.

5. Reduced Oxygen Building Fire suppression systems

6. Materials Handling and Containers
   - The repository building is fully automated
   - No human intervention within the storage void
   - No requirement for continuous lighting within the void.
The steel racking has been designed to be “double-deep” and to provide a highly space efficient store.
The following slides illustrate construction progress from October 2005 to the current day
September 2006 – The construction site was excavated to bring it to the level of the existing road. The retaining wall at the site boundary indicates the scale of excavation.
November 2006 - The first full height steelwork are put in place
November 2006 - 2 bays completed on 3 aisles, and work begins on the 4 aisles compartment
December 2006 – the storage void steelwork is almost complete
December 2006 – the first of the Paroc cladding panels are installed to form the dividing wall
February 2007 – the external Paroc cladding nears completion. The north and south elevations are a darker colour to help the building blend into the skyline.
March 2007 - work on plant rooms and feature towers steelwork is underway
March 2007 – The racking is 21 m high and internal walkways provide access within the storage void. The picture shows detail of the internal walkway.
March 2007 – the 3-aisle void
May 2007 – the Support block steelwork is complete. The eastern elevation plant rooms and towers are under construction
September 2007 – Air Handling Units are installed into the plant-rooms
September 2007 – Plant-room and plant tower cladding is installed.
September 2007 – the plant tower cladding is in place. The mountings for the decorative meshwork can be seen.
September 2007 – decorative meshwork will be supported and moulded to a series of shaped supports.
September 2007 – High-level ductwork is installed into the storage void. The picture shows the 3-aisle void.
September 2007 – The high-level ductwork and access walkways viewed from below.
October 2007 – The support building loading bay and electrical transformer
November 2007 – The rear wall of the 3-aisle storage void showing three doors, providing maintenance access and openings for the conveyors into the support building.
November 2007 – The 3-aisle storage void, showing the high level ductwork and walkways
November 2007 – Racking installation begins with a mezzanine floor which will support the conveyors linking the storage voids and support building.
November 2007 – A temporary building is installed to provide storage space for racking components before installation.
December 2007 – Conveyor sections are delivered to the support building and begin to be laid out
December 2007 – The first racking components are installed.
January 2008 – The first racking section is installed above the mezzanine floor.
January 2008 – The first full height racking upright is installed.

The clearance between the top of the racking and the duct work during installation is 6 cm.
January 2008 – As the first few racking uprights are installed, it is possible to get a sense of the density of storage.
Questions?