



A New Chapter In Bodleian Library History

Introduction

Famous for housing some of the country's most treasured books and manuscripts, Oxford's Bodleian Library is one of the oldest in Europe. It's also one of six legal deposits in the country, meaning it is entitled to a copy of every book published in the UK. And here lies the problem; it's growing at a rate of around 170,000 volumes, or five kilometres of shelf space, per year.



Oxford's library service is one of the most diverse and extensive in the UK, comprising 30 separate libraries, one of which is the world-famous Bodleian. Built in 1602, the Bodleian is Oxford University's central research library and has become one of the most celebrated buildings in the country. Already boasting the status of the largest university library in Britain and the second largest library in the UK, it is rapidly growing and is in desperate need of more storage space to support its future growth.

The Challenge

The challenge for Total Logistics and the rest of the team was to design a purpose-built storage facility that could hold millions of the library's books that are in low demand, whilst ensuring their preservation. Some unique and complex considerations have had to be taken into account and throughout the project design, we've taken a very hands-on approach, regularly visiting existing collection stacks and working closely with the Oxford University Library Services (OULS) team to understand the unique nature of this challenge.

A further design criterion that has added more complexity to the project has been the need to accommodate most of the material from the New Bodleian Library during its redevelopment to become a modern special collections library and research centre. The refurbished library will be built to meet National Archive Standards (NAS) which state specific guidelines on how books and manuscripts are stored.





Refurbishment will begin when stock has been transferred to the storage facility. On completion – which is expected to take four years - the New Bodleian Library will be renamed the Weston Library and will be repopulated with a selection of material back from the book storage facility. Therefore in the planning, the book storage facility had to be able to cope with a peak population of around seven million books plus one million maps, almost immediately, whereas normally in logistics the peak is towards the end of a design planning frame.



The Solution

Once the intricacies of the challenge had been fully considered, we began planning the facility's infrastructure. The location was determined by OULS; 28 miles from Oxford, a site in South Marston, Swindon, on a direct route to the library, allowing for a reliable book-delivery service to the central Oxford reading rooms. Of the eight million books to be stored in the facility, it is expected that just 200,000 books will be requested online by readers per year.

In addition to understanding and developing a solution capable of accommodating the differentiating stock dimensions, the book storage facility needed to conform to strict National Archive Standards. This required very close working with the wider design professions and added further dimensions to the storage solution design and modelling – an unusual perspective with some unusual hurdles but one that we successfully overcame.

By bringing all the storage requirements and control factors together we created a storage model and detailed planograms to determine the contents specification of each of the 100,000 shelves within the facility. To achieve the required standards, the building is designed to be maintained at 18 degrees with a 50 per cent relative humidity together with a four-hour fire-rated perimeter wall. To guarantee the books' preservation for the long-term, volumes will be stored in specially designed storage trays and boxes that are of conservation alkaline standard and fully modular to the planogram shelf configurations.





The final design of the facility takes the shape of an 11 metre tall narrow-aisled solid shelf racking system comprising 31 Very Narrow Aisles (VNA), with seven different bay type configurations to accommodate the different sizes of books and other materials. It also boasts over 250 kilometres of shelf space and a five level map multi-tier structure. All of this has been designed in a manner that provides easy access to the books for retrieval and is environmentally controlled and sprinkler protected.

Total Logistics also undertook an extensive tender process across the logistics European supplier base to find the most suitable partners for the logistics solution. Two suppliers were selected to develop the installation details, these being Jungheinrich UK Ltd for the materials handling equipment (MHE) and SSI Schaefer UK Ltd for the storage solution equipment which will be purpose built to the book storage facility specification.

The bespoke storage facility that has been designed for the Oxford libraries has capacity to support the library's projected growth over the next 20 years. Unlike most logistics operations where picking will involve replenishment, this application is unique as it will house eight million individual items – and only one of each. In addition, when a reader has finished with the requested item, it will be returned from Oxford and processed back into the storage location. This reverse logistics operation is integral to the solution.

Every step of the project has been carefully executed in very close partnership with OULS to provide a comprehensive knowledge of the process needed and to ensure every eventuality is covered. This deep-seated understanding of the library and its unique challenge has allowed us to help develop a book storage facility like no other in the UK.”

Dr Sarah Thomas, Bodleian Librarian and Director of Oxford University Library Services, said: “With a modern storage facility for its extensive collections under construction, the Bodleian is now entering an exciting phase of development of services. The book storage facility will be the catalyst for improved management of its collections and the transformation of the New Bodleian into a special collections library and public galleries.

Total Logistics is making a substantial contribution to the success of this huge undertaking. Its understanding of the complex nature of this unique storage facility and attention to detail is impressive and will have a positive impact on library services for years to come.”

