

Map It Out

Visualising Data For Sustainable Collections Management at the National Archives UK

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Example file from TNA's collection

Interior of TNA's storage area

Aerial photograph of TNA site with storage highlighted in red

Introduction

The National Archives (TNA) is the official government archive for England, Wales and the United Kingdom and holds over a 1000 years of the nation's history, from the Domesday book to digital files.

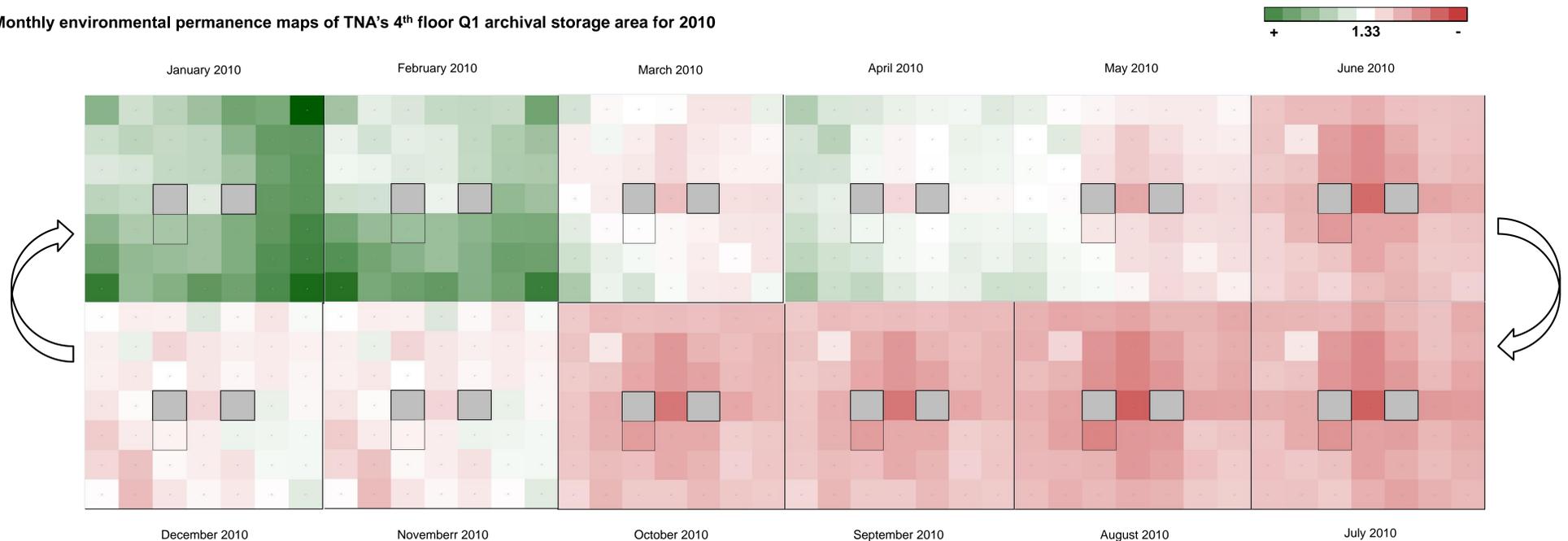
With such a vast and varied collection we need to manage it sustainably, and to do so, we need to understand the collection, our storage and display areas and how and why the collection is accessed. In recent years we developed thematic maps that visually represented our collection and storage environment. These tools permitted us to implement improvements that are both better for the collection and more sustainable.

Mapping the storage environment

TNA monitors its archival storage with over 150 radio telemetry RH and temperature sensors recording every 15 minutes. Using the data collected from this system, we mapped TNA's environmental conditions in storage by illustrating the temperature and RH readings as paper-based isoperms¹ on a single map created in Microsoft Excel®. Isoperms at 1.33 are white on the map and represent the permanence TNA was aiming for with set points of 18°C and 50% RH.

The maps were created monthly and clearly demonstrated the seasonal cycle of environmental conditions in TNA's main storage area. The 2010 data below shows how conditions moved from cooler and drier in the winter (providing better permanence) to warmer and more humid in the summer (providing less permanence). The annual average worked out at about 1.3. Despite having mechanical control, the external environment still influenced the internal environment.

Monthly environmental permanence maps of TNA's 4th floor Q1 archival storage area for 2010

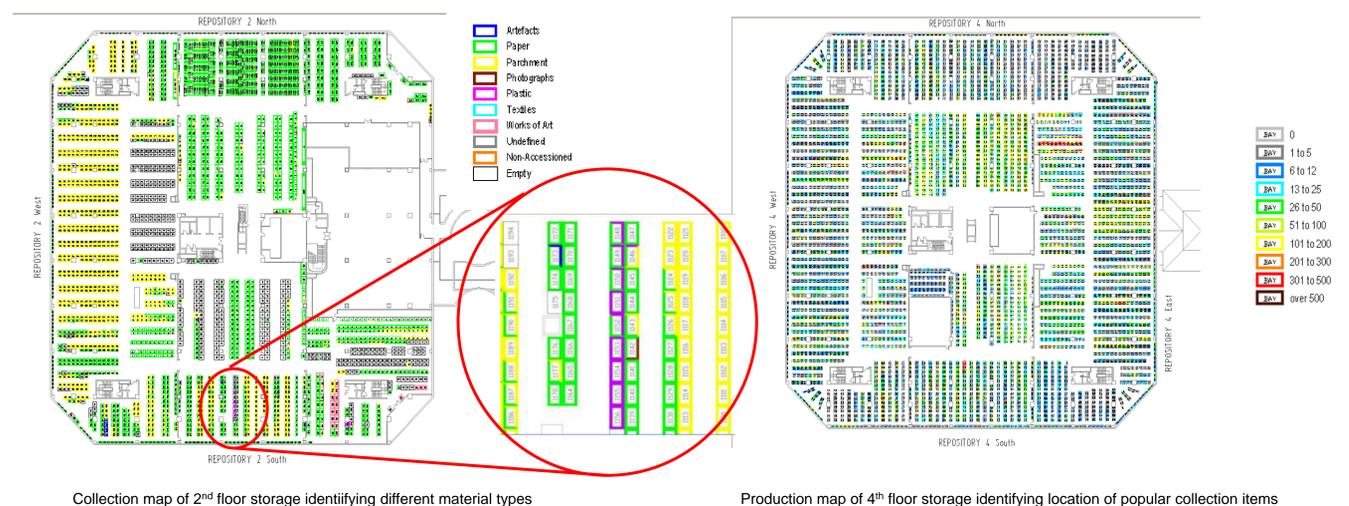


Mapping the collection

TNA has also created maps that linked a number of different data sets to storage locations using specially adapted facilities management software.

'Collection maps' colour-coded material types across the collection, which showed the collection consisted of over 81% paper, 16% parchment and less than 1% each of plastic, photographic material, works of art, artefacts, textiles and undefined material. Mapping the material type illustrated their dispersal across the various storage areas.

'Production maps' illustrated the number of deliveries to our reading rooms and documented where our most popular records were stored. In general, these were stored near the central distribution point with some pockets of popular records around the perimeter.



Collection map of 2nd floor storage identifying different material types

Production map of 4th floor storage identifying location of popular collection items

Successes and conclusion

The information obtained through mapping the storage environment helped us develop a new seasonally adjusted set point schedule, which provides an improved storage environment for the collection and delivers substantial energy savings compared to our use of constant set points for the HVAC system throughout the year.

The collection maps informed our decision to explore the possibility of zoning the collection according to material type, allowing for tighter environmental control in areas storing more vulnerable materials. These maps supported the establishment of a dedicated area for photographic collections with the HVAC operating at cooler and drier conditions. The production maps will inform changes to our storage cleaning regime, concentrating cleaning in the busiest areas will result in a more efficient and effective cleaning programme and a better cared for collection.

As conservation professionals we routinely collect data, but mapping it innovatively offers us new insight and has enabled us to make truly sustainable collections management decisions.

References: 1. Sebera, D.K., "A Graphical Representation of the Relationship of Environmental Conditions to the Permanence of Hygroscopic Materials and Composites." In Proceedings of Conservation in Archives: International Symposium, Ottawa, Canada, May 10-12, 1988. Paris, France: International Council on Archives, 1989.

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