

**Council of Australian State Libraries
Working Group on Stack Management**

Guidelines for planning collection storage of physical collections

Introduction

Collection storage was identified as a core library management function by the CASL Working Group on Stack Management in the paper entitled “Defining Stack Management”. Effective collection storage is a critical library management responsibility as it optimizes service to clients, supports good occupational health and safety and maintains the condition of the collection.

Discussions between members of the Working Group indicate that there are variations in approaches to managing collection storage. This is a highly practical paper that identifies key activities involved in managing collection storage within CASL Libraries, recognising that each site is different, and makes recommendations on the best practice for CASL libraries. Virtual storage is outside the scope of this paper.

Key activities in collection storage

Each of the activities listed below is briefly discussed in this paper, and appendices have been added to provide background information.

1. Strategic planning
2. Measuring storage capacity
3. Occupancy rates
4. Monitoring and projecting growth of the collection
5. Adopting and using collection size standards
6. Maintaining collection integrity
7. Specifying storage equipment and layouts
8. Procurement of storage equipment
9. Installation of shelving
10. Planning and managing collection relocations

1. Strategic planning

Collection storage and access in libraries with large and complex collections requires high level planning and support at the senior management level. A key issue is positioning the collection storage program appropriately within the scope of library wide management to ensure effective support and budgeting.

A review of a library's current collection storage and access situation is a good starting point for the development of a long term storage plan. The review should consider factors such as collection development policy, statutory responsibilities, for example, Legal Deposit; historical arrangements and cataloguing practices, access and preservation requirements of different categories of the collection and especially, the range of formats to be stored.

Identifying a program of enhancements and improvements consistent with the organisation's strategic plan is the next step. These may include offsite storage, more efficient shelving arrangements or collection relocations to sustain effective client service, good OH&S and optimum storage of the collection. The size, scope and timing of particular projects should be defined in the program. Options should be investigated and finally, costs should be obtained to provide information for funding bids. These tasks may be undertaken by experienced staff in house or with the support of experienced consultant(s).

Key activities to support collection planning include: mapping and profiling the collections; documenting current collection size standards; calculating collection growth rates; data capture, analysis and documentation to enable calculation of the linear metres required for various sub collections; relating this information to available space and standard storage equipment; and ensuring appropriate storage conditions for each collection category.

Recommendation

- That CASL libraries target collection storage and access issues in strategic planning.

2. Measuring storage capacity

Understanding storage capacity is fundamental to storage planning. The task of measuring storage capacities and monitoring vacant space may be undertaken as a routine program or on an as required basis, perhaps incorporating sampling or periodic statistical snapshots.

Due to variations in shelf widths storage capacity is generally expressed in *linear metres*. For standard shelving units the following formula is used to calculate linear metres of storage:

$$\frac{\text{Shelf width in mm}}{1,000\text{mm}} \times \text{No. of shelves} = \text{Linear metres}$$

The capacity of storage units housing non-book formats such as maps can also be calculated and recorded in linear metres. The chart in Appendix 1 indicates standard methods for measuring non-book formats.

Depending on the level of accuracy required when calculating storage capacity, each individual shelf can be measured and counted or a general indication of capacity can be calculated by multiplying:

- Average number of shelves per bay (e.g. 6)
- Average number of bays per single sided range (e.g.10)
- Number of single sided ranges in the stack (e.g. 30)

This figure can then be converted into linear metres when the average shelf width is known. Due to inconsistencies in shelving heights and stack layouts this method is less accurate than measuring individual shelves and will provide only an indication of capacity.

Recommendation

- That CASL libraries adopt linear metres as distinct from square metres as the standard unit of measure for recording storage capacity.

3. Occupancy rates

Library literature suggests that when storing books in classified order, live collections should occupy a maximum of 86% of each shelf to gain maximum stack efficiency. Ideally each shelf should have a vacancy rate of between 25% to 34% if constant book moving is to be avoided as new items are added to the collection. (Quon and Szkudlarek, p. 173)

In classified collection arrangements, “buffer” zones should be allowed for unanticipated changes in acquisition patterns such as retrospective acquisitions and relocation of material. This may require leaving bays vacant at regular intervals throughout a run or leaving the top or bottom shelf vacant. This issue is less relevant when material is arranged in running number order.

Two aspects of occupancy require consideration: overall occupancy rates for the stack and occupancy rates for individual shelves:

To measure overall occupancy rates the amount of material on each shelf can be measured and converted to linear metres, or an average can be taken if the stack is evenly spaced. In the latter case it is easy to estimate whether 25%, 50% or 75% of the shelf is occupied. The resulting estimates can be calculated as a percentage of the capacity of the stack e.g. 75% of 1,000 LM means that overall 250 LM remain vacant throughout the stack.

While the overall occupancy rate may indicate there is sufficient capacity to accommodate new material for several years, occupancy rates of individual shelves will indicate whether a book move is required to redistribute space throughout the stack. If there are several shelves with an occupancy rate greater than 86%, a relocation should be planned to redistribute space before an area

becomes unworkable. The occupancy rate of neighbouring shelves will indicate the extent of the move required.

It is critical for material to be shelved in sequence, whether in classified or running number order, to support good access to material. In extreme circumstances, if there is insufficient space in the stack or if insufficient resources are available to carry out a complete redistribution of space it may be necessary to temporarily relocate a segment of material out of sequence with a marker indicating the temporary location.

However, practice indicates that temporary relocations should be avoided in all but the most dire circumstances where optimum client service, good OH & S and the condition of the collection are at risk. Placing material out of sequence results in a greater number of misplaced items and concomitant poor client service. Effective strategic planning for collection storage should be emphasised to avert temporary collection relocations.

Recommendation

- That CASL libraries monitor occupancy rates and provide vacant space to accommodate collections for an identified timeframe that reflects at least the length of the organisation's strategic planning cycle.

4. Monitoring and projecting growth of collections

Growth rates indicate the rate at which collection material is acquired and relate to collection development policy and trends in publishing. Growth rates are expressed in percentages and linear metres and are calculated on an annual basis. Surveys to monitor growth can be conducted over shorter periods of time. Annual growth rate figures can be used to project how much additional storage will be required to accommodate new collection material in future years. A cumulative growth rate for the complete collection is useful to project how much space will be required to house the collection over a number of years, and growth rates for individual segments are useful for determining how space should be distributed during book moves and re-spacing projects. Due to significant variations in the dimensions of collection material, measuring collection growth is a challenging task for most organisations.

The following methods may be adopted for measuring the growth of a collection:

- Recording the number of items added to the collection
- Measuring and adding the spine widths of newly acquired items
- Measuring vacant space after a book move and recording how quickly the space is occupied by collection items

Recording the number of items added to the collection

Most libraries maintain annual statistics on the number of items or pieces added to the collection in different formats. If the number of items held in the collection is known it is possible to use the following formula to establish the rate of growth:

$$\frac{\text{Number of new collection items} \times 100}{\text{Number of existing collection items}} = \text{Growth rate as \%}$$

This should be calculated for every collection format or segment for which separate storage will be required.

If the number of metres of shelving currently occupied by the collection is known this figure can be converted into approximate linear metres using the following formula:

$$\frac{\text{Growth rate as \%} \times \text{Linear metres occupied}}{100} = \text{Growth rate in linear metres}$$

These formulae may be used to calculate the growth of the entire collection or of particular segments. Due to variations in the spine width of new collection material this method is less reliable than measuring the spine width of individual collection items, but may provide a useful estimate.

Measuring and adding the spine width of newly acquired items

Measuring and adding the spine width of newly acquired collection items is the most accurate method of measuring growth because it takes account of variations in spine width and format of individual items. To obtain consistent information this task should be incorporated into standard procedures for processing newly acquired collection items.

In this method, newly acquired collection material must be measured before adding it to the collection. The most efficient way to do this is to attach a tape measure to a library trolley or sorting shelves and to sort the new collection items into classified or running number runs on the trolley or sorting shelves. The new material is then measured using the tape measure and recorded in centimetres or millimetres in a spreadsheet. This information should be recorded on a routine basis and cumulated by sequence to provide the actual growth rate over a specific period.

Measuring vacant space after a book move and recording how quickly the space is occupied by collection items

Another method of obtaining an indication of the growth rate of the collection is to measure the amount of vacant shelf space available after a major book move and then monitor how quickly the space is being occupied using the following formula:

$$\frac{\text{Vacant space (LM) after book move} - \text{Current vacant space (LM)}}{\text{Number of years since the book move}} = \text{Growth in LM}$$

This method is the least accurate, but may provide a useful annual estimate in the absence of other options.

Recommendations

- That CASL libraries select and use appropriate methods to obtain information about collection growth rates to support strategic planning.
- That the feasibility of recording spine width measurements in a separate MARC field to provide a shared source of data to enable the extraction of growth rate information from bibliographic records be investigated.
- That vendors of Integrated Library Management Systems be encouraged to develop modules to support collection storage management by enabling information on growth rates and stack locations to be recorded and analysed, and information on storage capacity and space to be stored and updated.

5. Adopting and using collection size standards

Agreement on and adherence to collection size standards is critical to optimum collection storage efficiency. Collection material and shelving size standards provide a basis for decisions about the location of specific formats and sizes of collection material. Standards adopted within an organisation may reflect historic practices, but the aim is to adopt the minimum number of shapes and sizes that will provide storage efficiency, support ease of decision making by staff members, allow a high level of congruence amongst material within sequences and enable the use of standard sizes of manufactured shelving.

Standards should include for each size category, the maximum height and depth of items to be placed on shelves vertically; and the maximum width, depth and height of items to be placed on shelves horizontally with spine outwards. This enables calculations to be made for the number of shelves required per bay for each size category. For optimum shelving efficiency, the standards must be the default for the bulk of storage decisions.

Recommendations

- That CASL libraries identify and document collection shelving and material size standards.
- That CASL libraries share information about collection shelving and material size standards with a view to achieving a sector wide standard.

6. Maintaining collection integrity

Collection integrity recognizes the relationship of material in a way that reflects intellectual organisation and supports intellectual access. This may relate to subject classification; method of acquisition; size, shape or format; security or environmental issues. Physical integrity supports and enhances retrieval

efficiency and good service to clients, particularly in open stacks. While the use of electronic catalogues has enabled clients to access material virtually no matter what the physical location or order, the impact on retrieval by library staff of material that is out of order cannot be underestimated.

The design, construction and previous use of buildings may restrict the capacity to maintain collection integrity. Challenges include integrating runs that have been fragmented through space constraints, and separating runs of material that were artificially amalgamated in previous times, and the consequent need to recreate or separate collection sequences. Fragmentation of collections such as split runs and out of sequence material can significantly slow retrieval.

Recommendation

- That CASL libraries identify issues in collection integrity as they arise and plan to remedy these.

7. Specifying storage equipment and layouts

This is specialised work and should be approached with appropriate technical and legal advice. If agencies have not developed in house expertise in shelving layouts, specifications, purchasing and installation, a specialist consultant should be engaged to advise on or oversee these tasks. There are consulting agencies able to undertake the entire process from determining requirements to fully installing and commissioning the shelving or providing expertise on individual parts of the process. (See section 9 on installation of shelving)

Preparing specifications for the purchase of static shelving is relatively straightforward. Manual and mechanical mobile shelving units are more complex to specify and the design requirements may vary depending on location and conditions.

In considering layouts and preparing specifications, Australian shelving standards should be consulted and the following issues should be considered:

- Amount of material to be stored currently and in future
- The organisation's collection material and shelving size standards
- Adjustable vs. fixed shelving
- Cased or covered vs open shelving
- Standard vs. custom units
- Complexities of the particular space/area
- Floor loadings and potential deflection of the floor area
- Shelving on the walls and possible water damage
- The environment and air conditioning/circulation/microclimates
- Loading levels for each shelf and overall units
- Shelf deflection tolerances
- Critical OH & S issues such as lighting, aisle width and shelving height
- Fire egress and access for final shelving layout
- Width of corridors for trolley access

- Sprinkler systems related to height and direction of shelving
- Australian Standards for relevant issues (metal shelving, lighting for area, motors on compactus units)
- Lead times for ordering equipment, especially if it is manufactured overseas
- Access to the building (eg is a crane required? will components fit within existing lifts?)
- Is the installation schedule consistent with the organisation's funding, construction, building works and fit out program?
- Warranties
- Maintenance
- Performance Standards
- Documentation and Training

Recommendation

- That CASL libraries seek professional advice if in house expertise is not available for shelving layout, specification and installation.

8. Procurement of storage equipment

The aim of government procurement whether at state or commonwealth is to obtain "best value for money". In a procurement process this principle requires a comparative analysis of all relevant costs and benefits of each proposal throughout the whole procurement cycle. Methods of procurement vary among agencies. The officer responsible for major procurement in the organisation should be contacted to discuss specific requirements. Procurement guidelines may be found at Appendix 2.

Recommendation

- That CASL libraries follow local procurement methods and seek professional advice if in house expertise is not available relating to the procurement of storage equipment.

9. Installation of shelving

During the installation of shelving there is a number of critical issues requiring attention. These include planning for the installation, managing contractors, and warranties. See Appendix 3 for information about shelving installation.

10. Planning and managing collection relocations

Planning and managing any collection relocation is a complex process. With preliminary consideration of key issues and flexibility to adapt to circumstances during the move, collection relocations should have a successful outcome.

A number of elements may be identified as critical to the success of collection relocation. These fit within the broad categories of decision making, data and documentation, communication and issues relating to equipment and building or OH & S. Elements within these categories are detailed as a checklist in Appendix 4.

Recommendation

- That CASL libraries plan collection relocations using the guidelines in Appendix 4.

In conclusion

The activities outlined in this paper are basic to effective collection storage and access. The methods and guidelines are the result of a collaborative process and are offered for use in the development of individual library strategies and procedures. Please note that the information provided is an outline only of the many tasks involved in collection storage and access activities. Suggestions for additions, comments and questions should be referred to the Secretary, CASL Stack Management Working Group, State Library of South Australia.

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References

- Chappell, S. "Moving library collections: planning shifts of library collections". April 11, 2005 http://libweb.uoregon.edu/acs_svc/shift/
- Evans, H. and Sweeney, G. "Defining stack management". *Library collections, acquisitions & technical services*. 29 (2005) 51-60
- Quon, T. and Szkudlarek, I. "National Library of Canada survey of holdings and projected growth". *Library collections, acquisitions & technical services*. 28 (2004) 159-179

CASL Stack Management Working Group
Standard methods of measuring capacity of storage equipment for non-
book formats in linear metres

Format	Type of storage equipment	Collection measuring (Standard way to measure format)
Audio tapes	Cased shelving	Width of each shelf
Cassettes	Drawers	Depth of drawers x the number of rows per drawer x number of drawers
CD's	Cased shelving	Width of shelf
Manuscript carton	Cased shelving	Width of shelf
Maps	Plan file cabinets	Width of each drawer e.g. 850mm
Microfiche	Drawers	Depth of drawers x the number of rows per drawer x number of drawers
Microfilm	Drawers	Depth of drawers x the number of rows per drawer x number of drawers
Newspapers (Stored horizontally)	Cased shelving	Width of each shelf
Newspapers (Stored vertically)	Cantilever shelving	Width of each shelf
Paintings	Screen storage	Length of screen
Videos	Cased shelving	Width of shelf
Records	Normal shelving	Width of shelf
DVDs	Normal	Width of shelf

CASL Stack Management Working Group Procurement guidelines

Each agency or government has procurement guidelines. These specify the type of procurement process that is required for each procurement activity, based on the estimated value and the complexity or perceived risks involved.

A tender (RFT) process is complex and involves a tender threshold (maximum purchase amount before tender), formal documentation, detailed written specifications, selection criteria, and a formal, regulated evaluation process. These can be lengthy and costly processes, however a tender process should result in providing a competitively priced solution for the agency and a fair opportunity to all suppliers who are capable of providing the goods and/or services specified.

For purchases under the tender threshold, procurement guidelines may require a less complex Request for Quotation (RFQ) or Request for Proposal (RFP) process and which involves a brief written specification and quotations from three or four suitable suppliers.

Some agencies may find that their agency already has access to a period contract. In this situation, the work associated with specifying the product and setting a price has already been undertaken and one or more suppliers have a contract to supply certain products at the agreed price. In this case it is still incumbent on the purchasing agency to check the product and negotiate the best price and service arrangement based on the size of the purchase.

It is critical to understand the following issues about requirements to make an informed decision in each procurement action:

Size, estimated value and complexity of the procurement action

- What is the allocated budget?
- How many potential suppliers are in the marketplace and what is their level of expertise?
- Is the product required exactly what is on offer or will it require customisation?

Type of Contract

A one-off procurement process for the supply and installation of standard shelving may require no more than a simple purchase order specifying the goods/services, the price and general terms and conditions. An agreed program for the installation may also be included.

If the purchase is more complex, it may be worthwhile to have a service contract which would include more complex terms and conditions.

Continuing purchase arrangements

For on-going requirements, it may be useful to undertake a procurement process and enter into a panel contract arrangement with one or more suppliers. This may result in the capacity to obtain a more competitive price and will assist in reducing procurement costs each time a similar product is required. Any period contract should include details about the longevity of fixed pricing arrangements and an agreed methodology for price increases over the life of the contract.

CASL Stack Management Working Group Shelving installation

During the installation of storage equipment the following issues should be considered:

- Installation plan/program
- Designated contact officer to oversee the installation
- Protection of the collection
- Contractor protocols
- Certificate of practical completion
- Rebate clauses
- Defects liability periods
- Warranties

Installation plan/ program

There should be an agreed installation plan or program which identifies “construction inspection/hold points”. This specifies each stage of works that must be completed, inspected and signed off before the next stage is commenced. This is particularly useful for motorised mobile units and allows any problems to be identified and rectified properly before the next stage of the installation is commenced. For example, typical construction hold points for a mobile unit would include: tracking; flooring; vinyl floor; shelving; and lighting.

Designated contact officer to oversee the installation

Prior to commencing a shelving installation it is helpful for both the agency and the supplier to have a designated contact officer who is authorised to make decisions in relation to the installation. This person will be responsible for overseeing the installation and signing off on construction/inspection hold points after appropriate inspections have been carried out.

Protection of the collection

Protection of collection material in the vicinity of the new installation is an important consideration. Before any installation work commences it is the responsibility of the contact officer to ensure that collection material has been covered appropriately. Preservation specialists within the organisation will be able to provide advice about the most appropriate method of covering and protecting the collection.

Contractor protocols

Contractor Protocols can be very useful for specifying issues like security, access to the site, noise restrictions, safety issues and conduct of contractors. It is a good idea to issue a copy to all contractors before commencement of the installation and require them to sign a disclaimer saying they have read and understood them.

Certificate of Practical Completion

At satisfactory completion of the installation, a certificate of practical completion should be issued. This certifies the completion date and marks the commencement of the defects liability period.

Rebate clauses for time delays

Depending on the original contract it may be possible to apply rebate clauses for time delays with the installation.

Defects liability period

The defects liability period is the period in which any faults must be fixed by the supplier in line with the terms and conditions specified in the contract. The defects liability period is commonly 52 weeks. The contract should state the timeframe in which any identified defects must be rectified and alternate solutions should this not occur (for example, the principal may engage another suitably qualified contractor to undertake defect rectifications and pass the associated costs to the original supplier).

Warranties

In addition to the defects liability period, the supplier may offer an extended warranty for specific components of the unit (eg the electric motors or the shelving units). The contract should identify clearly the warranty terms and conditions.

**CASL Stack Management Working Group
Checklist of elements to support a collection move**

Decisionmaking

▪ **Establish access principles for the duration of the move**

Before commencing a book move decisions need to be made about whether material can be retrieved from the collection during the move or whether access to the collection will be restricted. Any changes to access arrangements need to be notified to reading room coordinators and clients well in advance. Pre-ordering of material may also be considered as a viable option.

▪ **Contractors**

If engaging a contractor ensure that you have followed appropriate procurement guidelines for your organization and that the contractor is compliant and is capable of providing necessary services and, where appropriate, is aware of handling constraints for heritage materials. If available issue the contractor with a copy of your organization's contractor's protocols.

▪ **Security**

Security of collections, especially for heritage items, is paramount during a move. For material being moved externally to the library building this may involve the need for additional staff and should be noted as a requirement within tender documentation. Security of collections can also be addressed through appropriate handling techniques and the utilisation of customised, securable trolleys and capsules.

▪ **Lead times**

Timing is critical for to support planning of a successful collection move. Make appropriate allowances for shelf checking, flagging and identification; preparation and packing; physical relocation and relocation checks. Incorporate allowances where possible to cater for unexpected over runs.

Determine as early as possible the non-negotiable aspects of potential time impacts and be prepared to implement recovery programs in order to meet timeframes. This may involve the need for additional resources whether this be staff, trolleys or vehicles.

Communication

▪ **Consultation**

Allow sufficient time to liaise with all stakeholders. This would usually involve staff working in the area, reading room coordinators, preservation staff, building

maintenance staff if assistance is required with adjusting shelving and library operation areas such as technical services and document supply.

Involvement of colleagues in general relocation updates provides a common basis of understanding for relocation issues.

- **Point of contact**

Ensure that a supervisor is available at all times to answer any questions that may arise during the move and encourage questions. It is better to resolve issues before they become problems. Ensure that both library staff and the move contractor are aware of who is the designated move supervisor. This will streamline the communication process.

It is vital that the roles and responsibilities of all involved in the move are articulated clearly at each stage of the move and prior to, undertaking the actual move. This ensures that appropriate directions are given; responsibilities acknowledged and work undertaken at relevant stages of the project.

This applies for all library staff as well as the external expertise brought in to assist with the process.

- **Small teams**

It is easier to supervise a move and to work methodically if small teams of staff work on a move on a roster basis rather than a large number of people at once. Access to collections may be impacted by physical factors such as compactus and in these cases small move teams are the only way to go.

Data and documentation

- **Shelving dimensions**

Is the shelving in which the material is currently housed the same height, depth and width as the shelving in the new location? Variations in height and width will affect the capacity, and variations in depth may mean that some material will overhang the shelving when it is moved, creating OH & S and preservation issues. Are the shelves in the new location set at appropriate levels to accommodate the material in the new location? Is the width of the shelves consistent throughout all of the ranges, e.g. 900mm wide? If there are variations throughout the stack layout this will affect the accuracy of any shelf count and collation of data.

- **Growth rates**

To estimate how much space is required to accommodate new collection material over a period of time, for example, five years, break the items into logical classified segments and convert from linear metres to shelves (if all shelving is consistent widths).

- **Data check**

Take the time to check your data - whether it be collection measures, planning documents or floor plans, then double check it. If in doubt check it again. At the end of the day your planning is only as good as the data supporting it so accuracy is critical.

Allow appropriate timeframes for collation and analysis of data. Use the skills of colleagues to collate this data, and then encourage them to take a step back to allow for the implementation of the project.

- **Vacant shelving**

Calculate the amount of vacant shelving available to re-space the collection. Use either number of shelves or a measure of linear metres. Ensure substantial space is made available to accommodate growth of the collection for the specified period. It may be necessary to locate additional space or consciously reduce the period of growth that can be accommodated, for example to three years instead of five years.

Calculate on average how much vacant space can be allocated per range to allocate and monitor available space throughout the move. For example, if there are a total of 100 vacant shelves and 10 single sided ranges this means you can afford to leave up to 10 shelves per range of shelving on average. This assists with monitoring how much space is being used throughout the move. For example, if you have moved five single sided bays and only have 30 shelves vacant for the remainder of the move you have allowed too much space.

- **Shelf check**

If possible, shelf check the sequence of the collection prior to the move. This will allow a more accurate relocation of items as well as providing accurate allocation of space in the new location.

- **Fragmented runs**

When the move involves re-integrating fragmented runs of material the move will be easier if the beginning and end of each run is flagged. Each run can be allocated a job number.

If serious fragmentation has occurred over time it may be necessary to develop a book moving schedule listing the job, description of material, current location, number of shelves to be moved and information about the new location.

- **Flag where growth space is required**

Monograph runs should have at least a 25% vacancy rate on each shelf to accommodate new material. Serial runs require growth space at the end of each title plus additional growth space for new titles.

- **Allow space for existing material on loan**

Allow sufficient space when there is a call slip to enable the return of the material on loan. Also allow additional space for reference or other open access titles that will eventually be returned to stacks.

This can be done by generating a list of titles routed to reference shelves and then stacks, calculating space required and flagging shelves prior to the move.

- **Allow space for retrospective cataloguing projects**

Retrospective cataloguing projects may involve relocation of material from one run to another. If retrospective cataloguing projects are scheduled, find out as much information as possible about the project and how it will impact on stack spacing. Integrate estimated requirements into planning documentation.

- **Build in "buffers"**

If space permits allow additional vacant space at the end of each classified range for example, in Dewey, after the 100s, 200s, or more frequently in high growth areas to allow for unusual acquisition patterns or retrospective acquisitions.

- **Order of material**

Ensure the people undertaking the move are familiar with the classification system used and the call number arrangement, or library specific alpha/numeric codes. This may be an issue if a contactor such as a removal company is used and needs to be monitored for the duration of the move.

- **Undertake periodic checks**

Check frequently when the move first commences to ensure that the material is being moved in the correct order with adequate spacing. The first bay is a good check point. Then check periodically to ensure that the material is being moved in correct order, the spacing is adequate and that not too much space is being allocated. STOP the move if a problem arises until it is resolved.

- **Shelf check**

Undertake a shelf check after the move has been completed if possible.

- **Update Stack directory**

After the move update the Stack directory with the new locations and notify staff from all areas within the library.

Equipment and building

- **Stability of shelving**

Ensure that all shelving is properly braced and that individual shelves are adequately supported on shelving clips prior to relocating any material.

- **Floor loadings and shelf loadings**

Seek appropriate advice to ensure that floor loadings are suitable for the type of material to be stored. This may involve weighing several shelves to estimate the weight of the collection. Test the shelf loadings in the new location to ensure they are capable of holding the maximum shelf load without any deflection.

- **Cleanliness**

Is the shelving in a fit state to store collection material or does it require dusting and cleaning prior to the move? Does any of the collection material to be moved require cleaning?

- **Equipment**

Ensure that staff have suitable equipment to conduct the move and facilitate good OH & S, and that the equipment is in good working order.

- **Collection preparation**

Preparation of collections for relocation needs to be tailored for requirements. Heritage collections will require additional assessment to ensure that appropriate packaging and buffering has been applied to minimize the risk of damage during transit. This may include assessment of boxing and housing, handling options, restrictions of numbers of items moved in each load or even changed transportation routes.

- **Housing**

It can be useful to have access to enclosures, bags, folders or flags to quickly or temporarily accommodate damaged material discovered during the move. This assists later on to identify damaged material for preservation treatment.

- **Every site is unique**

Evaluate the issues and possible risks of each move at the start of the planning process to ensure a safe and efficient move.

- **Weather proofing**

For the relocation of collections external to the main building ensure that mechanisms are available for the weatherproofing of move trolleys or capsules. This may range from using fully enclosed capsules to the addition of waterproofing material over the trolley unit.

- **OH&S**

Ensure that staff and contractors have been provided with OH&S training relating to lifting, manual handling, use of mobile compactus units and equipment as well as training in book moving. The risk of injury will be minimized if staff have a sufficient variety of duties and extended periods of book moving without variation of tasks is avoided.