GOOD RECORDS MANAGEMENT PRACTICES

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FOREWORD

Records are valuable assets of organizations. Good records management not only helps protect records but also enhances organizations' operational efficiency. Recognizing the importance of good records management and of preserving Hong Kong's documentary heritage, the Government of the Hong Kong Special Administrative Region (the Government) has developed its records management policy and procedures with regard to international standard (i.e. ISO 15489 *Information and documentation - Records management* published by the International Organization for Standardization in 2001) and international best practices.

2.   Records management is an important function of an organization. We believe that good and proper recordkeeping is evidence of a well-governed organization and should be seen as an integral part of, rather than incidental to, any business. In terms of strengthening corporate governance and promoting good management practices, we see definite merits of sharing good records management practices and procedures with government-owned or funded statutory bodies.

3.   By setting out the principles and good practices relating to records management, and providing checklist and guidelines, this document aims to help government-owned or funded statutory bodies and their staff to assess the way in which they are managing their records and to pursue improvements if necessary.

1.   OVERVIEW OF RECORDS MANAGEMENT

WHAT ARE RECORDS?

1.1   An organization receives and processes tremendous amount of information day in and day out but not all of them are records.   A record is invariably linked to an organization's official business and maintained as evidence.   Accordingly, "records" can be defined as any recorded information or data in any physical format or media created or received by an organization during its course of official business and kept as evidence of polices, decisions, procedures, functions, activities and transactions.   For example, a driving licence application will be kept as a record by the Transport Department of the Government as evidence of its business.

> **Content, context and structure of a record**
>
> In order to serve as evidence, a record should be complete and must possess the following three elements -
>
> - **Content** – this refers to the information or ideas the record contains;
>
> - **Context** – this refers to the information about the circumstances in which the record is created, transmitted, maintained and used (e.g. who created it, when, to whom it was sent, why); and
>
> - **Structure** – this means the physical and logical format of the record, and the way parts of the record relate to each other (e.g. the structure of an e-mail record covers its header, body, attachments and corresponding reply).

WHAT IS RECORDS MANAGEMENT?

1.2   Records management refers to the whole range of activities which an organization should perform to properly manage its records. The key activities include setting records management policy, assigning responsibilities, establishing and promulgating procedures and guidelines, as well as designing, implementing and administering recordkeeping systems.

1.3   In the Government, "records management" includes the planning, directing, organizing, controlling, reviewing, training and other managerial activities involved with respect to the creation, classification and indexing, distribution, handling, use, tracking, storage, retrieval, protection and disposal of records to achieve adequate and proper documentation of government policies, decisions and transactions as well as efficient and cost-effective operation of government bureaux and departments (B/Ds).

1.4   All organizations need to identify the regulatory environment that affects their records management.   The regulatory environment may comprise such elements as laws and regulations, codes of best practices, code of conduct etc.   For instance, the retention period of a particular type of records before they can be destroyed may be governed by a law or a code of practice.

Regulatory environment

Some laws and codes may have implications on records management of an organization, for example -

- Evidence Ordinance (Cap. 8) - e.g. proper keeping of records to ensure its legal admissibility;

- Personal Data (Privacy) Ordinance (Cap.486) - e.g. timely destruction of personal data in accordance with Privacy Commissioner Office's Code of Practice on Human Resource Management;

- Limitation Ordinance (Cap.347) - e.g. retention of relevant records for the specified limitation periods to serve as evidence in possible legal proceedings;

- Electronic Transactions Ordinance (Cap.553) - e.g. admissibility of electronic records in a court of law; and

- Code on Access to Information - e.g. proper organization of records to facilitate their efficient retrieval to timely respond to public access requests.

WHY IS RECORDS MANAGEMENT IMPORTANT?

1.5   Records management is important because it supports an organization to -

- make decisions based on evidence;

- meet operational, legal and regulatory requirements;

- be open and accountable;

- enhance operational efficiency and effectiveness; and

- maintain organization or collective memory.

1.6   A comprehensive checklist to assess whether an organization has put suitable arrangements in place to manage its records is at **Annex I**.

2.   RECORDS MANAGEMENT POLICY

OBJECTIVE OF RECORDS MANAGEMENT POLICY

2.1   Good records management starts with a policy which reflects an organization's needs.   The objective of the policy should be the creation and management of authentic, reliable, complete and usable records which are capable of supporting business functions and activities of the organization for as long as they are required.

Characteristics of a record

Authenticity, reliability, integrity and usability are the characteristics of a record.   The purpose of any records management policy, practices, guidelines and procedures is to ensure that records should have these characteristics, as follows -

- *Authenticity* - an authentic record is one that can be proven
  (i)   to be what it purports to be;
  (ii)   to have been created or sent by the person purported to have created or sent it; and
  (iii) to have been created or sent at the time purported;

- *Reliability* - a reliable record is one whose contents can be trusted as a full and accurate representation of the transactions, activities or facts to which they attest and can be depended upon in the course of subsequent transactions or activities;

- *Integrity* - the integrity of a record refers to its being complete and unaltered; and

- *Usability* - a *usable* record is one that can be located, retrieved, presented and interpreted.   It should be capable of subsequent presentation as directly connected to the business activity or transaction that produced it.

2.2   An organization should formulate and communicate its records management policy, set out the organization's intentions on records management and identify a senior staff member(s) with lead responsibilities for records management to enhance governance in this aspect.   A records management policy should be underpinned by procedures and guidelines for compliance by staff.

> **Records management policy of the Government**
>
> The Government's records management policy requires the implementation in each bureau and department of a comprehensive records management programme that will -
>
> - make and keep full and accurate records as long as they are required;
>
> - minimize the costs of managing government records;
>
> - provide quality services to users;
>
> - provide necessary security for government information;
>
> - facilitate public access to records and information that encourages better understanding of government policies and operations; and
>
> - identify, preserve and provide access to archives that have continuing or permanent value for research, educational, cultural and other related purposes.

RECORDS MANAGEMENT RESPONSIBILITIES

2.3   Defining and assigning records management responsibilities and promulgating such responsibilities within an organization are crucial to good records management and to meeting the needs of internal and external stakeholders.   The authorities and responsibilities for records management of different employees within an organization should also be clearly defined, including senior management, records managers, records management staff and all staff who create, receive and keep records as part of their daily work.

Good practices

An organization should -

- formulate and promulgate its records management policy, e.g. in the form of records management policy statement setting out what the organization intends to do in respect of records management;

- formulate and promulgate records management requirements, guidelines, procedures and best practices for compliance and reference by its staff;

- review and improve records management policy, recordkeeping systems, practices, guidelines and procedures whenever appropriate;

- develop and provide records management training for its staff;

- designate a senior officer as Corporate Records Manager to oversee its records management and to establish and implement a proper records management programme within the organization;

- designate Assistant Corporate Records Manager(s) to oversee records management matters in each section/unit;

- designate a responsible staff to control the creation, naming and coding of new files to facilitate accurate capturing and ready retrieval of records; and

- reflect in the job descriptions of the staff concerned their assigned specific records management roles and responsibilities for accountability and to facilitate evaluation.

3.   RECORDKEEPING SYSTEMS

3.1   A recordkeeping system is the tool to manage records. It is a manual or automated information system having the necessary functionality that enables it to carry out and support the various records management processes such as collection, organization and classification of records to facilitate their retrieval, distribution, use, disposal or preservation.   The various records management processes and controls are described in Chapter 4.   When designing and implementing a recordkeeping system, an organization should ensure that it can meet the organization's records management policy, requirements, practices, guidelines and procedures.   The figure below shows the generic functionality of recordkeeping systems to support the various records management processes.
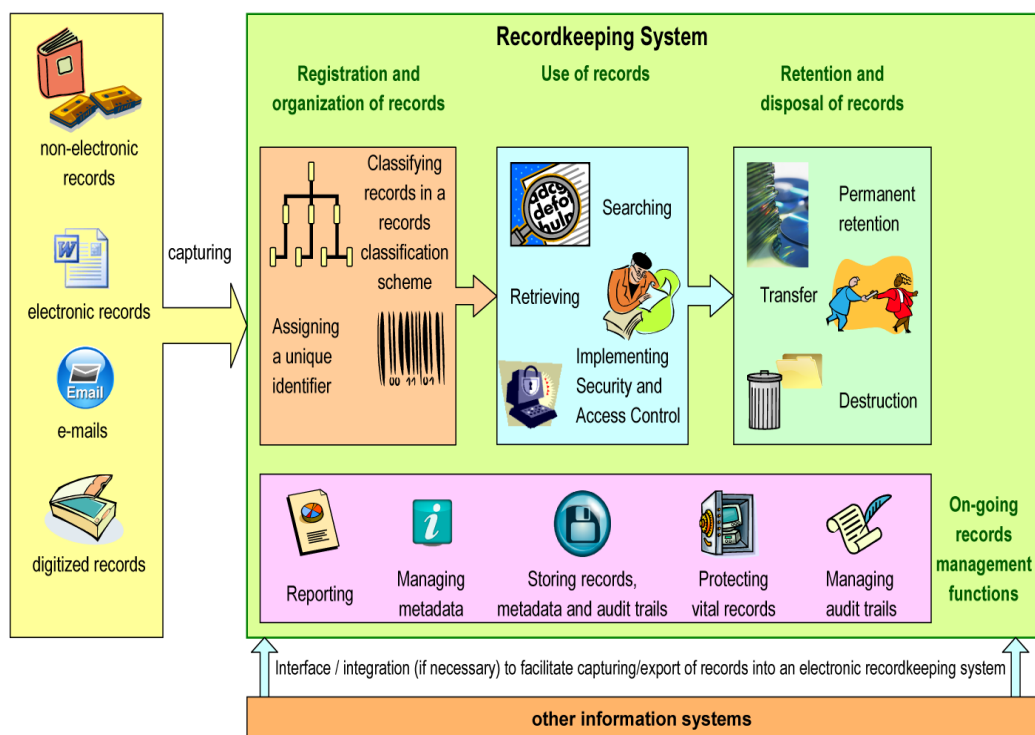
3.2   To serve its purpose, a recordkeeping system should have the following characteristics -

- *Reliability*: It should be capable of continuous and regular operation in accordance with established guidelines and procedures;

- *Integrity*: Access and security measures should be in place to prevent unauthorized access, destruction, alteration or removal of records;

- *Compliance*: It should be managed to comply with all requirements arising from the legal and regulatory environment and business, and expectations in which the organization operates;

- *Comprehensiveness*: It should be able to manage records in any formats captured from different activities and transactions of the organization; and

- *Systematic*: It should be able to capture, maintain and manage records systematically.

3.3   In light of the increasing use of electronic exchanges for official transactions, an organization may pursue the development of an electronic recordkeeping system (ERKS)[1] to assist it in managing both non-electronic and electronic records[2] in an integrated and consistent manner.   More details on the development of an ERKS are given in Chapter 8.

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[1] An ERKS is named as an electronic records management system in some jurisdictions.

[2] An electronic record in the context of this document means a record generated in digital form by an information system, which can be (a) transmitted within an information system or from one information system to another; and (b) stored in an information system or other medium (Electronic Transactions Ordinance).   In some jurisdictions, it is sometimes named as a digital record.

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4.   RECORDS MANAGEMENT PROCESSES AND CONTROLS

RECORDS MANAGEMENT PROCESSES

4.1   The purpose of a recordkeeping system is to manage records throughout their life cycle, i.e. from the creation or receipt of a record, through its useful life to its final disposal.   The figure below illustrates the life cycle of records.
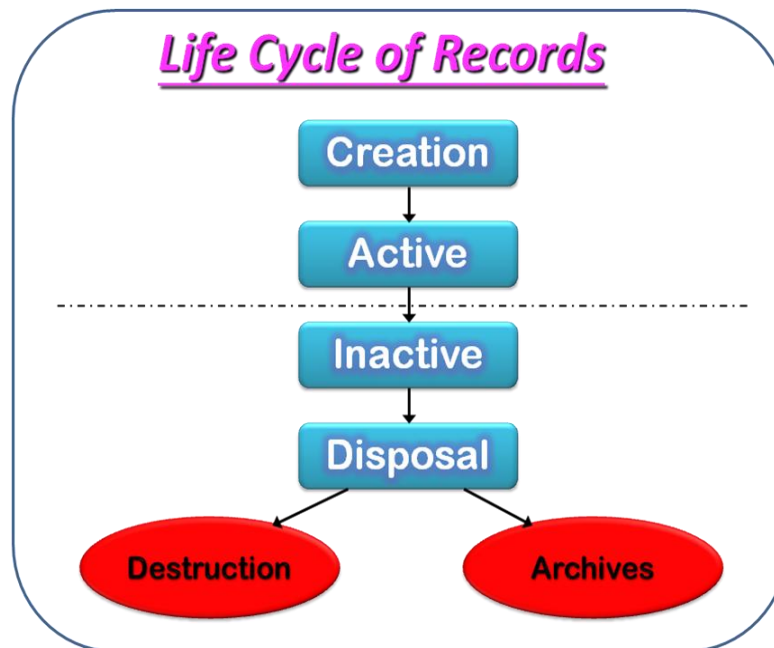
4.2   The records management processes in different stages of records life cycle include -

- records capture;
- registration;
- records classification;
- records storage;
- access;
- tracking; and
- records disposal.

4.3   Although the processes described above are presented as if in a sequence, it should be noted that in some recordkeeping systems, particularly electronic recordkeeping systems, some of them may take place simultaneously (e.g. records capture, registration and classification are often carried out as an integrated series of actions) or in a different order (e.g. access control and tracking should be implemented for records during their whole life) from that described.

4.4   Before examining the requirements of each records management process, an organization should first determine documents to be captured as records into a recordkeeping system and how long to retain records.

DETERMINING DOCUMENTS TO BE CAPTURED AS RECORDS AND HOW LONG THEY SHOULD BE RETAINED

4.5   An organization should determine which documents created or received during business processes should be captured as records into a recordkeeping system, and how long they should be maintained within the system, based on an analysis of the legal and regulatory environment, business and accountability requirements and the risk of not capturing or retaining the records.   This will ensure adequate and necessary records are captured to meet business needs.   This process is also important since proper disposal of records facilitates easy retrieval of records in active use, and minimizes costs for maintaining and storing records.

4.6   An organization should establish records retention and disposal schedules for its records to ensure systematic planning and orderly implementation of records disposal after records have been kept the right length of time.   An organization should also review approved records retention and disposal schedules regularly, say at least once every five years, to see whether amendments are required in light of changing circumstances.   Records retention and disposal schedules are established and reviewed having regard to the values of the records, as follows –

- *Administrative value*: Records with administrative value are those needed to determine the policy and procedures necessary to carry out the activities of an organization. For example, policy documents, procedure directives, rules and regulations;

- *Operational value*:   Records with operational value are those documenting the activities and transactions of an organization. For example, routine correspondence and technical data;

- *Legal value*:   Records with legal value are those required to define the rights and obligations of an organization, its staff and individuals and organizations with which it deals.   For example, agreements, certificates and contracts. If necessary, legal advice should be sought as to the legal value of individual records;

- *Fiscal value*:   Records of fiscal value are those relating to the financial transactions of an organization and especially those required for audit purpose.   For example, contracts, guarantees, bonds and documents related to settlement of claims and loans; and

- *Archival value*:   Records with archival value are those which should be preserved permanently.

Example

A typical records retention and disposal schedule will contain the following details -

- *Series of records*:
  The group/series of records covered (e.g. records relating to licence applications) by the schedule;

- *Inactive record criterion:*
  An indicator to demarcate active and inactive stages of records so as to start the counting of retention period (e.g. after action completed or after file closed);

- *Retention period:*
  The period the records are to be kept after active use (i.e. meeting the defined inactive record criterion) but before their final disposal;

- *Custody venue:*

  The place where inactive records (records become inactive when meeting the inactive record criterion) are kept during the retention period (e.g. 2 years on-site and 3 years off-site storage); and

- *Disposal action:*

  The final disposition of records (e.g. destruction, transfer to the organization's archives or the Public Records Office (PRO) of the Government Records Service (GRS) for permanent retention as archival records, migrating records to other storage formats etc.).

The figure below illustrates how a records retention and disposal schedule plans the life of a series of records relating to licence applications.

Record Creation	Inactive Record Criterion After action completed	Disposal Action Destruction

| Kept in agency for handling licence applications | Retention Period and Custody Venue
Kept for reference for 5 years | |
| | 2 years on-site storage in agency | 3 years off-site storage |

Time
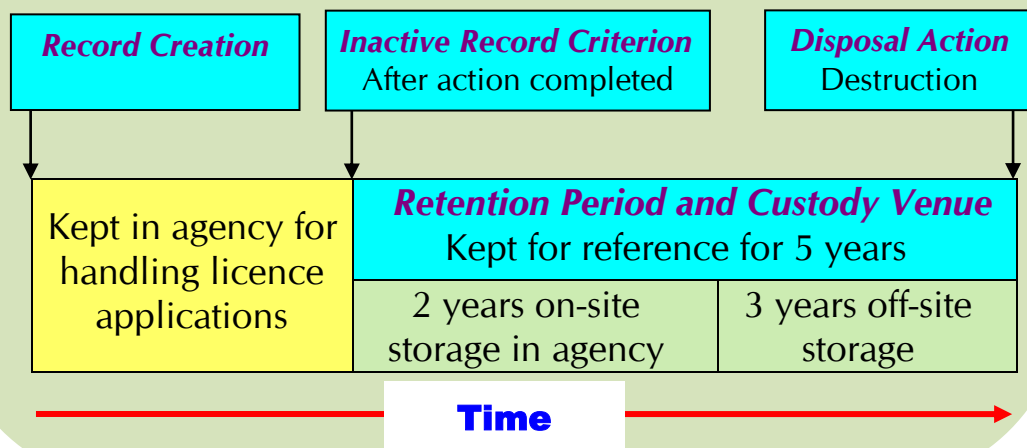
4.7   Establishment of records retention and disposal schedules can also facilitate identification of records with archival value.   If any records having potential archival value are identified, an organization may contact PRO of GRS for assistance.   The functions of PRO and the arrangements for accepting archival records in the form of private donations from government-owned or funded statutory bodies are described in **Annex II**.

4.8   Records appraised as having archival value should be permanently preserved in a secure and controlled environment.   Some guidelines on the preservation of archival records, which have been adopted by the Preservation Service Office of GRS, are at **Annex III** for reference.

RECORDS CAPTURE

4.9   All records, regardless of format and technological environment in which they are collected, created or generated, should be captured into and maintained in an identifiable and proper recordkeeping system.   The purpose of capturing a record into a recordkeeping system is to establish a relationship between the record, the creator and the business context that originated it, and to link it to other records.   The captured records should be complete, and contain the content, structure and contextual information (as defined in paragraph 1.1 of Chapter 1 above) which are necessary to document an official activity or transaction as evidence of business.   It should be possible to understand a record in the context of the organizational process that produced it and of other linked records.

Examples

An organization may draw up guidelines for its staff on records capture.   The following are examples of what records should be created and kept -

- inward and outward communication (e.g. letters, memoranda, e-mails, forms) with external persons and bodies directly relating to the functions and activities of the organization;

- minutes and other records of meetings, consultations and deliberations pertinent to the decision-making process, formulation of policies and procedures or transactions of business; and

- major oral decisions and commitment.

REGISTRATION

4.10   A record is registered when it is captured into the recordkeeping system, providing evidence that it has been created or captured.   In a paper-based system, a record captured into a file is registered through entering such contextual information as the type of record (e.g. memo), date of record, and name of originator/addressee(s) of the record on the file.

RECORDS CLASSIFICATION

4.11 To facilitate a wide range of records management activities, including identification, capturing and retrieval of records, security and access control as well as disposal, records should be systematically organized according to records classification schemes (also called file plans), which are plans for logical arrangement of records according to one or more of the following: business functions, activities and contents of the records. In general, a records classification scheme includes a coding system expressed in symbols (e.g. alphabetical, numerical or alpha-numerical) to show the logical relationship amongst the records. A records classification scheme should allow modifications such as addition of new records series/groups to cater for changing circumstances.

Example

A Fictitious, Hierarchical Records Classification Scheme
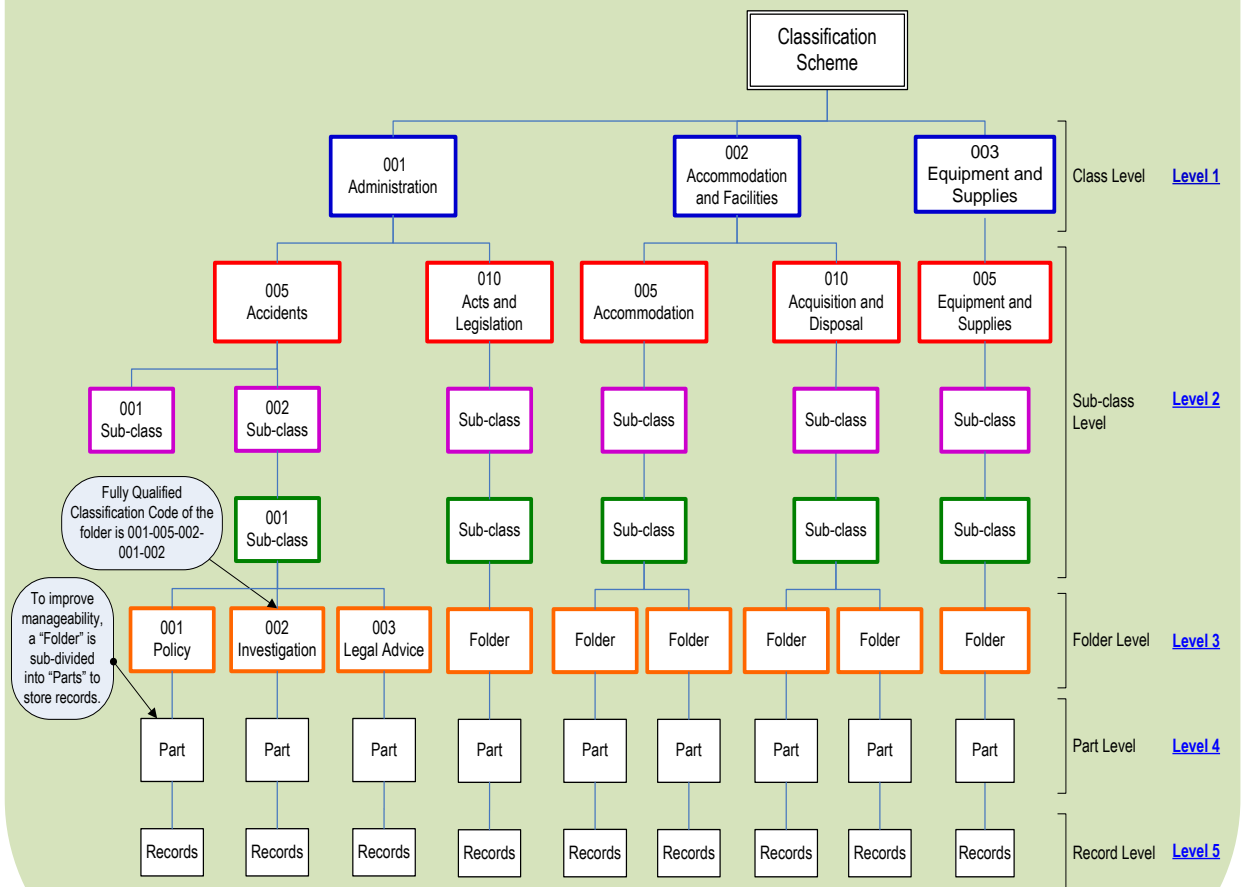
Real schemes are much larger.

4.12   In view of their important role in records management, records classification schemes should be approved and reviewed by a senior staff in the organization having regard to the following principles -

- whether business records are separated from administrative records;

- whether the scheme is systematic, logical, consistent and scalable to facilitate accurate and complete documentation of policies, procedures and decisions for the efficient carrying out of the organization's functions, activities and transactions;

- whether the scheme can be used easily and the file titles are clear and unique (e.g. avoid the use of "general"/"miscellaneous") to facilitate accurate capturing and ready retrieval of records; and

- whether the scheme facilitates segregation of vital records for protection and establishment of records retention and disposal schedules to satisfy retention requirements stipulated by legislation (e.g. Personal Data (Privacy) Ordinance) and to separate records which need to be kept for a long period (e.g. those on policy) from those which need to be kept briefly (e.g. routine correspondence).

RECORDS STORAGE

4.13   Records should be stored in such a manner so as to facilitate user access and ensure that they are protected from unauthorized access, use, disclosure, removal, deterioration, loss or destruction.   An organization should lay down guidelines on the storage of records including sensitive or classified records[3].   For records in paper form, organizations should note that paper deteriorates rapidly in an environment of high temperature and humidity.   Furthermore, mould growth on paper can be a health hazard to staff.

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[3] For storage of classified records in the Government, for example, B/Ds are required to comply with the Security Regulations.

Good Practices

- Paper records should be stored in a clean and dry environment (e.g. not near unblocked window, under/near water/sewage pipe, water drain, manhole, water permeable wall or ceiling, water tank), and in proper facilities (e.g. filing cabinets and filing racks) instead of stacking them on the floor.

- An organization should also arrange inspection regularly and after events such as typhoon or rainstorm.

- For paper records which have long-term (e.g. 30 years or over) value, they are recommended to be stored in a clean environment with round-the-clock control of temperature and relative humidity (RH) at 20°C +/- 2°C and RH 50% +/- 5% respectively to ensure their preservation over time.

4.14   For storage of electronic records, the selection of storage media (e.g. optical disc and tape), storage system, storage environment and handling procedures should be based on records management and business considerations, e.g. volume and growth rate of records, records security needs, retrieval requirements and preservation needs.

4.15   In line with the international records management best practices, organizations should consider the following measures regarding storage of electronic records in an ERKS -

- the hardware and software of the ERKS should be installed at a proper location, e.g. server room meeting industry standards and other related requirements;

- digital media, e.g. optical disk and tape storing electronic records should be accommodated in a safe environment with suitable climate control under regular monitoring;

- a programme should be set up to monitor and refresh the digital media regularly, e.g. transferring the records to a new optical disc, having regard to the life span of the media to ensure the accessibility and usability of records over time;

- a programme should be set up to back up records and the associated metadata and audit trails regularly to prevent their loss or damage;

- migration of records, the associated metadata and audit trails should be conducted through successive hardware/software upgrades to retain the content, context and structure of records for their preservation and access over time;

- the storage requirements and arrangements should be regularly reviewed to meet records management and business needs; and

- proper documentation should be maintained on the storage arrangements.

4.16   For storage of records in other formats (e.g. audio-visual materials, microfilms), an organization should seek specialist advice to ensure their preservation is commensurate with business needs.

ACCESS

4.17   An organization should ensure that timely access to records is provided to authorized users for conducting business. On the other hand, to provide sensitive information with adequate protection, records should be classified according to their level of sensitivity at a particular time. An organization should also lay down guidelines on the protection, processing and transmission of classified records.

Good practices

- Records should be kept in a recordkeeping system with systematic indexes and classification to facilitate their easy retrieval.

- Access to personal data - An organization should refer to the Personal Data (Privacy) Ordinance for arranging access to personal data held by them.

- Public access to information held by public bodies - The Code on Access to Information provides public access to government information kept by B/Ds in the Government. The Government has been encouraging public bodies under the jurisdiction of the Ombudsman Ordinance (Cap. 397) to adopt the Code or a similar guide.

4.18   Public access to archival records transferred to GRS is managed through the Public Records (Access) Rules 1996.   Apart from government archival records, GRS welcomes donations from non-government sources.   Details of the arrangements for accepting donations from government-owned or funded statutory bodies are set out at **Annex II**.

TRACKING

4.19   In a recordkeeping system, tracking of the movement and use of records is required to -

- identify outstanding action required;

- enable retrieval of records;.

- prevent loss or missing of records;

- monitor usage for recordkeeping system maintenance and security (e.g. growth of records, disposal of records); and

- identify the operational origin of individual records where the recordkeeping systems have been amalgamated or migrated.

4.20   An organization should decide the type of information that needs to be maintained to facilitate tracking of records, and to adopt means to track the whereabouts and movement of records.

Good practices

To support tracking of records in a paper-based recordkeeping system, an organization should -

- prepare and maintain an accurate inventory of records which covers such information as file title, file reference number, date opened, date closed and storage location (e.g. room/floor); and

- track the whereabouts and movement of records by adopting file movement card/register or appropriate electronic means (e.g. a bar-coding system).

4.21   To minimize the risk of losing records during bulk relocation of files, it is necessary for an organization to make appropriate arrangements to ensure that the relocation process is properly supervised and conducted.   For reference, government B/Ds are required to put in place such arrangements as designating an officer not below the rank of Executive Officer II or equivalent to oversee the task; taking stock before the relocation exercise; conducting a file inventory check after relocation; documenting the inventory check; and updating the new storage location immediately afterwards.

IMPLEMENTING DISPOSAL

REGULAR DISPOSAL OF RECORDS

4.22   Approved records retention and disposal schedules (please refer to paragraph 4.6 above) will not serve their intended purposes if they are not followed.   An organization should initiate regular disposal of records in accordance with approved records retention and disposal schedules.   To safeguard against premature disposal of records and destruction of records having archival value, disposal of records should be properly authorized in advance by a sufficiently senior staff in the organization.   Specifically, the responsible staff of the organization should ensure -

- the retention and disposal requirements specified in the respective disposal schedules, and any governing legislation have been complied with; and

- there is no outstanding actions on any of the records.

> **Good practices**
>
> Care should be taken to minimize the risk of inadvertent, unauthorized destruction of records during the disposal process. The disposal process should be properly supervised by adopting the following procedures -
>
> - prepare an accurate list of records to be disposed of. Records (including those stored off-site) to be disposed of should be physically checked against the list to ensure its accuracy;
>
> - ensure the completeness (e.g. no enclosures of files are missing) of records having archival value;

- segregate records approved for destruction to ensure that they do not mix up with those pending approval;

- destroy classified records and records containing sensitive information (e.g. personal data) in accordance with the relevant requirements e.g. shredding the records to the required size to prevent reconstruction; and

- document the procedures for accountability.

TRANSFER OF RECORDS TO OTHER BODIES

4.23   An organization may need to consider arrangements for transferring its records to other bodies due to such reasons as reorganization or outsourcing.   The organization should prepare a list of records pending transfer for internal approval and document the transfer arrangements.

DOCUMENTING RECORDS MANAGEMENT PROCESSES

4.24   Documentation describing records management processes and recordkeeping systems should address legal, regulatory, operational and technical requirements.   It is important that authority for records management processes, such as classification and disposal of records should be clearly stated.

Good practices

An organization should document the following records management functions and processes -

- guidelines on what records should be created and kept;

- records security policy, including security classification, access rights and security breach management;

- approval for adoption of new records classification schemes;

- endorsement on establishing records retention and disposal schedules;

- endorsement on disposal of records; and

- records disposal procedures.

5.   PROTECTING VITAL RECORDS

WHAT ARE VITAL RECORDS?

5.1   Vital records are those records containing information essential to the continued and effective operation of an organization in the event of an emergency or a disaster e.g. a prolonged electricity blackout, a serious flood, a blaze and an earthquake.   Although an organization may take precautionary measures to protect records from perils in their day-to-day operations, even foolproof measures may not prevent damage to or loss of records when an emergency or a disaster strikes.   Therefore, vital records protection should be put in place to reduce the risks of loss of records and to mitigate the possible adverse effects on the operation of organizations during and immediately after an emergency[4] or a disaster[5].   Vital records are specific to each organization having regard to its unique functions and responsibilities.

Tips

In general, vital records are required to -

- deal with emergencies and disasters e.g. building plans and rescue plans;

- continue and/or resume business operation during and/or after emergencies and disasters e.g. operational manuals of mission-critical information systems;

- protect and/or re-establish legal, financial and functional status e.g. property and revenue records; and

- preserve the rights of the organization, its employees and clients as well as members of the public e.g. payroll and medical records.

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[4] An emergency refers to a situation or an occurrence of a serious nature developed suddenly or unexpectedly that warrants immediate action.   It may lead to an interruption of normal operation of short duration.

[5] A disaster is an unexpected occurrence which inflicts widespread destruction and distress and has long-term adverse effects on the operation of an organization.

5.2   It is the responsibility of an organization to identify and protect (e.g. through duplication and/or off-site storage) its vital records to ensure uninterrupted operation of major business functions.   If appropriate, a comprehensive vital records protection programme should be established.   Some general guidelines on establishing a vital records protection programme are at **Annex IV**.

6.   MONITORING AND AUDITING

6.1   An organization should undertake compliance monitoring regularly to ensure that the records management processes and controls are being implemented according to the organizational policies and requirements.   This is to ensure that its records management programme is functioning effectively.

> **Good practices**
>
> An organization should conduct regular review of its records management programme and practices to -
>
> - assess its compliance with key records management functions and requirements; and
>
> - identify areas requiring improvement with regard to desirable best practices and formulation of plans to implement improvement measures.
>
> The review and recommended improvements should be endorsed by the management.
>
> The Checklist at **Annex I** will be helpful in conducting the review.

6.2   An organization should also consider the arrangements to deal with cases involving loss or unauthorized destruction of records.   It should properly follow up any loss or unauthorized destruction of records, including ascertaining the facts and identifying the circumstances leading to the loss or unauthorized destruction, taking steps to prevent recurrence and taking disciplinary action or administrative action as appropriate.

7. TRAINING

7.1   An organization should establish an ongoing training programme for its staff to provide them with adequate knowledge and skills on records management requirements and practices, particularly on creating records during their work, capturing those records into and managing them in designated recordkeeping systems.

7.2   For records management staff, including records managers, registry supervisors and registry staff, specific records management training should be provided to them on records management concepts, principles and practices, covering such topics as records classification, records scheduling and disposal, and records capturing.

7.3   Records management training should be provided to staff at the appropriate timing to facilitate their work.   For example, records management training should form part of the induction programme for new staff.   Refresher training should be arranged for serving staff on a regular basis.   Seminars on topical records management issues (e.g. promulgation of new guidelines) should be arranged to keep staff abreast of new development of records management in the organization.

Good practices

An organization should arrange records management training for its staff at different levels on the following important topics -

- records management policy and requirements of the organization;

- records management roles and responsibilities;

- filing practices;

- records classification and coding;

- records scheduling and disposal; and

- electronic records management (if appropriate).

8. ELECTRONIC RECORDS MANAGEMENT

CHALLENGES OF MANAGING ELECTRONIC RECORDS

8.1   Development of information technology (IT) and the widespread use of networked computers to conduct business have resulted in exponential growth of records being created digitally.   More and more records relating to decision-making and programme delivery are created and kept in electronic forms e.g. e-mails, spreadsheets and video recordings.   However, electronic records have a vulnerable nature and present unique challenges in managing an organization's records because of -

- the fragility of the media (e.g. magnetic tapes, optical disc and USB drives) upon which they are recorded;

- the dependency on technology to allow access and use of electronic records which cannot be read directly without the aid of computer software and hardware;

- the ease of manipulation (i.e. updated, deleted, altered intentionally or inadvertently) without being discovered; and

- the absence of self-evident and ready contextual information (e.g. who created it, when, to whom was it sent, why) to enable that the records are understandable and useable over time.

8.2   Having regard to the above considerations and the need for proper controls over electronic records, new records management policy, strategies, practices, procedures and tools benchmarked against international records management standards and best practices are required to support efficient and effective management of electronic records and non-electronic records under such an environment in an organization.   Electronic records management (ERM), which advocates adoption of electronic means to manage electronic and non-electronic records in a consistent and integrated manner, has therefore evolved in recent years to provide the solution.

Example

- ERM has been widely adopted and promoted in the public sectors of regions/countries such as Australia, Canada, New Zealand, the European Union and the United States of America.

- International professional bodies notably the International Council on Archives (ICA) have also put continuous efforts to develop standards, best practices and solutions for ERM.

ERKS AS A SOLUTION TO DRIVE ERM

8.3   Based on the ERM implementation experience of countries/regions mentioned in paragraph 8.2 above, an ERKS, which is designed and developed in accordance with well-established records management principles and practices and is able to support efficient business operations of an organization, is commonly adopted as a solution to drive ERM in office setting.   By definition, an ERKS is an information/computer system with the necessary records management capabilities designed to electronically collect, organize, classify and control the creation, storage, retrieval, distribution, maintenance and use, disposal and preservation of records throughout the life cycle of records.   It aims to manage records with the desired levels of confidence and integrity, by combining both advantages of electronic ways of working with well-established records management principles.

8.4   As with the development of other IT systems and in line with the international best practices and experience of other countries/regions in taking forward ERM, it is incumbent upon an organization to develop a set of functional requirements[6] which not only describes the characteristics of a good ERKS, but also helps the organization design, develop and implement an ERKS compliant with its records management policy and requirements.

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[6] "Functional requirements" refer to specific operations that an information/computer system needs to perform in order to achieve the desired objective.

Tips

The functional requirements of an ERKS will give the system the functionality to carry out and support the following records management processes and controls -

- records capture (to determine whether a record should be made and kept and to establish a relationship between the record, creator and the business context that originated it);

- registration (to provide evidence that records have been created or captured in a recordkeeping system);

- classification (to link records with the business context under which they were created/received);

- access and security classification (to assign rights or restrictions to access records);

- setting of retention and disposal arrangements (to assign records retention and disposal schedules to ensure that records are kept for as long as they are required for organizations' business needs and they are duly disposed of to meet legislative requirements (such as those of the Personal Data (Privacy) Ordinance) and to reduce storage and management costs);

- storage (to determine the efficient and effective means of maintaining, handling and storing records);

- use and tracking (to manage the use and track movement of records to prevent loss, detect unauthorized use and ensure ready use when required); and

- implementation of disposal (to execute disposal of records, including destruction, transfer of custody or ownership of records).

IMPLEMENTATION ISSUES OF ERM AND ERKS

8.5   Having regard to the experience of overseas jurisdictions in implementing ERKS, ERM is not just to have a proper ERKS in place though it is an essential component.   The successful implementation of ERM and ERKS in an organization also depends on the following critical success factors -

- formulate ERM policy and strategies and integrate them as part of corporate records management programme and define clearly roles and responsibilities of staff on managing records;

- foster a corporate culture of taking responsibilities on records management among all staff members and adopt electronic means to manage records;

- analyze business processes before incorporating ERM processes into business operations;

- provide training and support to ensure compliance with the corporate records management policy and requirements; and

- develop practices and guidelines in managing electronic records to guide staff members.

8.6   Given the complex issues involved, including functional and technical requirements for the IT system, and the key success factors mentioned above, organizations wishing to pursue ERM and implement an ERKS should conduct a study to examine their readiness for ERM before embarking on the project.   Specialist support and advice, e.g. consultancy services may need to be considered in the process.   A list of websites of national archives of overseas jurisdictions and international professional bodies which contain useful reference materials for organizations wishing to pursue ERM and ERKS is set out at **Annex V**.

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[Paragraph 1.6 of Chapter 1 and paragraph 6.1 of Chapter 6 refer]

CHECKLIST FOR PROPER RECORDS MANAGEMENT PRACTICES

A.   Policy and responsibilities

1.   Is a comprehensive records management programme in place to manage records in your organization?

2.   Is the records management programme adopted as organizational policy at the top management level?

3.   Does the records management policy define clearly and adequately the programme authority, objectives, responsibilities and the interrelationship of the staff who manage or perform records management processes?

4.   Has the policy been properly authorized and promulgated to all staff concerned of the organization?

5.   Are the records management responsibilities assigned to staff of appropriate level and skills?

6.   Has a senior officer been designated to oversee the organization's records management?

7.   Has your organization formally designated officers at an appropriate level with the responsibilities for carrying out the records management programme in their sections/units?

8.   Has the records management programme been allocated appropriate resources to enable it to be established and maintained?

9.   Have procedures and guidelines been established to underpin the records management policy for compliance by staff?

10. Have the records management policy, responsibilities, guidelines and procedures been properly documented?

B.   Recordkeeping systems

1.   Does your organization have a recordkeeping system having the necessary functionality to enable it to carry out and support the various records management processes taking account of workflow, records quantity and formats, and operational needs?

2.   Has your organization considered deploying an ERKS to support more efficient and effective management of electronic records?

C.   Records capture and registration

1. Has your organization issued guidelines and procedures on the creation, and capture of those records that are necessary to meet operational, fiscal, legal and other requirements?

2. Has your organization issued guidance for sharing information/records between sections/units to avoid keeping unnecessary duplicates?

3. Has your organization chosen the most appropriate storage media and formats for its records?

4. Are there guidelines on proper capture of records into the organization's recordkeeping system?

5. Does your organization have a monitoring system which eliminates filing of unneeded information copies to minimize costs and administrative work?

D.   Records classification

1. Has your organization developed and implemented records classification schemes which cover all records irrespective of nature or formats?

2. Is your organization's records classification scheme(s) systematic, logical, consistent and scalable to facilitate accurate and complete documentation of policies, procedures and decisions for the efficient carrying out of the organization's functions, activities and transactions?

3. Is your organization's records classification scheme(s) able to support accurate capturing and easy retrieval of records?

4. Is your organization's records classification scheme(s) able to provide robust security and access control for records?

5. Does your organization's records classification scheme(s) facilitate segregation of vital records for protection?

6. Does your organization's records classification scheme(s) facilitate establishment of records retention and disposal schedules and segregation of records with different retention periods to support timely and effective disposal?

7. Is there any documentation to explain the organization of records classification scheme(s), and titling and coding mechanisms of files?

8. Does your organization review its existing classification scheme(s) regularly to cater for changing circumstances (e.g. obsolete subjects due to reorganization)?

E.   Records storage

1. Are your organization's records storage areas clean, tidy, secure and free from water and fire hazards?

2. Are all your organization's records properly stored in records storage equipment without having them stacked on the floor or on the top of cabinets and racks?

3. Are your organization's records stored in an environment compatible to their formats and retention periods?

4. Are all your organization's records storage equipment such as file cabinets, drawers and racks labeled correctly and legibly to facilitate records retrieval?

5. Are your organization's records storage areas secure against unauthorized access?

6. Does your organization review the storage areas and needs regularly?

F.   Records access

1. Has your organization implemented standardized procedures for sorting, filing, indexing, classification, retrieval, charging-out and follow-up action of records to facilitate timely access to and retrieval of records?

2. Are your organization's sensitive records and information classified according to their level of sensitivity in order to provide them with adequate protection?

3. Are your organization's records made available only to those authorized for access?

4. Does your organization manage access to records and information according to the legal and regulatory requirements, e.g. Personal Data (Privacy) Ordinance and Code on Access to Information?

G.   Records tracking

1. Has your organization maintained an updated records inventory?

2. Has your organization implemented a system to track the movement and use of records?

3. Has your organization made use of technology (e.g. bar-coding file management system) to track the physical movement of records?

4. Are the right records always delivered to users timely?

5. Are outstanding actions of a record always identified timely?

6. Are there arrangements to minimize the risk of losing records during bulk relocation of files?

7. Are there any missing records cases which necessitate improvements in the tracking system?

H. Records disposal

1. Does your organization maintain central control over records disposal throughout the organization?

2. Does your organization have any guidelines which prescribe uniform records disposal procedures and consistent records disposal action?

3. Has your organization established records retention and disposal schedules for all its records?

4. Has your organization separated active and inactive records to enhance retrieval efficiency?

5. Has your organization utilized off-site storage for inactive records to save cost?

6. Does your organization conduct regular review (e.g. at least once every two years) to systematically and consistently dispose of time-expired records according to approved records retention and disposal schedules?

7. Has your organization instituted safeguards against unauthorized destruction of records?

8. Has your organization put in place procedures for the physical destruction of time-expired records to avoid inadvertent destruction and leakage of sensitive information?

9. Does your organization review approved records retention and disposal schedules regularly to cater for changing circumstances (e.g. a longer retention period due to a new statutory requirement)?

10. Has your organization put in place procedures to facilitate arrangements for and documentation on transferring records to other bodies?

I.   Documentation

1. Does your organization document the records management policy and responsibilities, records management programme, recordkeeping system, records management guidelines and procedures and subsequent revisions to them?

2. Does your organization document guidelines on what records should be created and kept?

3. Does your organization document access rights and security of records?

4. Does your organization document approval for adoption of new records classification schemes and revision to the existing records classification schemes?

5. Does your organization document endorsement on establishing and revising records retention and disposal schedules?

6. Does your organization document endorsement on disposal of records?

7. Does your organization document records disposal procedures?

J.   Vital records protection

1. Has your organization assessed its potential records hazards (e.g. fire and flooding) that need to be addressed?

2. Has your organization established and implemented policy, practices and procedures to protect vital records?

3. Has your organization identified vital records and documented essential information (e.g. responsible party for maintaining and protecting records, records storage medium, volume, location etc.) about those vital records?

4. Has your organization determined records protection methods (e.g. duplication of paper records through means such as scanning and microfilming for off-site storage and dispersal of records in different office locations)?

5. Has your organization prepared or identified sources of supplies, equipment and services for records protection and recovery?

6. Does your vital records protection plan include regular back-up and updating of the identified vital records?

7. Does your organization conduct staff training, testing and regular review of its vital records protection plan?

K.   Monitoring and auditing

1. Does your organization conduct regular review on records management policy and responsibilities, records management programme, recordkeeping system and records management guidelines and procedures to cater for changing circumstances?

2. Does your organization continuously monitor the compliance with established records management guidelines and procedures?

3. Does your organization identify areas requiring improvement through regular review of records management practices of sections/units and exception cases (e.g. loss or unauthorized destruction of records)?

4. Has your organization put in place the requirement to seek the senior management's endorsement on any change of the organization's records management policy?

L.   Training

1. Are your organization's records management staff at different levels equipped with the necessary records management concepts, principles and practices?

2. Is records management training provided to new staff as part of their induction programme?

3. Are refresher courses on records management provided to serving staff regularly?

4. Are seminars on topical issues (e.g. promulgation of new records management guidelines) arranged for staff?

M.   Legal and regulatory requirements

1. Is your organization aware of the implications on records management imposed by the relevant legislation and codes such as the Evidence Ordinance, Personal Data (Privacy) Ordinance, Limitation Ordinance, Electronic Transactions Ordinance, Code on Access to Information etc.?

2. Have guidelines and procedures been developed and made known to staff for meeting records related legal and regulatory requirements?

3. Are records created, processed, maintained, accessed to and disposed of in compliance with relevant legislation and regulations?

N. Management of electronic records

1. Has your organization developed policy, practices and procedures to capture, manage and store electronic records in a proper and secure manner?

2. Has your organization maintained complete and up-to-date system documentation for its electronic information system(s)?

3. Has your organization issued adequate guidance and procedures to all staff on capturing, using, managing and keeping electronic records, including e-mail records created and received in the course of official business?

4. Are records in your organization's electronic information system(s) readily identifiable, retrievable and accessible?

5. Has your organization put in place adequate security measures to protect electronic information system(s) from unauthorized access and to prevent unauthorized and accidental loss or destruction of records stored in that system(s)?

6. Has your organization conducted regular back-up of electronic records stored in electronic information system(s)?

7. Has your organization put in place adequate measures (e.g. media migration) to ensure the accessibility and usability of electronic records stored in electronic information systems over time?

8. As an ultimate solution, has your organization developed or planned to develop/adopt an ERKS to manage electronic records?

MANAGEMENT OF ARCHIVAL RECORDS

Purpose

This Annex introduces the functions and services of the archives of the Government of the Hong Kong Special Administrative Region (the Government) run by the Public Records Office (PRO) of the Government Records Service (GRS) and the arrangements for accepting private donations including donations from government-owned or funded statutory bodies.

PRO's services

Central archives repository

2.   PRO of GRS is the central repository for the permanent archives of the Government.   PRO keeps about one million archival records dating from 1840s.   Its also operates a Central Preservation Library for Government Publications which selects and centrally preserves government publications and printed materials of permanent value.   PRO provides access to its collections to increase knowledge, understanding and appreciation of the collective documentary heritage of Hong Kong. Archival records are held at the Hong Kong Public Records Building which is located at 13 Tsui Ping Road, Kwun Tong, Kowloon.   The building is designed, constructed and equipped throughout in accordance with international standards specified for the preservation of archival records.

Records appraisal and accessioning

3.   Among other responsibilities, the archivists of PRO are responsible for conducting records appraisal.   Records appraisal is the process of determining whether records have archival value and should thus be accepted for permanent preservation in GRS.   Archival records will be arranged and described according to the General International Standard Archival Description issued by the International Council on Archives so as to make them accessible to members of the public.

Access and reference service

4.   Public requests for access to archival records in PRO are dealt with in accordance with the Public Records (Access) Rules 1996 (obtainable at GRS website: www.grs.gov.hk).   In general, public access will be granted under these Rules to archival records containing open information and those containing classified information which have been closed for 30 years.   Reprographic and records certification services are also available to the public at a charge.   Copies of required items are provided to users in accordance with the Copyright Ordinance (Cap. 528) or the terms and conditions imposed by the donor of the item.

Donations from non-government organizations and individuals

Records appraisal

5.   Apart from government bureaux/departments (B/Ds), PRO welcomes private donations, including donations from government-owned or funded statutory bodies, to help preserve their archival records as part of Hong Kong's documentary heritage.   PRO will consider accepting the donations if these records are appraised to have historical value for permanent retention and are accessible by members of the public.   In general, the following categories of records are considered to have archival value and may be selected for permanent preservation by PRO -

(a) records that document or reflect the organization, functions and activities of the creating agency;

(b) records about important people, places, events, buildings or institutions of Hong Kong;

(c) records that document the formation process, implementation and outcome of significant policies, decisions, legislation and actions of the Government, particularly those that set precedents;

(d) records that document the impact of the decisions, policies and programmes of the Government upon the physical environment, community, organizations and individuals and the interaction between the public and the Government as well as between the physical environment and the Government; and

(e) records that contain significant or unique information or aged records that can enrich the understanding about the history, physical environment, society, culture, economy and people of Hong Kong.

Procedures and required documentation

6.   To decide whether to accept private donations, e.g. records from government-owned or funded statutory bodies, PRO needs to conduct a comprehensive appraisal of the materials concerned.   In this connection, the relevant organizations will need to provide sufficient information about the records concerned to PRO for appraisal purpose.   The basic information required includes a brief description of the records and a list of each individual record.

7.   The brief description of the records concerned to be provided includes -

(a) subject matters;

(b) quantity;

(c) format/media; and

(d) covering period.

8.   As regards the list of the records, it should include the following information for each record -

(a) original reference code/number;

(b) record title; and

(c) covering period.

9.   If necessary, the archivists of PRO will get in touch with the organizations concerned for further details about the records and/or physical examination of the records.   PRO will inform the organizations concerned of the examination results once the whole records appraisal process is completed.

10.   In the event that records possessing historical value are identified, PRO will propose the terms for records transfer for consideration of the organizations concerned.   Documentations effecting the records transfer will be prepared when the proposed terms are agreed by both parties.

Transfer of archival records to PRO for preservation

11. When archival records of government-owned or funded statutory bodies, or private organizations are transferred to PRO, they will be inspected by the Preservation Service Office (PSO) of GRS to see if immediate fumigation and conservation are required. After that, PRO will arrange accessioning and description for the records so that the related information about the records can be searched via the online catalogues of PRO for public access. A Records Transfer List (RTL) listing the basic particulars of each transferred records, including the controlling numbers allotted by PRO, will be provided to the organizations concerned after accessioning of the transferred records.

12 All transferred records will be enclosed by archival folders/boxes and stored in PRO's environmentally-controlled archives repository. PSO of GRS will carry out suitable preservation work to facilitate long term preservation of and access to the records.

Access to and retrieval of transferred archival records

13. The archival records transferred by government-owned or funded statutory bodies will be made available to members of the public in PRO's Search Room according to the transfer agreement. Normally, we expect that the organizations concerned need not requisition archival records already transferred to PRO. In the unlikely event that this is necessary, the organizations concerned will be required to complete a standard requisition form and inspect the transferred records in PRO's Search Room.

Enquiry

14. For enquiries relating to support and assistance to government-owned or funded statutory bodies for selecting records, publications and library items for permanent retention in PRO of GRS, please contact the following staff -

(a) Records appraisal and transfer of permanent records
Mr. Ted Cheng, Senior Assistant Archivist (Archives Acquisition) (tel. no. 2195 7774)

(b) Selection and disposal of library items
Mr. Bernard Hui, Senior Assistant Archivist (Reference Services) (tel. no. 2195 7728)

GUIDELINES ON PRESERVATION OF ARCHIVAL RECORDS

Overview

Records that have been identified as having archival value for long-term retention must be kept physically separated from active and inactive records.   The preservation of archival records can be considered as a concerted effort of preserving the storage media, providing an appropriate storage environment, transferring the information to an alternative medium (making surrogate or reformatting), implementing preventive measures to protect the materials from deterioration, and formulating and implementing mitigation measures and disaster plan after risk assessment.

Preserving the physical storage media

2.   Physical storage media are the physical media recording the information of the records.   Paper is the most commonly encountered medium in an archive.   Although there are a number of paper types, it is generally stable and durable if they are kept in an archival storage environment and handled with care.   The storage media for audiovisual records generally call for cooler temperature and lower relative humidity than paper so as to prolong the useful life of the records.

Providing an appropriate storage environment

3.   All archival records must be kept in a suitable environment to prolong their life and to minimize the conservation treatment needs which are expensive and may not be readily available.   The concept of preservation storage environment includes the provision of stable and clean climatic condition that is specific to individual materials in question, appropriate archival enclosure and shelving, and good house-keeping and handling practices.

Environmental control

4.   Having regard to international standards such as BS 5454:2000 [8] and the local circumstances, GRS has adopted a set of climatic conditions for the preservation of archival materials of different material types as set out below -

Material	Temperature	Relative Humidity
Paper	average at 18°C with not more than ±1°C fluctuation in 24 hours	average at 50% with maximum fluctuation of ±2% in 24 hours
Photographic films	average at 2°C with not more than ±1°C fluctuation in 24 hours	average at 35% with maximum fluctuation of ±2% in 24 hours
Microfilm (black-and-white)	average at 13°C with not more than ±1°C fluctuation in 24 hours	average at 35% with maximum fluctuation of ±2% in 24 hours
Magnetic Tapes (data backup, video, audio)	average at 15°C with not more than ±1°C fluctuation in 24 hours	average at 40% with maximum fluctuation of ±2% in 24 hours
Optical Discs (CD, DVD etc.)	average at 15°C with not more than ±1°C fluctuation in 24 hours	average at 40% with maximum fluctuation of ±2% in 24 hours
Organic Material in general (including leather, parchment, paintings etc.)	average at 18°C with not more than ±1°C fluctuation in 24 hours	average at 50% with maximum fluctuation of ±2% in 24 hours

5.   It should be noted that, owing to the large difference between storage and access environment, photographic films, microfilms, magnetic tapes and optical discs kept in the above-mentioned storage conditions must be acclimatised either by gradual change of temperature and/or relative humidity or staging at an intermediate condition between the two environments after retrieval from or before returning to the repositories.

6.   Merely providing air-conditioned space to meet the average temperature and relative humidity figures is not enough in keeping the recommended storage environment.   Dehumidifiers must be installed to control the relative humidity in the archival storage effectively. Furthermore, effective filters must be installed in the air-conditioning system to reduce pollutants and dust in the air.   The lighting in the storage must be ultraviolet-free.   The lighting intensity and duration should also be minimised as far as possible.   It is preferable to use rooms with no windows at all for archival materials storage.   However, if there are already windows, they must be blocked for natural light, sealed and insulated to minimise the effect of ambient climatic fluctuations on storage environment, and equipped with facility to ensure the security of archive.

7.   The environmental condition of archival storage has to be managed by monitoring and control.   For example, the archival repositories of GRS are continuously monitored with a 24-hour operating real-time wireless data-logging system that records, analyses and displays the climatic data of each monitoring point and sends alarms to responsible personnel when the climatic condition deviates from pre-set limits. Remedial action should be taken to put the climatic condition back to the desirable settings.

Enclosures and shelving

8.   The packing and storage of archives should ensure sufficient air movement to avoid pockets of stagnant air and to remove off-gassing from deterioration of materials.   Shelving should be strong and adequately braced.   Archival records should be stored on the shelving in archival boxes made of acid-free archival quality materials.   Tailor-made enclosures and separate protection should be given to volumes, oversized documents and maps.   BS 5454: 2000 provides specific guidance on packaging and storage (please refer to items [8] and [9] of the reference list at the Appendix for details).

Pest control

9.   Pest is one of the common problems in archive preservation even when effective control of climatic condition is achieved.   Not to mention when the relative humidity rises to higher than 65%, mould will appear first, then insects and rodents.   An integrated pest management plan has

to be devised according to the following rules and guidelines and the specific situation of archival storage environment -

(a)   prohibit eating or drinking in repository of archival materials;

(b)   inspect all incoming materials (including items returned from loan) before put them to the archive storage;

(c)   quarantine all suspected items to ascertain infestation extent;

(d)   conduct fumigation treatment to eradicate insect infestation;

(e)   clean all treated items and inspect them again before returning them to the archive storage;

(f)   keep all surfaces (floor, shelves, drawers) clean and dry;

(g)   monitor pest activities continuously by installing and regularly inspecting insect traps not only in storage areas, but also in working areas and all entrances or exits in the building; and

(h)   pay attention to spots of generally high humidity in the building such as toilet, plant room, pantry, office and areas with no air-conditioning.

For advice on prevention and treatment of mould outbreaks, please refer to item [4] of the reference list at the Appendix.   In case active pest infestation is found, professional advice should be sought from conservators.

Storage environment for audiovisual materials

10.   Photographic films (motion pictures and stills) should not be stored in a general-purpose repository unless appropriate environmental conditions can be provided.   Films should be stored in dust-free metal or inert plastic cans, placed horizontally on metal shelves.   Films on a cellulose nitrate base, which are inherently unstable, must not be stored in the repository but deposited in a specialist store that satisfies the requirements of relevant fire regulations.   Magnetic tapes should be stored in containers made from aluminium, acid-free board or inert plastic, placed vertically on metal shelving.   No electric or electronic apparatus producing magnetic currents that can cause the erasure of the recordings should be permitted in the storage area, nor should tapes be brought within the vicinity of such apparatus or of lightning conductors.   Optical

recordings are usually on discs that have to be housed in individual jewel cases of archival quality.   Ultraviolet radiation and strong light are known to cause rapid deterioration of the optical recording layer.   It is important to keep the discs in dark storage as far as possible such as light-proof drawers or boxes.

Making surrogate copy and reformatting

11.   Making archival materials accessible is the main objective in preserving them.   However, heavy and excessive use of the materials will shorten their life significantly.   Producing surrogate copy and reformatting are the effective means in resolving the conflict.   Access policies can be laid to protect unnecessary use of original materials by accessing the surrogate copy instead.   Yet the quality of the surrogate copy should be ascertained to contain as much as possible the information in the original.   After making surrogates or reformatting the information content, so long as the original materials are designated as having archival value, they should still be kept and never be disposed of.

Photocopying

12.   For paper records, photocopying (if carried out with archival quality papers) can preserve the information content of records.   For records on unstable paper, such as thermal paper or heavily deteriorated paper, photocopying is a necessary step to ensure the survival of the information content.   Use of stable alkaline paper and carbon toner or carbon pigment ink will help to ensure the long-term preservation of the surrogate copy.   All preservation photocopies should be made by black and white copy machines since colour photocopies cannot survive in the long term.   Moreover, one should avoid using the "auto-feed" feature of photocopying machines, otherwise, the original can be easily damaged without any sign.

Surrogate copy of audiovisual items

13.   Making surrogate copy from audiovisual items is the best practice in holding maintenance.   The image and/or sound content should be copied by an appropriate, well-maintained and functioning machine to the same medium as the original.   The quality of the copy should be checked

against the original.   Attention should be paid to common problems in signal delay in transfer such as out-of-sync between image and sound signals, jitter in image, "click and crackle" in audio, low-frequency hum and loss of high frequency components due to excessive copying of analogue copy, though signal degradation due to generation loss is inevitable.   The access status of the surrogate and the original should be distinguished.

Reformatting

14.   The continuous access to the information contained in an archival record depends on the continuous accessibility of the medium and format of the information that can still be understood by the contemporary users. As time goes by, it is perhaps necessary to transfer the information to a new format or even a new medium that is most viable and accessible in the current time.   This process is called reformatting.   Paper archival records can be reformatted to microfilms or digital images.   Microfilms of the silver-gelatine on polyester based film type have been known to have an extended life expectancy of more than 500 years if they are kept in the recommended archival storage condition (see paragraph 4 above).   There are a number of commercial microfilm service providers available in the market.   They usually provide digital scanning service to transform paper archives to digital files as well.

15.   Although digital images are very convenient for access, their long-term preservation poses a challenge to most institutions for their accessibility cannot be guaranteed for more than a decade.   They are subject to technological obsolescence, even though the physical storage media are well preserved.   On the other hand, microfilm is a stable technology and a proven method for preserving paper archive.   Therefore, it is prudent to adopt the hybrid approach by producing both microfilm (analogue format) and digital image (digital format) for the same archival record.   The "Principles for Reformatting Library and Archival Collections" written by the Library of Harvard University (item [1] of the reference list at the Appendix) is a good guide for formulating reformatting projects.

Preventive measures to protect archival materials from deterioration

16.   Proper handling of archival items is an important element in preserving them.   Archival materials should therefore be always handled with care.   It is necessary to wear clean cotton gloves or close-fitting surgical gloves to handle them.   For fragile items, a rigid support should be provided instead of directly handling them especially in moving the items.   Heavy and oversized items must be transported on trolley.   It is a good practice to put interleaving archival paper between pages of artworks to protect them from abrasion, ink or adhesive transfer.

17.   As a good practice, GRS encapsulates flat paper materials with clear polyester sheets to provide support and to allow viewing without being taken out of its housing that takes the majority of handling pressure and abuse.   The process of encapsulation involves sealing the edges of two polyester sheets by ultrasonic welding that sandwich the flat paper item.   Heat lamination should not be used as this treatment is not reversible and will lead to the accelerated deterioration of the material within.

18.   All audiovisual materials require corresponding machines to access the information content.   These machines have to be well-maintained; otherwise the audiovisual materials will be destroyed upon playing back. The machines have to be kept clean regularly, before and after each use. It should be noted that every time when the audiovisual material is played in the machine, there is a risk of being damaged even in well-maintained machine.   Therefore, it is very important not to use the single copy of the collection for viewing.   Proper duplicates should always be made and used for access and exhibition.   The number of viewing of the original materials should also be kept to the minimum as far as possible.

Risk assessment and mitigation

19.   There are many factors that cause deterioration in or pose threats to archival collections.   As precautionary measures to better protect archival materials from damage, various risks affecting the archives should be identified and assessed for their magnitudes in order to prioritise the actions to mitigate the risks.

20. The steps in conducting an effective risk assessment are shown in the figure below -
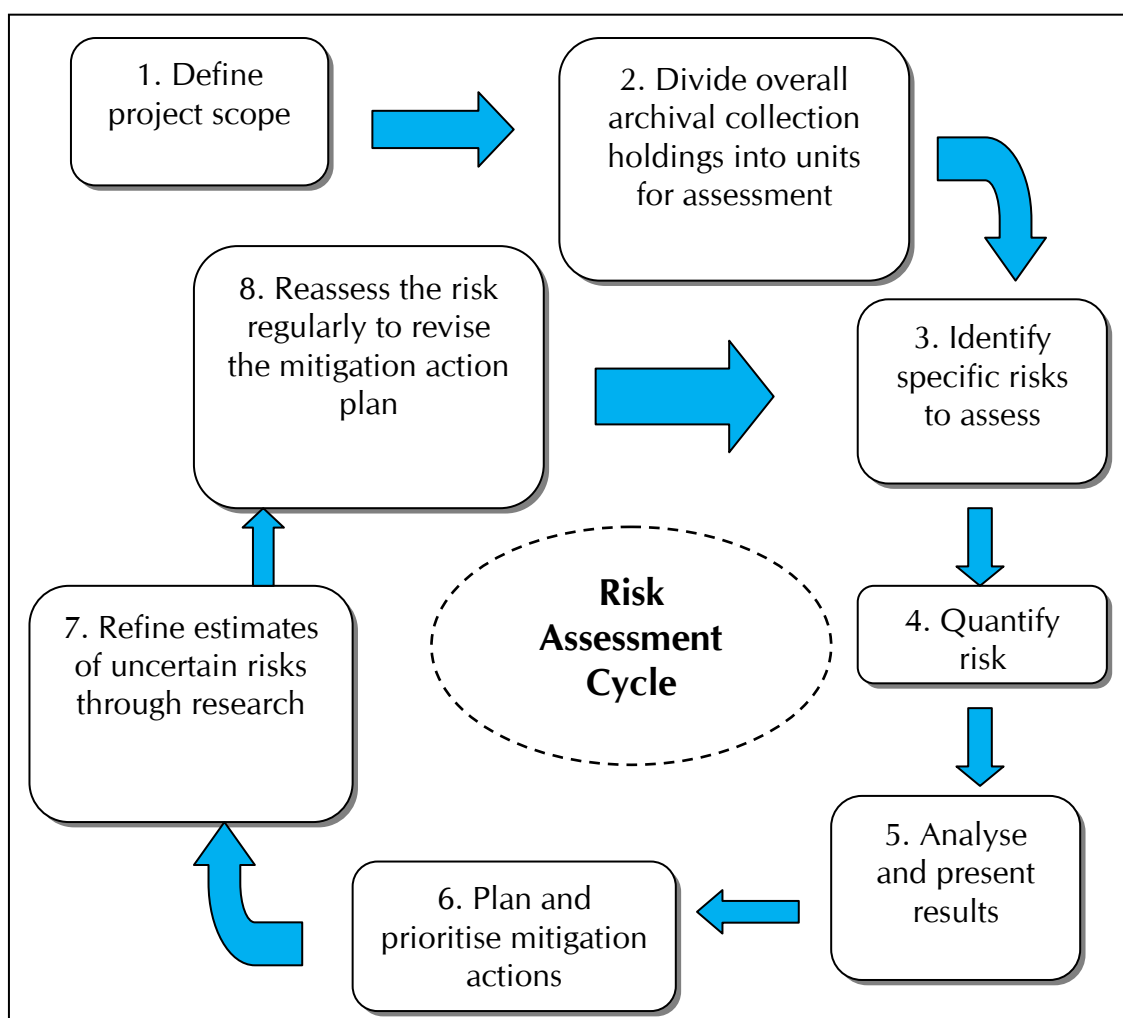
Disaster planning and preparedness

21. Risk assessment deals with anticipated risks. The worst-case scenario should always be borne in mind because disasters do occur in an accidental manner, especially during holidays. Disaster planning and preparedness are therefore necessary, with the disaster plan aiming at identifying responsible individuals and all necessary resources for salvage action to rescue an organization's archival collection in case of disaster.

22. A typical disaster recovery plan should provide details on the following processes -

(a) notify the appropriate persons immediately in case of emergency to relay details about the nature of the emergency and the level of threat to the archival collection;

(b)   assess the damage to archival collection as soon as possible after the disaster and taking immediate steps to stabilize the condition of the items so that further damage will not occur;

(c)   assemble an archive recovery team of agency staff members to expedite stabilization of the archives (generally only for major disasters);

(d)   consult contractors that provide disaster recovery services if the damage assessment points to a need for their expertise; and

(e)   recover the archives and the information that they contain, or transfer the remaining information to another alternative medium when recovery is not feasible.

Items [5], [6] and [7] of the reference list at the Appendix provide useful online resources on this subject.

Conservation treatment

23.   After all the measures stipulated in paragraphs 2-22 above are implemented effectively, the useful life of the archival materials will be prolonged.   For archival materials that have already been in the deteriorated or damaged state, the preventive effort should guarantee that the need for conservation treatment is delayed until relevant services are available.   Professional advice should be sought from specialist conservators who can provide assessment of the deterioration condition of the items and prioritise the treatment according to the overall urgency after a holistic consideration.

References and Suggested Further Reading on Preservation of Archival Records

[1] Library of Harvard University, Principles for Reformatting Library and Archival Collections, 2007
http://preserve.harvard.edu/guidelines/reformattingprinciples.html

[2] Pinheiro, A. and Macedoa, M., Risk assessment: A comparative study of archive storage rooms, *Journal of Cultural Heritage* Volume 10, Issue 3, July-September 2009, Pages 428-434

[3] Muething, G., Waller, R. & Graham, F., Risk Assessment of Collections in Exhibitions at the Canadian Museum of Nature, *Journal of the American Institute for Conservation* 2005, Volume 44, Number 3, Article 7 pages 233- 243
http://cool.conservation-us.org/coolaic/jaic/articles/jaic44-03-007_indx.html

[4] The prevention and treatment of mould outbreaks in collections, London: Preservation Advisory Centre, 2004
http://www.bl.uk/blpac/pdf/mould.pdf

[5] Disaster preparedness and response (list of online resources), Conservation Online
http://cool.conservation-us.org/bytopic/disasters

[6] Mcll Waine, J. IFLA disaster preparedness and planning: a brief manual, Paris: IFLA PAC, 2006
http://archive.ifla.org/VI/4/news/ipi6-en.pdf

[7] Selected resources on disaster management, IFLA PAC
http://archive.ifla.org/VII/s19/usefulresrcs.htm

[8] BS 5454:2000 Recommendations for the storage and exhibition of archival documents, British Standards Institute, 2000

[9] BS DISC PD 0024:2001 Archival documents. Guide to the interpretation of BS 5454:2000. Storage and exhibition of archival documents, British Standards Institute, 2001

GUIDELINES ON ESTABLISHING A VITAL RECORDS PROTECTION PROGRAMME

Procedural steps

Organizations wishing to establish their vital records protection programmes should follow the major procedural steps below -

(a) conduct a risk analysis to identify potential disasters/hazards (e.g. fire and flooding) that need to be addressed;

(b) identify vital records and document essential information about those vital records, e.g. responsible party for maintaining and protecting records, records storage medium, volume, location etc.;

(c) determine records protection methods (e.g. duplication of paper records through means such as scanning and microfilming for off-site storage and dispersal of records in different office locations);

(d) prepare or identify sources of supplies, equipment and services for records protection and recovery; and

(e) conduct staff training, programme testing and revision.

2.   Amongst these major procedural steps, selection of vital records and adoption of proper protection methods are of significant importance and require thorough review and study.   They are elaborated in the ensuing paragraphs for reference.

Selection of vital records

3.   Identification and selection of vital records requires a comprehensive review on records kept by an organization so as to determine what records warrant protection under the programme. Records management staff should always bear in mind that vital records protection programme has to be well-justified and cost-effective.   They should not incline to classify records as vital records simply for fear of potential loss/damage to those records.

4.   To select vital records, records management staff may, in consultation with subject officers, identify records that meet the purposes and protect the interests set out in paragraph 5.1 of Chapter 5 and select only those records that meet the following criteria[#] -

(a) records which are absolutely needed without which your organization is unable to function properly;

(b) records which are irreplaceable or can only be replaced/ reconstructed in a costly and lengthy way; and

(c) finding aids, e.g. records classification scheme and indexes of records selected for protection as part of the vital records to facilitate prompt retrieval of records during and after an emergency or a disaster.

Protection methods

5.   There are various methods to protect vital records.   They should be adopted having regard to the business needs (e.g. records of rescue plans may need to be kept on site to facilitate timely retrieval during and after an emergency or a disaster), cost implications and expertise and skills required of the organization.   Three common methods for protecting vital records are listed below for reference -

(a) **dispersal/off-site storage**: prepare extra copies of records when the records are created and store them in location(s) away from the organization's primary place of business;

(b) **duplication**: prepare extra copies of records when they are created, or through scheduled reproduction such as microfilming and scanning at regular intervals specifically for protection or back-up purposes to support normal business;

(c) **on-site protection**: protect vital records in the primary place of business by use of special facilities and equipment such as fire resistant safes and records vaults[@].

[#] The criteria are not exhaustive.   An organization may take into account its own business and operational needs to add, modify and/or delete the criteria.

[@] A vault is a fire-resistant enclosure constructed within an office building to protect large quantity of vital records stored in a non-fire-resistant building.

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6.   In addition, appropriate equipment and proper environmental conditions should be provided and used to protect vital records, particularly for those stored in fragile media such as microfilm and magnetic tapes and optical disks, to ensure the preservation of vital records for as long as required.

7.   With the increasing use of computerized information systems, including an ERKS to manage records, there is good potential for organizations to enhance their capability of protecting electronic vital records in a cost-effective manner.   Unlike vital paper records which require considerable resources and efforts to duplicate or microfilm them for off-site storage, vital electronic records are far more convenient to be backed up for off-site storage in a large volume through automated processes.   Functionality for protecting electronic vital records can be incorporated into information systems during system development or system upgrading/enhancement.

REFERENCES

International Records Management Standards

1. ISO/TR 13028:2010 - Information and documentation - Implementation guidelines for digitization of records

2. ISO 15489-1:2001 - Information and documentation - Records management - Part 1: General

3. ISO/TR 15489-2:2001 - Information and documentation - Records management - Part 2: Guidelines

4. ISO 16175-1:2010 - Information and documentation - Principles and functional requirements for records in electronic office environments - Part 1: Overview and statement of principles

5. ISO/FDIS 16175-2 - Information and documentation - Principles and functional requirements for records in electronic office environments - Part 2: Guidelines and functional requirements for digital records management systems

6. ISO 16175-3:2010 - Information and documentation - Principles and functional requirements for records in electronic office environments - Part 3: Guidelines and functional requirements for records in business systems

Records management publications developed by the Government Records Service

7. Records Management Manual - This publication provides guidance and instructions for proper and coordinated management of government records.

8. Publication No. 1 "A Practical Guide to Records Scheduling and Disposal" - This publication provides a detailed procedural guide on the drawing up of records retention and disposal schedules and explains the operation and services of the records centres operated by GRS.

9. Publication No. 2 "Managing Active Records: File Management" - This publication details the principles, standards and procedures in the management of active records kept in a paper-based recordkeeping system.   Major topics include the roles of registries and registry staff, records grouping, file coding, handling of incoming and outgoing correspondence, file movement control, making up and closing of files.

10. Publication No. 3 "Subject Filing" - This publication establishes a comprehensive classification scheme for administrative records, which are grouped into six schedules, viz. Administration, Accommodation and Facilities, Equipment and Supplies, Finance, Personnel as well as Information Systems and Services. It also provides guidelines on the development of a classification scheme for programme records.

11. Publication No. 4 "General Administrative Records Disposal Schedules" - As a sequel to Publication No. 3 and using the same classification scheme of administrative records, this publication sets out retention and disposal schedules of administrative records for adoption by government bureaux and departments.

12. Publication No. 5 "The Microfilming User Manual" - This publication provides guidelines, standards and procedures for microfilming government records and the retrieval and maintenance of microfilm, as well as information on the service of the Government Microfilming Centre of GRS.

13. Publication No. 6 "Manual on Vital Records Protection" - This publication identifies common hazards to records, explains the importance of vital records protection, provides guidelines on selection of appropriate protection methods, and enumerates the steps in establishing a vital records protection programme.

14. Publication No. 7 "Checklist for Proper Records Management Practices" - Structured in a simple self-assessment format, this publication aims to provide a useful tool for planning, conducting and evaluating records management activities.

15. Publication No. 8 "中文檔案管理指引" - This publication provides a practical guide on the proper handling and filing of Chinese documents in a bilingual environment. Major topics include the convention of writing Chinese documents, their formats and recording of Chinese documents onto minute sheets.

16. Handbook on Records Management - The handbook aims to provide Departmental Records Managers and their assistants with a total records management concept, together with the principles and good practices for improving the quality and cost-effectiveness of records management systems.

   (The above records management publications developed by GRS are accessible at the Central Preservation Library for Government Publications located at 1/F, Hong Kong Public Records Building, 13 Tsui Ping Road, Kowloon.   More information on the Library's opening hours and access procedures is obtainable from GRS website: www.grs.gov.hk.)

Functional Requirements of ERKS

17. Design Criteria Standards for Electronic Records Management Software Applications (2007) published by the Department of Defense, Government of the United States of America (http://www.interpares.org/display_file.cfm?doc=dod_50152.pdf)

18. MoReq2010®: Modular Requirements for Records Systems - Volume 1: Core Services & Plug-in Modules (2011) developed by DLM Forum Foundation for the European Commission (http://www.moreq2010.eu/)

19. ISO/FDIS 16175-2 - Information and documentation - Principles and functional requirements for records in electronic office environments - Guidelines and functional requirements for digital records management systems

National Archives of Overseas Jurisdictions in pursuit of ERM

20. National Archives of Australia (http://www.naa.gov.au/records-management/index.aspx)

21. Library and Archives Canada (http://www.collectionscanada.gc.ca/government/products-services/007002-3000-e.html)

22. National Archives of New Zealand
    (http://continuum.archives.govt.nz/recordkeeping-publications.html)

23. The National Archives, United Kingdom
    (http://www.nationalarchives.gov.uk/electronicrecords/default.htm)

24. United States National Archives and Records Administration
    (http://www.archives.gov/records-mgmt/index.html)