

Emergency Management and Disaster Preparedness: A Manual for Protecting Archives

Margaret Crockett and Emilie Gagnet Leumas



Emergency Management and Disaster Preparedness: A Manual for Protecting Archives

Copyright © 2024 Emilie Gagnet Leumas, Margaret Crockett,
International Council on Archives and Iain Brown

Licensed under Creative Commons License Attribution-Noncommercial 4.0 International



<https://creativecommons.org/licenses/by-nc/4.0/>

Cover image, Copyright © 2024 Emilie Gagnet Leumas and Margaret Crockett

Other images courtesy of the authors and Iain Brown

Table of Contents

List of Images, Tables and Figures	iii
Acknowledgements	iv
Dedication	v
1. Introduction.....	1
The disaster plan	3
Emergency management and disaster preparedness.....	4
Chronology of disaster	5
Complexity	5
Benefits	6
Institutional support	6
Mitigation, preparedness, response, recovery	7
2. The Importance of Archives and Documentary Heritage	8
Defining archives.....	8
Defining documentary heritage	10
The importance of documentary heritage to the community	12
The impact of disasters on documentary heritage	13
3. Prevention and Mitigation	16
Risk assessment	16
Prevention and mitigation	20
Protecting digital archives.....	24
4. Preparedness	25
Disaster response team	25
Volunteers.....	27
Training for the disaster response team	28
Support network	30
Vital records	33
Significant archives	34
Funding and insurance	38
Developing responses to particular scenarios	39
Building plans	42
Disaster supply boxes.....	42
Off-site operations centre	43
The contact lists	44
Conclusion.....	46
5. Response	48
Emergency measures	48
Protection of human life	50
If there is warning	50
Reporting and notification	50
Terminating cause of disaster	51
Briefing authorities and being briefed	51
Activating the plan	52
Evacuation and initial deployment of response team	52
Assembly points and temporary operations centres	52
Protection of undamaged material.....	53
Securing the buildings and stabilising the environment	53
Regaining access	53

Briefing the team and notifying the support network and contractors.....	54
Damage assessment.....	54
Protection of undamaged material.....	56
Salvage plan	56
6. Recovery	59
Recovery plan.....	60
Setting up storage areas, workspaces and stations	60
Clearing the storage areas	61
Monitoring the environment	62
Salvage and retrieval of damaged material	62
Specific actions for specific materials	63
Rehabilitation of storage areas and return of archival material.....	67
Back to normal	68
Documenting the disaster and lessons learned	68
7. The Disaster Manual	71
How to write the manual	72
What to include in the disaster manual.....	72
8. Conclusion	81
9. Emergency Management and Disaster Preparedness Terminology	82
10. Additional Resources on Emergency Management and Disaster Preparedness.....	86
Resources on archives management	86
General works and resources on EMDP	86
The importance of archives and documentary heritage	89
Prevention and mitigation	89
Preparedness	89
Volunteers.....	90
Response and recovery	90
Disaster plans: examples and templates.....	90
Salvaging and treating damaged material	91
Assessing significance	91
Support networks.....	92
The disaster manual.....	92
In time of war or civil unrest	92
Vital records management and business continuity	93
11. Appendices	94
Appendix A: Purpose of Disaster Response and Recovery Equipment	95
Appendix B: Disaster Planning on a Budget	98
Appendix C: In Time of War or Civil Unrest.....	100
Appendix D: Vital Records Management and Business Continuity for Archives Operations.....	103
Appendix E: Example of a Disaster Journal	110
Appendix F: Using Journals in Disaster Reports	113
Appendix G: Forms.....	116
The authors	151
Index.....	152

List of Images, Tables and Figures

Images

Image 1. Postcard of the 1910 flooding of Maisons-Alfort	2
Image 2. Hotel emergency signage	4
Image 3. Archives Security includes instituting good practice	17
Image 4. The risk posed to archives volumes housed on shelves	20
Image 5. Training on drying out wet photographs	29
Image 6. Evacuation route sign	40
Image 7. Salvage supplies	46
Image 8. Drying racks	47
Image 9. Dehumidifiers and ventilation fans	47
Image 10. Interleaving wet records after 2005 Hurricane Katrina	58
Image 11. Drying photographs after 2016 flood in south Louisiana	66
Image 12. Meeting of archives colleagues after the 2017 Earthquake in Puebla, Mexico	70
Image 13. Boarded-up exterior of the National and University Library of Bosnia and Herzegovina	101
Image 14. Stari Most, the “new Old Bridge” at Mostar, Herzegovina.....	101

Figures

Figure 1. The Chronology of a Disaster.....	5
Figure 2. The Disaster Response Team.....	26
Figure 3. EMDP Team Leader Skills and Expertise Checklist.....	29
Figure 4. Disaster Timeline	49
Figure 5. Reporting a Disaster	51
Figure 6. Disaster Plan Test Outline.....	80

Tables

Table 1. Disaster Classifications.....	19
Table 2. Options for Prevention and Mitigation.....	22
Table 3. Natural Disasters.....	41
Table 4. Vital Records Categories and Examples.....	105

Acknowledgements

This Manual would never have been written without the generous support of our colleagues. Our heartfelt thanks go to Brandon Oswald, Gregor Trinkaus-Randall and Jonathan Rhys-Lewis for their constant support and help to us in delivering the training courses and workshops since the ICA Annual Conference in Reykjavik in 2015.

We thank Emma Dodson, Graham Matthews, Hamady Gaye, Berta García del Real Marco, Max Scriwanek and Paolo Cecconi for sharing their expertise and reviewing the Manual in its many iterations.

Claude Roberto deserves special thanks for her careful reading and expert adaptation of the text into French.

We would also like to acknowledge the work of our colleagues in the Pacific and the Caribbean, that has informed development of this Manual. In addition, we are grateful for the feedback received from all our training participants over the years.

Thanks also go to Iain Brown for his work in copy-editing and indexing the Manual.

And lastly, we would like to express our gratitude to David Fricker and Normand Charbonneau for their support of the work of the Expert Group on Emergency Management and Disaster Preparedness and the project to develop this Manual.

Emilie Gagnet Leumas and Margaret Crockett, August 2024

Dedication

The manual is dedicated to Emilie's father, John Lawson Gagnet, who taught her to prepare, protect and respond before, during, and after disasters.

1. Introduction

This Manual was written by Emilie Gagnet Leumas and Margaret Crockett in collaboration with the International Council on Archives' (ICA) Expert Group on Emergency Management and Disaster Preparedness to support training courses in the Caribbean and Africa. It has been a work in progress since the first draft in 2018. This iteration reflects the authors' ongoing activity in the field, working in disaster prone regions and collaborating with colleagues. This manual brings together the knowledge and expertise of planning for disaster with lessons learned from response and recovery efforts following disasters.

It should be noted that the Manual is aimed at individuals responsible for archives holdings and does not address disaster planning and management for non-archival current and non-current records management programmes. The Manual's focus is advocating for the importance of good archives and records management. Whilst acknowledging the importance of protecting library materials and museum collections, the Manual does not cover in detail disaster management techniques for these and other forms of cultural heritage.

The Manual is written primarily for the person who has overall responsibility for the archives, including the holdings, the buildings and the staff, regardless of the organisational structure or size of the archives. However, it is also intended to be useful for anyone wishing to learn more about Emergency Management and Disaster Preparedness (EMDP) for archives. The Manual provides readers with the knowledge and resources to review their archives operation, identify the resources, staff and volunteer training and actions required to develop and write their own EMDP plan.

There is a lot to consider when planning for disaster preparedness and response and it is advisable to approach it as a project. You will want to think about and work through all the elements to plan immediate actions to prevent, mitigate and prepare for disaster, as well as to make provision for people, equipment and procedures to deal with disasters when they occur. The project will result in policies, procedures and forms, stores of equipment and documentation to use in every phase of the disaster cycle. All aspects of planning and preparation will come together into a disaster manual which will guide ongoing prevention, training and maintenance activity as well as support your planning and actions in the event of a disaster.

The Manual adheres to the four-phase disaster model of mitigation, preparedness, response and recovery advocated by the ICA's Expert Group on Emergency Management and Disaster Preparedness. Prevention sits alongside mitigation. Sections One to Seven comprise the detailed instructional portion of the Manual and guide the reader through the processes to follow to prepare for and recover from emergencies

and disaster. The first Section of the Manual introduces the disaster plan, emergency management, and disaster planning. It explains the complexity of disasters and the benefits of planning ahead. In Section Two there is a discussion of archives and documentary heritage and the impact disasters have on them. Prevention, mitigation and risk management are covered in Section Three. The next Section addresses how institutions prepare for potential disasters, including creating a disaster response team, working with volunteers, and creating a support network. This section also includes protecting vital records, funding and insurance, building plans and disaster supply boxes. Section Five discusses response initiatives following disasters as well as damage assessments and salvage plans. Recovery efforts, temporary storage, and rehabilitation are the focus of Section Six, which also covers how an institution can return to business as usual. Section Seven explains how to create a disaster plan, what it should include and how to test it. This deliberately appears at the end of the Manual, once all elements of the plan have been covered. Section Eight concludes the instructional part of the Manual.

The final two Sections provide supplementary material. Section Nine offers a list of terms used in EMDP that has been specifically developed for this Manual. Section Ten provides additional resources, some of which are also mentioned in earlier sections. The forms referenced in the Manual are in the appendices and are also available as a separate Word document for ease of adaptation and use.



Image 1. Postcard of the 1910 flooding of Maisons-Alfort, a commune in the southeastern suburbs of Paris, France. (From the collection of Emilie Gagnet Leumas.)

The disaster plan

Disaster Plan: A strategy and course of actions which anticipates a range of risks and potential disasters, identifies and implements measures to prevent or mitigate them, develops actions and procedures to respond to and recover from the disasters when they occur.

The disaster plan is, in itself, insurance. It protects irreplaceable assets from destruction and damage in ways that monetary insurance policies cannot do. This is an important argument when bidding for budget to develop the disaster plan and put in place measures to protect the archives from potential disasters. A disaster plan assures the archives management, funders and other stakeholders that all possible precautions have been taken to protect the archives holdings, the organisation's assets, operations and staff in the event of a disaster, however big or small.

The objectives of the plan are to:

- identify and adequately protect the organisation's vital records and significant archives;
- reduce risk of disasters;
- prevent injury to personnel and the general public;
- reduce or limit the extent of damage to archives holdings and buildings;
- avoid escalation of the disaster;
- react quickly and effectively, eliminating risk of paralysis due to shock and lack of preparedness;
- record the damage for insurance purposes, at the same time as managing future preservation needs, and learn from the disaster and the team's response and recovery (in the event of a disaster);
- ensure the organisation's ability to resume operations effectively after a disaster;
- ensure the organisation's ability to reconstruct essential information and/or salvage damaged records rapidly;
- minimise the disaster's economic impact; and
- return to normal archives operations as soon as possible.

Emergency management and disaster preparedness

Emergency Management and Disaster Preparedness: The archives programme which is concerned with the plan and strategy to prepare for and recover from events that have disastrous effects on the archives and its holdings. Includes preservation management practices, disaster prevention, the capacity to respond to a disaster and a recovery plan which involves repairing damage to archival holdings and buildings.

In archives, emergency management and disaster preparedness is the function which aims to anticipate, prevent or minimise, handle and recover from disastrous events which have a negative impact on the holdings and work of an archives institution. It involves risk management, identifying what resources and actions would be needed in the event of a range of disaster scenarios and developing contingency plans and detailed procedures to set up emergency operations for salvaging the archives holdings and reconstituting the institution's storage repository and archives operations.

In preparing for and responding to disasters it is important to realise that there is a range of severity of disasters. This will be covered in detail later in the Manual but the key point to remember is that even small emergencies, such as a leaking toilet, can lead to loss of archives and, if not dealt with swiftly and effectively, will cost more money and cause greater loss than they would otherwise incur.



*Image 2. Hotel emergency signage detailing what to do in the case of an earthquake or fire.
(Photograph: Emilie Gagnet Leumas.)*

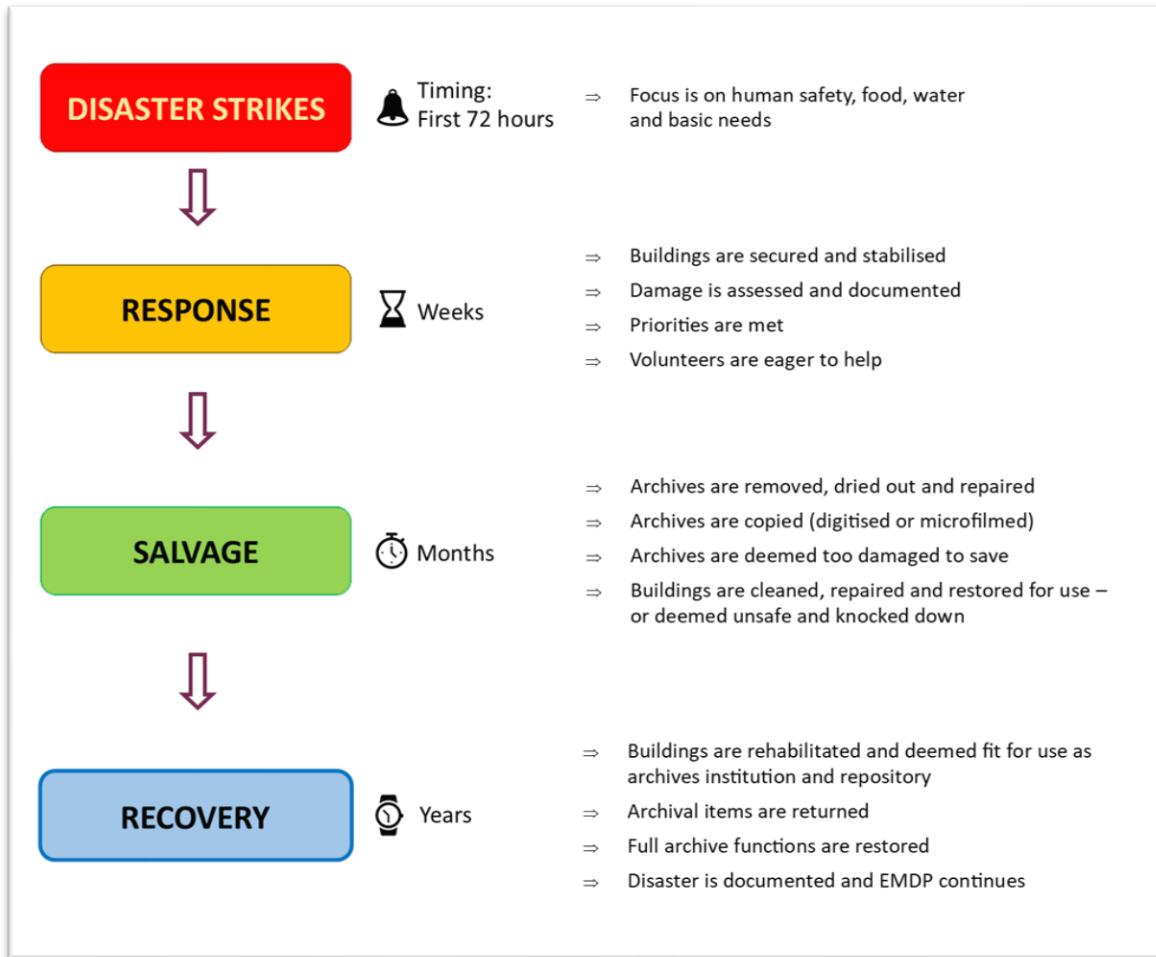


Figure 1. The Chronology of a Disaster

Chronology of disaster

When a catastrophe happens, whatever the severity or effect, there is a timeline. The greater the disaster, the larger the geographic area affected, the longer that timeline will be. Figure 1 shows the sequence and timing of the major phases of managing disasters.

Complexity

In any disaster suffered by an archives institution there will be a range of scenarios which require consideration, decisions and actions by the archives team. These are the main questions to be considered:

1. What was there before the disaster but now no longer exists and cannot be recovered: how can we document that, maybe even fill the gaps?
2. What is happening to the institution and the community during the disaster and how can we collect the record of that, either for current needs or as a permanent archival record of what happened?
3. If we cannot save everything, what are the priorities? Some archives are significant and will be put at the top of the list, while others can wait, because they are not needed

immediately. Other priority factors may include the relative vulnerability of the archives carriers or the existence of digital surrogates.

4. How do we recover and rebuild the archives institution and its operations? We have to plan for the future, rebuilding the archives, replacing or fixing the building, and salvaging collections.

The response to this will depend on whether the archives institution or operation is independent or not. It will either have responsibility for its own agenda, building needs and core business that need to be up and functioning, or it will be part of a government entity or business that must continue to function after the disaster. In both cases it is crucial to be aware of the key functions of the archives and records programmes that play vital roles in the recovery of the organisation.

Benefits

Comprehensive, current and effective disaster management has great benefits for the archives holdings, the staff and stakeholders. It allows for improved protection of the archives as vital assets, both reducing the likelihood of a negative event and increasing the institution's ability to salvage material and recover quickly. Protection is also more cost-effective since planning resources in advance and training staff and volunteers leave the institution less reliant on expensive emergency measures. It can also result in a reduction of insurance premiums. Disaster management will improve site and information security and reduce risks caused by human error. Most importantly it will give staff confidence and a sense of purpose in the aftermath of disaster, ensuring that the team is not paralysed by shock and indecision.

Many of the benefits outlined above will apply to all organisations whatever their purpose and business. However, because of the nature of archives as unique evidence documenting the history of the organisation, community, culture or country, it is crucial to protect and preserve them. They cannot be replaced if a disaster were to result in their being burned or pulped. Copies do not have the same value as originals and there may not be copies elsewhere.

Institutional support

An effective emergency management and disaster preparedness programme needs to have strong institutional support. This includes:

- strong commitment from senior management;
- trained staff and volunteers;
- financial resources to cover emergency supplies before and during potential disaster situations as well as salvage and recovery work on the archives holdings and buildings;

- emergency management and disaster preparedness policies, procedures and checklists which are agreed and implemented; and
- assigning clear leadership roles and responsibilities to deal with disaster situations.

Even if there is very little financial support available it is still possible to establish an effective, workable emergency management and disaster preparedness programme with strong institutional support, well-trained staff and a problem-solving approach. Appendix B gives more ideas for developing an EMDP programme on a low budget.

Mitigation, preparedness, response, recovery

In developing a programme to manage disasters that may occur and impact your archives, it is useful to remember the four phases of disaster planning:

1. **Mitigation**, where risks are assessed and minimised or eliminated
2. **Preparedness**, the task of ensuring there is a contingency plan to respond to and recover from adverse scenarios identified in the mitigation phase
3. **Response**, the initial actions in the immediate aftermath of a disaster
4. **Recovery**, procedures for salvaging damaged holdings and re-establishing the archives institution, repository and operations. This ideally begins with mitigation but can be initiated at any phase in the cycle.



2. The Importance of Archives and Documentary Heritage

Archives: Records of decisions and activities of individuals, organisations, families and societies which have been selected for permanent preservation because of their ongoing value as primary source material providing evidence of the history of the individual, family, organisation or society served by the archives.

Emergency management and disaster recovery requires resources and management support. It is important to be able to articulate the value of archives and explain the vital role that they play in culture and society. It is also important to distinguish between archives and other forms of documentary heritage such as books and publications. You will need a way to advocate archives and their care to managers and other stakeholders because this is where emergency management and disaster recovery fits into archives management. You will also need to explain the importance of archives, as well as why emergency management and disaster recovery work is needed, to both staff and volunteers. This part of the Manual aims to provide you with clear explanations and sound arguments for looking after archives.

Defining archives

Unlike other forms of documentary heritage, such as books, newspapers and magazines, archives are unique. There will usually only be one master or official archives that documents and provides evidence of the history of the creating organisation, family or individual. Archives are records that were created in the course of business, governmental, legal and social activity—in fact they may arise from any aspect of human life. These records, once they are no longer required for business or personal administration reasons, may be destroyed or deleted. But those records which have historical value because they provide evidence of the history of the creating organisation, family or individual, should be preserved permanently for current and future generations. Selection, or appraisal, of records for archival value is one of the skills which archivists and records managers develop. Only a very small proportion, around two to five percent, of the records created by organisations, families and individuals will be selected as archives to be cared for and managed permanently¹.

Because archives arise from the activity of the creating body (organisation, family, individual) the records and groups of records within the archives need to be managed together. The creating body is the context for the archives and supports its authenticity

¹ Note that in Francophone and Hispanic archival tradition and practice, there is no word for ‘record’; rather, the concept of ‘archives’ covers all records. Those records not selected for the archives are denoted by an adjective such as ‘current’ or ‘short term’.

to ensure the archives provides reliable evidence about the activity of that creator. The relationships between the records are important because they provide more detailed context as well as ensuring the record is complete and the whole story is accessible. Whilst the records that belong together don't need to be physically stored together, their relationships are documented in the archival catalogue.

Archives are kept by different kinds of entities in different kinds of repositories. We also use the term 'archives' for the repository which houses the archives. This might be a building primarily designed to keep archives in storage rooms or a room or two in premises that have other uses. Another way we use the term 'archives' is for the organisation responsible for managing the archives over time. This organisation will include staff and storage space, processing, research and conservation areas, as well as financial resources. Note that in this Manual the term 'archives institution' is used for the organisation that manages the archives holdings whilst 'repository' is used primarily for the storage areas.

The definition of archives as the records of a single organisation, family or individual is in contrast with the definition as archives being the repository where archives are held. One repository or archives institution may hold the archives of more than one creator. Such repositories are called 'collecting archives' because they have a collecting remit that mandates them to take in archives from other organisations. Local, Municipal and Territorial Archives are a good example of this—in addition to the archives of the local government authority itself, they will take in archives of businesses, individuals and organisations which play a role in the history of the area. Other repositories, particularly those of families and businesses, may only look after their own archives.

Archives are resources that "form the cultural identity of an organisation, country, state or territory. When we define culture in its simplest form, it is as *a way of life of a group of people*."² Archives provide authentic and reliable evidence of human actions as well as citizens' rights and entitlements. They underpin administrative transparency and democratic accountability, support human rights and preserve collective social memory. Moreover, the loss of archives and other cultural resources found in museums and libraries, can have negative economic impact, particularly where the researcher numbers are high. The role archives play in the cultural life of a community and in providing evidence of identity is also crucial to the well-being of communities and individuals. Without records of their origin and context, people lack a sense of belonging and even hope.³ There is more information on the value of archives to society on the Universal Declaration on Archives pages on the ICA website. Remember

² Recordkeeping for Good Governance Toolkit Guideline 20, "Developing a Disaster Preparedness Plan", PARBICA.

³ <https://www.ica.org/resource/universal-declaration-on-archives-uda/>.

that, regardless of the way your institution defines its archives holdings, it is those holdings that you need to protect and save in the event of a disaster.

Defining documentary heritage

UNESCO's 2015 *Recommendation concerning the preservation of, and access to, documentary heritage including in digital form* defines documentary heritage as:

Those single documents—or groups of documents—of significant and enduring value to a community, a culture, a country or to humanity generally, and whose deterioration or loss would be a harmful impoverishment.

The recommendation explains that the value and significance of documentary heritage may only become clear when time has passed. It states that the world's documentary heritage is of global importance and therefore all people and nations carry responsibility for its preservation and protection. This must be carried out with respect for and recognition of cultural values and traditions as well as practical considerations. The recommendation also asserts that documentary heritage should be permanently accessible and re-usable by all without hindrance.

The definition in the 2015 *Recommendation* goes on to explain that documentary heritage:

... provides the means for understanding social, political, collective as well as personal history. It can help to underpin good governance and sustainable development. For each State, its documentary heritage reflects its memory and identity, and thus contributes to determine its place in the global community.

This definition teaches us many things about documentary heritage:

- it has significant and enduring value;
- it has value to a community, a culture, a country or to humanity;
- it also has value for individuals;
- its value—or significance—might not be clear at the time of its creation and use;
- it allows us to understand social, political and collective history;
- it also allows us to understand personal history;
- it supports good governance and sustainable development;
- for states, documentary heritage reflects memory and identity, which helps to determine their place in the global community;
- it is of global importance;
- everyone—people and nations—carry responsibility for its preservation and protection;
- in caring for it we should respect and recognise cultural values;
- there will also be practical considerations;
- it should be permanently accessible and re-usable; and
- its access and use should be available to everyone without hindrance.

In summary, documentary heritage consists of documents that have enduring value because they support us in understanding our own personal as well as our community's and country's history—and that of other individuals, communities and countries/nations.

It is also important to understand what we mean by 'document' in the context of documentary heritage. The UNESCO 2015 *Recommendation* mentioned before gives a helpful definition:

A document is an object comprising analogue or digital informational content and the carrier on which it resides. It is preservable and usually moveable. The content may comprise signs or codes (such as text), images (still or moving) and sounds, which can be copied or migrated. The carrier may have important aesthetic, cultural or technical qualities. The relationship between content and carrier may range from incidental to integral.

A 'document' is a carrier with information. The carrier can potentially be anything. Examples include paper or parchment in sheets, rolls, bundles, volumes or file covers, memorial stones and plaques, film negatives and photographic prints, film, audio tapes, digital media such as hard drives, USB drives, magnetic tapes, floppy or compact discs, servers, wood blocks and palm leaves.

Like the carrier, the information that is recorded in or on the document takes many different forms; for example, maps, plans and architectural drawings, images (photographs), records documenting the actions and decisions of governments, organizations, communities, families and individuals and datasets.

There is no limit or constraint on the extent of the subject matter covered in documentary heritage—it can be about any field of human activity, knowledge, philosophy or exploration and it can be factual or fictional.

Memory institutions play an important role in preserving and providing access to documentary heritage. According to the UNESCO *Recommendation* of 2015 they:

May include but are not limited to archives, libraries, museums and other educational, cultural and research organizations.

The UNESCO Memory of the World Register provides many examples of carriers, information and subject matter which are documentary heritage.

The importance of documentary heritage to the community⁴

We have already seen that documentary heritage:

- reflects memory and identity;
- supports good governance and sustainable development;
- has significant and enduring value; and
- has value to a community, a culture, a country or to humanity as well as for individuals.

In other words, documentary heritage provides individuals and communities with enduring evidence of and reference to their identity and their story or history. Without such a resource it is difficult, if not impossible, to understand the past, good, bad or somewhere in between. It follows that, without understanding, the past cannot be dealt with through acceptance or by making reparation. Documentary heritage is not just about the past though, it provides evidence of the actions and decision-making of people and organizations that administer and govern nations, communities, industries and all organizations that touch the lives of people in the world. This type of documentary heritage is usually in the form of records. Records, created by organizations in the course of their work, provide the evidence that allows organizations to be accountable and held to account. Accountability is linked to transparency—it is through releasing the records that organizations can demonstrate how they operate, why individual decisions are taken, and what they have done.

Another important aspect of documentary heritage is its significant and enduring value. Not all publications and records have the value and significance to warrant keeping them permanently. The UNESCO Memory of the World Programme has criteria by which it assesses the value and significance of documentary heritage to decide whether it is worthy of inscription in the Memory of the World register. The criteria are designed to ensure that the collections and archival fonds honoured and protected in this way have been fairly and objectively selected. The criteria allow assessment of the documentary heritage's authenticity (that it is genuine), its rarity (that it is unique or extremely rare), its integrity (that it is complete and undamaged), whether it is at risk of deterioration or destruction and whether there is a plan in place to ensure its preservation over time. Significance is the most relevant criterion in the context of establishing the importance of documentary heritage to the community or individual. As the UNESCO documentation states, this seeks to establish whether loss of the documentary material would be detrimental to the heritage of humanity and to ascertain that it has had a great impact 'over a span of time or within a particular

⁴ This discussion draws on Preserving and sharing access to our documentary heritage and Seeking significance: A practical guide to identifying and articulating significance in documentary heritage. See Section 10, Additional Resources on EMDP, for details.

cultural area' and 'great influence—whether positive or negative—on the course of history'.

Custodians of documentary and other kinds of cultural heritage make decisions about what materials they take in, care for, preserve and provide access to. They have collecting policies that reflect their institution's goals and describe the subject matter and format of what they already have and what they aspire to acquire. They also have appraisal criteria, to help ensure that the cultural heritage they acquire has significance within the scope of the collecting policy. Significance will vary from institution to institution. A national library or archives will be looking to take in documentary heritage with national significance, whereas a municipal library will probably limit itself to material that provides evidence of life within its geographic boundaries. The Memory of the World criteria reflect and guide the work of institutions and professionals taking care of documentary heritage, but each institution needs to develop their own detailed significance criteria, in line with its organisational goals. Significance covers a range of values, including social, cultural, historical, and artistic value. In making acquisition decisions, archivists and other curators ask some or all of the following:

- Is the age of the material significant, is it particularly evocative of its time, perhaps a time of cultural or social crisis, change or development?
- Does the material document a key moment in a community's/individual's history or experience?
- Is the place of creation of the material important to history and culture, did the location play a role in the events, actions and decisions documented or portrayed?
- Does the material document individuals who were/are central to the community's / individual's experience or identity?
- Does the material reflect significant aspects and impacts of human behaviour, or of social, industrial, artistic or political development?
- Does the subject matter of the material represent particular historical or intellectual developments in natural, social and human sciences, politics, ideology, sports and the arts?
- Does the material have form or style with aesthetic, stylistic or linguistic value, is it representative of a rare type of documentary heritage?

The impact of disasters on documentary heritage

Contemporary society and future generations need documentary heritage in the form of archival records to provide reliable evidence of what happened in the past and why. Documentary heritage is particularly vulnerable compared to other forms of cultural heritage for a number of reasons. There is usually a large volume of archival material being preserved and managed in these archives institutions and evacuation of all archives holdings is very costly. Also, the carriers, paper and photographic materials

for example, are extremely fragile. In addition, most archives institutions have a backlog of cataloguing and although there are lists and inventories, they only provide summaries of the box contents rather than details of the records they contain. This can hinder advocacy work as well as planning for and managing disasters. Moreover, many archives institutions lack visibility, are not valued and appreciated by the communities they serve and do not have the basic resources to guarantee the security of the archives holdings. On the other hand, archives institutions can be targets deliberately chosen for destruction by those opposing the culture, politics and/or history documented in their holdings. A final vulnerability is due to the organic nature of archives and the relationships between all the items in the fonds, all of which must be retained to ensure the whole story is documented for posterity.

A sample of recent disasters which have impacted on documentary heritage worldwide include:

- since 2023 war in Israel–Gaza;
- since 2022 war in the Ukraine;
- since 2023 Sudan armed conflict;
- 2023 wildfire in Hawaii;
- 2023 earthquake in Morocco;
- 2023 earthquake in Turkey–Syria;
- 2022 earthquake in Turkey;
- 2021 earthquake on St. Vincent in the Caribbean;
- 2021 Table Mountain fire, University of Cape Town Library, South Africa;
- 2020 Hurricanes Eta and Iota affected Honduras, Nicaragua, Colombia and Jamaica;
- 2018 Brazil National Museum fire;
- 2018 El Salvador landslide;
- 2018 Guatemala volcano eruption;
- 2017 Central Mexico experienced an earthquake of 7.1 Richter magnitude—protection and restoration of 33 monuments that were affected;
- 2017 Hurricanes Irma and Maria affected islands in the Caribbean;
- 2013 destruction of historic manuscripts in Timbuktu library and research centre fire due to Islamist insurgency;
- 2011 earthquake and tsunami in Japan;
- 2009 construction work in Cologne, Germany (collapse of the Historical Archives of the City of Cologne building due to underground railway tunnelling work).

Disasters such as floods and fires, theft, vandalism, insect and pest infestation and mould outbreaks threaten the survival of documentary heritage. They result in the material suffering:

- destruction through burning;
- fire and smoke damage;
- water damage;
- destruction through water damage;
- loss of both artefact and the information it contains through theft;
- loss of both artefact and the information it contains through vandalism;
- damage through consumption, use as nesting materials or defecation by insects or pests;
- loss due to extreme mould outbreaks that cannot be treated and/or are too dangerous to health for humans to handle;
- damage, including partial loss of information due to mould staining;
- loss or destruction due to collapse of building;
- corruption and/or deletion or partial deletion of digital documentary heritage through cyber-security breaches, theft, vandalism or human carelessness;
- inaccessibility of digital documentary heritage through obsolescence of hardware and software and lack of digital preservation management.

When archives suffer from any of the events listed above even if they survive and can be restored, they may have become incomplete and less reliable through the damage incurred. Because archives are unique, they cannot be replaced if they are lost or destroyed. This is why it is vitally important to identify, document and protect archives to ensure that the evidence of identity and history is preserved and that transparency and accountability are still possible.

3. Prevention and Mitigation

Risk Management: the identification, assessment, and prioritization of risks, followed by the coordinated application of resources to eliminate or minimize, monitor, and control the probability and/or impact of adverse events.

While it is not possible to prevent all disasters and emergencies, it is important to assess all the risks to the archives and archives operation to ensure that those risks that can be prevented will not occur and those that cannot be prevented are mitigated as far as possible. The goal is to anticipate the things that can go wrong, do what you can to prevent them from happening or to lessen the negative impact if they do happen.

Risk assessment

The first step in prevention and mitigation is risk assessment which involves identifying the risks to the archives and calculating the impact of potential emergencies and disasters on the holdings and operations. The best way to do this is to conduct a thorough review of the archives, its operations and the external environment to identify all threats and risks. It is important not just to consider the immediate, local threats but to take a broad view beyond the direct environs of the archives institution. This review should be thorough, will take time and need to involve people outside of the archives team. The process will also have the benefit of allowing you and your team to become familiar with any external and internal risks posed to the building and its holdings. The review should encompass:

- **The archives holdings:** use your finding aids and location register to review your holdings, creating a list of all the different physical media held in the archives, together with their location and packaging types. Any material that is already currently housed in archives-quality packaging has a measure of protection. Some media may be more or less vulnerable to certain threats, such as mould. Other media (for example, silver nitrate film) may be a threat to other items in the collection.
- **Internal spaces:** if you have floor plans for your premises, use these as the basis for your notetaking, if not, draw the plan as part of the review process. Think through all the different places the archives go whilst they are in your custody during storage, processing and production to ensure you have covered all areas. In each area look carefully at the space, noting the structure, any visible gas or water pipes or electrical services, condition of the walls, floors and ceilings, the soundness of the structure, whether there are windows, what kind of doors there are, how secure the space is, what level it is on, and if there is air conditioning, heating or a fire suppression system. Make a note of the shelving used in storage areas, what it is made of, whether it is mobile or static, how robust it is and whether it could support the weight of soaking wet paper. Also, look at the general layout of storage spaces and corridors to see whether access would be straightforward or difficult in the event of an emergency. You are assessing

whether the space presents any threats or risks to the archives, as well as what protection it can offer in the event of a disaster.

- **The archives institution's building(s):** again, using existing plans or drafting them as you go, walk around the outside of your buildings. Look at the building structure for signs of damp or any kind of decay, check the roof, note whether it is pitched or flat, examine the state of the gutters and drains, if they look clear and as if they are doing a good job. Look at the windows from the outside and see if they are in a good state of repair. Consider how easy it would be to gain access to the building to remove damaged material in the event of a disaster. As with the internal spaces, you are looking for all the ways that the building could be hazardous for the archives. Note that, when selecting an existing building or designing a new one, it is prudent to incorporate vernacular architecture, construction features and design attributes. This will aid sustainability as well as offer better protection from disasters and help respond to environmental hardship and resource scarcity.
- **Security:** the security review cuts across the internal and external examination of the buildings and will include staff working processes and procedures for providing access to researchers. Here, you will be examining the physical security offered by external entrances to the buildings, as well as the internal doors, especially those to the storage areas. Use the data on the spaces where archives are processed and used to map those spaces to people, such as staff, volunteers and researchers, and identify the protocols for giving them access to the spaces and to the archives. This should also encompass handling practices for both staff and researchers. You also need to review the computer network and information technology (IT) provision to ensure that digital holdings as well as automated systems used for archives operations are secure. This includes door entry systems that use codes or swipe cards; for these, you will need to work with your IT colleagues. You are looking for gaps in the security measures and flaws in the handling procedures that pose a threat to the archives.

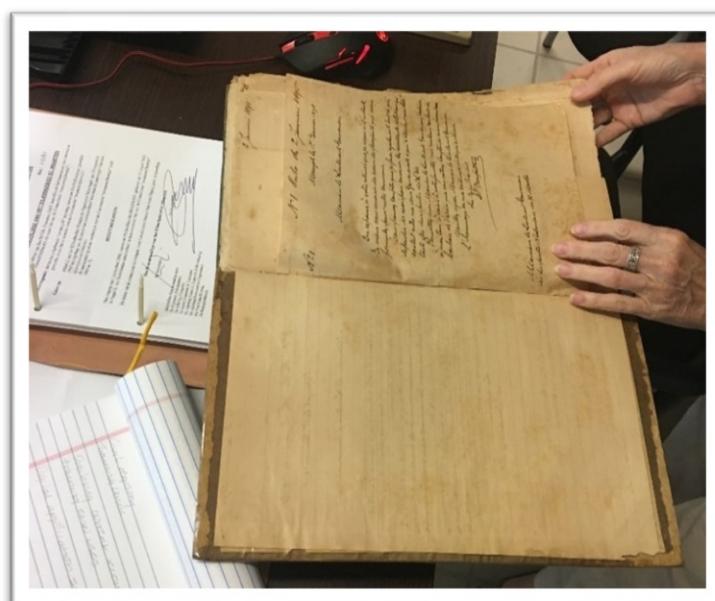


Image 3. Archives Security includes instituting good practice for handling archives for both staff and researchers. (Photograph: Emilie Gagnet Leumas.)

- **Geographical factors:** you also need to take into account the location of the archives institution to assess environmental factors that may threaten the archives. You need to be aware if the repository is close to rivers or otherwise at risk of flooding, or if it is in an earthquake, tornado or hurricane zone. Also, look at other buildings in the vicinity and understand their purposes to know whether they are at risk of incidents (for example, chemical fires, magnetic fields or terrorism) which, if they occurred, would pose a threat to your building and the archives. Another aspect to review is the distance that emergency services and the recovery teams will need to come to provide assistance in the event of a disaster and whether there are any potential obstacles to their access, such as if a bridge were compromised in a storm or if there are height limitations on trucks.
- **Social, economic and political factors:** it is also wise to consider the social, economic and political climate in your jurisdiction, be it local government, central government, international organisation, industry, non-governmental organisation (NGO), charity or a combination of factors. Assess whether the archives might be vulnerable to activism or terrorism⁵, either as a direct target or collaterally. Check the crime rates and statistics in the area.
- **Equipment:** while examining the interior of the building you should also be inventorying equipment to assess what additional supplies may be needed. Make a note of ladders and trolleys (rolling carts) and what they are made of; cleaning equipment such as buckets and mops; crates with or without lids; and portable computer equipment such as laptops and printers. Check supply cupboards for stocks of scissors, tape, plastic sheeting, plastic bags, paper pads, pencils and pens, gloves and anything else that would be useful to have to hand in the event of a disaster.

Appendix A provides details of how all the equipment identified in the Manual can be used in an emergency or disaster situation. Form A provides forms and checklists to support review of archives premises and procedures.

At the same time as you carry out the review, you should also draw up a list of potential risks. These divide into natural, human error or carelessness, equipment failure or malfunction, human ill-will and technology. The list below identifies the most common risks:

- **Natural Disasters:** these include earthquakes; volcanic eruptions; hurricanes; flooding; dam failure; lightning; high winds; tornadoes; cyclones; ice storms; hail; drought; heavy rain; snow; mould; insects; rodents. Constant vigilance, good, regular maintenance and effective planning for rapid response and salvage will reduce the adverse consequences of natural disasters.
- **Building or Equipment Failure or Malfunction:** leaky roofs; broken pipes; defective wiring/switches; faulty machinery and equipment; broken heating or cooling systems; broken electronic security systems; electrical outages and malfunctions; chemical fires;

⁵ See Appendix C for details of emergency planning in time of war.

magnetic fields. These can be prevented by inspection, maintenance and housekeeping practices, which reduce the danger of fire and water damage.

- **Human Ill-will:** arson; vandalism; bomb threat; active shooter; theft; accident; pandemic; terrorism; war. Appropriate safety and security measures can reduce these threats.
- **Human Error and Carelessness:** smouldering cigarette; open window; unattended stove; negligent storage of flammable chemicals; careless computer key stroke; failure to lock up; poor handling of archival material. Frequent employee training, adequate supervision and constant sensitivity to potential hazards will reduce the chances of disaster.
- **Technology:** hacking/cyberterrorism; server crash; network outage; obsolescence. Effective computer security such as usernames, passwords and access profiles, together with a firewall, anti-virus and anti-malware software, and data loss prevention software (DLP) should be in place to reduce the risks. There should also be security procedures for laptops and portable devices, backup systems and digital preservation strategies.

Whilst the list above includes the most known or obvious risks, your particular situation and circumstances may be vulnerable to others so take care to identify anything that could adversely affect the archives building or holdings, however insignificant or unlikely it might seem.

Once you have identified the threats and risks, you need to start evaluating both the likelihood and the degree of severity, or varying degrees of severity they represent. This will help you not only to develop prevention and mitigation strategies but also to make contingency plans for response and recovery. Most importantly, it will provide you with hard evidence to persuade management and funders of the importance of resources to support your emergency management and disaster preparedness programme.

Table 1. Disaster Classifications

Classification	Description of disaster
Class 1	A most severe disaster and would have national or international consequences across all businesses. An example would be a nuclear bomb detonation (worst disaster).
Class 2	A local or regional catastrophe such as a major hurricane, tornado, earthquake or flood affecting an entire city, state or region.
Class 3	Loss of one major building during working hours due to a disaster but does not affect other buildings in the area.
Class 4	Same as Class 3 except occurs during nonworking hours when most personnel are not on the premises.
Class 5	Disaster affects only one or two functions of an organization.
Class 6	Disaster affects only one sub-function.
Class 7	A lost document (lowest class of disaster).

Table 1 will help in developing a working tool to grade the impact of disaster on the institution and the repository.

Form B provides tables for threat identification and severity ratings. The Foundation of the American Institute for Conservation of Historic and Artistic Works' Risk Evaluation and Planning Program webpage has Risk Calculation Worksheets that can be used to support risk identification and calculation⁶. It offers worksheets to calculate the severity of the risk of a range of disasters. The methodology takes the likelihood of occurrence and multiplies it by the severity of damage to give a risk rating which will help you to anticipate disasters and the scale of gravity. From that you will be able to plan not only prevention and mitigation but response and recovery strategies.

Prevention and mitigation

Prevention: the elimination of risks to archives holdings by taking action which removes threats.

Whilst many natural calamities cannot be prevented, many can be—especially those caused by human error and ill-will. Emergency management and disaster preparedness programmes need to analyse the status of the archives holdings and premises together with all the disaster scenarios that have been identified to develop a plan to eliminate as many of the risks as possible. Prevention is about making the threat go away for good, although we need to remain vigilant to ensure it will not come back. An example of prevention would be putting archives in a box to prevent pollution from the atmosphere damaging the paper and rendering the record illegible.



Image 4. The risk posed to archives volumes housed on shelves could be mitigated considerably if they were packaged in boxes. (Photograph: Emilie Gagnet Leumas.)

⁶ See Section 10, Additional Resources on EMDP, for details.

Mitigation: the reduction of long-term risks to archives holdings by lessening the impact of disasters.

Mitigation involves reducing the level risk and/or lessening the impact of disaster on the archives holdings and storage repositories. An example of mitigation would be putting archives in a box to allow a margin of time during which a fire might damage the box but not the contents.

Initiating disaster prevention and mitigation is an obvious way to get a measure of control over potential disasters. There is no rationale or excuse for not preventing the negative occurrences, reducing the impact of disasters either by advance planning or by being well prepared to respond to a disaster when it happens. Prevention and mitigation must be the concern and responsibility of the entire archives team, as well as the wider organisation. Without prevention and mitigation planning, the safety of archives staff, as well as the financial security and self-reliance of archival institutions and the long-term viability of their holdings, are all jeopardized.

In developing your plan, remember that you may never be able to address some of the disasters you have identified, you may be able to lessen the potential impact of some but you may be able to eliminate others entirely. The goal is to do whatever you can to protect lives and livelihoods, premises and archival holdings and to reduce the impact of any disaster on the community and individuals from the damage and loss of archival records which provide evidence of identity and group memory.

Your disaster prevention and mitigation measures should be based on the data you have gathered during the review of your premises and holdings, resources and procedures, together with the risk assessment. Use the data to identify ways in which you can eliminate or reduce the impact of each of the potential disasters. You can use the forms in the appendices, or otherwise referenced in this Manual, to rank the probability as well as severity of the various scenarios and to devise ways of reducing or eliminating their effect. Remember you should adapt them as necessary for your own circumstances. This will give you a task list customised to your environment and you can begin to take action. Start with the activities that will be most effective or those related to your most likely risks. If you lack resources for obvious solutions, try to think of other ways to prevent or reduce risk. Appendix B offers ideas for EMDP with a small budget. Some options for prevention and mitigation are given in Table 2.

Digitisation is not included because digitisation is used to create a surrogate that can be used in the event of total loss of any or all holdings. Note that while digitisation can be expensive and also requires stringent quality control and an effective digital preservation strategy, digitising key collections in line with your salvage priorities can be an effective approach to ensure that the information they contain is not totally lost.

Table 2. Options for Prevention and Mitigation

Risk	Prevention/Mitigation Measures
Security: Physical access	<ul style="list-style-type: none"> ▪ Establish good locking up procedures ▪ Install automatic security alarms ▪ Install locks on all doors, windows and skylights ▪ Install bars and/or toughened glass around windows ▪ Conduct regular facility and security inspection of records storage areas, including off-site inactive and vital records facilities ▪ Control all building keys ▪ Supervise non-staff in building ▪ Lock rooms with computers at night ▪ Ensure staff are well-trained in security procedures
Security: Access to computer systems	<ul style="list-style-type: none"> ▪ Limit access to computer systems with usernames, passwords and access/authority control ▪ Use data encryption where necessary/appropriate ▪ Install firewalls and virus protection ▪ Ensure staff are well-trained in cyber-security procedures ▪ Ensure cloud computing services comply with security standards and legal requirements
Security: Accidental loss of digital records and data	<ul style="list-style-type: none"> ▪ Use auxiliary generators and surge protectors ▪ Employ due care when handling floppy disks, tapes, etc
Security: Protection of the collections when being accessed by researchers	<ul style="list-style-type: none"> ▪ Institute secure procedures for allowing researchers access to the reading rooms to use the archives ▪ Require identification of researchers ▪ Document and limit archives used by researchers at one time ▪ Follow best practice research room guidelines
Security: Accidental disclosure of information/data	<ul style="list-style-type: none"> ▪ Identify different levels of risk (for example, personal data) and prioritise the most sensitive ▪ Destroy classified records which have exceeded retention needs by incinerating or shredding ▪ Ensure good cybersecurity measures for mobile devices and storage (for example, USB sticks or portable hard disk drives)
Fire	<ul style="list-style-type: none"> ▪ Check and comply with all fire regulations ▪ Document and store flammable liquids in separate, locked metal cabinets ▪ Keep storage areas clean and tidy ▪ Ban smoking ▪ Check electrical wiring regularly ▪ Regularly tour premises with representative of the fire service for expert advice and to familiarise them with archives' special needs, how best to protect/salvage holdings in event of fire ▪ Install fire alarms, smoke detectors and heat detectors as appropriate ▪ Install lightning conductor ▪ Drill staff in raising the alarm and evacuation procedure

Risk	Prevention/Mitigation Measures
	<ul style="list-style-type: none"> ▪ Identify best extinguishing solution⁷ for your holdings, ideally a primary and secondary system (hand-held and water hose reels), which are regularly checked and tested ▪ Do not allow vehicles or flammable objects close to the archives building
Flood	<ul style="list-style-type: none"> ▪ Ensure mains supply, heating and drainage water pipes do not cross areas where archival items are stored ▪ Specify pitched, not flat roofs ▪ Install flood alarm systems ▪ Check water penetration points regularly ▪ Inspect and maintain gutters, downspouts and drains ▪ Monitor relative humidity and temperature ▪ Ensure taps are always turned off ▪ Turn off water at mains when the building is not occupied, with an automatic over-ride for fire ▪ Store archives holdings in good quality boxes
Poor storage	<ul style="list-style-type: none"> ▪ Do not store archives in basements or top floors ▪ Do not store archives on floor, use pallets if not able to shelve ▪ Select strong, stable, non-flammable (including paint) shelving ▪ Install the bottom shelf 6" (15 cm) above the floor ▪ Ensure shelving bays have metal hoods (or leave top shelf empty) ▪ Install rubber flanges on mobile shelving as protection ▪ Keep irreplaceable, important and/or valuable holdings in optimum security and storage conditions
Building work, major removal operations, exhibits etc.	<ul style="list-style-type: none"> ▪ Liaise with building contractor to obtain clear picture of the work being undertaken ▪ Check insurance, both the builders' and the archives' own ▪ Remove holdings during roof repairs or protect with polythene sheeting ▪ Check for blocked drains if building work occurs adjacent to your building ▪ Use archives staff as much as possible for moving archives, check the removal company's credentials, check insurance policies ▪ Protect material: raise material that is ready to be moved off the floor onto pallets, cover ▪ Display material on exhibition in optimal conditions
Hurricanes	<ul style="list-style-type: none"> ▪ Install shutters on windows ▪ Store archives in solid buildings, not container units ▪ Unplug computers ▪ Move most significant material into inner rooms
Earthquakes	<ul style="list-style-type: none"> ▪ Ensure building design meets earthquake zone standards ▪ Keep most significant material in reinforced storage
Mould	<ul style="list-style-type: none"> ▪ Check accessions for mould at point of acquisition ▪ Keep temperature and relative humidity levels at recommended levels

⁷ It is difficult to recommend any type of extinguisher, since water is so damaging to archives and other kinds are harmful to the environment.

Risk	Prevention/Mitigation Measures
	<ul style="list-style-type: none"> ▪ Isolate and quarantine mould infested material ▪ Treat spaces where mould has occurred to ensure spore-free when archives are returned
Insects	<ul style="list-style-type: none"> ▪ Check accessions for insects at point of acquisition ▪ Keep storage areas clean and tidy ▪ Do not allow food or drink in storage areas ▪ Isolate and quarantine insect infested material ▪ Set insect traps to monitor species
Rodents	<ul style="list-style-type: none"> ▪ Keep storage areas clean and tidy ▪ Do not allow food or drink in storage areas ▪ Ensure storage areas are sealed so rodents cannot get in ▪ Set rodent traps

Protecting digital archives

As previously noted, this Manual does not cover guidance on digitising archives holdings in physical formats. Archives that are born digital must be preserved and managed in digital formats. Whether kept on servers on the archives institution's premises or in the cloud, it is best practice to establish a Trusted Digital Repository (TDR) to hold digital archival material.

There is a growing body of standards and best practice to guide management of digital archives, including the Open Archival Information System (OAIS) standard that specifies requirements for a TDR. A TDR is not just the software and hardware needed to store and manage the archives but it is a complex infrastructure of processes, workflows and resources, including human expertise. Remember as well that the digital archives accumulate metadata over time that needs to be managed and preserved alongside the archives themselves.

Management of the TDR includes ensuring that regular back-ups are made. There also needs to be a digital preservation strategy to monitor, anticipate and make provision for technological developments that affect the ability to access and understand the digital archival material.

4. Preparedness

Preparedness: planning and precautionary measures taken to combat disasters, including practical action and training for staff and volunteers.

Disaster preparedness is being ready for disasters in practical terms—for example, having a store of supplies necessary to move or treat damaged archives—as well as in terms of having well-trained people to help during and after the disaster strikes. Preparedness plays a crucial role avoiding and mitigating the negative effects of disasters. It involves forecasting or anticipating disaster and taking precautionary measures before the threat is realised when advance warning is possible. This includes not only natural disasters, but all kinds of severe damage caused in a relatively short period, including warfare. Disaster preparedness builds on the risk assessment and threat identification covered in the previous section to develop a plan for dealing with the specific set of potential disaster scenarios that you have identified. Preparing for disasters also enables your team to cope with smaller emergencies.

Disaster response team

A crucial aspect of disaster preparedness is assembling and training a team that is aware of the threats to the archives and of the effects of potential disasters and knows what to do to prevent or mitigate, respond and recover. Well-prepared staff and volunteers will be able to react quickly and effectively to emergencies and, in the event of disasters, recover with the least possible damage.

The exact composition of the team, and the terms of reference under which it operates, will depend upon the organisational culture and status of the archives. A small archives that is not part of a larger organisation, a large archives that is independent, and both small and large archives within a larger organisation may all have different scenarios when it comes to establishing a disaster response team. However, the range of skills and services that you need to have on the team to meet the needs of the archives remains the same, regardless of the organisational circumstances. These include:

- the archivist or archives manager;
- archives staff;
- regular volunteers in the archives, including those who have specifically offered to be available for disaster planning;
- the buildings or facilities manager; and
- maintenance staff.

There is also a range of people who have skills and services that you need to involve in your planning but who are not colleagues and will not need to be privy to the whole of your disaster plan. This includes:

- emergency services professionals;
- vendors and suppliers of services and equipment; and
- insurance brokers.

Figure 2 shows the range of people that need to be involved.



Figure 2. The Disaster Response Team

The archivist or archives manager should lead the disaster response team or have a strong voice on the wider organisation's team. Senior staff in a large archives institution, representing the conservation and preservation, acquisition, processing and access functions, would all play key roles in defining and implementing the preparedness and response plan. This also ensures that all areas of the archives' operations are included in the plan. In a small institution all staff would be part of the team; in a larger institution they should be represented, as should regular volunteers.

Emergency services professionals (for example, fire officers and fire fighters) need to be aware of the archives' special requirements. Ideally, they would attend disaster response team meetings and be actively involved in the disaster planning process. Vendors and suppliers of services and equipment, like freeze-drying facilities or quantities of crates, are agencies with whom the archives must have supply on demand arrangements, even if they do not need to be represented on the disaster response team. The insurance company needs to be aware of the disaster situation and is also a

stakeholder which may be able to arrange services or supplies. Insurers may be key to certain aspects of your emergency management and disaster preparedness strategy, especially if you need access to insurance payments to start treating damaged archives.

When the archives institution is part of a larger organisation, the team will be more diverse. In that case, it may make sense to have the archives staff and volunteers working as a sub-unit of the organisational disaster response team but the archivist must be on the organisation-wide team in order to ensure the necessary, appropriate arrangements are in place for the archives institution and holdings.

The disaster response team, or its steering committee, should co-ordinate emergency planning and control. They will be responsible for directing all response and recovery activities both on- and off-site. There should be clear terms of reference for the team and the roles of key members of the team should be clearly defined. It is important that every task identified in the disaster plan has a named individual who is responsible for ensuring each specific action takes place to prevent, mitigate, respond, salvage or recover from the disaster. The *Planning for Emergencies: A Procedures Manual* from the International Records Management Trust (IRMT) provides a useful example of terms of reference⁸.

Volunteers

Volunteers can play a key role in the archives institution's ability to prevent, mitigate and recover from disaster. In doing so they perform a service to themselves, their communities and, in some cases, their country or the world. As previously discussed, archives allow current and future generations to understand history, hold governments and other organizations accountable and affirm our identity and place in human society. Volunteers are part of the larger team of archives professional and support staff, first responders and organisational support services. They should be trained in all aspects of disaster management and equipped to deal with smaller emergencies as well as large disasters. They also need to be given basic training in safely handling archival items under normal circumstances as well as be taught the principles of archives management so that they understand how archives are catalogued and preserved. The training should be delivered by someone experienced in archives management. In particular, volunteers will need to be able to:

- explain the importance of archives to the community served by the institution⁹;
- understand that archives are unique and therefore irreplaceable if damaged beyond recognition;

⁸ See Section 10, Additional Resources on EMDP, for details.

⁹ This is appropriate for small institutions where there is no professional communication team or spokesperson.

- understand the impact of disasters on archives buildings and materials; and
- handle archival items that have not been affected by disaster as well as those that have been damaged.

Archives volunteers may be given tasks to assist in preparing for disasters. These include creating lists of archives holdings and digitising and documenting archives and publications as well as more general practical tasks like creating and maintaining disaster supply boxes. They may also be asked to work during and after disasters. The tasks required will be similar to the work done by most of the archives staff who do not have managerial responsibility so volunteers need to receive the same training. It is beneficial for staff and volunteers to train together to foster a team spirit.

Note that in some cultures—for example, in archives in the Pacific Islands, where an archives institution may have some closed or restricted collections with access confined to a few authorised individuals—the safekeepers of these fonds may not wish volunteers to handle or even salvage archives which represent their particular traditional cultural expression. Response and recovery may need to be handled differently in such cases.

It is always important for volunteers to understand how their work fits into the overall work of the documentary heritage institution. This offers greater satisfaction in their work and enables them to act as ambassadors, or advocates, for the work of the institution and documentary heritage in general. The tasks and responsibility volunteers are given when they join teams working to recover from disasters should never exceed the volunteer contract or involve tasks for which they have not been trained.

Training for the disaster response team

The individual in charge of the archives institution is the person ultimately responsible for the safety of the holdings. They must develop expertise and skills in preparing for, responding to and recovering from disasters. Nothing is better than experiencing and handling a live disaster situation but there are ways you can increase your knowledge and skills, such as sharing best practices, attending workshops and courses, reading the literature and by volunteering to support other archives services suffering disasters. Creating an emergency management and disaster preparedness programme will also help you to train for disaster.



Image 5. Training on drying out wet photographs. (Photograph: Emilie Gagnet Leumas.)

Some of the skills and knowledge required to manage disasters are part of the expertise and competencies of an archives and records management professional and the content of this Manual provides an overview of all the things that need to be done to be prepared for disaster. Figure 3 gives a checklist of the necessary skills and expertise.

<input type="checkbox"/>	Ability to identify all threats to the archives holdings and operation
<input type="checkbox"/>	Ability to assess the relative probability and impact of the range of disasters likely to occur
<input type="checkbox"/>	Ability to inventory and audit holdings in all formats and media; and to assess their preservation and protection needs
<input type="checkbox"/>	Ability to identify significant collections
<input type="checkbox"/>	Ability to design surrogacy programmes to duplicate significant collections
<input type="checkbox"/>	Ability to develop strategies to prevent disasters, through good preservation and care of archives holdings and good security procedures and practice
<input type="checkbox"/>	Ability to build relationships and network with emergency services, local and regional partners and stakeholders to be able to call on as well as offer assistance
<input type="checkbox"/>	Ability to devise ways to minimise the impact of disasters before and as they strike
<input type="checkbox"/>	Ability to analyse data relating to risks and knowledge of needs of holdings
<input type="checkbox"/>	Ability to write a tailored disaster plan including policies and procedures for the archives of a specific organisation or archives institution
<input type="checkbox"/>	Ability to train staff and volunteers in methods and techniques to respond to and recover from disaster
<input type="checkbox"/>	Ability to lead staff and volunteers in responding to and recovering from disasters using the emergency plan
<input type="checkbox"/>	Ability to activate and lead staff and volunteers in specific disaster salvage activity
<input type="checkbox"/>	Ability to monitor and evaluate disaster response and recovery and to adjust disaster planning as appropriate

Figure 3. EMDP Team Leader Skills and Expertise Checklist

There are many ways to learn about emergency management and disaster recovery and to increase skills and expertise. Participating in courses and networking meetings, reading the relevant literature and following relevant social media feeds as well as monitoring the websites of organisations active in disaster planning work are good places to start.

The rest of the team will also need training. They will not all need the same training. Some will need an overview and to have awareness of the goals of the EMDP programme. The maintenance crew, for example, should have greater awareness of the need to check the fabric of the building to prevent issues from turning into emergencies. The archives staff and volunteers will need to know exactly what they should be doing in the event of a disaster, including how to handle and salvage damaged archives. Whatever the form of training most suitable for the various people for the job they are doing, regular follow-up training must also happen at least once a year to ensure everyone retains their skills and knowledge.

You also need to think about how you might deal with spontaneous volunteers who offer to help in the immediate aftermath of a disaster, some of whom may be families and friends of staff. If they need training, the effort required and the distraction from the focus on response and recovery must be taken into consideration before deciding to accept volunteer offers.

Support network

In addition to the disaster response team, it is highly advisable to establish links with the wider community. Some of the wider community (for example, the fire service) will be people whom you have already involved as part of your team. The boundaries are soft and you need to involve people with the skills and facilities that work best for the archives, its stakeholders and allies. The support network is a mutual cooperation group to help each other in times of emergency and disaster. If the disaster hits a large area it will ensure that everyone gets a share of available resources and aid and if there is an emergency which affects only part of the area covered by the network, other repositories and services will be able to help. These arrangements need to be put in place before any emergency or disaster strikes since it is much more difficult to negotiate terms and define roles during a crisis.

The network for disaster response is going to provide support not only to the archives operation but also to the community and infrastructure. You need the community and infrastructure back in place or at least temporarily replaced whilst you manage the immediate impact of the disaster on the archives operation. For example, you need your disaster response team to have somewhere to sleep, food to eat, and clean water to drink. The decision about organisations and individuals to include in your network for disaster response will depend on individual circumstances but the first question to

answer is the geographic spread of your network and once that is clear, you can begin to identify appropriate members. Consideration needs to be given to:

- emergency services such as fire fighters, medics and police who could be useful for both prevention and response;
- government agencies with responsibility for the environment and disaster management who might be responsible for issuing warnings of imminent threats and/or response and recovery activities—this might include the military;
- other archives repositories or cultural heritage institutions such as libraries and museums who can offer people, expertise, resources, space or facilities in both preparing for and responding to disasters on a mutual basis;
- specialist vendors of disaster recovery supplies and services, including recovery experts and box suppliers;
- businesses who might be able to provide resources that are not archives-specific but might nevertheless be useful in preparing for or recovering from disaster—for example, food retailers whose industrial freezers could be used to freeze waterlogged paper archives.

One example of this is the *Cultural Placekeeping Guide: How to Create a Network for Local Emergency Action*¹⁰ produced by the (US) National Coalition for Arts' Preparedness and Emergency Response was developed with the needs and concerns of artists in local community in mind. It provides excellent guidance on the rationale for a disaster recovery network, how to set it up and how to prepare as a group to respond to and recover from disasters. It suggests there are eleven steps in building a cultural placekeeping network, and these would work well for the kind of network useful for an archives institution. The first three steps should result in deciding on steering committee membership, and holding an initial meeting to determine what constituency the network will serve and when it will operate. This last is an important consideration in any disaster plan: how do you know it is an emergency or a disaster and it is time to deploy your response and recovery plan? As a group you need to decide based on the risk assessment work you have done as individuals as well as together for the whole community or geographic area. The next step is to decide and define what the network will do; for example, will it work on the whole range of disaster planning or focus on certain aspects, such as prevention or recovery? Will it be able to advocate for good disaster management or raise funds to ensure resources are in place? There also needs to be a plan for the network to communicate with members and beyond the network to other networks and stakeholders in the event of a disaster. The Cultural Placekeeping methodology recommends that network action plans should be created which specify what is to be done to respond and recover from disaster in order to inform a statement of purpose for the network. Networks should also have a contingency plan to cover

¹⁰ See Section 10, Additional Resources on EMDP, for details.

unforeseen issues. This involves examining network and member vulnerabilities. The next step would be to populate the network by identifying members and members' obligations. The decision-making plans and procedures should all be properly managed and saved or stored so that all members can access them and that as individuals leave and are recruited the institutional memory is not compromised. The final step is for the network to meet regularly to review the plans and ensure that all the detail is current.

The National Coalition for Arts' Preparedness and Emergency Response's Cultural Placekeeping solution is designed for the arts community but the archives community can take a lot from it. A logical approach for archives operations aiming to establish a disaster support network would be:

- identify the skills and services needed;
- identify the stakeholders and the constituency that needs to be served;
- set up a steering group to specify the goals and the activities needed to meet the goals—for example, risk assessment, resource management or deployment, volunteer training, preparing the network disaster plan;
- involve stakeholders and constituency in developing the network and the network's disaster management plans;
- identify stakeholders who need and can provide mutual support and specify how aid will be given and what resources will be shared in the event of a disaster;
- recruit expertise and agreements to help from relevant individuals and services, for example, fire fighters;
- draft Memoranda of Understanding or other instrument to set out responsibilities, commitments and rights of the stakeholders who become network members;
- develop an action plan or set of action plans for the various activities designed to meet the goals;
- provide training for all network members;
- test the disaster plan;
- review the disaster plan and related activity on an annual basis; and
- communicate with network members on an ongoing basis.

Another example of cultural heritage institutions working together is the European model which integrates emergencies affecting cultural heritage into the general Civil Protection System and facilitates coordination within cultural heritage institutions and emergency services. The EU has established the European Union Civil Protection Mechanism (UCPM)¹¹ supports planning for and response to disasters both within the member states and anywhere in the world. The Mechanism is developing common

¹¹ https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/eu-civil-protection-mechanism_en.

European rules, shared procedures and operating standards to improve the safeguard of cultural heritage at risk.

A third example is the Caribbean Heritage Emergency Network¹² established at the time that Grenada needed aid to recover from the effects of hurricane Ivan in 2004. It is partnering with Cultural Emergency Response (CER)¹³, to develop the CER Regional Hub in the Caribbean¹⁴. This initiative is a significant step in the ongoing efforts to coordinate and strengthen the protection of rich and diverse Caribbean cultural heritage.

There are many benefits of this kind of collaboration as part of disaster preparedness. It ensures that you know who to contact for help in the event of a disaster, or even a minor emergency. By pooling resources and expertise in this way the network's ability to respond and recover is increased. It allows for the local and regional disaster plans which focus on the macro or wider community, to work in harmony with archives operations' disaster planning which focus on the micro level of their own buildings and holdings.

Vital records

Vital records: records which are necessary for the organisation to continue to carry out its vital functions and without which the organisation could not fulfil its obligations, demonstrate its legal and financial standing, preserve its rights and those of others or do business.

Any organisation preparing to prevent, reduce, respond to and recover from disasters will need to ensure that the records required to keep going are safe and quickly found in the event of a disaster. This requirement must be part of disaster preparedness and be documented in the disaster plan. Archives operations are also organisations with defined deliverables and the process for identifying and protecting their vital records is the same.

The first step is to identify the archives institution's vital functions. This will be done in the context of the parent organisation as appropriate. In doing so, it is important to remember that only those functions which are needed to continue to operate are the vital functions. Consider what the archives institution absolutely must be able to do to fulfil its mission in extreme circumstances. Records provide evidence of as well as informing vital functions and enable them to continue. The vital records part of the disaster plan may need to include the whole business, or in the case of archival

¹² <https://carbica.org/chen/>.

¹³ <https://www.culturalemergency.org/>.

¹⁴ <https://www.culturalemergency.org/programs/caribbean-hub>.

institutions, it may just be archival functions that need to be assessed. In the case of archives, it is important to remember that the vital records include finding aids and records pertaining to ownership of the various archives that make up the collections. This is a separate issue from that of setting salvage priorities for the archival holdings (see the section on significant archives below).

Once the vital functions and their supporting records have been identified, the disaster team needs to find ways of protecting them before and during a disaster. The best way is to make copies and keep the copies in a place where they can be collected easily in the event of a disaster. Copies can be paper or digital, but if a digital surrogacy solution is used, there should be a strategy to ensure that compatible and working hardware and software are both in place to access the digital records. Appendix D gives an overview of vital records management in the context of business continuity for archives operations.

Significant archives¹⁵

Significant archives: archives which are deemed to have the highest priority for protection and salvage from disasters due to their cultural, spiritual, artistic, historical, social, scientific or political value.

Although all archives are unique and have been carefully appraised for their permanent value in providing evidence of the history of individuals, organisations, communities or countries, for disaster planning purposes it is advisable to identify and protect your institution's significant archives. On the one hand it makes sense to protect and save what you can, and on the other hand there will be some holdings, either whole fonds or iconic items, which have such significance for the organisation or community that there is a strong compulsion to preserve them before all others. Expressing the cultural, spiritual, artistic, historical, social, scientific or political value of a collection or record adds to the context and explains why they are significant.

The first step in identifying and protecting significant archives is to carry out an assessment to understand the protection and salvage priorities for your archives holdings and to factor significant records and collections into the organisation's disaster planning. Archives and organisations have different collecting responsibilities and approaches, so the significance assessment will reflect this. There is a range of options to consider when implementing a significance assessment regime for your organisation. The significance assessment:

¹⁵ This part of the Manual relies heavily on the PARBICA Recordkeeping for Good Governance Toolkit Guideline, "Identifying Significant Records in Archival Holdings".

- allows good decision-making about conservation and management, including disaster preparedness;
- helps focus limited resources on the most significant archives and collections;
- is the basis for research and curatorial functions;
- increases the accessibility of collections by sharing knowledge; and
- fosters collaboration across collections.

The significance assessment has a broader application in archives management since knowing and documenting which collection items are the most significant can help promote archives, encourage research and partnerships, support archives management and wider advocacy goals.

Depending on the mandate, collecting policy and appraisal guidelines of the archives institution, the archives holdings in your custody should have been selected because of their permanent value as evidence of the actions, decisions and history of the creating organisation(s) and/or individuals. Collecting policies and appraisal guidelines are crucial in distinguishing records with archival value but they are designed to result in archives which provide evidence of large and complex organisations and of individuals with varied and multifaceted lives. However, archives repositories are usually full and not everything can be saved at once, inevitably this means there is a risk of irreparable damage to some of the holdings. That is why a system for assigning relative significance must be applied if objective and justifiable decisions are to be made to prioritise the most important material.

Before we address how to define what makes archives significant, it is useful to review the archives institution's collecting and appraisal criteria. If you don't yet have these formally documented, this is a good opportunity to start to document your practice and align it with the archives operation's role and the organisation's overall goals.

Identify and articulate the following:

- The role and goals of the archives.
- What the archives holds (for example, records of national significance, medical research data, records of a religious denomination, records of a business or charity).
- Who values the records, who are the stakeholders.
- How the future use and value of the records are weighed against the cost of preserving and providing access.
- The collecting priorities.
- Other considerations which are taken into account when acquiring archives (for example, integrity of the record, cost of preservation, existence of finding aids).

This will provide a big picture context for the content of the archives institution, to be used as a basis for defining significant archives.

The Significance 2.0 methodology is set out in *Collections 2.0 a guide to assessing the significance of collections* by Roslyn Russell and Kylie Winkworth¹⁶ and is useful in assessing the relative significance of particular records over others in the same institution or collection. It involves researching, documenting and analysing the meanings and values of records in the archives. By looking at the history of a record, its provenance and context, it is possible to explain the importance of the record. This will be documented in a statement of significance. The process consists of analysing the record or archival collection, researching its history, provenance and context, comparing it to other items, understanding its values by reference to the Significance 2.0 criteria and summarising its meanings and values in a statement of significance. The aim of the process is to identify the most significant archives or collections as a priority for rescue or recovery action in case of a disaster.

In assessing significance, remember certain records or collections may hold different values and meanings for different groups of people. It is therefore important that assessing significance is a transparent and collaborative process. While one person may lead the process, they should call on the advice of those who have knowledge or interest in the collection or record. This is also an opportunity to build links with stakeholders and to ensure that all stakeholders' views and concerns are reflected in the significance assessment.

You should also consider establishing a register, maybe in a database or at least in digital form, that can also be printed out. The significance statements for records or archival collections that you have identified as taking priority over the rest of the archives can be incorporated into the register.

The Significance 2.0 methodology also provides two sets of criteria for assessing significance, as follows:

Four primary criteria:

- historic
- artistic or aesthetic
- scientific or research potential
- social or spiritual

And four comparative criteria to help evaluate the degree of significance:

- provenance
- rarity or representativeness
- condition or completeness
- interpretive capacity

¹⁶ See Section 10, Additional Resources on EMDP, for details.

You may want to add criteria which are relevant to your own environment, but the criteria can be used to analyse records and archival collections to determine why they may be significant. Not all criteria will apply to every item. For example, a record may have significant social meaning for a group of people but may not have any scientific or aesthetic value. The comparative criteria may help work out the degree of significance of the record.

Form C is taken from the PARBICA “Recordkeeping for Good Governance Toolkit Guideline 24: Identifying Significant Records in Archival Holdings” and provides the step-by-step process of assessing significance for both individual items and collections as a whole.

Once you have researched and analysed your potential significant archives and archival collections, you will be in a position to write your statement of significance. It will provide the argument for, as well as raise awareness about how and why, an archives collection or item is important. Keep notes of all stages of the process to ensure that all material and information you have collected will inform drafting the statement and provide evidence of its conclusions. The assessment criteria can be used to provide a framework or structure as you justify your findings against each criterion. The statement will be as long or short as it needs to be and is best written in prose style.

The PARBICA Guideline and the Collections Council of Australia resources cited in the footnotes and the Additional Resources section of this Manual offer very detailed guidance in developing significance statements.

Your significance assessment will assist in your emergency management and disaster preparedness planning by informing management decisions about your most significant archives or collections. This includes ensuring that significant archives or collections are:

- Stored appropriately (including appropriate environmental protection) so as to mitigate the risk of damage from disasters or emergencies: for example, housing significant archives in a fireproof safe or prioritising significant archives for archives-quality boxes if there are not enough resources to protect all material in this way.
- Housed and their whereabouts documented so that they are located such that they are easily accessible in the event of a disaster: the disaster plan must contain the list of significant archives and their locations, size and medium.
- Prioritised for rescue and salvage action as part of a disaster recovery: this needs to be stated in the disaster plan and included in all training.
- Known to disaster team members to allow for early action in the event of a disaster: team members need to know the appropriate actions to handle and treat affected material.

You can use the register of significant archives and archival collections to document the items that you would save first in the event of a disaster or would be your highest priority in terms of salvage and recovery actions. It should be part of the disaster plan, and staff should be trained so that they can quickly locate and either protect or remove significant material prior to, during or immediately after a disaster, depending on the earliest time it is safe to do so. Remember that the information about significant archives is sensitive and it should be kept securely.

It is highly likely that the organisation's vital records will include personal data. For both ethical and legal reasons, depending on the legislative jurisdiction in which the organisation is operating, care must be taken both in managing vital records in preparation for possible disaster situations and in managing them in the event one occurs.

Funding and insurance

Emergency management and disaster preparedness planning needs to be funded, both in the initial planning phase and on a continuing basis. This ensures staff are trained, the plan is monitored and audited and supplies are well maintained and available. There also needs to be provision for contingency funding since in the event of a disaster, money must be immediately available to authorised people. Ideally there should be a fund of money which can only be used to pay for disaster response and recovery. That money needs to be in an account that can be immediately available in the event of a disaster, even if the local banking services are disrupted. A secondary consideration is the need to be able to have accounting procedures in place that will provide evidence and a paper trail but are not too complex to manage in an emergency situation. You also need to investigate whether it would be possible to insure the archives operation against disaster but remember that insurance claims often take time to be approved.

In every archives spending budget, there should be a line item for disaster supplies and services. There should be a certain amount that the archivist is authorised to spend in an emergency situation and further spending may need secondary approval. This type of contingency funding can be the difference between salvaging the most important records of the institution or losing them forever. If the archivist does not have the authority to spend the monies necessary to make basic decisions for supplies, services, and salvaging materials, the loss can be immeasurably escalated.

Because archives are unique it is always hard to evaluate them for sale or insurance purposes. Even where a price can be put on archival material, if the records are destroyed through accident or disaster they cannot be replaced. This means insurance, which is usually about replacement value or the cost of repair, is hard to obtain. However, it is important to investigate insurance options to put in place, if possible,

funds and other assistance which can support recovery from potential disasters. Often the speed with which damaged archives can be treated will make a difference between saving them and losing them. Having the funds necessary to provide the resources to treat the archives will be a significant factor in their timely salvage.

One clear way in which insurance can and should be taken out is to provide funds to salvage and conserve archival material and to repair or rebuild premises. The insurance should cover the building, the furniture, shelving, trolleys (rolling carts) and other replaceable items such as computer hardware and software, archives-quality boxes, reading room equipment. It also needs to cover the cost of salvaging the archives and repair of those archives that are damaged but can be repaired by conservation experts. Make sure that you estimate a realistic salvage and conservation sum. Also, remember that there may be extraordinary costs such as temporary labour, salvage materials or equipment rental in the event of a disaster. You can refer to your initial review of the holdings, together with the significance assessment to think through all the potential damage scenarios for archives in different media and packaging. This is the basis for your discussion with insurance brokers and will ensure the policy meets your needs. This is also why it is important to include your insurer at a basic disaster planning meeting. The insurer will see what types of material you are protecting and how you wish to plan in the event of damage to the archives. This networking can prove invaluable. If the archives is part of a larger organisation, you need to make sure that you have explained the archives' insurance needs with colleagues responsible for arranging coverage.

Insurance for archives can be hard to explain or obtain in some parts of the world and where natural disasters are concerned it may not be possible at all. However, it is worth systematically contacting all insurers operating in the area and discussing the options to ensure that you have explored every possibility.

If you have managed to arrange insurance for the archives and archives institution you need to ensure it is documented in the disaster plan so that insurers can be contacted and notified as soon as possible following a disaster.

Remember also that the disaster plan is in itself insurance. It protects irreplaceable assets from destruction and damage in ways that monetary insurance policies cannot do. This is an important argument when bidding for budget to develop the disaster plan and put in place measures to protect the archives from potential disasters.

Developing responses to particular scenarios

Disaster preparedness consists not only of making sure you have the resources in place to handle emergencies and disasters, but also that you have a plan, or range of options, for managing as many possible scenarios as you can think of. You will have listed and prioritised the threats to your holdings and operation during your risk assessment. The

next step is to identify the potential negative outcomes of each scenario and to devise a plan, or response, to minimise the impact and to recover, salvage or take measures to repair or reconstitute your buildings and archives.

Again, the precise detail of a response plan will depend on the institution's individual context and the resources available. The nature and scale of the disaster will also influence the best way to respond so you should plan for a range of degrees of severity. The first thing to anticipate is that the building may need to be secured before you can access it and begin to decide what response measures need to be put into action. Most likely emergency services will be in charge of securing the building and you should follow their instructions. They will have experience of life-threatening situations and be equipped to assess whether the building is safe to enter. In planning your response, you must factor in the delay this may entail. Then you need to have an overall plan for the building as well as the holdings. For example, if the threat is a hurricane, you should estimate the likely nature of the damage it would likely cause. It would probably result in flooding and shattered windows, possibly in muddy or dirty water, potentially in movement of shelving and furniture and/or displacement of archives.

You need to plan and train for two co-dependent scenarios:

1. Clean-up, repair and rehabilitation of the building—such as pumping out the water, drying it out, fixing or replacing the shelves.
2. Removal of the archival items along with the data about its original location (because that is the only way you can link it back to your finding aids).

Form D gives tables for planning your emergency and disaster response actions for each of the threats covered in Section 3, Prevention and Mitigation. Table 3 shows how you might make plans to deal with the threat of a hurricane.



Image 6. Evacuation route sign. (Image credit: Wusel007. ¹⁷)

¹⁷ Image credit: Wusel007, CC BY-SA 3.0 <https://creativecommons.org/licenses/by-sa/3.0>, via Wikimedia Commons.

Table 3. Natural Disasters

Cause	Resulting damage	Response	Requirements
Hurricanes	Flooding Shattered windows Muddy or dirty water Movement of shelving and furniture Displacement of archives	<i>Building</i> <i>Archives, paper</i> Remove and pack according to damaged/wet paper archives handling procedures, note location and any box label information, freeze or air-dry ¹⁸	Water pump Protective clothing Skips/large rubbish bins Cleaning equipment Dehumidifiers Shelving Pallets Plastic crates Pens, paper, archives logging forms Wet archives drying facilities Freeze-drying contract

Even this one example shows that preparing for a hurricane's impact on the archives institution, its holdings and operations requires analysis and planning. Once you have decided on your plan to respond to all of the scenarios, you can use the separate plans to develop a master list of requirements. These requirements will take the form of people who have skills and training to help you respond as well as the emergency services. There will also be equipment and supplies, procedures and techniques, information and documentation. You should turn your master list into a checklist for procuring supplies and equipment, developing procedures and techniques, and entering into contracts or agreements for services and relationships you need to set up.

Archives disaster recovery consultants specialise in services to support archives operations in times of disaster and to help them respond and recover. They will offer a range of services, from dealing with isolated mould outbreaks to freeze-drying large quantities of material prior to systematic repair. If this kind of service supplier operates in your part of the world and if you have the resources, it is advisable to contract with them to provide appropriate support in the event of an emergency. This would include storage space, drying facilities, cleaning facilities, conservation services, box supplies and generators. If there are no disaster recovery consultants specialising in archives, look for one with experience in library and museum salvage. If that is not possible, consider approaching a more general disaster recovery company and working with them to bring them to a level of understanding and skills such that they can fulfil your needs.

¹⁸ Note: you will need to specify for all types of media represented in your holdings.

The disaster plan needs to work on a broad as well as a detailed level, and emergency procedures need to be included in the emergency management and disaster preparedness programme, the disaster plan and your checklists. These are the overarching actions which need to be taken immediately. They would include things like ensuring emergency services are aware of the disaster and are on their way, activating the contact list to alert staff, and accessing alternative accommodation. The procedures should be at the front of the disaster plan and are what you and your team turn to first. They should be extremely simple, short and clear. Staff and volunteers should be able to follow the instructions even if they have never seen or heard them before.

Building plans

Building plans are crucial both for preparing for disaster and for managing its aftermath. You need to have plans of all areas of all buildings which are part of the archives institution, and they should be as-built plans showing:

- entrances, exits and main evacuation points;
- fire extinguishers;
- main utilities and services and their shut-off points—water, gas, electricity, air conditioning;
- elevator operating systems;
- vital records and significant archives and collections;
- temporary or emergency storage areas; and
- disaster supply box locations.

If the plans do not already have these things marked, then you need to mark them or ensure a qualified person does it for you.

The floor plans can be used in several ways for disaster planning. They can support identification of risks and threats that could be eliminated (for example, services running through storage areas). Knowing the construction and shape of your buildings, together with the strength of the different spaces will allow you to identify possibilities for moving archives holdings temporarily to more protected areas if you know in advance a disaster will likely impact the institution. Of course, in the event of a disaster the building plans will be crucial for emergency services in their securing the building as well as in helping volunteers find their way around and potentially for the disaster response team to plan priorities and working spaces. It therefore makes sense to keep extra copies available with your other EMDP documentation.

Disaster supply boxes

The need to plan for and have equipment and supplies ready in case of disaster has been mentioned several times already in this Manual. You need to stock up with one or more disaster supply boxes, also known as disaster bins. A rolling container (for

example, a wheelie bin or wagon) makes an excellent receptacle for the disaster supplies. It is best to find a large, lidded receptacle which is waterproof when closed. The section on prevention and mitigation suggests you should inventory your equipment supplies as part of your review of the archives operations. Form A includes a checklist for quite bulky items such as ladders as well as computer items which are not suitable to be kept in storage for a long period of time without updates. Your disaster supply box needs to contain the things you need to protect yourself and the team as well as the tools to start on disaster response and recovery. You can use your equipment and supplies review form to decide what you need in your disaster supply box(es). Form E has a checklist of items typically found in disaster boxes and Form F gives checklists for additional disaster supplies that should be kept on the premises if possible.

Off-site operations centre

You need to plan for a scenario where you are unable to get back into your buildings and use it as a base for the disaster response and recovery work. It may be that this situation is temporary, or longer term. The alternative accommodation might just be a headquarters for managing and/or carrying out the salvage operation, but it might also be a place to resume operations. If you are part of a larger organisation it should be possible to incorporate requirements for the archives in the wider plan but remember you will have special needs, different from what is required to re-establish offices, and you will need to justify those needs to your colleagues. If you are part of a support network, such as the cultural placekeeping example given previously, or have a bilateral agreement, you could be entitled to a share of a partner's space.

In working out how to put arrangements in place for an off-site operations centre, consider what you need in terms of equipment, supplies and services. As is often the case with disaster planning, you need to run through a range of scenarios. If it is just a short-term base to manage the response and recovery operation your requirements will be different from those of a place to run the complete salvage and removal of the holdings, and rehabilitation or even rebuild of the archives building. If you have a legal obligation to provide access to your archives, or even if you calculate that you would need to start to resume access services in the interests of community morale and awareness raising, you will have to think through how you might do that from the off-site operations centre. Yet another factor to consider is whether you need storage for the archives and/or space to set up recovery and conservation of the damaged holdings.

Off-site operation centres can be 'hot' or 'cold' sites, where a hot site is fully equipped and ready to go and a cold site requires utility services to be switched on or furniture and equipment to be delivered. Either way you will need a checklist of facilities,

equipment and supplies to specify the operations centre, perhaps organised according to the different scenarios you envisage in the wake of a disaster.

In the case when you merely need a place to run the operation from for a short time before you can return to the archives buildings, you will need the following:

- computers and network access
- printers
- telephones or mobile phones
- vital records
- desks and chairs
- office/stationery supplies
- toilet facilities
- food and drink facilities
- clean water

If you need a space to store archives, to work on damaged archives or to provide access to archives, you need to add the following criteria to your specification:

- trestle tables
- shelves
- equipment for drying (lines, racks, fans, wind tunnels)
- equipment for cleaning (soft brushes, soft cloths, hand-held vacuum cleaner)
- archives-quality packaging
- hygrometers and thermometers, thermos-hygrographs or data loggers
- secure storage areas
- space to receive researchers

The contact lists

One of the most important aspects of disaster management is ensuring that the team responsible for activating the disaster plan and working on damage assessment, response and recovery, can be contacted when needed. Similarly, it is important to make sure non-vital staff do not come to work because they will not be able to do their usual work and they may be an added liability whilst the trained team puts the disaster plan into action. Remember also that in the event of a disaster the landlines and mobile signals may not be working so you need to think of an alternative. If the Internet is not accessible, you need to think about a way to set up a messenger service.

There are several types of contact lists, all of which need to be kept up to date and to be readily available off-site where the response team can easily access them:

- staff contact list
- first responders/emergency services list
- Disaster Response Team list
- vendor/contractor services list

The staff contact list is often known as the ‘telephone tree’ because landline telephone networks were the most likely communication tool in the case of a disaster before the advent of the mobile phone and because of the procedure of one person calling several people who in turn called several others. This means that more people can be contacted more quickly. These days the list should also include email addresses (both business and personal) to allow effective communications regarding facility closures and other work information. The staff contact list should also include the emergency contact information for the staff themselves, in case they are on leave or have evacuated the area during the emergency event.

The first responders and emergency services list includes the people and organisations that either need to be contacted by you in the event of a disaster or who could already be attending the scene. The following is an example of who might be included in the list:

- State Emergency Services/civil defence organisations
- ambulance/medical services
- fire service
- police
- council offices
- plumber
- electrician
- water
- gas
- security
- pest control
- insurance company/companies
- conservator
- locksmith
- engineer
- lawyer
- carpenter

The Disaster Response Team list will include those people required to attend on site or at the operations centre in the event of a disaster. It includes staff who have been trained and are designated as:

- team leader
- communication liaisons (internal and external)
- collection assessors
- facility/maintenance assessors
- recorders (to document the situation and decision-making)

The vendor and contractor services list includes contractors and vendors with whom there will be existing contracts as well as for supplies and agreements that you may need in the event of a disaster. These may be services or supplies that are part of

ongoing maintenance and facilities management—for example, air conditioning and heating equipment, roof repairs, carpentry, plumbing and general maintenance. They may be contracted services for specialised disaster recovery needs such as drying out the building and repairing structural damage.

Conclusion

Disaster preparedness is all about envisioning the emergencies and disasters that may happen, in line with your risk assessment and archives operation review. From there you can develop a suite of contingency plans that are tailored to your own circumstances. If you make sure that you are properly trained in emergency management and disaster preparedness, that your staff, volunteers and wider support network are aware of the archives' vulnerabilities and needs in case of disaster and that you all know the plan and how to operate it, you are already well equipped to respond to and recover from disasters. Do not forget to keep your plans up to date through a regular review schedule.



Image 7. Salvage supplies. (Photograph: Emilie Gagnet Leumas.)



Image 8. Drying racks. (Photograph: Emilie Gagnet Leumas.)

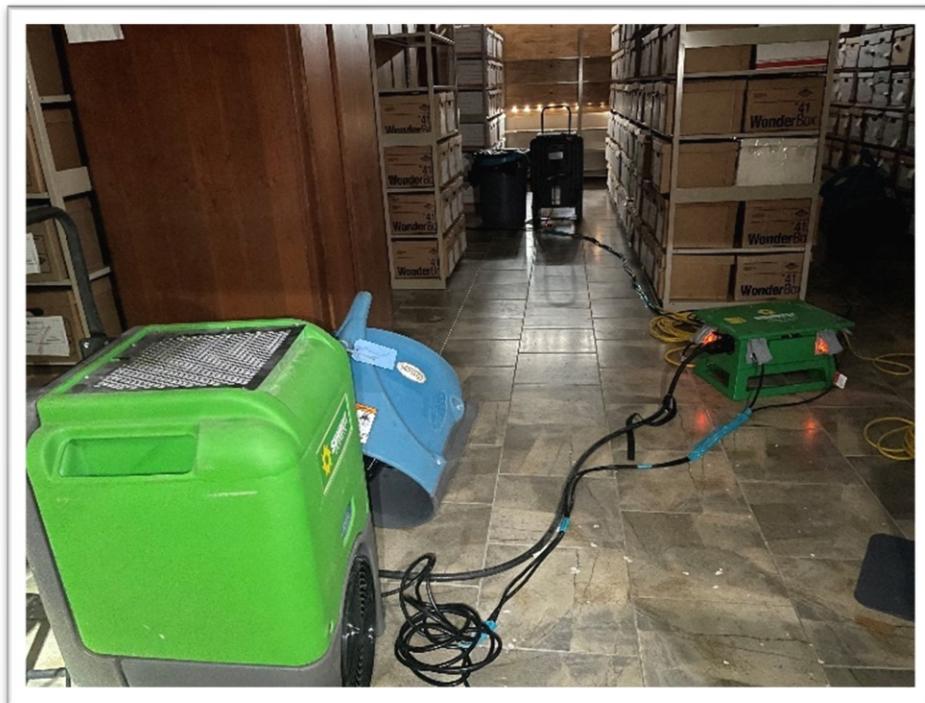


Image 9. Dehumidifiers and ventilation fans. (Photograph: Emilie Gagnet Leumas.)

5. Response

"Disaster Response covers the initial phase of the organisation's reaction to a collection emergency which, depending on the extent of the disaster, may be a few hours or several days. The response phase is not over until damaged collections have been removed and stabilised, and remaining collections are protected from further damage. Planning can then proceed and decisions made about how recovery actions will be undertaken."¹⁹

This definition of response helps to explain the difference between response and recovery: response is everything before the point at which you can start to take concrete action to improve the state of your buildings, particularly the storage areas, and holdings in the wake of a disaster. It consists of a number of elements, for example:

- warning and evacuation, human safety;
- search and rescue;
- stabilising the situation;
- providing immediate assistance;
- assessing damage to buildings and holdings, condition reports;
- continuing assistance;
- the immediate restoration of infrastructure.

The aim of emergency response measures is to provide immediate assistance to maintain life, to identify the needs of archives holdings and to protect them and the buildings. They should also aim to determine what steps are needed to ensure the recovery of the affected materials and structures, including the execution of emergency plans and actions to support short-term recovery. The focus of response is on meeting the basic needs of the archives holdings and facilities until more permanent and sustainable solutions can be found.

This Manual divides the disaster response timeline into emergency measures, assessment and initial planning.

Emergency measures

As mentioned in Section 4 Preparedness, the disaster plan needs to include emergency procedures, the actions which need to be taken immediately when a disaster occurs. The procedures must be short and clear and all staff should know them but they

¹⁹ PARBICA Recordkeeping for Good Governance Toolkit Guideline 21, "Developing a Disaster Response Plan".

should also be easy for others to find and follow even if they have never seen or heard them before.

It is helpful to think of the archives response team as being ‘second’ or ‘third responders’ after the first responders, the fire fighters, medical teams and the police who are first on the scene and focus on addressing the needs of people rather than archives.

Because the range of potential disasters and their varying severities, along with the different levels of preparedness and resources of archives repositories, organisations and wider communities, there is no one way or set of rules to follow in responding to the immediate emergency. Figure 4 provides a timeline suggesting the general order in which to act, but you may need to swap things around in your own disaster plan and/or adapt your plan on the ground when dealing with a disaster.

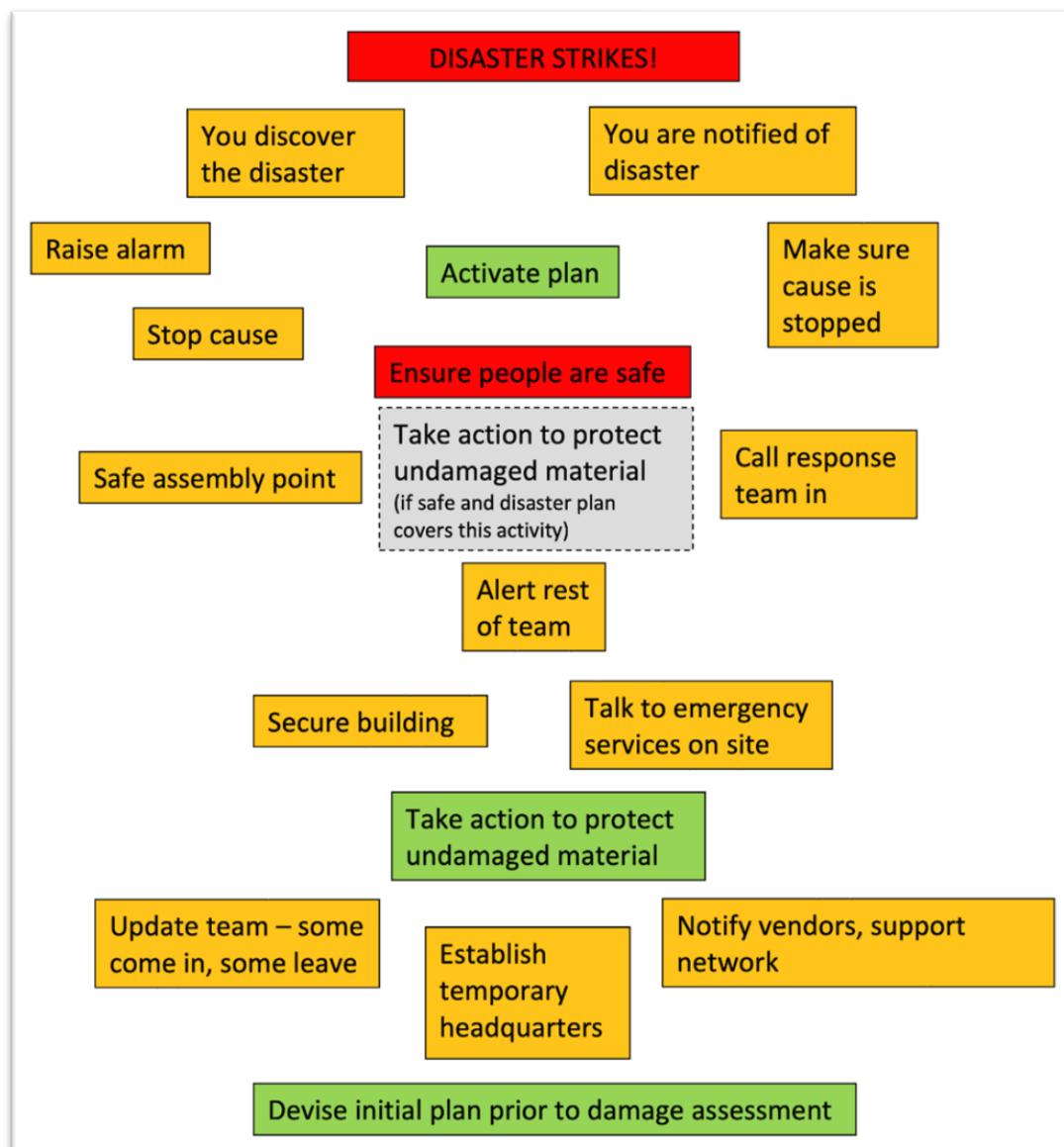


Figure 4. Disaster Timeline

Protection of human life

The most important thing to bear in mind throughout the disaster response phase is that people are more important than the archives. You and your team are encouraged to learn basic first aid and CPR as part of your disaster planning skills. Nobody, including the person who is in charge of the archives' emergency management and disaster preparedness programme, should risk themselves by going into unsecured premises or by undertaking salvage work without taking sensible precautions. In some circumstances, this may mean checking with your staff to ensure all have the recommended inoculations against disease and infection that may be present in standing water or at risk from broken objects. Whether leaving the building when the disaster first occurs or returning to the building (once safe to do so), all staff should be alert to ongoing or new dangers and look out for electrical damage, gas leaks and other dangers that could lead to injury to themselves and further damage to the collections.

If there is warning

If you know the disaster is likely to strike—for example, bush fires are nearby or a heavy storm is forecast—you should take measures outlined in your disaster plan such as moving significant archives to the more protected areas in the building or taking them off-site and covering windows with boards. Brief your team in person if it is during office hours. If not send a message, letting them know what to expect, reminding them of the disaster plan and their training. If the disaster is unexpected, you will not be able to anticipate the potential damage and the shock factor for you and your team may be greater.

Reporting and notification

Whether you are expecting the disaster or not, there will be a point where it happens and you are either the person or team that discovers it, or possibly a 'civilian' will report it to you, or you will be notified by the authorities. This may be during working hours or when the institution is closed. If you discover the disaster or experience the first impact, you need to report it to the relevant emergency services and authorities. This might be one or more of the following: the fire service, the local authority, the regional authority, the environment agency, the police or the army. Contact details should be in the disaster plan and Figure 5 provides details of what to include when you report the disaster.



Figure 5. Reporting a Disaster

You may also need to sound an alarm, as in the case of a fire. When the emergency services and/or other authorities arrive, you will need to talk to them again to repeat your initial report or to bring them up to date on the status on the ground.

Terminating cause of disaster

If the disaster is one that you are able to bring to an end or stop safely (for example, turning off a tap or extinguishing a small electrical fire), you should do so. This is probably only going to be possible for small-scale disasters.

Briefing authorities and being briefed

If you are not on site when the disaster hits you will be notified by the authorities or emergency services and you will need them to let you know when it is safe for you to go on site. Once you arrive on site you will need to talk to them to both be briefed about the situation and to explain to them about the particular needs of the archives operation. If you have your disaster plan in place, this will not be the first time either emergency services or the other authorities have heard about it and you may even already know some of the people who are on the ground. Of course, if you have multiple sites and the disaster is one that will have affected all of them, this step is more complex to accomplish but your disaster plan should anticipate this scenario and hopefully other members of the team will be ready to assist. Either when you arrive on site or when making arrangements to do so, you should confirm with the first responders that the cause of the disaster has been stopped or removed.

Activating the plan

At some point during this early stage, you need to activate the plan according to the protocol mapped out in the disaster plan manual. Activating the plan involves recognising the emergency or disaster and initiating the steps outlined in the disaster plan. Because emergency situations don't always play out according to anticipated scenarios and can be very disorienting, the point at which you, a member of staff, a response team member or even someone outside the archives, declares the disaster could be at any stage. Once you have given information or received information that indicates a disaster has happened, it is time to move into disaster mode. As soon as possible you should assess what kind of disaster you are dealing with and what its severity is likely to be, so you can follow the right part of the plan.

Evacuation and initial deployment of response team

If the disaster happens when the archives are open, you will need to evacuate to a safe assembly point. Once you are sure everyone is out and the building is empty, you may decide to send visitors and researchers home since normal business will be suspended for the foreseeable future. You may decide to send most of your staff and volunteers home too. If the disaster affects a wider area, staff may be anxious about family members or want to secure their homes. It is best to let them go since you need time to decide what you need to do next and therefore which members of the team you need to do this work. One or two people should stay to help you with the planning. Explain what you want people to do as clearly and calmly as you can. If the disaster occurs out of hours you will need to contact some of the disaster response team immediately to join you to start planning next steps. Your disaster plan should have anticipated the various scenarios and provide guidance on who should be called in, as well as substitutes in case of absence, illness or family commitments. Obviously if the team were all at work when the disaster occurred then they will already be aware that you are in a disaster situation. If it happens out of hours then you need to contact all team members to alert them of the situation and put them on stand-by to come in when needed. The disaster plan will have the contact numbers as well as a calling tree to cascade communication. It should also include contingency plans in case there is no network for phones and computers.

Assembly points and temporary operations centres

You may be able to use the safe assembly point as your temporary headquarters, but it is more likely you need to set up an operations centre elsewhere. The disaster plan should contain a number of options based on the anticipated range of disaster scenarios. You may need a series of spaces, a small one for you and a few colleagues at the very beginning, followed by somewhere for all the team to work on the archival items during the assessment and salvage phase. You may even potentially need

premises where you can set up the whole archives operation pending rehabilitation or re-building of the archives building.

You will have made contingency plans for your temporary or emergency operations centre in your disaster plan. As soon as you have decided where it will be, get some of your team to set it up with the supplies and equipment you have laid in or arranged to be delivered in an emergency. Do not forget your disaster supply boxes.

Protection of undamaged material

Depending on the type of disaster, it may be possible to take action to protect undamaged material before you leave the premises. This might involve taking it out of the building with you, covering or placing it in a protective container. It may be as simple as making sure that boxes are off the floor or moved to higher shelves. You will need to use your judgement as to whether it is safe to spend time doing this before you leave the premises. If you cannot do it at this stage, it is something to take into consideration when you regain access.

Note that as soon as you begin to move archives material there is a risk that personal data may be unintentionally disclosed.

Securing the buildings and stabilising the environment

The emergency services and authorities will secure the building in the sense of ensuring it is safe for humans to use. You also need to ensure that the building or buildings are secure from unauthorised entry by humans or animals by arranging to fix any broken doors or windows, you should also double-check the roof. There may be many reasons for people wanting entry, particularly if the disaster has had a wide impact, as people may need shelter or hope to find materials to rebuild their homes, as well as criminals who steal or loot for financial gain.

You will also need to stabilise the environment in the storage repository/repositories. This may involve shutting off water, gas or electricity, pumping standing water reducing heat or humidity. Create through drafts and ventilation, use fans. You will need to remove wet carpets and furnishings.

If electricity is down, or your electric circuits are not safe to use, you will need to have a generator to power electrical equipment.

Regaining access

The authorities and emergency services will notify you when it is safe to regain access to the archives facility. There will be two stages of re-entry because the emergency services are unlikely to let you and your team in before they have satisfied themselves that it is a safe place for you to be. They will enter first, and then you will be allowed back in.

Briefing the team and notifying the support network and contractors

Once you have regained entry and are ready to assess the damage you need to call in the rest of the response team and brief them. If any of the buildings are useable, then you can set up operations there, but if not, you will need to go to the temporary headquarters. The briefing will update the team on the situation and give details of how the damage assessment will be conducted.

If you have not already done so, it is also time to contact your support network, to check who else has been affected and who is available to offer help, either with people, supplies or space. The exact timing of this will depend on the situation; for example, you might contact someone in the support network early on if you know you will need something that they can supply such as a generator or space for your temporary operations centre.

You also need to notify your insurers, if you have insurance. They may be able to help by advancing funds or arranging supplies, but they may also want to come on site to assess the damage for themselves. You should also inform the vendors and contractors with whom you have arrangements for supplies and services in the event of a disaster.

All details of agreements and contracts should be in the disaster plan, together with contact numbers. Also remember that you do not have to make all the calls yourself, you should delegate as appropriate so that the necessary work is carried out as quickly and efficiently as possible.

Damage assessment

The first task once you have access to the buildings and your team is assembled, is the damage assessment. Without sound data on the impact of the disaster and the status of your buildings, furniture and holdings, you will not be able to plan for salvage and recovery. You should have planned and practised damage assessment procedures during the preparedness phase of your emergency management and disaster preparedness programme, so your team will be competent to assist you in this crucial task.

Team members conducting the damage assessment need to wear appropriate protective clothing and equipment. This might include:

- rubber boots
- hard hats
- warm clothing
- closed shoes
- rubber gloves
- masks
- overalls

You and your team need to walk through all the buildings, and especially the storage areas, to document the impact of the disaster and the status of the holdings. This will form the basis of your decision-making for salvage and recovery. You need to assess on two levels: the status of the archives building(s) and the condition of the archives holdings but the two are interconnected and you need to link the data arising from each of these two foci. The best way to do this is through forms, one for the environment and one for the archival material. A master checklist of the spaces and of the holdings will also be useful, both to ensure that you have covered all the places where archives are kept and all of the holdings. This in turn will feed into your report and support your recommendations and justification of decisions and actions to salvage and repair the holdings and to rehabilitate and renovate the buildings. Don't forget that you also have your building plans in the disaster plan to assist with this activity. You should have a stock of the forms in your disaster supply boxes as well as digital versions on your easy-access computer. You should also take photographs of both holdings and storage areas.

In assessing the storage space, you are investigating whether it is, or can be made, fit for storing archival holdings. You need to document all obvious damage caused by the disaster to the walls, ceiling and floor, as well as to any services, including electrical wiring, that run through it. You also want to look at the furniture, such as shelves and trolleys (rolling carts), to assess whether they have been damaged or weakened by the disaster. You then need to note if any measures have already been taken, perhaps by emergency services, to address damage from the disaster. A brief note of the archives holdings which are still in the storage area should also be made on the location form. It does not need to be detailed but it will help in deciding repair and repackaging needs which are appropriate to the holdings. Conversely it helps to understand what has happened to the archival items if they can be linked to their location(s) and what may have happened there. Assessment forms need to be signed and dated and there should be space for notes by the head of the archives to record decisions about renovation and rehabilitation requirements. Form G gives a sample Archival Storage Space Damage Assessment Record form for the environment.

In gathering data on the archives holdings, it is important to include information about the assessor (for example, the paper conservator) and to provide space on the form to record decisions or approvals regarding salvage and repair. The main management data to collect is the medium, details of the packaging and the state of the material itself. Form H is a sample Archives Holdings Damage Assessment Record for the materials.

Whilst the focus of damage assessment is necessarily on the archival holdings, you also need to record damage to all areas of the archives operation, as well as to furniture and equipment as these will need to be renovated, repaired or replaced.

It should be noted that damage assessment is an exercise which the insurers and loss adjustors may potentially be able to help with. In any case at this point in the response phase, they may need to have access to the buildings and especially the storage repositories.

Protection of undamaged material

If you were not able to protect undamaged material in the immediate aftermath of the disaster, this can be done after the damage assessment. As a result of the assessment, you will know where the undamaged material is.

Salvage plan

When the damage assessment exercise is complete you will be able to use the data to evaluate the damage to your buildings, the storage, processing and public areas, the holdings, individual storage areas and equipment. You will be able to document the extent and nature of damage to various types of material, decide what steps to take to repair that damage, the urgency and the resources required. This allows you to set priorities. Your disaster plan will provide details of priorities based on your analysis and decision making around a range of values that you were able to assign to specific archives or archives holdings. These will include:

- vital records;
- significant archives;
- items on loan to the archives;
- record groups that most directly support the archives mission;
- material that is most vulnerable to damage if not treated; and
- materials most likely to be successfully salvaged.

Whilst needing to identify the iconic items, or the ones which, if lost, will have impact on the archives' reputation or funding, you should take into account the bigger picture. For example, the wettest material may seem most at risk but may be more time-consuming and costly to salvage—you will need to weigh this consideration against the possibility of salvaging more, less-damaged material first.

At the same time, you will also be analysing the damage to the building and setting priorities for renovation and rehabilitation together with specifying the work that needs to be done. For this you will need to call on builders and/or your colleagues or support network to tap into building and facilities managers' expertise.

All of this analysis will feed into your salvage plan. You need to identify what expertise you need (for example, conservators, electricians, and plumbers) and what expertise you have in your disaster response team and your support network as well as any volunteers who have agreed to help in emergencies. You should be able to specify what equipment and materials you will need. You will also be able to call on

contingencies, which were anticipated in the preparation phase of the EMDP programme. Similarly, as provided for in your disaster plan, you will be able to establish a larger off-site operations centre if necessary, with space for archives salvage work, storage and premises for the team and other support personnel.

Your salvage plan should include:

- authorisation to implement the plan;
- an account of the damage to the holdings according to both medium/type of material and relative significance using your damage assessment documentation and the statements of significance;
- a prioritised list of the holdings and the measures to be taken to salvage and repair them;
- floor plans marked up with holdings and salvage priorities (with photos if possible);
- identification of priority holdings with red, orange, and yellow fluorescent dots on the boxes;
- details of the temporary operations centre to include salvage areas, storage facilities, offices, quarantine facilities, pest control, equipment and supplies;
- names of personnel who will assist with the salvage operation and provision for recruiting volunteers if needed;
- procedures for removing holdings and protecting personal data;
- procedures for each type of treatment needed for each category of archives;
- supplies needed to treat the damaged archives;
- priorities and specifications for renovation and rehabilitation of the archives institution's storage repositories;
- financial arrangements;
- details of vendors of services, equipment and supplies; and
- communications plan and strategy to let researchers and others know the situation.

Most of these things will have been planned for and mapped out as far as possible in the disaster plan. Once you have drafted the plan, you will need to confirm that your management, as well as the authorities, emergency services, your support network, insurers and contractors are able and willing to help you implement it.

Up until now, through the activation of the plan, alerting the response team, the support network and other stakeholders, securing the building and regaining access, assessing the damage and developing the salvage plan, you may not have needed all of your staff and volunteers. Once you, and the colleagues who assisted you, together with the stakeholders you have been consulting with, have finalised the plan it is time for you to mobilise the whole team. Call them all in and brief them about the plan before organising them to set up the emergency operation centre as well as the institution premises for the work that is needed.

It is very important to maintain everyone's morale in the aftermath of a disaster. Apart from making sure everyone is keeping safe, there needs to be a staff room where the temperature is comfortable, so people can either cool down or warm up after salvaging records in situ. There should be frequent breaks for food and cool or warm drinks as appropriate. Team members should not be left to work alone, ensure they are in pairs and monitor the mood both of individuals and the group as a whole.



Image 10. Interleaving wet records after 2005 Hurricane Katrina. (Photograph: Emilie Gagnet Leumas.)

6. Recovery

Recovery: phase in post-disaster management during which positive action is taken to restore archives buildings and holdings to optimal condition and partial or full operations and services are resumed. The goal is to get back to business as usual.

If the disaster response phase is “everything before the point at which you can start to take concrete action to improve the state of your institution and holdings in the wake of a disaster” as indicated in Section 3 of this Manual, then the recovery phase is what happens after that point until the occasion at which the archives operation can be considered to have returned to normal. It consists of the following elements:

- The recovery plan.
- Arrangements to continue vital functions and skeleton services, according to pre-agreed policy and priorities.
- Salvage or retrieval of holdings from affected areas.
- Long-term stabilization and treatment of archival material.
- Specialised repair and conservation work.
- Copying or image creation of archives too badly damaged for repair.
- Renovation and rehabilitation of archives storage repository and other accommodation.

In planning the recovery phase it is important to have a clear picture of what recovery means for the institution in question. It is probably not realistic to expect that everything will return to exactly the way it was before. Some facilities and even some archival items may be gone for good but on the other hand there may also be the opportunity to improve on operations going forward. If nothing else, the recovery phase provides the chance to reflect on the experience of coming through the disaster and improving mitigation, preparedness, response and recovery in future.

It is a sad fact that sometimes it takes a disaster for the organisation, stakeholders and the wider community to realise the importance of archives. When this is the case the realisation can result in greater support both for recovery and to manage the archives in future. It can be a golden opportunity to define the best practices, apply for grants, attract and coordinate volunteers, and continue advocacy for the archives operation and the protection of archival holdings. Along with effective planning and good project management, taking advantage of the opportunity afforded by the higher profile of the archives in the wake of the disaster and an understanding of change management are success factors in recovery. We must constantly remind others why and how the archives operation remains a critical and vital part not only of the parent organisation, but of the community in general. A final consideration is how we can use

modern technology to support the process and find ways to work more efficiently in future.

Recovery plan

Following on from the emergency procedures taken during the response phase of your EMDP programme, you will have developed a recovery plan. It will be based on your damage assessment and the available human, financial and material resources in your operations centre. This will either be a temporary off-site arrangement or in your buildings, if there is suitable space that has not been affected or can be quickly restored after the disaster. Your team will have expanded beyond the few people you needed to help you take stock of the situation to include all staff, your regular and disaster recovery volunteers and people supplied by contracted vendors and consultants. They will be ready and you will have briefed them on their tasks, which will encompass:

- protection and/or removal of unaffected archival items;
- packing and removal of damaged archives;
- treatment of damaged archives;
- re-packaging repaired or treated archives;
- documenting movement of archives;
- capturing and adding to metadata about the archives;
- documenting treatment and repair of archives;
- clearing and cleaning storage and other areas;
- special handling needs for archives of particular cultural, spiritual or religious value to their communities; and
- running basic archives operations.

Setting up storage areas, workspaces and stations

As already mentioned, the recovery operation needs to take place in secure premises which have an environment which meets the standards for archival storage. It will need to have storage areas as well as working areas and facilities for staff such as kitchens, rest areas and bathrooms.

Workstations should be set up where staff can conduct further assessments on, stabilize and treat the material. The workstation may be a series of tables, covered in protective plastic sheeting. The supplies discussed in the preparedness section of the Manual will need to be available, either at workstations or centrally. It may also be necessary to set up areas with drying facilities such as racks, lines and wind tunnels as well as water containers for material that needs to remain in water as part of or until further treatment can be administered.

Clearing the storage areas

When clearing storage areas that have been damaged by disaster, make sure all personnel are wearing appropriate safety gear, this may include masks, gloves, closed shoes, high visibility vests and hard hats. You need to approach the task in a way that ensures it is accomplished efficiently and safely. Clear entrances and main gangways or aisles first before moving down bays; take items off the shelves starting with the top shelf and working down.

Depending on your recovery plan, you should secure vital and high-priority items first. It may be possible to negotiate with disaster experts on the scene to retrieve high-priority items even if they have not yet stabilised the area but remember human safety is your paramount consideration.

Depending on the scale of the disaster you may be able to leave undamaged items in place if they are secure and the environment meets archival standards but protect them with plastic sheeting and monitor both the environment and their condition.

Eventually you will need to remove them whilst the storage area and building is being renovated.

Damaged archives should be separated from undamaged ones and material sorted according to the extent and nature of the damage. Items should be carefully taken off shelves and packed in plastic crates. If they have been damaged, do not attempt to fix at this stage and leave any volume open or closed as you find it. Use cotton ties or tape and plastic bags to support, protect or keep together any items that need it. Any identifying marks, such as references and locations, should be transferred from packaging to labels. Waterlogged paper is extremely heavy, so great care should be taken when moving it both to prevent further damage to the archives and to avoid injury to staff. Remember also that packaging will no longer be as strong as it once was. In some cases the packaging will have taken the worst of the damage and the contents could be relatively unharmed. It is best to use plastic crates to store and move archives affected by water, fire or smoke because they offer strength and will ensure the integrity of individual items can be maintained, as well as protecting staff and undamaged items from direct contact. All plastic crates should be labelled with a unique reference and brief details of the contents and where they came from. The contents of each crate should be documented. The best way to do this is with a form. The form will have the crate reference number as well as information about the content of the archival items and their condition. It can also be linked to the damage assessment form, although the damage assessment form will have been briefer and refer to more than one crate of material. This should be linked through the reference to a documentation form which will record damage, treatment, and movement of the archival items. The crate documentation form should provide details for each item as follows:

- crate reference
- archives reference
- location of archives
- any other references or labels
- medium
- packaging type
- treatment, repair or conservation needs
- whether it is a vital record or a significant archives

You can also add in a salvage priority code, in the way triage works to sort what can be salvaged from what cannot be salvaged. Identify what is worth salvaging and what can be left due to the conditions and time constraints, for example:

1. Badly damaged, can be salvaged
2. Badly damaged, cannot be salvaged
3. Medium damage, action can wait

Form I is an example of a crate documentation form.

Monitoring the environment

Although it may seem like everything is in disarray and none of your normal operating procedures persist, it is vital to continue to monitor the environment in storage areas where the archival items remain, as well as the spaces they are removed to. The temperature and humidity should be kept as close to archival standard as possible but keeping a record, whatever the situation, will allow you to understand and report on their condition in the future. If there is the risk of a mould outbreak, which is particularly the case following any disaster involving water ingress, you need to check regularly for mould. The period of time elapsing after water affects archival items is a critical factor in mould growth.

You also need to ensure that the wider disaster recovery team adhere to the usual rules around archives. There should be no smoking, food or drink although you probably need to allow water bottles if it is very hot. Even if the spaces look like total chaos, rubbish should be disposed of properly and not left to add to the list of things to do.

Salvage and retrieval of damaged material

During the preparedness phase of the emergency management and disaster preparedness programme you will have thought through all of the possible kinds of damage to your various types of archival items. As a result you will have developed guidance for the team to follow when removing material, wrapping it to prevent further structural damage and treating the various media to return it to a viable state. The guidance should be in the form of separate action sheets for each particular

procedure, giving step-by-step instructions and tips on handling. These sheets should be prepared as part of the disaster plan because they need to be tailored to the specific needs of each archives institution. They should be kept both in the disaster manual and in the disaster boxes.

In removing the material from the affected storage area, you will have generated crate documentation forms, as well as damage assessments for the material. You will also have packed high-priority items together and will be dealing with these crates first. You should maintain a master list of the crate numbers, contents and archives references as well as location, including when the materials move. The master list will cross reference the crate documentation form and the archives holdings damage assessment and archival storage space damage assessment records.

You will need to brief all team members in the processes required for each of the types of material you identified and assessed in situ so they know how to handle and treat them, as well as what information they need to document, where to document and how to save the records for everyone to access. All team members involved in treating damaged material should wear appropriate protective clothing.

As previously mentioned, when archives material is moved around, particularly in an emergency situation, there is a risk that personal data may be unintentionally disclosed. Team members will need to be briefed about the archives repository's specific legal jurisdiction and the procedures that must be followed to meet legal obligations.

Specific actions for specific materials

The guidance given below represents general recommendations for the most commonly found archival media in a range of disaster scenarios. Each archives institution is unique, with unique holdings and its own specific reporting lines and resources so you will need to take the guidance and tailor it to your own situation, both in advance of the disaster in the preparation phase and in the recovery phase when you may need to adjust or select from your manual to fit the specific disaster and effects on the ground. Wherever possible you should consult experts in paper conservation, technology and digital preservation and audio-visual media preservation.

Wet material: guidance for treatment

Items which have become wet lose strength whilst they are wet and are easily damaged as well as being at risk of mould outbreaks whilst they dry out. Mould can grow within 48 hours of material becoming wet. Moreover, if they are still in their boxes, or are volume format, these outer shells will hinder the drying process. It is therefore crucial to dry them out as quickly as possible or to freeze them to prevent the

growth of mould whilst waiting for drying facilities to be freed up. However, in many situations there will not be resources to pay for, or access to or enough facilities to make freezing a realistic option. In that case you can only set up the largest drying facility that is viable and try to keep your wet archives as cool as possible.

Circulating air effectively dries most items. Although physical distortions may occur, the document information is saved. Fans should be positioned for optimal drying conditions, but don't aim directly at the documents and be careful not to create a draft that might disorganise or damage the material further. A wind tunnel can be constructed using a table or similar frame and covering it with sheet plastic or card and positioning fans at the mouth. Be careful to turn the fans on or up gradually so as not to blow the wet materials away. You can use a range of blotting material, such as blotting paper, paper towels or rags to lay underneath wet material or for interleaving whilst it is drying out.

To dry wet paper:

1. Remove from boxes and packaging, making sure you record references by documenting on the crate documentation form as well as with the item's own tag or label.
2. Consider removing covers of bound volumes.
3. Do not separate records that belong together if possible and retain labels and identification.
4. Set up your space into a drying facility with racks, tables and lines plus fans and dehumidifiers.
5. Depending on the fragility of the item:
 - Stand volumes upright on blotting paper and fan out, interleaving with sheets that extend beyond the pages to act as wicks; invert the volume periodically to ensure it dries out evenly.
 - For more flimsy/fragile volumes and files, interleave with thin blotting material, place on blotting paper, change interleaving material regularly.
 - Drape pamphlets over hanging line along spine.
 - Pin papers and photographs to hanging line with plastic peg or paper clip.
 - Air-dry documents flat in small piles or individually if possible, interleaved with blotting paper, change the blotting material frequently.
 - Spread items out over blotting paper or over screens or rack.
6. Monitor items regularly, change blotting paper regularly, empty water reservoirs in dehumidifiers regularly, adjust fanned out pages and alter point at which pamphlets hang regularly.

Glossy magazines and photographs are likely to stick together. If they are important, they should be an early priority. Rinse in cool, clean water if necessary. If there are too many to deal with at once they can be kept in a bucket of clean water for up to 48 hours.

Audio-visual formats such as photographs, negatives and motion-picture film are very vulnerable to water damage and may never recover. It is best to call on specialist conservation advice if possible. Otherwise:

1. Avoid touching the surface of photographic prints and negatives.
2. Never freeze old photos or negatives.
3. Dry prints, negatives and slides face-up on blotting paper, changing it as it becomes soaked.
4. More modern prints and negatives that have stuck together can be separated after soaking in cold water.

Take the backing material off framed items and remove them from their frames to air-dry as other material. If the material is stuck to the glass do not attempt to remove it but dry intact with the glass side down.

If you need to freeze material it should be rapidly frozen and not defrosted until you are ready to dry it out in cold air. To prepare the material:

1. Remove from the crate.
2. Remove boxes and packaging, making sure the references are recorded on the crate documentation form as well as with the items.
3. Wrap bundles and volumes in tape, securing with a safety pin, to give extra support; volumes may be swollen with the additional volume caused by waterlogging.
4. Place bundles and volumes in Ziploc (re-sealable) bags and seal, label clearly with references, the date and the name or initials of the team member.
5. Return to crate, volumes should be placed spine down.

Remember that skins (such as parchment), microform as well as other audio-visual media must be air-dried and not frozen.

Vacuum and freeze drying are usually services provided by external contractors. Vacuum drying is a process which, by placing the material in a vacuum, reduces the boiling point of water which increases the rate of evaporation and speeds up the drying process. Freeze drying involves rapidly freezing the material and then lowering the pressure before heating slowly to enable the moisture to convert to gas without melting and going through the liquid stage.

Once material is dry, place in fresh folders and boxes, label packaging with the correct references, and put into temporary storage until the archives storage repository is ready to receive them. Update documentation and make a note of material that will require repair or conservation. You will need to carefully monitor temperature and

humidity levels in temporary storage as well as in permanent storage and to remain vigilant for outbreaks of mould²⁰.

Soiled and dirty material: guidance for treatment

Archival items that have been heavily soiled, particularly in large quantities, should be treated by experienced conservators. You should pack these items in Ziploc (re-sealable) bags in crates whilst waiting for these arrangements to be put in place.

Depending on the nature of the dirt, it may be possible to rinse to remove some of the initial dirt before you bag the items. If you suspect the dirt is contaminated, take great care in packing and use gloves and masks. In some cases, it may not be viable to retain them because of the threat they post to human safety, if soiled with toxic material, the archives will not be salvageable.

Soiled material may be dry or wet. If paper is dry but soiled the dirt can be removed with a soft brush, such as a paintbrush. If it is wet, place in a bath of cool water, move gently to remove the worst of the dirt. You should always use cool water, but sometimes cool water will not remove the dirt. In that case, if you have no other available resources or conservation expertise, test whether washing in warmer (but not hot) water works better. However, do not attempt this water treatment if the writing or image is blurred, feathered or faded. You will then need to follow guidance for drying wet material.

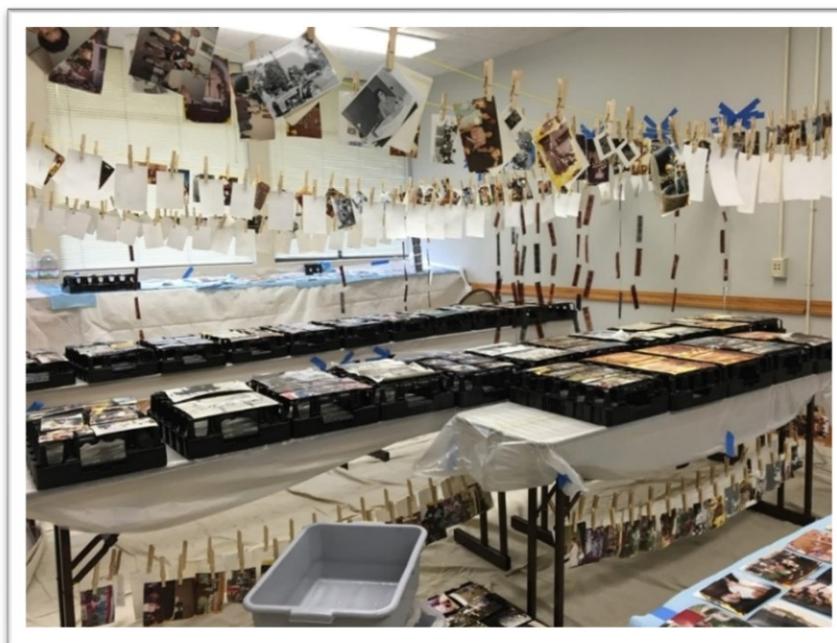


Image 11. Drying photographs after 2016 flood in south Louisiana. (Photograph: Emilie Gagnet Leumas.)

²⁰ Pre-1840 paper records can absorb from 80% to 200% of their weight in water; modern paper can absorb up to 60% of their original weight. It is important to monitor moisture content with a water moisture meter, because the material is still at risk of mould infestation if their own moisture content is higher than 7%, even after relative humidity has reached acceptable levels.

Fire damaged material: guidance for treatment

If paper archives have suffered fire damage alone, they will remain stable and can wait until there is time for suitable conservation methods to be employed. They will be very fragile and should be packaged carefully in archives-quality folders and boxes.

Mouldy material: guidance for treatment

Wet archives are at great risk of mould infestation, but mould can also occur without there being an external disaster—perhaps following a breakdown in temperature and humidity control. Remember that mould spores can be very harmful to people, especially if they have respiratory illnesses. Masks and gloves should be worn at all times and a doctor should be consulted if there is any reaction, in the respiratory system or skin. Remember:

1. Active mould is slimy or fuzzy, dormant mould is powdery.
2. The best way to prevent or stop mould is to remove it from environmental conditions that encourage it (high temperature, high relative humidity, stagnant air, darkness).
3. Exposure to the sun can kill active mould (but can cause archives to fade), dormant mould can reactivate if the conditions become favourable.

Treat material contaminated by mould outdoors so other material is not infected, brush gently or vacuum with screened nozzle. If possible, you should consult an expert in mould contamination.

Digital and audio-visual materials: guidance for treatment

It is best not to attempt to treat digital media without expert advice, but because they are mostly magnetic, digital media are extremely vulnerable to heat and humidity. Audio-visual media are often made of the same materials so treat them in the same way. Wear gloves when handling and avoid scratching the surface; avoid using magnetised tools. Leave the media as it is and do not remove the casing, although if possible you can open it up to let it air out a bit, then send it to the conservator. Never rewind it and never try to play it. You may only get one chance to salvage the text or the images and an expert should be responsible for that attempt. The rate at which digital media absorbs water is slow and tapes can survive in clean water for several weeks. Salty or dirty water is more damaging, and tapes should be rinsed in clean water. However, the tapes from the Challenger space shuttle were in the sea for six weeks yet the data was recovered. Older tapes are more vulnerable and should be prioritised for recovery and treatment.

Rehabilitation of storage areas and return of archival material

Whilst the damaged archival material is being treated, you will also need to oversee the renovation and rehabilitation of the storage areas, and possibly the rest of the archives institution accommodation. In some scenarios, the building might be too

badly damaged to do anything except knock it down and rebuild. If that is the case, you may be offered other accommodation. Whatever the situation you find yourself in, you need to ensure that you specify the archives' requirements and ensure that the rehabilitated, new or re-purpose accommodation meets archival standards, in exactly the same way as you would if you were procuring archival accommodation from scratch.

If you are moving back into the storage area which has been affected, you need to be sure, before you move the archives in, that the temperature and humidity levels are acceptable. You also need to make sure that any chemicals, such as those given off by paint, which are harmful to archives, have dispersed. Ideally the renovated premises should be well-ventilated and humidity and temperature controlled and there should be enough shelving to allow half the normal density of archives to allow optimal air flow. You also need to be sure that the archival items, whether you have treated them yourselves or given it over to a recovery consultant, have a water content reading of under 7%. You should conduct random inspections for mould on a regular basis, as well as monitoring temperature and humidity for the life of the archives.

[Back to normal](#)

Rebuilding an archives after a disaster takes years or even decades to complete. It is important to define what recovery will look like, and if 'back to normal' is even possible. Full recovery would mean the archives operation is fully functioning, the storage areas have been renovated and rehabilitated, all the materials have been treated, shelving is repaired, rebuilt or replaced, and new technology is in place. Moreover, staff will have come to terms with the disaster and be working on projects and goals that are not a direct consequence of the disaster. Perhaps recovery needs to be defined in a less absolute way. Being open for business, providing services to those that need information, taking in material, or advising on interim management of material that needs to be preserved are also all signs of recovery and moving forward. The key to surviving and growing again is planning, managing, documenting and having the fortitude to keep going no matter how long it takes.

Remember also that the aftermath of a disaster offers the opportunity for fundraising at a time when stakeholders and the wider community will be acutely aware of the value of archives. Now may be the chance to improve the archives facility, campaign for better space and rebuild sustainably with climate change in mind. Be ready to make your case if and when the occasion arises.

[Documenting the disaster and lessons learned](#)

Documenting the effects of a disaster can help the archives institution understand what happened and review the experience with a view towards updating and improving the disaster plan. The team should be monitoring and documenting every phase of the

disaster recovery operation, including decision-making processes, by photographs, written notes and minutes. Many of the procedures outlined in this Manual recommend the use of forms and master lists and will provide a helpful basis for your documentation strategy. All of these records provide evidence of important decisions made by the organisation under great stress, provide documentation on losses and the organisation's response (which is also useful for insurance purposes) and provide invaluable material for future review and improvement. You will not be able to do everything yourself so remember to assign staff to contact and keep written records of details of meetings and conversations with insurance agents and other investigators. Take time at the end of each day to review what took place and record the information for future review and use. It is helpful to keep a disaster journal either written by individuals or by groups of people. These describe the impact of the disaster on the collections and the salvage activity for later review. These can be invaluable when paired with photographs for submission as evidence to insurance companies. Noting what worked and what did not work will enhance the salvage procedures if there is another disaster. Appendix E gives sample extracts from a disaster journal and Appendix F extracts from a report based on data from that journal.

Once you are ready to draw a line under the disaster and declare yourselves out of disaster mode, you need to take some time to review the experience with a view to updating and improving your disaster plan. Use the headings of your disaster manual as a checklist for the review, remembering to allow time and room for consideration of anything that should have been in the plan but was not. The next Section covers the disaster manual and Form J is a checklist for the contents of the manual.

In conducting your review of the disaster, you are investigating the extent to which your disaster plan was effective in preventing or mitigating risks, preparing the team for disaster and responding to and recovering from the disaster that has just happened. You should seek the views of everyone involved in the disaster management work and ask them some focused questions designed to determine whether your plan was fit for purpose and what could be improved in future. For example:

- Did they have adequate training in disaster response and recovery?
- Did they find the disaster manual to be an effective guide for all of the things that were required during the response and recovery phases?
- Did they feel that their own needs as a human being and staff member/volunteer were sufficiently met?
- What would they change in order to improve the institution's capacity to respond to disaster?
- Please give specific recommendations for improvement of the EMDP programme.

You should also review all of your documentation, map out the timeline to see where the pinch points were, where things did not go well, and/or where pre-determined

courses of action did not work well on the ground. Don't forget to ask yourself the same questions as the other team members. There should be a series of meetings to go through the review findings, the disaster plan and the disaster manual to identify changes and updates that need to be made. Once these tasks have been carried out properly, and updated the plan and procedures have been updated, a revised cycle of training for everyone needs to be put into place.

As part of the recovery process, it is important for your finding aids to be amended following any disaster or salvage effort. If the paper documents were destroyed, but a digital image remains, the finding aid should reflect that. If the documents were destroyed and no other copies exist, that should be noted as well. Details regarding current location, rehousing, reshelfing and conservation efforts should be documented on the existing finding aid. Metadata may need updating to reflect a change in availability while the material is out for conservation. Additionally, documents that may have been available for researchers to access in the past, may no longer be available due to the damage on the document during the disaster.



Image 12. Meeting of archives colleagues after the 2017 earthquake in Puebla, Mexico. Representatives are from Japan, United Kingdom, Mexico, UNESCO and ICA. (Photograph: Emilie Gagnet Leumas.)

7. The Disaster Manual

Disaster manual: a comprehensive document in handbook format which describes the disaster plan in detail and gives all the information needed to contact support, service suppliers, emergency services, staff, volunteers and other stakeholders in the event of an emergency, as well as providing procedures to address the full range of anticipated disasters that might affect the archives and to retrieve and treat damaged archives.

In order to be in a position to develop the plan, you need to know your archives holdings, their content but also their physical characteristics and vulnerabilities. We have covered all of the steps in the planning process in the last four sections on Prevention, Preparedness, Response and Recovery. These outlined strategies and procedures to ensure you and your team are as prepared as you can be for any disaster that strikes your archives. This section focuses on writing everything up into a manual that will become your most important working record and will provide you with all the detail you need to manage disasters, big or small, that strikes your archival operation.

Throughout this Manual, we refer to the ‘disaster plan’, as well as the ‘preparedness plan’, the ‘response plan’ and the ‘recovery plan’. The last three come together with your strategy for elimination of risk and prevention or mitigation of disaster into the overall disaster plan. The disaster plan is one of the key outcomes of your EMDP programme and needs to be articulated in a disaster manual, which contains not just the plan but also all of the supporting documentation and procedures, contact details and forms that you will need on hand, if a disaster threatens or comes to pass.

Disaster plans are unique to each organisation, although they will all cover similar ground. General recommendations as given in this Manual can be useful but the ultimate configuration of preventative measures, supply sources, priorities, and reactions will depend on the makeup of your archives, their formats and media, geographical location, availability of personnel and resources, and the nature of the disaster itself. Each organisation must define what constitutes a disaster in terms of its own operation. The Manual has already covered the need for the EMDP programme to begin with an articulation of the aim and scope; how it involves carrying out a risk assessment and analysing the impact of likely disaster scenarios on the archives operation. These tools allow the project team to develop a detailed definition of the requirements of the plan, to draft the plan and to implement it. There should also be provision for ongoing testing and maintenance of the plan. The overall aim is to put together an effective plan, which enables staff to feel prepared to handle emergencies and disasters.

The written manual is a vital tool in an emergency situation when it is important to react quickly and effectively. It is a comprehensive handbook with step-by-step procedures for dealing with any emergency or disaster situation, all the information and contact details that you need to access and pointers to find documentation and information that cannot practicably be included in the manual. Copies of the manual should be available in the workplace, but you and the team should also keep copies at home. Digital copies should also be kept, either on the server or in the cloud and on mobile devices such as laptops and tablets. You may want to consider laminating some or all of it, particularly the guidance on procedures, for example, for salvage, retrieval and treatment of damaged material. A copy can also be kept in a large airtight container and in the disaster supply boxes. Creating a shorter, handy reference in a foldable, pocket format, is also a good idea. All copies of the manuals, regardless of location or whether they are hard copy or digital, must be kept up to date. Contact numbers in particular are likely to change over time. Most importantly, reviewing and having a basic knowledge of everything in the manual is invaluable if the physical/digital manual is unavailable. You will be at a severe disadvantage if you are reading the manual for the first time, after the disaster has happened.

How to write the manual

A good disaster plan and manual will be clear, concise and well-organized so that everyone finds it easy to follow and understand. It should be relevant and practical, providing well-written procedures, supporting forms and other documentation. It will be tailored to the archives institution's geography, users, and priorities and should be based on consultation with staff as well as other stakeholders such as emergency services, disaster recovery experts and members of the disaster support network. It should be widely distributed and all of the wider team should be encouraged to read it. It must be reviewed and updated regularly, at least once a year, and therefore the format should be easy to update and the latest version should be easy to identify whilst copies of older versions should be destroyed.

There are many examples and templates available, for example, *dPlan in Depth* or *dPlan Lite: The Online Disaster Planning Tool for Cultural and Civic Institutions*²¹ developed by the North-East Document Conservation Center. Form J provides a checklist form to help map out the contents of your disaster manual.

What to include in the disaster manual

There are no hard and fast rules about what to include in your disaster manual, you need to make sure that it contains all the information, instructions and documentation

²¹ See the Additional Resources on EMDP Section for details.

that is needed to support you and the team to carry out the plan in the event of a disaster. What follows is a set of elements, based on the guidance in this Manual, that can be used as section headings.

Introduction

The introduction should clearly but briefly set out the purpose, development and contents of the plan. It should indicate when the plan was written, who authorised it and when it will be revised. This should be in line with statements about emergency management and disaster preparedness that appear in the archives institution's collection care and/or archives policy or the parent institution's over-arching disaster policy. It should also indicate whose responsibility it is to revise the plan. Depending on your organisation, a committee or just one person may write the plan. However, it is crucial that all those involved with running the archives have a chance to read and comment on the plan before it is approved and becomes an official document.

Disaster response team members: roles and responsibilities

All personnel who have a role in disaster management must be listed in the disaster manual, together with their specific roles and the tasks they have trained to carry out in the event of a disaster.

Activation authority

It is important to document the trigger for activating the plan and who has authority to do this.

Preventative measures

The disaster manual should document the positive action that should be taken, perhaps repeatedly, to remove the risk of some kinds of emergencies and disasters. These will properly be incorporated into the daily routine of running the archives operation but also need to be reviewed when the risk assessment cycle calls for it.

Mitigation

This activity kicks in when an emergency or disaster threatens or begins to happen. The manual will provide a range of scenarios together with actions and procedures that can reduce the scale of the emergency or disaster. A strategy to protect vital records through copying and dispersal to another location or server would be an example of mitigation measures. The original is always more important than a copy, and it is possible that not all vital records can always be protected in this way but such a strategy will significantly reduce the impact of the disaster.

Preparedness

Training for the disaster response team

The disaster manual should include details of the training that is given to the disaster response team, what the training consists of, how often it needs to be run and/or how often staff and volunteers should attend.

Support network

The disaster support network is an important aspect of the disaster plan and the manual needs to provide details of the network and the agreements and commitments made by all of the partners.

Details of the contents of storage areas

The disaster manual needs to indicate where the finding aids giving details of the contents of the storage areas are to be found. This will include the location register, your accessions register and the archival description, which makes up your catalogue. If these are in hard copy format you need to hold duplicates at a secure location away from the archives. Ideally, you would digitise them as part of your disaster preparedness strategy. Digital finding aids can easily be copied and held in the cloud or on multiple computers. The digital version of the manual can easily be held together with the digital finding aids but obviously, it is not ideal to include a bulky printed archives catalogue in the hard copy disaster manual, so the finding aids should be a companion volume that is kept safe but does not have to be carried around all the time. Finding aids can also change over time with the arrival of new accessions to the archives, when archival items are moved around within storage areas or additional cataloguing work is carried out. As with the manual itself, copies of the finding aids need to be kept up to date.

Vital records

As stated earlier, vital records are records which the archives operation needs to continue to operate in the immediate aftermath of the disaster. The manual needs to list them and give instructions for finding or recalling them

Significant archives

The disaster manual should either list significant archives and their locations or explain where the list can be found to enable the significant archives to be retrieved and protected as a matter of priority

Emergency funding

Full details of all financial resources that would be available in the event of a disaster must be included in the disaster manual. This includes normal accounting procedures

together with arrangements for accessing emergency funding. This information may need to be held securely and released on a ‘need to know’ basis.

Insurance details

The disaster manual needs to contain details of the insurance policies pertaining to the archives. Insurance policies are often issued on an annual basis so this section of the manual must be updated each time a new insurance policy is issued.

Responses to particular scenarios

The manual should provide response procedures for each of the threats identified in the risk assessment exercise.

Building plans and/or floor plans

Building plans give details of the construction and layout of the building and inform emergency services of vulnerabilities and potential hazards when they respond to the disaster and first enter the facility. Floor plans assist in locating vital records and significant archives, as well as in tracking response and recovery work. They will also show where your fireproof safe or extra-strong areas are. It can be challenging to include building plans in the disaster manual so you may need to create a handy A4- or Letter-size version for the manual as well as find a way to have the most important full-size hard copy plans kept with the manual. If they are not already available in digital format, you should have them digitised as part of your vital record protection strategy and ensure that they are in a format that does not require specialised software to view on your easy-access computer.

Disaster supply boxes

The contents of the disaster supply boxes and how they can be used should be documented in the manual. The location of the boxes should also be noted and any maintenance requirements (for example, checking that spare batteries are still charged).

Security protocols and procedures

Security protocols will assist you in accessing your institution in the event of a disaster but they will also assist in re-securing the buildings and reconstituting lists of individuals to be given access. Documentation and procedures must cover both physical and computer security. With respect to including these in your disaster plan, you will need to consider what aspects of this should only be available to you and your IT expert because publishing more widely in itself constitutes a security breach. In the digital version of the disaster plan security details should be password-protected such that only authorised people have access.

The contact list

The manual must contain a current list of names, phone numbers and email addresses of all staff and volunteers together with details of the disaster planning training they have completed. A current contact list for the insurers, contractors, emergency services, support network members and other stakeholders should also be maintained in the manual.

Response

Business continuity

Business continuity is about ensuring the essential functions of the organisation and/or the archives institution can be resumed as quickly as possible following any disaster, supported by records protected and re-assembled from the vital records programme. The disaster manual needs to contain instructions for accessing vital records as well as procedures for carrying out the essential functions. For an archives operation the essential function might be providing the parent organisation with evidence of rights such as property ownership which would entail accessing the original records, if they were physically accessible and not too damaged, or by accessing a surrogate.

Protection of human life

The manual must include a clear statement that human safety is the most important priority in any disaster scenario. It should stress the need to follow the instructions of first responders, wear protective clothing, work in pairs, and be alert for signs of fatigue and illness in team members. It is also vital to know where each team member is at all times.

When there is warning

For disaster scenarios where there is advance warning, usually weather-related, the manual needs to provide guidance and procedures for ways to protect or remove archives from danger.

Reporting and notification

When the disaster occurs and the archives team discovers it, they will need a procedure for reporting it to the relevant authorities. The manual should set out the details of who to contact and what information needs to be reported.

Terminating cause of disaster

Some disasters can be halted or the cause removed to prevent further damage. The disaster plan should anticipate scenarios where this is a possibility and the manual will be able to provide instructions on when and how to act.

Briefing authorities and being briefed

The disaster manual needs to include guidance on liaison with emergency services and other authorities, when and how to brief them about the status and needs of the archives and when to ask them to brief you on what is happening.

Activating the plan

The manual must set out clearly when and how the plan should be activated.

Evacuation and initial deployment of response team

Where the disaster has occurred during working hours, there needs to be a protocol for evacuation and the manual should document it. Similarly, there needs to be guidance on how to deploy the response team, including where there is a hiatus pending cessation of the disaster and/or arrival of emergency services.

Assembly points and temporary operations centres

The manual needs to contain clear instructions on where to assemble after evacuation. It also needs to contain full details of options and arrangements for temporary operations centres.

Regaining access

The manual should include the protocol for regaining access following the disaster. This should only be once the emergency services and/or the authorities have declared the premises safe.

Securing the buildings and stabilising the environment

The manual should define what needs to be in place for the buildings to be considered secure, including confirmation that it is safe to enter (responsibility of emergency services) and control of access (the archives team should manage this). Guidelines for stabilising the environment also need to be included.

Briefing the team

When the disaster response team has regained access to the premises, the whole team will need briefing on next steps and their individual tasks. The manual should provide guidance on conducting the briefing as well as providing a list of anticipated tasks.

Notifying the support network and contractors

The manual also needs to outline procedures for notifying the support network and contractors that their services are needed.

Damage assessment

Forms for damage assessment, together with the procedures for carrying out the exercise should be detailed in the disaster manual.

Protection of undamaged material

There should be guidance on options for protecting undamaged archives material if the team are on site when the disaster occurs. Where undamaged material has remained in situ whilst the archives premises were being secured, the manual should cover how to protect it whilst salvage and treatment is being carried out on the damaged material. This may consist of a range of options to cover different potential scenarios.

Salvage plan

The manual needs to provide detailed guidance on drawing up a salvage plan tailored to the specific circumstances of the disaster case in point and based on the damage assessments and assessment of personnel and resources.

Recovery

Clearing the storage areas

Guidance on the best way to clear storage areas is broadly applicable and the manual should contain clear and detailed guidance on how to do this.

Monitoring the environment

The manual should provide advice on how best to monitor and document the environment in both the archives areas affected by disaster and the temporary storage and treatment facilities.

Salvage and retrieval of damaged material

Guidelines for removing items from disaster affected storage areas should be included in the disaster manual. They should be detailed and cover all anticipated types of damaged archival items such that the response team leader can select the guidance relevant to the situation on the ground.

Specific actions for specific materials

The response team will have trained in how to handle and treat specific types of material but the manual needs to include detailed guidance for the full range of anticipated scenarios for use by new volunteers as well as experienced team members.

Rehabilitation of storage areas and return of archival material

The manual needs to cover all aspects of renovating, rebuilding or specifying the future premises for the archives operation. It should present all potential scenarios and

provide detailed guidance on the conditions that need to be in place for premises to be acceptable and ready for occupation by the archives, including allowing time for environmental conditions to settle down to acceptable levels of temperature and humidity. Similarly, the manual should also specify the conditions which treated archival items must meet to be accepted back into the storage repository.

Termination of disaster mode

Just as the manual provides guidance on activating the disaster plan it also needs to provide the process by which disaster mode is de-activated.

Disaster review

The manual needs to provide guidance on how to conduct reviews of situations that have caused the disaster plan to be activated and how to learn from the experience.

Testing the disaster plan

Since the disaster plan is only there in case of disasters, which no one wants to happen, there need to be other ways to test the plan and the team's capacity to deploy it. The manual should set out test parameters, test assessment and documentation. It also needs to allow for the test experience to feed back into the disaster plan to allow for improvement based on the lessons learned from testing.

Ongoing review of the disaster plan

The manual also needs to allow for a protocol for review of the plan and the manual on a regular basis.

Documentation

The manual should include all documentation necessary to manage disasters and emergencies. Where the documents are too bulky to include in hard copy versions these should be maintained as companion volumes but everything should be kept together in the digital version.

Testing the plan and the manual

The disaster plan and the manual need to be tested in order to ensure that they provide a viable way to manage disasters. They need to be tested immediately after the plan has been developed and the manual drafted before the manual is finalised. Thereafter they should be tested on an annual basis. Testing the disaster plan can be an excellent way to train staff to operate in disaster situations.

It is also important to realise that the emergency management and disaster preparedness programme is not the kind of project that can be forgotten once completed. In order to be effective, the programme must be ongoing, constantly

monitored, maintained and regularly tested. It must reflect changes in personnel and changes in procedures as well as any changes to the premises and holdings.

The plan can be tested either as a whole or in parts (for example, the computer component is often tested separately from the rest of the plan). Prior to the test, the goals of the exercise should be defined. You should identify and notify the team members who will participate. Once the test has been run you can analyse the results both to assess performance and readiness of yourself and the team and to identify ways in which to improve the plan, which should be amended to incorporate improvements and lessons learned. Figure 6 outlines a disaster plan test.

- 
1. Map out a disaster scenario that could be acted out in the archives premises and use labels to indicate no-go areas, equipment that is out of order, blocked off aisles and other hazards and impediments.
 2. Using similar materials and formats to those found in the archives, damage them in ways that archives might be damaged in your anticipated disaster scenarios (for example, burning, soaking with water, crushing, marking to represent mould).
 3. Run through the response and recovery steps provided in the disaster manual.
 4. If you are testing out of hours use the contact list to call in colleagues, otherwise use it to notify colleagues.
 5. Call service providers to enable testing of their response readiness and capabilities.
 6. Close the reading room for few hours and/or run limited service in accordance with emergency scenario.
 7. Review the response times and standards, identify weaknesses.
 8. Amend the plan if necessary and make provision for additional training as appropriate.
 9. Test some of the cleaning and drying procedures on non-archival material.

Figure 6. Disaster Plan Test Outline

Testing the disaster plan and manual is a serious exercise and all staff should use it as an opportunity to prepare for a real emergency. It will also require the team to use imagination and role-playing techniques in order to get the most out of it.

Standard setting

The final part of a comprehensive EMDP programme is the development of recovery standards that specify recovery expectations. Any emergency or disaster that occurs should be written up in the light of how successfully the disaster plan was deployed and in such a way that allows the assessment of performance in the event of a disaster.

8. Conclusion

Developing an effective Emergency Management and Disaster Recovery plan requires many skills and many players. In developing the programme, it is important to remember that any action or reaction—even a small one dictated by a small budget—is better than no action at all. Much can be achieved with minimal resources in areas such as staff awareness, good archival and records management practice and preventative measures. Moreover, for most repositories many skills and processes are already in place, and it is just a question of rationalising them into a coherent plan.

Preparing for and responding to a disaster is never easy or quick but risk assessment, prevention and mitigation, disaster preparedness, creating a plan, response and recovery procedures all significantly increase the chances of recovery from a disaster. Similarly building relationships with first responders and others who can help you or provide services in the event of a disaster is a crucial investment ahead of time since it will save time and resources in a real emergency.

9. Emergency Management and Disaster Preparedness Terminology

The terms and definitions in this list have been written by the authors specifically for this Manual.

Term	Definition
Air-drying	A salvage treatment which dries wet items by circulating air, preferably in a cool, low humidity environment.
Archives	Records of decisions and activities of one organisation, family or individual, selected for permanent preservation because they provide key evidence of the entity's history; the physical institution which houses the archives; the organisation which manages them over time. Also referred to as 'archival material'.
Archives holdings	All of the archival material held and cared for by the archives institution.
Archives institution	Organisation that manages the archives, including the building(s) or premises where archives are stored, processed and accessed and where the archives team works.
Archives operations	Functions of the archives including acquiring, cataloguing, preserving and providing access to archives.
Business continuity	The part of emergency management and disaster preparedness concerned with ensuring the essential functions of the organisation and/or the archives institution can be resumed as quickly as possible following any disaster.
Catalogue	See Finding aid.
Disaster journal	A logbook, formal or informal, which is used to document the disaster, response and recovery, or any part thereof. Its function is to provide documentation and information that can be used later to describe the impact on the collections and the salvage activity. It can be invaluable when paired with photographs for submission as evidence to insurance companies. It is a useful way of helping the author or authors to process the experience.
Disaster manual	A comprehensive document in handbook format which describes the disaster plan in detail and gives all the information needed to contact support, service suppliers, emergency services, staff, volunteers and other stakeholders in the event of an emergency, as well as providing procedures to address the full range of anticipated disasters that might affect the archives and to retrieve and treat damaged archives.

Term	Definition
Disaster plan	A strategy and course of actions which anticipates a range of risks and potential disasters, identifies and implements measures to prevent or mitigate them, develops actions and procedures to respond to and recover from the disasters when they occur.
Disaster response team	The groups of people with a range of appropriate authority, expertise, knowledge and ability who will work together to respond to an emergency or a disaster.
Disaster supply box	Sometimes referred to as 'disaster supply bin'.
Disaster	A sudden and negative event that damages or destroys some or all archival holdings, some or all of the archives premises and interferes with normal archives operations.
Emergency management and disaster preparedness (EMDP)	The archives programme concerned with the plan and strategy to prepare for and recover from events that have disastrous effects on the archives and its holdings. Includes preservation management practices, disaster prevention, the capacity to respond to a disaster and a recovery plan which involves repairing damage to archival holdings and buildings.
Easy-access computer	Portable computer which has all the programs, data and documentation needed to activate the disaster plan and for the disaster response team to operate accordingly in the event of a disaster.
Emergency operations centre	Space in which the archives response leader and team can set up operations when the archives premises are inaccessible due to disaster damage. May include treatment areas. Also known as a 'temporary operations centre'.
Emergency procedures	The actions which need to be taken immediately when a disaster occurs.
Emergency services	Official organisations that respond to and handle emergencies and disasters, especially ambulance or medical services, police, and the fire brigade.
Emergency treatment area/centre	Space which the archives response team can equip and set up to handle and treat affected and damaged archives holdings following a disaster.
Emergency	A situation that threatens to damage or has already caused harm to archival holdings, premises or operations which, whilst needing to be dealt with according to EMDP procedures, is not as severe as a disaster.
Finding aid	A document or body of metadata in any format which lists or describes archives and aids their identification, use and management. For example, a catalogue.
First responders	Fire fighters, medical team and police who are first on the scene after a disaster and focus on addressing the needs of people rather than archives.

Term	Definition
Freeze drying	Service usually provided by external contractors which involves rapidly freezing the material and then lowering the pressure before heating slowly to enable the moisture to convert to gas without melting and going through the liquid stage.
Integrated pest management (IPM)	A regime which manages the risk of pests in archives by monitoring and trapping, identifying, preventing and setting criteria for action at various levels. IPM regimes aim to be economical and have the least possible effect on people, property, and the environment.
Man-made disaster	A disaster that is a consequence of human action, rather than arising from the force of nature. Also known as 'human-made disaster'.
Mitigation	The reduction of long-term risks to archives holdings by lessening the impact of disasters.
Natural disaster	A disaster that arises from the natural world rather than the consequence of human action.
Preparedness	Planning and precautionary measures taken to combat disasters, including practical action and training for staff and volunteers.
Preservation management	That area of professional archival management which pertains to ensuring their longevity and permanent survival. Includes storing archives in optimal environmental conditions and protecting archives from hazards such as mould, rodents, water damage, fire damage, magnetic fields, vandalism, wear-and-tear and natural disasters.
Prevention	The elimination of risks to archives holdings by taking action which removes threats.
Record	Recorded information in any medium which provides evidence of decisions and activities. Not all records have archival value.
Recovery	Phase in post-disaster management during which positive action is taken to restore archives buildings and holdings to optimal condition and partial or full operations and services are resumed. The goal is to get back to business as usual.
Rehabilitation	Process of cleaning, drying and renovating archives storage areas and building to bring back to the pre-disaster standard.
Repository	Building, strongroom or room where archives are stored. Sometimes used to encompass the whole archives operation.
Response team	Archives team consisting of staff, volunteers, support network members and contracted individuals, trained in the disaster plan, who respond to emergencies and disasters to help the archives operation, holdings and premises recover.

Term	Definition
Response	The initial phase of reacting once a disaster has occurred which focuses on safeguarding life, meeting the basic needs of the archival holdings, buildings and operations as well as business continuity until more permanent and sustainable solutions can be found. It includes stabilising the situation and assessing archives and premises for damage.
Retrieval	Removal of archives holdings from shelves or where they land after the disaster, packing and moving to the treatment centre.
Risk management	The identification, assessment, and prioritization of risks, followed by the coordinated application of resources to eliminate or minimize, monitor, and control the probability and/or impact of adverse events.
Salvage	That part of disaster recovery which is concerned with repairing damage to archival holdings. The salvage plan will be based on the damage assessment carried out during the response phase.
Significant archives	Archives which are deemed to have the highest priority for protection and salvage from disasters due to their cultural, spiritual, artistic, historical, social, scientific or political value.
Vacuum drying	Service, usually provided by specialist contractors, to treat water-soaked documents by placing them at room temperature in a vacuum chamber, slowly evacuating the air until the temperature reaches freezing point and then proceeding through a series of cycles, the number dependent on the wetness of the documents, in which the chamber is alternately filled with hot, dry air and evacuated until the temperature of the documents is raised to 50°F/10°C.
Vital records	Records which are necessary for the organisation to continue to carry out its vital functions and without which the organisation could not fulfil its obligations, demonstrate its legal and financial standing, preserve its rights and those of others or do business.

10. Additional Resources on Emergency Management and Disaster Preparedness

All websites accessed in May 2024.

Resources on archives management

International Council on Archives. Online Resource Centre. <https://www.ica.org/en/online-resource-centre-0>.

International Council on Archives. Training Programme webpages.
<https://www.ica.org/en/training-programme>.

International Council on Archives. Website. <https://www.ica.org/en>.

UK National Archives. "Archive Principles and Practice: an introduction to archives for non-archivists." 2016. <http://www.nationalarchives.gov.uk/documents/archives/archive-principles-and-practice-an-introduction-to-archives-for-non-archivists.pdf>.

General works and resources on EMDP

American Institute for Conservation of Historic and Artistic Works. Web pages on the Risk Evaluation and Planning Program.
<https://www.culturalheritage.org/resources/emergencies/risk-evaluation-and-planning-program>.

Archives de France. *Mettre en place un plan de sauvegarde et d'urgences des biens culturels*.
<https://francearchives.gouv.fr/fr/article/94529231>.

Blue Shield International. Website. <https://theblueshield.org/>.

Bulgawicz, Susan L. & Nolan, Charles E. *Disaster Prevention and Recovery: A Planned Approach*. ARMA International, 1988.

COSTEP MA (Coordinated Statewide Emergency Preparedness Massachusetts). Website.
<https://mblc.state.ma.us/costepma/>.

Dunn, F.I. *Best Practice Guideline 2: Security*. Society of Archivists, 1994.

Endangered Archives Programme. <https://eap.bl.uk/>.

Fortson, Judith. *Disaster Planning and Recovery*. Neal-Schuman Inc, 1992.

Foundation of the American Institute for Conservation. Website. <http://cool.conservation-us.org/>.

Fox, Lisa L. *Disaster Preparedness Workbook for U.S. Navy Libraries and Archives*. Northeast Document Conservation Center, 1998. <http://resources.conservation-us.org/disaster/disaster-preparedness-workbook/>.

International Centre for the Study of the Preservation and Restoration of Cultural Property. Website. <https://www.iccrom.org/>.

International Centre for the Study of the Preservation and Restoration of Cultural Property. *A Guide to Risk Management of Cultural Heritage.* https://www.iccrom.org/sites/default/files/Guide-to-Risk-Managment_English.pdf.

International Centre for the Study of the Preservation and Restoration of Cultural Property. *Endangered Heritage. Emergency Evacuation of Heritage Collections.* <https://www.iccrom.org/publication/endangered-heritage-emergency-evacuation-heritage-collections>.

International Council on Archives. *The Guiding Principles for Safe Havens for Archives at Risk.* <https://safehavensforarchives.org/en/guiding-principles/>.

International Council on Archives Committee on Disaster Prevention. *Guidelines on Disaster Prevention and Control in Archives.* 1997. <https://www.ica.org/resource/ica-study-n11-guidelines-on-disaster-prevention-and-control-in-archives/>.

International Council on Archives Expert Group on Emergency Management and Disaster Recovery. Webpages. <https://www.ica.org/ica-network/expert-groups/egemdp>.

International Council on Archives PARBICA (Pacific Regional Branch). "Recordkeeping for Good Governance Toolkit." 2018. <https://parbica.org/sharing-knowledge/publications/the-recordkeeping-for-good-governance-toolkit/> and <https://www.ica.org/en/the-recordkeeping-for-good-governance-toolkit-by-parbica>.

International Records Management Trust. *Emergency Planning for Records and Archives Services.* 1999.

http://www.irmt.org/documents/educ_training/public_sector_rec/IRMT_emergency_plan.pdf.

International Records Management Trust. *Planning for Emergencies: A Procedures Manual.* 1999. http://www.irmt.org/documents/educ_training/public_sector_rec/IRMT_emergency_plan_proc.pdf.

International Standards Organisation. *ISO 21110:2019 Information and documentation. Emergency preparedness and response.* 2019.

Jones, Virginia A. & Keyes, Kris E. *Emergency Management for Records and Information Programs.* ARMA International, 1997.

Museum of London. Introduction to emergency planning e-learning.

<https://www.museumoflondon.org.uk/Resources/e-learning/emergency-planning-tool/>.

National Institution for the Preservation of Cultural Property Inc. *Emergency Response and Salvage Wheel.* 1997.

<https://store.culturalheritage.org/site/index.php?app=ecom&ns=prodshow&ref=FAIC-1>.

National Library of Australia. Collection disaster plan. <https://www.nla.gov.au/about-us/corporate-documents/policy-and-planning/collection-disaster-plan>.

National Library of Scotland. *Planning Manual for Disaster Control in Scottish Libraries and Record Offices.* 1985.

North East Document Conservation Center. Website. <https://www.nedcc.org/free-resources/preservation-leaflets/overview#section3>.

- Scottish Council on Archives. *Planning matters: emergency planning guidance*. 2023. <https://www.scottisharchives.org.uk/resources/preservation/emergency-planning/>.
- Skepastianu, Maria & Whiffin, Jean I. *Library Disaster Planning*. International Federation of Library Associations and Institutions, 1995.
- Smithsonian Institution Archives. Website. <https://siarchives.si.edu/what-we-do/preservation/emergency-preparedness>.
- Smithsonian Institution. *A Primer on Disaster Preparedness, Management, and Response: Paper-Based Materials*. 1993. <https://www.archives.gov/files/preservation/emergency-prep/disaster-prep-primer.pdf>.
- Söderlund Consulting. *Be Prepared: Guidelines for Small Museums for Writing a Disaster Preparedness Plan*. Australian Heritage Collections Council, 2000. <http://www.history.org.au/Documents/beprepared.pdf>.
- Spanish Ministry of Culture/Ministerio de Cultura español. *Plan Nacional de Emergencias y gestión de riesgos sobre patrimonio cultural*. 2015. <https://www.cultura.gob.es/planes-nacionales/dam/jcr:7271e79b-5637-4cff-8a51-9ba9aedad5/13-maquetado-emergencias.pdf>.
- Spanish Ministry of Culture/ Ministerio de Cultura español. *National Emergency and Risk Management Plan for Cultural Heritage*. 2015. <https://www.cultura.gob.es/planes-nacionales/dam/jcr:e57714b1-7a59-4e90-99d4-afb1f4285191/13-emergencias-y-gestion-de-riesgos-eng.pdf>.
- Ministerio de Cultura español. *Conservación preventiva y plan de gestión de desastres en archivos y bibliotecas*. <https://www.cultura.gob.es/planes-nacionales/dam/jcr:6346095c-3ae9-4198-9c11-c38f53bf0116/cp-y-plan-gestion-desastres-archivos-y-bibliotecas.pdf>.
- The National Preservation Office. *Keeping our Words*. 1989.
- Trinkaus-Randall, Gregor. *Protecting your Collections*. Society of American Archivists, 1995.
- UNESCO²². *Disaster Planning. preparedness and recovery for libraries and archives: a RAMP study with guidelines*. 1988.
- UNESCO International Centre for Documentary Heritage. *Guidelines for Documentary Heritage at Risk. Vol.1: Natural Disasters*. 2022. <https://www.unescoicdh.org/eng/sub.php?menukey=231&mod=view&no=88878&listCnt=10>.
- United Nations Office for Disaster Risk Reduction. *Sendai Framework for disaster risk reduction (2015-2030)*. 2015. <https://www.undrr.org/implementing-sendai-framework/what-sendai-framework>.
- Western States and Territories Preservation Assistance Service. WESTPAS Preservation Education and Training Workshops. <https://connectingtocollections.org/westpas-preservation-training-workshops/>.

²² UNESCO publications available via search box on the main website, <https://unesdoc.unesco.org/>.

The importance of archives and documentary heritage

International Council on Archives and UNESCO. "The Universal Declaration on Archives." 2011. <https://www.ica.org/en/universal-declaration-on-archives-uda>.

UNESCO. "Memory of the World General Guidelines to Safeguard Documentary Heritage." 2002.

UNESCO. "Memory of the World Register." <https://www.unesco.org/en/memory-world/register>.

UNESCO. "Preserving and sharing access to our documentary heritage." 2011.

UNESCO. "Recommendation concerning the preservation of, and access to, documentary heritage including in digital form." 2015. <https://www.unesco.org/en/legal-affairs/recommendation-concerning-preservation-and-access-documentary-heritage-including-digital-form>.

Prevention and mitigation

American Institute for Conservation of Historic and Artistic Works. "Risk Calculation Worksheets." <https://www.culturalheritage.org/resources/emergencies/risk-evaluation-and-planning-program>.

Blue Shield International. *Threats to Heritage*. <https://theblueshield.org/why-we-do-it/threats-to-heritage/>.

Brokerhof, Agnes, Ankersmit, Bart and Ligterink, Frank. *Risk management for collections*. 2017. <https://www.cultureelerfgoed.nl/publicaties/publicaties/2017/01/01/risk-management-for-collections>.

International Council on Archives, PARBICA. "Recordkeeping for Good Governance Toolkit Guideline 20: Developing a Disaster Preparedness Plan." <https://www.ica.org/resource/the-recordkeeping-for-good-governance-toolkit-by-parbica/>.

UNDRR and International Science Council. "Hazard Definition & Classification Review Technical Report." 2020. <https://www.undrr.org/publication/hazard-definition-and-classification-review>.

UNESCO. "Documentary Heritage at Risk a Pilot Survey."

UNESCO y Ministerio de Cultura de Ecuador. *Manual de procedimientos de contingencias en archivos históricos por desastres naturales*. 2017.

United Nations Office for Disaster Risk Reduction. Terminology.
<https://www.undrr.org/terminology>.

Preparedness

American Red Cross. Personal disaster plan page. <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html>.

Ready Campaign. Personal disaster preparation page. <https://www.ready.gov/plan>.

Vanderbilt University and Medical Center. Webpage with guidance on making a family emergency preparedness plan. <https://emergency.vanderbilt.edu/vu/personal/plan.php>.

State of Louisiana. "Louisiana Emergency Preparedness Guide." <https://ldh.la.gov/assets/docs/OAAS/EmergencyPrep/EmergencyPreparednessGuide.pdf>.

Volunteers

Society of American Archivists. *Best Practices for Volunteers in Archives*. 2018.

https://www2.archivists.org/sites/all/files/Best%20Practices%20for%20Volunteers%20in%20Archives_SAA_RevisedNov2018.pdf.

Response and recovery

American Institute for Conservation. "Working with Emergency Responders."

https://www.culturalheritage.org/docs/default-source/resources/emergency-resources/alliance-for-response-documents/working-with-emergency-responders-booklet.pdf?sfvrsn=c2270820_2.

American Library Association. Disaster Response webpages.

<http://libguides.ala.org/disaster/response>.

Conservation OnLine (CoOL). Disaster Preparedness and Response webpages.

<http://cool.conservation-us.org/bytopic/disasters/>.

International Council on Archives, PARBICA. "Recordkeeping for Good Governance Toolkit Guideline 22: Developing a Disaster Recovery Plan." <https://www.ica.org/resource/the-recordkeeping-for-good-governance-toolkit-by-parbica/>.

National Archives and Records Administration (USA). Response and Recovery webpages.

<https://www.archives.gov/preservation/disaster-response>.

Disaster plans: examples and templates

Harwell Restoration "Harwell Template Emergency Plan."

https://harwellrestoration.cdn.prismic.io/harwellrestoration%2F9ff4ccc1-3e62-4185-bbab-fb76301fa6f3_harwell_template_long2014.doc.

Leumas, Emilie. "Saving Photos." <https://youtu.be/Ob2R-XbQpLI>.

Museum of London. "Pocket Salvage Guide."

<http://www.museumoflondon.org.uk/application/files/9414/5615/4887/pocket-salvage-guide.pdf>.

North East Document Conservation Center. Worksheet for outlining a disaster plan.

<https://www.nedcc.org/free-resources/preservation-leaflets/3.-emergency-management/3.4-worksheet-for-outlining-an-emergency-response-plan>.

State Records New South Wales. *Counter disaster reaction and recovery plan*. 2019.

<https://staterecords.nsw.gov.au/recordkeeping/advice/disaster-management/counter-disaster-reaction-and-recovery-plan>.

US Council of State Archivists. *The Pocket Response Plan™*.

<https://www.statearchivists.org/viewdocument/pocket-response-plan-prep>.

Salvaging and treating damaged material

Leumas, Emilie. "Wet Paper Exercise Overview." <https://youtu.be/bE087haSH7g>.

Library of Congress (USA). "What to do when collections get wet." <https://www.loc.gov/preservation/espanol/index.html> (In Spanish).

Metamorfoze. *The Archives Damage Atlas*. 2010.

<https://www.metamorfoze.nl/sites/default/files/documents/schadeatlas-2010%20engels.pdf>.

North East Document Conservation Center. "Emergency Salvage of Wet Photographs." <https://www.nedcc.org/free-resources/preservation-leaflets/3.-emergency-management/3.7-emergency-salvage-of-wet-photographs>.

Northeast Document Conservation Center (NEDCC). "Emergency Management 3.6 Emergency Salvage of Wet Books and Records." <https://www.nedcc.org/free-resources/preservation-leaflets/3.-emergency-management/3.6-emergency-salvage-of-wet-books-and-records>.

Image Permanence Institute. "A Consumer Guide for the Recovery of Water-Damaged Traditional and Digital Prints." <https://allaboutimages.wordpress.com/wp-content/uploads/2011/02/disaster.pdf>.

Ross, Seamus and Gow, Ann. *Digital Archaeology: Rescuing Neglected and Damaged Data Resources*. JISC and UK National Preservation Office, 1999.
www.ukoln.ac.uk/services/elib/papers/supporting/pdf/p2.pdf (Provides guidance on recovery of damaged digital media).

Assessing significance

International Council on Archives, PARBICA. "Recordkeeping for Good Governance Toolkit Guideline 24: Assessing Significant Records in Archival Holdings." <https://www.ica.org/resource/the-recordkeeping-for-good-governance-toolkit-by-parbica/>.

National Library of Australia. Significance assessments guidance. <https://www.nla.gov.au/about-us/fellowships-scholarships-and-grants/community-heritage-grants/preparing-assessment>.

Russell, Roslyn & Winkworth, Kylie. *Collections 2.0 a guide to assessing the significance of collections*. Collections Council of Australia Ltd, 2009. <https://www.arts.gov.au/what-we-do/museums-libraries-and-galleries/significance-20>.

UK UNESCO Memory of the World Committee. *Seeking significance A practical guide to identifying and articulating significance in documentary heritage*. 2019. <https://www.elizabethoc.co.uk/Documents/Seeking-Significance%20Final%202019.pdf>.

UNESCO/PERSIST Content Task Force. *Guidelines on the selection of digital heritage for long-term preservation*. 2016. https://unescopersist.files.wordpress.com/2017/02/persist-content-guidelines_en.pdf.

Walsh, Betty. *Salvage Operations for Water Damaged Archival Collections: A Second Glance*. Canadian Council on Archives, 2003. <https://cool.culturalheritage.org/waac/wn/wn19/wn19-2/wn19-206.html>.

Support networks

National Coalition for Arts' Preparedness and Emergency Response. *Cultural Placekeeping Guide: How to Create a Network for Local Emergency Action.* <https://www.americansforthearts.org/by-program/reports-and-data/legislation-policy/naappd/cultural-placekeeping-guide-how-to-create-a-network-for-local-emergency-action>.

EU Civil Protection Mechanism. https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/eu-civil-protection-mechanism_en.

CER, Cultural Emergency Response. <https://www.cultureemergency.org/>.

Cultural Emergency Response's Caribbean Hub.
<https://www.cultureemergency.org/programs/caribbean-hub>.

CHEN, the Caribbean Heritage Emergency Network. <https://carbica.org/chen/>.

Protecting Cultural Heritage from the consequences of Disasters (PROCULTHER). *Key elements of a European Methodology to Address the Protection of Cultural Heritage during Emergencies.* 2021. <https://www.proculther.eu/wp-content/uploads/2022/06/PROCULTHER-Methodology.pdf>.

The disaster manual

International Council on Archives, PARBICA. "Recordkeeping for Good Governance Toolkit Guideline 21: Developing a Disaster Response Plan." <https://www.ica.org/resource/the-recordkeeping-for-good-governance-toolkit-by-parbica/>.

North-East Document Conservation Center. *dPlan in Depth and dPlan Lite: The Online Disaster Planning Tool for Cultural and Civic Institutions.* <https://www.dplan.org>.

In time of war or civil unrest

International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM). *PATH – A tool for directing heritage recovery for sustainable peace.* <https://www.iccrom.org/news/path-tool-directing-heritage-recovery-sustainable-peace>.

International Council on Archives and the International Alliance for the Protection of Heritage in Conflict Areas (ALIPH). *Practical Guide to Emergency Digitization of Paper-Based Archival Heritage.* <https://www.ica.org/ica-and-aliph-complete-digitization-manual-to-support-ukrainian-archives/>.

Scottish Council on Archives. *Planning matters: emergency planning guidance. Guidance for times of armed conflict.* 2023. <https://www.scottisharchives.org.uk/wp-content/uploads/2022/10/SCA-Emergency-Planning-Guidance-for-Times-of-Armed-Conflict.pdf>.

UNESCO. *Hague Convention on the Protection of Cultural Property.* 1954. <https://en.unesco.org/sites/default/files/1954%20Convention%20EN%202020.pdf>.

UNESCO. *Second Protocol to the Hague Convention of 1954 for the Protection of Cultural Property in the Event of Armed Conflict.* 1999. <https://www.unesco.org/en/heritage-armed-conflicts/convention-and-protocols/second-protocol>.

Vital records management and business continuity

Community Door. Website providing information on how to develop business continuity plans for community-managed organisations in Queensland, Australia.

<https://communitydoor.org.au/planning-and-evaluation/business-continuity>.

International Council on Archives, PARBICA. "Recordkeeping for Good Governance Toolkit Guideline 23: Identifying Vital Records for Government Departments."

<https://www.ica.org/resource/the-recordkeeping-for-good-governance-toolkit-by-parbica/>.

University of Glasgow. Web pages with examples of documentation to support business continuity and disaster planning. <https://www.gla.ac.uk/myglasgow/bcep/>.

11. Appendices

- Appendix A: Purpose of Disaster Response and Recovery Equipment
- Appendix B: Disaster Planning on a Budget
- Appendix C: In Time of War or Civil Unrest
- Appendix D: Vital Records Management and Business Continuity for Archives Operations
- Appendix E: Example of a Disaster Journal
- Appendix F: Using Journals in Disaster Reports
- Appendix G: Forms

Appendix A: Purpose of Disaster Response and Recovery Equipment

Item	Purpose
Aprons	For EMDP team to wear to protect their clothing.
Archives-quality packaging	To package archival items once they have been treated.
Bandages	To wrap fragile archival material.
Blotting materials	To lay archival items on to dry, to interleave between sheets or pages.
Buckets	To collect dripping or running water, to bail water, to collect water from mopping activity, to carry wet articles such as archival items or equipment.
Closed shoes	For EMDP team to wear at all times if rubber boots are not required. This will protect them from being bitten by vermin as well as give a measure of protection from items falling onto their feet.
Cloths	To soak up excess of water on archival items, to dry small pieces of equipment, to clean small surface areas.
Desks and chairs	For EMDP team to sit at both during breaks and to work.
Fans	To circulate air in drying areas; to keep EMDP team cool; to use in construction of wind tunnels.
First aid kits	To administer medical aid in case of minor injuries such as cuts and bruises, insect bites; to take temperatures; to treat minor ailments such as headaches and stomach aches.
Flashlights/torches	To illuminate areas that are dark—mobile phones can also perform this but might be needed to record or make a call at the same time.
Flexible plastic or card sheets	To use in construction of wind tunnels.
Hand-held vacuum cleaner	To clean dirty surfaces (not to use directly on archives).
Hard hats	For EMDP team to wear in areas where there is a risk of debris or items falling on their heads. This is often a health and safety requirement even when the risk is low.
Hygrometers and thermometers	To measure the temperature and relative humidity.
Hygro-thermographs or data loggers	To measure and record the temperature and relative humidity.
Labels	To identify archival items or groups of items.
Ladders	To access items that are too high to reach from the ground.
Laptops	To keep documentation up to date, accessing bulky records, connecting with the Internet.
Linen tape	To tie several archives items together, to keep damaged items together, to fix reference labels to archival items or packaging.

Item	Purpose
Masks	For EMDP team to wear for protection against poor air quality due to smoke in the atmosphere or from ash or dust disturbed by moving material.
Mobile phone chargers for variety of models	To ensure phones can be kept charged and working.
Mops	To dry floors—it is good to have the buckets with a wringing mechanism.
Name tags/badges	To identify the EMDP team clearly.
Notepads	To take notes, write messages, draw diagrams, use for labels, play noughts and crosses during rest breaks.
Office/stationery supplies	To supply the EMDP team in case a temporary operations base needs to be set up.
Overalls	For EMDP team to wear to protect their clothing and/or exposed areas of skin.
Packing crates with lids and that can stack	To store and transport archival items and either protect them from damage and water ingressions or to protect humans and other items from damage or contaminations from the contents. They need to be able to stack compactly when empty and stack on top of each other when full and lidded.
Pencils	To write archives labels.
Pens	To write notes, messages etc.
Pins	To pin bandages wrapping fragile archival material. Might also be useful to craft name tags/badges
Plastic bags	To package single archives items to protect from further damage from dirt and damp; also to protect other items and humans from damp and dirty items.
Plastic or brass paperclips and bulldog clips	To fix/hang items on drying lines.
Plastic pegs	To fix/hang items on drying lines.
Plastic sheeting	To put over shelving bays to protect unaffected archives from water or other threats from above; to use as a surface to protect archives or other items from dirty and/or damp surfaces; to use as wrapping when transporting items.
Portable printers	To print out checklists, labels and documentation as needed.
Power packs	To ensure phones and laptops can be kept charged and working in case of a prolonged power outage.
Protective gloves	For EMDP team to wear for their protection when moving furniture, crates, boxes, bulky or rough-edged items.
Racks	To dry out damp or wet archival items in a space-efficient way.

Item	Purpose
Rubber boots	For EMDP team to wear in areas where there is standing water.
Rubber gloves	Finer gauge rubber gloves for EMDP team to wear when handling archives to protect the archives; more robust gloves to wear when cleaning premises and furniture to protect from harmful substances in the water and from the effects of prolonged immersion in water.
Scissors	To cut tape and packaging materials (to remove old or replace with new).
Shelves	To house supplies; to store archives awaiting treatment and following treatment.
Soft brushes	To clean archival items.
Soft cloths	To clean archival items.
Sponges	To soak up excess of water on archival items, to dry small pieces of equipment, to clean small surface areas.
String	To tie non-archival items up or together.
Telephones or mobile phones	To maintain communications between the EMDP team and with the wider community of stakeholders and service/equipment suppliers. Also to serve as a directory of useful contacts.
Thin wire/plastic string	To use in setting up drying lines.
Trestle tables	To furnish the processing area where archival items are being assessed and treated.
Trolleys/rolling carts	To transport multiple items at once, such as archival items, equipment supplies, food and drink.
Warm clothing	For EMDP team to wear when working in low temperatures.
Wet and dry vacuum cleaners	To clear standing water and dry floors.

Appendix B: Disaster Planning on a Budget

Many archives institutions around the world have very small budgets and in some cases no money at all to spend on managing the archives. It is important to remember that any action or reaction, even a small one, is better than no action at all. Much can be achieved with minimal resources in areas such as staff awareness, good archival and records management practice and preventative measures. Moreover, for most repositories many elements are already in place, and it is just a question of rationalising them into a coherent plan.

Advocacy and making the business case to senior management and other decision-making stakeholders is an important initial step when starting to develop or review the archives institution's disaster plan. In the absence of insurance to replace the archives or to support the institution's recovery following any size of disaster, a disaster plan is in itself insurance since it reduces the risk of something bad happening as well as reducing the impact of a disaster and ensuring that recovery efforts are as effective as they can be. This point is a good place to begin the argument for resources or, if the resources cannot be leveraged, the argument for prioritising work on the disaster plan. Combining this with advocacy to everyone who comes into contact with the archives and even in staff and volunteers' social circles will ensure that the community understands the value of the archives and the need for assistance to protect and rescue them in the event of a disaster.

In developing your disaster plan, regardless of the size of your budget, try to think creatively. Disaster planning is not a rigid standard, it is a very practical exercise. Often, when the challenge or problem seems resistant to conventional methods and recommendations, a creative solution can be very effective. For example, if there's a hole in the roof, why wait for the facilities team to authorise the designated workman to investigate the damage if you can fling up a tarpaulin without any health and safety risk? It is not a long-term solution but it will prevent the archives from further exposure to the elements as well as reducing the extra work entailed in restoring them if they are further damaged.

Here are a few ideas and suggestions of how to approach disaster planning on zero or a very small budget:

1. Review this Manual for all the actions that you can take that require little or no expenditure.
2. Find opportunities to collect materials to be used during a salvage effort:
 - Ask for donations
 - Buy materials when they are on sale.
3. Assess and document the risks to the building as far as you can without commissioning external expertise.
4. Document the building's vulnerabilities.

5. Do what risk mitigation you can do in anticipation of any disaster.
6. Make sure your fire extinguishers are maintained (and staff know how to use them).
7. Make sure the storage environment is as close to the recommended temperature and humidity as possible and monitor it as best you can—recording the external temperature and humidity as given in the newspaper or on a weather app is good information if you don't have the necessary recording equipment.
8. Ensure all your material is off the floor: bricks and planks can be used for this, you don't need expensive shelving.
9. Inspect your building regularly for maintenance and repair requirements.
10. Make building repairs in a timely manner.
11. Be ready with evidence and data to make a bid for more budget as soon as you see an opportunity.
12. Create a collection care plan.
13. Create the collection priority list.
14. Work your network: identify volunteers who can help in any and all phases of the disaster.
15. Have your advocacy material ready in text form and learn to argue the points so you are ready:
 - To make the case for emergency management and disaster preparedness to management and other decision-makers
 - To appeal to your fellow-citizens' better nature in defence of archives and their documentary heritage.
16. Provide volunteer training.

Appendix C: In Time of War or Civil Unrest

If you are working in a region of country where there is risk of armed conflict, you need to include strategies to protect the archival holdings. The specific risk to the archives is damage or destruction due to enemy fire, whether collateral or deliberate, friendly fire, looting or inability to maintain normal operations. It is not always possible to plan in advance of war breaking out or hostilities occurring near the archives but being aware of current affairs in and outside your country will help you anticipate threat of armed conflict.

It is important to copy and disperse your finding aids and as many of your significant archives as possible as part of your emergency management and disaster preparedness programme. You should also work with other archives in the region and country to ensure you tap into any national strategy to protect archives in time of war.

If there is a risk of enemy action destroying all or part of the record holdings, evacuation of records should be considered. During World War Two the National Archives of the United States analysed its records and sorted them into three groups:

1. Those records whose preservation from capture and damage was deemed vital for public morale and the nation's honour.
2. Those records the loss of which would be a serious handicap to government agencies, scholars and others:
 - a. Those records which could readily be moved to safety without seriously handicapping services because available in duplicate form
 - b. Those records that could not be moved to safety readily because of existing demands of service.
3. The larger bulk of records which would not be evacuated.

In the event of war breaking out, the disaster plan should be amended to include analysis of the risk of the holdings being harmed by enemy action and assessment of the holdings with a view to prioritising evacuation. Remember that in recent wars irreplaceable cultural heritage material has been deliberately targeted by enemy action. One example of this is the National and University Library of Bosnia and Herzegovina in Sarajevo, built in the Austro-Hungarian period to house the rich library of books and manuscripts which included oriental texts of great cultural significance. The library, also known as Vijećnica (or City Hall), is a distinctive landmark (see Image 13) clearly visible from the mountainsides around Sarajevo which were occupied by the Bosnian Serb forces during the war in Bosnia and Herzegovina. In August 1992 the besieging forces shelled the building and around two million books were burnt in the resulting conflagration. It was restored and opened again in 2014. Another example from the same conflict is the destruction of Stari Most, the medieval Old Bridge at Mostar. It was a famous landmark and example of Herzegovina's Ottoman inheritance. A replica was opened in 2004, built with stone from the same quarry as the original bridge and using the same construction techniques (see Image 14).



Image 13. The boarded-up exterior of the National and University Library of Bosnia and Herzegovina, Sarajevo, in 2004. (Photograph: Iain Brown.)



Image 14. Stari Most, the “new Old Bridge” at Mostar, Herzegovina. (Photograph: Iain Brown.)

Obviously, the evacuation site should be outside the zone of military objectives. When specifying the criteria for premises include:

- steel and concrete frame buildings which withstand bomb blasts better than buildings with load-bearing walls;
- windows and skylights which can be protected and reinforced with steel plates or sandbags;
- below ground may be safest, provided there is not a risk of flooding.

If you are unable to evacuate, you need to reinforce the existing building as much as possible, and perhaps move high-priority archives to the most protected areas of the building, such as the lowest areas near the centre of the building. You might also consider removing signs and other identifying features, although in the age of Google Maps and the Internet the enemy may not need this intelligence.

You should plan the evacuation carefully and decide when to evacuate after consultation with military and civil authorities:

- select location;
- select building and storage areas;
- prepare removal carefully;
- transportation - as in all archives moves, this is the most vulnerable point for safety and security of the records;
- care of archival items in storage should be to the same rigorous standards as in the original storage repository.

Some other points to remember are:

- the creation of records is often greatly increased;
- control over current records is not so great;
- there is reduction of staff in records management and archives;
- decisions about disposition are made by untrained staff under pressure;
- paper is in demand and records are in danger of being recycled;
- the paper is of poor quality;
- semi-current record storage can be less ideal because buildings are appropriated for war activity and administration.

Blue Shield International²³ is the cultural equivalent of the Red Cross and its protective emblem is specified in the 1954 Hague Convention (Convention for the Protection of Cultural Property in the Event of Armed Conflict) for marking cultural sites to give them protection from attack in the event of armed conflict. Its mission is to protect the world's cultural heritage not just from armed conflict but from all forms of disaster.

²³ <https://theblueshield.org/>.

Appendix D: Vital Records Management and Business Continuity for Archives Operations

Introduction

Vital records are those records an organisation needs to continue to operate its business. Management of vital records is the part of EMDP that identifies and protects the organisation's vital records. Managing vital records is also part of the records management function. Any vital records programme must be developed as a team effort between EMDP and records management. The vital records programme's main goal is to ensure that those records identified and protected as vital records will be immediately available in the event of a disaster.

Note the difference between vital records, which are needed in the short term to ensure the organisation can continue business in the immediate aftermath of a disaster, and the rest of the organisation's records which are not a priority for business continuity.

Archives operations also need to develop vital records programmes as part of their contingency planning. The principles are the same as for an organisation which is not solely dedicated to preserving and making archives accessible. The archives operation must commit to managing its vital records. Senior management must establish the programme formally and appoint an individual or team to take responsibility for it. This is a crucial and ongoing role which requires the programme to be established and managed into the future. It will need continuous processes for identifying and protecting vital records as some of them lose currency and value for business continuity and new ones with greater relative value and currency are created.

Archivists and records managers possess the professional skills and organisational experience to be well placed to identify and manage vital records. They understand the nature and importance of vital records, the ways vital records relate to the organisation's other information resources, and how they support the various functions of the organisation. They should be key members of the EMDP programme and are the obvious choice to take responsibility for the vital records programme. Archives institutions should therefore be at an advantage in establishing their vital records programme.

The aims of the vital records programme

The vital records programme aims to:

- identify the organisation's vital records;
- assess the risks threatening the organisation and its records;
- develop and implement protection strategies and procedures for the records;

- develop procedures for returning and/or reconstituting vital records in the event of a disaster;
- maintain, test and audit the programme.

It is clear how vital records fit into the EMDP framework since the EMDP programme will identify the potential risks to the organisation, devise prevention and protection strategies and test the disaster plan. This will include the organisation's assets, the archives and the records, particularly the vital records needed for business continuity. Business continuity is an important aspect of EMDP. It aims to ensure that the organisation's essential functions can be resumed as quickly as possible following any disaster.

Risk assessment

Before vital records are identified, the risks to the organisation and its records should be assessed. The sub-section on risk assessment in Section 3 covers how to manage risk in some detail and this guidance applies equally to vital records management. For vital records this involves:

- identification of the potential hazards;
- assessment of whether the risks present a threat to the records;
- assessment of the impact threats would have on the archives operation's ability to operate in the event of a disaster.

Identifying vital records

Vital records are those that will be crucial in the event of a disaster in supporting the management and administration of the disaster mitigation, salvage and recovery as the incident unfolds. They will also enable business continuity so the archives can continue to operate as an organisation. Vital records arise from the organisation's vital activities and functions. Senior management should agree a list of mission-critical operations that pertain to the organisation's most fundamental responsibilities and essential activities that must continue even in the event of an emergency. This list will be the basis of assessing active and inactive records for potential vital status.

Using the list of mission-critical operations, vital records can be identified from the organisation's record survey data and/or from records management tools such as classification schemes and retention schedules. If these do not already exist, it will be necessary to conduct a survey. The survey should result in an inventory that identifies and describes the organisation's vital records. This is in effect an assets register and in some organisations may be part of a wider effort to assess and manage information assets.

The vital record inventory (or schedule) should contain:

- a brief description of the series' characteristics, including volume and storage media (including if more than one type), and the purpose for which the record was created;
- the rate at which the record series is created and accumulated, where it originates, where duplicates are;
- frequency of access;
- reasons the record series is considered vital;
- name of individual/team responsible for protecting the series;
- method of protection.

The archivist/records manager can help by distinguishing records that support mission-critical operations organisation-wide from those that are just vital to the department or organisational unit. The organisation will not need to continue to do everything it usually does if there is a disaster. Selection must be on organisation-wide basis to ensure all, and nothing but, those records which are vital are included. Note that many records are of great but not vital importance, requiring much effort and expense to reconstruct if lost, or they have intrinsic historical value, or are source records that could be used to reconstruct vital information. It will be a matter of policy and dependent on resources during normal times as well as in the event of an emergency, as to whether these should also be included in the vital records programme. However, standards and methods of protection may be applied in accordance with an assessment of their relative value, the risk involved in not being able to access them and the available resources to protect and recall them. Table 4 provides a categorised list of examples of records that would be vital for archives operations.

Table 4. Vital Records Categories and Examples

Categories of vital records	Examples of records vital for an archives institution
Financial	Agreed budgets and amount spent so far, monies owed, income and expenditure for past year
HR	Records that enable staff salaries and benefits (including pensions) to be paid, leave to be calculated, staff to be contacted and their next of kin to be identified
Legal rights and government requirements	Records evidencing data protection and health and safety compliance
Core business	Records supporting cataloguing, conservation, outreach, publications, exhibitions and other projects in progress
Insurance	Insurance policies
Property ownership	Property deeds and leases, archives acquisition agreements
Major contracts and agreements	Supplier and contractor contracts and agreements with all amendments

Corporate	Archives Board/Committee minutes, archives policies and strategies, organisation charts
Expensive records systems which would be expensive or impossible to reconstitute	Finding aids in paper and digital form, IT systems or databases used to manage archives, or any aspect of archives management
Building	Record systems controlling the building and access to it as well as building plans and security clearances
Objects necessary for the use of vital records (not hardware)	Building keys

It is important to remember that only 2–4% of an organisation’s records are likely to be vital and vital records do not necessarily have archival value. Each organisation must identify its own unique set of vital records. Also, vital records are generally active, reflecting the ongoing operations of the organisation, although some inactive records may also need to be protected. It may be necessary to keep the originals of some documents in the protection programme as originals (for example, deeds, contracts, and articles of incorporation) if they alone satisfy legal requirements. It is important to ensure the inventory of vital records is correct and up to date. If it does not align closely to the list of vital functions it will be inefficient and uneconomic: it will also dilute the value of the records being protected and the programme won’t be taken seriously.

Protecting vital records

Records by their nature are usually unique and the only form of insurance is protection. The baseline of protection is instituting and rigorously adhering to preventative measures and best practice for disaster prevention. This has been covered at length in the prevention and mitigation section of the Manual. The next level of protection is achieved either by securing the originals in locations safe from potential hazards or by copying the originals and storing either copy or original away from the location of the operation for which the EMDP programme is designed. This second option, sometimes referred to as ‘dispersal’ can be partially achieved by the transmission of copies in the course of an organisation’s routine business. When assessing options for protecting vital records it is important to consider the ratio of protection from hazards to the cost of protection such that the cost of protecting records does not exceed that of potential loss.

As with any records storage facility (digital or hard copy), those used for storing vital records must meet basic standards for preservation, access and security. If the original needs to be immediately accessible, protection on site (in a fireproof safe, for example) may be the best or only option. Where the original record is necessary for legal reason, it might be necessary to have copies notarised.

Vital records protection solutions may differ between different categories of vital records within the organisation. For example, it may be necessary to make frequent copies of the archives management system to be stored elsewhere. This would entail the deletion of the existing copy as part of the process of copying and storing the new copy. Other finding aids, whether in digital format or hard copy, might be more useful in hard copy in the event of a disaster. It might also be more efficient or cost-effective to have the copy in a particular format. These decisions will depend upon the risk, the likely need to access the record and the way the archives operates.

The method of protection should be recorded in the vital records inventory.

Vital records in digital formats

Mission-critical operations were and are priorities for automation, such as archives finding aids. Most, if not all, of an organisation's vital records will have been created and exist in computer systems. Whilst it may seem that digital records can be copied easily and the copies held securely in a different location to the organisation's centre of operations, the process needs to be carefully managed. Vital records in digital formats should be subject to a regime that ensures the files can be accessed and used in the event of an emergency. This requires a strategy or plan which includes provision for the hardware and software to be available in the event of an emergency. The documentation on the record system and records, providing content, context and structure metadata and the development specifications and manuals must also be accessible. This will be particularly crucial for older digital records since they may exist on back-up storage but the organisation may no longer have the equipment and software to read them.

If there is IT support for the archives, there will procedures to ensure back-ups are regularly taken. However, in the event of a disaster the vital records will need to be easily identified and reconstituted, so they require a separate process. In developing the strategy for protecting vital digital records the EMDP team should collaborate closely with IT colleagues responsible for cyber security. It will be important to select the digital storage facility and location for the vital records and their related hardware, software and documentation. This might be a cloud service, a server managed by the organisation but in a location away from the main archives operation, lodged with third party service, or a different solution. Consideration should be given to the speed with which the records can be retrieved. It might also be a good strategy to change the format of the copies of the vital records for ease of preservation and access—for example, PDFs of text-based records. In some cases, a paper print-out could be the best solution.

It is crucial to monitor changes in the organisation's IT strategy and how it affects any part of the IT platform and the records created and held in the systems. As systems are upgraded and migrated, it is important to pick up on the possible effect on those

records that have already been included in the vital records protection strategy. Whilst vital records tend to have a short period of time during which they are vital, some will be vital for long enough to be subject to migration. Whilst the original resides in the main computer system, the emergency copy will be off-line. Procedures must be in place to either migrate the emergency copy or re-copy the migrated original and transfer the copy to the vital record storage.

Procedures

The vital record protection programme needs to develop and implement operating procedures. These will ensure that the current vital records of the organisation are properly protected for retrieval at any time in the event of a disaster. As discussed, the vital records inventory identifies those records which need to be protected and records the selected protection method. For records protected by copying and transfer to off-site storage the procedures should indicate:

- The name of the individual/team responsible for protecting the series.
- Who creates or makes the copies.
- How often (or on what cycle) copies are made.
- How to send or transfer the copy off-site, or load it into the appropriate digital storage.
- How to document records sent off-site, or loaded into the designated digital storage, for example:
 - labelling/tagging to indicate the number, date of transfer, reference relating to vital records inventory, originating department
 - transfer forms
 - receipts
- What to do with expired vital records.
- How to update the master inventory of all vital records that are off-site, keep it safe but available for reference in the event of an emergency.
- How to access, return or reconstitute vital records in the event of an emergency.

Security procedures should also be in place to cover all aspects of operating the vital records protection programme. The transportation of hard copy records from headquarters to off-site storage should be secure and drivers should sign in and out. If the records are digital, equivalent digital security needs to be in place. It is very important that the routine tasks of the vital records programme such as duplicating, sending off-site, inventorying and recalling expired vital records, are carried out promptly and diligently. Keep amendments with the record amended, indicate that the record is a copy and when prepared, destroy vital records in accordance with the retention schedule for the original.

Vital records protection procedures should be documented and kept alongside copies of the vital records inventory.

Business continuity

In the event of a disaster the vital records inventory and the procedures for accessing, recalling or reconstituting the vital records will be available as part of the disaster manual and related documentation. The disaster plan will have made provision for setting up workstations for staff and volunteers who are doing jobs that require vital records. The vital records programme is part of the archives institution's EMDP framework.

Maintenance and audit of the programme

The vital records inventory should be regularly reviewed, at least annually, to ensure that the records continue to be vital and add new ones as necessary. Auditing procedures are also needed to ensure that those responsible for looking after the vital records are carrying out their responsibilities effectively.

Appendix E: Example of a Disaster Journal

Here are extracts from a disaster diary written by Emilie Gagnet Leumas, during the 2005 salvage efforts of church records following Hurricane Katrina in New Orleans, Louisiana. While these notes may appear cryptic, they provided a wealth of information [as noted in the interleaved, italicised comments] that added both documentation and recollection of the writer when interviewed later about the collections and the salvage efforts. The following text are the exact, unedited words of the author from her journal.

September 14, 2005 (trip to New Orleans to recover Archives from the Archdiocese of New Orleans, work notes)

Left Baton Rouge at 6:30 am from the Catholic Life Center, crossed the Sunshine Bridge, took LA 3127 through Vacherie, crossed the Luling Bridge, took River Road to Kenner, National Guard checkpoint at Kenner, went to Ochsner Hospital, got vaccinated, took River Road to Oak Street, 2 more checkpoints, got to Carrollton Ave. and Walmsley to the Archdiocese of New Orleans Administration Building.

[While this information may seem mundane, documenting how to enter the city became critical for others seeking to enter to recover cultural heritage materials. Roads were blocked with debris, National Guard checkpoints required personnel identification documents and the hospital was giving free typhoid and tetanus vaccinations for those entering the city during the response phase.]

Met moving van workers and recovered materials from the vault and packed into moving van.... will go to Diocese of Baton Rouge Archives for safekeeping.

[This documented where the cultural material was going for safekeeping.]

Notre Dame Seminary Library

Rare Book collection exposed to mold, but no visible signs of mold on collection. Isolated material, put into my personal van not the moving van, will go to LSU Hill Memorial Library for triage and to watch for mold outbreak. I hope these books will be ok as there is a Bible that is only one of four that exists in the world: 15th century imprinted in Latin and Greek.

[This documented how rare books were transported to the university library for observations. It also documented the exposure to mold and the indication that no mold was presently visible.]

Old Ursuline Convent in the French Quarter

I was upset to see that one of the chimneys had fallen, hitting the sprinkler system pipes, busting them which poured water into the building for 8-12 hours. Active mold was in several areas. Collections and artifacts are at risk. We packed bishops' portraits and many boxes to be moved to Baton Rouge.

[This documents how the building was damaged and mold was evident. It also noted how the portraits were boxed and moved.]

After a full day of work, we went into St. Mary's Chapel to see if there was damage. There was a little water damage on the marble floor. The roof appears to have leaked. Surprisingly enough, the chapel still smelled like a church and not the mold in the rest of the building. How odd... David opened the tabernacle and there was a ciborium of the Blessed Eucharist. We found some water and washed our hands. Fr. S. led us in the Lord's Prayer and asked us to consume as many as we could, as reverently as we could. I think I had 25. There was no sound at the time, only the five of us standing around the altar consuming the Eucharist. There was also little sound outside, except for the helicopters that are still flying rescue missions. I don't think I have ever had such a profoundly spiritual experience. It will stay with me forever.

[This illustrates how personal and emotional the work can be on staff and volunteers.]

October 13, 2005 (work notes)

We have received many of the Sacramental registers from the churches in New Orleans but today we got the worst thus far: 13 Sacramental Record books (baptism, first communion, confirmation, marriage and burial books) from St. Francis Xavier Cabrini (Paris Ave.)

Books were quadruple bagged in plastic garbage bags and the smell of sewerage was still strong. They are still wet, smell of sewerage and mold.

With protective eyewear, gloves and masks, Ann and I did the following to the registers:

1st bath-Books were rinsed in warm water to remove the sludge. Covers fell off and other removed.

2nd and 3rd bath-cool water

Books were place on plastic shells to drain.

Bindings were cut and book was separated into packets of 2 gatherings each

Acid-free folders were marked with a black sharpie to indicated book and order

Each folder contained 2 gatherings (about 20 pages)

Folders were place in 1.25 cu. ft. boxes.

Boxes were taken to LSU Hill Memorial Library where they were doubled bagged and place in a sub-zero freezer (-20 degrees)

[These books were received 6 weeks after Hurricane Katrina struck the New Orleans area. It illustrates how first responders bagged the items and left them without any treatment at all. The books were, remarkably, still salvaged and many of the sacramental entries were still legible due to permanent ink. Note the depth of the information for how the books were processed before sending to the freezer.]

November 3, 2005 (work notes)

We finally received the Sacramental registers from St. Dominic Church (Harrison Ave.) They are still wet and have been stuck in the church vault since the flooding. The books were so swollen from the water that it took several tries (drills, crowbars, brute force, etc.) to extract them from the vault. We sent them to LSU for freezing.

[These books were recovered more than two months after the disaster. It illustrates that salvage work can take place long after the disaster has occurred even when the material has been wet.]

While this is just a sample of the writings from a disaster journal, it bears noting that the information documented what happened to the cultural material as it was received by the salvage team. It depicts the salvage team efforts when they went to the area as well as when material was received by them and the condition of the material.

Appendix F: Using Journals in Disaster Reports

It is important for the archives institution to document the treatment conducted on its archival material. This information will aid in further treatment efforts and any other preservation or conservation needs. Here is a portion of Emilie Gagnet Leumas' report describing the treatment to the documents recovered after Hurricane Katrina which uses the information in her 2005 disaster journal.

The process

Flooded records were appraised as they arrived. The Baton Rouge Archives staff researched the best practices of wet records recovery based on available literature. Determinations were made on a case-by-case basis due to the varying severity of the damage. The damage ranged from dirt and mold to contamination from being submerged in standing floodwater and sludge for several weeks. Some had been "treated" in the field by priests attempting to minimize the damage. Therefore, different levels of recovery procedures were required. In the least of the extreme situations (i.e. dirt and mold), books were boxed, labelled and sent to the freezer... In the most extreme cases, covers were removed and the books were rinsed in several batches of clean water, laid in the sun to dry, separated by gatherings, then foldered, labelled, boxed and sent to the freezer. Freezing killed the mold, retarded any further mold growth and bought time for archivists to conserve the records in reasonable quantities.

Grants were requested from the National Endowment for the Humanities... for emergency funds to restore damaged records. An emergency grant was requested from NEH for rental fees, and a feasibility study was performed to determine how to proceed. A decision was made to conserve the records in-house, rather than outsource them to the NEDCC or another institution. Space requirements were considered, and a materials list was made.

A conservation room within the Catholic Life Center campus was set up in a former classroom to accommodate the recovery needs of wet records. Elaine S., Special Collections Curator, visited with the archives staff and provided guidance for setting up the conservation room. The floors were covered with [plastic sheeting] and canvas to prevent mold from getting into the carpet. After monitoring the room for several days, an average temperature of 72 degrees²⁴ and average humidity of 40% were recorded. These values were deemed adequate for drying materials. The dehumidifier was turned on and a temperature and humidity monitor set up before any records were taken out of the freezer. Stations were assembled around the room and labelled for supply storage. Fans in several corners provided cross ventilation. The tables were covered in paper. Every surface in the room was used for laying out materials on the overturned Pepsi crates. Essential supplies included a vacuum with HEPA[©]-filter, drying trays, fans,

²⁴ 72° Fahrenheit is 22.22° Celsius.

brushes, masks, and gloves. Certain materials were donated from local businesses, including an entire roll of blank newsprint from [the local newspaper press], cut and used for interleaving wet pages, and plastic trays [were] used to aid in air circulation.

Contact was made with the [university] Graduate School of Library and Information Science (SLIS), seeking volunteers to help set up the temporary [space] and work with the conservation process. Several [university] SLIS professors encouraged students to take advantage of this unique learning opportunity and help with the project. A team of volunteers was assembled, and work began at the beginning of November. At first, the bulk of the work was spent drying and cleaning church records.

Boxes were removed from the freezer, transferred to the conservation room, left in their plastic wrap, and allowed to thaw for 24 to 48 hours. After thawing, the records were unwrapped and placed on drying trays. The records were then laid open and, depending on their degree of wetness, the pages were interleaved, either individually or in groups, so that water could be absorbed. As drying progressed, individual pages could better be separated and interleaved with blank newsprint which functioned as a blotter to remove moisture. The books were turned every few hours, and the newsprint was changed when it became saturated. Crates around the room held blank pieces of newsprint in varying stages of drying, as it was reused until it became too dirty. Once the records were dry, the newsprint was removed and the pages were examined for evidence of mold and dirt. Any dirt was brushed away, and non-moldy materials were placed in acid-free folders and labelled. A variety of methods were used to remove mold, including brushing and vacuuming. All records were re-housed in acid-free folders, labelled, tied with tying tape and re-boxed.

In addition to dealing with church records, ten boxes of student cumulative records were also acquired from a school which was heavily flooded. These records were bagged by contract workers shortly after the storm. They remained in plastic garbage-type bags for over five months until the middle of February. Surprisingly, much of the information from the records was salvageable.

The Problems

There were several problems faced in the recovery of these documents which were not specifically addressed in available literature. The use of inferior ink led to the information on entire pages, sometimes entire books, being washed away.

Another problem was the presence of various pieces of paper including Post-its® left in the books, which stained the pages various colours. Keeping track of inserted paper documents was also a real problem. The adhesive under the tabs of the books' indexes sometimes dissolved, gluing the edges of the papers together. Rusting paper clips and staples acted as corrosive agents that ate away the paper to which they were attached or they created permanent rust stains. The presence of white-out [correction fluid], which seemed sometimes to function as an adhesive, made the pages very difficult to separate. Care had to be taken so that records did

not dry too quickly, especially if their pages had not been individually separated, for they had a tendency to block together as though cemented. The school records included test scores on stickers that, once dry, began to pop off and pose a “matching” challenge. Glue sticks were used to reattach them. The smell of the polluted, wet records was unbearable for many staff members, and those with allergies could not even enter the room.

Evaluation

Volunteers were the single biggest asset to the conservation process. A total of 114.25 volunteer hours were logged over a five month period. Diocesan archives staff provided 124.4 in-kind hours; in addition to conserving wet materials, they coordinated the project and recruited volunteers. Through this effort 36.25 cubic feet of records was salvaged. Types of materials saved include sacramental books, student records, cemetery records, parish bulletins, school board minutes, correspondence, legal and financial papers, and sacred objects.

For future use, these sacramental records will be microfilmed. The originals will be retired to the archives and working copies will be made and provided to the parishes. The school records will be microfilmed or digitized and the originals destroyed in keeping with archdiocesan policy.

Many of the conservation methods used were discovered by trial and error. Because there has been little written on what to do in a salvage situation of this magnitude, the staff had to go against their own instincts and sometimes use unorthodox methods to clean and house materials. Washing paper that had already been submerged for several weeks and taking the covers off books to aid in the drying process and deter mold growth were techniques not previously endorsed by accepted theory. Though the process was long and at times tedious the importance of salvaging these materials for future use outweighs the negatives. These records now tell two stories; the first is the story of the Catholic people of New Orleans written on the pages of these books. Another story is told in the stains, smells, and water marks that permeate the records, and that is something that should never be forgotten and cannot be lost.

This 2006 report documents what happened, how the material was treated and what lessons were learned. It gives credit to the many volunteers, especially university students and teachers that spent hours interleaving wet material. Their work was recognized as an important factor in the salvage effort. While documenting actions and decisions may seem a tedious act, it tells a story by itself. It provides information decades later that can help the organization in its future disaster planning.

Appendix G: Forms

These forms are also available in a separate Microsoft Word document for ease of use and adaptation. They may be freely printed out, divided, copied, cut and pasted or otherwise adapted as best suits the needs of readers and their archives institutions.

The forms provided in this appendix are:

- Form A: Archives Premises and Procedures Review Forms and Checklists
- Form B: Threat Identification and Severity Rating Tables
- Form C: The Significance Assessment Method
- Form D: Emergency and Disaster Response Action tables
- Form D: Disaster Supply Box Checklist
- Form E: Additional Disaster Supplies
- Form F: Archival Storage Space Damage Assessment Record
- Form G: Archives Holdings Damage Assessment Record
- Form H: Crate Documentation Form
- Form I: Checklist Form for Disaster Manual Contents

Form A: Archives Premises and Procedures Review Forms and Checklists

The archives holdings				
Details of finding aid(s):				
Details of location register:				
Physical media	Y/N	Packaging	Location	Notes
Paper				
Parchment				
Cotton				
Bark				
Other forms of physical media used for text-based records				
Photographic prints				
Photographic transparencies				
Glass plate negatives				
Acetates				
Silver nitrate				
Other forms of photographic processes				
Movie film				
Magnetic film				
Other forms of film recordings				
Magnetic audio				
Other forms of audio recordings				
Compact disks				
Floppy Disks				
Hard drives				
Other forms of digital media				
Other				

Internal review of archives premises			
Location address: Floor plans: Storage area under review (complete separate form for each space):			
Factor	Description	Potential risks	Notes
Structure			
State of decoration			
Ceilings			
Walls			
Doors			
Windows/skylights			
Electric sockets			
Electrical services			
Water pipes			
Gas pipes			
Heating / ventilating / air-conditioning systems			
Fire detection system			
Fire suppression system			
Water detection system			
Security alarms			
Trash			
Housekeeping			
Pest management: mould, insects, rodents, birds, bats			
Shelving type (material, mobile, static), lowest shelf off the floor, nothing on top shelf			
Unshelved material			
Access to/within storage area			
Intended construction projects			
Likelihood of moves			
Other			

External review of archives premises			
Location address:			
Building plans:			
Factor	Description	Potential risks	Notes
Location address			
Building condition			
Damp			
Brick work/fabric			
Roof type			
Roof condition			
Gutters, downspouts			
Drains			
Doors			
Windows			
Surroundings/neighbourhood			
Urban or rural?			
Who shares the building?			
Who are the immediate neighbours?			
Who is in a 1-block radius?			
Who is in a 3-block radius?			
Who is in 2 miles (3–4 km) radius?			
What is the infrastructure, road access, electrical / water / phone services?			
What are the crime statistics/rates?			
Radio waves/magnetic fields			
Rivers or bodies of water			
Fire hazards			
Roads, bridges, railway lines			
Trees and landscaping			
Hurricane, tornado or hurricane zone			
Earthquake zone			
Volcano nearby			
Access by emergency services and first responders			
Other			

Review of security			
Factor	Process	Authority	Notes
Location address:			
Floor plans:			
Details of all areas under review:			
Staff induction and training			
Access to site			
Access to building			
Doors			
Windows			
Staff access			
Researcher access			
Volunteer access			
General visitor access			
Loading bay(s)			
Storage areas			
Reading/research room			
Exhibition space(s)			
Processing areas			
Staff offices			
Staff room(s)			
Bathrooms			
Archives handling practices			
Server room access			
Cloud service provision			
User names, passwords and access profiles			
Fire wall			
Anti-virus/malware software			
Back-up system			
Data loss prevention software (DLP)			
Security procedures for laptops and portable devices			
Other			

Equipment list			
Equipment	In stock?	Order	Notes
Gloves			
Protective clothing (overalls, aprons, rubber boots etc)			
Ladders			
Trolleys			
Buckets			
Mops			
Portable printers			
Laptops			
Scissors			
Linen tape			
String			
Plastic sheeting			
Plastic bags			
Notepads			
Labels			
Pencils			
Pens			
Blotting materials			
Cloths			
Sponges			
Flashlights/torches			
Bandages			
Pins			
Packing crates with lids			
Packing crates without lids			
First aid kits			

Form B: Threat Identification and Severity Rating Tables

Natural disasters				
Threat	Likelihood	Severity	Notes	Prevention / mitigation
Earthquakes				
Volcanic eruptions				
Hurricanes				
Flooding, dam failure				
Lightening				
High Winds				
Tornadoes				
Cyclones				
Ice storms				
Hail				
Drought				
Heavy rain				
Mould				
Insects				
Rodents				
Snow				
Other				

Building or equipment failure or malfunction				
Threat	Likelihood	Severity	Notes	Prevention / mitigation
Leaky roofs				These can be prevented by inspection, maintenance and housekeeping practices, which reduce the danger of fire and water damage.
Broken pipes				
Defective wiring or switches				
Faulty machinery and equipment				
Broken heating or cooling systems				
Broken electronic security systems				
Electrical outages and malfunctions				
Chemical fires				
Magnetic fields				
Other				

Human ill-will				
Threat	Likelihood	Severity	Notes	Prevention / mitigation
Arson				Appropriate safety and security measures can reduce these threats.
Vandalism				
Bomb threat				
Active shooter				
Theft				
Accident				
Pandemic				
Terrorism				
War				
Other				

Human error and carelessness				
Threat	Likelihood	Severity	Notes	Prevention / mitigation
Smouldering cigarette				
Open window				
Unattended stove				
Negligent storage of flammable chemicals				
Careless computer key stroke				
Lack of care in computer security (poor password choice/control, carelessness with portable devices)				
Failure to lock up				
Poor handling of archival materials				
Other				

Technology				
Threat	Likelihood	Severity	Notes	Prevention / mitigation
Hacking or cyberterrorism				Computer access security, firewalls, virus and malware protection, laptop security procedures, back-up systems, digital preservation strategies will help protect the organisation from risks
Server crash				
Network outage				
Obsolescence				
Other				

Form C: The Significance Assessment Method

This form is taken from the PARBICA “Recordkeeping for Good Governance Toolkit Guideline 24: Identifying Significant Records in Archival Holdings”. It provides the step-by-step process of assessing significance for both individual items and collections as a whole. Note that it is intended for use as part of planning how to respond to a disaster, not as something that should or could be done as a disaster unfolds. It should be used to evaluate the relative significance and priority of the different archives holdings in advance so as to make it easier to organise their removal and/or treatment at the time of a disaster.

It is worth reading the full PARBICA guideline on assessing significant records in archival holdings before writing your statement of significance for your archives.

Method for assessing single records	Method for assessing collections
This method is best used when you are assessing a single record. It may be that this single record has special importance to your collection or is being nominated to a register.	It is often impractical to assess single records as a result of limited resourcing; many organisations instead prefer to assess a collection as a whole or part of a collection.
<p><i>Step 1: Collate</i></p> <p>Pull together all of the information about the record, including its history, when it came into your collection, any notes about it, reference material, details on related collections.</p>	<p><i>Step 1: Collate</i></p> <p>Collate records and information about the history and development of the collection, which may include publications about the collection, acquisition notes, published histories, official records.</p>
<p><i>Step 2: Research</i></p> <p>Research the history and provenance of the record, such as when it was created, who by, notes about ownership and use, general history research.</p>	<p><i>Step 2a: Research</i></p> <p>Research the history of the collection. This may include details of how the collection was developed and by whom, and any documentation relating to how the collection reflects on collecting practices.</p> <p><i>Step 2b: Review</i></p> <p>Review the scope and themes of the collection and how the collection relates to key themes.</p>

Method for assessing single records	Method for assessing collections
<p><i>Step 3: Consult</i></p> <p>Consult with donors, past owners, and those with an interest in or knowledge of the record. During the consultation process, remember to ask questions about the provenance and context of the record, its creation, use and meaning, and document their answers for future reference. Keep notes to assist in preparing the statement of significance.</p>	<p><i>Step 3: Consult</i></p> <p>Consult with people who are knowledgeable about the collection, such as donors, experts, staff and community interest groups. As part of your consultation, talk to people to whom the collection is important about why it has such value. One option may be to hold an event and encourage people to talk about the collection, its history, social value and meaning. Keep notes to assist in preparing the statement of significance.</p>
<p><i>Step 4: Explore</i></p> <p>Examine the context of the record, and think about how it related to wider historical themes and development. Consider its purpose and use within the context of its time and place.</p>	<p><i>Step 4: Explore</i></p> <p>Look at the context of the collection in terms of its history, development and identity within the broader community. Consider whether historical patterns have influenced the collection, and whether it is associated with a place and time.</p>
<p><i>Step 5: Analyse</i></p> <p>In this step, you examine and describe the record by noting its appearance, condition, materials, design and repair.</p>	<p><i>Step 5: Analyse</i></p> <p>Examine and describe the condition of the collection, especially noting if there are items which require attention.</p>
<p><i>Step 6: Compare</i></p> <p>Check the record against similar items or records, to see if it is comparable. Look at the websites of other archives to see if they hold similar records, and check reference books and knowledgeable colleagues.</p>	<p><i>Step 6: Compare</i></p> <p>Compare the collection against similar collections to ascertain how the collection is different or similar to comparable collections. Identify the strengths and characteristics of the collection.</p>
<p><i>Step 7: Identify</i></p> <p>Identify relationships between places, people and the record, which may include the location of its creation, environment, or related records from the same owner or organisation.</p>	<p><i>Step 7: Identify</i></p> <p>Identify relationships between places, people and the collection, which may include the location of the collection, environment, or related collections in other organisations.</p>

Method for assessing single records	Method for assessing collections
<p><i>Step 8: Assess</i></p> <p>Once you have gathered your supporting information, you can begin assessing significance against the primary criteria: historic, artistic or aesthetic, scientific or research potential, and social or spiritual. You can then determine the degree of significance by assessment against the comparative criteria: provenance, rarity or representativeness, condition or completeness, and interpretive capacity.</p>	<p><i>Step 8: Assess</i></p> <p>Once you have gathered your supporting information, you can begin assessing significance against the primary criteria: historic, artistic or aesthetic, scientific or research potential, and social or spiritual. You can then determine the degree of significance by assessment against the comparative criteria: provenance, rarity or representativeness, condition or completeness, and interpretive capacity.</p>
<p><i>Step 9: Write</i></p> <p>Write your statement of significance by:</p> <ul style="list-style-type: none"> • Summarising the record's values and meaning against the criteria in Step 8. • Referring to notes made at each step above. • Explaining how and why the record is significant. • Signing and date the assessment. • Listing references and sources for research. • Acknowledging contributors to the significance assessment process. 	<p><i>Step 9: Write</i></p> <p>Write your statement of significance by:</p> <ul style="list-style-type: none"> • Summarising the collection's value and meaning against the criteria in Step 8. • Referring to notes made at each step above. • Explaining how and why the collection is significant. • Signing and dating the assessment. • Listing references and sources for research. • Acknowledging contributors to the significance assessment process.
<p><i>Step 10: Action</i></p> <p>In this final step, you list all of the recommendations and actions arising from the significance assessment. These could include further research to be done, conservation needed. These action items will also inform your disaster planning.</p>	<p><i>Step 10: Action</i></p> <p>In this final step, you list all of the recommendations and actions arising from the significance assessment. These could include further research to be done, conservation needed. These action items will also inform your disaster planning.</p>

Form D: Emergency and Disaster Response Actions

Natural disasters			
Cause	Resulting damage	Response	Requirements
Earthquakes			
Volcanic eruptions			
Hurricanes			
Flooding, dam failure			
Lightening			
High Winds			
Tornadoes			
Cyclones			
Ice storms			
Hail			
Drought			
Heavy rain			
Mould			
Insects			
Rodents			
Snow			
Other			

Building or equipment failure or malfunction			
Cause	Resulting damage	Response	Requirements
Leaky roofs			
Broken pipes			
Defective wiring/switches			
Faulty machinery and equipment			
Broken heating/ cooling systems			
Broken electronic security systems			
Electrical outages and malfunctions			
Chemical fires			
Magnetic fields			
Other			

Human ill-will			
Cause	Resulting damage	Response	Requirements
Arson			
Vandalism			
Bomb threat			
Active shooter			
Theft			
Accident			
Pandemic			
Terrorism			
War			
Other			

Human error and carelessness			
Cause	Resulting damage	Response	Requirements
Smouldering cigarette			
Open window			
Unattended stove			
Negligent storage of flammable chemicals			
Careless computer key stroke			
Lack of care in computer security (poor password choice/control, carelessness with portable devices)			
Failure to lock up			
Poor handling of archival materials			
Other			

Technology			
Cause	Resulting damage	Response	Requirements
Hacking or cyberterrorism			
Server crash			
Network outage			
Obsolescence			
Other			

Form E: Disaster Supply Box Checklist

- A 20-gallon trash can (76-litre rubbish bin) with lid, preferably on wheels, to hold the supplies
- Buckets
- Disposable plastic gloves
- Protective clothing (overalls, aprons, rubber boots etc)
- Flashlights/torches and spare batteries (these need to be routinely checked for charge and replaced)
- Two-way radio handsets
- Scissors
- Utility knife/blades
- Linen tape
- String
- Duct tape
- Masking tape
- Plastic sheeting (1 mm)
- Plastic bags
- Notepads
- Labels
- Writing implements including red and green and waterproof markers, pens, pencils, grease pencils
- Paper towels and blotting materials
- Cloths
- Sponges
- Bandages
- Pins
- Hygrometers and thermometers
- Water moisture meters
- Disinfecting wipes
- First aid kits

Form F: Disaster Supplies

Other more specialised supplies stored in the Archives

- Apron, rubber
- Binder's board
- Bookends
- Boxes
- Bungie cords
- Coloured self-adhesive dots
- Disinfectant
- Eraser, synthetic rubber
- Flashlights/torches
- Gloves, cotton
- Gloves, disposable
- Gloves, rubber
- Grease pencils
- Hair dryers
- Moisture meter (for books)
- Nylon monofilament fishing line
- Paper, blotting
- Book trucks
- Camera
- Data loggers
- Small Dehumidifier
- Paper, ruled
- Paper, unprinted newsprint
- Paper, waxed
- Pens, ball-point
- Pens, waterproof marking
- Plastic bags
- Polyester or PET film/sheeting (3 mil or heavier) – e.g. Mylar® polyethylene sheeting
- Rope
- Scissors
- Soft cloths and/or brushes
- Sponges
- Steel wool, extra fine
- Tape, dispenser
- Tape, duct

- Tape, filament
- Towels, paper
- Utility knife/blades
- Weights

Supplies List for Building Maintenance

- Brooms
- Mops and buckets
- 50-gallon plastic garbage cans
- Dollies
- Emergency lights
- Extension cords
- Fans
- Hand tools
- Hand trucks
- Pallets and pallet mover
- Portable generators
- Shovels
- Water hoses and water source
- Wet/dry vacuum

Form G: Archival Storage Space Damage Assessment Record

Location/name:	
Damage description:	
State of furniture:	
Measures already taken:	
Repair/repackaging needs:	

Details of archives stored in this location		
Ref/archives damage assessment form	Medium	Status/needs
Assessor:	Date:	
Action		
Head Archivist:	Date:	
Page 2 of 2		

Form H: Archives Holdings Damage Assessment Record

Form number:	
Title, reference or crate number:	
Medium:	State of packaging:
Damage description:	
Treatment, repair or conservation needs	
Assessor:	Date:
Action	
Head Archivist:	Date:

Form I: Crate Documentation Form

For use to track and record damage, treatment, and movement of damaged archives material following disasters and emergencies. Fill one form out for every crate as it is being packed, include a separate entry for every item or groups of items with the same archives reference. Only pack items in the same crate if they have come from the same location.

Crate reference:				Original location of archives:					
Archives reference	Other references or labels	Medium	Packaging type	Quantity	Vital Records / Significant Archives (V or S)	Damage and Treatment, repair or conservation needs	Salvage priority	Notes	Subsequent locations
Packed by:				Date:					

Form J: Checklist Form for Disaster Manual Contents

Section	Details	Done
Introduction		
Policy statement	<i>Authority for plan</i>	
Disaster response team members	<i>Names</i>	
Roles and responsibilities	<i>Who does what in the event of the plan being activated</i>	
Activation authority	<i>Who has authority to activate the plan under which circumstances, how to activate the plan</i>	
Preventative measures	<i>Outline of measures put in place to prevent disaster</i>	
Mitigation		
<i>Range of scenarios together with actions/procedures to reduce scale of damage and impact (insert as many as required)</i>		
Scenario 1		
Scenario 2		
Scenario 3		
Preparedness		
Training for the disaster response team	<i>Details of training requirements for disaster response team</i>	
Support network	<i>Details of the support network, commitments and agreements</i>	
Details of the contents of storage areas	<i>The finding aids providing locations, media and content of archives holdings or details of where to find them</i>	
Vital records	<i>Details of vital records, how to protect them and how to recall them in event of disaster</i>	
Significant archives	<i>Details of significant archival records, where they are located and how to retrieve them in event of disaster</i>	
Emergency funding	<i>Details of arrangement to draw on funding in event of emergency or disaster</i>	

Section	Details	Done
Insurance	<i>Insurance policy and/or overview of terms</i>	
Responses to particular scenarios	<i>Range of scenarios together with disaster response actions for each of the threats identified in risk assessment (insert as many as required)</i>	
Scenario 1		
Scenario 2		
Scenario 3		
Building plans	<i>Handy size and/or large scale versions, and/or where to access them in emergency</i>	
Disaster supply boxes	<i>List of contents, where to find them, maintenance</i>	
Security protocols and procedures	<i>How to access and/or maintain security levels</i>	
Contact list	<i>Contact list for staff, volunteers, support network, vendors, insurers</i>	
Response		
Business continuity	<i>Details for accessing vital records and procedures for essential functions</i>	
Protection of human life	<i>Instructions for ensuring safety of human beings at time of and after disaster</i>	
If there is warning	<i>Actions to take if you know the disaster is coming</i>	
Reporting and notification	<i>How to report the disaster to the authorities</i>	
Terminating cause of disaster	<i>Range of scenarios together with ways to stop cause or end them (insert as many as required)</i>	
Scenario 1		
Scenario 2		
Scenario 3		
Briefing authorities and being briefed	<i>What to tell the authorities and what to ask them</i>	

Section	Details	Done
Activating the plan	<i>How to activate the disaster plan</i>	
Evacuation and initial deployment of response team	<i>How to evacuate the premises and what instructions and task to give the team (may need range of options)</i>	
Assembly points and temporary operations centres	<i>Details of where to assemble after evacuation and arrangement for temporary operations centres</i>	
Protection of undamaged material	<i>How to protect undamaged material as leave premises (may need range of options)</i>	
Regaining access	<i>Criteria for regaining access</i>	
Securing the buildings and stabilising the environment	<i>How to secure the buildings, measures for stabilising the environment</i>	
Briefing team; notifying the support network and contractors	<i>How to call the team together and contact the support network and disaster recovery vendors</i>	
Damage assessment	<i>How to carry out the damage assessments</i>	
Protection of undamaged material	<i>How to protect undamaged material on return to premises (may need range of options)</i>	
Salvage plan	<i>How to put together a salvage plan based on the damage assessment</i>	
Recovery		
Clearing the storage areas	<i>Procedures for clearing the storage areas</i>	
Monitoring the environment	<i>Reminder that the environment needs to be monitored</i>	
Salvage and retrieval of damaged material	<i>Guidance on retrieving and packing archives to move from storage to treatment area</i>	
Specific actions for specific materials	<i>Guidance on how to treat the range of anticipated damage to each kind of archives material (insert as many as required)</i>	
Scenario 1		
Scenario 2		
Scenario 3		

Section	Details	Done
Rehabilitation of storage areas and return of archival material	<i>How to manage renovation, rebuild or repurposing of premises for use as archives storage</i>	
Termination of disaster mode	<i>How to characterise/define and declare the end of the disaster</i>	
Disaster review	<i>How to review the experience and performance</i>	
Testing the disaster plan	<i>Instructions for testing the disaster plan</i>	
Ongoing review of the disaster plan	<i>Instructions for annual review of the disaster plan</i>	
Documentation	<p>List of documentation and forms to support deployment of disaster plan</p> <ul style="list-style-type: none"> <input type="checkbox"/> Archives Premises and Procedures Review Forms and Checklists <input type="checkbox"/> Threat Identification and Severity Rating Tables <input type="checkbox"/> Risk Calculation Worksheets <input type="checkbox"/> Disaster Classification Table <input type="checkbox"/> Team Skills and Expertise Checklist <input type="checkbox"/> The Significance Assessment Method <input type="checkbox"/> Emergency and Disaster Response Actions <input type="checkbox"/> Specifications for Temporary Operations Centre <input type="checkbox"/> Disaster Supply Box Checklist <input type="checkbox"/> Disaster Supplies <input type="checkbox"/> Communications Strategy <input type="checkbox"/> Archival Storage Space Damage Assessment Record <input type="checkbox"/> Archives Holdings Damage Assessment Record <input type="checkbox"/> Crate Documentation Form 	

The authors

Margaret Crockett

Margaret Crockett is a British archivist and records manager who works as a consultant for large and small businesses, NGOs and public sector organisations in the UK and overseas. She holds a Postgraduate Diploma in Archives Studies from University College London. Her career has taken her to live in Germany, the USA and Hungary and she has worked on projects in Australia, Africa, Asia, South America and the Caribbean as well as continental Europe. She is an experienced trainer and was responsible for establishing the International Council on Archives' Training Programme on a consultancy basis between 2018 and 2023.

Margaret became interested in disaster planning for archives in the 1980s. As Chief of the International Monetary Fund's Records Management Unit between 1994 and 1996 she was responsible for the day-to-day management of the organisation's vital records and emergency planning program and part of the team revising the IMF's Emergency Manual. Between 1996 and 1998 Margaret was Deputy Executive Director at the Open Society Archives (OSA) in Budapest, Hungary where she wrote the disaster recovery plan. She was also co-director of the OSA Summer schools for three years, teaching reference services, vital records and emergency planning for archives. Since then she has incorporated disaster planning into all of her consultancy work. Margaret and Emilie were part of the team that delivered the *Archives at Risk: Regional Solutions to Archival Development* conference in Grenada in February of 2017 as well as the 2018 *Regional Approaches To Disaster Response & Recovery A Working Conference* in Sint Maarten in the Caribbean.

Emilie Gagnet Leumas

Emilie Gagnet Leumas, PhD is a certified archivist, certified records manager, and Fellow of the Society of American Archivists. She has more than 25 years of experience in the field of archives and records management. Leumas holds leadership positions in national and international archives organizations, including ICA Expert Group on Emergency Management and Disaster Preparedness and represented ICA at Blue Shield International from 2016 until 2024. Leumas is a strong advocate for protecting cultural heritage with particular emphasis on documentary heritage. She is a National Heritage Responder trainer in the USA. Leumas received national and international recognition for her efforts in disaster recovery after Hurricane Katrina. She has participated in recovery efforts after local and regional disasters, especially those related to flooding in south Louisiana. She has presented conference papers, facilitated workshops and guest lectured at local, state, national, and international meetings on subjects including disaster plans, disaster recovery, risk management, salvaging wet records, archives management, and records management.

Index

- access
 - authorised, 75
 - changes to, 70,
 - frequency of, 105
 - in a disaster, 17
 - obligations, 43
 - regaining, 53, 54, 77, 144
 - security protocols, 75
 - to buildings, 40, 57
 - to computers, 22
 - to digital surrogates, 34
 - to records, 63
 - to vital records, 76, 107, 109
- access controls, 22
- access profiles, 19
- access protocols, 17
- access records, 106
- access services, 43
- accessibility, of collections, 35
- accessions, 24, 74
- accessions register, 74
- accidents, 19
- accommodation, 42, 59, 67-68
- accountability, 12
- accounting procedures, 38, 74
- accounts, of damages, 57
- acquisition agreements, 105
- acquisition notes, 127
- acquisitions, 13, 23, 24, 26, 82
- actions
 - for specific materials, 78
 - overarching, 42
 - positive, 59
 - post-assessment, 129
 - prioritisation, 37
 - to be taken, 73
 - to halt disasters, 76
- action plans, 32
- action sheets, 62-63
- activation authority, 73, 142
- activation, of disaster plans, 52, 57, 77, 144
- active records, 104, 106
- active shooters, 19
- activism, 18
- adhesive, 114
- administration, 9
- advance planning, 21
- advance warnings, 25
- advancements, 54
- adverse events, 85
- advocacy, 8, 14, 31, 35, 59, 98, 99
- aesthetic criteria, 36, 129
- agencies, 26, 100
- agreements, 41, 43, 74, 105, 142
- ailments, 95
- aims, 71
- air conditioning, 16, 42, 46
- air flow, 68
- air quality, 96
- air, 82
 - circulating, 64, 95, 114
 - heated, 85
 - stagnant, 67
- air-drying, 64, 65, 82
- airing, of audio-visual media, 67
- aisles, 61
- alarms, 23, 49, 51
- allergies, 115
- ambulances, 45, 83
- analysis step, 128
- animals, 53
- annual reviews, of plans, 145
- anti-virus and anti-malware protection, 19, 22, 126
- appearance, of records, 128
- appraisal, 8, 13, 35, 113
- aprons, 95, 135, 136
- architectural drawings, 11
- architecture, 17
- archival accommodation, *see also* accommodation
- archival description, 74
- archival functions, 33, 34
- archival holdings
 - archival holdings, and storage spaces, 55
 - archival holdings, needs, 85
 - archival holdings, protecting in conflicts, 100
- archival holdings, protection advocacy, 59
- archival holdings, salvage priorities, 34
- archival institutions, 21
- archival items, 55
 - and mould growth, 62
 - assessing, 97
 - care of, 102
 - cleaning, 97
 - drying, 95, 96
 - handling, 27, 28
 - identifying, 95
 - in crates, 61
 - monitoring, 62
 - moving, 40, 53, 60, 74, 95-97
 - packaging, 95
 - possible damage, 62
 - protection, 60
 - removing excess water, 95, 97
- soiled, 66
- storing, 96
- treated, 79
- treating, 97
- archival management, 81, 84
- archival material, 19, 82, 95
 - and poor handling, 19
 - documentation form, 141
 - protecting, 78
 - return of, 67-68, 79, 145
 - treating, 59
 - wrapping, 96
 - and vital records, 105-106
- archival records, 6, 21
- archival standards, 61, 62, 68
- archival storage space damage assessment records, 63, 145
- archival tradition
- archival tradition, in Francophone countries, 8
- archival tradition, in Hispanic practice, 8
- archival value, 84
- archive holdings damage assessment record, 145
- archive repositories, 31, 49
- archives
 - and cultural life, 8, 9
 - and documentary heritage, 8
 - and fire, water, smoke, 61
 - and insurance, 27
 - and libraries and museums, 9
 - and metadata, 60
 - and sunlight, 67
 - and support networks, 30
 - and volunteers, 27
 - as evidence, 9
 - assessing, 85
 - awareness of requirements, 26
 - briefing on, 77
 - carriers, 6
 - copying, 59
 - creation, 8
 - damaged, 44, 82
 - defined, 8, 9, 82
 - defining significant archives, 35
 - displacement in disasters, 40, 41
 - handling, 97
 - hazards to, 17, 68
 - holdings formats, 29
 - housing, 37
 - impact of disasters, 2
 - importance of, 8, 59, 89

- archives (cont.)*
 - in the Pacific Islands, 28
 - incomplete, 15
 - insuring, 38-39
 - loan items, 56
 - location recording, 62
 - loss of, 9
 - makeup, 71
 - managing on a budget, 98-99
 - mission, 56
 - monitoring, 78
 - moving, 23, 76
 - offsite access, 44
 - ownership records, 34
 - packing, 60, 144
 - protecting, 48, 96, 97
 - rebuilding, 6
 - removing, 41, 60
 - researching, 36
 - risk assessments, 16-18
 - salvaging, 5, 28
 - size and responsibility of, 25
 - sorting, 61
 - special handling needs, 60
 - storing, 44, 97
 - threats of geography, 18
 - treated, 60
 - uniqueness, 8, 15
 - unsalvageable, 66
 - value to society, 9
 - values, 68
 - vulnerabilities and needs, 46
 - websites, 128
- archives ambassadors, 28
- archives buildings
 - and off-site bases, 43
 - rebuilding or restoring, 53, 59
 - recovery financing, 6
 - review forms and checklists, 145
 - reviewing, 18, 118, 119
 - risks to, 19, 23
 - status of, 20
 - testing, 80
- archives categories, and treatment, 57
- archives communities, 32
- archives damage assessment form, 139
- archives descriptions, 83
- archives holdings, 3, 4, 16, 20, 55, 63, 71, 142
- damage assessments, 55, 63, 140
- defined, 9, 82
- focus of, 48
- impacts on, 21
- recovery financing, 6
- recording, 117
- removal, 85
- restoring, 59
- risks to, 19
- salvaging, 4, 5
- security of, 14
- storage of, 23
- threats to, 29
- archives institutions, 5, 6, 17, 28, 35
- defined, 9, 82
- functions of, 76
- location of, 18
- policies, 73
- risks to, 16
- vital records of, 105-106
- archives management, 3, 8, 27, 35, 59, 86
- archives management records, 106
- archives management system, 107
- archives manager, 25
- archives operations, 59, 60, 84
 - and full recovery, 68
 - automated, 17
 - briefing authorities, 51
 - daily routines, 73
 - defined, 82
 - insuring against disasters, 38
 - scenarios, 71
- archives policy, 73, 106
- archives premises, *see archives buildings*
- archives programme, 4
- archives references, 62, 63
- archives response team, 49, 83
- archives response team, *see also disaster response team*
 - disaster response team
- archives staff, *see staff*
- archives teams, 6, 16, 21, 77, 82
- archivists, 103, 105
- archivists, in disaster response teams, 25, 26
- armed conflicts, *see war and armed conflict*
- army, 50
- arson, 19
- articles of incorporation, 106
- artistic criteria, 36, 129
- artistic criteria, and significance, 36
- artistic value, 13, 34, 85
- arts communities, 31, 32
- ash, 96
- assembly points, 52, 77, 144
- assessment criteria, 37
- assessment forms, 55
- assessment phase, 52
- assessment step, 129
- assessment timeline, 48, 54-56
- assessments, 34
 - at workstations, 60
 - of buildings, 55, 98
 - of damage, 54-55, 78
 - of performance, 80
 - of records, 129
 - of risks, 98
 - of significance, 91, 127
- assessor, 55
- assets register, 104
- assets, 104
- assistance, in response phase, 48
- atmospheric damage, 20
- audio tapes, 11
- audio-visual formats, 65, *see also photographs, negatives, film, slides*
- audio-visual materials, 63, 67
- auditing
 - of EMDP, 38
 - in a disaster, 38
 - of vital records, 109
 - of vital records programmes, 104
- authenticity, 8-9, 12
- authorisation
 - for salvage, 57
 - of digital plans, 75
- authorities, 53
 - and disaster plans, 57
 - briefing, 77, 143
 - liaison with, 77
 - notifying, 143
- authority, 73, 83, 142
- automation, 107
- availability, of material, 70
- back to normal (status), 68
- backing material, 65
- back-ups, 19, 24, 107, 126
- badges, 96
- bagging, of items, 66, 11
- bags, 18
- bags, plastic, 61, 96
- bags, resealable (Ziploc), 65, 66
- bandages, 95, 96, 135
- banking services, 38
- bars, 22
- basements, 23
- bathrooms, 60
- baths (water), 66
- Baton Rouge, 113
- batteries, spare, 75

- bays, 61
- best practices
 - defining, 59
 - for digital archives, 24
 - researching, 113
 - sharing, 28
- binder's board, 136
- blades, 135, 137
- blocked drains, 23
- blotter, 114
- blotting materials and paper, 64, 65, 95, 135
- Blue Shield International, 102
- bombs and bomb blasts, 19, 102
- book covers, 115
- book trucks, 136
- bookends, 136
- books, 8, 100
- boots, 54, 95, 97, 135
- born digital, 24
- Bosnia and Herzegovina, 100, 101
- bound volumes, 64
- boxes, 20, 21, 39, 53, 64, 65, 96, 136
 - and drying processes, 63
 - archives-quality, 23, 37, 67
 - contents, 14
 - fresh, 65
 - marking, 57
 - removing from freezers, 114
 - supplies and suppliers, 31, 41
- boxing, 110, 113
- Brazil, 14
- breaches, 15, 75
- breaks, from work, 58, 95
- bricks, 99
- bridges, 18, 100
- briefings, 50, 54, 55, 57, 143
 - of authorities, 51, 143
 - of emergency services, 51
 - of teams, 63, 77, 144
- brooms, 137
- bruises, 95
- brushes, 44, 66, 97, 114, 136
- brushing, 67
- buckets, 18, 95, 96, 135, 137
- budgetary records, 105
- budgets, 3, 38, 39, 81, 98-99
- building collapse, 14, 15
- building conditions, 16
- building contractors, 23, 56
- building controls, 106
- building damage, 56, 110
- building failures, 18-19, 123, 130
- building loss, 19
- building maintenance supplies, 137
- building managers, 56
- building plans, 2, 17, 42, 55, 75, 143
- building records, 106
- building risks, 18
- building works, 23
- buildings manager, in disaster
 - response teams, 25, 26
- buildings, 17, 18, 33, 67-68, 82, 84
 - access to, 22, 56
 - and resources, 60
 - assessing, 30, 54-56
 - concrete and steel, 102
 - off-site, 43
 - protecting, 48
 - rehabilitation, 40, 41, 55, 61
 - repairing or replacing, 6, 55
 - response after hurricanes, 41
 - securing, 40, 53, 57, 75, 77, 144
 - soundness of, 16, 17
 - vulnerabilities, 98
 - see also* building plans
- bulky records, 95
- bulldog clips, 96
- bundles, 65
- bungie cords, 136
- burning, 15
- bush fires, 50
- business archives, 9
- business as usual, 2, 3
- business cases, 98
- business continuity, 33-34, 76, 82, 85, 93, 103, 104, 109, 143
- business records, 105
- cabinets, metal, 22
- calling tree, 52
- camera, 136
- campaigning, 68
- canvas, 113
- Cape Town, 14
- card, 64, 95
- carelessness, 15, 18, 125, 130
- Caribbean, 14, 33
- Caribbean Heritage Emergency Network, 33
- carpentry and carpenters, 45, 46
- carpets, 53, 133
- carriers, 11, 13
- casing, of audio-visual media, 67
- catalogues, 74, 82, 83
- cataloguing, 14, 28, 82, 105
- catastrophes, 19
- ceilings, 16, 55
- CER, *see* Cultural Emergency response
- chairs, 95
- Challenger space shuttle, 67
- chamber, for vacuum drying, 85
- change management, 59
- chargers, for mobile phones, 96
- charging, of batteries, 75, 135
- charities, 18
- checklists, 7, 29, 41, 43-44, 55, 69, 72, 96
- checkpoints, 110
- chemical fires, 18
- chemicals, 68
- church records, 110, 114, 115
- cigarettes, 19
- citizen rights, 9
- City Hall (Vijećnica), 100
- civic institutions, 72
- civil authorities, 102
- civil defence, 45
- Civil Protection Mechanism (UCPM), 32-33
- civil unrest, 100-102
- Classes 1-7, 19
- classification schemes, 104
- classified records, 22
- clean water, 31, 67, 113
- cleaning, 60, 84, 95, 97
 - unorthodox, 115
- cleaning equipment, 18, 41, 44
- cleaning facilities, 41
- cleaning procedures, 61, 80
- clearing, approaches, 61
- clearing, of storage areas, 60, 144
- climate change, 68
- clips, 64
- closed collections, 28
- clothing, 41, 54, 97
 - protecting, 95, 96
 - protective, 63, 76
- cloths, 44, 95, 97, 135
- cloud computing, 22, 24, 72, 74
- codes, for salvage priority, 62
- cold air, 65
- cold site, 43
- cold water, 65
- collaboration, 33, 35, 36, 100
- collateral damage, 18, 100
- collation step, 127
- collecting, 9, 34
- collecting policies and practices, 13, 35, 127
- collecting responsibilities, 34
- collection assessors, 45
- collection care plan and policy, 73, 99
- collection priority list, 99

- collections, 29, 34, 127
assessing, 127-129
describing disaster impacts on, 69
preventing damage, 50
protecting, 22
salvaging, 6
significant, 37
- Collections 2.0 a guide to assessing the significance of collections, 36
- Collections Council of Australia, 37
- Cologne, 14
- Colombia, 14
- commitments, 6, 32, 74, 142
- committees, 31
- communication liaisons, 45
- communication, 31, 32, 97
- communications plans and strategy, 57, 145
- communications, 44, 45, 50, 52
- communities, 5, 10, 21, 30-31, 34, 59, 60, 68, 98
- community interest groups, 128
- compact discs, 11
- companion volumes, 74, 79
- comparative criteria, 36
- comparison step, 128
- competency, of staff, 29
- completeness, 36, 129
- complexity, 5
- computer security, 19, 75
- computers, 18, 19, 23, 39, 43, 44, 52, 55, 74
and access, 22, 126
and vital records, 107
easy-access, 75, 83
testing, 80
- concrete, 102
- condition (of items), 36, 61, 112, 128, 129
- condition reports, 48
- conditions, constraints of, 62
- connectivity, 95
- conservation
advice and expertise, 63, 65, 66
efforts, 70
function, 26
funding, 39
in significance assessments, 35
needs, 62, 129
of records, 113
process and methods, 43, 44, 67, 114, 115
- conservators, 45, 56, 66, 67
- conservation records, 105
- conservation room, 113
- conservation services, 41
- conservation work, 59
- constituencies, 32
- construction, 14, 17
- construction, of buildings, 75
- construction, of wind tunnels, 95
- consultants, 41, 60, 68
- consultation step, 128
- consumption, 15
- contact information and contact lists, 42, 44-45, 50, 52, 54, 71, 72, 76, 80, 82, 97, 105, 143
- containers, 23, 53, 72
- contaminants, 96
- contamination, 66, 113
- context (of records), 9, 34, 36, 128
- contingencies, 56-57
- contingency funding, 38
- contingency plans, 4, 19, 31-32, 46, 52, 53, 103
- contract workers, 114
- contractors, 54, 60, 84, 85
and disaster plans, 57
contact details, 44-46, 76
contracts, 105
freeze-drying, 65
notifying, 77
- contracts, 41, 45, 106
- contributors, acknowledging, 129
- Convention for the Protection of Cultural Property in the Event of Armed Conflict ('Hague Convention'), 102
- conversation process, and volunteers, 115
- conversations, 69
- cool water, 66
- cooling and cooling systems, 18, 95
- copies and copying, 6, 59, 108
notarised, 106
of vital records, 34, 73, 106
- corporate records, 106
- correction fluid, 114
- corrosive agents, 114
- corruption, of digital materials, 15
- costs, 39, 107
- cotton ties, 61
- council offices, 45
- courses of actions, 70, 83
- covers, of bound volumes, 64
- crate documentation forms, 61-62, 63-65, 141, 145
- crate reference numbers, 61-63
- crates, 18, 26, 41, 61, 63, 65, 66, 96, 113, 114
- creation, of record, 128
- creativity, 98
- creators, of records, 8, 9, 127
- credentials, checking, 23
- crime statistics, 18
- criminals, 53
- criteria, for assessing significance, 36, 37
of assessments, 129
- Crockett, Margaret, 1
- cultural archives, 60
- Cultural Emergency Response (CER), 33
- cultural expression, 28
- cultural heritage
institutions, 31, 32
material, 100, 110
and the Hague Convention, 102
custodians of, 13
in the Caribbean, 33
safeguarding, 32-33
vulnerability of, 13-14
- culture and cultural identity, 9
- cultural institutions, 72
- cultural material, 110, 112
- Cultural Placekeeping Guide, 31-32
- cultural placekeeping, 31, 32, 43
- cultural significance, 100
- cultural sites, and the Hague Convention, 102
- cultural value, 13, 34, 85
- curatorial functions, 35
- current affairs, 100
- current records, 8, 102
- cuts, 95
- cutting items, 97
- cyber security, 15, 22
- cyberterrorism, 19
- cyclones, 18
- daily routines, 73
- damage assessment forms, 61, 138
- damage assessment record, 140
- damage assessments, 2, 54, 57, 60, 63, 78, 144
and insurers, 54, 56
and salvage plans, 78
and undamaged materials, 56
- in response phase, 48
- preceding actions, 49
- procedures, 54

- damage
 - and salvage priority codes, 62
 - anticipated, 144
 - collateral, 100
 - evaluating, 56
 - from dirt, 113
 - from fire and water, 123
 - from mould, 113
 - possible causes, 62
 - preventing, 37, 61, 76, 96
 - protecting from, 96
 - repairs, 46
 - sorting, 61
- damaged archives, 25, 27, 60, 83
 - copying, 59
 - sorting, 61
 - treating, 60, 82
- damaged material
 - procedures for, 72
 - salvage and retrieval of, 62-63, 78, 144
 - moving, 17
 - resources on treating, 91
- damp surfaces, protecting, 96
- damp, 17
- dams, 18
- darkness, 67
- data, 54, 57
 - data disclosure, 22
 - data encryption, 22
 - data gathering, 21
 - data loggers, 44, 95, 136
 - data loss prevention (DLP), 19
 - data protection records, 105
 - databases, 106
 - datasets, 11
 - de-activation, of disaster modes, 79
 - debris, 95
 - decay, 17
 - decisions and decision-making, 12, 45, 55, 62, 69, 84, 99
 - deeds, 106
 - defecation, 15
 - defrosting, 65
 - dehumidifiers, 41, 47, 64, 113
 - delegation, 54
 - desks, 44, 95
 - destruction, 14, 100, 115
 - development specifications, 107
 - developments, social or political, 13
 - diagrams, 96
 - digital archives, 17, 24
 - digital copies, 34, 72
 - of vital records, 34
 - digital formats, 24, 75, 107-108
 - digital images, 70
 - digital materials, 15, 67
 - digital media, 11, 67
 - digital preservation, 63
 - digital preservation strategies, 19, 21, 24, 126
 - digital records, 22, 107
 - digital storage, 108
 - digital surrogacy, 6, 34
 - digitisation, 21, 24, 28, 75, 115
 - direct contact, 61
 - directory, of contacts, 97
 - dirt, 66, 114
 - disaster bins, *see* disaster supply boxes
 - disaster boxes, and action sheets, 63
 - disaster experts, 61
 - disaster journals, 69, 113-115
 - defined, 82
 - extracts, 110-112
 - disaster management, 6, 27, 29, 69
 - disaster manuals, 1, 69-80, 109
 - and action sheets, 63
 - contact details, 76
 - contents, 71-80, 142
 - copies, 72
 - defined, 71, 82
 - digital copies, 72, 79
 - distribution, 72
 - resources on, 93
 - storing, 72
 - tailoring, 63
 - versioning, 72
 - disaster mitigation, 104
 - disaster mode, 52
 - terminating, 69, 79, 145
 - disaster models, 1
 - disaster plans and planning, 2, 3, 7, 25, 27, 33, 37, 50, 53-57, 70, 71, 82, 83
 - action sheets, 62-63
 - activating, 52, 142, 144
 - and computer security, 75
 - and creativity, 98
 - and floor plans, 42
 - and significant archives, 34
 - and war, 100
 - as insurance, 39
 - considerations, 31, 129
 - contents, 48-49, 72
 - de-activating, 79
 - defined, 3, 83
 - emergency procedures, 42
 - examples, 90
 - improving, 68, 69, 115
 - local, 33
 - meetings, 39
 - objectives, 3
 - on a budget, 98-99
 - regional, 33
 - resources, 90
 - reviewing, 32, 145
 - significance assessment method, 127
 - skills, 50
 - supporting documentation, 145
 - testing, 32, 43, 80, 145
 - tools, 72
 - training, 76
 - disaster preparedness, 25-47, 74
 - disaster prevention, 4, 83, 142
 - and volunteers, 27-28
 - strategies, 29
 - disaster recovery networks, *see* support networks
 - disaster recovery, 85
 - experts, 41, 72
 - funding, 38
 - needs, 46
 - documenting, 69
 - supplies, 31
 - team, 62
 - training, 28-30
 - vendors, 144
 - volunteers, 60
 - disaster reports, 113
 - disaster response, 59
 - actions, 130, 143, 145
 - equipment, 95-97
 - funding, 38
 - networks, 30-31
 - operations centre, 43-44
 - preparations, 31
 - timeline, 48-58
 - tools, 43
 - disaster response teams, 2, 25-27, 30, 34, 52, 56, 73, 74, 77, 142
 - and significant records, 37
 - contact lists, 44, 45
 - defined, 48, 83
 - training, 28-30
 - disaster scenarios, 6, 71
 - disaster supplies, 18, 38, 42-43, 54, 135, 136, 145
 - disaster supply boxes, 2, 28, 42-43, 53, 55, 71, 75, 143
 - checklist, 145
 - contents of, 135, 136
 - defined, 83
 - disaster support networks, *see* support networks

- disasters, 2, 5, 31, 59
aftermath, 58, 68, 84
and improving operations, 59
and significant archives, 37-38
and the Hague Convention, 102
and vital records, 38
anticipating, 71, 82, 83, 99
breakdowns, 67
building protection, 17
classifications, 19, 145
combatting, 25
defined, 83
documenting, 55, 68-70
escalation of, 3
funding support, 38-39
grading, 19-20
impact of, 3, 13-15
managing, 5, 14
mitigating, 18, 19, 25, 71, 73
notifications of, 50-51
organisational definition, 71
phase, 5
preparing for, 1, 3, 14, 17
preventing, 16, 71
probability of, 29
recovering from, 33, 55, 81
reporting, 50-51, 76
responding to, 3, 4, 27
reviewing, 79, 145
scale of, 51, 61
severity of, 4, 20, 40
terminating, 51, 76, 143, 145
timeline, 48, 49
types, 14, 84
warnings, 143
disclosure, of personal data, 53
disease, 50
disinfectant and disinfecting
wipes, 135, 136
dispersal, 73, 107
displaying material, 23
disposition decisions, 102
distances, 18
distortion, of items, 64
DLP, *see* data loss prevention
doctors, 67
documentary heritage, 8, 10-15, 28, 89, 99
documentation, 41, 65, 79, 83, 95
for disaster plan deployment, 145
for insurance, 69
in disaster manuals, 72-73
of archival movements, 60
of archive locations, 37
of building vulnerabilities, 98
of crates, 61, 141
of disasters, 82
of evacuation protocols, 77
of gaps, 5
of reporting a disaster, 51
of risks, 98
of tests, 79
on record systems, 107
needs, 63
pre-disaster, 6
printing, 96
reviewing, 69-70
strategy, 69
supporting, 71
documenting (act), 28, 55, 60, 68-70, 78
documents, 11, 64, 85, 106
dollies, 137
donations, 98, 114
donors, of records, 128
door locks, 22
doors, 16, 17, 53
dots, 57, 136
dPlan, 72
drafts, 53, 64
drains, 17, 23
drinks, 24, 31, 58, 62
drips, 95
drought, 18
dry items, 66
drying, 40, 84, 95
by air, 65
flooded records, 113
of negatives, 65
photographs, 66
process and procedures, 63, 65, 80, 115
speed, 114-115
wet material, 66
drying conditions and facilities, 41, 60, 64
drying equipment, 44
lines and racks, 47, 60, 64, 96, 97
tables, 64
trays, 113, 114
duct tape, 135
duplicates, of finding aids, 74
duplicating, 108
dust, 96
earthquakes, 14, 18, 19, 23, 70
easy-access computer, 83
eating, 62
economic factors, 18
economic impacts, 9
effective planning, 59
efficiency, 60, 61
El Salvador, 14
electrical damage, 50
electrical equipment, 53
electrical fires, 51
electrical outages, 18
electrical services, 16
electrical wiring, 22, 55
electricians, 45, 56
electricity, 42, 53
elevators, 42
elimination of impacts, 21
email, 45, 76
emergencies
actions 130, 145
and cultural heritage, 32
and disasters, 83
coping with, 25
defined, 83
determining, 31
preparing for, 1, 80
responding to, 48, 49, 84
situations, 52
vital tools, 72
emergency contact information, 45
emergency copies, of vital records, 108
emergency funding, 74-75, 142
emergency lights, 137
emergency management, 2
emergency management and disaster preparedness (EMDP), 1, 8, 62, 73, 82
aims and goals, 4, 30
actions, 40
advocacy, 99
and vital records, 103
defined, 4, 83
for libraries and museums, 1
framework, 104
general works on, 86-88
institutional support, 6, 8
on small budgets, 7, 21
planning, and significance
assessments, 37
policies, procedures and checklists, 7, 42
stages, 27
team, 95, 97
training, 28
emergency management and disaster preparedness programme, 20, 54, 57, 79-80, 100
improving, 69
membership, 103
outcomes, 71

- emergency measures, 4, 6, 48-49
emergency operations centre, *see* operations centre
emergency planning and procedures, 18, 27, 42, 48, 60, 83
emergency services, 18, 29, 40, 41, 42, 49, 50, 51, 53, 71, 72, 75, 77, 82
and disaster plans 57
awareness of requirements, 26
contact details, 44, 45, 76
defined, 83
in disaster response teams, 26
measures taken by, 55
use for floor plans, 42
emergency signage, 4
emergency supplies, 6
emergency treatment area/centre, 83
EMDP, *see* emergency management and disaster preparedness (EMDP)
encryption of data, 22
engineers, 45
entrances, to buildings, 42, 51
entry, to buildings, 53
entry systems, 17
environment agency, 50
environmental conditions, 53, 79, 84
environmental hardship, 17
environmental harms, 23
environmental monitoring, 61, 62, 78, 144
environmental protection, 37
equipment, 18, 39, 41, 57, 80, 121
failures, 18-19, 123, 130
drying, 95, 97
evaluating damages, 56
for disaster response, 95-97
for off-site operations, 43, 44
for recovery, 95-97
in cold sites, 43
procuring, 41
protective, 54
review form, 43
specifying in salvage plan, 56
suppliers, 26, 57, 97
supplies, 43, 97
transporting wet, 95
erasers, 136
errors, 125, 130
eruptions, 18
Eta (hurricane), 14
European model, 32
European Union (EU), 32
- Civil Protection Mechanism (UCPM), 32-33
evacuation sites, 102
evacuation, 22, 48, 52, 88, 100, 102, 144
assembly points, 77
from buildings, 42
of material, 13, 100
routes, 40
evaporation, 65
evidence, 13, 21, 34
exercising, 79-80
exhibitions, 23, 105
exits, to buildings, 42
experiences, 59, 68, 69, 82, 145
Expert Group on Emergency Management and Disaster Preparedness, 1
expertise
building managers, 56
checklist, 29
in treatments, 67
increasing, 30
of staff, 29
requirements, 56
experts, consulting, 63
exploration step, 128
exposure, preventing, 98
extension cords, 137
facilities maintenance, 45-46
facilities managers and teams, 25, 56, 98
facilities, drying, 60
facility assessors, 45
facility inspections, 22
failures, 122, 123, 130
family archives, 9
fans, 44, 53, 64, 95, 113, 137
fatigue, 76
fiction, and documentary heritage, 11
film, 11, 16, 65
financial gain, 53
financial records, 105
financial security, 21
financial standing, 33, 85
financial support and resources, 6, 7, 57, 60, 74-75, 98-99
finding aids, 16, 34, 70, 74, 83, 100, 106, 107, 142
findings, justifying, 37
fire, 14, 15, 18, 22-23, 50, 51, 61, 100
fire alarms, 22
fire brigade, 83
fire damage, 15, 19, 21, 67, 84
fire extinguishers, 23, 42, 51, 99
- fire fighters, 26, 31, 32, 49, 83
fire regulations, 22
fire service, 22, 30, 31, 45, 50, 51
fire suppression systems, 16
fireproof safe, 75, 106
firewalls, 19, 22, 126
first aid and first aid kits, 50, 95, 135
first responders, 27, 44, 45, 49, 51, 76, 81, 83, 111
fishing line, 136
flammable chemicals, 19
flammable liquids, 22
flammable objects, 23
flanges, 23
flashlights, 95, 135, 136
flood alarm systems, 23
floods and flooding, 2, 14, 18, 19, 23, 40, 41, 66, 102, 113
floor plans, 16, 42, 57, 75
floors, 16, 55, 99
drying, 96, 97
for storage, 23
floppy/compact discs, 11, 22
fluorescent dots, 57
foldering, 113
folders, 65, 67, 114
fonds, 28, 34
food and drink, 24, 31, 44, 58, 62, 97
format (of materials), 65, 71
forms, 69, 71, 72
archival material, 55
archival storage space damage assessment record, 55, 138
archive holdings damage assessment record, 55, 140
archives premises and procedures review forms and checklists, 117
assessment, 55
disaster manual content checklist, 142
crate documentation form, 61, 141
digital, 55
disaster supply box checklist, 135, 136
emergency and disaster response action tables, 130
environment, 55
for damage assessments, 78
location, 55
logging archives, 41
review, 43
significance assessment method, 127

- forms (cont.)*
- stocks, 55
- threat identification and severity rating tables, 122
- fortitude, 68
- Foundation of the American Institute for Conservation of Historic and Artistic Works, 20
- four-phase disaster model, 1
- fragility, of items, 64, 67
- framed items, 65
- frameworks, for significance statements, 37
- Francophone archival tradition, 8
- freeze-drying, 26, 41, 65, 84
- freezers, 111, 113
- freezing material, 63-65
- freezing point, 85
- functions, 76, 82
- funding and fundraising, 19, 31, 54, 56, 68
- accessing, 75
- and insurance, 2, 3
- EMDP, 38-39
- emergency, 74-75
- grants, 59
- in emergencies, 142
- ongoing, 38
- furniture and furnishing, 39, 53-55, 96, 97
- furniture, and cold sites, 43
- furniture, for off-site operations, 44
- Gagnet Leumas, Emilie, 1
- gangways, 61
- gaps, documenting, 5
- garbage bags, 114
- garbage cans, 50-gallon, 137
- gas, 42, 45, 53, 65, 84
- gas leaks, 50
- gas pipes, 16
- gatherings, 113
- Gaza, 14
- generators, 22, 41, 53, 54
- geographical features, 18
- Germany, 14
- glass, 22, 65
- glossy paper, 64
- gloves, 18, 54, 61, 66, 67, 95, 96, 97, 114, 135, 136
- glue sticks, 115
- glue, dissolved, 114
- Google Maps, 102
- government agencies, 31
- government records, 11
- governments, 18, 100
- grading impacts of disasters, 19-20
- grants, 59, 113
- grease pencils, 135, 136
- Grenada, 33
- group memory, 21
- groupings, of records, 100
- Guatemala, 14
- guidance, 63, 78
- guidelines
- for research rooms, 22
- for damaged materials, 78
- for stabilising the environment, 77
- Identifying Significant Records in Archival Holdings (PARBICA), 34
- removing items, 78
- gutters, 17, 23
- hacking, 19
- Hague Convention (1954), 102
- hail, 18
- hair dryers, 136
- hand tools, 137
- hand trucks, 137
- handbook, 71, 72, 82
- handling needs, 60
- handling practices, 17
- handling tips, 63
- handling, of specific types of material, 67, 78
- hanging lines, 64
- hard copy records, 108
- hard disk drives, 11, 33
- hard hats, 54, 61, 95
- hardware, 15, 24, 34, 39, 107
- harmful substances, 97
- Hawaii, 14
- hazards, 75, 84, 125
- head of archives, 55
- headaches, 95
- headquarters, 49, 52-54
- health and safety, 95, 98
- health and safety compliance records, 105
- health, of team members, 76
- heat and heating, 16, 53, 67, 84
- heat detectors, 22
- heating equipment, maintaining, 46
- heating pipes, 23
- heating systems, 18
- HEPA filters, 113
- Herzegovina, 100, 101
- high priority items, 61
- high visibility vests, 61
- Hispanic archival tradition 8
- historic criteria, 129
- historic manuscripts, 14
- Historical Archive of the City of Cologne, 14
- historical value, 8, 13, 34, 85, 105 and significance, 36
- history, 9, 11, 12, 82, 127
- holdings
- and surrogates, 21
- assessing, 54
- changes to, 80
- evaluating damages, 56
- locations of, 23
- micro level foci, 33
- needs, 29
- photographing, 55
- prioritised list, 57
- priority, 57
- removal procedures, 57
- retrieval, 59
- status, 55
- storage of valuable, 23
- viability of, 21
- homes, rebuilding, 53
- Honduras, 14
- honour 100
- hose reels, 23
- hostilities, *see war*
- hot site, 43
- housekeeping practices, 19, 123
- human action, 9, 13, 84
- human error, 6, 18, 19, 20, 125, 130
- human expertise, 24
- human health, 15
- human ill-will, 18, 19, 20, 124, 130
- human life, protecting, 50, 76, 96, 143
- human resources, 60
- records, 105
- human rights, 9
- human safety, 61, 66, 67, 76
- human-made disaster, 84
- humidity, 23, 53, 62, 66, 79, 82
- controlling, 67
- in rehabilitated areas, 68
- measuring, 95
- of conservation rooms, 113
- of storage environments, 99
- recording, 95
- Hurricane Eta, 14
- Hurricane Iota, 14
- Hurricane Ivan, 33
- Hurricane Katrina, 58, 110, 111, 113
- hurricanes, 14, 18, 19, 23, 40, 41

- hygrometers, 44, 95, 135
- hygro-thermographs, 95
- ICA, *see* International Council on Archives
- ICA Expert Group on Emergency Management and Disaster Preparedness, 1
- ice storms, 18
- iconic items, 34, 56
- identification
 - of records and items, 64
 - of teams, 96
- identification documents, 110
- identification step, 128
- identity, evidence of, 9, 12, 21
- Identifying Significant Records in Archival Holdings (PARBICA), 34, 37
- illness, 76
- illumination, 95
- images, 11, 59, 66
- immersion, in water, 97
- impacts, 16
 - minimising, 40
 - of disasters, 21
 - on reputation, 56
 - reducing, 21, 98
- implementation, authorisation of plans, 57
- improvements, 69, 79
- inactive records, 104, 106
- incinerating records, 22
- indexes, 114
- individuals
 - archives of, 9
 - evidence of, 34
 - impact on, 21
- industrial freezers, 31
- infections, 50
- infestations, 14, 15
- information, 11, 75, 76, 84
- information assets, 104
- information carrier, 11
- information disclosure, 22
- information forms, 11
- information security, 6, 38
- information sensitivity, 38
- information storage, 11
- information technology (IT), 17, 75, 106, 107
- infrastructure restoration, 48
- initial planning timeline, 48
- initialling, of bags, 65
- injuries, 3, 50, 61, 95
- ink, 114
- inoculations, 50
- insect bites, 95
- insect traps, 24
- insects, 14, 15, 18, 24
- inserts, 114
- inspections, 19, 23, 99, 123
- instincts, 115
- institutional memory, 32
- institutional support, 6
- institutions, 13, 69
- instructions, 63, 72, 76
- insurance and insurers, 3, 6, 23, 26-27, 38-39, 54, 56, 57, 75, 76, 98, 106, 143
- insurance brokers, 26, 39, 69
- insurance companies, 26-27, 45, 82
- insurance payments, 27
- insurance policies, 23, 39, 75, 105, 143
- insurance records, 105
- integrated pest management (IPM), 84
- integrity, 12, 61
- interleaving, 64, 95, 114
- internal spaces, 16-17
- International Council on Archives (ICA), 1, 9, 70
- international organisations, 18
- International Records Management Trust (IRMT), 27
- Internet connectivity, 44, 95, 102
- interpretive capacity, 36, 129
- inventories, 14, 18, 29, 108
 - of vital records, 106
- investigators, 69
- Iota (hurricane), 14
- IPM, *see* integrated pest management
- Irma (hurricane), 14
- IRMT, *see* International Records Management Trust
- isolating materials, 24
- Israel, 14
- IT, *see* information technology
- items
 - bagging, 66
 - bulky, 96
 - contaminated, 66
 - damp and dirty, 96
 - documenting, 61-62
 - drying, 63, 64
 - fragility, 67
 - framed, 65
 - hanging, 96
 - high-priority, 63
 - iconic 56
 - labels/tags, 64
 - monitoring conditions, 61
- non-archival, 97
- on loan to archives, 56
- protecting, 61, 96
- retrieving, 61
- rinsing, 66
- storing, 96
- transporting, 96
- tying, 95, 97
- undamaged, 61
- Ivan (hurricane), 33
- Jamaica, 14
- Japan, 14, 70
- journals, 113-115
- justifications
 - for significance, 37
 - of damage assessments, 55
 - of response and recovery needs, 43
- keys, 22, 106
- kitchens, 60
- knife, 135, 135
- knowledge sharing, 35
- knowledge, 72, 128
- labels and labelling, 61, 62, 64, 65, 95, 96, 108, 113, 114, 135
- lack of resources, 21
- ladders, 18, 43, 95
- lamination, 72
- landslides, 14
- laptops, 18, 19, 72, 95, 96
- lawyers, 45
- layout, of buildings, 75
- leadership, 7
- lease records, 105
- legal jurisdictions, 63
- legal obligations, 43, 63
- legal requirements, 22, 105, 106
- legal standing, 33, 85
- legislative jurisdictions, 38
- lessons learned, 68-70
- liaison, 77
- libraries, 9, 31
- library salvage consultants, 41
- lids, 18, 43, 96, 135
- lightning, 18
- lightning conductors, 22
- line items, in budgets, 38
- linen tape, 95, 135
- lines, 44, 60, 64
- liquids, 22, 65, 84
- lists, 14, 41, 44
- loan items, 56
- local archives, 9
- local authorities, 50
- local emergency action, 31
- local government authorities, 9
- location form, 55

- location register, 16, 74
- locations, 13, 16, 128
 - labelling, 61
 - of archives, 62
 - of disaster supply boxes, 42
 - of significant archives, 37, 74
 - of supply boxes, 75
 - of team members, 76
- locking up, 19
- locks, 22
- locksmiths, 45
- logbook, 82
- logging, forms, 41
- lone working, 58
- looting, 53
- loss adjustors, 56
- losses, 12-13, 15, 38, 69
- Louisiana, 66, 110
- machinery, 18
- magazines, 64
- magnetic fields, 18, 19, 84
- magnetic tapes, 11
- magnetised tools, 67
- mains supply, 23
- maintenance, 19
 - as prevention, 122, 123
 - assessors, 45
 - crew, 30
 - of buildings, 99
 - of fire extinguishers, 99
 - of plans, 71
 - of supply boxes, 75
 - on response teams, 25, 26
 - ongoing, 45-46
- Maisons-Alfort, 2
- malfunctions, 18-19, 123, 130
- management (of organisations), 19, 57, 103, 104
 - management data, 55
 - management decisions, 37
 - managers, 8, 68
 - managing digital archives, 24
 - managing disasters by testing plans, 79
 - man-made disaster, 84
 - manuals, testing, 79-80
 - maps, 11
 - Maria (hurricane), 14
 - markers, 135
 - marks, identifying, 61
 - masking tape, 135
 - masks, 54, 61, 66, 67, 96, 114
 - master list, 41, 63, 69
 - matching challenges, 115
 - material damages, 15
 - material resources, 60
 - materials
- actions for specific materials, 78
- age, 13
- and drafts, 64
- assessing, 60
- availability of, 70
- blotting, 95
- brushing, 67
- consumption by pests, 15
- cultural heritage, 100
- damage assessments, 63
- damaged, 15, 57, 80
- defrosting, 65
- destruction of, 15
- dirty, 66
- for conservation, 65
- form and style of, 13
- fragility of, 13-14
- freeze-drying, 41, 65
- in exhibitions, 23
- in salvage plans, 56
- most vulnerable, 56
- mould-infested, 24, 67
- moving, 53
- of records, 128
- protecting undamaged, 56
- removing in disasters, 17
- salvageable, 55, 56
- storing in water, 60
- test, 80
- treating, 60, 63-66
- type of, 115
- undamaged, 53, 78, 144
- unorthodox housing, 115
- wet, 56
- measures, to be taken, 55, 57
- media, 16, 29, 62
 - damage scenarios, 39
 - drying, 65
 - in holdings, 41
 - influence of, 71
- medical advice, 67, 95
- medical teams and services, 31, 45, 49, 83
- medium, 37, 55, 57, 62, 84
- meetings, 32, 70
- melting, 65
- memoranda of understanding, 32
- memorial stones, 11
- memory and identify, 10
- memory institutions, 11
- Memory of the World Register, 11, 13
- messages, 50, 96
- messenger services, 44
- metadata, 24, 60, 70, 83, 107
- metal cabinets, 22
- methodology, Significance 2.0, 36
- Mexico, 14
- microfilming, 115
- microform, 65
- migration, 107-108
- military, 31, 102
- minutes, of operations, 69
- mission-critical operations, 104, 105, 107
- mitigation, 1, 16-24, 73, 122
 - scenarios, 142
 - defined, 21, 84
 - first steps, 16
 - improving, 59
 - of disasters, 71
 - phase, 1, 7
 - resources on, 89
- mobile devices, 72
- mobile phones, 44, 45, 95, 97
 - charging, 96
- mobile shelving, 23
- modern paper, 66
- moisture, 65, 84, 114
- moisture content, 66
- moisture meter (for books), 136
- mold, *see* mould
- monitoring, 64
 - by team, 68-69
 - for pests, 84
 - of conservation rooms, 113
 - of EMDP, 38
 - of environments, 61, 62, 78, 144
 - of humidity, 23, 66
 - of moisture content, 66
 - of mood, 58
 - of storage environments, 99
 - of temperature, 65, 68
- monuments, 14
- moods, 58
- mops and mopping, 18, 95, 96, 137
- morale, 58
- Morocco, 14
- motion-picture film, 65
- mould, 14-16, 18, 23-24, 41, 62, 63, 66, 67, 84, 110, 113-115
- movement form, 60, 141
- moving archives, 25, 42, 85
- multi-site disasters, 51
- municipal archives, 9
- museum salvage consultants, 41
- museums, 9, 31
- mutual support networks, *see* support networks
- Mylar®, 136

- name tags/badges, 96
names, in contact lists, 76
National and University Library
of Bosnia and Herzegovina,
100, 101
National Archives of the United
States, 100
National Coalition for Arts
(USA), 31, 32
National Endowment for the
Humanities (NEH), 113
national strategies, 100
natural disasters, 18, 19, 25, 39,
84, 122, 130
need to know (principle), 75
needs
 of archives, 77
 of people, 83
negative outcomes, 39
negatives, 65
NEH, *see* National Endowment
for the Humanities (NEH)
nesting materials, 15
network access, 17, 44
network disaster plans, 32
network outages, 19
networks, 31, 32, 99, *see also*
 cultural placekeeping
 networks; disaster recovery
 networks; support networks
New Orleans, 110, 111
newspapers, 99, 114
Nicaragua, 14
no-go areas, 80
normalcy, 68
North-East Document
 Conservation Center, 72
notepads, 96, 135
notes, 69, 96
notifications, 50-51, 76, 77, 143
nozzles, 67
nuclear bombs, 19
nylon monofilament fishing line,
136
OAIS, *see* Open Archival
Information System
observation, 110
obsolescence, 15, 19
obstacles to access, 18
offers of help, 54
office supplies, 44, 96
offices, 43, 57
official records, 127
off-site operations, 43-44, 54, 57,
60
off-site storage, 108
Old Bridge (Mostar), 100
online disaster planning tool, 72
Open Archival Information
System (OAIS), 24
operating procedures, 62, 108
operating standards (UCPM), 32-
33
operations
 improving, 59
 mission-critical, 104, 105, 107
 off-site, 43-44, 57
 resumption, 59
operations centre, 52-54, 57, 60,
96, 107
checklists, 43-44
defined, 83
temporary, 52-53, 144
staffing, 45
options, for prevention and
mitigation, 21, 22-24
order of actions, 49
organisation charts, 106
organisations, 9, 27, 33-34, 39
originals, 106, 107
Ottoman period, 100
outages, of power, 96
outbreaks, of mould, 63
outcomes, 39-40, 71
outer shells, 63
out-of-hours contacts, 52
out-of-hours testing, 80
outreach records, 105
overalls, 54, 96, 135
ownership, evidencing, 76
ownership, of records, 127, 128
Pacific Islands, 28
packaging, 55, 64, 95
 after damage, 61
 archives-quality, 44, 95
 boxes, 20
 damage scenarios, 39
 labelling, 65
 of archival items, 95, 96
 transferring to labels, 61
packaging materials, 97
packaging types, 16, 62
packing crates and lids, 96
packing damaged archives, 60
packing items, 63, 66, 85, 144
pads, 18
paintbrush, 66
paints, 23, 68
pallets, 23, 41, 137
palm leaves, 11
pamphlets, 64
pandemics, 19
paper, 11, 13, 102
 blotting, 64, 136
damaged, 20
drying, 64
freezing, 31, 41
glossy, 64
ruled, 136
newsprint, 136
quality, 102
waterlogged, 31, 61
waxed, 136
weight of, 61, 66
wet, 16
paper archives, and fire damage,
67
paper clips, 64, 96, 114
paper conservation, 63
paper conservators, 55
paper documents, 70, 114
paper records, 66, 107
paper towels, 64, 135
paper trails, 38
papers, handing, 64
PARBICA, 9, 34, 37, 48, 127
 Identifying Significant
 Records in Archival
 Holdings, 34, 37
Recordkeeping for Good
Governance Toolkit, 34, 37,
48
parchment, 11, 65
parent organisations, 33
partners, 29, 74
password protection, 19, 22, 75
PDF (Portable Document
Format), 107
pegs, 64, 96
pens and pencils, 18, 41, 96, 135,
136
performance assessments, 80, 145
permanent ink, 111
permanent storage, 66
personal data, 22, 38, 53, 57, 63
personnel, 57, 61, 78, 80
pest control, 45, 57
pests, 14, 15, 84
PET film, 136
phases, documenting, 68-69
phone numbers, 76
phones, charging, 96
photographic materials, 11, 13
photographs, 11, 64, 65, 82
 drying, 66
 of holdings, 55, 57
 of operations, 69
 of storage areas, 55
 wet, 29
physical media, 16, 117
physical security, 17, 75

- pinch points, 69
pins, 96, 135
pipes, 18, 23
pitched roofs, 23
place of creation, 13
planks, 99
planning, 25, 68, 84
and significance assessments, 37
effective, 122
of evacuations, 102
process, 71
relationship to scenarios, 39-42
- Planning for Emergencies: A Procedures Manual, 27
- planning phases, funding, 38
- plans, 11, 16
activating, 52, 77
as-built, 42
authorisations, 57
building, 17, 42
coherent, 98
drafting, 71
hard-copy, 75
maintaining, 71
reviewing, 69
testing, 79-80
- plaques, 11
- plastic bags, 18, 61, 96, 114, 135, 136
plastic sheeting, 18, 60, 61, 95, 96, 113, 135
plastic string, 97
plastic trays, 114
plumbers, 45, 46, 56
police, 31, 45, 49, 50, 83
policies and procedures, 7, 59, 75
policy statement, 142
political factors, 18
political value, 34, 85
pollution, 20
polyester film, 136
polyethylene sheeting, 136
polythene sheeting, 23
portable devices, 19
- Portable Document Format (PDF), 107
- portable generators, 137
- portable printers, 96
- positive action, 59
- post-disaster management, 59, 84
- post-disaster reviews, 51
- Post-it® notes, 114
- potable water, 31
- potential impacts, lessening, 21
- power outages, 96
- power packs, 96
- practical action, 84
- precautionary measures, 25, 84
- precautions, taking, 50
- premises
acceptability, 79
changes to, 80
criteria for, 102
evacuating, 144
for team, 57
funding repairs, 39
protecting, 21
rebuilding, 78
regaining access, 77
ventilation, 68
- preparation phase, 57, 63
- preparation strategies, 71
- preparations, 31
- preparedness, 25-47, 49, 74-76
and response plans, 26
defined, 25, 84
improving, 59
phase, 1, 7, 54, 62, 71
resources on, 89-90
- preparedness checklist, 142
- preservation and protection need assessments, 29
- preservation function, 3, 26
- preservation management, 4, 15, 83, 84
- preservation of documentary heritage, 10
- preservation of records, 8
- preserving, 82
- pressure, 65
- pressure (air), 84
- preventative measures, 71, 73, 98, 142
- prevention, 1, 16-24
and mitigation, 19-24
defined, 20, 84
first steps, 16
of adverse consequences, 122
of disasters, 71
resources on, 89
- primary source material, 8
- printers, 18, 44, 65, 96
- prints, photographic, 65
- priorities and prioritisation, 6, 71, 98, 127
during disasters, 5
of salvage and recovery, 34, 37-38
pre-agreed, 59
setting, 56, 64, 67, 85
- priority code, 62
- priority holdings, 57
- probabilities, 21
- problems in document recovery, 114-115
- procedures, 71, 72
changes in, 80
emergency, 42
for damage assessments, 78
for emergencies, 48-49
for essential functions, 76
for vital records protection programmes, 108
- handbook for, 72
- laminating, 72
- protection, 57
- removal, 57, 108
- retrieval of items, 62-63
- shared, 32-33
- supporting, 71
- updating, 70
- processes
briefing on, 63
post-disaster, 51
for clearing, 61
for treating flooded records, 113
- processing areas
evaluating damages, 56
furnishing, 97
- processing function, 26
- processing
of archives, 16
of items before freezing, 111
- programs, 83
- project management, 59
- project team, 71
- property deeds, 105
- protection, 34
against obstacles, 96
baseline, 106
from attack, 102
from poor air quality, 96
from water, 97
items for, 43
methods, 105, 108
of archival holdings, 59
of clothing, 96
of feet, 95
of life and wellbeing, 21, 50
of skin, 96
of storage spaces, 16-17
of undamaged material, 49, 53
of unretrieved items, 61
of vital records, 106-107
procedures, 103
standards, 105
strategies, 103
- protective clothing, 41, 54, 63, 76, 135

- protective containers, 53
protective equipment, 54
protective gloves, 96
protocols, 75, 77, 79
provenance, 36, 127-129
psychological reaction to disasters, 6
public areas, 56
public morale, 100
publications, 8, 105
Puebla (Mexico), 70
pumps, 53
quality control, 21
quarantine facilities, 57
quarantining materials, 24
questions, for disaster reviews, 69
racks, 44, 60, 64, 96
rags, 64
railways, 14
rain, 18
rare books, 110
rarity, 12, 36, 129
ratios, protection to cost, 107
reactions, 71
reading rooms, 22, 39, 80
readings, of water content, 68
re-boxing, 114
rebuilding, 39, 68
recalling vital records, 108
receipts, 108
receptacles, waterproof, 43
recommendations, 55, 129
reconstituting vital records, 108
record
concept in Francophone and Hispanic traditions, 8
creation, 102, 128
defined, 84
details, 14
groups, 56
history, 127
value of, 129
record relationships, 9
record security, 102
record series, 105
record surveys, 104
record systems, 107
recorded information, 84
recorders (personnel), 45
recording equipment, 99
recordings, 6, 95
Recordkeeping for Good Governance Toolkit (PARBICA), 9, 34, 37, 48, 127
records
active and inactive, 104
and water marks, 115
assessing significance, 36
assessment method, 127
building, 106
business, 105
categories of vital records, 105-106, 107
classified, 22
contacts and agreements, 105
context, 36
corporate, 106
created by organisations, 12
creation of, 8
describing, 128
dried, 114
environmental, 62
financial, 105
flooded, 113
grouping, 100
history, 36
HR, 105
impact of IT upgrades, 107-108
importance of, 36
insurance, 105
legal, 105
mission-critical, 105
of significance statements, 36
of training, 74
old digital, 107
percentage selected as
archives, 8
pre-1840, 66
preservation from capture, 100
property ownership, 105
protecting, 34
provenance, 36
re-boxing, 114
recycling of, 102
re-housing, 114
safety of, 33, 34
saving, 63
selecting, 105
separating, 64
stains and smells, 115
storage of, 9
text-based, 107
value of, 34
vital record protection
strategy, 75
vulnerability of, 102
wet, 58
records management
of vital records, 34
practice, 81, 98
tools, 104
records managers, 103, 105
records of actions, 11
records storage facility, 106
records systems, 106
recovery actions, 27, 48
recovery consultant, 68
recovery efforts, 2, 98
recovery equipment, 95-97
recovery expectations, 80
recovery experts, 31
recovery needs, 68, 113
recovery operations, in secure areas, 60
recovery phase, 1, 5, 7, 59-70
recovery plan, 4, 17, 59, 60, 61, 83
recovery procedures, 113
recovery process, 70
recovery standards, 80
recovery steps, 80
recovery teams, 18
recovery work, tracking, 75
recovery, 48, 78-79, 84
and role of vital records, 104
decision-making, 55
defined, 59, 84
documenting, 82
full, 68
funding support, 38-39
improving, 59
of high-priority items, 61
off-site operations, 43-44
organisational, 6
planning for, 54-55
problems, 114-115
resources on, 90
short-term, supporting, 48
signs of, 68
success factors, 59
supporting, 59, 98
tools for, 43
Red Cross, 102
re-entry, 53, 54
reference aids, 72
reference books, 128
reference labels, 95
reference material, 127
references, 61, 129
reflection, 59
regional authorities, 50
regional hubs, 33
register
of significant archives, 37-38
of significant statements, 36
registers, 127
rehabilitation, 2, 53, 55, 59, 67-68, 78-79
defined, 84
of storage areas, 145
prioritising, 56, 57

- re-housing, 70, 114
- reinforcing, 102
- related records, 128
- relationship building, 29, 81
- relationships, 41
 - with first responders, 81
 - with records, 128
- relative humidity, 66
 - measuring, 95
- reliability, of archives, 15
- religious archives, 60
- removal of damaged archives, 60
- renovation, 59, 67, 84
 - of furniture, 55
 - of premises, 145
 - priorities, 57
 - prioritising, 56
 - requirements, 55
- repackaging needs, 55
- repaired archives, 60
- repairing damage, 4
- repairs, 59
 - costs, 39
 - justifying, 55
 - measures to be taken, 57
 - of records, 128
 - recording needs, 62
 - to buildings, 99
- report, damage assessment, 55
- reporting a disaster, 50, 51
- reporting, 76, 143
- reports, from journals, 69
- repositories
 - defined, 9, 84
 - kinds of, 9
 - locations, 18
- representativeness, 36, 129
- reputation, 56
- requirements assessments, 130
- requirements list, 41
- requirements
 - defining, 71
 - for off-site centres, 44
 - health and safety, 95
 - rehabilitation, 55
 - renovation, 55
 - specifying, 68
- rescue prioritisation, 37
- research functions, 35
- research potential, 36, 129
- research rooms, 22
- research sources, 129
- research step, 127
- researchers, 9, 17, 22, 52, 57
 - receiving off-site, 44
- reshelving, 70
- resource allocation
 - in significance assessments, 35
 - pre-agreed, 30
- resource management, 32
- resource planning, 6
- resource scarcity, 17
- resources, 60, 78
 - importance of, 19
 - minimal, 98
 - on EMDP, 86-88
- respiratory illnesses, 67
- response activities, directing, 27
- response and recovery,
 - cultural responses, 28
 - differences between, 48
- response and recovery plans, 19
 - deploying, 31
- response identification, 130
- response measures, 48
- response phase, 1, 5, 7, 56, 60, 85, 110
 - conclusion, 48
- response phases, 69
- response plan, 71
 - level of detail, 40
- response preparation, 21
- response steps, 80
- response team, 78
 - alerting, 57
 - calling in, 49
 - defined, 84
 - deploying, 52, 77, 144
 - leader, 78
- response times, 80
- response work, tracking, 75
- response, 76-78
 - aim of, 48
 - defined, 48, 85
 - documenting, 82
 - elements, 48
 - improving, 59
 - resources on, 90
- responsibilities
 - for revising plans, 73
 - in disasters, 7
 - of individuals, 27
 - of volunteers, 28
- rest areas, 60
- rest breaks, 96
- restricted collections, 28
- retention needs, 22
- retention schedules, 104
- retrieval
 - defined, 85
 - laminating procedures, 72
 - of damaged material, 62-63, 78, 144
 - of items, 61
- of vital records, 108
- review findings, 70
- review forms, 43
- review schedules, 46
- review step, 127
- reviewing, of vital records, 109
- reviews, daily, 69
- reviews, of disasters, 69
- reviews, of salvage activity, 69
- rights, 85
- rinsing items, 64, 66
- risk assessments, 16-18, 21, 32, 39, 71, 104, 143
 - cycle, 73
 - exercises, 75
 - work, 31
- risk, 21, 83, 85
 - assessing, 16
 - calculating, 20
 - documenting, 98
 - eliminating, 71, 84
 - health and safety, 95
 - human error, 6
 - identifying, 16, 19, 20, 118, 119
 - levels, 21
 - managing, 2, 4, 16, 85
 - mitigation, 16-24, 99
 - paralysis, 3
 - potential, 18-19
 - preventing or mitigating, 69
 - ratings, 20
 - reducing, 21, 73, 98
 - severity, 19
 - types of, 18-19
- Risk Calculation Worksheets, 20, 145
- Risk Evaluation and Planning Program, 20
- rivers, 18
- rodents, 18, 24, 84
- role-playing, 80
- roles and responsibilities, 142
- rolling carts, *see* trolleys
- rolling containers, 42-43
- roofs, 17, 18, 23, 46, 53, 98
- room temperature, 85
- rooms, 23
- rope, 136
- rubber gloves, 54, 97
- rubbish, 62
- rubbish bins, 41, 135
- rules, for European member states, 32-33
- Russell, Roslyn, 36
- rust stains, 114
- safe assembly points, 49
- safe, fireproof, 37, 75, 106

- safekeepers, 28
safety, 61, 143
safety gear, 61
safety measures, 19, 124
safety pins, 65
salt water, 67
salvage activity, 69, 82
salvage and recovery work, 6
salvage areas, 57
salvage costs, 39
salvage decisions, 55
salvage measures, 57
salvage operations, 43
salvage operations, personnel, 57
salvage phase, 52
salvage plans, 56-58, 78, 85, 144
salvage priorities, 21, 34, 57
salvage priority code, 62
salvage situations, magnitude of, 115
salvage supplies, 46
salvage team efforts, 110-112
salvage treatments, 82
salvage work, timing, 112
salvage
and funding, 38, 39
and priority codes, 62
and role of vital records, 104
considerations, 56
decision-making, 55, 62
defined, 85
from affected areas, 59
justifying, 55
laminating procedures, 72
of bagged books, 111
of collections, 6
of damaged material, 62-63, 78, 144
phase, 5
planning for, 54-55
plans, 2, 4
prioritisation, 37
protecting material, 78
sorting items, 62
successful, 56
salvageable records, 114
salvaged items, 115
salvaging holdings in fires, 22
salvaging, resources on, 91
sandbags, 102
Sarajevo, 100, 101
scenario planning, 39-42
scenarios, 21
and human safety, 76
anticipated, 52
co-dependant, 40
for disaster response teams, 25
for handling specific materials, 78
for mitigation actions, 143
for responses to threats, 143
for terminating cause of disaster, 143
for treating damaged material, 144
halting disasters, 76
impact, 71
in the disaster plan, 73
multi-site, 51
off-site, 43
potential damage, 39, 40
response procedures, 75
school records, 115
scientific criteria, 129
scientific potential, and significance, 36
scientific value, 34, 85
scissors, 18, 97, 135, 136
scope, articulating, 71
scratching, 67
screens, 64
sea water, 67
search and rescue, 48
second responders, 49
secure premises, 49, 53, 60, 74, 75
securing items, 61
security alarms, 22
security breach, 75
security clearances, 106
security inspections, 22
security measures, 17, 19, 124
security procedures, 19, 22, 29, 75, 108, 143
security standards, 22
security systems, 18
security, 17
contacting, 45
of computers, 75
of information, 6, 38
of sites, 6
physical, 75
prevention and mitigation measures, 22
reviewing, 120
selection of records, 8, 105
self-adhesive dots, 136
semi-current record storage, 102
senior management, 103, 104
sensitivity
of information, 38
to hazards, 19
separating pages, 114-115
servers, 11, 19, 24, 72, 73
service suppliers, 26, 57, 71, 80, 82, 97
services
and supplies, 26-27
damage to, 55
for off-site operations, 43, 44
freeze-drying, 65
ongoing, 45-46
shut-off points, 42
skeleton, 59
vacuum drying, 65
severity ratings, 20, 122
severity, 19, 21
planning for, 40
sheeting, 95, 136
plastic, 60, 61, 64, 96
polythene, 23
sheets, interleaving, 95
shelter, 53
shelves, 20, 53, 55, 61, 85, 97
for off-site operations, 44
shelving bays, 23
shelving bays, protecting, 96
shelving, 16, 23, 39, 41, 53, 68, 99
movement in disasters, 40, 41
shock factors, 50
shoes, 54, 61, 95
short term records, 8
shovels, 137
shredding, 22
shutters, 23
signage, removing, 102
significance
and damage assessments, 57
assessing, 36, 37, 129
criteria for importance, 12
degrees of, 36, 129
in documentary heritage, 12
resources on accessing, 91
variations in, 13
Significance 2.0 methodology, 36
significance assessment method, 127-129, 145
significance assessment, 34-35, 39
significance of collections, 34
significance statements, 36, 37
significant archives, 34-38, 37, 56, 74, 75, 100, 142
assessing, 36
defining, 35
defined, 34, 85
location of, 42
moving, 50
recording, 62
significant collections, 29
location of, 42
signs of recovery, 68

- silver nitrate film, 16
single records, assessing, 127-129
sites, hot and cold, 43
sizes, of archives documented, 37
skeleton services, 59
skilled people, 41
skills, 103
 appraising, 8
 of general disaster recovery
 companies, 41
 of team leaders, 29
 ways to increase, 30
skin, 67, 96
skins, 65
skips, 41
skylights, 22, 102
sleeping arrangements, 30
slides, 65
sludge, 113
smells, 115
smoke damage, 15
smoke detectors, 22
smoke, 61, 96
smoking, 22, 62
snow, 18
social criteria, and significance, 36
social factors, 18
social meaning, and significance, 36
social memory, 9
social value, 13, 34, 85, 128
soft brushes, 97
soft cloths, 136
soft cloths, 97
software, 15, 19, 24, 34, 39, 107
 specialised, 75
 weather apps, 99
soiled material, 66
solutions, 98
solutions, creative, 98
South Africa, 14
space shuttle, 67
space, using, 96
spare batteries, 135
specialised work, 59
species monitoring, 24
specifications for temporary operations centre, 145
specifications
 development, 107
 for renovations, 57
spending approvals, 38
spines, 64
spiritual archives, 60
spiritual criteria, and significance, 36
spiritual meaning, and significance, 36
spiritual value, 34, 85
sponges, 97, 135, 136
spores, 24, 67
St. Vincent, 14
stabilising the environment, 53, 59, 77, 85, 144
stackable crates, 96
staff room, 58, 60
staff, 17, 52, 60, 71, 82, 84, 109
 alerting, 42
 alternate contacts, 52
 and health and safety, 115
 and volunteers, 28
 awareness, 81, 98
 consulting, 72
 competence, 29
 confidence, 6
 contact lists, 44, 45, 76, 143
 contacting, 44
 documenting 69
 drills, 22
 emergency contact
 information, 45
 expertise, 29
 in disaster response teams, 25, 26, 27
 injuries, 61
 knowledge of procedures, 48-49
 mobilisation, 57
 needs met, 69
 numbers, 102
 preparation, 71
 protecting, 61
 psychological impact, 111
 records, 105
 recovering, 68
 trained for off-site operations, 45
 training, 6, 25, 50, 99
 untrained, 102
staining, of pages, 114
stains, 115
stains, rust, 114
stakeholders, 3, 8, 26-27, 29, 30, 32, 36, 57, 59, 68, 71, 72, 76, 82, 97, 98
standard setting, 80
standing water, 50, 53, 97, 113
staples, 114
Star Most, 100, 101
State Emergency Services, 45
statement of significance, 57, 128, 129; *see also* significance
assessments
stationery supplies, 44, 96
stations, 113
 setting up, 60
stealing, 53
steel frames, 102
steel plates, 102
steel wool, extra fine, 136
steering committees, 27, 31
steering groups, 32
stickers, 115
sticky notes, 114
stomach aches, 95
storage, 2, 16, 23, 57
 of archival items, 102
 of records, 9
 off-site, 43
 permanent, 66
 reinforced, 23
storage areas, 16, 17, 22, 24, 55, 60, 68, 84
 clearing, 60-62, 78, 144
 contents, 74, 142
 defined, 9
 emergency locations, 42
 evaluating damages, 56
 inspecting, 22
 renovating, 61
 returning to, 68
 monitoring, 62
 photographing, 55
 rehabilitating, 67-68, 78-79, 145
 removing material, 63
 securing, 44
 setting up, 60
 temporary locations, 42
storage environment, 99
storage facilities, 57, 64
storage media, 105
storage repositories, 59, 102
 accepting, 79
 access to, 56
 impacts on, 21
 rehabilitation, 57
 stabilising, 53
storage space, 41
 assessing, 55
 damage assessment form, 138
 threats to archives, 16-17
stories, evidence of, 12
storms, 50
stoves, 19
strategies, for preparation, 71
strategy, and vital records, 73, 75, 107
strength, of wet material, 63
string, 97, 135
strongroom, 84

- structural damage, 62
 - repairing, 46
- structures, soundness of, 16, 17
- student records, 114, 115
- subject matter constraints, 11
- Sudan, 14
- sunlight, 67
- supervision, 19, 125
- supplier contracts, 105
- suppliers, in disaster response
 - teams, 26
- supplies, 25, 54, 57, 60, 96
 - availability, 60
 - essential, 113-114
 - for building maintenance, 137
 - for off-site operations, 43, 44
 - for temporary operations
 - centres, 53
 - for treating damaged archives, 57
- housing, 97
- in disasters, 31
- maintained, 38
- of equipment 18
- ongoing, 45-46
- procuring, 41
- specialised, 136
- supplies review form, 43
- supply boxes
 - contents of, 135
 - location of, 42
- supply cupboards, 18
- supply on demand
 - arrangements, 26
- supply sources, 71
- supply storage, 113
- support, 82
 - in recovery, 59
- support networks, 2, 30-31, 43, 49, 54, 56, 74, 84, 100, 142
 - and disaster recovery, 31-32
 - and disaster plans, 57
 - contacting, 54
 - consulting, 72
 - contact list, 76, 143
 - establishing, 32
 - notifying, 77, 144
 - resources on, 92
- support personnel, 57
- support provision, 32
- support services, 27
- support staff, 27
- surfaces, cleaning, 95
- surge protectors, 22
- surrogacy programmes, 29
- surrogate records, 76
- surrogates, 21
- surveys, 104
- survival, of archives, 84
- surviving, 68
- sustainability, 17, 68
- swipe cards, 17
- switches, 18
- synthetic rubber eraser, 136
- Syria, 14
- Table Mountain fire, 14
- tables, 60
 - and wind tunnels, 64
- tablets, 72
- tagging, for transfers, 108
- tags, of items, 64
- tape, 18, 61, 65, 97
 - dispenser, 136
 - duct, 136
 - filament, 137
 - linen, 95
- tapes, 22, 67
- taps, 23, 51
- tarpaulin, 98
- task lists, 21
- tasks
 - after regained access, 77
 - and disaster plans, 27
 - anticipated, 77
 - for volunteers, 28
 - in recovery phase, 60
- TDR, *see* Trusted Digital repository
- team briefings, 77, 144
- team leaders, 45
 - skills, 29
- team members, 76, 142
- team skills and expertise
 - checklist, 145
- team spirit, 28
- teams, 54, 95
- techniques, for conservation, 115
- technological developments, 24
- technology, 18, 19, 60, 68
- technology experts, 63
- technology threats
 - identifying, 126
 - responding to, 130
- telephone tree, *see* calling tree
- telephones or mobile phones, 97
- telephony, 44, 45, 52, 95
- temperature, 23, 62, 67, 85
 - levels, 79
 - measuring, 95
 - monitoring, 65
 - of conservation rooms, 113
 - of rehabilitated areas, 68
 - of storage environments, 99
 - recording, 95
- for wet archives, 64
- of rooms, 58, 113
- protection against, 97
- templates,
 - for disaster plans, 90
 - for the disaster manual, 72
- temporary headquarters, 54
- temporary operations base, 96
- temporary operations centre, 54, 57, 60, 83, 144
- temporary operations centres, 77
- temporary operations, 52-53
- temporary storage, 2, 65, 66
 - monitoring, 78
- terminating cause of disaster, 76
 - scenarios, 143
- termination of disaster mode, 79, 145
- terminology, 82-85
- terms of reference, for teams, 25, 27
- terrorism, 18, 19
- test assessments, 79
- test materials, 80
- test parameters, 79
- test washing, 66
- testing, 32, 79-80
- text, salvaging, 67
- thawing, of frozen items, 114
- theft, 15, 19, 53
- themes, 127
- thermo-hygrographs, 44, 95
- thermometers, 44, 95, 135
- thin wire, 97
- third responders, 49
- threat identification, 16, 20, 122
 - and severity rating tables, 145
- threat warnings, 31
- threats
 - to archives, 18
 - to buildings, 18
 - identifying, 19
 - removing, 84
- ties, cotton, 61
- Timbuktu library, 14
- time constraints, 62
- timeline, 5, 48, 49, 69
 - of mould growth, 63
- toilet facilities, for off-site
 - operations, 44
- toolkit, Recordkeeping for Good Governance Toolkit (PARBICA), 34
- tools, 43, 67
- top floors, 23
- torches, *see* flashlights
- tornado zones, 18

- tornadoes, 18, 19
toughened glass, 22
towels, paper, 137
toxic material, 66
training, 6, 25, 30, 32, 41, 69, 80,
 84, 125, 142
 and tasking, 28
 in disaster planning, 76
 in fire safety, 99
 in security procedures, 22
 in the disaster plan, 84
 of disaster response team, 25,
 73, 74
 of staff, 19, 38
 of volunteers, 27-28, 99
prioritising actions, 37
retraining, 70
via testing, 79
transfer forms, 108
transfer, of records off-site, 108
transparency, 9, 12
 and significance assessments,
 36
transportation, 102, 108
transporting items, 96
transporting, multiple items, 97
trash can, 135
treated archives, 60
treated items, 79
 packaging, 95
treatment
 and water containers, 60
 documenting, 60, 113
 in the field, 113
 of audio-visual materials, 67
 of archival material, 59
 of bagged items, 111
 of damaged materials,
 resources on, 91
 of digital material, 67
 of fire-damaged material, 67
 of mouldy material, 67
 of soiled and dirty material, 66
 of wet materials, 63-66
procedures, 72
protecting materials, 78
storing items, 97
types, 57
treatment areas, 144
treatment centre, 85
treatment facilities, 78
treatment form, 141
treatment needs, recording, 62
trestle tables, 44, 97
triage, 62
trial-and-error, 115
trolleys, 18, 39, 55, 97
trucks, 18
Trusted Digital Repository
 (TDR), 24
tsunami, 14
tunnelling, 14
Turkey, 14
two-way radio handsets, 135
tying tape, 114
UCPM, *see* Civil Protection
 Mechanism
unauthorised entry, 53
undamaged materials, 53, 61
 moving, 144
 protecting, 56, 78, 96, 144
understanding the past, 12
UNESCO, 10, 11, 12, 13, 70
United Kingdom, 70
Universal Declaration on
 Archives, 9
unorthodox methods, 115
unrest, resources on times of, 92
unsalvageable items, 66
USB drives, 11, 22
usernames, 19, 22
utilities and services, 42, 43
utility knife, 135, 137
vaccinations, 110
vacuum chamber, 85
vacuum cleaners, 44, 95, 97, 137
vacuum drying, 65
 defined, 85
vacuuming, 67, 114
vacuums, 113
value
 aesthetic, 13
 assigned to archives and
 holdings, 56
 handling archives of
 particular, 60
 linguistic, 13
 of archives institutions, 14
 of archives, 98, 85
 of collection, 128
 of record, 129
 of significant archives, 34
 stylistic, 13
vandalism, 15, 19, 84
vehicles, 23
vendors, 26, 31, 49, 54, 57, 60
 contact list, 44, 45-46, 143
ventilation fans, 47, 53
ventilation, 53, 68
vermin, 95
versioning, of the disaster
 manual, 72
vests, 61
vigilance, 20, 122
Vijećnica (City Hall), 100
visibility, of archives institutions,
 14
visitors, 52
vital digital records, protecting,
 107
vital functions, 33-34, 59, 85, 106
vital items, 61
vital record inventory, 105
vital record protection strategy,
 75
vital record storage, 108
vital records, 33-34, 38, 56, 74, 75,
 103-109, 142
 accessing, 143
 auditing, 109
 categories, 105-106, 107
 copies of, 34
 defined, 33, 85
 destruction, 108
 expired, 108
 for off-site operations, 44
 identifying, 104
 instructions to access, 76
 location of, 42
 managing, 38
 percentage, 106
 protecting, 73, 106-107
 protection of, 2, 3
 reconstituting, 104
 recording, 62
 resources on, 93
 returning, 104
 storing, 106
vital records facilities, 22
vital records inventory, 107-109
vital records management, 34
 and risk, 104
 resources on, 93
vital records programme, 76, 105
 aims, 103-104
 protection programme, 108
volcanos, 14, 18
volume format, and drying
 processes, 63
volumes, 61, 65
volunteers, 2, 5, 17, 52, 59, 60, 71,
 78, 82, 84, 98, 99, 109
 and cultures, 28
 and emergency procedures, 42
 as assets, 115
 as part of the team, 27
 contact details, 76, 143
 expertise, 56
 in disaster response teams, 25,
 26
 mobilisation, 57

- volunteers (cont.)*
needs met, 69
psychological impact, 111
recruiting, 57, 114
resources on, 90
spontaneous, 30
tasks and responsibilities, 28
training, 6, 25, 27-28, 32
training records, 74
use for floor plans, 42
vulnerabilities, 32
 of archives, 46
 of buildings, 75
 of holdings, 71
vulnerability of documentary heritage, 13-14
wagon, 43
walls, 55
walls, condition of, 16
walls, load-bearing, 102
war and armed conflict, 14, 19, 25, 100-102
 and the Hague Convention, 102
 resources in times of, 92
warm clothing, 97
warnings, 48, 50, 76, 143
washing paper, 115
water, 53, 61
 and archives, 23
 and fire extinguishers, 23
 as storage facilities, 64
 baths, 66
 boiling point, 65
 clean, for off-site operations, 44
 cold, soaking in, 65
 contacting, 45
 dirty, 67
 dripping or running, 95
 harmful, 97
 muddy/dirty, 40, 41
 prolonged immersion, 97
 protecting against, 96
 shut-off points, 42
 soaking up, 95, 97
 standing, 97
 water absorption, 67, 114
 water bottles, 62
 water containers, 60
 water content readings, 68
 water damage, 15, 19, 84
 and audio-visual material, 65
 water hoses, 23, 137
 water ingress, 62, 96
 water marks, 115
 water moisture meters, 66, 135
 water penetration, 23
 water pipes, 16, 23
 water pumps, 41
 water reservoirs, 64
 water source, 137
 water treatment, 66
 waterlogged paper, 31, 61
 waterlogging, 65
 waterproof markers, 135
 water-soaked documents, 85
 wear-and-tear, 84
 weather apps, 99
 weather warnings, 76
 websites, 128
 weight, 66
 weights, 137
 wet and dry vacuum cleaners, 97, 137
 wet archive drying facilities, 41
 wet archives, 67
 wet material, 63-66, 82
wet pages, 114
wet paper, 16, 41, 64
wet records, 58, 113
wheelie bin, 43
wheels, 135
white-out, 114
wicks, 64
wider community, 30
wildfires, 14
wind tunnels, 44, 60, 64, 95
windows, 16, 17, 19, 22, 23, 40, 41, 50, 53, 102
winds, 18
Winkworth, Kylie, 36
wipes, disinfecting, 135
wiring, 18, 22
wood blocks, 11
work notes, 110-112

“We cannot stop natural disasters but we can arm ourselves with knowledge: so many lives wouldn't have to be lost if there was enough disaster preparedness.” Petra Nemcova

“Better to have, and not need, than to need, and not have.” Franz Kafka

“Knowledge is the key to survival, the real beauty of that is that it doesn't weigh anything.” Ray Mears

“There's no harm in hoping for the best as long as you're prepared for the worst.” Stephen King

