

***Example business continuity strategy***

*(Note: this is provided in the form of parts of the business continuity strategy report – many sections are complete, but some are shown with headings only.)*

**1. Personnel**

**1.1 Introduction**

Personnel is a key issue in the successful restoration of the Boulton Museum business functions. There are three separate personnel-related strategies, each of which needs to be addressed:

- staff availability in the event of widespread failure of public transport through a major incident or industrial action, or adverse weather conditions,
- resolving staff shortages in the event of a disaster (e.g. following a fire or an explosion), widespread illness (e.g. an influenza epidemic), mass resignation or industrial action,
- providing staff welfare in the aftermath of a disaster.

**1.2 Transport failure**

*The requirement*

Personnel may be unable to reach Boulton Museum locations or get to work due to mass disruptions to the public transport system for London (e.g. due to industrial action) or adverse weather conditions. The maximum requirements for numbers of personnel in the event of a disaster are:

Timescale	No. required to be in the office		No. who could work at home		TOTAL	
	period	cumulative	period <sup>1</sup>	cumulative	period	cumulative
½ day						
1 day						
1 week						
2 weeks						
1 month +						

Specific accommodation options are addressed in section 5 below.

*Option 1 - Do nothing*

This option is to have no prior arrangements in place, but to await a problem (e.g. a potential major transport problem in the London area) and then react accordingly.

Advantages - there are no significant advantages with this option other than cost avoidance in not having to put any arrangements in place prior to the event.

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<sup>1</sup> Negative numbers are sometimes shown in this column as it is a cumulative value across multiple business functions. It typically reflects those staff who were previously working at home changing to working in the office on a full or part-time basis.

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Disadvantages - the disadvantages of this option are that it is unlikely to ensure that essential staff can reach their workplace in the event of a disaster, and it is not possible to test this option.

Viability of option - this option is not considered viable.

*Option 2 - Work at home*

This option is for staff to work at home in the event of a disaster. To enable staff to work at home it would be necessary to provide staff with the relevant IT and communications equipment (e.g. laptops, printers (for some) and telephones).

Advantages - the advantages of this option are that it will allow key staff who can work from home on a temporary basis to be readily available for duties despite transport disruptions, and it provides a relatively low cost solution for the availability of some staff (although see disadvantages below).

Disadvantages - the disadvantages of this option are that (1) it will not cover those staff who have to be in the office to perform their functions satisfactorily, (2) there are a number of security issues concerning staff working from home, (3) it will be necessary to provide laptops and printers (for some) to those who need access to desktop facilities and telephone for those who have a high usage, who have no home telephone line or where the home telephone line is used for other purposes (e.g. for someone else in the household to run a business from home) - (new lines), and (4) some staff may not have a suitable home environment within which they can work, due to, for instance, young children at home, unavailability of suitable accommodation within the house where Boulton Museum work can be undertaken, a house being shared with other individuals.

Viability of option

This option is viable for those whose duties and home accommodation are suitable for home working, and where the transport disruption can be predicted (e.g. due to industrial action) and equipment distributed in advance. Where the disruption cannot be predicted, then all staff who could be potentially affected will need to be issued with laptops, (some with) printers and telephones. This option can provide a partial solution to the requirement.

*Option 3 - Walk/bike to work*

This option recognises that some staff live within reasonable distance of the Boulton Museum locations. In the event of a disaster involving the transport infrastructure, these staff may be able to walk or bicycle to work. It is also possible that arrangements may be made with staff who live in close proximity to the Boulton Museum locations for colleagues to stay overnight while the period of disruption lasts.

Advantages - the advantage of this option is that it is a low cost solution which requires minimal formal organisation prior to the event and does not incur any costs in the pre-provision of equipment, telephones, etc.

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Disadvantages - the disadvantages of this option are that (1) its cover is limited to those staff who live in relatively close proximity to the Boulton Museum locations <sup>2</sup>, (2) there may be insufficient staff who live centrally or who are willing to put up colleagues, (3) it potentially places some staff in an invidious situation where they may not wish to offer accommodation to colleagues but where they believe that they are expected to, and (4) it may not address disruption due to adverse weather conditions.

Viability of option

This option is viable for those who live within a reasonable proximity to the Boulton Museum locations and may be considered further as part of a hybrid solution to a disaster involving the transport infrastructure.

*Option 4 - Put up staff in hotels or flats*

This option considers booking hotel accommodation or flats after a disaster on short term lease within easy reach of the museum's location so that key staff who are required to be present at the Boulton Museum locations can stay within reach of their location should the transport system fail.

Advantages - the advantage of this option is that staff so accommodated would be able to gain ready access to the Boulton Museum locations despite any transport disruption.

Disadvantages - the disadvantages of this option are that (1) it is a relatively high cost solution, (2) it would not help those staff who were already 'stranded' at home (e.g. by adverse weather conditions), (3) should there be mass disruptions to the public transport system for London, other organisations would be similarly seeking accommodation and consequently accommodation would be in considerable demand and short supply.

Viability of option

This option is only viable in the event of a predicted transport disruption. It should also be recognised that the Boulton Museum would need to move quickly as other organisations would be similarly seeking accommodation, and consequently any accommodation would be in considerable demand and short supply.

*Option 5 - Pre-arrange bus/taxi collection service*

This option considers the possibility of either arranging coach or taxi collection to ensure that key staff can get to work (either in advance of, or subsequent to, a major transport disruption).

Advantages - the advantage of this option is that it could be used to provide a short term solution to enable key staff to reach the Boulton Museum locations in the event of a major transport disruption.

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<sup>2</sup> Data from the list of key individuals held by Personnel identified xx (out of xxx) people who are normally based at the main location lived within x miles of that location, and xx (out of xx) who are normally based at the storage location lived within x miles of that location. Not all of these individuals might be willing to accommodate other staff.

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Disadvantages - the disadvantages of this option are that (1) the road access into and within London are likely to be seriously congested should there be a major disruption to public transport, (2) adverse weather conditions may prevent any forms of transport from getting through, (3) other organisations have similar arrangements with the 2 taxi companies, and would be placing similar demands on their services.

Viability of option

This option may be able to provide short term cover to meet urgent requirements for a few staff. It is not considered a viable solution to the transport requirements for the majority of key staff in a prolonged disruption or in the event of adverse weather conditions. It should also be recognised that the Boulton Museum would need to move quickly to contract for a pre-arranged service and not wait until problems are forecast – as then other organisations would be similarly seeking such services.

*Option 6 - Camp beds in office/workplace*

This option considers the viability of key staff sleeping in the workplace on camp beds.

Advantages - the advantages of this option are that it is a low cost solution, and staff would be immediately available in the event of an issue requiring their attention.

Disadvantages - the disadvantages of this option are that (1) it is not suitable for higher volumes of staff required for normal working days, (2) it would not help those staff already 'stranded' at home, and (3) it may cause staff disquiet, together with pressures to provide some recompense or pecuniary reward to such individuals.

Viability of option

This option is considered viable (but not preferable) for the limited number of staff who will need to be at the Boulton Museum locations immediately after a disaster. It does not offer a viable solution for the medium to long term requirements for key staff availability.

*Analysis of viable options*

There is no single solution that will meet the business recovery requirements. However a number of the options outlined above can provide part of a hybrid solution to meet the Boulton Museum requirements. The strategy employed for each individual or group will depend upon the need to be physically in the workplace, the point in time after the disaster and the home location of the individuals concerned.

For those who can work from home, and whose presence is not physically required in the workplace, this should be the preferred option should the transport systems be disrupted.

For those who live in relatively close proximity to the Boulton Museum locations and who can get to work without having to use their own or public transport, this should be the preferred solution.

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For those key staff not covered by the above categories, it will be necessary to identify and agree individual solutions. The actual strategy for each will depend upon when that individual is required in the workplace and where that individual lives. Options include:

- contracting taxis from the recognised taxi suppliers,
- contracting taxis from a taxi operator local to the key individual's home,
- the use of an individual's own transport (car, motor bike, etc.) to get as near to the relevant museum location central London as possible, recognising that there may be road chaos anyway. Under these circumstances it may be necessary for staff to consider staggering their journeys to avoid extended peak times when road disruption is at its greatest,
- staying with colleagues, friends, etc. who live in close proximity to the relevant museum location.

Specific measures to take into account the unavailability of staff to authorise payments are addressed in section 1.4 below

### **1.3 Staff Shortages**

#### *The requirement*

There will be a need to address staff shortages in the event of the:

- temporary loss of staff, e.g. due to widespread illness (e.g. an influenza epidemic) or industrial action,
- permanent loss of staff, e.g. due to mass resignation or widespread loss of life/serious injury (due to a disaster).

Staff shortages due to transport failures are addressed above, and the unavailability of staff to authorise payments is addressed below.

#### *Option 1 - Do nothing*

This option is to have no prior arrangements in place, but to await a problem (i.e. shortages of staff for whatever reason) and then react accordingly.

Advantages - there are no significant advantages with this option other than cost avoidance in not having to put any arrangements in place prior to the event.

Disadvantages - the disadvantages of this option are that it is unlikely to ensure that business will be unaffected by staff shortages in the event of a disaster, and it is not possible to test this option.

Viability of option - this option is not considered viable.

#### *Option 2 – Reuse staff from unaffected Boulton museum business functions*

This option redeploys staff from unaffected Boulton Museum business functions to perform the roles normally filled by unavailable staff. Where there is a shortage in a

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higher priority Boulton Museum business function, available staff from a lesser priority business function will be reassigned.

Advantages - the advantage of this option is that key staff shortages can be quickly resolved (at least on a temporary basis) to meet the minimum staffing levels shown in the business recovery requirements.

Disadvantages - the disadvantages of this option are that (1) it will only work if there are enough staff unaffected by the disaster, and who are experienced and knowledgeable enough to work in another function. (This may work for 'office oriented' functions, but not for the collection function. For the collection function, the option would be to use staff from the other location to that affected.), and (2) the activities of the lesser priority museum business function will be adversely affected and will themselves require some form of remedial action.

Viability of option

This option is viable, providing that there are enough parts of the museum unaffected by the disaster to meet the staff shortage, and the experience and knowledge is compatible.

*Option 3 – Re-employment of former staff*

In this option, former staff such as the recently retired and those that have recently resigned but who are not otherwise in employment (e.g. mothers with young children) are temporarily re-employed on a full or part-time basis.

Advantages - the advantages of this option are that there will be only a minimal amount of re-training or familiarisation required, and staff are not taken from other, unaffected parts of the museum.

Disadvantages - the disadvantages of this option are that (1) these individuals may be unwilling to work for the museum again, (2) they may not be available (e.g. on holiday), (3) additional recompense or other indirect payment (e.g. child minding) may be required to obtain their services, and (4) it may not be viable in a major industrial relations situation.

Viability of option

This option is only viable if there are enough former staff available to meet the staff shortage and a record is kept of those staff willing to return should the need arise. It is understood that no such records are kept.

*Option 4 – Pay available staff to work additional hours*

This option would involve paying available staff to work additional hours.

Advantages – the advantage of this option is that experienced staff would be available to conduct work.

Disadvantages - the disadvantages of this option are that there may not be enough staff available able and willing to work additional hours, especially in an emergency, and in any event this would only be a short-term solution.

Viability of option

This option is unlikely to be viable other than for a short period of time.

*Option 5 – Use Temporary Staff*

This option would involve utilising agency staff or personnel borrowed from another similar organisation to fill the roles of the unavailable staff. (A contract is in place for the occasional provision of temporary experienced staff (including conservators/specialists).

Advantages - the advantages of this option are that (1) temporary staff may be cheaper than permanent staff, (2) staff are not taken from other, unaffected parts of the museum, and (3) the existing contract will cover the provision of temporary experienced collection staff (including conservators/specialists).

Disadvantages - the disadvantages of this option are that it may not be that effective for non-collection personnel in the short term as the temporary staff could require an amount of training and familiarisation.

Viability of option

This option is definitely viable for collection personnel. For non collection personnel it is not viable in the short term - it can be used to best effect at those levels where prior job knowledge is less relevant.

*Option 6 – Recruit new staff*

This option requires new permanent staff to be recruited and trained.

Advantage - the advantage of this option is that staff are not taken from other, unaffected parts of the museum.

Disadvantages - the disadvantages of this option are that (1) should the staff that were unavailable become available again then these new permanent staff will need to be relocated within the museum, and (2) it is not effective in the short term as it will take some time to recruit, and some new staff will require considerable training and familiarisation.

Viability of option

This option is viable, but not in the short term.

*Analysis of viable options*

There is no single solution that will meet the requirement to address staff shortages. However, a number of the options outlined above can provide part of a hybrid solution to meet the museum requirements. The strategy employed for each individual or group will depend upon the scope of the disaster, the spare capacity within the remaining museum staff resources and the likelihood of unavailable staff becoming available again. In the short to medium term, staff shortages should be met using (in order of preference):

- staff from unaffected parts of the museum,
- staff 'borrowed' from other similar organisations (for which a formal arrangement would need to be put in place),

- temporary staff,
- paying available staff to work additional hours.

When it can be determined that staff will not, or are unlikely to, return (e.g. due to injury or death), then permanent replacements should be recruited and trained as soon as possible.

It should be noted that a major industrial relations problem would not be countered by this strategy unless a reasonable proportion of the replacement staff were prepared to ignore any entreaties not to report to work, etc.

#### **1.4 Payment Authorisation**

##### *The requirement*

The requirement is to promptly process payments to suppliers and contractors - an activity which is very important to the museum. In the event of a disaster, payments may be delayed until priority services are restored. However, urgent/unexpected payments may still need to be processed.

##### *Option 1 – Do nothing*

This option is to do nothing in the event of disaster or failure, and to only make payments once normal operations have been restored.

Advantages - there are no significant advantages with this option other than cost avoidance in not having to put any arrangements in place prior to the event.

Disadvantages - the disadvantages of this option are that (1) payments may not be made on time with consequent adverse affect on the recipient's cash flow, (2) the museum could be liable to legal action from unpaid suppliers and/or contractors, and (3) it is not possible to test this option.

##### Viability of option

This option is not viable.

##### *Option 2 – Finance officer/deputy work as normal*

This option assumes that the Finance officer or deputy will continue to work as normal (as far as is possible), either in the workplace, in alternative accommodation or from home. If the Finance officer/deputy cannot go to his/her normal place of work to progress payment requests, until his/her normal (or alternative) place of work is re-established, he/she will remain at home. Communications will be by hand delivery, post, fax, courier, e-mail or telephone. A purely telephone-based authorisation process will be subject to additional security controls to prevent fraud, including telephone dial-back to a known number between either party.

Advantages - the advantages of this option are that Finance personnel are already knowledgeable about the financial records and payment recipients involved, and there is no need for duplicate copies of payment records to be lodged with anyone else.

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Disadvantages - the disadvantages of this option are that (1) Finance personnel may be unavailable (e.g. due to the disaster), (2) it may be very difficult to communicate/exchange paperwork, and (3) payments could be delayed even more.

Viability of option

The option is not fully viable.

*Option 3 – Nominated payments representatives*

This option builds on Option 2. Where necessary, named representatives in each affected museum business function or area will be given responsibility for registering and authorising payments within their business function or area. These individuals will be responsible for registering and authorising (where appropriate) all payment requests for their business function/area in the event of Finance personnel being unavailable. If a Finance person is available, or another pre-nominated individual in Corporate Services, will be responsible for:

- co-ordinating the activities of the museum business function/area payment representatives in the event of a disaster,
- ensuring the progressing of payment requests within the museum in the event of a disaster and/or Finance personnel not being available.

If payment representatives cannot go to their normal place of work to progress payment requests, alternative accommodation (including access to the finance system) should be provided. It is anticipated that these resources will be used on a time-sharing basis amongst various payment representatives who will only come into the workplace to authorise urgent payments. For the rest of the time, until their place of work is re-established, they will remain at home.

Where staff cannot come into the workplace, the Business Continuity Co-ordination Team and nominated other persons will be responsible for finding the request for payment (e.g. sorting through post), and contacting the relevant payments representative and providing details of the request for payment. This could be by hand delivery, post, fax, courier, e-mail or telephone. The payments representative will assess if the payment should be made and whether to authorise the payment. A purely telephone-based authorisation process will be subject to additional security controls to prevent fraud, including telephone dial-back to a known number between either party. If the payments representative is not contactable, a nominated member of the Business Continuity Co-ordination Team will authorise the payment (up to a previously agreed value).

Advantages - the advantages of this option are that (1) it allows for the unavailability of the usual Finance personnel, (2) it should allow timely payment, (3) it facilitates communications between disparate parties, and (4) it is possible to test this option.

Disadvantages - the disadvantages of this option are that (1) payments representatives/ a nominated member of the Business Continuity Co-ordination Team may not be knowledgeable about the financial records and payment recipients involved, and (2) certain staff will have delegated responsibilities for registering and authorising payments, will possible implications for fraud or error.

### Viability of option

This option is viable.

### *Analysis of Viable Options*

It is recommended that Option 3 is adopted. However, the process will need to be agreed with Internal Audit. Internal Audit will also need to agree the payment limits for petty cash, commercial account, and emergency payment authorisation.

## **1.5 People Welfare**

### *The requirement*

This requirement deals with the consequences of a disaster with respect to staff (including contracted), visitors and members of the public. Welfare requirements will change during the course of the disaster recovery process. Key aspects include:

- immediately after a disaster, in which there is a need to deal with a number of practical issues (this is expanded upon below),
- a period starting within a few hours of a disaster, in which there is a need to provide urgent welfare support to assist staff etc. or relatives where serious injury or death has occurred,
- a period starting from 1 day after a disaster, but continuing until after all staff (including contracted) are fully engaged in their normal activities, in which there is a need to communicate with and support staff during the period of disruption.

In the immediate aftermath of a disaster there may be several practical issues that require resolution. These cover the immediate needs of staff such as providing money for staff to get home where a person is unable to retrieve personal possessions from a jacket or bag, such as car or house keys, public transport tickets, wallets or purses. Staff may not be able to get home without some practical assistance. This problem will similarly extend to contracted staff, visitors and members of the public.

### *Option 1 – React on a case-by-case basis (do nothing beforehand)*

This option is to take no formal preparatory actions, but to allow management to use their discretion to deal with incidents on a case-by-case basis. Where necessary, existing staff records will be used by Personnel to contact the next-of-kin of any affected staff.

Advantage - there are no significant advantages with this option other than cost avoidance in not having to put any arrangements in place prior to the event.

Disadvantages - the disadvantages of this option are many, but include (1) it will not meet the requirement to provide immediate help to staff and others, and is therefore not realistic, (2) it will not be acceptable to staff and management, (3) there will be no accountability for expenditure, (4) staff could be overwhelmed by the volume of actions that they would be required to take, (5) management may not be present or could themselves be affected, and (6) it could reflect badly on the museum.

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Viability of option

The option is not viable.

*Option 2 – Take short-term actions only*

This option only addresses the actions necessary immediately after a disaster, in which there is a need to deal with practical issues. For staff this could be such as making available money for those whose wallet or purse is suddenly unavailable. It is envisaged that, should support need to be provided to staff immediately following a disaster (e.g. making funds available for travel, etc.), that this will be met centrally using petty cash and/or the commercial account. Where management (or others) expend or lend additional monies to other staff at their own discretion, these shall be recompensed at the earliest possible opportunity. Detailed records should be kept so far as is practicable.

Support facilities for staff and families where serious injury or death has occurred will be established. Actions necessary will include contacting relatives, making arrangements for key dependants (for instance where an employee lives with and looks after an elderly relative, or where a single employee has children awaiting collection, or has a pet at home). It will also extend to assisting dependent next of kin to obtain continued access to family finances, arrange for funerals, grants, pensions, etc. Some of these activities are ones that Personnel would probably undertake as a matter of course where there is death or sudden illness in service. Support facilities for the public where serious injury or death has occurred will be established

No long term staff welfare, communications or stress monitoring will be performed.

Advantage - the advantage of this option is that it addresses the staff welfare needs in the short term.

Disadvantages - the disadvantages of this option are that (1) it does not provide long term support for staff and families where serious injury or death has occurred into account, (2) it does not take into account longer term aspects of staff welfare such as monitoring for affects of stress in staff and, if necessary, implementing stress counselling, (3) staff are not kept aware of the remedial actions being taken, and their future in the museum, (4) petty cash may not be readily available due to the nature or time of the disaster, (5) it will not be acceptable to staff, (6) depending on how much is covered, in liaison with the public safety organisation, the short term actions only for dealing with the public may not be sufficient, and (7) it could reflect badly on the museum.

Viability of option

The option is not fully viable, although elements of it could form part of a more appropriate strategy.

*Option 3 – Implement full welfare strategy*

*Introduction*

This option is to undertake a full long-term staff welfare strategy, and a full strategy for dealing with the public, including elements of Option 2.

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*Immediate actions*

Actions immediately after a disaster, in which there is a need to deal with practical issues, will be co-ordinated (wherever possible) centrally by a member of the Business Continuity Co-ordination Team, trained in personnel and staff welfare matters (assumed to be someone from Personnel).

Where management (or others) expend or lend additional monies to other staff at their own discretion, these shall be recompensed at the earliest possible opportunity.

Should support need to be provided to staff immediately following a disaster (e.g. making funds available for travel home, etc.) then this will be met using petty cash (separate amounts should be kept in each museum location) and/or the commercial account. Detailed records will be kept so far as is practicable.

*Support for staff and families*

Support facilities for staff and families where serious injury or death has occurred will need to be established. Actions necessary will include contacting relatives, making arrangements for key dependants (for instance, if advised by the next of kin that the employee lives with and looks after an elderly relative, or is a single employee with children awaiting collection, or has a pet at home). It will also extend to assisting dependent next of kin to obtain continued access to family finances, arrange for funerals, grants, pensions, etc. (Some of these activities are ones that Personnel would typically be expected to undertake as a matter of course where there is death or sudden illness in service.)

The strategy to achieve these requirements must ensure that access can readily be made to staff personal details such as home address, telephone number and next of kin. Rapid access to reliable information is essential to both efficiency of operation and to prevent unnecessary embarrassment or stress to individuals. Access to accurate and up-to-date staff records will therefore be essential. Electronic and hard copy backups of key information from staff records will need to be stored at alternative locations (e.g. other location(s) or even at the homes of nominated Personnel staff) under suitable secure conditions.

*Staff communications*

In the event of a disaster, regular communications will need to be maintained with staff. At least for the short term, communications to the majority of staff will be a recorded message which staff will have to access by dialling a freefone telephone number. This recorded message will provide staff with up-to-date advice, detailing any changes to normal working practices and providing additional contact numbers if required. It should be noted that this method should not be used for the dissemination of sensitive or protectively marked information.

To maintain regular communications with staff over the longer term, periodic workshops/ meetings/events for staff will be held which would allow:

- formal dissemination of information,
- staff to raise questions of concern,
- staff to maintain contact with colleagues on an informal basis.

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*Stress counselling*

In the event of a serious incident occurring during working hours, such as a major fire, a number of staff may suffer severe stress symptoms due either to their own experiences or those of close colleagues. The recognised method for detecting whether a member of staff is suffering from stress is to alert management to look for changes in behaviour, outlook, etc. This technique can be successfully applied where staff continue to work in a normal environment. Once abnormal behaviour patterns have been recognised, Personnel will contact a contracted counselling service and ask that they assist the individual.

In the event of the disaster requiring staff to be relocated, it is probable that the majority of staff will be sent home until required and that some individuals may not be needed for some time. It should therefore be recognised that some staff might not be under surveillance for the recognition of stress symptoms for some time. Consequently, staff communications events should be used by management and Personnel to identify those individuals who may be exhibiting symptoms of stress.

*Welfare for visitors and the public*

Support facilities for visitors and members of the public where serious injury or death has occurred will need to be established in conjunction with the public safety organisations (Police, Fire and Ambulance/Paramedic).

Advantages - the advantage of this option is that it addresses all of the requirements for staff welfare in both the short and long term.

Disadvantage - the disadvantage of this option is that of funding and resourcing for the freefone recorded message service.

Viability of option

This option is viable.

*Analysis of viable options*

There are no real options for welfare in the event of a disaster: staff have to be supported, and supported over the long term, and the public have to be properly dealt with, i.e. as described in Option 3. The main issue is to establish a welfare point to ensure that this process is effective and supportive, whilst, nevertheless, undertaking such action in an accountable manner.

## **2. IT, including Data Communications**

### **2.1 IT Infrastructure**

*The requirement*

This section considers failure or destruction of the core IT infrastructure used by the museum and comprises:

- IT equipment (both servers and desktops);
- standard operating system software;

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- standard desktop software;
- LAN/network equipment and services.

This section excludes e-mail, which is addressed separately below.

The maximum requirements for desktop/laptop IT equipment at museum alternative accommodation and laptop IT equipment at home in the event of a disaster are shown in the table below.

Timescales		No. of desktops/laptops needed at alternative accommodation		No. of laptops needed for home working		TOTAL	
		period	cumulative	period	cumulative	period	cumulative
½ day	Main Storage						
	Total:						
1 day	Main Storage						
	Total:						
1 week	Main Storage						
	Total:						
2 weeks	Main Storage						
	Total:						
1 month +	Main Storage						
	Total:						

These figures reflect the ability of personnel working on location to share desktops, although many of the laptops will be used by staff working from home. A key business requirement is for the ability to use desktop software (e.g. word processing, spreadsheets) for access to, and the production of, documentation.

*Option 1 - Do nothing*

The option is to make no provision until after there is a failure or destruction of (part of) the museum IT infrastructure.

Advantages - the advantage of this option are that there is no up-front cost for the provision of this option.

Disadvantages - the disadvantage of this option is that it probably cannot meet the service requirements of users.

Viability of option

This option is not considered viable.

*Option 2 – Salvage existing IT infrastructure*

In this option, the museum (or others working on its behalf) salvages existing parts of the IT infrastructure, and the media containing its associated software from the affected location (where no backups are available off-site or in the media backup

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store, e.g. where important data was stored on a local hard disk). The contracted team will then be responsible for reintegrating the salvaged equipment and existing backups into the museum IT infrastructure.

Advantage - the advantage of this option is that existing parts of the IT infrastructure can be redeployed into the alternative accommodation relatively quickly.

Disadvantage - the disadvantage of this option is that it will not work if (1) the affected location cannot be accessed, (2) there is not enough of the IT infrastructure to be salvaged, (3) salvaged equipment, whilst superficially undamaged, may have still been affected by the disaster (e.g. smoke, water damage, shock), and (4) there is not enough of the salvaged IT infrastructure to meet the needs of the relocated staff.

Viability of option

This option is viable, providing that the affected location can still be accessed, that there is still enough of the IT infrastructure that can be salvaged, that the equipment salvaged has been unaffected by the disaster and that there is enough equipment to meet the needs of the relocated staff. It is also viable as part of an overall hybrid solution to ensure the provision of the IT infrastructure. It is not viable should the affected location be totally destroyed or inaccessible.

*Option 3 - Use Laptops in standalone mode*

This option envisages the provision of laptops to staff that can be used in standalone mode should there be a disaster involving the networked components.

Advantages - the advantage of this option is that it would cover LAN/server or software problems.

Disadvantages - the disadvantages of this option are that (1) there is a higher cost associated with providing laptops instead of desktops, (2) laptops, unless permanently off-site, may be damaged or destroyed during a disaster, and (3) there is an increased risk of theft/damage if laptops are continually being taken home.

Viability of option

This option would provide a solution for some, but not all, IT disaster and failure scenarios. It is worthy of further consideration.

*Option 4 - Utilise alternative desktop applications*

Recognising that there is a business requirement is to produce/access documentation, this option considers:

- reverting to an alternative (earlier) version of an existing desktop product which is known to work,
- obtaining alternative software packages for key desktop applications such as word-processing or spreadsheets.

Advantage - the advantage of this option is that it would allow continuity of key desktop facilities (e.g. word-processing/spreadsheets) should the normal applications fail.

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Disadvantages - the disadvantages of this option are that (1) there would be a significant cost of licensing additional versions of alternative software, (2) there would be a need to rewrite any embedded macros, document templates, etc., (3) in the case of previous versions of existing products, there may be significant problems associated with file format conversion and loss of functionality, (4) in the case of new products, staff would be faced with a the problem of having to use a possible unknown and complex package, which would cause considerable disruption in addition to any caused by the original disaster of failure, (5) given the availability of alternative desktop software, staff may use them anyway, leading to problems of document format interchange and some staff growing to like the alternative, causing non-standardisation and pressures for change, and (6) it would not solve failure of the operating system software or underlying hardware.

Viability of option

This option is not considered viable to combat desktop software failure throughout all key users. Reverting to previous versions of existing software should be viable in most circumstances, so long as there is a mechanism available for converting any affected files in the newer format. Consideration should also be given to obtaining a small number of copies of alternative software for controlled distribution by the IT team and for use in an emergency.

*Option 5 – Lease/procure new IT infrastructure*

This option considers the museum leasing or procuring new amounts of the necessary IT equipment and software after a disaster has occurred, and for this to then be installed and configured by the contracted team.

Advantage - the advantage of this option is that if leased, specified amounts of IT equipment and associated software can be provided for specified periods of time, particularly to meet immediate/short term requirements, and then returned (suitably sanitised) to the provider.

Disadvantages - the disadvantages of this option are that (1) there will be a time delay whilst IT equipment/software is being obtained and delivered (typically up to 5 –7 working days), (2) suppliers may not have enough IT equipment/software in stock, (3) there may be upfront costs associated with retainers/contract negotiations, and (4) the contracted team may have difficulty configuring and installing IT equipment/software that does not exactly meet current museum IT specifications.

Viability of option

This option is potentially viable, providing the initial requirement is not too large, and only as part of an overall hybrid solution to provide IT infrastructure.

New wireless LAN technology could be used in environments where there are limitations on cabling, although security restrictions could apply.

*Option 6 – Arrange IT disaster recovery service*

This option considers the museum having a disaster call off/priority contracts with a disaster recovery specialist and/or its IT suppliers where they undertake to provide a certain amount of IT equipment and associated software within an agreed timeframe.

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Advantages - the advantage of this option is that specified amounts of IT equipment and associated software can be provided within predetermined timeframes.

Disadvantages - the disadvantages of this option are that (1) the IT disaster recovery organisation/IT suppliers will be paid a contingency fee for an event which might never happen, and (2) depending on the scope and scale of the disaster or failure, the amount of IT equipment and associated software negotiated beforehand might be too little to support the personnel affected by the disaster.

Viability of option

This option is potentially viable but will require an accurate estimation of the amount of IT equipment and associated software needed. Additional clarification of the requirement will need to be undertaken (e.g. detailing server and client PC specifications) should the museum wish to progress this option further.

*Option 7 – Arrange with a supplier for it to have a contingency stock of IT equipment/software available at short notice*

In this option, the museum would enter into a call-off contract for the short notice supply of nominated IT equipment/software.

Advantage - the advantage of this option is that ....

Disadvantages - the disadvantages of this option are that .....

Viability of option

.....

*Option 8 – Maintain own contingency stock of IT equipment/software*

In this option, the museum maintains its own stock of IT equipment and associated software to be accessed in the event of a disaster. This may be stored within existing museum accommodation space or at a location provided by a third party.

Advantage - the advantage of this option is that certain, probably limited, amounts of IT equipment and associated software can be made available relatively quickly.

Disadvantages - the disadvantages of this option are that (1) the contingency IT equipment and associated software will utilise space within museum location(s) (if so stored), (2) there will be costs associated with the third party location (if not stored within a museum location), (3) the contingency IT equipment and associated software may not be accessible should the location(s) in which it is located become inaccessible/unusable, and (4) this contingency IT equipment and associated software will need to be regularly maintained and updated/refreshed in line with changes to the IT equipment/software being used by the museum.

Viability of option

Given that there is limited space to store such IT equipment and associated software within the museum, and the costs associated with maintenance/technology refreshes, this option is not considered to be viable.

*Option 9 – Provide resilient IT and data communications services*

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In this option, the museum would ...

Advantage - the advantage of this option is that

Disadvantages - the disadvantages of this option are that

*Viability of option*

.....

*Analysis of viable options*

Wherever possible, IT equipment and the media containing its associated software should be salvaged from the affected buildings and re-integrated into the museum IT infrastructure by the contracted team. Equipment should be checked carefully before its return to operational use in case it has been adversely affected by the disaster (e.g. shock, smoke, water damage).

The museum should consider having a disaster call off/priority contract with a disaster recovery specialist and/or its existing IT suppliers where they undertake to provide a certain amounts of IT equipment and associated software within agreed timeframes. Additional clarification of the requirement will need to be undertaken (e.g. detailing server and client PC specifications) should the museum wish to progress this option further.

Wireless LAN technology could be used in environments where there are limitations on cabling, although security restrictions could apply.

Where necessary, the museum should lease (if the IT equipment/software is salvageable, but not within the required timeframe) or procure (if it is unlikely that the IT equipment/software can ever be salvaged in a working condition) enough IT equipment and software to replace those affected by the disaster or failure. This equipment/software should be installed and configured by the contracted team using data held on off-site backups.

The provision of laptops for use in standalone mode will provide a reasonable degree of resilience to a disaster or failure involving IT services in the short-term, and should be considered for key individuals. However, there may be issues with the distribution/collection/reallocation of equipment for staff working at home, and for staff carrying laptops whenever they come into the workplace.

In cases of desktop application failure, reverting to previous versions of existing software should be viable in most circumstances, so long as there is a mechanism available for converting any affected files in the newer format. Consideration should also be given to obtaining a small number of copies of alternative software for controlled distribution by the IT team and for use in an emergency.

## 2.2 E-Mail Service

### *The requirement*

E-mail is a useful tool for streamlining communications within the museum, In the event of a problem with e-mail, essential communication needs to be maintained.

### *Option 1 - Do nothing*

The option is to make no provision until after there is a problem with the e-mail service.

Advantages - the advantage of this option are that there is no up-front cost for the provision of this option.

Disadvantages - the disadvantage of this option is that it probably cannot meet the service requirements of users.

### Viability of option

This option is not considered viable.

### *Option 2 – Use floppy discs and other media*

Should IT facilities otherwise be functioning normally, there is the option of communicating using messages and attached documents saved onto floppy discs or other media (e.g. a memory stick), and forwarding to the recipient through the internal or external mail service.

Advantages - the advantages of this option are that communication continues, and there are electronic copies of the messages and attachments.

Disadvantages - the disadvantages of this option are that (1) there is a delay from the keying to the delivery of messages and attachments, (2) there is no electronic time stamping audit maintained of the sending and receipt of messages, (3) staff may have to access stand-alone IT equipment away from their normal desk (e.g. in a different location), and (4) there is not a history of a multi-message dialogue kept together.

### Viability of Option

This option is viable if IT facilities are still available.

### *Option 3 - Revert to keyed and then printed messages and attachments*

Should IT facilities otherwise be functioning normally, there is the option of communicating using keyed documents, in which an individual keys the message into a document, prints it plus any attachments and forwards it to the recipient through the internal or external mail service.

Advantages - the advantages of this option are that communication continues, and electronic copies of the message are maintained for possible future electronic retrieval, etc.

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Disadvantages - the disadvantages of this option are that (1) there is a delay from the keying to the delivery of the messages and attachments, (2) there is no electronic time stamping audit maintained of the sending and receipt of messages, (3) staff may have to access stand-alone IT equipment away from their normal desk (e.g. in a different location), and (4) there is not a history of a multi-message dialogue kept together.

Viability of option

This option is viable if IT facilities are still available.

*Option 4 - Revert to pen and paper for messages and attachments*

This option allows communication to be maintained regardless of the state of the IT facilities. It envisages the manual writing of documents using pen on paper. Documents are then delivered by internal mail. Any attachment, whether electronic or on paper is sent in the same envelope.

Advantages - the advantages of this option are that it is not dependent upon the state of IT within the museum, and it provides a low cost and effective communications medium.

Disadvantages - the disadvantages of this option are that (1) there is a delay from the writing to the delivery of the message, (2) there is no electronic record of the message maintained, (3) there is no electronic time stamping audit maintained of the sending and receipt of messages, (4) there is not a history of a multi-message dialogue kept together, and (5) electronic attachments have to be handled separately.

Viability of option

Reverting to pen and paper is always viable, if necessary.

*Analysis of viable options*

If IT facilities remain available then the message can be keyed as a document and printed. Attachments can be printed or copied on to floppy disc or other media and sent with the document. Messages can normally be delivered by the internal mail, although, in urgent cases, they can be hand delivered or sent via external courier mail services.

In the absence of any IT facilities, messages can be hand-written in the form of documents and again delivered via internal mail or hand delivered or sent via external courier mail services if very urgent. Attachments can be sent on floppy disc or other media, although this may be a problem if the whole IT system is down.

### **2.3 Access to Information Stored Electronically**

*The requirement*

In addition to documents, spreadsheets, etc. held electronically, the museum has a number of instances of customised and bespoke application software used to store, access or format information held electronically. These include (but are not limited to):

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- collection item inventory and management database (including coverage of location specific information, internal (on show and stored) and external (loaned out),
- personnel systems (including for pay),
- marketing support database,
- stock control system for the shop and café,
- financial accounting system and database
- Boulton Intranet.

In the main, the urgent need in the event of system unavailability or data corruption is to be able to access a range of documents, spreadsheets and databases, some of which are contained within some of the above systems.

The key information access requirements over time are shown in the table below. In practice, during a period of significant disruption, access to a printed hard copy of information would typically suffice (at least initially).

Timescale	Access Requirement
½ day	
1 day	
1 week	
2 weeks	
1 month	

(The strategy to address the failure or destruction of the IT infrastructure over which these applications operate is addressed separately above.)

*Option 1 - Do nothing*

This option envisages that no planning or other action takes place until after an incident has occurred. It assumes that standard backups have been taken on a regular basis and are accessible.

Advantages - the advantage of this option is that it requires minimal spend prior to a disaster or failure.

Disadvantages - the disadvantage of this option is that it cannot ensure that the business timing requirements for access to information can be met (i.e. backups will need to be identified and accessed, and the data restored to another server, providing such a server was available and of an adequate configuration).

Viability of option

If data backups are unable to be restored, this option will not viable as it cannot meet the business timing requirements for access to information.

*Option 2 - Revert to manual procedures*

This option envisages that key information has been printed out in hard copy form prior to the disaster. In the event of a disaster, access can thus be gained to the data or documentation in hard copy format.

Advantages - the advantages of this option are that (1) it will allow access to be gained to key information or documents within the required timeframes, (2) access can be gained regardless of the state of IT at the time, and (3) this strategy can be tested.

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Disadvantages - the disadvantages of this option are that (1) it relies on copies of information, documents, etc. being taken on a regular basis, preferably immediately prior to the disaster or failure, and (2) access may not necessarily be gained to information or documentation electronically.

Viability of option

This option will meet the really urgent requirements of the museum and is considered viable. However, it should be recognised that data that has changed since the last backup would need to be re-keyed or manually amended.

*Analysis of viable options*

The printing out of copies of key reports, actions, diaries, documents, extracts of databases, etc. to serve immediate priorities on a regular basis will meet the business requirements. IT backups should continue to be taken on a regular basis and stored securely at the other museum location (or even elsewhere, such as an individual's home for a specific purpose) from the systems to which they relate.

Hard copy information or documents should be stored securely in a variety of locations (normal location storage, alternative accommodation, at home, etc.) for ready access regardless of the nature and effect of any disruptive incident. In cases such of home working, particular consideration should be given to the security of information being stored there.

## **2.4 Payment (including Payroll) Service**

*The requirement*

There is a need to pay staff monthly at month end, which is normally accomplished from documented information that is provided by the 10th of the month. As a worst case scenario, assuming failure on the 10<sup>th</sup> of each month, there is a 21 day window of opportunity for the museum of salary payments before they are due. Alternative mechanisms need to be defined to pay staff, should the pay service become unavailable. Further, there is a need to pay suppliers in line with contractual obligations

*Option 1 - Do nothing*

This option is to make no arrangements to pay staff salaries or suppliers by any other means until the process is seen to fail.

Advantages - the advantages of this option are that it requires no pre-planning, and it provides a low cost solution.

Disadvantages - the disadvantages of this option are that (1) it will not necessarily allow pay to be credited to staff bank accounts nor payments too suppliers within the agreed schedule, and (2) failure to pay on time will generate claims from staff for reimbursement of charges for interest on overdrawn accounts or for loss of bank interest, and claims form suppliers for contractual breach.

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Viability of option

This option is not viable as it will not necessarily meet the required payment schedule.

*Option 2 - Repeat previous month's BACS tape*

This option is that, in the event of the failure of the service to process staff pay and supplier payments within the agreed timeframes, the previous month's BACS tape should be resubmitted for processing the next month. Errors and omissions would be reconciled afterwards.

Advantages - the advantage of this option is that it will allow the vast majority of staff and suppliers to be paid at the right time.

Disadvantages - the disadvantages of this option are that (1) it will not allow any changes (e.g. for payroll - new starters, leavers, overtime pay, and for suppliers – new entries) in the last month to be processed through the system should there be a failure, (2) it will require new starters and any large additional payments for hardship cases, and new suppliers, to be paid by cheque, (3) it will require additional measures to reclaim money paid in error to staff who leave in the last month, and to suppliers out of contract, (4) it will require additional clerical effort to deduct any additional overtime, one-off payments or adjustments, etc. and similar for suppliers, made in the last month's BACS tape, AND (5) it will require additional reconciliation to be made to gross pay, tax deducted, other standard deductions and payments and net pay to date, and to supplier records, before the next fully processed payroll. This may be possible electronically for repeated BACS payments. It will have to be done manually for those paid by cheque.

Viability of option

This option is viable.

*Option 3 – Pay by manual methods*

This option allows staff to be paid at the end of the month, at the value of pay in the previous month, by submission of a paper copy of the previous month's payments to the bank, together with a covering cheque, with similar arrangements for suppliers. In the last event, the paper copy of the previous month's payroll could be used to write out cheques for each staff member and suppliers. Errors and omissions would be reconciled afterwards.

Advantages - the advantage of this option is that staff and suppliers can be paid on time by the end of the month.

Disadvantages - the disadvantages of this option are that (1) it would require a printed copy of the previous payroll and supplier payment list to be available, preferably reformatted in a way that could be submitted back to the bank with a single cheque to allow payment through the clearing system, (2) it is labour intensive, especially if there is a need to reformat the previous data or to write out individual cheques, (3) it may possibly result in increased bank charges for individuals and suppliers not fully recompensed, (4) it will not allow any changes in the next month to be processed through the system should there be a failure, (5) it will require new starters and any large additional payments for hardship cases, and new suppliers, to be handled separately for payment by cheque, (6) it will require

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additional measures to reclaim money paid in error to staff who leave in the previous month, if they have been sent a cheque for erroneous following month earnings, and for overpayments to suppliers (7) it will require additional clerical effort to deduct any additional overtime, one-off payments or adjustments, etc. included in the last month's payment, and similar for suppliers, AND (8) it will require additional reconciliation to be made to gross pay, tax deducted, other standard deductions and payments and net pay to date before the next fully processed payroll, and to supplier records. This will have to be done manually in some cases.

Viability of option

This option is viable.

*Analysis of viable options*

In the event of failure of the payment service, a number of possibilities exist, depending on the extent of any disaster or failure. If a copy of the previous month's payroll and supplier payment list, in BACS tape format, is available then this can be resubmitted for payment again, providing payment for the majority of staff and suppliers. Additional clerical effort will be required to adjust from the last month's payment information. Additional overtime, one-off payments or adjustments, etc. will need to be held over until the service is restored. New starters, special hardship cases, new suppliers, etc. could be paid separately, through specific request, through a separately prepared BACS submission (with pay details listed on paper separately) or through individually prepared cheques.

In the event of the BACS tape not being available, payments to the value of previous month's payments can be requested through a separately prepared BACS submission (with payment details listed on paper separately).

Failing all else, payments can be made using individually prepared cheques.

## **2.4 IT Support Service**

*The requirement*

A contracted team provides the IT support service responsible for the management, procurement, installation and cabling of the museum IT systems. Consideration needs to be given should the support team base at the museum's main location not be available and/or the service provider being unable/unwilling to provide any IT support service to the museum.

*Option 1 - Do Nothing*

This option envisages taking no action until after the IT support service is unavailable.

Under the existing contract, alternative staff will be available to replace any existing staff that became unavailable.

Advantages - the advantage of this option is that it provides a low cost option, requiring no pre-arrangements.

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Disadvantages - the disadvantages of this option are that (1) there will be a time delay whilst new staff are identified and reallocated to the museum, and (2) new staff will take time to familiarise themselves with museum IT systems and procedures.

Viability of option

This option is viable if the records (e.g. configurations, maintenance records, operating procedures) of the IT systems for which normal contracted staff are responsible are accurate, up-to-date and available to their replacements in a form that will allow them to continue providing an IT support service to the museum.

*Option 2 – Provide temporary in-house IT support capability*

This option envisages the museum temporarily providing its own in-house IT support capability using its IT team staff. Additional personnel would also need to be found (or IT contractors hired) to assist existing staff.

Advantages - the advantages of this option are that a reasonable level of IT support will be provided to the museum, and the service would be more flexible and responsive to the museum's needs.

Disadvantages - the disadvantages of this option are that (1) the increased workload (at least initially) on existing IT team staff will impact on their normal duties, (2) there may be some contractual issues with the provider, (3) there will be a time delay whilst new staff are recruited (or IT contractors hired), (4) new staff will take time to familiarise themselves with the museum's IT systems and procedures, and (5) there may be problems transferring the support capability back to the provider when its service become available again.

Viability of option

Whilst not preferable (principally due to the increased workload on existing staff and impact on their normal duties), this option is technically viable so long as the records of the IT systems for which the contracted team is responsible are accurate, up-to-date and available to the museum in a form that will allow them to provide their own IT support service.

*Analysis of viable options*

In the event of failure of the IT support service, a number of possibilities exist, depending on the extent of any disaster or failure at the museum and/or of the extent of any failure at the provider. It is recommended that the provider be consulted as to its business continuity plan with respect to the museum in the event of failure of its service.

Regardless of the option, the museum should ensure that the details of the IT systems for which the contracted team is responsible are accurate, up-to-date and available to others in a form that will allow replacement/museum staff to continue providing an IT support service should the need arise. This information should include:

- system configurations (e.g. network components, servers, desktops, laptops),
- infrastructure wiring/cablings diagrams,

- maintenance records,
- licensing information,
- operating procedures,
- minimum system requirements for key applications/databases.

## **2.5 Data Communications between Museum Locations**

### *The requirement*

The inter location communications network is used extensively, its primary uses are for:

- inter building e-mail,
- collection monitoring and planning via the collection item inventory and management database (including coverage of location specific information, internal (on show and stored) and external (loaned out),
- access to the Boulton Intranet from the storage location.

Whilst not a problem in the short term immediately following a disaster or failure, as time progresses resolution of inter location data communications will become increasingly important.

### *Option 1 - Do nothing*

This option is to make no pre-provision for the loss of data communications services. In this case e-mail would revert to use of the internal postal service and payment authorisation would revert to paper authorisations being sent by the internal postal service or fax. If the link to a remote server were down from the storage location, staff would have to go to the main location where the server was located and access it locally.

Advantages - the advantages of this option are that it is a low cost solution, and it would meet business requirements.

Disadvantages - the disadvantage of this option is that urgent communications could be marginally delayed whilst the relevant piece of paper was sent by internal postal service (or hand-delivered in the event of a very urgent note or payment).

### Viability of option

This option is viable.

### *Option 2 - Use Internet e-mail*

This option envisages the use of external Internet e-mail accounts (principally personal accounts) for transferring urgent messages from one location to another.

Advantages - the advantages of this option are that (1) it would provide communication for those staff who have Internet e-mail accounts, and (2) it is relatively cost effective, provided that it did not generate a requirement to significantly increase the number of museum staff with Internet access.

Disadvantages - the disadvantages of this option are that (1) it cannot be used for sensitive documents, without appropriate additional protection, (2) there is a danger that staff would forget that the communications medium was insecure and use it for

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sensitive information, thereby potentially compromising the confidentiality of museum information, (3) the implementation of suitable encryption algorithm/cryptographic equipment to allow sensitive information to be e-mailed over the Internet would have a cost, (4) there is not a 100% coverage of external Internet e-mail accounts throughout museum staff, (5) the nature of the disaster or failure may mean that Internet access from the museum was unavailable (as all Internet access goes via the main location), and (6) should there be a requirement to provide a greater coverage of staff with Internet e-mail access, then additional costs would be incurred by the museum (in additional access telephone costs to the Internet, the use of the Internet by staff to seek information as well as to communicate by e-mail, the loss of productivity as staff 'surf' the net for information that is not strictly necessary for the performance of their functions).

Viability of option

This option would allow partial satisfaction of business requirements where non-sensitive information was concerned and where staff actually already had Internet e-mail accounts.

*Option 3 - Use alternative routing/infrastructure*

This option envisages duplicating the communications link with an alternative service from another communications provider or by providing a duplicate set of circuits using different communications services/routes from the same or an alternative supplier.

Advantage - the advantage of this option is that it would provide the possibility of a more resilient data communications service.

Disadvantage - the disadvantage of this option is that it would prove an expensive option (e.g. to construct an alternative communications room for resilience purposes and to avoid a single point of failure) unless the appropriate services were already in place.

Viability of option

This option is viable but expensive.

*Analysis of Viable Options*

The use of Internet e-mail would provide a viable, but limited, option for those staff who already had a connection where non-sensitive information needed to be sent urgently. Otherwise the use of postal services would seem adequate for the majority of situations, backed up by hand delivery for the most urgent of communications that could not be dealt with over the telephone or fax.

## **2.6 Other External Communications Services**

*The requirement*

The analysis of existing external communications services showed the following links:

- for remote access to museum IT facilities, including e-mail,
- Internet:

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- to Internet for museum staff going out,
- to make changes to the museum public web site,
- to/from Internet for e-mail,

In normal circumstances, none of the communications links has a business case that requires a high level of access availability. However, in the event of a disaster or failure, as time progresses and with some staff working from home or elsewhere, resolution of the failure or unavailability of these external connections becomes increasingly important.

*Option 1 - Do nothing*

This option envisages taking no action until after the external connection fails.

Advantage - the advantage of this option is that it provides a low cost option, requiring no pre-arrangements.

Disadvantage - the disadvantage of this option is that it cannot necessarily ensure that the service provided over the connection can be restored in a timely manner.

Viability of option

This option is viable only in the very short term.

**Option 2 – Establish alternative access methods**

This option envisages having alternative communications methods for each of the identified connections.

Advantage - the advantage of this option is that it will ensure that the service provided over each connection can be restored in a timely manner.

Disadvantage - the disadvantage of this option is that it could be expensive.

Viability of option

Whilst technically possible, this option may not be totally viable from a business perspective.

*Analysis of viable options*

The start point should be that no action be taken before any interruption to external communications services. However, the possibilities of alternative access points to the museum IT infrastructure for remote access are investigated.

### **3. Voice Communications**

#### **3.1 Fixed line telephone services**

*The requirement*

There is extensive use of the fixed line telephone system for voice and fax communication. The unavailability of these services would be inconvenient, and some external access is justified in the short term. The maximum requirements for telephones in the event of a disaster are shown below.

Timescales		No. of phones needed at the alternative accommodation		No. of mobiles/landlines needed for home working		TOTAL	
		period	cumulative	period	cumulative	period	cumulative
½ day	Main Storage						
	Total:						
1 day	Main Storage						
	Total:						
1 week	Main Storage						
	Total:						
2 weeks	Main Storage						
	Total:						
1 month +	Main Storage						
	Total:						

These quantities assume that some staff working in alternative accommodation will share phones. It gives a total requirement for up to xxxx telephones in the first 2 weeks following a disaster, although this figure includes the potential to use mobile telephones instead of landlines. Similarly, it should be noted that home phone lines could be used (assuming normal services are operating) instead of providing mobiles to staff working at home, and costs reclaimed through expenses submissions.

The potential disaster scenarios relate to the failure of:

- service within a location,
- services between the two locations,
- external services to external organisations and individuals.

The main voice switch is based in the main location, with an additional local voice switches in the storage location. The museum switchboard is provided as a managed service.

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*Option 1 - Do nothing*

This option envisages making no prior arrangements for an interruption to voice services within the museum. In this case communication would be by:

- re-routing affected telephones onto the unaffected voice switch in the other location,
- personal contact within a location,
- e-mail,
- keyed documents using a postal or courier service,
- pen and paper, using a postal service or courier service.

Advantage - the advantage of this option is that it provides a low cost solution.

Disadvantages - the disadvantages of this option are that (1) the actual capacity of existing equipment is not fully known, (2) there may not be enough spare capacity on the unaffected voice switch to accommodate the affected phone lines, (3) additional wiring may be required, (4) normal business communication would be significantly downgraded, and (5) additional resources would be required to maintain the same level of communication.

Viability of option

This provides a viable, although somewhat disruptive, option for many individuals within the museum.

*Option 2 - Use mobiles*

This option envisages that mobile telephones can be used for internal and external communications.

Advantages - the advantages of this option are that telephone calls are entirely independent of the normal voice network, and it will provide some facility for internal communications.

Disadvantages - the disadvantages of this option are that (1) only a limited number of staff have their own mobiles or access to a museum mobile, (2) the nature of the disaster might overload the mobile network in the vicinity of the affected museum location, (3) there will be call cost recompense issues if staff use their own telephones for museum business, (4) any internal telephone directories will be unlikely to hold personal mobile telephone numbers, and (5) some staff may be reluctant to divulge their mobile telephone numbers to colleagues and museum management.

Viability of option

This option provides a viable, possibly partial, solution for the short and medium term – there are 20 mobiles allocated to staff at the main location, and 4 at the storage location. These could be re-distributed on a temporary basis. It would be worth having a small stock of additional mobiles, preferably from an alternative supplier. Within locations, cordless phone technology could be considered for use as an alternative to using mobile phones. Also, the possibilities of using pagers should be explored.

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*Option 3 - Install duplicate links or services from alternative communications provider*

The option envisages installing duplicate circuits from an alternative supplier. In the event of a failure of one service the alternative service may be able to take over. This would include additional communications rooms, separate cabling infrastructures and access points into the locations.

Advantage - the advantage of this option is that it provides a degree of resilience in the event of the failure of one supplier.

Disadvantages - the disadvantages of this option are that it will not cover all the possible disaster scenarios, and it is a very expensive option.

Viability of option

This option could provide some additional resilience, and is therefore technically viable. However, the very high cost of providing such alternative services compared to the relatively low level of the requirement indicates that it is not an option to be pursued further. Therefore no further consideration is given to this option.

*Option 4 - Arrange communications disaster recovery service with communications services provider*

The option would involve the museum arranging with a communications disaster recovery service for the provision of a standby exchange.

Advantage - the advantage of this option is that it ensures that a replacement exchange will be provided within agreed timeframes.

Disadvantages - the disadvantages of this option are that the supplier must be paid an annual subscription for an event which might never happen, and will typically require details of the configurations of the affected switch(es) which might not be readily available.

Viability of option

This may be expensive, but the possibilities should be explored.

*Analysis of viable options*

If a voice switch were to fail, then the spare capacity on unaffected voice switches in other buildings should be utilised wherever possible. Consideration should also be given to using a commercial communications contingency organisation.

Mobile telephones should be available for use by key individuals where continued voice contact is essential. Cordless landline technology could also be used. Where it is critical that specific key individuals can be contacted from outside, then these numbers should be documented and circulated to essential contacts. It may be necessary to limit the circulation and publication of some or all of these numbers to ensure that they are likely to be free should urgent incoming messages from key contacts occur. Outside of this area of essential contact, individuals may use mobile telephones that are available to or shared with colleagues in the same area, otherwise communication will have to revert to written memoranda and letters. In any

event, the museum should confirm the nature of the existing voice infrastructure to fully assess its capability for dealing with a disaster or failure.

### **3.2 Mobile Telephones**

#### *The requirement*

The main requirements for mobile telephones are:

- the need for the Press Office staff to be able to contact the media/be contacted by the media and by senior individuals within the museum at short notice (possibly outside of normal working hours) should there be any major events or disasters/failures,
- the need for key individuals to be able to contact/be contactable by others, including from outside organisations (public safety services, contracted specialists),
- as a backup to the failure of the fixed line telephone services (should its failure coincide with a disaster/failure or other significant event).

The possible disaster scenarios are the failure of one mobile service, either entirely or in a particular locality, and the failure of all mobile services.

#### *Option 1 - Do nothing*

This option envisages making no prior arrangements before the loss of mobile services. Under these circumstances, assuming the fixed line voice services are still functioning, mobile users can revert to or seek out fixed line services for use.

Advantages - the advantages of this option are that it is a low cost solution, and it will not impact the majority of museum requirements where the mobile is being held solely as a backup to fixed line voice services failure.

Disadvantage - the disadvantage of this option is that it will not meet the requirements of those individuals that have mobiles by the nature of their jobs.

#### Viability of option

This option is not viable for those users who must have a mobile service to be able to perform their jobs.

#### *Option 2 - Spread mobile service over multiple mobile service providers*

This option envisages contracting mobile services from more than one mobile service provider.

Advantage - the advantage of this option is that it introduces a degree of resilience should the services of only one service provider fail.

Disadvantages - the disadvantages of this option are that voice channels on all mobile services are subject to being commandeered in a particular locality by the civil or security authorities in the event of a major disaster, and there may be a marginal increase in operating costs.

Viability of option

This option provides a prudent degree of resilience. For added resilience arrangements should be made to avoid all handsets being provided by the same manufacturer, and, if possible, containing the same chip set.

*Analysis of viable options*

Where a mobile telephone is essential to a particular job function, each individual should be issued with a mobile for each of two network operators. Where mobiles are used solely as a backup to fixed line failure, then each individual should only have one mobile telephone, but where there are several individuals within a group with mobiles then it would be advantageous to split them across more than one mobile service provider. It is recommended that a small stock of additional mobiles, preferably from an alternative supplier, should be acquired.

**3.3 Pager Services**

*The Requirement*

The main requirements for pagers are for ....

*Option 1 - Do nothing*

Advantages -

Disadvantages -

Viability of Option

*Option 2 – Use mobile services*

Advantages -

Disadvantages -

Viability of Option

**3.4 Facsimile Machines**

*The requirement*

The main requirements for facsimile are for communicating with some suppliers and individual specialists who prefer fax and/or do not have e-mail access.

*Option 1 - Do nothing*

Advantages -

Disadvantages -

Viability of Option

*Option 2 – Use e-mail*

Advantages -

Disadvantages -

Viability of Option

*Option 3 – Use post mail services*

Advantages -

Disadvantages -

Viability of Option

*Analysis of viable options*

E-mail is the preferred option, but for those suppliers/people usually contacted via fax who do not have ready access to e-mail it would be worth having 2 spare fax machines, one at each location. Failing this, the fall-back must be the use of post mail services.

#### **4. Other Services**

##### **4.1 Unavailability of /damage to 'collection' location**

*Option 1 - Do nothing*

Advantages -

Disadvantages -

Viability of Option

This is not a valid option.

*Option 2 - Obtain guarantee of quick public safety organisation response (low single figure minutes), and ability to 'zone off' areas to minimise damage*

Advantages -

Disadvantages -

Viability of Option

This is an absolute must option to minimise damage.

*Option 3 - Move collection or parts thereof, and maybe related retail outlet facilities*

Advantages -

Disadvantages -

Viability of Option

This has to be a valid option for the collection if the disaster was such that normal operations in some sustainable form could not be conducted at the main location after 1 to 2 weeks. Reciprocal arrangements with another, similar, museum should be investigated, as should the possibilities of specialist' accommodation from a commercial company that provides disaster recovery accommodation – if a supplier can be found that can cover the requirements for collection items. Thought should also be given to having facilities at the storage location such that limited museum opening could be conducted. For the storage location, arrangements should be put in place to move at least key items to suitable storage at another location – a contract would need to be put in place.

**4.2 Unavailability of access to 'collection'**

*Option 1 – Do nothing*

Advantages -

Disadvantages -

Viability of Option

This is not a valid option.

*Option 2 - Depending on projected time of no access, move 'collection' or parts thereof, and maybe related retail outlet facilities*

Advantages -

Disadvantages -

Viability of Option

This has to be a valid option for the collection if the unavailability of access is projected to be longer than 2 weeks with no guarantee of when restrictions would be lifted. As discussed above, thought should be given to having facilities at the storage location such that limited museum opening could be conducted. For the storage location, arrangements should be put in place to move at least key items to suitable storage at another location – a contract would need to be put in place.

**4.3 Unavailability of key non-IT equipment, facilities, etc. (please specify)**

**Not applicable – but for the record ...**

*(Option 1 – Do nothing*

*Option 2 - Arrange with suppliers for them to have a contingency stock of non-IT equipment, facilities, etc. available at short notice.*

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*Option 3 - Maintain own contingency stock of non-IT equipment, facilities, etc.)*

**5. Accommodation**

**5.1 Space**

*The requirement*

The maximum requirements for accommodation space in each location in the event of a disaster over the designated time periods are shown in the table below.

Timescale		No. required to be in the workplace/office		No. who could work at home		TOTAL	
		period	cumulative	period	cumulative	period	cumulative
½ day	Main Storage						
	Total:						
1 day	Main Storage						
	Total:						
1 week	Main Storage						
	Total:						
2 weeks	Main Storage						
	Total:						
1 month +	Main Storage						
	Total:						

There are two scenarios affecting accommodation, namely the inability to use:

- a single museum location,
- both museum locations.

In addition, there are two possible access scenarios, namely the inability to:

- gain access to the location at all (e.g. the location is within a police cordon or destroyed),
- work in the location, although temporary access can be gained to it to extract some contents (e.g. caused through failure of utilities).

It should also be noted that the availability of, or capability for, suitable IT, data communications and voice communications infrastructure, and housing collection items, needs to be considered in the selection of alternative accommodation. IT and data communications, and voice/fax communication, requirements are considered below.

*Option 1 - Do nothing*

This option envisages making no prior arrangements for the loss of a location. Thus, should an incident occur, the museum would have to locate suitable accommodation,

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negotiate its use, furnish it, wire it and provide both voice and data communications, and provide the necessary IT equipment, and facilities to house collection items.

Advantages - the advantage of this option is that as there are no preparatory actions it could be a low cost solution. However it should be recognised that this might be more costly in the long term.

Disadvantages - the disadvantage of this option is that it cannot meet the business requirements and timescales for the provision of accommodation.

Viability of option

This option is not viable.

*Option 2 – Use unoccupied museum accommodation (spare space)*

This option considers the possibility of using (1) spare unoccupied accommodation in the same museum location to meet the urgent accommodation requirements of an affected museum area (e.g. just one floor), and (2) spare unoccupied accommodation in one museum location to meet the urgent accommodation requirements of the other location.

With regard to (1), for people other than those in the exhibit areas in the main location, the spare space in the existing accommodation could be used (see spare/special events areas and temporary storage area, staff rest room, etc.) to house xx people. There are spare rooms in the storage location – which could be used to house xx people. There is some spare environmentally correct accommodation in the storage location which could be used to house some but not all of the collection items from the main location. These are valid options for a small number of people etc. With regard to (2), some spare space could be used in the storage location for a small number of personnel from the main location, and vice versa (although most staff at the storage location would need to be with the collection items stored.)

Advantages - the advantages of this option are that it would allow existing accommodation and furniture to be used in an emergency, and it would provide at least a partial solution.

Disadvantages - the disadvantages of this option are that (1) this option would only be viable for a relatively small number of staff (up to xx in the main location and up to xx in the storage location and for only a short period of time (before the number of staff to be relocated increased beyond the location capacity), (2) if the disaster meant that additional staff over and above the maximum spare capacity needed to be accommodated within museum locations, then other areas would be adversely impacted (e.g. they may need to reduce staff/send some of their staff home to support the additional personnel), and (3) there may need to be some additional cabling for electrical points, voice and data in the spare areas.

Viability of option

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This option is viable in the short term providing at least either location was available, and until the number of affected staff exceeds the spare capacity.

Some spare space could be used in the storage location for a small number of personnel from the main location, and vice versa (although most staff at the storage location would need to be with the collection items stored.)

*Option 3 – Use accommodation in same location for key staff – sending non-key staff home*

For people other than those in the exhibit areas in the main location, use space for key staff in existing accommodation, sending other staff home. Thus, this option extends the previous option, by taking over the accommodation/infrastructure used by non-key staff in addition to any spare accommodation that there might be available. Where necessary, additional desks would be 'squeezed' into existing office space and corridors would be used for additional filing cabinets. In addition, depending on the requirements over time, non-key staff would either be sent home or instructed to only come into work on a part-time basis (thus allowing the accommodation/infrastructure normally used by them to be used by key staff).

Advantages - the advantages of this option are that it would allow existing accommodation and furniture to be used in an emergency, and it would provide at least a partial accommodation solution for staff from another location.

Disadvantages - the disadvantages of this option are that (1) whilst the main location could meet the requirement for alternative accommodation for up to (time period), the storage location .... (time period), (2) there could be adverse business impacts on other parts of the museum beyond those initially affected by the disaster, (3) inserting additional desks and placing filing cabinets in corridors could contravene health and safety or other regulations, (4) the option will not cover the scenario where the requirement for alternative accommodation exceeds that which can be made available by using spare accommodation or by relocating/sending home non-key staff.

Viability of option

This option is viable (although it could end up with very crowded areas/offices) for up to xx should cc be unavailable .....

*Option 4 – Use accommodation from another (preferably similar) organisation*

Use accommodation from another organisation, another government organisation, or from commercial sources. Should also consider reciprocal arrangements with another, similar, museum that is not too far away, and other sources

Advantages - the advantage of this option is that there is a similar museum 4 miles away from the main location, which may be interested in a reciprocal arrangement.

Disadvantage - the disadvantage of this option is that the accommodation available at the other museum would provide space for restricted Boulton museum operations,

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i.e. not all staff could be accommodated and only a part of the collection could be shown.

Viability of option

This option is viable in the short-term, but in the longer term other arrangements would have to be made.

*Option 5 – Use commercial accommodation*

This option covers identifying, negotiating rental or lease, fitting out and occupying commercial accommodation already available in the vicinity through commercial property agents. Such agents would typically need to know:

- essential information:
  - location,
  - size (in m<sup>2</sup>),
- useful information:
  - duration of requirement,
  - disabled access,
  - quality (raised floors, environmental controls),
  - car parking,
  - accessibility (24 hours),
  - any other special requirements.

Commercial property agents would typically charge 10% of the first year's rent for commercial property search and acquisition. It could typically take up to 2-3 months to acquire and re-cable a new building ready for occupation. This time could be reduced if additional payments were made. To ensure priority treatment, the museum would need to pay commercial property agents a retainer should the need arise.

Advantages - the advantage of this option is that it would meet the requirements, provided a property agent can be found that will be able to provide the required environmental conditions for collection items.

Disadvantages - the disadvantages of this option include (1) without a retainer such accommodation is unlikely to be available for occupancy in under 2-3 months, (2) FM personnel will need to negotiate with commercial property agents and gain approval for the funding for the alternative accommodation, (3) the problems of negotiating relatively short term occupancy (landlords will want to maximise the period for leasing or letting, and the museum may be unwilling to commit to any period beyond the possible reconstruction/repair time of the affected museum location), (4) possible cost penalties for short term lease or let (the extent of this will depend on the degree to which local landlords reflect the need of the museum to achieve a rapid negotiation to allow a prompt occupancy in their price offerings), and (5) many

buildings will require cabling and fitting out before occupancy, increasing delays in occupancy.

#### Viability of option

Assuming that there is a major disaster at a museum location this is one of the few options that will provide the scale of accommodation required to ultimately re-house the collection and all staff. This option is therefore worthy of consideration as a long term solution.

#### *Option 6 – Arrange specialist disaster recovery accommodation*

This option considers the museum establishing an arrangement with a specialist disaster recovery organisation for the provision of alternative accommodation, typically coupled with the provision of alternative IT/voice services (see below) and furniture/office equipment (see below), and of course the required environmental conditions for collection items.

Advantages - the advantage of this option is that specified accommodation would be provided within agreed timeframes.

Disadvantages - the disadvantages of this option are that (1) the specialist organisation will be paid a contingency fee for an event which might never happen, (2) the disaster recovery organisation may not be able to provide an environment suitable for collection items, and (3) depending on the scope and scale of the disaster, the accommodation negotiated beforehand might be too little (or too much) to support number of staff and collection items to be relocated.

#### Viability of option

This option is viable but will require careful estimation of the accommodation and services needed. Additional clarification of the requirement will need to be undertaken should the museum wish to progress this option further.

#### *Option 7 – Use temporary accommodation*

This option envisages the hiring of temporary accommodation constructed from such as portacabins to house a limited number of key staff. Where possible, these would be interconnected to an existing museum infrastructure at a collocated museum location to replace the need for additional module such as toilets, electricity generators, etc. The placing of such facilities in the car parks adjacent to the museum locations would need to be pre-agreed with the other organisations that currently use some parts of the car parking space, and agreements reached with the local councils regarding planning permission.

Advantages - the advantages of this option include availability of accommodation, and relatively immediate availability of external data, voice and fax communications.

Disadvantages - the disadvantages of this option include (1) limitations in capacity, (2) not really suitable for most collection items, (3) the possibility of unavailability of

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temporary accommodation due to prior bookings (although this can be mitigated (at a cost) by the use of a retainer with the supplier), and (4) security of the temporary accommodation - portacabins.

Viability of option

This option could be viable for temporarily housing staff, but not for collection items.

*Option 8 – Use hotels*

This option envisages the use of conference rooms, function rooms and bedrooms at hotels to house a limited number of key staff.

Advantages - the advantages of this option include prompt availability of fully serviced accommodation, including facilities such as photocopying, and immediate availability of external voice and fax communications.

Disadvantages - the disadvantages of this option include (1) the cost of room hire, (2) the possibility of unavailability of accommodation due to prior bookings, (this can be mitigated by the use of a retainer with the hotel to ensure a minimum occupancy within an agreed period), (3) security of the material kept in the hotel against access by unauthorised personnel (e.g. hotel staff, other hotel guests), and (4) not at all suitable for collection items.

Viability of option

This option is seen not seen as viable for long term occupancy or for large numbers of staff. It is, however, a viable possibility for the provision of short notice, short term accommodation for a limited number of key people, providing adequate security arrangements were made available. Such a strategy may be viable as a meeting place for business continuity personnel and emergency response terms until more suitable accommodation can be made available.

*Option 9 – Work at Home*

The option explores the possibility of some key staff working from home, in the event of the unavailability of their normal place of work.

Advantages - the advantages of this option are that (1) the requirement for urgent accommodation near the museum locations is kept to a minimum initially, and (2) it will allow key staff who can work from home on a temporary basis to be readily available for duties despite accommodation disruptions.

Disadvantages - the disadvantages of this option are that (1) it will not cover those staff who have to be in the workplace to perform their functions satisfactorily, and (2) there are a number of security issues concerning staff working from home (decisions/security guidelines will be required for taking certain museum data/documentation home, working on certain museum data/documentation at home, storing certain museum data/documentation at home, using own Internet connections, and use of own home PC for museum work), (3) it will be necessary to provide laptops and (for some) printers, and telephone lines (for those who have no

home telephone line or where the home telephone line is used for other purposes (e.g. for someone else in the household to run a business from home), and (4) some staff may not have suitable home environment within which they can work, due to, for instance, young children at home, unavailability of suitable accommodation within the house where museum work can be undertaken, a house being shared with other individuals.

### Viability of option

This option provides a viable option for some members of staff.

### *Analysis of viable options*

Immediately following a disaster or failure, some key staff should use the spare space in the location (assuming the effects of the disaster or failure are localised) and those key staff that can initially work at home should do so. For the first week or so, should some staff need to be at the workplace, then they should use the spare space in the location (assuming the effects of the disaster or failure are localised) and/or use the other museum location's spare space. If necessary, further accommodation can be made available by sending non-key staff home or instructing them to come into the workplace only on a part-time basis (effectively 'time-sharing' existing facilities).

Having a reciprocal arrangement in place with a similar museum should be given serious consideration. Paying a retainer to use a commercial disaster recovery organisation for suitable alternative accommodation is also viable and should be considered. This could be part of a total package encompassing furniture, office equipment, IT and environmentally suitable areas for collection items. Additional clarification of the requirement will need to be undertaken (e.g. estimating floor space) should the museum wish to progress this option further. The use of portacabins and hotels should also be considered as a possible short-term solution to accommodate any additional staff required to be in the workplace (assuming the collection is OK).

## **5.2 Furniture and Office Equipment**

### *The requirement*

Inextricably linked with the accommodation space requirement is the supply of office furniture and equipment (including stationery) in the event of a disaster. Such items will vary from the readily available commodity item (e.g. chairs) through to items of more specialist equipment (e.g. photocopiers).

### *Option 1 – Do nothing*

This option envisages making no prior arrangement for the provision for furniture and office equipment. Following the disaster or failure, the museum will obtain the necessary equipment on the open market.

Advantage - the advantage of this option is that it provides a low cost solution.

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Disadvantage - the disadvantage of this option is that it almost certainly cannot meet the business timescales for the provision of office furniture and equipment.

Viability of option

This option is not viable.

*Option 2 – Salvage existing furniture and equipment*

In this option, the museum (or others working on its behalf) salvages existing furniture and equipment from the affected location.

Advantage - the advantage of this option is that existing furniture and office equipment can be redeployed into the alternative accommodation relatively quickly.

Disadvantage - the disadvantage of this option is that it will not work if (1) the affected location cannot be accessed, (2) there is no furniture or equipment to be salvaged, and (3) there is not enough furniture or office equipment to meet the needs of the relocated staff.

Viability of option

This option is viable, providing that affected location can still be accessed, that there is still furniture and equipment that can be salvaged, and that there is enough of it to meet the needs of the relocated staff. It is also viable as part of an overall hybrid solution to provide furniture and office equipment.

*Option 3 – Maintain supplier lists*

This option envisages the museum maintaining an up-to-date list of suppliers and their products, which would be used in the event of a disaster.

Advantage - the advantage of this option is that it provides a relatively low cost solution.

Disadvantages - the disadvantages of this option are that there will be a time delay whilst furniture/equipment is being procured and delivered, and suppliers may not have enough furniture/equipment in stock.

Viability of option

This option is viable only as part of an overall hybrid solution to provide furniture and office equipment.

*Option 4 – Arrange disaster call off/priority contracts with suppliers*

This option considers the museum having a disaster call off/priority contracts with its suppliers where they undertake to provide a certain amount of stock within an agreed timeframe.

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Advantage - the advantage of this option is that specified amounts of stock will be provided within agreed timeframes.

Disadvantages - the disadvantages of this option are that (1) suppliers will be paid a contingency fee for an event which might never happen, and (2) depending on the scope and scale of the disaster, the amount of stock negotiated beforehand might be too little (or too much) to support number of staff to be relocated.

Viability of option

This option is viable but will require careful estimation of the amount of stock needed. Additional clarification of the requirement will need to be undertaken (e.g. estimating desks/storage needed) should the museum wish to progress this option further

*Option 5 – Maintain own contingency stock*

In this option, the museum maintains its own stock of furniture and office equipment to be accessed in the event of a disaster. This may be stored within existing museum space or at a location provided by a third party (e.g. at an office storage company).

Advantage - the advantage of this option is that certain, probably limited, amounts of stock can be made available relatively quickly.

Disadvantages - the disadvantages of this option are that (1) the contingency stock will utilise space within a museum location (if so stored), (2) there will be costs associated with the third party location (if not stored within a museum location), (3) the contingency stock may not be accessible should be location(s) in which it is located become inaccessible/unusable, and (4) technological items of stock (such as photocopiers, etc.) will need to be regularly maintained and potentially refreshed.

Viability of option

A small amount of stock could be stored in a museum location, but the better solution is to use off-site storage.

*Analysis of viable options*

The recommended strategy for furniture and office equipment should be to salvage existing furniture and equipment wherever possible. The museum should also maintain an up-to-date list of office equipment/furniture suppliers and their products for use in the event of a disaster (however, it should be noted that costs will vary depending on the extent to which such items are readily available on the market place compared with the urgency of the requirement). If there was an arrangement in place with a disaster recovery organisation for alternative accommodation then this requirement would be addressed anyway.

### ***Exercise 1***

In exercise 1 of the fourth workshop you will work in your groups to produce some action task lists for the topics you have been given, based on what you have learnt from these case study and exercise notes and the 'agreed' business continuity strategy summary (the handout of the example Workshop 3 exercise 1 answers) . A representative from each group will then present the results.

The allocated topics will be from the business continuity plan activation phases:

- Alert,
- Invocation,
- Resumption,
- Restoration,

The allocations are all for the main Boulton museum location, and for the Business Continuity Co-ordination Team.

#### ***Group 1 (and Group 5):***

##### ***Alert***

1. Co-ordination Alert 1 (Receive notification of a disaster or failure)
2. Co-ordination Alert 2 (Receive request from key personnel to come into museum location)

##### ***Invocation***

3. Co-ordination Invocation 4 (Ensure welfare of staff, public and relatives in the event of a disaster)
4. Co-ordination Invocation 5 (Gain authorisation to activate alternative accommodation)

#### ***Group 2 (and Group 6):***

##### ***Invocation***

1. Co-ordination Invocation 2 (Invoke FM resumption plan)

##### ***Resumption***

2. Co-ordination Resumption 1 (Activate alternative accommodation)
3. Co-ordination Resumption 2 (Relocate Business Continuity Co-ordination Team)

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4. Co-ordination Resumption 3 (Respond to theft or attempted theft at museum location)

**Group 3 (and Group 7):**

**Resumption**

1. Co-ordination Resumption 4 (Respond to non-theft related disaster/failure at museum location)
2. Co-ordination Resumption 5 (Gain access to museum location)
3. Co-ordination Resumption 6 (Authorise use of contract taxi service)

**Restoration**

4. Co-ordination Restoration 1 (Activate Restoration Phase)

**Group 4:**

**Resumption**

1. Co-ordination Resumption 7 (Authorise use of contract courier service)
2. Co-ordination Resumption 8 (Change museum recorded message/status web page)
3. Co-ordination Resumption 9 (Advise staff of disaster or failure)

**Restoration**

4. Co-ordination Restoration 2 (Co-ordinate Restoration Phase)

You should assume that the business recovery organisation structure is as shown earlier in this document, and note any assumptions you make about further detail.

**Exercise 2**

In exercise 2 of the fourth workshop you will work in your groups to list the appendices that you consider should be included with a business continuity plan (same for all groups). There will then be a short open discussion on your results.

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**Attachment 1 – Numbers of Personnel, IT and Voice Equipment**

<b>Main Location</b>								
<b>Office</b>	<b>People</b>	<b>PCs</b>	<b>Laptops</b>	<b>Telephones – Desk</b>	<b>Telephones – Wall Mounted</b>	<b>Fax Machines</b>	<b>Mobiles</b>	<b>Radios</b>
<b>Ground Floor</b>								
Collections Manager	1	1	1	1			1	
Collection Team	10	10	3	10		2	3	
Development Manager & Team	3	3	1	3		1	1	
Public Services Manager & Team	13	13	4	13		2	4	
IT & Communications Manager	1	1	1	1			1	
IT & Communications Team (in-house)	3	3	1	3		1	2	
IT & Communications Team (outsourced)	5	5		5			1	
Security	6	2		2				6
Ticket Office & Information Desk	4	1		2				
Shop	4	1		1				
Café	9	1		1				
Exhibit Areas	5				5			
<b>Totals</b>	<b>64</b>	<b>41</b>	<b>11</b>	<b>42</b>	<b>5</b>	<b>6</b>	<b>13</b>	<b>6</b>

**DCMS Business Continuity Planning for Sponsored Bodies  
Workshop 4 – Case Study and Exercise Notes**

<b>Office</b>	<b>People</b>	<b>PCs</b>	<b>Laptops</b>	<b>Telephones – Desk</b>	<b>Telephones – Wall Mounted</b>	<b>Fax machines</b>	<b>Mobiles</b>	<b>Radios</b>
<b>First Floor</b>								
Chief Executive	1	1	1	1			1	
Chief Executive Team	3	3	1	3		1	1	
Corporate Services Manager	1	1	1	1			1	
Corporate Services Team	9	9	1	9		1	1	
Finance Manager & Team	3	3	1	3		1	1	
Exhibit Areas	9				9			
<b>Totals</b>	26	17	5	17	9	3	5	0
<b>Second Floor</b>								
Exhibit Areas	9				9			
Exhibit Areas Back-up Staff	7							
Cleaning Engineers	3							
	4	2	1	2		1	2	
<b>Totals</b>	23	2	1	2	9	1	2	0
<b>Totals for Location</b>	113	60	17	61	23	10	20	6

**DCMS Business Continuity Planning for Sponsored Bodies  
Workshop 4 – Case Study and Exercise Notes**

<b>Storage location</b>	<b>Office</b>	<b>People</b>	<b>PCs</b>	<b>Laptops</b>	<b>Telephones – Desk</b>	<b>Telephones – Wall Mounted</b>	<b>Fax machines</b>	<b>Mobiles</b>	<b>Radios</b>
<b>Ground Floor</b>									
Security		2	1		2				3
Collection Maintenance		4	4	1	4		1	1	
Collection Workshop		2	1		1				
Engineers		2	1		2		1	1	
<b>First Floor</b>									
Collection Workshop		3	2		3		1	1	
<b>Second Floor</b>									
Collection Workshop		2	1		2			1	
Cleaners		2							
Totals		17	10	1	14	0	3	4	3
<b>Grand Totals</b>		130	70	18	75	23	13	24	9

(Notes: (1) most staff belong to a union, (2) whilst many staff have their own IT equipment at home, and external e-mail access via the Internet, there are some who do not)