Memorandum

To: See circulation below

From: Lucy Lonergan

Number: 0208 424 1036

Date: 4 July 2016

IT Data Centre Landlord Risks – Follow Up

A review of IT Data Centre Landlord Risks was undertaken as part of the 2014/15 Internal Audit annual plan and a report was issued on 2nd November 2015 which contained 22 recommendations.

It was established that 20 of the 22 recommendations have been fully implemented and evidence was obtained to support this. Table 1 below details the number of recommendations which are partially implemented, planned and not yet implemented to date and highlights where these actions are overdue. The attached updated action plan shows the details of implementation for each recommendation.

The report issued on the 2nd November 2015 was a red report and follow up has established that it is now a Green report with 87% of expected controls operating effectively and a further 13% partially in place. (It has been assumed that the controls that were originally operating are still operating effectively during follow up and these have not been re-tested). The 40% of controls substantially and partially operating reflects the 3 recommendations yet to be fully implemented..

The level of implementation made to date is considered acceptable however every effort should be made to fully implement the outstanding recommendations.

Table 1

Risk Ranking	Part Implemented or In Progress	Planned but not implemented to date	Not Implemented or planned
H		(1.1b Overdue)	
M	(2.2 Overdue)		
L			

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Internal Audit

Circulation: Michael Lockwood – Chief Executive
             Tom Whiting – Corporate Director Resources & Commercial
             Carol Cutler – Director of Customer Services & Business Transformation
             Venetia Reid-Baptiste – Divisional Director-Commissioning Services
             Rahim St John - Head of Business Transformation Partnership
             Catherine Little - Service Manager Performance & Financial Payment

Internal Audit

Ref	Recommendation	Risk Rating H/M/L	Agreed Action / Responsible Officer / Implementation Date	Current Position	Evidence	Action to date

| 1.1 | **Data centre strategy**

a) Create a Hosting strategy which takes into account the projected growth of council services and limitations of the on-site data centre.

b) When creating the strategy consider the current limitations, cost and likely longevity of the existing datacentre (i.e. given the likely demolition of the Civic Centre) and consider moving services to a 3rd party data centre, whilst having a far smaller room to manage connectivity. | **H** | **a)**

Agreed Action:

The Corporate IT Strategy 2015-19 clearly states that "The Council will, as a preference, consider online options for any future hardware, system software or application software procurement." and makes a commitment to plan for "the reduction in hosting services … as applications move to Software as a Service"

The Sopra Steria contract includes within it a cloud hosting service for any new systems.

Sopra Steria will take over responsibility for managing the existing datacentre capacity in accordance with their standard processes on transition and this will take into account the growth in services and limitations of the data centre. .

Responsible Officer:

Head of BTP & ICT

Implementation Date:

IT Strategy Complete

Sopra Steria take over data centre on 31/10/15 | SSL contract is in place | Schedule 2.1 (74)

Hosting Services

Email from SSL:

Each project will assessed on a case by case basis against the data centre strategy.

There is currently 211Kw of non-resilient cooling and 138Kw of resilient cooling. Current power is measured at 76KW. SSL Standard is to complete a feasibility study for the kit to go into the Data Centre The team would be provided with the installation, relocation or decommission details. They would then review this against the current documentation to determine the suitable location for new or relocation and adjust the rack diagrams and CMDB accordingly. For decommissioning the rack diagrams and CMDB would be updated accordingly.

In addition to the above all new solutions take into account the Authority's strategic plan and where possible look to use Cloud hosting. | **Implemented** |

			b)	SSL contract is in place	Schedule 2.1 (74)	
					Hosting Services	
			Agreed Action:			
			The Corporate IT Strategy 2015-19 recognises "the requirement to relocate the data centre in order to avoid the expense of rebuilding the data centre in the new location. " This was discussed extensively in Competitive Dialogue with Sopra Steria but it was not possible to determine a definitive approach while the timing of the Civic Centre move is unknown as a transformation of the services is planned and the size of the residual requirements will be driven by timing of the move. A plan will be developed when the timing of the move is known.			
			The Sopra Steria contract includes within it a cloud hosting service for any new systems.			
			Responsible Officer:			
			Head of BTP & ICT			
			Implementation Date:			
			When advised that the Civic Centre move is to proceed			

Planned but not implemented to date

| 1.2 | **DC capacity management: Data centre capacity tracking**

a) For all actions in 1.2 management should engage the outsourcer to remediate the gaps as they are responsible under schedule 10 section 42 (first para) of the contract.

b) Establish the exact capacity of the data-centre from both a cooling and power perspective, taking emergency power capacity into account.

c) Establish the desired capacity ceiling of the datacentre i.e. one that allows for the desired level for resiliency in cooling | **H** | **a)**

Agreed Action:

Responsibility for monitoring power and cooling has been confirmed with the responsible parties – action being performed by current outsourcer and accepted to be taken over by new outsourcer.

Responsible Officer:

Head of BTP & ICT

Implementation Date:

Complete | Implemented | Harrow Data Inspection

Sopra Steria IT Data Centre Report | Implemented |
| | | | **b)**

Agreed Action:

Capacity has been established for both cooling and power in Sopra Steria's due dilgence.

Responsible Officer:

Head of BTP & ICT

Implementation Date:

Complete | Implemented | Harrow Data Centre Inspection | Implemented |

	and power supply. Implement the required processes and tools for monitoring the actual used power and cooling capacity and create an appropriate dashboard. NOTE: with respect to tooling, if IT are using IT service management tools such as Remedy, theses should be used in preference to implementing a new one	**c)** **Agreed Action:** Sopra Steria will take over responsibility for managing the existing datacentre capacity in accordance with their standard processes on transition and this identifies the maximum cooling capacity. **Responsible Officer:** Head of BTP & ICT **Implementation Date:** Live on 31/10/15	Implemented	Harrow Data Centre Inspection Confirmation from NM re ongoing processes: Each project will assessed on a case by case basis against the data centre strategy.	Implemented

	DC capacity management: Data-centre capacity planning	H	d) Agreed Action:	Implemented	Confirmation from NM re capacity plan & ongoing processes:	Implemented
	d) A process that implements and maintains a forward looking datacentre capacity plan should be developed and implemented that takes cooling and power changes into account against the established capacity ceiling. The process should interlock with the forward change plan and the Council's IT service development programme.		Capita have managed the capacity of the datacentre based on the maintenance of actual temperatures within appropriate limits. Utilisation has been falling since the peak load through a planned programme of equipment decommissioning. Sopra Steria will take over responsibility for managing the existing datacentre capacity in accordance with their standard processes on transition which will include a forward looking capacity plan. **Responsible Officer:** Head of BTP & ICT **Implementation Date:** Live on 31/10/15		Each project is engaged with the data centre operations team to ensure there is capacity within the existing datacentre. In addition the operations team are engaged in the change management process.	

	DC capacity management: **Data-centre related change** e) The change control process should take the impact on the data centre available cooling and power capacity into account and ensure that, once established, the view of the available data centre capacity. Additionally the party responsible for datacentre capacity must be involved in the change process as an approver to ensure the agreed capacity ceiling is maintained. f) The method and tools in use to track the content of the datacentre should be updated/replaced so that they are integrated into the change process	**H**	**e)** **Agreed Action:** The party responsible for the datacentre capacity already manages the change process - **Complete**. Sopra Steria have confirmed their processes related to data centre changes and capacity management cover the recommendation. These will be implemented on transition. **Responsible Officer:** Head of BTP & ICT **Implementation Date:** Live on 31/10/15	Stars Service management toolset has been implemented. Any data centre related change is actioned via RFCs and tracked through the technical change management process All additions and removals from the DC are updated within the CMDB	CAB minutes & FSofC Client team presence at CAB	**Implemented**
			f) **Agreed Action:** Sopra Steria will implement an ITSM (IT Service Management) toolset which integrates with the change process on transition. **Responsible Officer:** Head of BTP & ICT **Implementation Date:** Live on 31/10/15	Sopra Steria have implemented their Stars Service management toolset which manages the ITIL process flows and ensures that any changes to the DC environment can be tracked and the CMDB is updated Any data centre related change is actioned via RFCs and tracked through the technical change management process as part of the STARS toolset	CAB minutes & FSofC **Implemented**

2.1	**Network cable management** **For all the control weaknesses identified in 2.1 and 2.2 management should engage The Outsourcer to remediate the gap as they are responsible under the contract (Schedule 10 47.8)**	**H**	**a)** **Agreed Action:** Sopra Steria will implement an ITSM management toolset which integrates with the change process **Responsible Officer:** Head of BTP & ICT **Implementation Date***:* Live on 31/10/15	Sopra Steria have implemented Stars Service management toolset which has an integrated Change Management module Any data centre related change is actioned via RFCs and tracked through the technical change management process	CAB minutes & FSofC	**Implemented**
	a) Integrate the management of network cabling into the standard change management process. b) Create/implement a unified tool set to aid with management of the physical network. c) Conduct a full		**b)** **Agreed Action:** Sopra Steria will implement an ITSM management toolset which will aid with the management of the physical network by enabling them to document what they have done. **Responsible Officer:** Head of BTP & ICT **Implementation Date***:* Live on 31/10/15	Sopra Steria have implemented Stars Service management toolset which has an integrated Change Management module Any data centre related change is actioned via RFCs and tracked through the technical change management process	CAB minutes & FSofC	**Implemented**

review of the physical network, populate the new tool set and label all cables in data centre with start and end points. Once implemented place the data, now in the tool under change control.	█ RED █	**c)** **Agreed Action:** Sopra Steria will implement and populate a CMDB (Configuration Management Data Base) which acts as an inventory and records inter-relationships . Changes will be controlled via the relevant governance processes. **Responsible Officer:** Head of BTP & ICT **Implementation Date:** To start on 31/10/15	CMDB is in place and has been built using data provided by Capita and SSL's discovery tools. SSL are working to remediate any gaps	CMBD **Implemented**

| 2.2 | **House keeping**

The outsourcer should establish datacentre operations manual to manage its basic operation and housekeeping. (Section 10 41.8.1 &2 – could argue that this would mean the basics are under contract).

This should include:

i) Management of the fire suppression systems.

ii) Rack management and security.

iii) Basic Datacentre housekeeping e.g. removal of decommissioned kit.

iv) Maintenance regimes for power, aircon, water detection and fire suppression

v) Physical access management. | **M** | **Agreed Action:**

Capita have confirmed that procedures for setting the fire suppression to manual are correct and adherence to the manual has been reinforced

Responsible Officer:

Head of BTP & ICT

Implementation Date:

Complete

Sopra Steria have detailed their processes related to housekeeping, maintenance and access control and the existing manual will be transferred over.

Together these actions cover points i) – v),.

Responsible Officer:

Head of BTP & ICT

Implementation Date:

Live on 31/10/15 | **Sopra Steria IT Data Centre Report** | **Email from SSL:**

(NB the ops manual can be inspected for evidence but cannot be sent as there is a paper copy only)

Sopra Steria confirm that the procedures have been implemented for setting the fire suppression to manual. This has been included within the data centre operations manual which is currently in draft

Coffley evidence to be supplied directly to Audit via Venetia/Errol | In Progress |

| 3.1 | Data centre facility services

The following actions, in conjunction with those for 1.1 and 1.2 should be undertaken:

a) For all actions in 3.1 and 3.2 management should engage The Outsourcer to remediate these gaps.

b) Verify the capability of the Air-con, UPS and generator against the current power draw of the data centre. (section 42)

c) Specify clearly the contracted level of desired resiliency required within the emergency power infrastructure (e.g. N+1 for UPS, if one unit fails the other | H | **a)**

Agreed Action:

Capita have confirmed that a maintenance visit had occurred prior to the audit and a defect report was outstanding at the time. The UPS has been repaired and the order number provided as evidence.

Responsible Officer:

Head of BTP & ICT

Implementation Date:

Complete | Complete | | Implemented |
| | | | **b)**

Agreed Action:

Sopra Steria have confirmed their processes for assessing the capability and draw of the Air Con, UPS & Generator. These will be implemented on transition.

Responsible Officer:

Head of BTP & ICT

Implementation Date:

Live 31/10/15 | Implemented | Capacity Plan from SSL: | Implemented |

two can hold the load) d) As per 1.1 use this to set the desired capacity ceiling. e) If the current or future hosted infrastructure will breach the limit consider upgrading, or hosting elsewhere. **NOTE**: As the cooling capacity appears to be approaching its full capacity and the likely longevity of the building upgrading the air-conditioning would not represent a cost effective solution and external hosting should be considered for infrastructure that will breach the set capacity ceiling.	█	**c)** **Recommendation Not Agreed:** The contracts are outcomes based and the available target/service levels have been assessed on the basis of the Council's risk appetite. The supplier is required to provide the necessary level of resiliency to meet the service levels. The Council chose in its procurement strategy not to specify the technical solution and to do so would transfer commercial risk back to the Council. **Responsible Officer:** Head of BTP and ICT **Implementation Date:** Complete **Audit Comment:** Whilst it is appreciated that the running of the data centre has been transferred via the contract to the Outsourcer, the operational risks associated with resilience (or rather the lack of resilience) cannot be transferred and will have a direct impact on Council services. It is accepted that it is not commercially viable to specify the level of desired resiliency in the contract however the Outsourcer should be required to provide assurance of the level of resiliency in place and that this is adequate to minimise the operational risk to the Council.	Recommendation not agreed but alternative action Implemented	**Confirmation that UPS is adequate:** There are 3 UPS's and therefore the resiliency is N+1
				Implemented

Implemented		Implemented	**d)** **Agreed Action:** See action (b)	Implemented		Implemented
			e) **Agreed Action:** The Corporate IT Strategy 2015-19 clearly states that "The Council will, as a preference, consider online options for any future hardware, system software or application software procurement." and makes a commitment to plan for "the reduction in hosting services … as applications move to Software as a Service" This will happen regardless of the capacity ceiling. Sopra Steria will take over responsibility for managing the existing datacentre capacity in accordance with their standard processes on transition **Responsible Officer:** Head of BTP & ICT **Implementation Date:** Complete Live 31/10/15	Confirmation from SSL	Data Centre Audit	Implemented

3.2	**Datacentre facility service maintenance**	H	**Agreed Action:**	Implemented	**Confirmation from SSL of maintenance plan/regime:**	Implemented
	The outsourcer should establish, implement and manage a formal maintenance regime for the different facility service elements of the data centre. Additionally the outsourcer should follow the recommendations of the maintenance company with respect to the replacement of failed components immediately. This can be part of remediation for observation 2.2.		Sopra Steria have confirmed that maintenance regimes include maintaining within the manufacturers recommended timeframes. **Responsible Officer:** Head of BTP & ICT **Implementation Date:** Live 31/10/15		A maintenance plan is in place within the manufactures recommended timeframes Air conditioning – quarterly External condenser – 6 monthly UPS – 6 monthly Integrity check - annually	

| 4.1 | **Facility protection**

a) As fire suppression and water detection are the responsibility of the Council this should be reaffirmed with the appropriate department.

b) Establish, implement and manage a formal maintenance regime for the different facility service elements of the data centre. This can be part of remediation for observation 2.2.

c) It is recommended that the water detection alarm is integrated into the Data centre's monitoring system. If this is not possible then the security | **H** | **a)**

Agreed Action:

The FM comprehensive service contractor Cofely' will be attending to all servicing and all defect / breakdown remedial work however arising to all fire fighting equipment and all specialist installations within and serving the computer suite at the Civic Centre. This is part of the Planned Preventative Programme being agreed with Cofely.

Responsible Officer:

Divisional Director - Commissioning Services, E&E

Implementation Date:

1 April 2016, (or sooner).

Note: Water detection is not the responsibility of the Council. This has been affirmed with Capita. | The fire suppression system has been serviced (29/11/15), with remedial works scheduled for week beginning 29th February 2016. The system remains operational. This service included investigations with the building Fire Alarm maintenance contractor, PEL, confirming the systems were linked as per design.

The doors to the comms room are currently being manufactured and are due to be replaced week beginning 7th March 2016

Air conditioning systems and the generator set that serves the comms room are scheduled to be serviced during March.

All items are scheduled to be serviced at 6 monthly intervals | Engineer's service sheet for Fire Suppression system service attached

12 Month PPM forecast for comms room systems attached | Implemented |

	staff should be informed as to what the alarm signifies and who to contact.		**b)**	Implemented	Email	

Agreed Action:

Capita have confirmed There is a formal maintenance regime in place and service is provided by MITIE and as above re Cofley

Responsible Officer:

Head of BTP & ICT

Implementation Date:

Complete – Capita

Cofley - 1 April 2016, (or sooner).

Implemented

			c) **Agreed Action:** FM confirm that as Corporate Landlord we will take responsibility for arranging the emergency event interface arrangements with between the Council / Civic Centre and the IT service provider. **Responsible Officer:** Divisional Director - Commissioning Services, E&E **Implementation Date:** Trial demonstration in mid-December 2015 **Note:** Water detection is not the responsibility of the Council. This has been affirmed with Capita		Sopra Steria reported that this was not their responsibility and came under the ENGIE contract. Facilities were contacted for a response as this issue falls under the ENGIE contract however this was not received. **Response from Facilities Management** This is part of the Engie contract and the planned preventative maintenance schedule will demonstrate this This is being implemented and integrity testing has been carried out PEL visit report for the joint Tyco/PEL visit testing the links between the house alarm and the comms room fire suppression. Service visit for the fire suppression took place last November. The cylinders were replaced on 30th March 2016. See attached evidence 'Fire Suppression Panel Demo' and 'Tyco Service Sheet'. There was also a service visit for the generator – evidence attached 'Emerson Preventative Maintenance'	Implemented

| 4.2 | Water ingress design prevention | M | **Agreed Action:** | | Technical library inspected | Implemented |
| | In the absence of the technical library confirm the extent that the hot water pipes potentially threaten the data centre and consider where necessary removal or installation of leak prevention detection measures. | | FM have confirmed that a technical library does exist and have reviewed and confirmed that there is one hot water riser in the facility but the risk is low. **Responsible officer:** Divisional Director - Commissioning Services, E&E **Implementation Date:** Complete | | | |

Implemented	
Part Implemented or In progress	
Planned but not implemented to date	
Not planned for Implementation	