

WIRRAL COUNCIL

CABINET

18 MARCH 2010

REPORT OF THE DIRECTOR OF FINANCE

DATA CENTRES

1 EXECUTIVE SUMMARY

- 1.1 This report provides Cabinet with an assessment of the current status of the Council data centres and possible options for their future development.

2 BACKGROUND

- 2.1 The Council currently has three principal data centres, each of which is approximately 20 years old and no longer meet current standards.
- 2.2 The data centres contain the Storage Area Network (SAN) and principal servers.
- 2.3 The SAN was replaced in 2009 and the principal servers will be replaced in 2010.
- 2.4 The architecture of both the SAN and servers is such that the hardware is split between the Treasury and Link data centre rooms. Data is replicated between the two rooms and servers are configured so that loss of either room would be followed by a continuation of service.
- 2.5 Treasury Building Data Centre
- 2.5.1 The data centre room is on the first floor of the Treasury Building on the corner of Hamilton Square and Cleveland Street.
- 2.5.2 The basement of the building is occupied by the Printing Section which uses flammable chemicals which are secured in a fireproof cabinet each evening.
- 2.5.3 The power supply is shared with the rest of the Treasury Building.
- 2.5.4 There is no standby power supply.
- 2.5.5 There have been periodic incidents of flooding from the Treasury roof, two floors higher.
- 2.5.6 The Treasury and Link rooms are approximately 100 meters apart with a building constructed in two phases, 1956 and 1968.

2.6 Treasury Link Building Data Centre

- 2.6.1 The data centre is on the ground floor of the Link Building which is mainly of a single storey construction.
- 2.6.2 Beneath the data centre is the Treasury Building garage which, apart from daytime use is also used to store vans overnight. Smoke detectors are fitted to the garage area.
- 2.6.3 The power supply is shared with the rest of the Link Building but is separate from the Treasury.
- 2.6.4 There is no standby power supply.
- 2.6.5 The flat roof above the data centre is in poor condition and as is common with such roofs, is subject to periodic repair works.
- 2.6.6 The data centre is located above the Queensway Mersey Tunnel.
- 2.6.7 The Link data centre is the location for the Treasury Building hub of the Mitel telephone system. In the event of this part of the system being unavailable, the in-built resilience in other parts of the system would ensure that communication to and between the other main sites would continue.

2.7 Hamilton Building Data Centre

- 2.7.1 The data centre is located in the basement of the Hamilton Building, Conway Street, Birkenhead and has been the subject of flooding.
 - 2.7.2 Both gas and water pipes pass through the data centre.
 - 2.7.3 There is no fire detection or suppression equipment.
 - 2.7.4 There is no standby power supply.
- 2.8 Following a procurement process, NCC Group was engaged to carry out a review of current data centre provision.
- 2.9 The review has taken place concurrently with the future of office accommodation being considered as part of the Strategic Asset Review. The Head of Asset Management has been consulted by NCC Group and appropriate IT Services staff interviewed by consultants E C Harris.
- 2.10 Pending the outcome of the office accommodation review essential improvements and maintenance of the data centre rooms will continue.
- 2.11 IT Services is involved in discussions with the National Health Service and other Local Authorities on future local IT co-operation and will explore partnership possibilities.

3 FINDINGS OF THE NCC GROUP REPORT

3.1 Findings on physical conditions in the data centre rooms have been prioritised One, Two or Three as follows (comments in italics):

3.2 Priority One

- There was no earthing in place for the equipment racks, which presented a risk of electrical shock to personnel.

This risk was addressed immediately upon being discovered.

- The mains gas pipe in the Hamilton Building Data Centre presents a serious risk given that no gas suppression is installed.

A written report from the Director of Technical Services on options is awaited.

- Fire proofing is required to the data centres due to there being holes in the walls.

To be progressed.

- Fire exits are poorly labelled and need reassessing with the fire officer.

This has been addressed.

- No fire extinguishers in the Treasury data centre or the Hamilton Building data centre.

This had previously been raised with the Fire Officer who does not require them.

- UPS power protection is poorly provisioned and is unreliable. In addition the open battery rack in the Treasury Building presents a risk to personnel working.

Work to address a lack of power supplies in the rooms will enable these batteries to be decommissioned. This will take place March/ April 2010.

- There is no VESDA system (fire detection with gas suppression) installed in the data centre in the Hamilton Building.

The outcome of the accommodation review will influence the decisions taken.

3.3 Priority Two

- The layout of the racks means that some are receiving little to no cooling and others are having the warm air emitted from racks in front of them.

As far as is practical, as new racks are introduced they will be commissioned in this way

- Air Conditioning has been poorly provisioned using office grade cooling units and the humidity level is set far too low (20% – 25% and should be between 40% -55%).

The Director of Technical Services has monitored the humidity and offered guidance in terms of adjustment of air conditioning. Humidity remains under review by the environmental monitoring software used in the rooms.

Again, the outcome of the accommodation review will influence decisions taken.

- Cabling within the racks is poorly managed and there is little or no labelling.

The work to address the separate issue of a lack of power will enable cabling to be reviewed and labelled appropriately.

- Need to re-assess the number of smoke detectors installed in each data centre as there appeared not to be enough for the size of the rooms.

The Fire Officer has reviewed this and is satisfied with the number of detectors. He requested the relocation of one and this work has been carried out.

3.4 Priority Three

- The cabling under the raised access floor has not been installed on trays and runs alongside/ over the 16amp power feeds to the racks which degrades the signal.

The work to address the separate issue of a lack of power includes a review of cable management.

- Re-assess the suitability of the floor coverings, because nylon carpet floor tiles are not suitable for data centres.

The outcome of the accommodation review will influence any changes in the floor covering.

- The windows on the first floor data centre in the Treasury building have no solar film installed, which increases the thermal gain within the room and therefore requires the air conditioning to work harder.

Three quotations have been requested and an order will be placed for film.

- The rooms are being used for storage of boxes and old IT equipment which presents a risk of fire and therefore all items should be moved elsewhere and the room kept clean.

This is being addressed and will continue to be monitored as part of monthly health and safety inspections that have been implemented.

4 CONCLUSIONS OF THE NCC GROUP REPORT

- 4.1 The current Data Centres have evolved over time, are no longer fit for purpose and do not currently meet best practice guidelines.
- 4.2 Any major investment needs to await the conclusions of the Accommodation Review.
- 4.3 Irrespective of the future of the individual buildings, actions need to be taken to make the current Data Centre facilities safe.
- 4.4 Within the currently portfolio of Council office locations there is no space available to create a new data centre.
- 4.5 The option of hosting the data centres externally is cost prohibitive and requires a high level of investment in resilient WAN links, again adding extra cost.

5 RECOMMENDATIONS OF THE NCC GROUP REPORT

- 5.1 The appropriate model for Council data centre provision is a main room situated in a principal building with a remote secondary site providing the capacity for business continuity and disaster recovery in respect of the major corporate systems.
- 5.2 These corporate systems would include:
 - E-mail
 - Client information for DASS and CYPD
 - Customer relationship management

- Financials
- Revenues and Benefits
- Document management systems

5.3 NCC Group makes a number of recommendations which are dependant upon the outcome of the office accommodation review:

- Ensuring the two data centres in the Treasury building are as resilient as possible, by balancing the applications, the incoming wide area network and telephony connections across both locations.
- Re-assessing the level of protection between the separate fire zones in the Treasury Building.
- Addressing the short comings (the Priority One Actions) of the existing data centres in the Treasury and Hamilton Buildings.
- If possible, identifying a secondary location (remote from the main data centre) where the core business applications could be replicated to provide additional resilience.
- If a distributed office model is continued with, then the cost of establishing a standalone data centre should be fully evaluated compared with refurbishing one of the Treasury Building data centres.
- If one centralised Council office is the preferred option, then a large data centre in the basement of this building should be factored into the design. Such a building would incorporate up to date network and power provision.

5.4 Should the outcome of the office accommodation review be a recommendation for a single corporate office, it would be appropriate for a new data centre to be incorporated into the design.

5.5 Should the office accommodation review recommend a continuation of the existing distributed provision, and assuming the Treasury Building remains part of that provision, steps should be taken to improve one of the current rooms.

5.6 In either case, the Council should continue to investigate alternative sites for a secondary site including co-location with a partner.

6 FINANCIAL AND STAFFING IMPLICATIONS

- 6.1 The capital programme includes £6m for the ICT implications of the Strategic Asset Review.
- 6.2 More immediate priority findings are being addressed from within existing budgets.

7 EQUAL OPPORTUNITIES IMPLICATIONS

- 7.1 There are none arising directly from this report.

8 HUMAN RIGHTS IMPLICATIONS

- 8.1 There are none arising directly from this report.

9 LOCAL AGENDA 21 IMPLICATIONS

- 9.1 There are none arising directly from this report.

10 COMMUNITY SAFETY IMPLICATIONS

- 10.1 There are none arising directly from this report.

11 PLANNING IMPLICATIONS

- 11.1 There are none arising directly from this report.

12 LOCAL MEMBER SUPPORT IMPLICATIONS

- 12.1 There are no particular implications for any Members or wards arising out of this report.

13 BACKGROUND PAPERS

- 13.1. NCC Group – Wirral MBC Data Centre Location Review – November 2009.

14 RECOMMENDATIONS

- 14.1 That a further report be presented to Cabinet following the outcome of the current review of office accommodation.
- 14.2. That the more immediate priority recommendations be implemented.

IAN COLEMAN
DIRECTOR OF FINANCE.