

TONBRIDGE & MALLING BOROUGH COUNCIL
FINANCE, INNOVATION and PROPERTY ADVISORY BOARD

22 July 2020

**Report of the Director of Finance and Transformation
and Director of Central Services**

Part 1- Public

Matters for Information

1 BUSINESS CONTINUITY INCIDENT - IT DISASTER RECOVERY

An information report providing Members with a record of the issues arising from the power outage on 5/6 April 2020 in respect of which Members will note that a compensation claim against UK Power Networks was lodged. In addition, the report provides a short summary of the issues arising from the failure of the air conditioning in the server room on 16 June.

1.1 Power outage 5/6 April 2020

- 1.1.1 On the afternoon of Sunday 5 April (approximately 16:00 hrs), a fire broke out in the electrical substation adjacent to the Gibson Building. The Council's out of hours duty officer informed the IT team on the situation, particularly with regard to potential IT server room implications.
- 1.1.2 The Council's own uninterruptible power source (UPS) and generator which serves as the back-up power supply was however confirmed to be operational with fuel for approximately 21 hours running time. An IT team (virtual) meeting took place at around 17:00 hrs on Sunday afternoon to discuss options, and as it was not known at that point when UK Power Networks could attend the substation to fix the problem, it was agreed to close down test/train/development systems to reduce potential load on the generator. Other systems continued to operate however, using power from our backup generator.
- 1.1.3 UK Power Networks (UKPN) attended site during at around 20:30 hrs and installed their own temporary generator at the substation. Once the newly installed UKPN generator started up, our backup generator automatically stood itself down as it is designed to do. Mains power was restored to the building, but unfortunately it transpired that the server room power did not switch back from the generator to the mains due to an electrical phasing error by UKPN and had failed subsequently after UPS batteries were drained out. This was brought to the IT team's attention when, around 21:00 notification was received that the website was 'down'.

1.1.4 As Members are fully aware, this was at a particularly vulnerable and challenging time given the start of the 'lockdown' and the new responsibilities that the Council were required to take on as a result of the pandemic. All Council staff at that time were working from home relying heavily on the Council's networks following the government's directions.

1.2 Subsequent Actions and Issues

1.2.1 Members of the IT team subsequently attended site on the (late) evening of 5 April and power was restored to the computer room around 23:00 hrs. A system rebuild of the storage platform was in progress overnight and restoration of web site, email, telephony and critical application systems commenced. Staff worked through the night and into the following day.

1.2.2 At this point it was not known why the power to the computer room had failed following UK Power Network's installation of their temporary generator; and also why the Council's own generator and UPS had not 'kicked in'. It subsequently came to light that the electrical phasing (which could be either standard or non-standard rotation) had not been properly taken into account by UK Power Networks and the incorrect phasing had been used.

1.2.3 A UPS engineer attended site on Monday 6 April and confirmed that the issue was connected to electrical phasing and caused a problem with our generator and UPS configuration thereby taking all IT systems down. The Head of Buildings, Facilities and Administration contacted UK Power Networks and they attended to fix the problem at around noon. Unfortunately, during the switch over process from one generator to another, the UPS sustained damage to 4 fuses and a power board which resulted in it being unusable.

1.2.4 At this point telephony and the website had been functional following the work overnight, and other systems had been in the lengthy process of restoration. The failure on switchover therefore, despite all the work undertaken overnight, took everything back to 'ground zero'.

1.2.5 Due to the specialist nature of the UPS, replacement parts were required for the UPS, which can only be sourced from the manufacturer and were not stock items. However we were able to arrange a loan UPS through our UPS contractor, which was confirmed for delivery on Wednesday 8 April. Members will note that until a UPS was functional there was a risk that any 'blip' variation in power could have caused the systems to go down again. This risk was acknowledged, but, due to the 'mission critical' nature of the systems and the impact of non-availability, it was agreed that restoration should proceed immediately with a list drawn up of 'priority' systems to restore in the first instance.

1.2.6 The Business Continuity Plan (BCP) was used to identify the majority of the mission critical services, data and programmes that needed to be established. However due to the timing and the new service demands as a result of COVID-19 response, new mission critical services – notably the community hub and

associated services – were not captured on the BCP but were identified separately.

- 1.2.7 Staff had been alerted to the IT problems through the use SMS texting systems which allows us to keep staff and members informed despite the core systems being offline.
- 1.2.8 Restoration of web site, email, telephony and critical application systems recommenced. The second rebuild took a lot longer due to major faults being detected in the data and these rebuild works were completed around 06:00 hours on Tuesday 7 April, although some systems were not available at this point because of critical issues that had occurred. Staff were however able to use email and telephony at some point during the course of Tuesday 7 April.
- 1.2.9 On Wednesday 8 April the loan UPS was installed, and at 17:00 the IT team closed down IT systems to reduce risk if further failure/corruption pending the scheduled arrival on site of UK Power Networks. This further visit was for another 'power down' to switch over to new substation equipment and took place at 18:30 seamlessly with a satisfactory result.
- 1.2.10 Overall, this could be described as a 'perfect storm' with two power outages in the space of 24 hours arising from issues outside of the Council's control. Whilst the incident caused major disruption to Services council-wide, the main impact was contained to under 48 hours which, considering the scale of the disaster, was a successful outcome facilitated by the IT Team. This was particularly important given that the majority of staff were (and still are) working from home in line with government guidance regarding COVID-19.
- 1.2.11 The required parts were sourced and the damaged UPS was repaired by the manufacturer on Wednesday 29 April and was reinstated by the supplier on Tuesday 5 May.

1.3 Business Continuity Impacts

- 1.3.1 The business impact of this power outage was on our core IT systems, website, telephony and data sets. Without suitable power supply to these systems, our UPS drained and all of the IT systems collapsed. This resulted in a complete loss of service with no access to our systems by staff or customers.
- 1.3.2 Members may also be aware that the Council hosts websites for two neighbouring councils. The outage impacted on the availability of their websites too, although both websites were restored relatively quickly.

1.4 Failure of Air Conditioning units in the server room 16 June

- 1.4.1 On the afternoon of 16 June at around 14:40 hrs, it was discovered that 4 out of 5 of the air conditioning units in the server room had failed and the temperature in

the room had risen to 38 degrees Celsius, way beyond the recommended level of (maximum) 20 degrees Celsius.

- 1.4.2 Members will be aware that government guidance in relation to COVID-19 states that staff should work from home wherever possible, and therefore the number of staff present on-site has been extremely limited and infrequent. In other circumstances, during working days, it is highly likely that the rising temperature, and therefore the malfunctioning of units, would have been noticed in a timelier manner and taken evasive actions.
- 1.4.3 The overheating caused some of the equipment to 'go down' and this affected email, telephony and internal applications. The website and public facing Revenue and Benefits systems remained operational throughout and were not affected. However, a further rise in temperature could have caused far greater damage to the equipment and prolonged the outage.
- 1.4.4 The Head of Buildings, Facilities and Administration arranged a visit from a specialist air conditioning contractor who attended site within an hour of the issue arising. A member of the IT team who was on site took some immediate preventative action and, with the assistance of interim work performed by the contractor, the temperature began to reduce allowing the opportunity for systems to be safely brought back into operation. This was completed by 20:00hrs on the same day.
- 1.4.5 On 17 June the air conditioning contractor attended site to replace two of the faulty air conditioning units, one of which with a more powerful unit. In addition they were able to get the remaining 3 units working.
- 1.4.6 Being that it is likely staff numbers at the offices will continue to be kept to a minimum, the air conditioning contractor is investigating the possibility of installing a monitoring system which would alert Officers to any faults which the units developed, enabling action to be taken. In addition, costs are being sought on the option to replace/upgrade the air handling units. IT services have enabled their own proactive temperature monitoring solutions to help ensure that the team are alerted of any changes to the optimum temperature within the datacentre pending any more permanent solution.

1.5 Legal Implications

- 1.5.1 In the event that the claim made against UK Power Networks is not settled to our satisfaction (see 1.6.1 below), consideration will be given to pursuing legal proceedings.

1.6 Financial and Value for Money Considerations

- 1.6.1 In respect of the April incident, a claim has been made against UK Power Networks for the sum of £60,710, representing unproductive time for the Council's

staff for approximately 1.5 days. We understand that this has been referred to the insurers. Other costs have been met from annual maintenance budgets.

1.6.2 In respect of the air handling units, quotes are being sought as set out above.

1.7 Risk Assessment

1.7.1 Following incidents such as these, business continuity 'post-event' meetings are held in order to learn from the incident and introduce any new mitigation measures.

1.7.2 Due to the business continuity impact of these events, we will be asking Internal Audit staff to review the incidents to allow a better understanding of our resilience and to provide a level of assurance to Management Team that we are well placed in the future to deal with incidents of this type.

1.7.3 The Council and its staff are reliant on IT systems for the delivery of services. In addition, with the promotion of digitally enabled services to the public, it is imperative that the availability of the systems involved are maintained at a higher level around the clock.

1.7.4 In turn we are also reliant on the goodwill of staff across the Council to work 'out of normal hours' to ensure that services are able to be restored and run efficiently.

1.7.5 As the reliance on IT systems becomes even greater, opportunities are being explored to mitigate risks further – for example by assessing greater use of cloud services in line with the IT and Digital Strategy. Consideration will also be given to the resource base within IT Services to ensure that there is adequate resilience and if appropriate proposals will be brought to the General Purposes Committee.

1.8 Policy Considerations

1.8.1 Business Continuity/Resilience

1.8.2 Human Resources

Background papers:

Nil

contact: Sharon Shelton
Ganesh Thangarajah
Stuart Edwards
Andy Edwards

Sharon Shelton
Director of Finance & Transformation

Adrian Stanfield
Director of Central Services