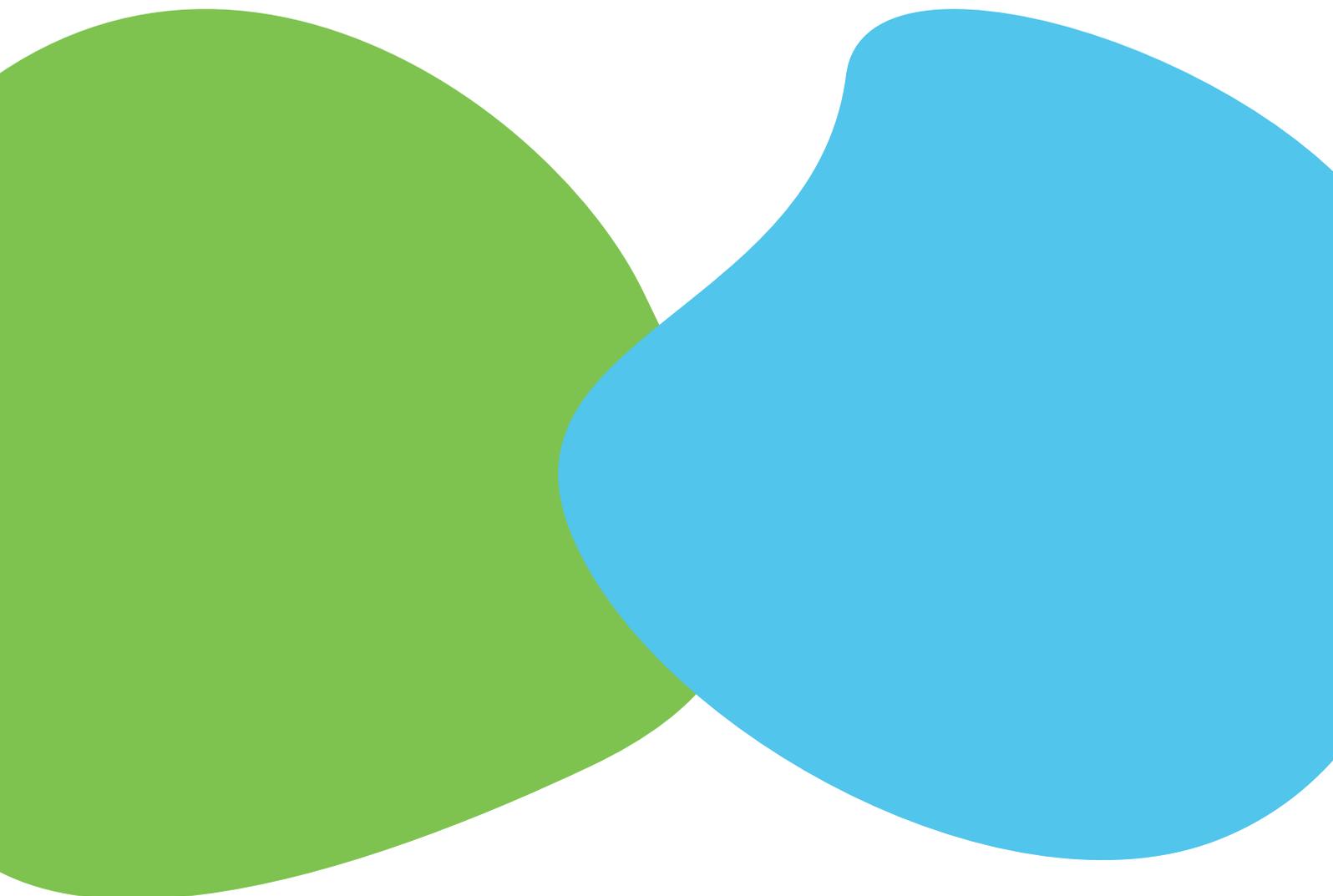




Property
Services

Weybridge fire incident report



Weybridge Fire Incident

NHS Property Services Report into the Fire at the Weybridge Community Hospital

Address of Incident:

**Weybridge Community Hospital
Church Street
Weybridge
KT13 8DY**

Date of Incident: **Tuesday 11th July 2017**

Date of Instruction to carry out investigation: **Wednesday 12th July 2017**

Date of this Document: **Version 3.1 – 14th May 2018.**

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Weybridge Fire Report

1. Introduction

1.1 Following the fire at Weybridge Community Hospital on the 11th July 2017, NHS Property Services (NHSPS) commissioned an investigation in the incident. This report sets out the investigation process, the conclusions and findings and makes recommendations for consideration by NHSPS and other stakeholders.

1.2 At the time of the incident the building owned by NHSPS was operating as a Health Centre with several different organisations occupying various parts of the ground and first floors. These included two GP Practices and Central Surrey Health (CSH), a service commissioned by North West Surrey Clinical Commissioning Group (NWS CCG). NHSPS will cooperate fully and share the findings from the investigation, including any reports submitted with all relevant parties.

1.3 The extent of the damage caused to the building by the fire and subsequent demolition of the structure on the grounds of safety has prevented any form of physical examination of the fire scene from taking place. Normally this would form an essential part of any fire scene investigation. Consequently, the investigation has relied on compiling information from available records and documents, witness accounts and reference to technical literature.

1.4 In summary, the investigation has identified that it was not one single point of failure, but a combination of several events that led to the conditions necessary for the fire and as a result the destruction of the building. These are:

- The most probable cause of ignition is a combination of issues associated with the electrical installation and the AC unit.
- Failure to access the server room and inspect the fixed electrical installation that may have identified a problem. It is important to note that an EICR would not have picked up the AC unit in this process (only the wiring leading up to the unit)
- Apparent failure of the Electrical Contractor to alert NHSPS management that a hazard room had not been inspected as part of the EICR.
- Each organisation that was unable to access the server room whilst undertaking a n FRA of the premises potentially missed opportunities to identify breaches in the fire rated construction enclosing the compartment.
- The NIFES building condition survey potentially failing to identify poorly fitted or missing elements of the fire resisting construction at the boundary between compartment walls.
- Failure to raise the alarm and initiate a more rapid response to help prevent the fire from spreading.
- Failure to address the defective fire stopping below the fire doors in the roof void.
- Failure of several parties to recognise that the change in use should have prompted a review of the FRA, which should have identified that the building was no longer protected when the premises were unoccupied.
- On two occasions server room 204 was not accessed during fire risk assessments, which may have highlighted any potential ignition risks.

2. Purpose and Scope of Report

2.1 The primary purpose of the report is to provide NHSPS and other stakeholders with information relevant to the incident and key findings from the investigation made into the cause and development of the fire.

2.2 The scope of the investigation has been broadened out to include matters beyond the cause of fire and its development; it has also looked at the issues at the route of these matters. These are reflected in the report's conclusions and in the recommendations for further action. The scope includes:

- Matters contributing to the cause of the fire
- How the fire developed and why it developed to the extent it did so, the effect of not connecting the fire alarm system to an alarm monitoring station
- The type of structure involved and its' performance in fire, details of statutory tests, planned performance maintenance, servicing of equipment and installations, and inspections or assessments carried out, including the extent and potential impact of any outstanding actions
- The building standards in force at the time the structure was built and the standard of compliance with the plans submitted
- The security arrangements in place
- The supervision and management of the building
- The initial response and subsequent action taken by NHSPS to the fire.

2.3 Wherever possible, the report provides evidence and justification for each of the findings made, identifies key learning points, and makes recommendations for consideration by NHSPS and others. It will evidence, by reference to documents and information provided by witnesses to the incident, the sequence of events prior to the incident occurring; during the incident and immediately following the incident.

2.4 An essential part of the investigation process involved interviewing key witnesses for their account of matters leading up to the incident. Reference is made throughout the document to critical information reported during the interviews. To safeguard the identity of the individuals concerned, any reference to them has not been included in the report but copies of the interviews have been retained.

3. Background Information and Summary of Findings

Background information to the Incident

3.1. In the week leading to Tuesday 11th July 2017, Weybridge and most of the UK were experiencing hot weather conditions. CSH staff working at the hospital reported that they had recorded the temperature reaching 34°C in their office on the second floor of the building. A member of the public noticed that the double fire exit doors at the side of the building had been open for some time, presumably to allow cool air to enter the building.

At 23:59hrs a resident living nearby to the hospital saw and reported an apparent fire in the vicinity of the Hospital. Fire crews from Painshill and Walton-on-Thames fire stations were mobilised to attend the incident. On arrival, they found a well-established and spreading fire in the roof area above the main entrance. They immediately started fire firefighting operations in an attempt to stop the fire from spreading to the rest of the building. Firefighting operations continued throughout the night eventually finishing the next day.

The remains of the building were ordered to be demolished by the Local Authority because it was deemed to be a dangerous structure and therefore a health and safety hazard. An investigation into the cause and development of the fire was instigated by the fire service and the local police. The fire alarm panel and remains of the CCTV system were recovered and seized as evidential items. NHSPS also commissioned their own investigation into the fire and other matters associated with the incident.

Summary of Findings Made

3.2. The first smoke detector to activate was in Server Room 204 on the second floor. The fire was most likely the result of accidental ignition. It is known that Server Room 204 contained several electrical appliances and equipment. The potential for each of these to cause the initial ignition has been considered, but this investigation has determined that the most probable source of ignition is the wall mounted DeLongi air conditioning unit fitted in the room. This evidence directs the investigation to determine that the fire originated in Room 204.

3.3. After initial ignition, the fire spread through into the roof compartment above. Due to the proximity of the air conditioning unit to the pitch of the roof structure in Room 204, the bitumen underfelt of the roof structure quickly caught fire. As the underfelt burnt away, the roof structure rapidly weakened and collapsed venting fire and hot gases through the roof. The breach in the roof supplied air (oxygen) to the combustion process and so increased the rate of burning. The timber construction of the roof and structure of the roof void supplied the fire with fuel and as the rate of burning increased, the intensity and spread of fire would have been rapid. The initial fire crews observed this when they arrived at the scene.

3.4. The fire continued to spread along the inside of the roof structure and breached through the fire compartment lines separating the compartments in the roof. Potential weakness in the fire separation at roof level caused the Rockwool fire mesh walls that formed the compartment fire boundaries to collapse, allowing fire to spread rapidly through from one compartment to the next. Eventually the collapsing structure caused further breaches in the compartment ceiling spreading the fire into the first floor below and, subsequently into the ground floor. It is also probable that

defects in the standard of fire separation in the cavities in the void below the fire doors also provided a route for fire spread between fire compartments.

3.5. The initial fire crews arrived at the scene to find an established and rapidly spreading fire in the roof above the second-floor area close to where the lift shafts were located. Fire crews report hearing cylinders explode inside the building very soon after arriving at the scene and during the fire and firefighting operations. The rapid fire spread and danger posed by exploding cylinders prevented fire crews from entering the building to fight the fire they therefore took up defensive firefighting operations and attacked the fire from the outside only.

3.6. The fire alarm panel was recovered from the fire and interrogated to identify where the fire started and when the first detector activated (Room 204). The sequence of detectors that first activated enabled tracking of the route smoke and hot gases followed during the early stages of the fire. Because smoke travel is affected by air currents and any leakage paths, the sequence of activations cannot always be taken as an absolute indicator of fire spread.

3.7. When the Hospice moved out of Weybridge Community Hospital in April 2017 the premises ceased to have twenty-four-hour coverage in terms of fire warning. The fire alarm and detection system was not connected to an alarm receiving station and so it functioned as a local audible alarm only. Any activation of the detection or alarm would need to be physically reported to the fire service to initiate their response.

3.8. By analysing the activation log from the fire panel and comparing this with the time when the weekly test was carried out this investigation estimates that the time recorded on the fire alarm panel was approximately fifteen minutes fast. The consequence of this is that the actual time when the first detector activated was around 23:30hrs, rather than 23:45hrs. This helps explain why the fire appeared to develop so quickly following initial ignition and breach through the roof.

3.9. The investigation has taken all reasonable efforts to locate the original building design of Weybridge Hospital and the Building Regulations Application. Two files containing details of the external services and roofing details were recovered from the fire site, but all other information retained by NHSPS and stored on site at Weybridge Hospital are thought to have been destroyed during the fire. Butler and Young (Approved Building Inspectors), confirmed that they submitted the Building Regulations Application but no longer retained any copies (it is their policy to destroy documents after fifteen years) This Investigation concludes that copies of the Building Regulations Application and other documents are no longer available and therefore it is not possible to confirm details of the original design and build or application process.

3.10. The investigation can confirm that the cause of the fire was accidental and that any reference to a malicious or doubtful cause can be discounted. The level of damage sustained by the CCTV during the fire has excluded the possibility of recovering any information from the system.

3.11. NHSPS completed a landlord Fire Risk Assessment (FRA) on the 18th May 2016 with a review date for 18th May 2017. There is no evidence that a review was undertaken. Whilst there is no legal requirement to undertake an annual review, NHSPS has an internal protocol for annual review of properties with a residential or life risk i.e. "bedded" patient units. In April 2017, the residential (Hospice) unit moved out, which should have also triggered a review of the FRA to determine if the changes impact on the fire safety measures in place. However, the NHSPS Safety team were not informed of the change in use until the 12th July 2017 (i.e. the day after the incident).

3.12 The action log for the FRA identified seven areas where the fire resisting construction had been breached and not effectively fire stopped. Evidence from the NHSPS action logs indicate that only three of these actions were completed. These are listed in the main body of the report.

3.13. The FRA does not specifically refer to any defects or observations relating to Room 204, it does make a disclaimer in Section 25 that the assessment was non-invasive only. It recommends that because of the timber construction a detailed survey of the fire separation and fire compartments is made. There is no evidence that this was carried out.

3.14. The Electrical Installation Condition Report (EICR) carried out on the 23rd Jan 2017 makes 53 Category 2 (C2) observations. At the time of the investigation, there was no evidence of these defects being resolved.

3.15. The Engineer carrying out the EICR inspection was unable to access Room 204 and consequently, any equipment fitted in that room was omitted from the inspection. A qualified Electrical Engineer from Ingleton Wood LLP was commissioned to review the document and to comment on the potential for any of the C2 observations to cause the fire, assess the standard of the installation in terms of the protective devices fitted and the omission of inspecting Server Room 204. The observation from that review are contained within Section 4.3. of this report.

3.16. Efforts have been made to recover Portable Appliance Testing (PAT) Records for the second floor. The testing was carried out by an external contractor employed by Virgin Care and subsequently Central Surrey Health. However, none of the equipment fitted within the server room 204 (apart from any extension cables used) would be covered by PAT.

3.17. The investigation has identified that it was not one single point of failure, but a combination of several events that led to the conditions necessary for the fire and result in the destruction of the building. In summary, these are:

- The most probable cause of ignition is a combination of issues associated with the electrical installation and the AC unit.
- Failure to access the server room and inspect the fixed electrical installation that may have identified a problem. It is important to note that an EICR would not have picked up the AC unit in this process (only the wiring leading up to the unit)
- Apparent failure of the Electrical Contractor to alert NHSPS management that a hazard room had not been inspected as part of the EICR.
- Each organisation that was unable to access the server room whilst undertaking a n FRA of the premises potentially missed opportunities to identify breaches in the fire rated construction enclosing the compartment.
- The NIFES building condition survey potentially failing to identify poorly fitted or missing elements of the fire resisting construction at the boundary between compartment walls and the roof.
- Failure to raise the alarm and initiate a more rapid response to help prevent the fire from spreading.
- Failure to address the defective fire stopping below the fire doors in the roof void.

- Failure of several parties to recognise that the change in use should have prompted a review of the FRA, which should have identified that the building was no longer protected when the premises were unoccupied.
- On two occasions server room 204 was not accessed during fire risk assessments, which may have highlighted any potential ignition risks.

4. The Investigation Findings

4.1 Construction Details

4.1.1 The construction of Weybridge Community Hospital was completed in 1999. The building application was submitted by an Approved Inspector, Butler and Young. Fitzpatrick Construction UK Limited engaged as the main contractor. The structure comprised of a hexagonal, mainly two storey building. A third storey was only present over the main entrance area. The building was designed as a timber framed structure with supporting metal framework, external brick walls and timber floors.

4.1.2. The hospital was transacted over from NHS Surrey Primary Care Trust at the inception of NHSPS in April 2013. As Landlord, NHSPS owns and takes responsibility for the maintenance and servicing of systems and equipment installed in the building. These are carried out as essential Planned Preventative Maintenance (PPM). Arrangements are in place to ensure that service engineers are able to access NHSPS equipment fitted in any area, including tenant's demised areas. Tenants are responsible for the maintenance and operation of any equipment and appliances they introduce into their demised areas e.g. IT equipment.

4.1.3. The construction of the roof is Redland Cambrian slate/tile clad system incorporating eaves ventilation and dry vent ridge system with lead works to isolated areas. The slate/tiles sat on 50mm x 25 timber battens with LF bitumen type underlay. The roof void contained the building's plant and service equipment. Fire resisting Rockwool mesh walls separated each fire compartment in the roof void.

4.1.4. The external walls of the second floor were clad in composite tiles. Access to the upper floors were via three stairways and two passenger lifts. Only the staircase in the main entrance area and the lifts provided access to the second floor.

4.1.5. Butler and Young confirm that they dealt with the original Building Regulations Application but have since destroyed all records and documents relating to the application. It is also understood that copies of the application along with other related Operational Manuals were retained on site at Weybridge and these were destroyed during the fire.

4.1.6. NIFES Consulting Group carried out an extensive building condition survey in 2011 that included an assessment of the standard of fire resistance around the fire compartments and a general assessment of the level of fire risk. A report was submitted in 2011 listing 154 items where compartment walls or general lines of fire resistance had been potentially breached. The remedial work to remedy the issues raised in the report was completed by Oliveti Construction Ltd in 2012.

4.1.7. Table 1 lists the demised areas on the second-floor of the building.

Table 1 List of rooms on the second floor

Designation	Room Description	Area (m ²)	Demised area
Room 213	Print and Copy room	5.2	CSH
Room 208	Lift Machine room	6.7	NHSPS
Room 208	Washroom	4.2	CSH
Room 212	Interview room	7.2	CSH
Server room 204	Server room	5.3	CSH*
Server Room	Server Room	7.9	
Room 203	Kitchen	10.5	CSH
Corridor	Corridor	12.5	CSH

* Note that although the equipment in server room 204 was under the control of CSH the AC Unit was retained by NHSPS.

4.2 Fire Alarm Installation

4.2.1 The original automatic fire and detection installation was upgraded from category L2 to L1¹ in 2012. It comprised 14 zones plus a zone for the main fire alarm panel. Most of the detection was provided by optical smoke detectors (222 heads) the remainder being heat detectors (15 heads) and one ionisation detector. Optical smoke detectors are more effective than ionising detectors in reacting to fires where smoke is released rather than free flaming fires where very little smoke is released.

4.2.2 The fire alarm panel was manufactured by a company called Advanced Electronics Ltd and the system was installed by DEBco. CFS maintained and services the system under contract to Mitie. According to the certificate submitted by CFS following their last routine service of the installation carried out 11th April 2017 and the PPM certificate issued the Lucas type batteries fitted as part of the standby power supply failed. These had not been changed since that service was carried out or before the Fire Alarm panel and battery backup box were recovered from the fire scene. The batteries were found connected to the system with the words "Failed" written across both batteries. When tested on the 22nd July by the Estates Officer for NHSPS, the batteries recorded the following power reserves as opposed to the normal operating capacity of 26 amps as registered on each battery.

- Battery 1 – 3.21 amps
- Battery 2 – approximately 4 amps (fluctuating reading)

A category L1 system, as defined in BS 5839 defines, requires all rooms including the roof void to be protected by automatic fire detectors. It is the highest standard of life safety detection and is designed to offer the earliest possible warning of fire, to allow for the longest time available for escape.

4.2.3 There is discrepancy as to who is responsible for requesting new “back-up” batteries for the fire alarm system. The FM team understand that because the replacement cost is below a certain level (£500), Mitie should replace automatically and without having to consult with the FM team.

4.2.4 The report carried out by CFS under contract to Mitie in April 2017 contained the following inaccuracies:

- Checklist – records that all controls and visual indicators are correct – (time shown appears to be incorrect and the time was incorrect by at least one hour during British Winter time) Anecdotal evidence indicates that this is not checked during any routine servicing or checking of the installation.
- The Planned Preventative Maintenance certificate issues by CFS for the installation is not signed, and refers to Subcontractor 12 as the person undertaking the inspection; no explanation of Subcontractor 12 is provided, the printed name of the customer is incorrect and not signed (note in a previous document the signature appears false).
- The system design and false alarm section of the certificate incorrectly records the category of the installation as L2.

4.2.5. Advanced Electronics Ltd successfully recovered data from the fire alarm panel that indicates where and when the fire started. The time recorded on the activation log initially indicates that the fire broke through into the adjoining fire compartment very rapidly after the first detector activated. The accuracy of the time recorded on the panel will need to be verified in conjunction with an assessment of the speed of fire spread and development. The first twenty activations and their location recorded by the system has been reproduced in the table as Appendix D to this report (Appendix D Table of first twenty fire smoke detector activations)

Verification of time recorded by fire alarm panel

4.2.6. The fire alarm for the Hospital was tested on Wednesday mornings. The test was carried out by two members of the NHSPS Estates staff as part of PPM work. Records indicate that staff generally booked in on site at 08:15hrs. The Event Log report (refer to Ref. 2. Event Log Report <Q:\COO\Health, Safety, Security & Fire\T Godfrey stuff\Event Log.pdf>) from the recovered fire alarm panel shows that between 16/11/2016 and 05/07/2017 when the last weekly test was carried out, ranges between 08:45hrs and 09:00hrs.

4.2.7 According to the staff involved with the PPM test, the alarm was activated after each of the four reception desks were given verbal notification of the test. If an allowance for the time taken to travel to each desk is made, it is reasonable to suggest that the test was carried out closer to 08:30hrs rather than 08:45hrs. This indicates that the times set on the fire alarm panel was approximately fifteen minutes later than the real time. Therefore, the time when the first detector activated could be as early as 23:30hrs.

4.2.8. Section 45.3(h) of BS 5839 Part 1 (Ref.3. [Fire Detection and Fire Alarm Systems for Buildings. Part 1 Code of Practice for design, installation, commissioning and maintenance of systems in non-domestic premises. BSI Standards Publications](#) recommends that all functions of the control indicating equipment (Control Panel) are checked as part of the annual service, this would include that the correct time is displayed on the panel. Anecdotal evidence obtained during the course of the investigation indicates that the accuracy of the time is not checked or amended by engineers undertaking mandatory inspection and testing of fire alarm systems in general.

4.3 Electrical Fixed Wire Installation

4.3.1 Mitie sub contracted Key Electrical Solutions Limited to undertake and report on the condition of the premises Electrical Installation Condition Report (EICR (five-year fixed wiring installation examination)) (refer to [Ref. 4 Electrical Installation Condition Report: 9380. Phil Cranenburgh, Engineer, Key Electrical Solutions Limited, 218 Boughton Industrial Estate, Boughton. NG22 9LD](#)). The examination was completed on the 23rd January 2017 and the report was issued on 2nd March 2017. The examination should include all areas of the building containing elements of the fixed electrical wiring installation.

4.3.2 The report records that the overall condition of the installation as 'Unsatisfactory' and recorded the following observations against the C codes:

- C1 – Zero observations
- C2 – 53 observations made regarding potentially dangerous faults requiring urgent remedial action
- C3 – 14 observations made where improvements to the installation are recommended

C2 observations comprise of the following;

- 16 circuits recording maximum permitted earth fault loop impedance exceeded
- 14 overrated overcurrent protective device fitted
- 5 damaged socket outlets
- 3 damaged light switches
- 1 damaged joint box
- 2 with no banjo or earth tail
- 1 with damaged fused spur
- 3 with poor terminations
- 1 where the light switch not adequately fixed
- 1 with no CPC present in circuit
- 2 where the distribution board is not adequately fixed
- 3 with a blank or missing cover
- 1 with no RCD present for socket outlet

4.3.4 A third party qualified electrical Engineer (Ingleton Wood LLP) was commissioned to undertake a full review of the above report and comment on the potential for any of the C2 observations contributing to the cause of fire. This report is listed as [Ref. 12. Weybridge Hospital M&E Building Engineering Services Assessment. 13th September 2017](#). The report made several observations relating to the report. These are summarised in [Table 2](#).

4.3.4 There is no evidence confirming that remedial action was undertaken to remedy the C2 observations made: i.e. no task order was raised to carry out the remediation work, the local FM team confirm that the actions/observations have not been completed, and no certificate or re-inspection report produced. Therefore, this report concludes that these remained outstanding when the incident occurred.

4.3.5. Correspondence with Key Electrical Solutions Limited, in conjunction with Mitie, has confirmed that Server Room 204 was not tested because access to the room was unavailable. The contract for this work was set to take place during the daytime and was part of a larger contract to survey several sites to ensure that all compliance documentation was in place by 1st April 2017.

The NHSPS Building Manager (now retired for this site) is responsible for arranging access to the site and relevant areas.

Table 2: Observations made from the Ingleton Wood review of the EICR.

Observation
EICR in 2010 but not conducted again in 2015.
Alterations have been made to the electrical installation in the previous five years and that the estimated age of the existing was thirty years.
The C2 items, which in the main could cause overcurrent issues, should be addressed as a matter of urgency. Best practice recommends C2 are addressed within 30 days from the issue of the report.
Most of the Distribution Boards (DB) examined as part of the inspection had limitations relating to insulation resistance.
Concern regarding the true condition of the DB given that access wasn't available to inspect all boards.
No RCD testing was identified in the reports
Thermal images taken of DB causing concern in terms of overcurrent and indications of 'hot spots'.
HTM05-02 cited as classifying Data Rooms as hazards with 1 hr fire rating ¹ .
No Low Voltage (LV) distribution schematic available ²
Not all distribution boards tested during EICR
Emergency lighting testing referred to in the report ³ .

Notes

¹ Section 5 of HTM05-02 recommend that 'Hub' rooms are enclosed with 30 minutes' fire resisting construction Ref. 14. Department of Health. Health Technical Memorandum 05-02 Firecode. Guidance in Support of Functional Provisions (Fire Safety in the design of health care premises) 2015 edition

² A LV distribution schematic dated 01/09/2010 has subsequently been provided.

³ The yearly three-hour test was carried out on the 22/08/2016. The report is available as Ref. 13. Weybridge Hospital – Emergency Lighting yearly 3 hour test – week 22 - 22/08/2017

4.4 Premises Fire Risk Assessment

4.4.1 The primary purpose of a Fire Risk Assessment when carried out in pursuance of the relevant Articles of the Regulatory Reform (Fire Safety) Order 2005 is to protect life; it is not intended to address the risk to property or business continuity from fire. Article 9 of the legislation requires that where an organisation employs persons, the Responsible Person should ensure that an assessment of the premises is made to protect employees in the event of fire.

4.4.2 The risk assessment carried out should cover any areas where they occupy and for routes to and egress from it. Article 9 (b) of the Regulatory Reform (Fire Safety) Order 2005 prescribes when the Responsible Person (the employer) should review the FRA for premises; it makes specific reference to when organisational changes take place i.e. when a new organisation takes over the occupancy from a vacating tenant, they should instigate a review of the FRA

4.4.3 The last fire risk assessment for the site was carried out by Exova Warrington Fire (Ref. 5. [Exova Warrington Fire: Weybridge +RSC NHS Property Service \(Surrey\) Fire Risk Assessment Date 17/08/2016](#). on behalf of NHSPS. The site visit was completed on the **18th May 2016** and the report issued on the **17th August 2016**.

4.4.4 At the time when the FRA was carried out the building was operating as a Hospice with an “in-patient” care facility and in accordance with the NHSPS policy, it would require a review every year. However, the “in-patient” care facility ceased in April 2017 when the Hospice moved out of the premises. Because this constitutes a material change of use it should have triggered a review of the FRA to determine if the changes affected the fire safety of the premises. According to information received by the NHSPS Safety Team, they were only informed of the change in use on the 12th July 2017.

4.4.5 The action plan attached to the FRA lists seven items relating to breaches in the lines of fire resistance, three regarding the storage of combustible materials, the remainder relate to training and fire safety management. These items and their progress are listed in Table 3, which has been reproduced from the Exova Warrington Fire Risk Assessment.

4.4.6 From those seven items, NHSPS actions logs for the building indicate that three had been completed. Some of the items included in the FRA have been carried over from the previous assessment carried out in 2015.

4.4.7 Virgin Care carried out a FRA in compliance with the Regulatory Reform (Fire Safety) Order 2005 of their demised area in June 2015 and a review of that assessment in May 2016 (Ref. 6. [Virgin Care: Fire Risk Assessment Review Record. Weybridge Hospital Date 10th May 2016](#)). Sections 1, Fire Hazards and 2, Fire Hazard Rooms (Other) of their report does not include any reference to Communications or Server Rooms. Later correspondence with their fire safety advisor, confirms that because Server Room 204 was labelled as a plant room, it was not accessed and therefore not included in the May 2016 risk assessment review. The original, June 2015, FRA lists twenty-seven items in the action plan, nine of which are assigned to NHSPS. The review lists twelve items as either outstanding or as an observation e.g. Item 60 Piped Oxygen system is the responsibility of Sam Beare Hospice.

NOTE: piped oxygen was supplied to the Sam Beare Hospice on the ground floor only. At the time of the fire, at the request of the CCG, the system was not in-patient use but was still fully operational. Daily checks on the system Planned Preventative Maintenance (PPM) continued to be carried out by NHSPS Estates staff and the system was inspected by Medical Gas Services Limited as part of their audit carried out in February 2017. The Action Plan from that audit recommended

that the system should be retested before it is brought back into commission (Ref. 11. MedicalGas services limited Audit February 2017).

4.4.8 It is understood that CSH did not complete a FRA for their demised areas when they replaced Virgin Care as the occupier and health provider in April 2017. The FRA for Virgin Care did not include access to server room 204, believing it to be a “Plant Room” and therefore part of the Landlord’s responsibility.

Table 3: Relevant fire hazards taken from Exova Warrington Fire Risk Assessment

Item No.	Hazard description	Responsibility	Comments	Action Log reference number
1	Room 029, 30 and 34 – provide self-closers to maintain the lines of fire separation in the sub-compartments	NHSPS	No evidence of being completed	
2	First floor – cleaners store (room 133) and COMM’s room – inadequate fire stopping to prevent smoke spread into the corridor space – no access to re-assess	NHSPS	See note (i)	
4	Second floor – vents installed in the fire doors to the lift motor rooms in the ancillary accommodation corridor. These louvered vents do not appear to be fitted with intumescent seals	NHSPS	No evidence of being completed	
6	Cavities apparent to base of access doors in roof void	NHSPS	No evidence of being completed	
8	Fire doors along the corridor areas to the first floor require maintenance as many do not latch or are poorly fitting.	NHSPS	Items completed	91314 92609 96232 9648996373 92552
9	Defective fire stopping in various risers is apparent. Fire collar in electrical intake not fitted to structure	NHSPS	See note (ii)	
10	Penetrations above suspended ceiling is apparent between protected corridor and staff kitchen on ground floor.	NHSPS	See note (i)	
12	Various fire doors wedged throughout building	Tenants		
20	Housekeeping, combustibles in escape routes and rear stairs	Tenants		
26	Storage in escape stair and other routes around building	Tenants		

Notes

- (i) NHSPS Estates staff have evidence (invoices for fire stopping materials) that some of this work relating to fire stopping were completed.
- (ii) NHSPS Estates staff have evidence (invoices for fire stopping materials) that the riser in the main entrance was fire stopped.

4.5 2012 NIFES Survey

4.5.1 NIFES Consulting Group carried out an extensive building condition survey in 2011 that included an assessment of the standard of fire resistance around the fire compartments and a general assessment of the level of fire risk (Ref. 7. NIFES Consulting Group. The removal and installation of fire barriers, glazing and fire doors at Weybridge and Woking Hospitals. Date January 2012).

4.5.2 The NIFES report was submitted in January 2011 listing 154 items where compartment walls or general lines of fire resistance had been potentially breached. It is noted that none of the

issues regarding fire separation related to the roof structure, i.e. the boundary created by the roof at the junction between each compartment.

4.5.3 The remedial work identified by the NIFES report was completed by Oliveti Construction Ltd. A completion certificate for the works was received by NIFES on the 20th April 2012. At the time NHS Surrey Primary Care Trust was responsible for the building.

4.6 Security of the site

4.6.1 Site security is operated by Fidelis Security Ltd who provided a security guard to attend the site each evening to check and secure the site and to remove the cash from the car parking payment machines based on site. The security operative attending the site on the evening of the incident arrived approximately one hour later than usual. There are some anomalies associated with the security operatives account for the evening in terms of the security of the double fire exit doors and a perimeter patrol of the site, these are not considered as having any direct bearing on the cause of the fire.

5. The cause of the fire; its development and spread

The investigation has adopted a logical process (commonly referred to as the “Scientific Method”) to determine the cause and development of fire. As part of that process it has considered:

- Where the fire started - the room of origin
- The ignition sources and item first ignited
- The act or omission responsible for causing the ignition
- Estimating the Time of Ignition
- Fire Development and Spread

5.1 Where the fire started?

5.1.1 The initial indication for the location of where the fire started is provided by the witness accounts that describe the fire venting through the roof at the rear of the main entrance. Fire tends to break through at the nearest point in a structure where the resistance to fire is weakest, often through glazed windows but also roofs. Photographic images (refer to Appendix A: Photographs) show that although the fire is well established in the second-floor area, the first and ground floors remain relatively clear of fire. This suggests that the fire originated somewhere on the second floor or possibly in the roof void.

5.1.2 Further evidence became available from the fire panel recovered from the building. The record from the Activation Log confirms that an optical smoke detector, device reference number 3/005, activated at around **23:30hrs** (actual time) and by reference to NHS Primary Care Trust plan (refer to Appendix C: Plan of second floor of premises showing room layout and point of origin for the fire) locates this device to a room on the second floor of the premises. A separate plan (refers to Weybridge Hospital Second Floor) registers this as Server Room 204.

5.1.3 Room 204 is a relatively small room measuring 5.3m² it was accessed via the corridor that leads from the main office past the washroom, kitchen, roof void access and lift machinery room. The corridor is fitted with two optical detectors: Lobby to Kitchen (Device no. 015) and Lobby to Plant room (Device no. 088). A further door within the room gave access to the Plant Room (Server room), which contained a control panel for the air handling unit for the building. This room measured 7.9m².

5.1.4 According to NHSPS estate staff, the roof of the building formed the ceiling of server room 204 and was underdrawn with plaster board fixed directly to the rafters forming the roof structure. This room was known to contain:

- A rack containing one switch with a fibre link to the Communications room on the first floor
- A wall mounted DeLongi (NR or CF – AR) air conditioning unit
- A combined ‘five foot’ fluorescent emergency and ambient light fitting fixed to the room ceiling

5.1.5 All the IT equipment was fitted into the room by Virgin Care in March 2016 and comprised of a rack containing one switch with a fibre link to the first-floor communications room.

5.1.6 The DeLongi AC unit was fitted to the wall between the roof void and the server room with 25mm copper pipes linking it through to the condenser unit fitted in the adjacent roof void. Information provided by the NHSPS estates team suggests that the unit was fitted when the hospital was originally constructed.

5.1.7 The purpose of the AC unit fitted in the server room was to maintain the temperature within the room below approximately 30°C. The unit is known to be an older model which is no longer manufactured. It was fitted in a relatively small enclosure (area 5.3m²) on the top floor of the building. The unit would have been operating under considerable load during the hot weather prior to the incident. The unit was last serviced by Mitie on the 15th March 2017 (refer to [Ref 10. Mitie Air Conditioning Service Report No 55158 15/03/2017](#)).

5.1.8 The hot weather conditions preceding the period leading up to the fire contributed to the hot conditions experienced on the second floor of the building where Room 204 was located. The relatively small volume of the room, its location and design relative to the roof structure, and the heat generated by the equipment would cause the AC unit to operate at or near maximum capacity to maintain the low ambient temperatures in the room necessary for the IT switch gear (it is normally recommended that the ambient temperature in IT server rooms is maintained below 40°C to 35°C).

5.1.9 This investigation has determined that the most probable location for where the fire started was in Server Room 204 on the second floor of the building.

5.2 The ignition source and item first ignited

5.2.1 Because of the extensive damage to the building structure by the fire and the subsequent order by an Engineer from the Local Authority to demolish the property it has not been possible to undertake a physical examination of the fire scene. The investigation has sought to collect and collate all relevant documents, records, and witness information to establish a cause of fire and explain why the fire developed to cause the eventual destruction of Weybridge Community Hospital.

5.2.2 For a fire to occur a source of energy is required to generate the heat needed to ignite the item. The source of energy may be:

- A hot object
- A chemical reaction, including biochemical reactions resulting in spontaneous combustion
- An open flame (e.g. matches or flames from cooking stoves)
- Electricity

5.2.3 Room 204 contains several electrical appliances and the mechanism of the AC unit has the capacity to generate heat. The room did not contain chemically reactive substances or sources to create open flames and so these are discounted.

5.2.4 In general, the built-in safety factor normally included in the circuit protection (circuit fuses, MCB etc.) prevents overheating by small overloads. However, the EICR indicates fourteen instances where overrated overcurrent devices were fitted to the installation. The age of most of the installation is approaching thirty years² and it is also evident from the thermal images of some of the Distribution Board that it was operating at maximum or near maximum capacity. The combination of these two factors would contribute to the breakdown of insulation between conductors in the installation. Eventually, if the breakdown in the insulation brings the conductors into contact with each other, arcing can take place which will ignite any gases, resulting from the pyrolysis of the insulation, or any adjacent combustible materials.

² The EICR reports the approximate age of the installation as being 30 years, however this is greater than the age of the building (approximately 18 years)

5.2.5 Poor or loose connections have the potential to cause fire along any part in the any of the circuits involved. As with the cases mentioned above, ignition of combustible materials by arcing would need to take place for fire to take place.

5.2.6 Ingleton Wood Ltd (Ref 12) note that the unit is known to be more than eighteen years old and state that the normal life expectancy of these units is between ten to fifteen years. They list common failures in these units as the compressors failing because of repeated switching on and off and Fan motors overheating. They are also subject to electrical failures. It should be noted that a service report (Ref 9) indicates that the unit was serviced in March 2017 with no faults recorded.

5.2.7 In the event of an incorrectly rated current over protection device being fitted this could fail to operate and power would continue to be supplied to the circuit resulting overheating.

5.2.8 Fires starting in IT switch gear are not common. The quality of the equipment used and their design are generally considered to be a low fire risk. The Category 6 Cables used are standard twisted pair cables for Ethernet and other network connections. They contain optical fibres and not electrical conductors which do not generate heat. The insulation protecting the optical fibres is ignition resistant.

5.2.9 Fluorescent light fixtures can cause fires when the ballast transformers breakdown and ignites combustible ceiling materials. The proximity of the roof construction would provide combustible materials that would readily ignite if breaches in the ceiling were apparent. For ignition to take place the fluorescent light would need to have been switched on and remained on since the last person visited the room. Access to the room is under the general control of CSH and they have confirmed that none of their staff had visited the room in months. NHSPS estates staff have also confirmed that none of their staff visited their server room, which is accessed through the server room 204. Most modern fittings contain thermal cut out switches that operate and disable the appliance in the event of overheating. Because the light fitting was not recovered from the scene the light type of light fitting has not been identified.

5.2.10 This investigation has determined that the most probable source of ignition was the AC unit in Server room 204.

5.3 The act or omission responsible for causing the ignition

5.3.1 Older fluorescent light fittings do contain ballast unit that can fail and cause ignition. The unit would need to be powered on to fail but because there is no evidence that the light was left switched on it has been discounted as a possible cause.

5.3.2 The conditions of the IT equipment indicate that it was improbable that this was the source of ignition and resultant fire. It is, therefore discounted as a possible cause.

5.3.3 The investigation has concluded that the most probable source of ignition was a fault associated with the DeLongi AC unit fitted in the room. It has further concluded that the act or omission responsible for ignition is either:

- An electrical fault causing resistance heating in that part of the installation and the eventual ignition of combustible materials through arcing from a combination of: the decomposition of the standard of the insulation resulting from the age of the installation and prolonged operation

at maximum or near maximum capacity, and the fitting of overrated overcurrent protective devices, or

- Heat from a fault generated in the AC unit either from the fan overheating, or failure of the compressor unit resulting in the ignition of the casing or other combustible materials
- It is unlikely that either of the above two conditions would be discovered as part of the ECIR

5.4 Estimating the Time of Ignition

5.4.1 Adjusting the time when the first detector activated by 15 minutes in accordance with the reasoning detailed early in this report, the time when the alarm operates is around **23:30hrs**.

5.4.2 The contents of the room suggest that the combustion process, particularly in the early stages of fire development, will release smoke rather than free flaming. The optical smoke detector fitted in the room would react and activate relatively quickly when the fire releases smoke.

5.4.3 Therefore, the time of ignition is estimated at between **23:25hrs** and **23:30hrs** with the first detector activating at approximately **23:30hrs**.

5.5 Fire Development and Spread

5.5.1 The fire was not confined to the room of origin but broke through into adjoining compartments and spread to involve the rest of the roof structure, first floor and eventually the ground floor. The extent of the damage to the building prevented any investigation of the structure but witness information and evidence from the fire alarm activation log does show that the fire broke through from the room of origin to involve and vent through the roof after a relatively short period of time.

5.5.2 The first call to the fire service reports that flames could be seen from the roof at **23:59hrs**. The earlier analysis of the activation log estimates that the fire started at around **23:30hrs** and within four minutes' smoke had activated detectors 3/026 and 3/027 in the roof void above the lift and stairway shafts (Zone 8).

5.5.3 The sequential activation of smoke detectors in the building cannot be taken as direct evidence of the route that the fire spread through the structure but it does indicate, particularly in the early stages of the fire, that smoke had broken through one fire compartment zone into an adjacent zone.

5.5.4 The walls and ceiling enclosing the server room should provide a minimum period of thirty minutes' fire resistance. For the fire to spread beyond the room of origin it needs to either breach through the fire compartment enclosure or through any existing gaps or openings in the enclosure, for example via any gap created as the AC unit burns away from its fittings.

5.5.5 It is unlikely that the fuel content within the room would be sufficient to create fire conditions capable of breaching through the ceiling of the enclosure and through the floor into the roof compartment within thirty minutes. Therefore, it is more probable that the fire spread through an existing breach or gap in the ceiling or walls of the enclosure.

5.5.6 The arrangement of the roof and ceiling in server room 204 would enable fire to spread through any weakness or breach in the ceiling to the combustible elements of the roof structure. In the initial stages this would be the underlay and timber battens. Fire would spread readily across

this configuration weakening the roof causing roof tiles to dislodge and fall inwards. Gaps formed in the roof allow flames and hot gases to vent outwards and fresh air (oxygen) to flow inwards and support the combustion process. Fire would also spread through other weaknesses in the standard of fire separation, for example in the voids below the fire doors between each fire compartment.

5.5.7 The timber rafters and floor construction used in the roof void would have provided the fire with sufficient fuel to develop into the intense and rapidly spreading fire as witnessed by the initial fire crews attending the site.

5.5.8 Fire spread across the roof should have been prevented by properly installed fire stopping methods employed at the junction between each fire compartment, however documented evidence (Ref. 8. Shipp, Holland, Crowther, and Lennon Feb 2015) shows that poorly or incorrectly fitted fire barriers permit fire to spread through fire compartment boundaries. This would explain reports from fire crews where they referred to fire spreading through the roof void and not just across it. Fire would spread through to the first floor when elements of the roof collapsed inwards breaching through the floor and ceiling.

6. Observations, Conclusions, and Recommendations for further Action.

6.1 As with most fires, the cause and subsequent damage cannot be attributed to one single event that occurred at Weybridge Hospital but because of a combination of several factors that came together to cause the eventual damage and destruction of the building. This investigation has concluded that the most likely cause of ignition can be attributed to the AC unit, but it is the combined apparent failure of all the following conditions that eventually caused the development and spread of fire and the resultant destruction of the building. The following points summarise critical issues and factors that can be linked to the fire;

6.2 Documentation

6.2.1 This investigation has encountered significant problems in acquiring important documents and relevant information. This has caused an extension to the anticipated duration of the investigation, particularly where documents cannot be traced or found. To some extent this can be attributed to the many organisational changes the NHS has experienced during the lifetime of Weybridge Community Hospital. Information under the control of tenants, contractors and third-party organisations has also, at times, being difficult to obtain.

6.2.2 The level and extent of the damage sustained by the building prevented any examination of the scene from taking place. The investigation has therefore taken available information and evidence from various sources to identify the cause and development of the fire.

Recommendation 1a - This inability to refer to back to records and empirical information on buildings within the NHS estate is encountered frequently by NHSPS and therefore this report recommends that NHSPS review how building related information is stored and retrieved.

6.3 Management of Fire Safety

6.3.1 The Responsible Persons (as defined under the RRO) failed to recognise that a significant change affecting the use of the building had taken place when the Hospice moved out in April 2017 and the risk assessment for the premises was not reviewed. Central Surrey Health may not have been aware that as new occupiers they would need to undertake a fresh assessment of the premises when they replaced Virgin Care. It is evident that a review of the existing FRA was not carried out.

6.3.2 The investigation encountered difficulties trying to determine ownership of the room. It was only after several email communications with CSH IT department and Virgin Care, the previous occupier and installer of the equipment, that ownership was established. It is reasonable for CSH, or sections of CSH, if they considered that the room was not part of their demised area or did not contain equipment under their ownership, not to direct an assessment of that area.

6.3.3 Failure to review the premises FRA following the change of use also failed to alert the occupants and NHSPS that the building was not being monitored when the premises were unoccupied. An earlier response by the fire service may have restricted the extent of the damage caused by the fire. Only weak evidence exists to prove that all actions from the 2015 and 2016 FRA were completed.

6.3.4 It is evident from the speed at which the fire spread through the structure, information provided by the attending fire crews and details determined by this investigation that the lines of fire resistance separating the compartments at roof level did not provide an effective barrier to fire. It is difficult to conceive that given the 154 fire related defects found on the second floor and roof void none related to the roof structure.

6.3.5 The investigation has identified at least two occasions when essential inspections or assessments have been unable to access the Server Room (and the control room behind it), one being the Electrical Installation Condition Report and the second being the FRA carried out by Virgin Care Limited. This has also been reported as a similar issue across other properties in the NHSPS estate. Server rooms are considered as Hazard Rooms and should be an essential aspect of any inspection or assessment.

6.3.6 Several process issues regarding the fire alarm system have been identified during the investigation. These relate to inaccurate details recorded on certificates and records, incorrect time recorded on the fire alarm panel and failure to replace defective batteries.

Recommendation 2a. NHSPS to ensure all tenants are made aware of their obligations under the Regulatory Reform (Fire Safety) Order and the requirement to inform NHSPS of any changes affecting the premises.

Recommendation 2b. NHSPS to review company position on the monitoring of the fire alarm systems in its premises.

Recommendation 2c. NHSPS to continue to improve its arrangements for obtaining assurance that actions resulting from inspections, servicing of equipment and risk assessments are addressed.

Recommendation 2d. NHSPS continue to progress the intrusive fire surveys of in-patient and high-risk health centres to assess the standard of fire separation of these properties.

Recommendation 2e. NHSPS to continue to progress the Lease Regularisation Programme to ensure leases clearly identify landlord and tenant demises and responsibilities.

Recommendation 2f. NHSPS to evaluate the effectiveness of current governance and management arrangements for principal contractors and sub-contractors.

6.4 Probable Cause

6.4.1. The fire started at approximately 23:30hrs on the evening of the 11th July 2017. It most likely started in Server room 204 on the second floor of the premises.

6.4.2. The most likely cause of fire is a fault within DeLongi Air Conditioning unit either, as a result of electrical ignition or heat generated by a mechanical fault. The root cause of this incident can be attributed, to some extent, on the age of the installation in combination with the evidence of overrated overcurrent protection devices operating at full capacity and the apparent redundancy of the AC unit, but again to note the AC unit was serviced only three months prior to the fire and no reported faults at the time.

6.4.3. The conclusions and wider findings documented in the text of the report, relating to the AC unit are issues that warrant further attention.

Recommendation 3a. NHSPS should review the age and condition of all fixed electrical equipment, including AC units fitted in premises across the Estate. Tenants and owners of server rooms should

review the adequacy of installed cooling equipment to ensure it matches the heat output of the equipment installed particularly if new or additional equipment is installed.

Recommendation 3b. NHSPS will inspect all risk rooms (including server rooms) as part of the Landlord's Fire Risk Assessment, irrespective of the actual or perceived ownership.

Recommendation 3c. NHSPS to review its managements arrangements and governance of electrical safety.

6.5 Fire Development and Spread

6.5.1 Following initial ignition, fire appears to have spread from the unit through to the combustible underlay of the roof structure and timber battens. It most likely spread rapidly across the roof void causing the roofing tiles to dislodge and allow the fire to vent through the roof, where it was then observed by a member of the public and reported to the fire service.

6.5.2. Fire crews witnessed the fire spreading rapidly through both sides of the roof void seemingly unaffected by any fire compartment walls or barriers. Documented evidence of poorly constructed or missing fire compartmentalization can explain why the fire spread rapidly through the roof void. Eventually the fire spread to lower levels in the building.

6.5.3. The apparent rapid rate of the fire spread through the upper compartments and the danger from exploding oxygen cylinders prevented the fire service from mounting any form of offensive firefighting measures, instead relying on adopting a defensive approach by restricting any form of attack to being mounted from the outside of the building only. Fire crews also report, that during the early stages of firefighting operations the water supply was poor and so limited the impact of firefighting jets directed from the outside of the building onto the fire.

The rapidity of fire spread through the structure was such that in addition to the recommendation already made regarding the integrity of fire compartments, NHSPS should review:

Recommendation 4a. NHSPS should review their portfolio of properties to identify the construction type, with particular reference to timber frame buildings.

Recommendation 4b. Where responsible, NHSPS to review its inspection and maintenance arrangements for onsite fire hydrants ensure they are being suitably maintained.

6.6 Communication

6.6.1. The final recommendation is made to help inform the wider NHS of the learning made from this incident.

Recommendation 5a. NHSPS to ensure learning from Weybridge Hospital is shared with the wider NHS and other stakeholders.

References

Copies of all the documents listed below can be obtained on request by writing to NHS Property Services (insert full address for correspondence)

- Ref. 1. CFS Fire Alarm PPM Certificate v2.0 Contract Number 189754 April 11th 2017.*
- Ref. 2. Event Log Report Q:\COO\Health, Safety, Security & Fire\T Godfrey stuff\Event Log.pdf.*
- Ref.3. Fire Detection and Fire Alarm Systems for Buildings. Part 1 Code of Practice for design, installation, commissioning and maintenance of systems in non-domestic premises. BSI Standards Publications.*
- Ref. 4 Electrical Installation Condition Report: 9380. Phil Cranenburgh, Engineer, Key Electrical Solutions Limited, 218 Boughton Industrial Estate, Boughton. NG22 9LD.*
- Ref. 5. Exova Warrington Fire: Weybridge +RSC NHS Property Service (Surrey) Fire Risk Assessment Date 17/08/2016.*
- Ref. 6. Virgin Care: Fire Risk Assessment Review Record. Weybridge Hospital Date 10th May 2016.*
- Ref. 7. NIFES Consulting Group. The removal and installation of fire barriers, glazing and fire doors at Weybridge and Woking Hospitals. Date January 2012.*
- Ref. 8 Fire compartmentation in roof voids. Martin Shipp, Clara Holland, David Crowder and Tom Lennon. BRE, Bucknall Lane, Watford, Hertfordshire, WD25 9XX.*
- Ref. 9 Weybridge Community Hospital Plans of Ground, First and Second Floors*
- Ref 10. Mitie Air Conditioning Service Report No 55158 15/03/2017*
- Ref. 11. MedicalGas services limited Audit February 2017*
- Ref. 12. Weybridge Hospital M&E Building Engineering Services Assessment. 13th September 2017*
- Ref. 13. Weybridge Hospital – Emergency Lighting yearly 3 hour test – week 22 - 22/08/2017*
- Ref. 14. Department of Health. Health Technical Memorandum 05-02 Firecode. Guidance in Support of Functional Provisions (Fire Safety in the design of health care premises) 2015 edition*
- Ref 15. Information provided by witnesses to the incident. Note: copies only available after agreement has been sought with the individual who provided the information.*

Appendix A: Photographs

Photograph A1. Showing roof above main entrance on fire



Photograph A2. Showing extent of fire in main entrance of building



Appendix B: Information provided by witnesses to the incident

Reports have been provided by individuals with background information deemed key to the investigation. They are available on request with permission of the individual concerned.

- B1: NHSPS Estates Officer
- B2: NHSPS Estates Supervisor
- B3: Security Operative Fidelis Security
- B4: Information provided CHS NHS staff.
- B5: Watch Manager Surrey Fire and Rescue Service
- B6: Watch Manager Surrey Fire and Rescue Service

Appendix D Table of first twenty fire smoke detector activations

Plan Number Log Index	Ref.	Date and Time	Device reference	Zone	Location
Activation of first AFD					
1 (99)		11/07/2017 23:45hrs	3/005	7	Server Room 204
2 (98)		11/07/2017 23:49hrs	3/008	7	2 nd Floor Lobby to plant room (Corridor)
3 (97)		11/07/2017 23:49hrs	3/026	8	Roof void above stairs
4 (96)		11/07/2017 23:49	3/027	8	Roof void above Lift
5 (95)		11/07/2017 23:49hrs	3/066	7	Plant room
6 (94)		11/07/2017 23:51hrs	3/021	14	Lift shaft
7 (93)		11/07/2017 23:51hrs	3/020	14	Lift shaft
8 (92)		11/07/2017 23:52hrs	3/091	7	2 nd Floor office
9 (91)		11/07/2017 23:53hrs	3/050	4	Ground Floor Lift lobby
10 (90)		11/07/2017 23:53hrs	3/083	6	1 st Floor Lift lobby
11 (89)		11/07/2017 23:56hrs	3/002	7	2 nd Floor Open plan office
12 (88)		11/07/2017 23:57hrs	3/089	7	2 nd Floor Lobby to Kitchen
13 (87)		11/07/2017 23:58hrs	3/022	7	2 nd Floor Stairway lobby
23:59hrs Fire seen by local resident and reported to SFRS (Time of first call to Fire Service)					
14 (86)		12/07/2017 00:04hrs	3/001	7	2 nd Floor Open plan office
00:07hrs Time of arrival of first fire appliance (Painshill Fire Station)					
15 (85)		12/07/2017 00:12hrs	2/085	9	Stairway Enclosure
16 (84)		12/07/2017 00:12hrs	3/049	9	Stairway Enclosure
17 (83)		12/07/2017 00:13	2/008	6	1 st Floor Comp 3 Practice
18 (82)		12/07/2017 00:15hrs	2/014	6	1 st Floor PM2 Practice
19 (81)		12/07/2017 00:15hrs	2/010	6	1 st Floor Store room 109
20 (80)		12/07/2017 00:17hrs	2/018	6	1 st Floor Minor Ops Rm 1 (Ionisation)

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