

10/11 High Street  
Uxbridge  
Middlesex  
UB8 1JN

Tel: 01895 451950  
Fax: 01895 232325

**P O I N T W E S T**  
**116 CROMWELL ROAD**  
**LONDON SW7**

**UPDATED**  
**10 YEAR MAJOR WORKS PROGRAMME**  
**FOR THE**  
**MECHANICAL, ELECTRICAL & ASSOCIATED SERVICES**

## **CONTENTS**

- 1.0 Introduction
  
- 2.0 General Description of the Installed Services
  - 2.1 Mains Electrical Services
  - 2.2 Car Park Electrical Services
  - 2.3 Plant Room Electrical Services
  - 2.4 Common Parts Electrical Services
  - 2.5 Emergency & Escape Lighting
  - 2.6 Fire Alarm System
  - 2.7 Emergency Power Supplies
  - 2.8 Ventilation Systems
  - 2.9 Fire Safety Systems
  - 2.10 Cold Water Services
  - 2.11 Hot Water Services
  - 2.12 Passenger Lifts
  - 2.13 Access Control Systems
  
- 3.0 Scope of Inspection
  
- 4.0 Condition:
  - 4.1 Electrical Services
  - 4.2 Fire Safety Services
  - 4.3 Emergency and Stand by Power Systems
  - 4.4 Ventilation Systems
  - 4.5 Cold Water Services
  - 4.6 Passenger Lifts
  
- 5.0 Recommended Phasing of Works & Budget Costings

## **1.0 Introduction**

This report was commissioned by David Tibbles of Point West London Ltd. The purpose of the report is to review and update the previous 10 Year Major Works Programme for the Mechanical, Electrical and Associated Services prepared for Point West Limited in March 2006.

The report again describes each of the services elements associated with Point West and comments upon progress of major works against the original programme. The report has also been updated to include 'lessons learnt' on expenditure over the last three years.

A valuable meeting was held with David Tibbles to discuss, progress to date, review costs and identify any forthcoming works which should also be included within the programme.

The common parts, circulation areas, plant rooms and car parks were re-inspected in May 2009 and the following report describes our findings and our recommendations in accordance with our fee proposal as accepted by Point West Limited.

For clarity and commonality, this report has been prepared in the same format as the main building 10 year programme and the previous 10 Year Major Works Programme and should therefore be read in conjunction with this document. Detailed descriptions of the building's history, usage and construction are contained in the main document and these have not been repeated in this document. The following descriptions relate purely to the mechanical, electrical and associated services installed in Point West serving the inspected areas and the residential apartments. Where relevant these have also been updated from the descriptions contained in the 2006 Report.

## **2.0 General Description of the Installed Services**

### **2.1 Mains Electrical Services**

The electrical services to the development are derived from three substations containing transformers and switchgear which are wholly owned by the Regional Electricity Company (REC). The sub-stations are the property of the REC which in this case is EDF (formally London Electricity) and they are accessible only by EDF personnel. Each substation has its own extract system which is the property of Point West and a Carbon Dioxide fire suppression system which is the property of EDF.

Cables from the sub-stations feed adjacent switch rooms and these contain energy meters and switchgear for the apartments and landlord's services. Each switch panel has power factor correction equipment and automatic changeover switchgear which activates on mains failure when the standby generator is brought into operation.

The switchgear and associated equipment was manufactured in 1999.

Sub-main cables are run from each switchboard to feed remote sub-switchboards which in turn feed items of landlord's plant and the mechanical, electrical and associated services in the common parts, circulation areas, car parks and plant rooms.

Electrical services to the apartments are adopted by the REC and are sealed to prevent misuse. Each service has an REC fused cut-out and an energy meter which is in turn connected to the apartment consumer unit. All equipment associated with the infrastructure of the electrical services to the apartments up to the output side of the energy meter is effectively the responsibility of the REC, however since privatisation, REC's merely adopt all cables and containment during the life of the equipment. In the event that cables became damaged or had deteriorated to the end of their serviceable life, the cost of replacement would be the responsibility of the management company.

## **2.2 Car Park Electrical Services**

Electrical services to the car parks comprise general small power, lighting and emergency lighting and services to mechanical plant such as ventilation systems, carpark barriers, CCTV cameras. All services are contained in galvanised steel trunking and conduits fixed to the building structure. Sub-main cables to remote distribution boards are PVC served armoured cables (PVC/SWA/PVC) again fixed directly to the structure or supported on cable trays.

## **2.3 Plant Room Electrical Services**

Electrical services to the plant rooms comprise general small power, lighting and emergency lighting and services to mechanical plant such as supply and extract ventilation systems, boosted cold water pumps, generator services, passenger lifts, sprinkler pumps, hose reel pumps and wet riser pumps. All services are contained in galvanised steel trunking and conduits fixed to the building structure. Sub-main cables to remote distribution boards are PVC served armoured cables (PVC/SWA/PVC) again fixed directly to the structure or supported on cable trays.

## **2.4 Common Parts Electrical Services**

Electrical services to the common parts and circulation areas comprise general small power, lighting and emergency lighting and services to security and fire alarm systems, access control systems, the main reception, lift lobbies, smoke vents, and automatic opening vents and refuse rooms on each floor of the residential areas. All services are contained in galvanised steel trunking and conduits fixed to the building structure. Sub-main cables to remote distribution boards are PVC served armoured cables (PVC/SWA/PVC) again fixed directly to the structure or supported on cable trays.

During the period, lighting has been replaced and upgraded within the common parts. In areas where luminaires have had high failure rates, these have been replaced with luminaires of higher energy efficiency and longer lamp life. An example of this is the Sky Lounge lift lobby.

## **2.5 Emergency & Escape Lighting**

Emergency and escape lighting is installed throughout the building in accordance with the British Standard relevant at the time of construction (BS5266: 1999). This comprises illuminated exit signs within the car parks and circulation areas to indicate routes of escape and non-maintained conversion modules contained within primary luminaires to provide general illumination in the event of local lighting circuit failure. All escape and emergency lighting is capable of being tested via a key switch located at the electrical sub-switchboard position or within a local plantroom.

During the period, there has been an active programme of regular replacement of the emergency luminaires.

## **2.6 Fire Alarm System**

An analogue addressable fire alarm system is installed throughout the premises which is also interfaced with the systems installed with the David Lloyd's Centre and presumably the Sainsbury's store.

The system comprises a main control panel mounted within the main reception and repeater panels mounted within the management suite and at the rear entrances to the development. Devices connected to the system include sounders, break glass call points, automatic heat and smoke detectors and interfaces with the sprinklers systems, access control systems, car park ventilation systems, CO2 suppression systems, automatic vents and fire dampers.

## **2.7 Emergency Power Supplies**

In the event of mains failure of any of the landlord's services, emergency power is provided automatically via two 425 kVA diesel engine generators. The generators were manufactured in 1998 and currently have approximately 100 hours operational use. Fuel for the generators is replenished via a free standing oil drum and hand pump.

The generators are designed to support essential and safety services and will not restore full electrical services to the development. In the event of mains electrical failure the generators will ensure that the building can be evacuated safely or that all fire and safety systems would still be operational.

The generators will therefore support the sprinkler systems, the fire alarm system, the hose reels, the wet riser pumps, all fire fighting lifts and the car park extract systems.

All emergency and escape lighting will remain illuminated and supported by each luminaire's dedicated battery and all smoke vents and automatic vents will fail open via spring mechanisms.

## **2.8 Ventilation Services**

Mechanical Ventilation systems are installed to the car parks, sub-stations and plant rooms as follows:-

**Car Park Ventilation** is installed to remove all vehicle exhaust fumes and any smoke due to fire and comprises a system of high and low level galvanised sheet steel (GSS) ductwork installed throughout each level of the car park areas. The ductwork is connected to a series of extract fans which are configured in a run and standby mode. Essentially this means that should one fan fail in operation due to a controls fault or motor defect, this will be detected at a local control panel and the second fan will automatically be energised and continue to extract the air from the space.

As described earlier, these systems are fully supported by the standby generator in the event of mains electrical failure.

**Sub-Station** Ventilation is installed to each REC transformer chamber and comprises run and standby fans operating as described under car park fans. The systems are installed to operate as general extract to control ambient temperature within the chamber and are also utilised to operate at high speed should the CO2 suppression system discharge. The activation of this latter operation is carried out manually by an authorised person from the Fire Brigade or REC. The fans and associated control panels are located outside the transformer chambers to allow access for maintenance and air is extracted via fire rated GSS ductwork from the chamber to the external air.

**Plant Room** Ventilation is provided to the tank room, switch rooms and generator room. These systems comprise single extract fans running continuously or via thermostatic control. Each fan has a permanent electrical supply and the systems are simply designed to remove warm or stagnant air from the space in which they are installed. Air is extracted via GSS ductwork from the space to the external air.

**Refuse Chute** Ventilation in the form of run and standby extract fans is installed to each of the four refuse chutes. GSS ductwork from each fan rises within the chute to a grille in each refuse lobby to provide negative air pressure and to eliminate smells from refuse entering the circulation areas. Air on the output side of the extract fan is ducted to fresh air via an acoustic silencer.

The refuse extract fan is an integral part of the refuse chute system and is controlled via the refuse chute control panel.

**Smoke Extract** Ventilation to the residential circulation areas is provided via automatic opening vents. These stand alone units are located on all residential floors and comprise a door or louver which is held in the closed position by a magnetic lock or sprung actuator. Both are held in this position by a constant electrical supply and are interfaced with the fire alarm system. Smoke detectors are provided locally to the door or louver and if smoke is detected, the fire alarm notifies the actuator interface and via a relay the power supply to the actuator is severed. This causes the magnetic lock or actuator to deenergise and the door or louver to open under the operation of a local spring. Once operated these ventilators have to be manually reset.



## **2.9 Fire Safety Systems**

With the exception of the fire alarm system, there are a number of water based fire safety systems installed throughout the car parks, plant rooms and circulation areas. These systems comprise sprinklers, wet risers, fire hose reels and a dry riser to the lower residential levels.

The sprinklers serve the car park and immediately adjacent areas with trunk and branch line pipework at high level. High capacity cold water storage tanks are located in the basement water services plantroom tank and these are connected to run and standby duplicate sprinkler pumps and a jockey pump, supported by the standby generator. The pumps, in turn serve two sprinkler valve sets located at the rear of the building at ground floor level.

Wet Risers serve the upper floors of the residential areas via pipework located within service risers with valve sets at each landing level. A high capacity cold water storage tank is located in the basement water services plantroom and this serves run and standby duplicate wet riser pumps and a jockey pump, supported by the standby generator.

Dry Risers serve the lower floors and these are simply a network of pipes to which the brigade would connect an appliance or hydrant at low level and attach a hose to a valve set on an upper floor. Each tap off point is contained within a standard riser outlet cupboard which is locked and appropriately labelled.

Fire hose reels serve the car park areas and are fed via a network of high level pipework terminating into wall mounted hose reel sets. A dedicated water storage tank supplies run and standby duplicate hose reel pumps located in the basement water services plantroom. The complete system is supported by the standby generator.

## **2.10 Cold Water Services**

The mains cold water service to the development enters the premises at basement level from Cromwell Road. This in turn feeds the cold water storage tanks listed above and two high capacity cold water storage tanks dedicated to the mains cold water domestic supplies required for the development and the apartments.

During the period, new butyl liners have been replaced in a number of the tanks. Further works are planned in the near future.

Pipework from the storage tanks is routed to the basement water services plantroom where is connected to a boosted cold water system which comprises five main pumps and a jockey pump, all of which is controlled by a local panel.

Pipework from the pump set is routed through the building to serve all cold water outlets and water heaters in the administration areas, common parts and circulation areas. Pipework is contained in service risers up the building with tap offs and pressure reducing valves at each floor level. Individual water supplies for the apartments branch off the main riser and prior to entering the demise are provided with a stop valve, double check valve and further pressure reducing valve.

Cold water services are trace heated in the car park and other un-heated areas.

### **2.11 Hot Water Services**

Hot water domestic services are provided to cleaner's sinks, staff toilets and administration area kitchenettes. These are simply derived from instantaneous electric or multipoint water heaters local to the area they serve. Electrical supplies for the heaters are derived from local landlord's small power distribution boards.

### **2.12 Passenger Lifts**

There are seven passenger lifts serving the accommodation at Point West, three are 10 person lifts, three are 16 person lifts and one is a 21 person lifts. The lifts are regularly inspected for insurance purposes by Allianz Cornhill every six months and we have seen the reports for March and October 2005. It should be noted that the inspections are for safety and insurance purposes only at the time of the inspection. The reports do not comment on required future works or the serviceable life of components.

It is intended that the lift cars are refurbished in a rolling programme over the next few years and comment is made on the budget costs for this in subsequent sections.

### **2.13 Access Control Systems**

Security and access control systems were excluded from the previous report, however we have been made aware by Mr Tibbles that the existing systems are no longer supported by the manufacturers. Point West Limited are considering a programme for replacing the existing system with new, utilising the existing cabling. The WA+A Design Group have issued Mr Tibbles for a typical specification for carrying out these works.

### **3.0 Scope of the Re-Inspection**

The scope of the re-inspection was limited to the basement car parks, all switch rooms and plant rooms and three/typical floors in the residential areas where we also inspected risers, lift lobbies, corridors and stairwells. Automatic opening vents and fire curtains were inspected but not operated and our inspection did not involve any intrusive surveying or confirmation of correct operation of any plant and equipment.

We rode in some of the passenger lifts and inspected one lift motor room serving two adjacent lifts. Our comments on the lifts are based upon our meeting with Mr Tibbles and are related to lift car refurbishment.

#### **4.0 Condition**

Note:- the following comments are only intended to give an outline guide as to the general overall condition of the various elements of the building services sufficient for the purposes of preparing the 10 Year Planned Replacement/Refurbishment. Our comments are not intended to provide a detailed structural survey report on the condition of the equipment and systems and should not be relied upon by any vendor or purchaser or any potential vendor or purchaser in connection with the sale or potential sale of any flats within the building. These third parties should be advised to obtain their own independent professional advice on the condition of the shared systems.

#### **4.1 Electrical Services**

##### **Main Switchgear**

The electrical infrastructure and main switch panels are now over 10 years old and therefore relatively new compared to the life of a good quality electrical which is 20-30 years. In general there are few moving parts used on a regular basis with the exception of the generator change-over system. If this is not tested on a regular basis with a full simulated mains failure, we would recommend that a system of testing be introduced.

Further non intrusive testing and inspection should be carried using thermal imaging of the switchgear to identify any local overheating in conjunction with the five yearly NICEIC Periodic test required under the IEE Regulations (BS:7671)

We understand that an NICEIC Approved electrical contractor is appointed to test 20% of the electrical services every calendar on a rolling programme to ensure that all are periodically tested within five years.

### **Sub- Switchgear**

As with the main switchgear, there are few moving or serviceable parts within these systems and equipment however the minor components are less complex, less expensive to manufacture and have a lower serviceable life. Regular inspection and test of operation following a fault or trip is recommended and a regular check on the tightness of terminals and the condition of cables at termination positions.

Sub-distribution boards comprise metal enclosures containing miniature circuit breakers (MCB), a number of these when inspected had broken cover locks and these should be repaired. The MCBs are no longer manufactured and are therefore unavailable, we would recommend a rolling programme of MCB replacement over the next 10 years.

### **Luminaires and Accessories**

All luminaires and accessories are approximately 11 years old and have deteriorated due to constant use and lamp changes. It is clear that as units have become damaged or failed they have been replaced as part of the general planned maintenance regime. This will be an ongoing routine for the future unless wholesale redesign or repositioning is envisaged. We have therefore continued to allow a nominal sum in the cost plan for ongoing repairs/replacement.

### **Emergency and Escape Lighting**

The life of the batteries, invertors and charger units within emergency and escape luminaires is greatly enhanced with regular testing as required by the British Standards, however all elements of the battery circuits within the luminaires either fail or deteriorate substantially within five years.

As with general luminaires and accessories, individual units are replaced as and when they fail but with a system associated with the protection of life in the event of fire or electrical failure it is prudent to commence a planned replacement programme on an area by area basis over every five years. During our inspection it was noted that at least 20% of the luminaires, batteries and/or chargers per annum are being replaced on a rolling programme.

### **Fire Alarm System**

The fire alarm system is comprehensive and complex, however all of the component parts are in fair condition for their age.

It was noted that the fire alarm has been upgraded since the last inspection and report and we assume that Point West Limited are regularly advised on required updates and certification by their maintenance contractors to achieve full compliance with BS5839.

### 4.2 Fire Safety Systems

#### **Sprinkler, Hose Reels and Wet Riser Systems**

Sprinkler, hose reel and wet riser systems are designed robustly to provide service in extreme conditions and a long serviceable life. Pipework and sprinkler heads are therefore not items that require regular replacement unless they are damaged or misused. We would not therefore anticipate any works within the 10 year period.

The water storage tanks installed at Point West are aluminium and we would not expect wholesale replacement within the period however butyl liners will require replacement. We have noted that three of the tanks have been relined and that the remaining three are planned in the near future. It should be noted that the serviceable life of butyl liners is 15 years.

Each tank contains a ball valve or similar and due to their heavy use, these can have relatively short serviceable lives, as little as five years. Additionally the tanks are fixed in place with cast iron brackets which are in turn bolted to the floor. Due to the damp conditions, these fixings have become heavily corroded and should be replaced with stainless steel versions of the same thing in the short term to prevent any further damage to the water tanks.

In the previous report an item for this was included for year one. We did not note that these works have been carried so have included again for 2010.

Hose reels are perishable and have a number of moving parts, we have therefore included accost in the summary for overhaul and replacement as necessary within the period.

Sprinkler pumps and the associated controls and valves often fail in service and this is generally due to the weekly testing operation where the items lie dormant for 5-6 days and are brought into full operation, mimicking a fire condition during the test. This inevitably leads to motor, bearing, seals and valve failure more often than one would anticipate.

It is a requirement of the statutory bodies that all sprinkler equipment be fully overhauled and tested extensively every three years and this is generally extra over the standard maintenance contract conditions. We have therefore included a cost for this in the summary and note that a major overhaul has been carried out since the previous report.

### **Dry Risers**

Dry risers are passive as previously described but have valve caps, drain off points and access doors which require replacement as they are stripped down or utilised during regular pressure testing. Again a nominal amount is included in the summary to deal with these.

### **4.3 Emergency and Standby Power Systems**

#### **Standby Generators & Associated Controls**

The serviceable life of a standby generator is 25 – 30 years and we would not anticipate the replacement of major cost items such as the alternator or diesel engine. Costs over the period would be incurred with replacement batteries, hoses, engine heaters, fuel lines and exhaust systems. The costs in the summary make an allowance for these components.

The system control panel contains similar components to those in the main switchgear and any ongoing inspections and repairs should follow the same guidelines.



#### 4.4 Ventilation Systems

All of the installed ventilation systems comprise ductwork, grilles or louvers, controls and fans. All ductwork should be regularly swabbed and the sample should be analysed by a laboratory to check for bacteria. If bacteria is present the ductwork should be chemically cleaned and certified as such. Ductwork associated with car parks and refuse areas is a high risk for contamination and sampling should take place on a six monthly basis.

We note that regular cleaning of the ductwork has not commenced yet due to high financial costs and complex access requirements into the systems themselves. Mr Tibbles has advised that a procurement process is in place for these works and should commence in 2009.

We have included for further sampling and chemical cleaning of all systems within the summary over the proposed period.

The service life of a ventilation fan is 5-10 years and we would anticipate major works or major component failure to each of the ventilation systems within the period. A sum is identified within the summary for these works within the period.

Control panels associated with the individual systems and their relative field devices are similar to the components within sub-distribution boards and should be treated in the same manner.

#### 4.5 Cold Water Systems

The cold water storage tanks associated with this system are identical to the fire safety systems tanks therefore the same comments apply. One of the tanks is currently drained down and it should be noted that if the tank were to be brought back into operation a full chemical clean and chlorination would be required.

See section 4.2 for our additional comments and summary on the storage tank Butyl liners.

The booster pumps and jockey pumps are all inverter driven and this should increase their serviceable, however as with all pumps, bearing, seal and valve failure is not uncommon within a ten year period and we have therefore allowed for some component replacement during the period.

Pressure relief valves and downstream valves can all fail regularly and similarly we have included for minor component replacement over the period.

#### 4.6 Hot Water Systems

The hot water services are directly connected to the cold water system, therefore all of the previous comments apply.

Individual hot water heaters have very short service lives due to scale build up and the inexpensive components used in their assembly. We would anticipate the requirement to replace one heater at least every year and this has been allowed for in the summary.

#### 4.7 Passenger Lifts

The reports on the passenger lifts prepared by Allianz Cornhill list a number of current defects that are required to be rectified to bring the systems up to current safety and operational standards. Our knowledge of lifts is limited and a full inspection is excluded from our survey and report.

We did not have the Allianz Cornhill reports at the time of our inspection and cannot confirm that the defects noted by them have been rectified. We recommend that a lift consultant be employed to provide the information required to supplement this report.

### **5.0 Recommended Phasing Of Works & Budget Costings**

The budget costs given in the following section of this report are based on present day costs and make no allowance for inflation. The costs also exclude professional fees and VAT, which will need to be added.

#### **YEAR 4 (2010)**

For year 4 of the programme, we would recommend the following work:-

Sprinkler & Fire Safety Systems overhaul in accordance with FOC Rules	£10,000
20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Ductwork Cleaning & Chlorination (If Required)	£15,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£5,000
Allowance for overhaul and repairs to Hose Reels	£6,000
Allowance for two lift car refurbishments	£8,000
<b>TOTAL (Year 4)</b>	<b>£74,500</b>

## YEAR 5 (2011)

For year 5 of the programme, we would recommend the following work:-

20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£2,000
Allowance for two lift car refurbishments	£8,000
<b>TOTAL (Year 5)</b>	<b>£40,500</b>

## YEAR 6 (2012)

For year 6 of the programme, we would recommend the following work:-

20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£5,000
Allowance for one lift car refurbishment	£4,000
<b>TOTAL (Year 6)</b>	<b>£39,500</b>

## YEAR 7 (2013)

For year 7 of the programme, we would recommend the following work:-

Sprinkler & Fire Safety Systems overhaul in accordance with FOC Rules	£10,000
20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Ductwork Cleaning & Chlorination (If Required)	£15,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£5,000
Allowance for overhaul and repairs to Hose Reels	£6,000
Allowance for lift car refurbishments	NIL
<b>TOTAL (Year 7)</b>	<b>£66,500</b>

## YEAR 8 (2014)

For year 8 of the programme, we would recommend the following work:-

20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£2,000
Allowance for lift car refurbishment	NIL
<b>TOTAL (Year 8)</b>	<b>£32,500</b>

## YEAR 9 (2015)

For year 9 of the programme, we would recommend the following work:-

20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£5,000
Allowance for lift car refurbishment	NIL
<b>TOTAL (Year 9)</b>	<b>£35,500</b>



## YEAR 10 (2016)

For year 10 of the programme, we would recommend the following work:-

Sprinkler & Fire Safety Systems overhaul in accordance with FOC Rules	£10,000
20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Ductwork Cleaning & Chlorination (If Required)	£15,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£5,000
Allowance for overhaul and repairs to Hose Reels	£6,000
Allowance for two lift car refurbishments	£8,000
<b>TOTAL (Year 10)</b>	<b>£74,500</b>

## YEAR 11 (2017)

For year 11 of the programme, we would recommend the following work:-

20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£2,000
Allowance for two lift car refurbishments	£8,000
<b>TOTAL (Year 11)</b>	<b>£40,500</b>

## YEAR 12 (2018)

For year 12 of the programme, we would recommend the following work:-

20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£5,000
Allowance for one lift car refurbishment	£4,000
<b>TOTAL (Year 12)</b>	<b>£39,500</b>

### YEAR 13 (2019)

For year 13 of the programme, we would recommend the following work:-

Sprinkler & Fire Safety Systems overhaul in accordance with FOC Rules	£10,000
20% Periodic Inspection of Electrical services.	£3,000
Ductwork Sampling	£2,000
Ductwork Cleaning & Chlorination (If Required)	£15,000
Replace 20% of Escape Lighting	£7,500
Replace 10% of Luminaires & Accessories	£5,000
Allowance for Ventilation System Failures	£2,000
Allowance for Replacement Water Heaters	£1,000
Allowance for Repairs and Replacement Booster Pump Parts	£2,000
Allowance for Repairs and Replacement Fire Safety System Component Parts	£4,000
Allowance for Repairs and Replacement Fire Safety System Pump Parts	£4,000
Allowance for Sub Switchboard & Control Panel Repairs	£5,000
Allowance for overhaul and repairs to Hose Reels	£6,000
Allowance for two lift car refurbishments	£8,000
<b>TOTAL (Year 13)</b>	<b>£74,500</b>

Please note that none of the aforementioned Budget Costs are based on recent quotes received by Mr Tibbles, estimates from the incumbent maintenance contractors.

Costs are intended to provide only an approximate guide for budget purposes. Accordingly, the figures provided should be treated with due caution. In due course, for each phase of the work, it will be necessary to undertake more detailed inspection of the specific items of plant as part of the planned maintenance regime to obtain accurate quotations based on current market and manufacturer's prices.

The costs are also based upon component parts being readily available from the existing manufacturers and are not based upon wholesale replacement of systems due to non continued production or incompatible upgrade.

We trust that the above is satisfactory for your purposes but, if you require clarification of any of the points we have raised, we shall be pleased to hear from you.

Yours faithfully,

**Stephen Aldcroft**

The WA+A Design Group