

hunters

## **Condition Report of the Building Services Installation.**

### **Kedge House**

**Prepared by MCCE on behalf of Hunter & Partners for One Housing**

**February 2018**



#### **MCCE**

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## End of Document

# **1. Introduction**

## **1.1 Background**

Kedge House was built in the late 1960's. The building has evidence of substantial refurbished within the last 10-15 years with many of the services undergoing a further replacement to the present day.

Kedge House consists of 10 storeys containing 40 dwellings. The entrance, concierge office and plant areas occupy the ground floor with 4 dwellings located to all floors including the Ground.

## **1.2 Project Brief**

The project brief from One Housing, relevant to MCCE's services, was to review the condition of the services and to advise on any immediate works required and any further works related to current health & safety regulations.

In addition, works budget forecast has been produced to detail estimated costs for the future works required on the building. These budgets have been based on today's values and no account has been taken for future inflation.

### **Mechanical & Electrical Services covered by this report**

1. Heating distribution and dwellings.
2. Electrical Intake and Distribution
3. Communal Lighting
4. Above Ground Drainage
5. Water Supply Services
6. Fire Alarm System
7. Door Entryphone
8. CCTV System
9. Below Ground Drainage
10. Lifts/Lift Motor Room - Detailed within a separate document

### 1.3 **Survey**

Several surveys were carried out between November 2017 and early February 2018.

The underground drainage was surveyed by a specialist company using CCTV equipment in order to obtain a good representation of the general condition of the drainage.

All other services surveys were visual and subject to access. These were carried out within all blocks accessing plant areas and dwellings where possible.

## 2. Executive Summary

Many of the systems at Kedge House have undergone a refurbishment since the building was constructed but are approaching the end of their economic life.

Access to dwellings was not available. The electrical intake was not accessed during the three surveys carried out on this building.

Below is a summary of the condition of the systems reviewed by this report and the recommended works to each of them.

### 2.1 Heating System

The central heating system to Kedge House is served from the Barkantine Heat & Power district heating system. The condition of the pipework and the system within the dwellings is unclear.

It is recommended that the following works are carried out:

Heating System Works	Year
Replacement of Pumps – No access to plant area estimate only.	3
Heating Pipe Distribution & Ancillaries – Due to age.	26-30
HIUs – Due to age.	11-15
Survey & minor remedial within Dwellings.	1
Radiators, HWS and dwelling pipework – Due to age.	11-15

### 2.2 Electrical Supply

Much of the incoming supply was not visible but the rising bus bar system is no longer manufactured and may be difficult to obtain spares.

Electrical System Works	Year
Incoming electric distribution	Not Seen
Landlord's services – Due to age of components.	Not Seen
Dwelling consumer unit – Due to the non-compliant installation	Not Seen

### 2.3 Lighting – Communal

The lighting system has been replaced in excess of 15 years ago and all fittings appeared operational with good light coverage. There were no recommended works but a budget has been allowed for a replacement system at the anticipated life cycle end of these fittings.

Communal Lighting	Year
Wiring	4
Internal fixtures	4
External fixtures	4

## 2.4 Above Ground Drainage

There was limited access to inspect the main soil stacks but they are unlikely to fracture as they are internally mounted. Connections to the services may have been altered during Kitchen and Bathroom fit-outs. The new connections are often carried out to a poor standard using fittings that are not suitable for Cast Iron connections.

The recommendation is for all dwellings to be reviewed and the connections to the soil stack be made good. The budget allows for the works to be carried out at the same time as the Water Services works as the soil stack and water pipe share the same riser.

Above Ground Drainage Works	Year
Replacement of surface PVC drain connections to kitchen and bathrooms due to previous poor installation.	3

## 2.5 Water Supply

The system pipe material was unclear from the survey but is expected to be formed of Galvanised Steel. Sections cut for buildings of this age within the Tower Hamlets area show significant corrosion internally and the recommendation is that following a section slice to prove the condition that the pipework system be replaced.

Water Supply System Works	Year
Replacement of pipework & valves – Due to internal corrosion	3
Booster pumps & controls – Due to age	6
Tanks - In dwelling – Due to age	11-15

## 2.6 Fire Alarm System

There is no Fire alarm at Kedge House. The recommendation is to provide a new system that serves the building.

Fire Alarm System Works	Year
System Panel – Due to Coverage	1
Heads & Wiring – Due to Coverage	1
Smoke Head replacement – Cyclical replacement due to age	16-20

## 2.7 Door Entryphone

The door entry phone system is an audio only system appears to have been installed late 1995. The manufacturer appears to no longer exist as there are a number of components missing. In addition, the system is now in excess of 20 years old and is passed its economic life. It is recommended that the system be replaced

## 2.8 CCTV System

The system appears to have been installed in 2010 and is partially operational with several cameras not operational. A budget has been put forward for the replacement of the system in year 5 when the system would have reached its anticipated economic life

although some repairs are likely to be required to get the system fully operational immediately.

## 2.9 **Below Ground Drainage**

The survey indicated some drains silted up and a recommendation for a jet clean and re-check has been proposed.

### 3. Mechanical & Electrical Services

#### 3.1 Heating

##### 3.1.1 Description of System

Kedge House is served from the Barkantine District Heating system operated by EDF Energy. This central boiler house provides heat to a plate heat exchanger housed in a GRP building adjacent to the main block on the ground floor.

The plate heat exchange separates the water circulating around the building from the water between all the buildings on the system and the central boiler house.

From the plate heat exchanger heated water is pumped up through the building to each dwelling.

Access was not available to the Barkantine plate heat exchange plant room and so the condition of the circulation pumps could not be assessed.

It is unclear how the heating system provides heat to the dwelling as no voids were available to inspect however as this forms part of a district system we have based the report on the use of Heat Interface Units.



Barkantine Boiler House



Plate Heat Exchange Room

The plate and the central part of the system is the responsibility of the Barkantine Heat and Power Company. For the purposes of this report the system from the plate up through the building has been taken as the responsibility of the One Housing Group.

##### 3.1.2 Heating System Condition

Access to the Barkantine plant area is restricted by EDF / Barkantine Heat & Energy.

The risers are not within the common areas and not visible to inspect.

There is no evidence of the risers being replaced as these would be expected to be in the common areas as has been carried out in the Point Blocks. A guide to the services installation is the condition of the Kelson House heating pipework as this did not appear to have been replaced and is of similar age.

However, this cannot be used for the heating services within the dwellings or even to identify the system type.



### 3.1.3 Heating System Recommendations and Budget

This section relates to main plant replacement and do not include for maintenance items. Below is a description of the anticipated works and how the date has been established. As with all services good maintenance is essential for extended life expectancies to be achieved. Economic life expectancy values have been taken from the CIBSE Guide M but used in conjunction with MCCE's experience and judgement following the survey.

#### Central Plant – Pumps etc.

Using the Point blocks as a guide for this Kedge House it has been estimated that the circulating pumps have a remaining life of 3 years.

#### Heating Distribution Pipework

The heating distribution pipework was no visible and no budget has been allowed as the timescales cannot be estimated.

CIBSE Guide M states that the life expectancy for steel pipework is 25 years. Our experience on systems well maintained and with a good water treatment processes is that

#### Heat Interface Unit

We have allowed for the system to use HIU but access to these was not gained. If the units were installed with the Barkantine District system the budget allows for replacement at 25 years i.e. in years 11-15.

#### Radiators

The year one cost for the Radiators is to allow for a review of the systems within the dwellings and minor remedial works to maintain the system. However, as noted above access to the dwellings was not obtained and this budget is subject to change. An allowance has been put in years 11-15 for complete replacement allowing for the radiators installed being between 5-10 years.

The budget below is an extract from main spreadsheet specific to the heating system and excludes the preliminaries which were shown as a global addition to the works shown in each year.

Component of Work	Year 1	Year 3	Yrs 11-15
<u>Heating System</u>			
Central Plant - Pumps etc	0	20,000	0
Heating Pipe Distribution & Ancillaries	0	0	0
HIUs	0	0	100,000
Radiators, HWS and dwelling pipework	14,000	0	160,000

## 3.2 Electrical Supply

### 3.2.1 General Electrical System Description

The incoming supply enters the building at the ground floor intake room access from the internal of the building.



Access to the Intake room was not gained.

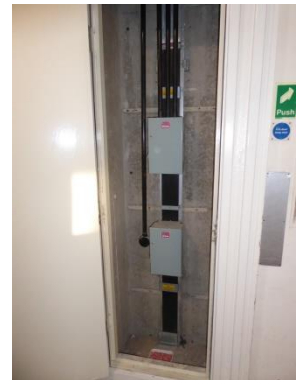
### 3.2.2 Landlords Services

The Landlords distribution boards are located with the main intake and were not accessed during the surveys.

The local distribution to plantrooms and the lateral mains to the dwellings have been used as a guide to the condition of the services.

### 3.2.3 Communal Lateral Mains

From the main intake room the rising bus bars are fed. These rise through the building in the services risers and have tap offs on each level to serve the four dwellings located on the floor.



### 3.2.4 Electrical Installation Condition

The condition of the electrical system cannot be globally summarised as there are many facets of the system that require attention and many that have been addressed.

The main electrical intake was not inspected.

The rising bus bar system is obsolete as the manufacturer is no longer in business and spares may be difficult to obtain.

The consumer units within the dwellings were not inspected.

### 3.2.5 Sizing and Compliance

The electrical services appear to be suitably sized for the buildings load. There were no signs of overloading to any of the switchgear that was inspected and the Busbar system appeared in good condition.

### 3.2.6 **Electrical System Recommendations and Budget**

No budget has been put forward for Kedge House as there was insufficient survey information for works to be identified.

It is likely that the Busbar system will need replacement and the lateral supplies to the dwellings appear to be as originally installed. These should only be carried out in conjunction with works within the dwellings.

### 3.3 Lighting – Communal

The lighting to the main communal areas has been replaced with fluorescent lighting with some newer LED fittings which are also used for emergency lighting.



Coverage through all communal areas is more than adequate with very good visual uniformity.

External lighting appears very dated with the lenses “yellowing” due to age. The fittings appear to be approaching the end of their economic life expectancy.



#### 3.3.1 Communal Lighting System Recommendations and Budget

The light fittings are estimated to be in excess of 15 years old with an anticipated life of 15 years. It was unclear from the survey if the wiring had been replaced with the fittings and so the budget below allows for a complete system replacement in year 4.

The budget below is an extract from main spreadsheet specific to the Communal Lighting system and excludes the preliminaries which were shown as a global addition to the works shown in each year.

Component of Work	Year 4
<u>Communal Lighting</u>	
Wiring	12,500
Internal fixtures	12,500
External fixtures	6,000

### **3.4 Above Ground Drainage**

#### **3.4.1 Above Ground Drainage Description and Condition**

The soil drain stacks are routed within the dwellings and was not accessed during the survey.

From the plant area it was determined that the pipework is formed of LCC Cast Iron.

The following is based on our surveys of the other buildings within the project and is what we would expect to see within the dwellings.

The local drains to the appliances within each dwelling were originally formed in copper. Many of these have been replaced using uPVC pipe and fittings with a variety of connections to the main soil stack.

Life expectancy of Cast Iron soil pipes is listed within CIBSE Guide M at 35 years although many manufacturers quote life expectancies of up to 100 Years. PVC has a life of 20 years. Much of the modified local PVC drains age cannot be determined although some of the fittings have “yellowed” and appear over 20 years old.

As the main soil stack does not provide consumable services, internal corrosion is not a consideration in its replacement and we consider the pipework usable until it leaks. Furthermore, the system is internally mounted and not subject to weather extremes which would extend its life expectancy.

From the survey of the four dwellings within the Point blocks & Kelson House together with MCCEs experience within similar blocks, leakages are caused by the poor connection rather than the main soil stack failures.

#### **3.4.2 Above Ground Drainage Recommendations and Budget**

The works below is an allowance to enter each dwelling and replace the drainage connection to the main soil stack with a connection that is designed to be used with a Cast Iron Stack. The connection will be linked to the resident's system external to the riser allowing the resident make modifications in the future without entering the riser.

As access is required into all dwellings, it has been budgeted for the these works to be carried out in conjunction with the Water Services Installation detailed below to avoid additional costs.

The budget below is an extract from main spreadsheet specific to the Above Ground Drainage systems and excludes the preliminaries which were shown as a global addition to the works shown in each year.

There are no works shown for the main stacks as these do not appear in poor condition and should remain serviceable for the 30 year extent of the budget.

Component of Work	Year 3
<u>Soil &amp; Waste Services</u>	
Above Ground (Central stacks)	0
Above Ground (Dwelling drainage)	48,000

### 3.5 Water Services Installation

#### 3.5.1 Water Services System Description

The water supply enters the building and feeds a plant room at the first floor level.

The mains feed serves a single tank which act as a break tank. This provides water for the booster pumps.

From the booster set the water is piped to the roof level where it directly feeds the former CWDS, bypassing the now redundant storage tanks.

It is unclear what material the water services are formed in as no access was gained top the dwellings.

At roof level the pipework is formed in copper. This may be local to the tank bypass area.

For the purposes of this report we have taken the rising water mains to be formed in Galvanised Steel



#### 3.5.2 Water Services System Condition

The internal condition of the pipework cannot be confirmed without cutting a section out for examination. However, galvanised pipework does corrode over time and the pipework is in excess of 45 years old. The CIBSE Guide M states that Galvanised pipework has a life expectancy of 35 years.

It is reasonable to expect the internal surfaces to be failing and any internal corrosion will start a snowball effect and cause the pipework to contaminate the pipework and water supply at an increasing rate.

The Photo is of pipework from the building MCCE are currently working on to replace the water Services pipework. This building is within the Tower Hamlets area and is of identical layout and age.



Additional evidence of pipe corrosion can be found in the storage tanks. The old galvanised tanks were replaced with GRP tanks before these became redundant and this is normally due to the internal corrosion.

As the Water Services are a consumable service we consider the pipework condition critical.

The booster pumps were installed in 2007 and appear to be in good operational condition.

### 3.5.3 Water Services System Condition Recommendations and Budget

#### Pipework & valves

This budget covers the complete renewal of the water services pipework system from ground to roof level serving. Before this work is carried out a sample of the pipework should be taken to confirm the expected condition of the pipework system.

The works are extensive and disruptive expecting to take between 6-8 months for each block.

As access is required into all dwellings, it has been budgeted for these works to be carried out in conjunction with the Above Ground Drainage Services Installation detailed below to avoid additional costs.

The budget below is an extract from main spreadsheet specific to the Water Services systems and excludes the preliminaries which were shown as a global addition to the works shown in each year.

Component of Work	Year 3	Year 6	Yrs 11-15
<u>Water Distribution Services</u>			
Pipework & valves	300,000	0	0
Booster pumps & controls	0	30,000	0
Tanks - In dwelling	0	0	40 ,000



### 3.6 Fire Alarm System

There is no Fire Alarm system at Kedge House.

We have allowed within our budget for a new system to serve the building. The smoke heads are shown twice as they are to be replaced every 15 years.

The budget below is an extract from main spreadsheet specific to the Fire Alarm systems and excludes the preliminaries which were shown as a global addition to the works shown in each year.

Component of Work	Year 1	Yrs 16-20
<u>Fire Alarms</u>		
System Panel	15,000	0
Heads & Wiring	7,500	2,500

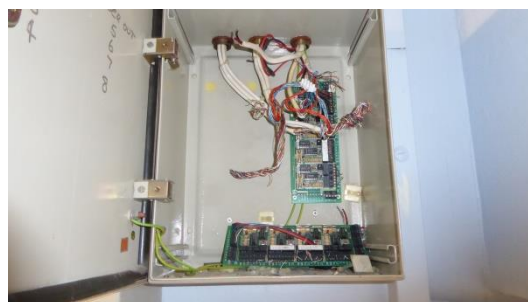
### 3.7 Door Entryphone

The door entry phone is an audio only entry phone system. The system was installed mid-1995.

The system suppliers are fed from the ground floor corridor area to each apartment with intermediate panels located to the floors.

The system has a significant number of components missing and disconnected and it is possible that not all features are functioning.

The system has exceeded its anticipated life expectancy of 15-20 years and has been budgeted for complete replacement.



The budget below is an extract from main spreadsheet specific to the Door Entry systems and excludes the preliminaries which were shown as a global addition to the works shown in each year.

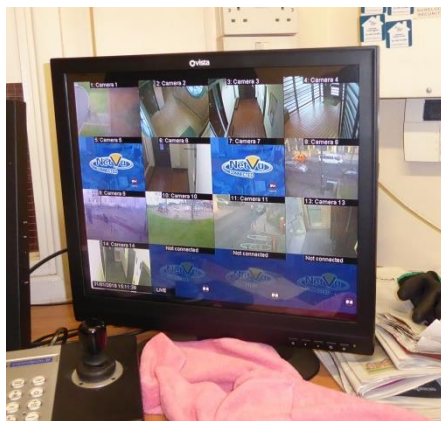
Component of Work	Year 1	Yrs 26-30
<u>Door Entry</u>	20,500	20,500

### 3.8 CCTV System

The CCTV system covers most of the entrance, ground floor communal areas of the building and the external perimeter of each building.

The system is housed in the concierge's office and is estimated to have been installed in 2010. There are a number of cameras visible that appear non-operational. These may from a previous installation.

The images are of reasonable quality internally but the external cameras had poor resolution. There are 2 cameras non-operational out of the 14 on the system.



CCTV Monitor.



CCTV Recorder.

Within the budget we have allowed for the replacement of the system in year 5 although there will almost certainly be occasional failures of cameras requiring replacement.

The budget below is an extract from main spreadsheet specific to the CCTV systems and excludes the preliminaries which were shown as a global addition to the works shown in each year.

Component of Work	Year 5
<u>CCTV system</u>	10,000

### 3.9 Below Ground Drainage

The below Ground Drainage Systems for Kedge House have had a CCTV survey carried out. The detailed report for the block is shown in appendix A together with a schematic of the drain runs.

The drains were found to have some build-up of silt blocking the view of the camera. The recommendation is that the drains be jet cleared and re-checked.

The budget below is an extract from main spreadsheet specific to the Below Ground Drainage system and excludes the preliminaries which were shown as a global addition to the works shown in each year.

Component of Work	Year 1
<u>Soil &amp; Waste Services</u>	
Below Ground	3,500

**Appendix A - Below Ground Drainage Specialist Report**

# **WATERGUARD** (LONDON) LTD

## **WATER QUALITY SPECIALISTS**

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05-02-18

F.A.O Mike Cookman

### **DRAIN SURVEY 05**

**KEDGE HOUSE TILLER ROAD E14 8PS**

#### **OBSERVATION**

##### **Inspection Chamber 2-9**

0.7m in from chamber 2 on main run holding solid waste, suggests possible obstruction / break.

9.2m in from chamber holding solid waste, suggests possible obstruction / break.

18.8m in from chamber main run heavy scaling to walls

19m possible displacement.

19.5m dip in run and holding waste, which suggests possible belly in run or obstruction.

##### **Inspection Chamber 3-5**

13.6m in from chamber 3 on main run holding waste and camera dips slightly, which suggests possible ring fracture / displacement.

14m in on main drain joint displacement.

14.3m dip in drain run which suggests possible ring fracture / displacement.

18.1m obstruction in main drain run as camera could not pass.

#### **SUMMARY**

Drain run to be high pressure jetted and re-surveyed from 1-9 due to heavy build up of silt and obstructions. Also once clear to carryout in depth survey to determine if further repair / renewal / lining required.

All chamber frames to be cleared of debris and greased for future ease of access.



Chamber number 1



Chamber number 2



Chamber number 3



Chamber number 4



Chamber number 5





Chamber number 6



Chamber number 7



Chamber number 7



Chamber number 8



Chamber number 8

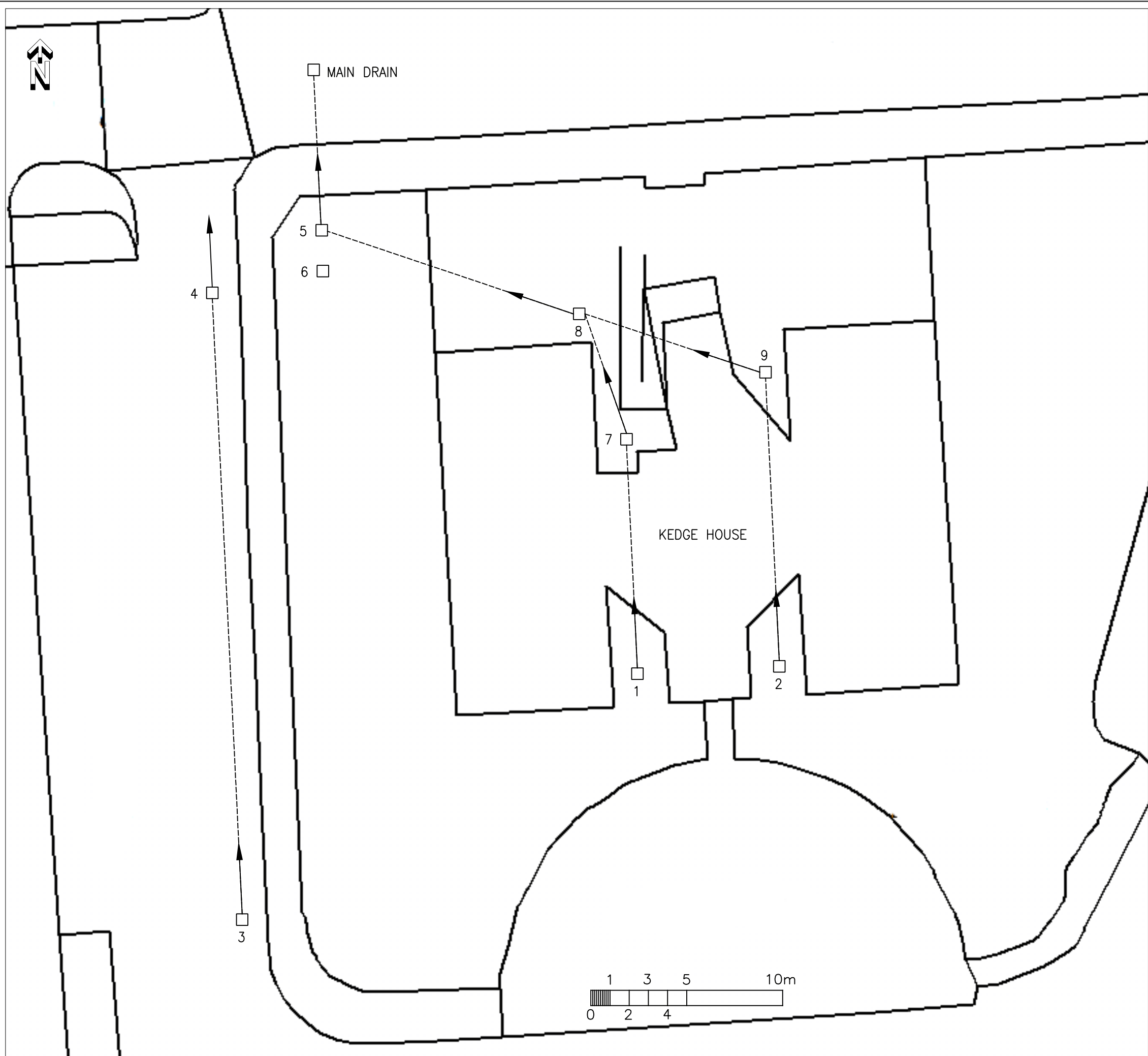


Chamber number 9

**A D Street  
R P Williams**

**UTR NO: 63480 19915  
COMPANY REG NO: 6004845  
VAT REG NO: 761338921**





Notes  
DO NOT SCALE THIS DRAWING.

MAIN DRAIN = ø150mm  
OUTLET SIZE = ø100mm

MANHOLE	No. OUTLETS	RUN LENGTH /m	NOTE
1	1	21.90	
2	1	3.50	
3	1	3.90	
4	1	0.80	
5	1	7.10	
6	0	9.40	
7	1		
8	1		

A	.	.	yy.zz
Rev.	Description	By	Date
Status	SURVEY		
Title	BELOW GROUND DRAINAGE & MANHOLE LOCATION PLAN		
Project	KEDGE HOUSE TILLER ROAD LONDON E14 8PS		
Client			
Drawing No.	Scale(s) At A3	Rev.	
0095/003	1:200	.	
Date	Drawn	Checked	
JAN 2018	J.B.	M.C.	
J103 The Biscuit Factory Tower Bridge Business Complex 100 Clements Road London SE16 4DU T 020 7237 4865 E info@mcce-ltd.co.uk			



## **Appendix B – Budget Costs**

Below is the budget cost spreadsheet for Kedge House.

This section relates to main plant replacement and does not include budgets for routine maintenance items. As with all services good maintenance is essential for extended life expectancies to be achieved. Economic life expectancy values have been taken from the CIBSE Guide M but used in conjunction with MCCE's experience and judgement following the visual survey.

Component of Work			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Yrs 11-15	Yrs 16-20	Yrs 21-25	Yrs 26-30	Yrs 1-30		
<u>Heating System</u>																			
Central Plant - No Access to plant area			0	0	20,000	0	0	0	0	0	0	0	0	0	0	0	20,000	Incl Leaseholders	
Heating Pipe Distribution & Ancillaries			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Incl Leaseholders	
HIUs			0	0	0	0	0	0	0	0	0	0	100,000	0	0	0	100,000	Incl Leaseholders	
Radiators, HWS and dwelling pipework			14,000	0	0	0	0	0	0	0	0	0	160,000	0	0	0	174,000	Incl Leaseholders	
<u>Water Distribution Services</u>																			
Pipework & valves			0	0	300,000	0	0	0	0	0	0	0	0	0	0	0	300,000	Incl Leaseholders	
Booster pumps & controls			0	0	0	0	0	30,000	0	0	0	0	0	0	0	0	30,000	Incl Leaseholders	
Tanks - In dwelling			0	0	0	0	0	0	0	0	0	0	40,000	0	0	0	40,000	Incl Leaseholders	
<u>Soil &amp; Waste Services</u>																			
Above Ground (Central stacks)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Incl Leaseholders	
Above Ground (Dwelling drainage)			0	0	48,000	0	0	0	0	0	0	0	0	0	0	0	48,000	Incl Leaseholders	
Below Ground - Jetting & Review			3,500	0	0	0	0	0	0	0	0	0	0	0	0	0	3,500	Incl Leaseholders	
<u>Ventilation</u>			No Central System - Excluded																
<u>Fire Alarms</u>																			
System Panel			15,000	0	0	0	0	0	0	0	0	0	0	0	0	0	15,000	Incl Leaseholders	
Heads			7,500	0	0	0	0	0	0	0	0	0	0	2,500	0	0	10,000	Incl Leaseholders	
<u>CCTV system</u>			0	0	0	0	10,000	0	0	0	0	0	0	0	0	0	10,000	Incl Leaseholders	
<u>Door Entry</u>			0	0	0	0	10,000	0	0	0	0	0	0	0	0	0	10,000	Incl Leaseholders	
<u>Communal Wiring</u>																			
Incoming electric distribution			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Incl Leaseholders	
Rising mains			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Incl Leaseholders	
Landlord's services			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Incl Leaseholders	
Dwelling consumer unit			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	Incl Leaseholders	
<u>Communal Lighting</u>																			
Wiring			0	0	0	12,500	0	0	0	0	0	0	0	0	0	0	12,500	Incl Leaseholders	
Internal fixtures			0	0	0	12,500	0	0	0	0	0	0	0	0	0	0	12,500	Incl Leaseholders	
External fixtures			0	0	0	6,000	0	0	0	0	0	0	0	0	0	0	6,000	Incl Leaseholders	
Sub-Total			40,000	0	368,000	31,000	20,000	30,000	0	0	0	0	300,000	2,500	0	0	791,500		
Preliminaries 25%			10,000	0	92,000	7,750	5,000	7,500	0	0	0	0	75,000	625	0	0	197,875		
Total			50,000	0	460,000	38,750	25,000	37,500	0	0	0	0	375,000	3,125	0	0	989,375		
																		Per Dwelling	
																		Per Annum Yrs 1-30	
OH Rented		37	22,561	0	207,561	17,485	11,280	16,921	0	0	0	0	169,207	1,410	0	0	446,425	402	12,066
Leaseholders		45	27,439	0	252,439	21,265	13,720	20,579	0	0	0	0	205,793	1,715	0	0	542,950	402	12,066
Total		82	50,000	0	460,000	38,750	25,000	37,500	0	0	0	0	375,000	3,125	0	0	989,375		

**End of Document**