Condition Report of the Building Services Installation.

Alice Shepherd House

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

February 2018

MCCE

J103 The Biscuit Factory
Tower Bridge Business Complex
100 Clements Road
London
SE16 4DU

Telephone: (020) 7237 4865
Email: mike@mcce-ltd.co.uk

CONFIDENTIAL

Project No. 001/0095
Version No: 1

CONTENTS

End of Document

1. Introduction

1.1 Background

Alice Shepherd House was built approximately 1969 by Tower Hamlets Council and forms part of the St John's Estate on the Isle of Dogs. The block has evidence of some refurbishment since it's construction but some of these services have come to the end of the economic life expectancy.

Alice Shepherd House consists of 10 storeys containing 72 dwellings. The entrance, concierge office and plant areas occupy the ground floor with a number of single level dwellings access from Stewart St and garages accessed from the car park facing Manchester Road. The dwellings to the upper levels are duplex with the numbers to each floor as shown in the photo.

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. Electrical Intake and Distribution
2. Communal Lighting
3. Ventilation System
4. Above Ground Drainage
5. Water Supply Services
6. Door Entryphone
7. CCTV System
8. Below Ground Drainage
9. Lifts/Lift Motor Room – Detailed within a separate document

The heating systems are individual to each dwelling and were excluded from the project.

There is no fire alarm system at Alice Shepherd House as the entry to the dwellings are on open balconies and there is limited enclosed landlord areas.

1.3 **Survey**

Several surveys were carried out between November 2017 and early February 2018. Access was provided to Flat No.1 and this was used as a representative of the services to the block.

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 Alice Shepherd House have undergone a refurbishment since the building was constructed and are approaching the end of their economic life.

However, where replacement systems have been put in place the old systems have not always been removed and there are a significant amount of redundant services within the 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 Electrical Supply

The incoming supply has been renewed in 2010 with some of the Landlords switchgear, but the rising bus bar system and many local services remain original or renewed but dates. There are redundant services which appear to include wiring and we would recommend that these be removed.

Electrical System Works	Year
Incoming electric distribution	26-30
Rising Mains and Feeds to Dwellings	11-15
Landlord's services – Due to age of components.	11-15
Dwelling consumer unit – Due to the non-compliant installation	1

2.2 Lighting – Communal

The lighting system has been replaced some 10-12 years ago with a further addition of emergency light fitting in 2010. All fittings appeared operational but showing signs of failures 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

2.3 Ventilation System

The ventilation system serves the WC/Bathroom vent within Alice Shepherd House. The extract fan units had been replaced during 2010.

The WC / Bathroom vent required an amount of immediate maintenance to improve operation.

Fire protection measures are recommended to WC/Bathroom Vent to prevent the spread of fire.

Ventilation System Works	Year
Fans – Replacement estimate	11-15
Ductwork - Clean	1
Installation of Fire dampers	1

2.4 Above Ground Drainage

The main soil stacks appear to be in good condition and are unlikely to fracture as they are internally mounted. Many of the connections to the services 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 Booster Pumps were replaced in 2010 and are in good operational condition.

The pipework system is formed of Galvanised Steel which appears to have been installed with the buildings construction with an anticipated life of 35 years. Sections cut for a building of similar age within the Tower Hamlets area shows 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	11-15

2.6 Door Entryphone

The door entry phone system is an audio only system appears to have been installed in 2011. There were no recommendations for this system.

2.7 CCTV System

The system appears to have been installed in 2010 and is partially operational with low quality images and two 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.

2.8 **Below Ground Drainage**

The survey indicated the drains in good condition and recommended a jet clean only.

3. Mechanical & Electrical Services

3.1 Electrical Supply

3.1.1 General Electrical System Description

The incoming supply enters the building at the ground floor intake room access from the corridor off the main entrance lobby.

Two service heads are routed through the original switch panels to the Landlord's distribution cupboard located behind the intake room. From the Landlord's distribution both the communal services and the rising bus bars are served with the distribution boards located to each floor.

3.1.2 Landlords Services

The Landlords main distribution board and meter are access from the bin store to the rear of the building.

A significant amount of the switchgear has been replaced with the latest item the landlords distribution board serving the door entry, ground floor lighting etc.

Most of the main isolators appear to have been replaced but some of these appear very dated although operational.

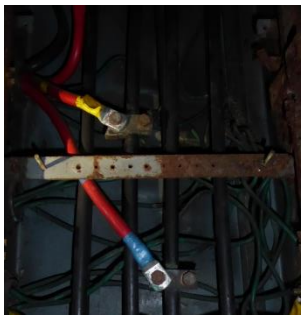
There are some redundant services within the cupboard making it difficult to identify to operation services.

Oldest isolator serving the Booster Pump room

Modern isolator serving the Lift

3.1.3 Communal Lateral Mains

From the main intake room the rising mains bus bar cables feed the Ryefield Boards located in riser cupboards off the stairwells / Lift Lobby rising up the building.



The rising bus bar system is a cable based system rather than bars.

The Ryefield Boards appear to have been replaced in 2002

3.1.4 Electrical Installtion 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 has been upgraded and the original switchgear relocated in 2010.

The rising cabling serving the Ryefield Boards appears original and very dated and some immediate H&S repairs to enclose live terminals etc. are required.

The Ryefield boards serving the dwellings have been replaced in 2002. The wiring between the Ryefield and each dwelling was not replaced and appears to be as originally installed with the buildings construction.

Wiring from Ryefield to Dwellings

The consumer unit within Flat 1 was of the newest type available and compliant with the IET BS7671 wiring regulations with 2017 update.

3.1.5 Sizing and Compliance

The electrical services appear to be suitably sized for the buildings load.

The main intake connection to the bus bar chamber has been replaced and there were no visible signs of overloading or fuse activation from the previous installation.

3.1.6 Electrical System Recommendations and Budget

Incoming electric distribution

No works have been shown until years 26-30 as the installation has undergone a refurbishment in 2010.

Landlords Services

The switchroom has had several ad-hoc component changes most probably due to service change rather than electrical failures. The complete upgrade of the Landlords services should be carried out with the bus-bar replacement budgeted for years 11-15.

Rising mains & dwelling feed

The budget allows for the replacement of the rising bus bar system and the feeds to each dwelling making allowance for the condition of the service. However, this may need to move forward due to the availability of spares.

Dwelling consumer unit

No works have been shown until years 26-30 as the installation in the unit inspected had been replaced. However, if Flat No.1 is not typical this budget will require revision.

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

Component of Work	Year 11-15	Year 26-30
Communal Wiring		
Incoming electric distribution		50,000
Rising mains and dwelling feeds	432,000	
Landlord's services	40,000	
Dwelling consumer unit		144,000

3.2 Lighting – Communal

The lighting to the main communal areas has been replaced with fluorescent lighting an estimated 12-15 years ago although the emergency lighting fittings were installed in 2010.

There is evidence of some of the fittings having had LED replacement plates fitted but these do not appear to fit correctly and we would recommend complete replacement of the fittings when they fail

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

Modified Communal Lighting

The external fittings have been listed as replaced in 2010. It appears that this was not all the fittings ad some of the older types remain.

It does not appear that the wiring to the external lighting was replaced with the fittings.

3.2.1 Communal Lighting System Recommendations and Budget

The main fittings are estimated to be approximately 10-12 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 external fittings were scheduled as being replaced in 2010. However the budget allows for additional fittings to improve coverage.

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
Communal Lighting	
Wiring	12,500
Internal fixtures	12,500
External fixtures	10,000

3.3 Ventilation System

The central ventilation system extracts air from the bathrooms and WC's. There are two twin fan extract units mounted within the rooftop plant room. These are ducted along the roof and drop to serve the dwelling in a number of locations. A remote alarm indicator is located on the ground floor Lift Lobby to alert in the event of a fan failure.

Alarm Panel

Central Extract Plant and Controls

Roof Duct

The grilles are ducted to a builderswork shafts which is routed to all levels adjacent to the bathrooms. Within the shaft it appears that ductwork continues down serving the bathrooms/WCs within the dwellings with grilles cut flush with the wall.

Vent in Flat 1

The fans and roof plant room ductwork system were replaced in 2010 but it is unclear if the rest of the ductwork system from the roof to the dwellings was cleaned, although from the dust build-up on the inside of the grille shown, it appears that this was not carried out.

3.3.1 Ventilation Systems Recommendations and Budget

Fans

This budget covers replacement of the Extract fan units in year 6 as they would be approaching their economic life expectancy of 15 years at that time.

Ductwork Clean

The cleaning of the ductwork and more specifically the internal grilles is necessary for the systems operation and to reduce the risk of fire. As access is required into all dwellings, it

has been budgeted for the these works to be carried out in conjunction with the Fire Damper Installation detailed below to avoid additional costs.

Fire Dampers

There was no visible fire compartmentation between the extract duct and the bathrooms. This budget allows for the installation of fire barriers as the ducts enter each dwelling. The builders work shaft is likely to have sufficient fire resistance to meet the requirements but this will need to be checked. The budget below relating to the fire dampers is not shown in the M&E costs but are shown in the Fire Risk Assessment budget.

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

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

Component of Work	Year 1	Years 11-15
Ventilation		
Fans	0	15,000
Ductwork - Clean	36,000	0
Fire dampers – (shown in Fire Risk Budget)	144,000	0

3.4 Above Ground Drainage

3.4.1 Above Ground Drainage Description and Condition

Several 100mm Cast Iron soil stacks serve the buildings' above ground drainage system. It was not clear if the vent pipes were separate but this would be expected for drainage design at the time of installation. The soil pipes are routed within the dwellings local to the bathrooms and kitchens in a service riser that also contains the water services and the redundant gas service.

150mm CI Soil Pipe

100mm CI Soil Pipe with Water Services

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.

PVC WHB connection to original Copper Waste Pipe

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.

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, extending its life expectancy.

From the survey of the Flat No.1 and MCCEs experience within similar blocks with Cast Iron soil stacks, leakages are caused by the poor connection rather than the main soil stack failures.

The photo above shows a typical new connection leading to the stack from the WHB in the bathroom using a white compression fitting onto the original copper joining the stack. This one appears to be carried out in a reasonable fashion using a Mcalpine fitting to join the copper and is formed outside of the riser.

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
Soil & Waste Services	
Above Ground (Central stacks)	0
Above Ground (Dwelling drainage)	88,800

3.5 Water Services Installation

3.5.1 Water Services System Description

The water supply enters the building and feeds a detached plant room at the car park entrance. The mains feed serves a number of storage tanks which act as a break tanks for booster pumps. From the booster the water is piped to the roof level.

Within the roof plantroom is a large asbestos duct blocking access to some areas. Some of the access doors to the plant room required tools to open as they been wedged closed.

From the visual survey and the access available it is not clear of the exact system operation. It appears from the survey, that boosters feed the following services:

- Cold Water Down Services supplying water to the cold-water bathroom outlets.
- Boosted Drinking Water Services feeding the kitchen cold outlets and the combi boilers.

The pipework is formed in Galvanised Steel and is routed within the risers with the Soil Waste pipework adjacent to the bathroom in each dwelling.

Booster Pump Room

Pump set and Break Tank

Roof Plant Area Cold Water Storage Tanks.

3.5.2 Water Services System Condition

The roof tanks are of a modern GRP pre-insulated construction and are scheduled to have been installed in 2010.

The booster pump-set was also installed in 2010 but the storage tank was not replaced. The schedule of works in 2010 suggests that the rising main pipework from the booster to the roof tanks was replaced. However the down service from the roof tanks serving the dwellings was not replaced and is as originally installed during the buildings construction.

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 a similar age to Alice Shepherd House.

Additional evidence of pipe corrosion can be found in the storage tanks. The original Galvanised tanks have all been replaced with new GRP tanks, shown above, due to the internal corrosion.

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

The CWDS booster pumps were installed in 2010 and appear to be in good operational condition.

The individual pumps can be replaced on an ad-hoc basis but the set will eventually require complete replacement.

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. This can easily be carried out within the dwellings during a tank replacement but a large diameter section of pipe should also be cut for inspection.

The works are extensive and disruptive expecting to take between 8-10 months to complete due to the complex nature of the block and specifically the dwelling layout.

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

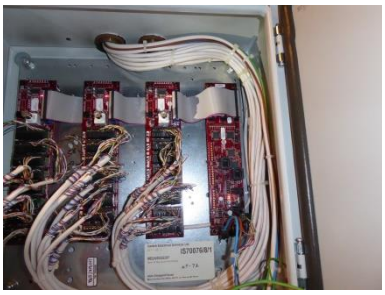
The budget below is an extract from main spreadsheet specific to the Water Services systems and excludes the preliminaries which were shown as a global addition to the works shown in each year.

Component of Work	Year 3	Yrs. 11-15
Water Distribution Services		
Pipework & valves	540,000	0
Booster pumps & controls	0	30,000

3.6 Door Entryphone

The door entry phone is an audio only entry phone system. The system was replaced in 2011 with an Entrotec Door Entry System

The system is fed from the ground floor to each apartment with intermediate panels located to the floors within the electrical riser cupboards.



These systems typically last for 20 years and the budget shows replacement between 11-15 years.

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	Years 11-15
Door Entry	18,000

3.7 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 although there are a number of components that have been replaced. There are only two of the nine cameras visible that appear non-operational.

The images to four of the cameras are of low quality.

CCTV Monitor.

Within the budget we have allowed for the replacement of the system in year 5 although it may be some consideration should be given to the quality of the images from the existing cameras and potentially have remedial works to these areas earlier.

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
CCTV system	10,000

3.8 Below Ground Drainage

The below Ground Drainage Systems for Alice Shepherd 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 be in good condition and a recommendation to jet wash only was made.

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
Soil & Waste Services	
Below Ground – Jet wash drains	1,500

Appendix A – Below Ground Drainage Specialist Report

*WATER*GUARD (LONDON) LTD
WATER QUALITY SPECIALISTS
15A Valley Side Parade Chingford, London, E4 8AJ
Tel: 020 8559 3881 Fax: 020 8559 3643 Mobile: 07960 466168/169
E-mail: waterguardwqs@aol.com

MCCE
The Biscuit Factory
Tower Bridge Business Complex,
100 Clements Road,
Se16 4DU
Tel 020 7237-4865
info@mcce-ltd.co.uk

05-02-18

F.A.O Mike Cookman

DRAIN SURVEY 03

ALICE SHEPHERD HOUSE MANCHESTER RD E14 3ET

OBSERVATION

On inspection of drain survey, material of main drain is 150mm Earthenware and is in very good condition. Inspection chambers benching is also in good condition.

SUMMARY

Due to condition of total drain run and inspection chambers I would suggest high pressure jetting of total run and greasing of chamber frames only.

Chamber number 1

Chamber number 1

Chamber number 2

Chamber number 3

Chamber number 4

Chamber number 5

Chamber number 6

Chamber number 7

Chamber number 8

Chamber number 8

Chamber number 9

Chamber number 10

Chamber number 11

Chamber number 12

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	4.80	
2	1	4.30	
3	1	6.50	
4	1	5.00	
5	2	3.90	
6	0	7.00	
7	1	5.90	
8	1	3.20	
9	1	8.10	
9	1	7.00	
9	1	14.00	
12	MAIN DRAIN		

1 3 5 10m
0 2 4

Rev.	Description	By	Date
A	.	.	yy.zz

Status
SURVEY

Title
BELOW GROUND DRAINAGE & MANHOLE LOCATION PLAN

Project
ALICE SHEPHERD HOUSE
MANCHESTER ROAD LONDON
E14 3ET

Client
ONE HOUSING
LIVING BETTER

Drawing No.	Scale(s) At A3	Rev.
0095/001	1:500	.

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
mcce

Appendix B – Budget Costs

Below is the budget cost spreadsheet for Alice Shepherd 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	
Heating System		Indivdual Systems - Excluded															
Water Distribution Services																	
Pipework & valves		0	0	540,000	0	0	0	0	0	0	0	0	0	0	0	540,000	Incl Leaseholders
Booster pumps & controls		0	0	0	0	0	0	0	0	0	0	30,000	0	0	0	30,000	Incl Leaseholders
Soil & Waste Services																	
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	88,800	0	0	0	0	0	0	0	0	0	0	0	88,800	Incl Leaseholders
Below Ground		1,500	0	0	0	0	0	0	0	0	0	0	0	0	0	1,500	Incl Leaseholders
Ventilation																	
Fans		0	0	0	0	0	0	0	0	0	0	15,000	0	0	0	15,000	Incl Leaseholders
Ductwork - Clean		36,000	0	0	0	0	0	0	0	0	0	0	0	0	0	36,000	Incl Leaseholders
Fire Alarms		No Fire Alarm System - Excluded															
CCTV system		0	0	0	0	10,000	0	0	0	0	0	0	0	0	0	10,000	Incl Leaseholders
Door Entry		0	0	0	0	0	0	0	0	0	0	0	18,000	0	0	18,000	Incl Leaseholders
Communal Wiring																	
Incoming electric distribution		0	0	0	0	0	0	0	0	0	0	0	0	0	50,000	50,000	Incl Leaseholders
Rising mains & dwelling feed		0	0	0	0	0	0	0	0	0	0	432,000	0	0	0	432,000	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 Based on No.1		0	0	0	0	0	0	0	0	0	0	0	0	0	144,000	144,000	Incl Leaseholders
Communal Lighting																	
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	10,000	0	0	0	0	0	0	0	0	0	0	10,000	Incl Leaseholders
Sub-Total		37,500	0	628,800	35,000	10,000	0	0	0	0	0	477,000	18,000	0	194,000	1,400,300	
Preliminaries 25%		9,375	0	157,200	8,750	2,500	0	0	0	0	0	119,250	4,500	0	48,500	350,075	
Total		**46,875**	**0**	**786,000**	**43,750**	**12,500**	**0**	**0**	**0**	**0**	**0**	**596,250**	**22,500**	**0**	**242,500**	**1,750,375**	

Cost Split																**Per Dwelling Per Annum**	**Yrs 1-30**
OH Rented	64	41,667	0	698,667	38,889	11,111	0	0	0	0	0	530,000	20,000	0	215,556	1,555,889	810	24,311
Leaseholders	8	5,208	0	87,333	4,861	1,389	0	0	0	0	0	66,250	2,500	0	26,944	194,486	810	24,311
Total	72	46,875	0	786,000	43,750	12,500	0	0	0	0	0	596,250	22,500	0	242,500	1,750,375		

End of Document