



Wellington Mills Estate
Lambeth
London

Report on Electrical Consumer Units.

August 2018

Project: Wellington Mills Estate
comprising:
Holst Court, Oakey Lane, Mead Row
Lambeth
London
SE1 7JG

Client: Wellington Mills Housing Co-operative
24 Mead Row
Lambeth
London
SE1 7JG

Document: Report on Electrical Consumer Units

Date: 24th August 2018

Prepared by: Richard Emery

Checked by: Robert Wilson

Approved by: Graham Champion

Revision	Date	Description	Prepared	Checked	Approved
-	24/08/2018	Initial Report	RE	RW	GC

CONTENTS:

1.0 Executive Summary

2.0 General

3.0 Electrical Services

4.0 Conclusions

1.0 EXECUTIVE SUMMARY

Green Building Design Consultants have been appointed by the Estate Management Team, led by Isaac Essuman, at the Wellington Mills Housing Co-operative to comment on proposals for an update of electrical services supplying the residential properties at the Wellington Mills Estate in Lambeth, South London, and to comment on the proposed works.

Following on from our review of the information supplied we have made comment on our findings in Section 4.

The Estate was built between 1975-76. At this time of the electrical installation, install by GLA was to the Regulations for the Electrical Equipment of Buildings 14th Edition Amendment 1974. The Wylex 'M Series 60 Range' BS3036 rewirable Skeleton fuseboard installed in each property was the mainstay of the industry.

The electrical installations have in part been updated to the latest standard at the time, however there are still a large number of the old rewirable Wylex fuseboards still in use.

Under CIBSE guidance Part M, the useful service life of (electrical installations: sub-main distribution:) distribution boards and consumer units is 20 years. The majority of the estate is over 40 years old.

In the given installation the Prospective Fault Current is greater than 1.3kA.

It is recommended that all the original rewirable Wylex fuseboards are replaced before further works to the sub-mains is completed as they are not rated for the proposed or current prospective fault current.

It is also recommended that all properties either have a current Electrical Installation Condition Report or an Electrical Installation Completion Certificate, as appropriate.

“No addition or alteration, temporary or permanent, shall be made to an existing installation, unless it has been ascertained that the rating and condition of any existing equipment, including that of the distributor, will be adequate for the altered circumstances.” Source BS7671:2008+A3:2015 Requirements for Electrical Installations

2.0 GENERAL

2.1 Purpose of Report

Green Building Design Consultants have been appointed by the Board of the Estate Management Team, led by Isaac Essuman, at the Wellington Mills Housing Co-operative to comment on proposals for an upgrade of the electrical sub-main infrastructure to the flats at Wellington Mills Estate in Lambeth, South London, and to comment on the current state of the sub-main distribution equipment in each property.

2.2 Reservations

There is limited information available on the electrical infrastructure on site. The properties are a mixture (60/40) of Leasehold and council tenanted flats and maisonettes. Some of these have had additional works. New fuseboards / consumer units, rewires and additional equipment may have been added.

Information has not been reviewed on current electrical inspection or testing, and it is believed that Lambeth do not follow SFG20, CIBSE or IET recommendations for periodic electrical inspections.

Any inspections carried out by GBD were specifically to measure incoming supply characteristics, not to test and inspect the electrical systems within each property. This should be undertaken by a competent person at suitable intervals.

2.3 Record Drawings and Maintenance Manuals

We have not seen the O&M information on site, but we understand that the electrical services consist of mains intake distribution and sub-mains that are consistent with the original services for the building construction c.1975-76.

3.0 ELECTRICAL SERVICES

3.1 Distribution

The estate comprises 8no. blocks of two and three storey flats and maisonettes on a roughly triangular site between Kennington Road, Westminster Bridge Road and King Edward Walk in Lambeth. Electrical distribution is via the Distribution Network Operator (DNO) mains intakes and sub-mains operated by EDF Energy.

The distribution is provided by unswitched Ryefield 'J' Pattern multiway TPN fuseboards with GRP fuse carriers.

The existing sub-mains run through steel trunking and conduit through the structure of the building to each property and are terminated at a metal meter cabinet in the hall. The meter cabinet is installed in the main escape route from the properties. The sub-mains are terminated into the Utility meter, and a Main Earth Terminal is provided, fixed to the case of the meter cabinet. In the original installation, Wylex 'M Series 60 Range' BS3036 Rewireable Skeleton fuseboards were installed in the meter cabinet. These pre-1977 fuseboards are believed to have a fault current capacity of 1-1.5kA.

The extent of the works to the sub-mains is limited to the replacement of the Ryefield fuseboards at the Main Intakes, installation of cable containment and installation of single cables comprising Line conductors and Circuit Protective Conductor. Existing meters and resident's consumer units are not planned for inspection or replacement.

3.2 Current Installation

The current installation comprises four general categories of mains distribution equipment:

- (1) Original with rewireable fuses / Original with replacement miniature circuit breakers
- (2) Replacement consumer units: Skeleton, or surface units, made of plastic and therefore fire propagating. This type does not provide suitable protection against electric shock.
- (3) Replacement consumer units: Skeleton, or surface units, made of plastic and therefore fire propagating. This type does provide suitable protection against electric shock.
- (4) Replacement consumer unit: non-combustible enclosure.



(1) Wylex 'M Series 60 Range' Rewireable BS3036 Skeleton Fuseboard c/w rewireable fuses



(1) Wylex 'M Series 60 Range' Rewireable BS3036 Skeleton Fuseboard c/w rewireable fuses and miniature circuit breakers (MCB)

(1) Wylex 'M Series 60 Range' BS3936 Rewireable Skeleton Fuseboards c1975. These boards do not support the likely Prospective Fault Currents for the existing installation. They do not offer appropriate electric shock protection by modern standards. These boards are over 40 years old and twice their serviceable life expectancy. There is no evidence of electrical inspection and testing. These boards are not covered by a current British Standard.



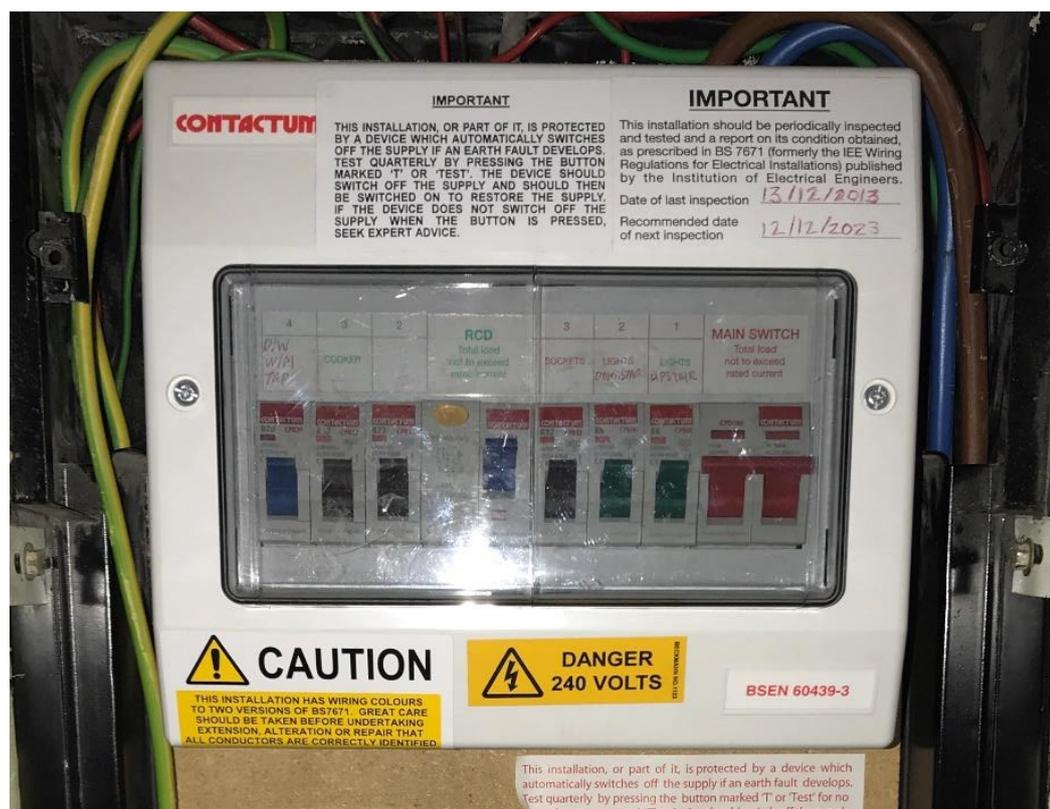
(2) Crabtree Starbreaker Skeleton Consumer Unit c/w MCB

- (2) Crabtree Skeleton Consumer unit. These boards are still a current model. The circuit protection can be upgraded to the current requirements. These boards are contained in the original metal meter cabinet, with the metal door fitted as the location is on a fire escape. Where these doors have been removed and replaced by wooden doors, we would recommend refitting the metal cabinet doors or replacing the distribution board with a non-combustible unit as (4). NB: this board has missing covers which allows access to the internal area, which may be dangerous.



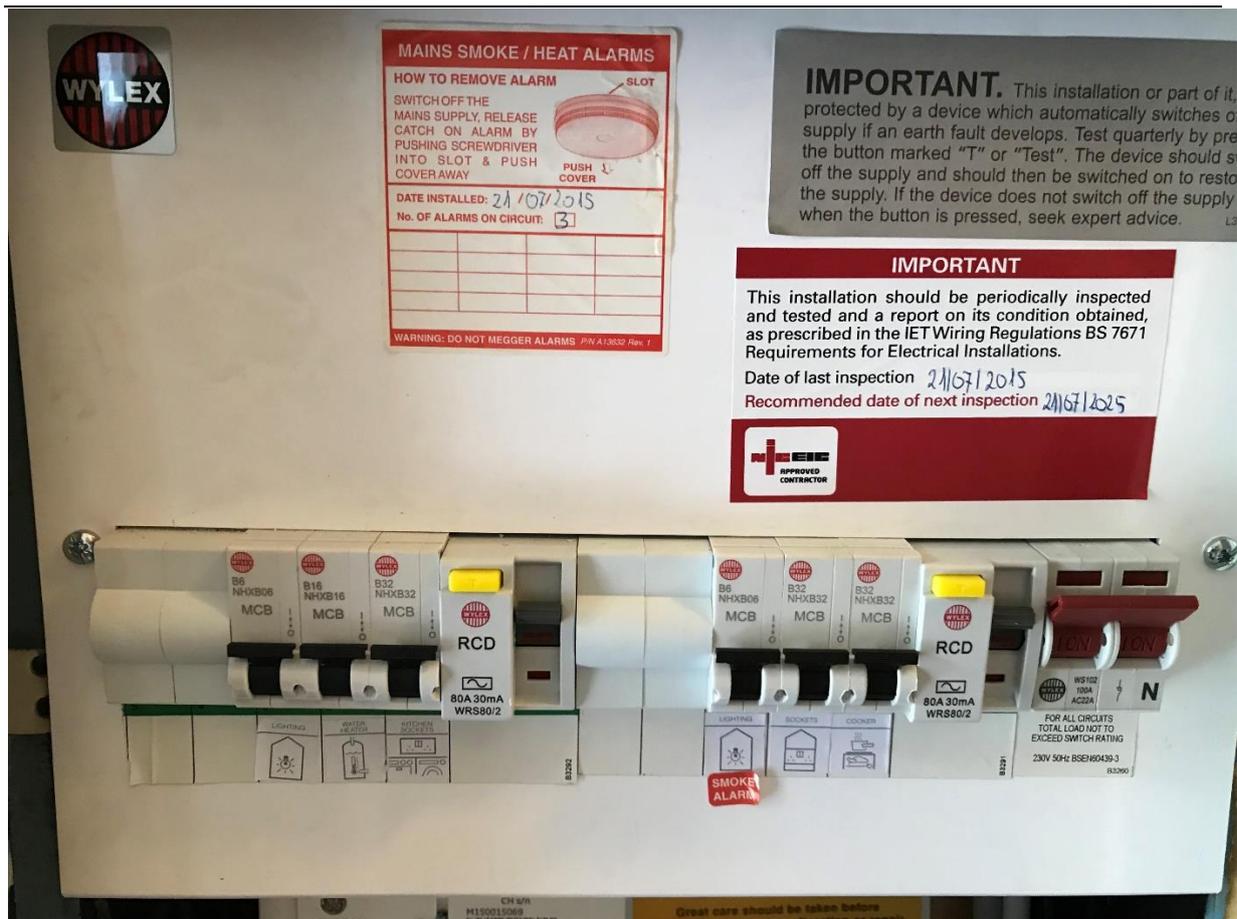
(2) Modern plastic Split load consumer unit c/w MCB and one Residual Current Device (RCD) Main Switch

- (2) A modern plastic consumer unit mounted outside the meter cabinet. This board has suitable protection against electric shock on the part covered by the RCD but not to the lighting circuits. The original installation had the distribution board mounted inside a non-combustible meter cabinet. Moving the distribution board outside the meter cabinet is a change to the original design. As the location is on a fire escape it is recommended that the distribution board is non-combustible and/or mounted in a non-combustible enclosure. There is no evidence of an electrical test or inspection however this may not in itself be a dangerous installation.



(2) Contactum split load consumer unit, c/w MCB and one Residual Current Device (RCD) Main Switch

- (2) A modern plastic consumer unit mounted inside the meter cabinet. This board has suitable protection against electric shock provided by the RCD on part of the board but not to the lighting circuits. The original boards are contained in the metal meter cabinet, with the metal door fitted as the location is on a fire escape. Where these doors have been removed and replaced by wooden doors, we would recommend refitting the metal cabinet doors or replacing the distribution board with a non-combustible unit as (4). There is evidence of an electrical test or inspection completed within the last 5 years.



(3) Wylex split load consumer unit, dual RCD protection for all MCB circuits.

- (3) Wylex Skeleton consumer unit. This board has appropriate protection against electrical shock and shows a test or installation label stating that it has been tested within the last 4 years. The original boards are contained in the metal meter cabinet, with the metal door fitted as the location is on a fire escape. Where these doors have been removed and replaced by wooden doors, we would recommend refitting the metal cabinet doors or replacing the distribution board with a non-combustible unit as (4).



(4) Wylex metal cased split load consumer unit, dual RCD protection to all MCB circuits.

(4) Wylex consumer unit, BS7671:2008 Amd3:2015 compliant consumer unit. This board has suitable protection against electric shock and has been tested and inspected in the last 3 years. The board is manufactured in a metallic, non-fire propagating material. This meter cabinet has had the original metallic door removed and a wooden door fitted. The installation of the correct consumer unit maintains the fire barrier on the escape route.

4.0 CONCLUSION

The electrical installation at Wellington Mills is generally over 40 years old unless the properties have been rewired. This is considerably beyond the expected economic service life, and some additional work and monitoring of this installation may be required to ensure safety.

It is recommended that the properties are regularly tested and inspected by a competent person working within the Competent Person Scheme.

We would make the following general comments on the estate, based on properties we have visited.

Comments:

- Having carried out a selective audit on properties across the estate, all those with the original Wylex skeleton fuseboard with the original rewireable fuses or retro-fit miniature circuit breakers (MCB) may not be able to support the current Prospective Fault Currents >1.3kA. This will be made worse by the planned sub-main works. It is recommended that all the original Wylex 'M Series 60 Range' rewireable fuseboards are investigated for replacement with a suitable product such as the Wylex metal cased skeleton units, before works commence. These have already been installed in some flats. They offer a non-fire propagating metallic case and the ability to install Residual Current Devices to offer electric shock protection to BS7671:2008+A3:2015.
- In recent years we have seen an increase in the reports of electrical fires caused by small electrical faults which would not be picked up by the current protection devices. BS7671:2018 Requirements for Electrical Installations recommends that Automatic Fault Detection Devices are considered for premises with sleeping accommodation. Where there is the availability it would be recommended to install these devices on final circuits supplying electrical equipment.
- No addition or alteration, temporary or permanent, shall be made to an existing installation, unless it has been ascertained that the rating and condition of any existing equipment, including that of the distributor, will be adequate for the altered circumstances.
- On completion of the works, and after changing the supply characteristics, an Electrical Installation Completion certificate should be provided to each property. The requirements are that all properties are maintained in a suitable condition for continued service.
- Attention is drawn to the use of cables and cable containment systems used in escape routes where evacuation may be difficult: to include individual properties, corridors, halls, stairs.
 - Existing Installations installed after 30 June 2008, should comply with BS7671:2008 in that they shall be non-fire propagating (422.2.1)
 - Existing Installations installed after 30 June 2015, should comply with BS7671:2008+A3:2015, in that they shall be non-fire propagating (422.2.1), and shall offer suitable support in the event of a fire (521.11.201).
 - Plastic conduit and trunking is not suitable.

- In the original installation consumer meter cabinets were installed in the hall of the properties. These are metal in construction. However, in a number of cases these do not meet the requirements of BS7671:2008+A3;2015 as there are additional holes, loose or missing doors, loose frames, frames and doors replaced by wooden doors. In other Boroughs these cabinets have not been satisfactory to stop or limit the passage of fire. As these units are on fire escapes it is advised that should be inspected for suitability for continued service.
- NB- Electrical installations may have been designed and installed to conform to the standards set by earlier editions of BS7671 or the IEE/IET Wiring Regulations. This does not mean that they will fail to achieve conformity with the relevant parts of the Electricity at Work Regulations 1989, but they should be regularly tested and inspected to ensure that the systems are suitable for continued service.