



# Mechanical, Electrical and Public Health Systems | Factsheet

The Palace of Westminster is one of the most iconic and significant buildings in the world. It is home to one of the busiest parliaments, with more than a million people, including 100,000 schoolchildren, passing through its doors each year.

The Palace of Westminster's Mechanical, Electrical and Public Health (MEP) systems provide essential services such as heating, water, ventilation and power. These services are essentially the arteries of the Palace and are critical for the ongoing functioning of the building.

The primary MEP services are run mainly along the extensive basement corridors and riser shafts (vertical ducts), while the many secondary MEP services run under the floors of the Palace upper storeys. Since construction of the Palace in the mid-1800s, the services infrastructure has developed significantly, with additional systems added and overlaid to serve the ever increasing and changing demands of the Houses of Parliament. These have included cabling for specialist systems such as division bells, and pipe work for heating and lighting.

More recent additions include cabling for telephones and communication systems, IT systems and asbestos insulation. By the late twentieth century the vertical and horizontal ducts had become severely congested, making access to the originally installed pipes and cables virtually impossible.

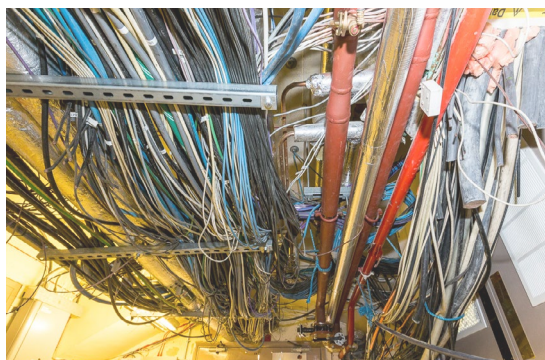
This has led to the current situation where it has become extremely difficult to repair, replace or remove many of the now redundant services. The condition and age of the mechanical pipe infrastructure is variable, but some of the pipe work is between 60-100 years old.

These infrastructure systems include, but are not limited to: steam, condensate, hot and cold water systems, mains cold water, fire mains, gas, compressed air and drainage. To reduce the risk of system failure to pipes and cables, and to ensure the safety of contractors working in the plant rooms, the steam system must now operate at a reduced pressure.

Because of the sheer scale of the MEP work required and the disruption it would cause to the operation of both Houses, the current medium-term risk reduction programme, being run over several years, focuses only on areas at particularly high risk of failure. Consequently, it only addresses 15% of the primary system plant rooms and just one of the 98 risers in the Palace.

## Key Facts

- 128 MEP plant rooms, 80% in the basement
- 98 distribution risers throughout the Palace
- 778 radiators
- 701 fan coil units
- 272 other heaters (electric, oil and unidentified)
- 40 air handling units
- 100 electric distribution boards
- 34 heat exchangers
- 2 km of basement corridors



## Cabling

- 2 km high voltage cabling
- 150 km low voltage cabling
- 4 km earthing
- 2 km lightning protection
- 4 km system clocks cabling
- 80 km fire system cabling
- 70 km security systems cabling
- 12 km annunciator cabling
- 70 km Building Management Systems cabling
- 11 km division bell cabling

## Pipework

- 11 km steam system
- 6 km low temperature hot water
- 5 km chilled water

## Specialist IT cabling

- 80 km telephone cabling
- 180 km network cabling
- 50 km broadcasting/sound cabling

Images: Cables and pipes in the basement of the Palace of Westminster © House of Lords 2016 / Roger Harris