

# 311-318 High Holborn, London

John F Hunt



Ebble Developments



£3.7m



9 months

## Project Overview

The island site comprised several prominent brick and timber constructed 4 and 5 storey buildings, ranging from the 1920's to the 1970's.

Located on the junction of High Holborn and Chancery Lane, the structures required demolition down to the top of the existing basement slab. Floor by floor techniques were used together with hand demolition methods for some of the timber floors in the older buildings.



Investigation works for the foundation design found extensive voids beneath the vault floors and façade foundations; some were dry but many were full of water and had to be pumped out before establishing their size and depth.

In view of the restricted working space, the vaults and voids were only accessible for break out by remote controlled Brokk machines.

The voids were progressively filled with concrete, thus helping to support the 200 tonnes of timber and steel work incorporated into the façade retention scheme.

A 5 storey brick built party wall between the site and the Silver Exchange also required internal retention steel work.

The perimeter of the site at basement level was sheet piled and propped to allow excavation, construction of the new drainage layout and pouring of a new



## Scope of Works

Demolition involved the introduction of a very complicated external facade retention system of over 90m's. Based on a combination of piles and Kentledge foundations, the temporary structure was installed to preserve one of the most delicate listed stone façade's in the City of London, whilst protecting pedestrians on an extremely narrow, busy public footpath.

The buildings were carefully demolished with mini excavators on a floor by floor basis, using back propping to support the floors at each stage of the works.

A "Luffing Jib" tower crane was erected to assist with demolition and servicing the steelworkers in the building of the Façade retention, minimising disturbance to the local environment.

In view of the "delicate" nature of the structures, long reach excavators were used only very sparingly when tackling the central core. Working methods were agreed and closely monitored by the Structural Engineers, Whitby Bird.



1000mm basement slab and lift pits.

Following the removal of extensive asbestos, the 7 storey building was soft stripped ready for demolition.

The voids beneath the pavements in Chancery Lane were progressively injected with grout, where the terrace gravels had been washed away by the River Fleet, helping support the façade retention scheme.

The retention system contained a very detailed design to ensure no façade movement and that the public remained unaffected during the course of our works.

The safe containment of the structure within monarflex scaffolding, acoustic screens and the management of dust transmission within an enclosed area, served to protect both the building and the outside environment.

The phased construction of a 900mm thick reinforced concrete raft across the site to suit the demolition and temporary works sequence was installed. This was increased to 1,900mm along the wall next to the vaults for further strengthening.

Caltite concrete with its non-absorbent properties was used throughout to waterproof the basement structure, with all construction joints installed to satisfy warranty requirements.

The raft construction included lift pits, cast iron drainage, earthing rods/pits and holding down bolt boxes.

The perimeter of the site at basement level was sheet piled & propped to allow excavation, with the construction of a new drainage layout and the creation of a new 1000mm basement slab and lift pits.

The building was located in a busy area with

Chancery Lane Underground Station and the Central Line just 20m below ground level; however a disused Royal Mail tunnel also existed between the Underground lines and the basement of the buildings. This meant that demolition methods needed to be adapted to ensure vibration was kept to an absolute minimum, with vibration monitoring equipment installed as a precaution.

The use of smaller machines with cracker attachments ensured that vibration trigger levels were not exceeded, therefore the delicate facade, Underground and Royal Mail tunnel were protected from any damaging movement.

The introduction of protective covered walkways to the perimeter of the project allowed safe access for pedestrians.

The buildings were carefully demolished both by hand and with remote control excavators on a floor by floor basis, utilising back propping to support the floors at each stage of the works.

Strict hours of working were agreed with the City of London in view of the close proximity to many residential properties.

### **Historic and hidden discoveries on this site required the intervention of archaeologists from the Museum of London:**

The 1572 temple of the "Knights Templar, self-appointed guardians of the Holy Grail was uncovered, followed by the 1920's home of Alastair Crowley, famed Leader of Britain's most evil satanic cult.

Under one corner of the structure, a total of 28 individual disused Silver Vaults from the London Silver Exchange were found.

