

ENGINEERING

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INTRODUCTION

Welcome to the 8th edition of *Engitec*. In this issue we describe our input to The Phillimores development for Westcity Wates, and work undertaken recently for loss adjusters. We also include regular features such as the caption competition, the Party Wall etc Act and the 19th Century construction cartoons. ■

'THE PHILLIMORES'

In 1878, a course of lectures for women, held under the auspices of King's College in the Strand, was given at the Vestry Hall in Kensington. The exceptional attendance led to the inauguration of the King's College Women's Department, which became the King's College for Women, for whom the Architects Adams and Holden designed new buildings on a recently cleared site on the Phillimore Estate on Campden Hill, between 1914 and 1931.

Apart from the destruction of one wing during the 2nd World War; reconstructed in the 1950's; and some unsympathetic 1960's development in the courtyard, the buildings survived largely unchanged with halls of residence and teaching rooms intact.

The Phillimores is an impressive development of 66 high quality apartments set within these original buildings.

For obvious reasons, the internal layouts did not suit the needs of modern apartment living and hence extensive internal re-modelling was required to form the new spaces within the buildings. To facilitate this process, extensive opening up work was carried out and with historical records it was possible to produce accurate structural drawings of the existing buildings. This information proved invaluable to the team when designing the new layouts.

One particularly impressive part of the transformation was the re-modelling of the original lecture hall and laboratory wing where only the external walls were retained. With its tiered seating, extremely high ceilings and cellular layout, not only



▲ FLOORS DEMOLISHED AND LEVELS REDUCED

was the horizontal layout inappropriate, the existing floor levels did not suit the client's aspirations for the buildings.

Hence, with a clean slate, the Architect managed to design 5 internal levels, 2 of which are contemporary duplex apartments with part mezzanine floors and inspirational double height spaces; all into the original 3 storey building. However, to achieve this, not only were the floors to be replaced, but the building was to be extended vertically upwards, and downwards.

The challenge was to retain the 550mm thick, 3 storey facades on 3 sides of the building whilst removing all the internal floors and constructing two levels of basement beneath.

To achieve this, a wholly external retention system was developed supported on steel columns plunged into bored concrete piles. A reinforced concrete beam was first inserted segmentally into the external wall, this was picked up on jacked cantilever goalpost frames off which the retention towers were built.

This then gave a completely clear space between and beneath the facades within which a new concrete framed superstructure could be built. The walls were then extended down onto a new piled raft and upwards to enclose the new floors and the retention system removed.

■ CONTINUES PAGE 2 ■



▲ THE RETENTION SYSTEM RETAINED!

Hurst Peirce + Malcolm

'THE PHILLIMORES' CONTINUED

Whilst all this was in progress, a new underground swimming pool and leisure centre was built beneath the courtyard, a new 2 storey deep underground car park was formed immediately adjacent to, and beneath a 120m long 5 storey grade 2 listed facade and extensive structural remodelling work was carried out throughout.

Now that structural works are largely complete, and the very high quality fit out is in progress, the Architects' vision for the buildings is well on the way to being realised. ■



▲ THE PHILLIMORES – INTERIOR

'FIRE!'

Even in today's sophisticated world of fire sensors, alarms, sprinkler systems and other building management systems, fires still have the capacity to seriously disrupt a commercial enterprise. We have been involved with two incidents recently where fires have caused extensive damage to buildings and the aim of the recovery operation has been to re-open the business as soon as possible.

A small fire which started during the early hours of 2 June 2003 in the first floor warehouse of Waitrose Finchley led to a major incident as the Fire Brigade could not easily access the seat of the blaze to extinguish it. In the end, part of the roof over the warehouse had to be peeled back using a long reach high duty hydraulic crushing arm supplied by demolition contractor Squibb & Davies, thereby allowing the fire brigade to put the blaze out in the early morning of 3 June 2003. Arriving on site a little later that morning to meet the Building Control Manager for the London Borough of Barnet, John

Redmond found that much of the warehouse at first floor level had been destroyed. The sales floor beneath was largely intact with only water damage, and perhaps somewhat surprisingly given the length and ferocity of the blaze, the steel frame up to and including the first floor was found to be largely undamaged.

It was clear though that the shop could not operate without the warehouse or the adjacent staff and office areas which had also been badly damaged. Together with Waitrose, Loss Adjusters Cunningham Lindsey, Kier London, Brooker Flynn Architects, Quantity Surveyors Edmond Shipway, Hurst Peirce & Malcolm helped to formulate a recovery plan which saw the damaged



▲ SQUIBB'S MUNCHER IN THE DAWN LIGHT

sections removed, one of the largest free standing temporary roofs in London erected and the store re-open for trading within 8 weeks. The building was fully reinstated by Christmas 2003 with only the warehouse racking to be reinstalled in the New Year.

The second incident befell wax refiners Poth Hille late on Sunday 5th October 2003. Part of their manufacturing plant in Stratford, East London caught fire and, whilst wax does not easily burn, once its ignition point is reached it burns fiercely. The 2 storey administrative centre of the business was badly damaged as was a warehouse used to store outgoing completed goods. In addition a 3 storey brick warehouse used in the manufacture of depilatory creams was gutted, rendering some of the external walls unstable, which meant that part of the A11 by Bow Flyover had to be closed. John Redmond arrived on site at 1pm within 45 minutes of the call from loss adjuster's Cunningham Lindsey. Once on site it quickly became apparent that demolition was the only option for the warehouse so that the road could be re-opened. An emergency call through to demolition contractors Squibb & Davies revealed that their long reach hydraulic crushing arm was in Wandsworth and could be on site at 10pm that night (the Police will allow it to be moved only after 7pm due to it's size). Demolition of the warehouse started at first light allowing the road to be re-opened the next morning.

Poth Hille have managed to re-establish most of their manufacturing operation and we are working with their directors in an endeavour to re-instate the full business facilities. ■



▲ PICTURE OF FIRE DAMAGED ROOF



▲ TEMPORARY ROOF

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CDM AND ALL THAT



Regular readers will recall the picture taken by John Redmond of a window cleaner in the City of London on a ledge, 10 storeys above ground level. We had a number of interesting entries to our caption competition where we asked what is the window cleaner thinking? Space limitations prevent us from printing all entries but they varied from :-

'Where is the nearest lavatory? I do not think that I can hold on much longer.' By A M Heneker of Hyde Mahon Bridges, to 'Hey Lawrance, pass

me that squeegee, when you've finished with it!!!!!!.' By Steve Barker of The Stephen Barker Partnership.

But by unanimous decision of the judges the winning entry was submitted by Ian Morrison, who is a project manager with Grosvenor Developments 'Ah, I thought that I had the wrong building, I am sure it is that one over there'.

The gift vouchers are on their way to Ian. Thank you to all those who took the time and trouble to submit entries.



This picture was taken recently by Barry Pitcher when he was called in to investigate damage caused by vehicular impact to an industrial unit. What might the owner of the vehicle (and it was a large vehicle) be saying to his driver? We will award £30 of gift vouchers to the winning entry.

A further observation on the subject of CDM, and the need to provide edge protection to buildings, will be familiar to those of you who know their Old Testament Deuteronomy - Chapter 22 verse 8 says:-

When you build a new house, you must put a parapet round the roof, that you may not bring the guilt of blood upon your house by anyone falling from it. One for the Planning Supervisor? ■

VALUATIONS UNDER SECTION 11(11) PARTY WALL ETC ACT 1996

The late John Anstey used to maintain that payment for extra use of a party wall (you have to pay a sum to your neighbour if you enclose upon a wall he has erected on the boundary) did not apply to walls of a certain age because one Act or other failed to include this provision. He did however accept that the principle was embodied in the Assize of Fitzalwyn in 1189, when party walls in London really started, but I do not recollect hearing him cite the mention of party walls and their valuation by Vitruvius in the first century BC. In Chapter VII of Book 2 paragraphs 8 & 9, after describing walls built with two facing skins and rubble hearting, Vitruvius writes:

"One who in accordance with these notes will take pains in selecting his method of construction,

may count upon having something that will last. No walls made of rubble and finished with delicate beauty - no such walls can escape ruin as time goes on. Hence, when arbitrators are chose to set a valuation on party walls, they do not value them at what they cost to build, but look upon the cost one eightieth for each year that the wall has been standing, decide that the remainder is the sum to be paid. They thus in effect pronounce that such walls cannot last more than eighty years.

In the case of brick walls, however, no deduction is made provided that they are still standing plumb, but they are always valued at what they cost to build. "

Lawrance Hurst ■

RESPONSIBILITY

"Responsibility is a unique concept: it can only reside and inhere in a single individual.

You may share it with others, but your portion is not diminished.

You may delegate it, but it is still with you.

Even if you do not recognise it or admit its presence, you cannot escape it.

If responsibility is rightly yours, no evasion, or ignorance, or passing the blame can shift the burden to someone else.

Unless you can point your finger at the man who is responsible when something goes wrong, then you never had anyone really responsible."

Admiral Hyman Rickover of the US Navy.

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BUILDING CONSTRUCTION A HUNDRED YEARS AGO

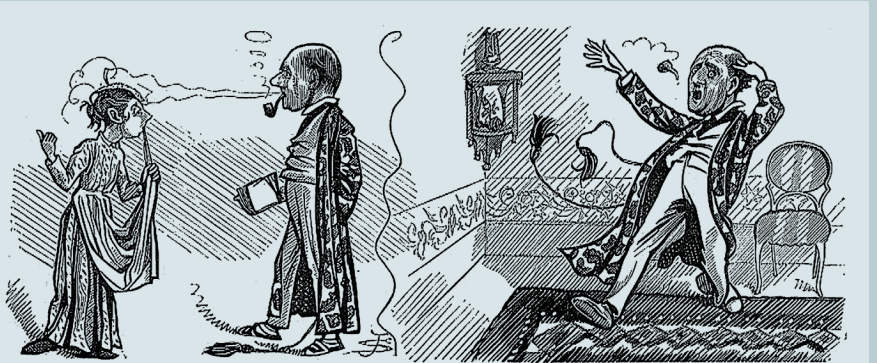
Lawrance Hurst has recently written an introduction to Donhead Publishing's facsimile of three volumes of the 1904 edition of Rivington's *Notes on Building Construction*. Rivington's was the first text book on building construction in this country, and was the most comprehensive. The first edition of Mitchell did not appear until 1893, 13 years after the first edition of Part 1 of Rivington's. The 1904 edition of Rivington's incorporates revisions and is easier and simpler to use than earlier issues.

The need for such text books arose from the changes in the arrangements for constructing buildings during the 19th century. In pre-Victorian times there were craftsmen main contractors who employed craftsmen sub-contractors for the other trades, and they all knew what was required by way of detail; hence architects and surveyors only needed to draw their intent, generally on small scale plans and elevations. Details were only required for work that was out of the ordinary. This situation changed when work was entrusted to general contractors such as Cubitt, Lucas Brothers, Kelk and the like, who needed detail drawings, perhaps not for the traditional trades, but certainly for the new materials and methods of construction that were being adopted. Drawings were also needed for pricing to prepare tenders, for the foremen who coordinated and supervised the work, for ordering materials, and for items fabricated off site. Textbooks on building construction were needed to use for the preparation of drawings and also to prepare for the examinations being set on that subject by the Department of Science and Art at South Kensington.

Those parts of the building industry concerned with work to old buildings and particularly with conservation owe an increasing debt to Jill Pearce and her colleagues at Donhead for the growing number of facsimiles they are producing, to provide guidance on the construction we can expect to find. Old books on construction have become scarce and expensive; this series enables us to have them next to our boards and screens to provide ready and authoritative references to building construction through the ages. Rivington's is the latest and probably the most valuable of Donhead's facsimile production to date.

Lawrance's other recent writing is a paper on 'The Properties And Uses of Roman Cement' which appeared in Volume 18 of *Construction History - the Journal of the Construction History Society*. ■

A further entry in our series from 19th Century building practices, here is another related to building access. The Construction (Design & Management) Regulations 1994 mean that this would never happen today would it? Answers on a post card to the Editor. ■



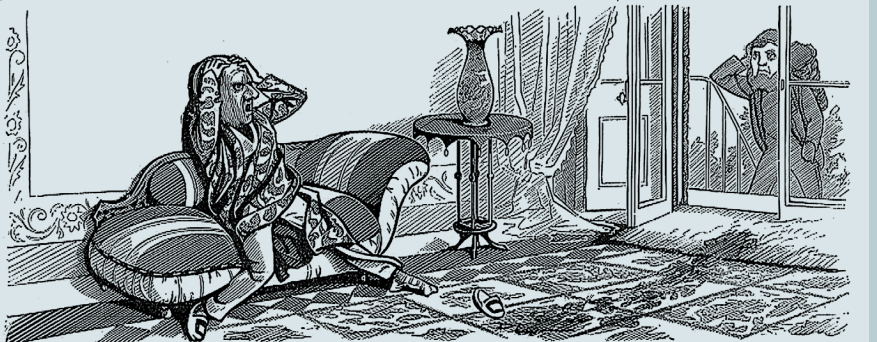
Always make the very most of your ground; leave no side entrance. "Ere's the dustman," says the servant to the Tenant.

"Great Universe!" says the Tenant, "there is no side entrance for him."



So first of all he gets the dustman to come along the wall from the end of the road.

Then he tries getting him over the top of the house.



But at length these little arrangements become somewhat tedious. "There!!!" gasps the Tenant, "let him come through the drawing-room - and the coals too - and everything else!"

▲ THE COMPLETE BUILDER LANDLORD - WAYS AND PASSAGES

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