

## A Flagship of Roofing Best Practice



### PROJECT DETAILS

#### NAME

London Business School, The Sammy Ofer Centre

#### ADDRESS

Marylebone Road, London, NW1

#### SECTOR

Higher Education

#### MAIN CONTRACT VALUE

£30M

#### ROOFING PACKAGE VALUE

£570K

### THE CHALLENGE

The elite London Business School has been delivering world class business education for 50 years.

The works to refurbish the Old Marylebone Town Hall comprised the internal and external remodelling, refurbishment and fitting out of two existing Grade 2 Listed buildings. It also included extensive works to the Council House and the Annexe incorporating a link bridge, to create The Sammy Ofer Centre. The Centre is located on basement, lower ground, ground and four upper floors. These upper floors feature a mezzanine in the Annexe to form a Lecture Theatre and associated educational functions. The project also included the construction of a new glazed link between the two buildings.



## KEY POINTS

To help bring this historic building up to 21st century standards, a highly concentrated array of plant and PV equipment had to be accommodated on the roof, some of which were sensitive to the additional ballast and to foot traffic.

As part of the 2nd stage tender process, Wates Construction Limited (WCL) needed to select a highly robust waterproofing system for the roofs which could tolerate access by following trades and routine maintenance once the building was in use.

WCL reviewed the roofing specifications proposed by the Design team and identified that the specified 1.1mm thick, EPDM single ply membrane (SPM) for the overlay and replacement waterproofing roofing system was deemed not sufficiently robust for the Project.

The team also ascertained that the warranty was limited only to the material / product, not the workmanship; therefore an additional premium for an independent insurance backed workmanship warranty would be required.



## ROOFING STRATEGY

The Project team then put in place the following successful roofing strategy:

- An initial meeting with SIG Design & Technology (SIG D&T) to identify an IKO built-up bituminous felt solution (BUFR) that offered the best overall value to the Client in terms of a robustness, together with an IKO single point guarantee to include both materials and workmanship.
- SIG D&T, in liaison with WCL, surveyed the roof areas, took core samples and produced a numbered roof layout, tapered insulation scheme and a J41 NBS type specification
- After consideration of the IKO Goldseal (20-year guarantee) and the IKO UltraPrevent (25-year guarantee), the WCL team proposed the IKO UltraPrevent built-up bituminous felt system (BUFR)
- Bills were produced by the Client's Quantity Surveyor based upon the original EPDM single ply membrane and reviewed by WCL. Additional items were added to include walkways and an insurance backed workmanship warranty. Bills were then issued to the SPM manufacturers' approved Subcontractors
- WCL in liaison with SIG D&T reviewed the SPM bills and amended to suit the IKO, UltraPrevent BUFR system. These were then issued to an IKO approved Subcontractor for pricing, thereafter a comparison was produced by WCL, BUFR versus the SPM
- WCL produced a package recommendation based upon the figures from the SPM system with a recommendation to change the system to the IKO BUFR system and a financial solution was agreed with the Client team
- Meetings were arranged with the Client team to influence the change to the IKO BUFR solution. Upon approval, SIG D&T were fully engaged to work up the specification and detailing which included several roofing workshop meetings with the Architects with WCL in attendance. The overall design responsibility remained with the Architects. Total number of drawings produced by SIG D&T: 496no. between 29/1/15 and 7/3/17
- When the SIG D&T drawings and specifications were approved by the Design team, bills were produced by the WCL commercial team and issued to IKO approved Subcontractors, who also hold preferred status with WCL London
- E.J. Roberts Roofing Limited secured the package in a competitive tender in May 2015
- Roofing package value including Client variations for the IKO Permascreed, Permaphalt and Permapark was £570K.



### KEY DATES

From August 2014, SIG D&T began designing the complex 2,681m<sup>2</sup> roof, comprising 41 roof areas in total. A total of 496no. drawings were produced including revisions for the Project.

After a competitive bidding process, SIG D&T accredited contractor EJ Roberts Roofing Limited of London, E10 were appointed for this immensely complex roofing Project requiring a multiskilled approach across a variety of roofing disciplines.

Dean Skipper of EJ Roberts Roofing Ltd said: "From the subcontractor perspective, challenges at the London Business School were largely due to the Project's logistics; i.e. the buildings taking up the footprint, access and storage, multiple roof areas, different waterproofing solutions to differing roof areas and hook time for unloading materials. Both Wates and SIG D&T were highly supportive to us. Three-way collaboration enabled this demanding project to be successfully completed for the client."

As part of the service, IKO Engineers visited the Project and issued reports throughout the roofing programme.

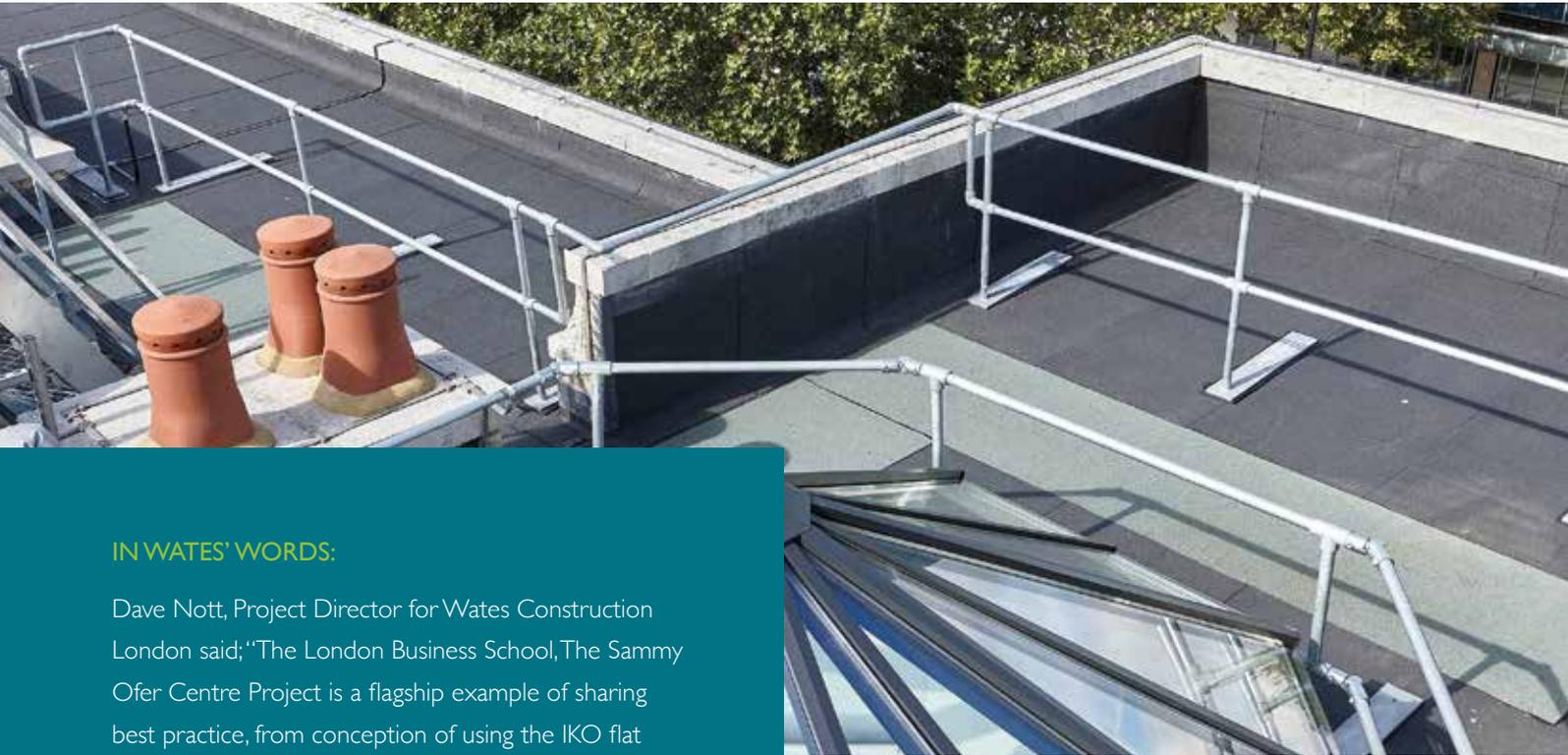
SIG D&T initial survey & core samples	Jul 2014
SIG D&T initial report & draft design to produce bills	Aug 2014
WCL approval by the Client team to use the IKO solution and design commencement meeting	Jan 2015
Roofing workshops with the Design team	Feb to Apr 2015
WCL produce bills / enquiry docs & issue to IKO / WCL Preferred Subcontractors	Apr 2015
WCL order date	May 2015
First start on site date	Sept 2015
Practical completion date:	Aug 2017

### THE OUTCOMES AND BENEFITS

As a risk averse business, the Wates Group favours early engagement with its Supply Chain, thus enabling SIG D&T to develop the very best flat roofing solutions using their wide portfolio of materials on each Project where they are engaged. In turn, the Wates Group can secure best value whilst trading with approved SIG D&T / IKO / WCL Preferred Subcontractors.

WCL expectations were achieved through the close working relationships between the Project team, SIG D&T and the SIG Roofing Stratford branch. Through this informal partnering approach, Steve Scottorn at SIG D&T and Dean Skipper at E.J. Roberts Roofing have gone on to secure further projects with WCL London using the IKO flat roofing solutions.





### IN WATES' WORDS:

Dave Nott, Project Director for Wates Construction London said; "The London Business School, The Sammy Ofer Centre Project is a flagship example of sharing best practice, from conception of using the IKO flat roofing solutions and the challenges encountered were solved by good design (through SIG Design & Technology), and the delivery of the roofing works relied on each team member within the Supply Chain fully engaging to deliver this unique Project."

### APPROX. TOTAL METERAGE

1. IKO, UltraPrevent BUFR – 1,683m<sup>2</sup>
2. IKO, UltraPrevent BUFR maintenance walkways cap sheet – 150lm
3. IKO, PermaTEC hot melt – 184m<sup>2</sup>
4. IKO, Polimar cold applied liquid – 200m<sup>2</sup>
5. IKO, Solar reflective paint – 91m<sup>2</sup>
6. IKO, high level asphalt – 394m<sup>2</sup>
7. IKO, low level asphalt to light wells – 220m<sup>2</sup>

### SCHEDULE OF PRODUCTS/USED WITH APPROXIMATE QUANTITIES

Annex Roofs: (20 + differing roof levels) – Approx. 465m<sup>2</sup>

- Strip existing asphalt roofing, including insulation & VCL
- IKO priming of existing concrete deck
- IKO torch-on VCL
- IKO tapered Enertherm ALU insulation
- IKO self-adhesive underlay
- IKO Ultra-PreVENT torch on cap sheet
- Together with upstand details with code 4 lead flashings

Council House & Link Roof:

(20 + differing roof areas) – Approx. 1,190m<sup>2</sup>

- Existing asphalt roofing, repair & clean
- Existing asphalt used as the VCL
- IKO tapered Enertherm ALU insulation
- IKO self-adhesive underlay
- IKO Ultra-PreVENT torch on cap sheet
- Together with upstand details with code 4 lead flashings

Council House, Asphalt Cornice & Cornice to Tower  
(252 metres, N/E 1200mm wide)

- Existing asphalt striped & removed
- IKO Permaphalt polymer modified mastic asphalt
- Lead apron & collars to balustrade posts
- All new asphalt painted with IKO grey solar reflective paint

Council House, Terrace (Area: 184m<sup>2</sup>)

- Existing asphalt, repair & clean
- IKO PermaTEC Hot Melt
- IKO flat board uniform thickness Enertherm XPS Insulation
- Timber decking on pedestals (by others)

Council House, Front of Building, Cold Liquid Applied Overlay:  
(Area: 200 m<sup>2</sup>)

- Existing asphalt, repair & clean
- IKO Polimar cold applied liquid overlay system

Council House, Asphalt to Perimeter of Low Level Light Wells:  
(Area: 220 m<sup>2</sup>)

- Repairs to approx. 50% of non-insulated existing areas
- IKO Permascreed laid to falls
- IKO Permapark

Annex, Asphalt to Perimeter of Low Level Light Wells:  
(Area included within the above)

- Strip & repairs to non-insulated existing areas
- IKO paving grade asphalt

Annex Dome – (Area: 91m<sup>2</sup>)

- Strip off existing asphalt & replacement to approx. 30% of the lower dome, the balance repaired & repainted with IKO grey reflective paint
- Annex Dome – Flat Roof (Area: 28m<sup>2</sup>)
- Strip existing asphalt roofing, including insulation & VCL
- IKO Enertherm PIR tapered insulation incorporating a gutter formed within the insulation
- IKO Permaphalt polymer modified mastic asphalt

Maintenance walkways: 150 lm

- Additional IKO torch on cap sheet