BUILDING PROJECTS



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Speaker's corner

An energy efficient, new headquarters named after a former parliamentary speaker has brought Croydon Council closer to its public, Mark Smulian reports

Stand in a small public garden in central Croydon and one can see the rather unusual sight of three adjacent town halls. The first is the Victorian original, now Grade II listed and boasting a fine tower and the elaborate ornamentation typical of the period. Next comes the 20-storey brutalist slab of Tabiner House, into which the council moved in the 1960s. Between the two stands the 200,000 sq ft Bernard Weatherill House, into which Croydon Council staff moved during the autumn of 2013, leaving Tabiner House to, according to plan, be demolished and redeveloped.

Bernard Weatherill House, named after the former local MP and House of Commons speaker, is a complete contrast to both its predecessors, a light blue clad building rising to 12 storeys. Its design was guided by the principle that the council's headquarters must be not just a place that residents can enter to transact business but one that looks welcoming, and which lets them see the council at work. Bernard Weatherill House goes from five storeys to eight to 12, with a two-storey annexe. Its main building has a central atrium, glass walled on all sides allowing anyone in the public reception area on the ground floor to observe council staff at work around them.

Julian Barrett, associate director of architect EPR, explains how Croydon's brief was turned into reality: "There was a three storey council office building on the site linked by bridges to Tabiner House and with a basement and car park.

"We did not change the site topography, it was a matter of demolition and rebuilding in the same space. One issue was that a very significant BT cable runs through the site, which would have cost the council £3 million to move, so we instead sited the building slightly differently to avoid it."

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'Croydon wanted the building to achieve a BREEAM Excellent rating, which it has with a design planned to minimise running costs and to reduce carbon impact'

Photo: Bernard Weatherill House takes its place between the Victorian town hall and the 1960s Tabiner House, which it will replace



EPR decided on a stepped building, as a slab would have overshadowed the old town hall. It steps up becoming higher towards the side that abuts the Croydon flyover, matching tall buildings on the opposite side.

Barrett says the council's design brief was "quite prescriptive as to what it wanted for accommodation.

"The council initially did not want a landmark building but saw it more as something to kick-start regeneration in that area.

"They now have something that is very functional but sits well in that location with the listed old town hall and the public gardens.

"What they've got is a new headquarters building that in massing terms, responds to its context, materially is pretty honest about it's function, spatially provides them with a modern flexible working environment and generous public facility and is an exemplar of sustainable design."

Bernard Weatherill House is built from an insitu concrete frame with 150mm raised floors throughout and exposed concrete soffits for ceilings, which help with thermal mass, with concrete columns rising up and also providing an interior feature through each storey.

"We would have left exposed soffits but painting them white did the job better in terms of light," Barrett says.

The curtain wall is fully glazed with a twin skin and white ceramic fritting lines on the glass help to reduce solar gain.

"The biggest issue was to do the cladding so it was transparent but did not affect thermal performance too much, using two skins means air can enter between them in summer but vents at the top close in winter," he says. "The fritting helps, though it led to scrutiny of costs as its not cheap, but it works."

The facade consists of a double glazed inner skin, ventilated cavity and a single glazed outer skin with the ceramic frit. Dynamic thermal modelling of the facade indicated this provided the optimum approach for good daylight into the internal space while also reducing solar gain in summer and improving thermal insulation in the winter.

During the summer months, the facade is fully open to the environment using temperature sensors to activate dampers to allow heat that has become trapped in the cavity to be removed by the stack effect, thus reducing heat gain to the space. In winter, the dampers shut and the cavity is used to help insulate the building and reduce the heat loss by making use of the sun's energy to heat the building.



Croydon wanted the building to achieve a BREEAM Excellent rating, which it has with a design planned to minimise running costs and to reduce carbon impact.

The atrium gives good natural daylight into the centre of the building, which would otherwise be distant from windows.

There is a combined heat and power system used for both heat and cooling, though the heat demand is low because of the way the building is designed.

Although all staff from Tabiner House and from some other redundant council buildings will transfer into Bernard Weatherill House, remote working means that they are not all expected to be there at once. With desk space for about two-thirds of the 2,800 staff, the building has less IT equipment giving out heat than did its predecessor.

Other passive measures include optimisation of high performance glazing G-values and U-values on the different facades to limit solar gain and heat loss.

According to mechanical and electrical engineering contractor Aecom, the equivalent G-value for the climate wall was 0.19 with a U-value of 1.20 W/m²k but still provided good light transmittance, which it said far exceeded both the requirements of the 2006 regulations at time of design and the current 2010 regulations. The building is airtight with very low air permeability.

Water-cooled chillers generate cooling water with heat rejection by water efficient hybrid cooling towers to provide high seasonal efficiencies.

Low NOX gas fired central boilers and the CHP system are used to generate heating and electricity for both Bernard Weatherill House and the old Town Hall opposite. The heating from the CHP is used in an absorption chiller in the summer to ensure it operates for the maximum number of

Continued overleaf...

A corner of the interior while under construction (opposite). Climber lifts rise to the atrium roof height in Bernard Weatherill House (above)

'Croydon's new civic centre is a great example of modern thinking, sustainability and efficiency in local government, ready to meet the needs of residents in the 21st century'

Councillor Sara Bashford, cabinet member for corporate and voluntary services



Photo: Bernard Weatherill House shown rising progressively higher to avoid an overbearing 'slab' appearance

hours year round to generate electricity.

Central air handling units with heat recovery supplying straight runs of ductwork have allowed specific fan powers to be very small at 1.80 w/l/s, which for a building designed under 2006 Building Regulations is significantly lower than the new requirements of the 2010 edition, Aecom says.

Very efficient light fittings with a fully addressable lighting control system make use of the high levels of natural daylight and to minimise unnecessary use of artificial lighting.

On the roofs, photovoltaic panels are used to generate electricity, while some of the roofs are 'green' and water from them is collected for rainwater harvesting, mainly for flushing toilets.

All these systems are monitored from a central building management control. However, except for the photovoltaics, renewable energy proved unusable.

"Other types of renewables did not work economically", Barrett says. "Wind does not really work in an urban setting like that. Ground source heat pumps were considered but not used for similar reasons."

Internally, Bernard Weatherill House has two wall climber lifts and four conventional ones in a shaft.

These are no ordinary lifts, being programmed to 'learn' travel patterns, for example, that the canteen floor will need a frequent service at lunchtimes.

The public area on the ground floor, named Access Croydon, is where residents do business with the council and meet its staff. It bristles with terminals and printers where visitors, perhaps those who lack internet access at home, can get information and send documents to officers.

Around and above them the council can be seen at work. Staff who deal with the public can enter through a lockable door at the rear, thus keeping the bulk of the building secure and off limits to unauthorised visitors.

Bernard Weatherill House is part of a wider regeneration project known as the Croydon Council Urban Regeneration Vehicle, a 50/50 joint venture partnership between developer John Laing and the council to regenerate a range of sites over 28 years.

It is also a wider public service hub, accommodating staff from the Metropolitan Police, NHS, Jobcentre Plus, Croydon Credit Union and Citizens Advice Bureau, and with the linked annexe available for hire by local organisations.

Councillor Sara Bashford, cabinet member for corporate and voluntary services, says: "Croydon's new civic centre is a great example of modern thinking, sustainability and efficiency in local government, ready to meet the needs of residents in the 21st century."

Architect: EPR

Main contractor: Sir Robert McAlpine

M&E, structural, fire and acoustics contractor: Aecom

Planning consultant: Indigo

Curtain wall consultant: Buro Happold

Landscape consultant: Capita Lovejoy

Lift supplier: Mitsubishi

Client and planning authority: London Borough of Croydon