

Bloomberg European Headquarters

London

Market: Office
Size: 1,100,000-sq.-ft.

Architect:
Foster + Partners
Development Advisor:
BNP Paribas
Development Manager:
Stanhope
Construction Manager:
Sir Robert McAlpine
Structural Engineer:
AKT II
**Services Engineer /
Lift Consultant / Fire
Engineer:**
Sweco
Cost Consultant:
AECOM
Lighting Designer:
Tillotson Design Assocs.
Acoustic Consultant:
Sandy Brown Assocs.
Landscape Consultant:
Charles Funke Assocs.
Art Consultant:
Nancy Rosen Inc.
Accessibility Consultant:
David Bennett Assocs.
Façade Consultants:
FMDC; Optis; BMT Group
**Natural Ventilation
Consultants:**
Breathing Buildings;
With Research; Price
Industries
Wayfinding Consultants:
Whyrow
**Façade Access
Consultant:** Reef Assocs.
Right of Light Surveyor:
Gordon Ingram Assocs.

Text: Vilma Barr
Photos: Courtesy,
Foster + Partners

| PROJECT ZERO |

BLOOMBERG EUROPEAN HQ

OCCUPYING A FULL CITY
BLOCK IN LONDON'S
FINANCIAL DISTRICT,
BLOOMBERG'S EUROPEAN
HQ ACHIEVES A 98.5 BREEAM
SCORE—THE HIGHEST
YET FOR A MAJOR OFFICE
DEVELOPMENT.





A Mutual Vision

The design brief for the project states the personal objectives of its two primary decision makers, Michael Bloomberg and Norman Foster—from the beginning—was to create an exemplar of sustainable development, inside and out, for a new enlightened era in the heart of London.

Located between the Bank of England and St. Paul's Cathedral, Bloomberg's European headquarters responds to its historic context, yet is uniquely of its place and time. "From day one, we had a shared belief that we should create an elegant stone building that would be a good neighbor in the City of London, and make a significant contribution

a competitive advantage in attracting and retaining the brand of employee that collectively drives the firm's worldwide success. Earning a BREEAM Outstanding rating—the highest design-stage score ever achieved by any major office development, the project occupies a full city block on a 3.2-acre site. The office is actually two buildings united by bridges that span a pedestrian arcade that reinstates Watling Street—an ancient Roman road that ran through the site.



A major point of agreement between Foster and Bloomberg, was the building's profile. "There was an absolutely conscious attempt not to create another glass box," said Foster, referring to the recent bumper crop of surrounding curtainwall skyscrapers. Instead, structural sandstone was awarded the distinction as the basic façade material. "This is the biggest stone building project in the City for the past 100 years," affirmed Foster.

to the daily life of those who work here," said Lord Foster, the firm's founder and executive chairman.

Bloomberg's objectives followed a similar pattern. "We set out to push the boundaries of sustainable office design that functions as a work environment that inspires our employees."

In a city that has an abundance of talented and skilled professionals, Bloomberg also wanted to make sure that the lively atmosphere generated by the new building would give his company

its striking façade is defined by a series of large-scale bronze fins that shade the floor-to-ceiling glazing. The fins give the building a visual hierarchy and rhythm as they vary in scale, pitch and density across each façade according to orientation and solar exposure. The building height also protects key views of St. Paul's Cathedral while respecting historic neighbors.

TIMELINE

- 2010: Design and planning phase
- 2012: Construction begins
- Fall 2017: Construction completed
- Oct. 24 2017: Opening ceremony

Construction commenced in 2012 for the two triangular-shaped, nine-story structures. To establish the interior environment feeding into work areas and support spaces, an on-site combined heat and power generation center was created. The result of the proactive action is a predicted overall 35% energy savings in comparison with typical utility usage. The combination of passive and active environmental strategies incorporated into the project is expected to yield even more impressive results: Translated into savings of CO₂ emissions per year, the estimated total is more than 1.3 million pounds. Combined with sensing controls that open and close the bronze exterior fins that adjust airflow to the interior, an additional savings of 600,000 pounds of CO₂ will be saved.

Beyond its BREEAM rating, the project also has been certified LEED Platinum. "What sets the building apart is the result of its all-pervading focus on innovation and its holistic, integrated approach to sustainable construction and design," said Alan Yates, technical director of the BRE Global Sustainability Group, parent company of BREEAM. "Projects like these are really important to give the building industry confidence to experiment," Yates believes.



ENVELOPE

The main entrance is defined by a substantial porte-cochère, where the building forms two sides of a new formal city square. Beneath this square is a new entrance to the local underground station. The envelope, however, is highlighted by its unique "fin" system. Several of the bronze fins contain openable panels in the face of the blade. When ambient weather conditions are temperate, these blades can

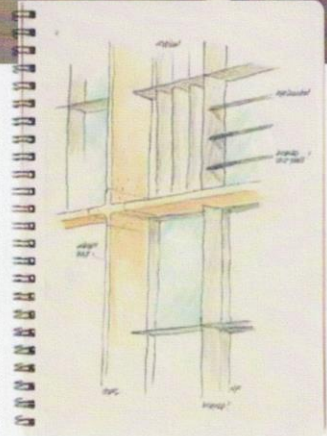
open and close, allowing the building to operate in a "breathable" natural ventilation mode. Natural air flows through the building, up its atrium and out of the roof with the central ramp acting as a chimney. Reducing dependency on mechanical ventilation and cooling equipment significantly reduces energy consumption.

The ability to dynamically adjust airflow in response to occupancy hours and patterns results in significant energy reduction. Smart CO₂ sensing controls allow air to be

distributed according to the approximate number of people occupying each zone of the building at any given time. A typical floor, where there are circa 775 workstations, has 68 such CO₂ sensors. Power saved by adopting this approach is expected to be 600–750 Mwhr per annum. As a result, projected CO₂ emissions resulting from Bloomberg's occupancy are reduced by 250–300 tons per annum.



PUBLIC WELCOME ▲ Plazas, at each end of the arcade, and in front of the building's entrance, provide new civic spaces.



ABOVE THE NOISE ▲
The internal section of the fin contains an acoustic lining that attenuates the external sounds of the city.

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▼ **OPEN CULTURE**

The clear site lines of the open floors are representative of the firm's corporate image, notes Foster Senior Partner Michael Jones. The cores, in fact, he adds, have been pushed to the edges of the building to visually open all of the floors.



HVAC

Beyond natural ventilation, the project's integrated ceiling contains 2.5 million individual "petals," which are chilled, with their increased surface area producing the same amount of cooling as a flat ceiling. The bespoke ceiling panels integrate the various elements of a typical office ceiling into a 150mm-deep zone to maximize the floor-to-ceiling height of the workplace. It is a unique and innovative element developed for the building, inspired by the pressed metal ceilings of New York.



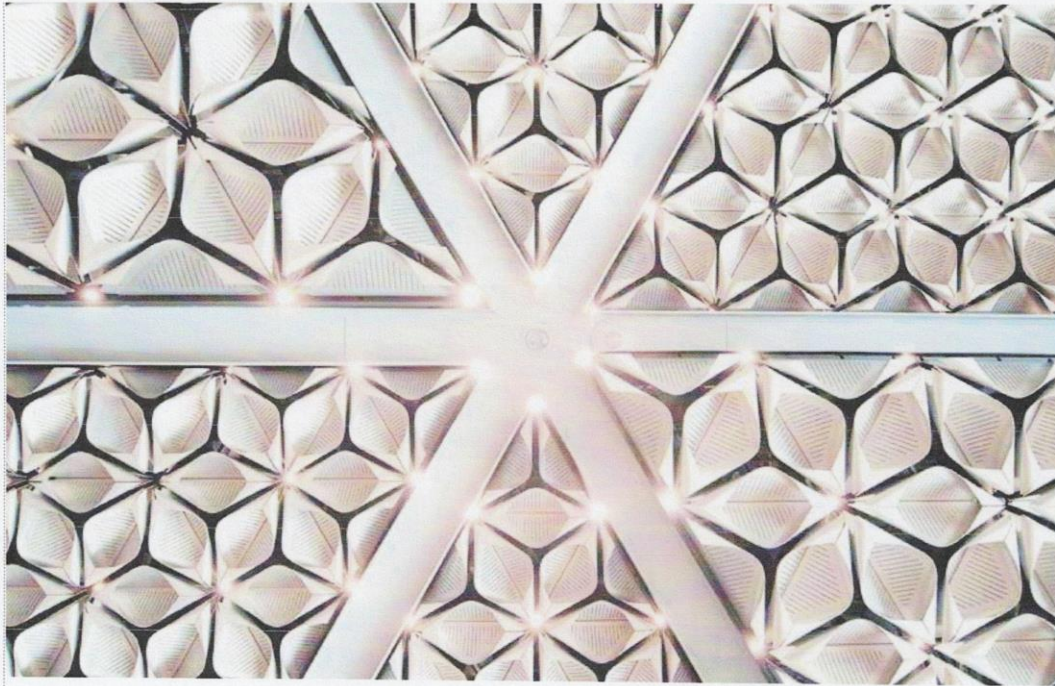
Its distinctive polished aluminum panels of 'petals' perform multiple roles—ceiling finish, light reflectors, cooling elements and acoustic attenuation—combining various elements of a typical office ceiling into an energy-saving integrated system.

▲ **ENERGY SAVER**

The large surface area of the petals, with their high heat-transfer efficiency, allows the use of elevated chilled water temperatures.

An Alternative Lunch Philosophy

Michael Bloomberg, who built his privately-held financial services information company into a worldwide enterprise with 192 offices and an annual estimated revenue of \$9.5 billion, says that his employees are his most valuable asset. He looks on one hand at the bigger picture, with a new co-authored book, *Climate of Hope: How Cities, Businesses, and Citizens Can Save the Planet*, and on the other hand, encourages interaction between individuals wherever feasible. When discussions with architect Norman Foster turned to the topic of food service for the employees who would occupy the new European headquarters, Bloomberg emphasized his belief in workplace openness encouraging thoughtful collaboration that in turn spurs productivity. His double-prong rationale for the providing of food for the staff took two forms: an architecturally important space that possesses its own sense of place within the new building; and an edited menu that encourages staffers to leave the building at midday to patronize nearby businesses. For the latter, he wanted to avoid what he termed "the Google Syndrome," adopted by the electronic giant and other high-tech firms where free meals and near-residential décor and recreational options can result in work-life addiction. His approach was a "no-cafeteria zone" that encourages workers to leave the building at lunch time. "I want people to get out and enjoy the local economy," he stated.



LIGHTING

Bloomberg staffers in the 1.2-million-sq-ft, London European headquarters are going about their assigned tasks at workstations illuminated by daylighting plus a lighting program that blends integrated technology and art.

In their objectives for the building conveyed to the various design teams, Foster and Bloomberg, wanted "to push the boundaries of sustainable office design... to what an office environment can be." They went on record to express their joint visualization that work areas for groups and individuals avoid the typical office appearance and resultant ordinary atmosphere.

Rather, a distinctive design sensibility for furnishings, finishes and lighting that would adhere to the building-wide sustainable environment guidelines should also reflect an inspiring singular approach not achievable in multi-tenant buildings.

Charged with integrating the lighting design was Tillotson Design Assoc., New York, which had previously served as consultants to Foster for the Winspear Opera House in Dallas. Ultimately, the lighting program for the nine-story Bloomberg building makes use of over 500,000 LED lamps.

The overhead lighting for the deep-plan interior breaks with the standard palette of suspended, recessed, and accent fixtures. Instead, ceiling panels in a repetitive petal-leaf design integrate combined lighting, heating, cooling and acoustic functions. Firm head Suzan Tillotson explains that each petal is hand-bent metal, not extruded. The LEDs are embedded to achieve maximum reflectivity that produces multiple points of light on the white desk tops. Mock-ups produced a 30 fc reading on the horizontal work surfaces. Where needed, task lights are provided for workstations, all of which have tiltable double screens and desk tops that raise and lower.

"We were all well-aware of the city's stringent energy use code, and so we worked backward from there with our suppliers to develop the final specifications," she affirmed. Tillotson called on such lighting fixture brands as We-Ef, Zumtobel and iGuzzini to meet the project's customization requirements.

Bloomberg, who was mayor of New York City for 12 years, was not in favor of a full-service cafeteria for the building. Instead, he felt it was important that staffers get out of the building whenever possible at lunchtime and patronize local food establishments.



Signature Ceiling
Approximately 4,000 modular, bespoke ceiling panels combine 2.5 million metal 'petals' with half a million LED lights.

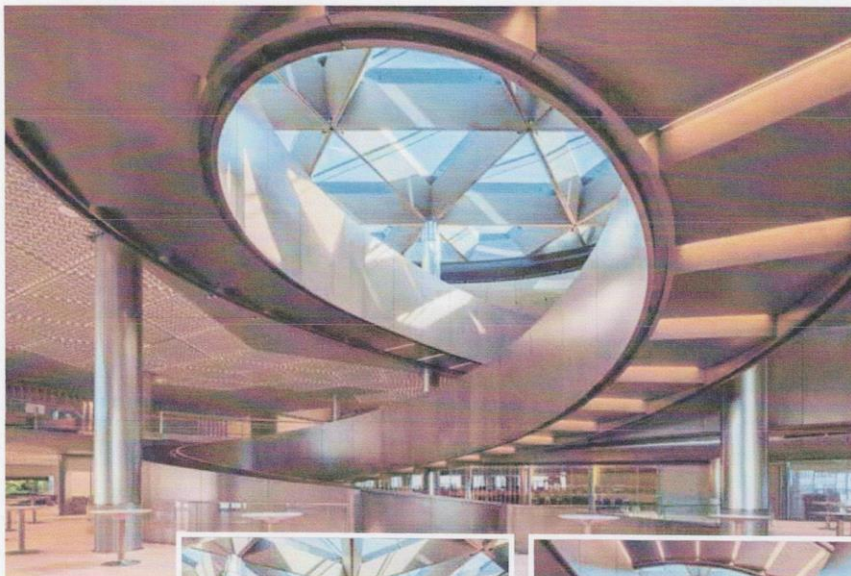
The solution is the double-height sixth floor Pantry, placed between the building's two wings that offers a classic view of St. Paul's Cathedral. Daylighting is supplemented with uplights in soffits and recessed LED spots in the seating area.

DAYLIGHTING

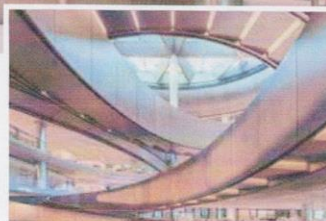
Taking advantage of the city's dense environment, the building's façades are naturally shaded by neighboring buildings. To draw in daylight, Foster + Partners looked to open up the space above. A distinctive hypotrochoid-shaped stepped ramp, characterized by its smooth continuous three-dimensional loop, flows through the full height of the building, adding to the drama of the space. Clad in bronze, the ramp is designed and proportioned as a place of meeting and connection, allowing people to hold brief impromptu conversations with colleagues, while not impeding the flow of people.

Michael Jones, senior partner at Foster + Partners, and project architect of the building, said the design of the building supports the values of Bloomberg as an organization and the way it operates. "The cores have been pushed to the edges of the building to visually open the floors and reveal a spiraling ramp, the heart of the building, bringing together the people who work in it. In a sense, it is all about community and collaboration—both within the building and the way it embraces its surroundings."

Daylight also enters via the core central to Bloomberg's ethos—a double-height "pantry" on the sixth floor, that is the heart of the building, according to Jones, in that it reflects the importance of sharing and collaboration at the company. "Everyone passes through this animated space, increasing the likelihood of chance meetings and informal discussions."



INTERACTIVE DESIGN
The ramp is designed and proportioned as a place of meeting and connection, allowing colleagues to hold impromptu conversations without impeding the flow of people.



GATHERING SPOT
The upper level of the "pantry" is formed by a crescent of meeting booths that overlook the central space, known as the Ha-Ha, referring to the classic landscape device that inspired its design.





▶ AN EYE ON WATER
Collectively, water conservation strategies result in roughly 70% less potable water being used than in a typical office building.

WATER

Rainwater from the roof, cooling tower blow-off water and greywater sources, like basins and showers, is captured, treated and recycled to serve vacuum flush toilets. Vacuum toilets use very little water (approximately 0.6 to 0.8L vs. the standard 5L), and since the Bloomberg toilets are serviced using recycled water, they effectively use net zero mains water for flushing. Collectively, thanks to these water conservation strategies, the Bloomberg building uses roughly 70% less potable water than a typical office building. It also has a reduced impact on the surrounding drainage utility infrastructure.





POWER

An on-site combined heat and power (CHP) generation center supplies heat and power in a single, efficient system with reduced carbon emissions. Natural gas is converted to power and the waste heat generated in the process is also used in the building either for heating and hot water, or to generate cooling, via an absorption chiller for Bloomberg's technical facilities.

In use, the CHP system is expected to save 500-700 metric tons of CO₂ each year. Photovoltaic cells on the roof of the building also supply additional power. Power/heat/water conservation has resulted in a 73% saving in water consumption compared to typical office building.

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RENEWABLE FOCUS

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A Green Process Throughout

Sustainability has been central to the Bloomberg building from day one, from site selection to design and construction practices. During the six-year construction process, Bloomberg worked with contractors and subcontractors to minimize environmental impact. Key strategies included a 95% recycling rate of demolition and construction waste. The operation, in fact, has been a zero-landfill facility since 2010 as waste is composted or converted to energy. Better waste streamlining during the operation of the building will enable Bloomberg to take this commitment further, allowing a greater proportion of waste products to be recycled into functional products. Globally, Bloomberg currently diverts 75% of its total waste away from landfills and is targeting 90% diversion by 2020. With the addition of the new London building, Bloomberg has 34 LEED or BREEAM-certified projects globally. By the end of 2017, nearly 70% of the company's 19,000 employees will occupy an environmentally certified office. "We believe that environmentally-friendly practices are as good for business as they are for the planet. From day one, we set out to push the boundaries of sustainable office design — and to create a place that excites and inspires our employees. The two missions went hand in hand, and I hope we've set a new standard for what an office environment can be," said Bloomberg.

