# Norman Foster
## 1999 Laureate
Biography

"I believe," explains Sir Norman Foster, "that the best architecture comes from a synthesis of all the elements that separately comprise a building: the structure that holds it up; the services that allow it to work; the ecology of the building—whether it is naturally ventilated, whether you can open the windows, the quality of light; the materials used, their mass or their lightness; the character of the spaces; the symbolism of the form; the relationship of the building to the skyline or the streetscape; and the way in which the building signals its presence in the city or the countryside. I think that holds true whether you are creating a landmark or deferring to a historic setting. Successful architecture addresses all these things and many more."

With that design philosophy and a richly varied body of work throughout the world, it is not surprising that Sir Norman Foster has been named the 1999 Pritzker Architecture Prize Laureate. He receives his profession's highest honor as one who has been the recipient of 165 awards over his 35 year career. Some of the most prestigious include his own country's 1983 Royal Gold Medal for Architecture, which is administered by the Royal Institute of British Architects (RIBA) and bestowed by the Queen. He has likewise been honored with France's Grande Medaille d'Or in 1991, Japan's Design Foundation Award in 1987, and the American Academy and Institute of Arts and Letters' Arnold W. Brunner Memorial Prize in 1992, and in 1994, the American Institute of Architect's (AIA) Gold Medal. He received his Knighthood in 1990 in the Queen's Birthday Honors, and was appointed to the Order of Merit by the Queen in 1997.

From his first minimalist glass bubble in 1964, which was a building partially dug into the earth in Cornwall, and named the "Cockpit", to his London towers for Citibank and the Hongkong and Shanghai Banking Corporation at Canary Wharf, Sir Norman has always been on the cutting edge of technology.

But Sir Norman has never liked the label "high-tech." A Modernist, yes, but traditional in the sense that he uses structure to create space, with an attachment to technology that never goes beyond what is appropriate for the project. "Ever since man came out of the cave, he has been on the cutting edge of technology, always pushing the limits," says Foster. "Technology is part of civilization and being anti-technology would be like declaring war on architecture and civilization itself. The history of architecture is the history of technology, and the tradition of architecture is one of continuous change. If I can get carried away with some passion about the poetry of the light in one of my projects, then I can also, in the same vein, enjoy the poetry of the hydraulic engineering." He further acknowledges a respect for materials that harks back to the Arts and Crafts movement.

Today, Foster and Partners has studios in London, Berlin and Hong Kong, employing some 500 people. In Berlin, a major project is coming to fruition, the rebuilding of the Reichstag. In Hong Kong, the world's largest airport (it's even visible from satellites) on the island of Chek Lap Kok, was recently completed by the firm. Foster has described the $20 billion project as "a horizontal cathedral." He further expresses the hope that his airports will put some "sense of occasion" back into travelling.

Judging from Hong Kong and the earlier Third London Airport in Stansted, England, completed in 1991, he is succeeding. He tells the story of a security guard on duty when the Queen opened the building, saying to him, that he had been guarding buildings all his life, but this was the first time he realized that a building could be beautiful. At Stansted, a lightweight roof seems to float above the convergence of road, rail and air modes of transport, another variation on Foster's "umbrella building" concept. That lightweight roof is possible because Foster has literally turned the traditional design model for airports upside down. "Before Stansted," explains Sir Norman, "that model had the structure carrying huge amounts of ductwork at roof and ceiling level, and substantial amounts of artificial lighting. Artificial lighting generates a great deal of heat, which in turn means that you need more cooling with increasingly large ducts and a larger refrigeration plant. All that equipment in the ceiling and on the roof had to be supported structurally so the structure had to be enormous. Not only did this cost a great deal of money, it was incredibly wasteful of energy." He elaborated further that by putting all the services and transport links below the concourse, on the ground, they are easy

to access for service and alteration. The roof can then be not only lighter in weight, but perform a controlled light-admitting function. Stansted has now become a model for airports worldwide.

The London headquarters of Foster and Partners is described as a 24-hour-a-day, 7-days-a-week practice for more than 400 people working on various projects, all (including Sir Norman) working in one large room with spectacular views of the River Thames. With a panoramic view of the city from a Thamesside site next to Albert Bridge, Foster and Partners certainly lives up to its design philosophy that "the workplace can be a pleasant environment." Foster's home is an apartment above the studio. His wife, Elena Ochoa, is a respected Spanish professor of psychopathology, with whom he recently had a daughter, Paola, now nine months old. His first wife, Wendy, died in 1989. He has four sons. Ti, Cal and Steve, in their thirties, are pursuing their own careers. His youngest son, Jay, 13, lives at home.

Foster attributes the firm's success in dealing with multiple projects to an extraordinary line of communication within the studio. "There is a real sense of continuity," he says, adding that "I've been working with four of my partners for 25 years. Some of the younger directors have been here for 12-15 years."

In many ways, Sir Norman's biography comes close to being a real-life Horatio Alger story. It's certainly the kind of biographical material of which great novels and film stories are made. He was born into a working class family in a suburb of Manchester, England in 1935, where the odds of his making a career in any of the professions were highly unlikely. "In fact," says Sir Norman, "the idea that anyone in the neighborhood where I grew up would go to a university was like saying I'd be the next Pope." He attended a local high school and did School of Architecture, where he learned from Paul Rudolph, Serge Chermayeff and Vincent Scully. It was while at Yale that he met a fellow scholarship student, Richard Rogers, and one of the teachers, the late Sir James Stirling (who became a Pritzker Laureate in 1981). Foster received his Master of Architecture degree from Yale, and then spent nearly a year touring the country from coast to coast, seeing works by the Chicago School, Mies van der Rohe and even meeting Louis Kahn. He visited nearly every one of Frank Lloyd Wright's projects, as well as the work of many others, including Charles Eames, whose use of standard components in building would also be an influence. While in California, he worked for a time in the offices of Carl Warnecke and Anshen & Allen on such projects as a new campus for UCLA at Santa Cruz.

When he returned to England in 1962, he joined Richard Rogers and met two architect sisters, Wendy and Georgie Cheesman, the former eventually becoming Foster's wife. Wendy, Georgie, Rogers and Foster would join together to form their first practice, called Team 4, in 1963. Their first output was the already mentioned retreat known as the "Cockpit." The Creek Vean House in Feock, Cornwall followed almost immediately. It was designed to exploit the views while remaining concerned with the ecology. It featured, among other things, a skylit picture gallery and a landscaped roof, and received an award from the RIBA.

Team 4 went on in 1965 to design a 30,000 square foot factory in Swindon for Reliance Controls, which gained international recognition.

Considered a turning point, this project was Foster's first steel building. According to Sir Norman, "The economic realities of the project dictated the need for speed and flexibility, forcing a change in our building methods." His designs proposed a series of pavilions linked with a series of glass-walled courtyards, and service ducts in the floors, but in fact, only the first phase was constructed. It consisted of flexible moveable walls under an umbrella-like roof. The exterior walls were of plastic-coated corrugated steel, white painted stanchions, beams and cross-bracing. Team 4 split up in 1967, and Norman and Wendy formed Foster Associates.

Shortly after forming Foster Associates, Fred Olsen Limited became an important client, needing reorganization of their London docking facilities for their shipping company. Foster's solutions to their

problems involved a new amenity center, a new passenger terminal, new cargo loading facilities and administrative offices, and eventually new warehousing. Although the solutions were brilliant at the time, other factors dictated that the buildings be demolished in 1980 and 1988 to make way for the Canary Wharf redevelopment.

In 1968, Foster met Buckminster Fuller who asked him to be his collaborator on the Samuel Beckett Theatre project. This was the beginning of a long friendship and collaboration that would continue until Fuller's death in 1983. Foster and Fuller worked together on several projects beyond the Beckett Theatre. One such was the Climatroffice, based on the St. Louis Climatron and the Montreal Expo Dome (some earlier works of Fuller). At the time of Fuller's death, he and Foster were in discussion about an autonomous house. Although none of these projects were completed, Sir Norman has said of Fuller, "The thing about Bucky was that he made you believe anything is possible." At this time, Foster is working on a project inspired by his work with Fuller, for Swiss Reinsurance.

The world's first inflatable office building was created by Foster Associates in 1970 to house some 70 employees of Computer Technology for a 12-month period. Made of a nylon and pvc fabric, the translucent envelope to enclose a space 200 x 40 feet was inflated in 55 minutes, anchored to perimeter beams laid directly on the surface of the company's parking lot. Electrical and telephone cabling was on top of the beams providing ready access for lighting stanchions and communications.

Within three years, he had designed another break-through building, the IBM Pilot Head Office. The project had to be completed in 18 months at a cost not to exceed the cheapest temporary structures. Those parameters were met and more. He proved he could build something permanent for less than the client had been paying for temporary quarters. The single story offices, clad in reflective glass, are still in use today. Further, it was his concept to accommodate the computers and the offices within the same building with floor access for the machines as required (computers previously were isolated in their own structure). "At that time," Foster recalls, "the computer was regarded as a sacred machine, and the conventional approach was to build a kind of 'chapel' for it. Yet really all that was needed was a raised floor which could be inserted on top of the floor slab. With its raised floor, the building became very flexible and responsive to change. Again on this project, integration became a part of the design process."

Soon after the IBM building, the medieval street patterns of its site in Ipswich inspired the shape of another office building, the Willis Faber & Dumas Headquarters. The company had begun as a family firm and wanted to restore a strong sense of community that had been eroded during its growth. The concept for this building would integrate the social issues of the company and its technology. The building's unusual curving glass façade follows the contour of its site. Built with three open office floors for a total of 1200 people, there is a central atrium, a rooftop restaurant and garden and a ground floor swimming pool. It was, Sir Norman says, "a conscious effort to elevate the workplace." Tinted glass exterior walls reflect the surroundings of the building by day, but at night the glass becomes transparent showing the colorful lighted interior.

Sir Norman has elaborated on this project: "The most significant thing about Willis Faber is its social dimension. In that sense, it really was, and is, revolutionary. It represents the vision of the office as a place that is filled with sun, has fantastic views, where everybody wants to work because you know that you can sunbathe on the lawn at lunch time. At the time it was created, when there were absolutely no social facilities in this little market town, this building was a place where you could swim with your family on weekends. This was a social revolution and the technology was a means to that end. I am focusing on this aspect very deliberately because in a way, in microcosm, what I am threading is related to history, to a social dimension, to energy usage, and to the appropriate use of technology. I believe that all of these actually come together. That is the story of many of my buildings." He is most proud that the project has won as many energy awards as architecture awards, and that with Willis Faber, "I was able to anticipate the information revolution. With our design, we

provided floor access for the wiring necessary for computers and advanced communications. This client was ahead of its competition with this building."

The Sainsbury Centre for Visual Arts at the University of East Anglia in Norwich was built in 1977 to accommodate several functions: to house the primitive and 20th century art collection of Sir Robert and Lady Sainsbury; to provide temporary exhibition space, as well as a senior common room, conservatory, restaurant and offices for the faculty of fine arts. Philip Jodidio, in his book on Foster's works, describes the building as "an inspired development of the 19th century glass and iron train shed, including numerous energy saving features…"The building is 115 feet wide by 25 feet high, and 426 feet long. Later when called upon to expand the center, Foster designed a crescent shaped underground wing with a curved glass skylight viewing the lake.

In 1979, he won first prize and the commission in the competition to design the Hongkong and Shanghai Banking Corporation Headquarters to accommodate some 3500 employees in Hong Kong. His building rises some 50 levels above a ground-level plaza, separated from the banking lobby by a glass underbelly, allowing views up into the banking hall.

It has been recognized by many as one of the world's great 20th century monuments, a new step forward in the evolution of the skyscraper. Where the blind core of services usually is found, there is an open space lit from above by a system that directs daylight into the interior. The whole building is lifted up from the plaza by eight columns, leaving an open public space which has become one of Hong Kong's favorite picnic spots. There are actually three vertical layers of differing heights with a helicopter port on the roof of the tallest.

About that same time, Renault cars were selling so well in England that they needed to expand their facilities. Since they wanted a high-profile quality image, they approached a number of the leading architects for their concepts. Foster's approach responding to the client's need for a speedy solution that would be flexible and economical won the commission and by the fall of 1982, they had their new Parts Distribution Centre, with a showroom, a restaurant, and offices for training sales and service staff, on a 16 acre site in Swindon, England. The structure is based on a modular layout whose square grid defines the element of repetition. A bright yellow painted steel load bearing frame consists of four pillars, united by beams which are suspended by cables. The roof of each repeated modular element follows the form of the beams creating a surface that is fractured according to the geometry governing the entire project, becoming an object of beauty as well as function.

Sir Norman is the epitome of the successful international architect. With a demanding schedule, keeping track of projects around the world, somewhat out of necessity, but at the same time admitting to a grown-up indulgence stemming from a childhood passion for building model airplanes, he pilots not only the company's Cesna Citation jet, but a light aircraft and a helicopter as well. And he still enjoys building the models with his youngest son. For his other leisure activities, he is fortunate that he loves bicycling and cross-country skiing—both of which help keep him trim and fit. He recently completed the 26-mile Engadin Ski Marathon in Switzerland making his best time ever in six years of participation.

His international outreach was broadened in the eighties when he won the competition for the Carré d'Art in Nîmes, France. In this project for exhibition and library spaces, it was necessary to incorporate and integrate a new work of architecture into the historic context of a Roman Corinthian temple. "The site as it existed," explains Sir Norman, "was a scene of urban squalor. The new building has provided a social focus, an identity for the local community, as well as attracting international visitors, and is reinvigorating the spaces around it." Much of this building is below ground, accessed via glass staircases, where the libraries, performance spaces and meeting places for children are found. The upper level galleries display a permanent collection of contemporary art, and a roof-level café overlooks the ancient temple.

In 1991, he completed a renewal-renovation project for the Royal Academy of Arts which consists of two buildings: the original 1666 house converted by Lord Burlington in the 18th century, and the Victorian galleries behind, and separated by dingy lightwells and a central staircase. The Diploma Galleries, on top of Burlington house had always been underused because of the difficult access. Sir Norman's solution was to insert a new elevator and staircase between the original garden elevation of Burlington House and the main gallery extension. The Diploma Galleries were also completely rebuilt and renamed the Sackler Galleries. When asked by Modern Painters magazine if he would have preferred to design something that would have made the gap between the two buildings his own, Sir Norman replied, "It is entirely my own. It is a deliberate interpretation of how you relate the old to the new, and get something richer and more dynamic out of both."

In the United States, the Foster touch is represented by the very successful addition to the Joslyn Art Museum (1993-94) in Omaha, Nebraska. His extension consists of a rectangular block structure constructed of the same pink limestone used in the original 1931 building, with a full height glass atrium linking the original to the new. "In adding the new wing," says Foster, "we were able to regenerate the interior of the original building, redesign the outside spaces for outdoor events, and most significantly, make use of the gap between the old and the new parts of the building as another social space, in this case, a café."

Another major Foster project in the United States will be completed at the millennium at Stanford University, Palo Alto, California. A 214,000 square foot Center for Clinical Sciences Research for their Medical School, will provide laboratory space for 500 researchers and technicians.

A current highly publicized project is the British Museum Great Court scheme proposed by Sir Norman Foster in 1994 and moving along to a planned completion in 2000. The institution's famed Round Reading Room, situated in a two-acre courtyard, initially had been hidden by the encroachment of library bookstacks over the years. The latter have now been removed, and the entire courtyard will be covered by a light-weight glass and steel roof, creating the largest enclosed public space in Europe. It will also give the public access to the entire museum.

The Headquarters for Commerzbank in Frankfurt-am-Main, Germany (1994-97) is now the tallest building in Europe, and has the distinction of being the world's first ecological high-rise tower. Nine 4-storey-high greenhouse gardens spiral around the building at different levels on each of the three sides of the triangular shaped building, allowing every office a view of greenery. All offices are naturally ventilated with opening windows.

Some of the more significant, more recent projects not already discussed, include the Faculty of Law for the University of Cambridge (1993-95) and four projects in Spain: the Telecommunications structures in Barcelona (1990-92) and another in Santiago de Compostela; the Congress Centre in Valencia (1993-98); and in Bilbao, the Metro transportation system. Of the latter, he says, "We invested a tremendous amount of research in creating graffiti-proof concrete that could easily be cleaned. The reality is that there is such a sense of pride in the Metro among the residents, nobody defaces it."

One aspect not mentioned thus far is his furniture. He has just approved the final designs for a new line of aluminum furniture to be manufactured by the famous Thonet factory in Frankenberg, Germany, in addition to his work for such distinguished companies as Tecno, Vitra and Poltrona Frau.

Kenneth Powell, a British journalist and author, has stated that Foster's architecture "has consistently depended on the mastery of light and space for its success…at the heart of Foster's art is the way in which daylight penetrates buildings and is linked to the system of human circulation." And further, he predicted some ten years ago, "Norman Foster's practical poetry is likely to remain a major force in the late 20th century renaissance of modern architecture because it rejects styling, literary and intellectual allusion, and sheer pretentiousness in favour of the pursuit of excellence."

**Norman Foster, 1999 Laureate** (continued)

With the imminent completion of the Reichstag in Berlin, Foster's mastery of daylight is once again evident in the new glass dome, which has at its center a light-reflecting cone which reflects light downward into the parliamentary chamber. Two spiraling ramps allow the public to climb to the top of the dome for a full view of the city. "And both actually and symbolically," says Sir Norman, "the public stand above the members of parliament who represent them. They can look in on them, down on them, and see the process of democracy at work." He further states, "Our energy strategy for the building is quite revolutionary, relying on totally renewable sources of energy—burning vegetable oil in a cogenerator to provide heat and electricity."

In all of these projects, there are themes which Foster describes as "design processes:" integration, regeneration, adapability and flexibility, as well as communication, economy and ecology. "Architecture and building have many different facets," he elaborates. "It is in the end, a balancing act of integrating and somehow responding to all the needs of a project: material and measurable; as well as the spiritual and intangible, the subjective; it is somehow about making all those value judgments. Creating a building involves the efforts and energy of thousands of people so there is a massive task of communication. One has to be a totally committed optimist to not give up before even starting. It also requires an interactive process between those who initiate buildings, those who use them, and those who design them."



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