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Authors(s): RICHARD MacCORMAC

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BOSSOM LECTURES ON THE MAKING OF GREAT ARCHITECTURE

I. 'A sense of the marvellous' – Frank Lloyd Wright's Fallingwater

RICHARD MACCORMAC, CBE
Architect, MacCormac, Jamieson, Prichard

*Delivered to the Society on Monday 3 April 1995,
with Paul Vaughan, writer and broadcaster,
in the Chair*

THE CHAIRMAN: The Bossom lectures exist through the generosity of the first Lord Bossom, a former Chairman of Council of the Society, who died in 1965 and bequeathed the sum of £3,000 to endow three lectures each year on the subject of architecture. The first three lectures were given in 1967 and this year, not for the first time (indeed, this appears to be the norm) the three lectures are to be given by three separate individuals. The overall title they have been given is 'The making of great architecture'. What was in the Society's mind when these lectures were planned was that the speakers might try to convey to us in the sort of language which we laymen, non-specialists in architecture, would understand, something of the character of buildings that have excited them, what it is they look for in architecture and tell us something also of the aesthetic criteria to which they

work, as exemplified in the buildings perhaps of some architects they especially admire.

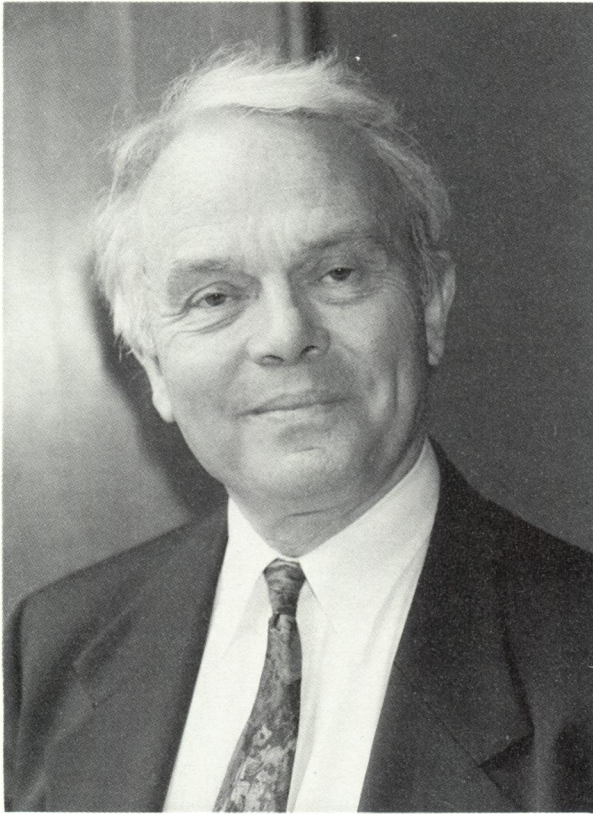
Richard MacCormac is an extremely distinguished member of the profession. He is a past President of the RIBA and the buildings he has more recently been responsible for include the Cable and Wireless College in Coventry and the new Ruskin Library at the University of Lancaster. His own connection with Cambridge University (of which he is a graduate and where he has lectured) did not, I am glad to say, prevent or disqualify him from creating a splendid new block at Oxford in St John's College. Both that and the Cable and Wireless building have won major awards. The building which particularly excites his imagination is clear from his title: 'A sense of the marvellous' – Frank Lloyd Wright's Fallingwater'.

I first visited Fallingwater in 1963 and I made a fleeting visit there recently. I thought I ought to go there again and my first profound impression when I went there more than 30 years ago still held true. I sensed an artist who had conceived a great work in its entirety in such a way that he knew every detail and the effect of everything upon the visitor and the occupants of the building.

It struck me when I first went to Fallingwater that here was the presence of a genius, and the other genius who came to mind was Mozart. The works of both exhibit a brilliant, surprising and immediate certainty. Wright's first known sketch plans of Fallingwater in red ochre crayons indicate virtually every feature of the final building traced layer upon layer. He knew what he was doing before he set pencil to paper. In 1928,

eight years before he designed this building, he wrote: 'Therefore, conceive the building in the imagination, not on paper, but in the mind, thorough before touching paper'. This is an extraordinary facility, which I certainly do not have. Most of us scratch around for ages trying to work out what to do.

This phenomenal process was witnessed by Wright's young assistants when the project was in hand. The story goes (and of course there are a number of stories) that Kaufmann, the client, had asked Wright to visit the site and thereafter heard absolutely nothing from him for some months. Kaufmann was a powerful business man, a retailer – highly confident and very wealthy – and he became somewhat exasperated. He rang up Wright and said 'I am flying up to Spring Green, Wisconsin [where Wright's office was] to see the



Richard MacCormac

scheme'. Edgar Taffel, one of Wright's assistants, wrote the following account: 'Wright boomed into the phone. "Come along EJ we're waiting for you". His assistants were aghast; Wright hung up the phone, briskly emerged from his office some 12 steps from the drafting room, sat down at the table and started to draw – first floor plan, second floor, sections, elevations, and sketches of details, talking *sotto voce* all the time. The design poured out of him; the basic design never changed – pure all the way'.

As I have said, Kaufmann was a powerful businessman and retailer. His son Edgar Kaufmann Jnr, who died a few years ago, became a well known architectural historian and critic and wrote what one might call the definitive biography of the house Fallingwater – a Frank Lloyd Wright Country House. He had gone to join the Wright office, which was known as the Taliesin Fellowship, and returning home to his father talked about Wright. That is how the connection was set up.

There was also a connection of another sort – a Viennese émigré connection which was important to the climate of patronage in America at this time.

This was a highly sophisticated group of people who had become part of American intellectual and avant-garde society. Wright very rarely confessed admiration for any other architects, but he did admire Otto Wagner and was clearly intrigued by the Viennese secession. He had been involved with some of the Viennese architects who had come to America, such as Neutra and Schindler. The atmosphere was one of innovation and creativity of a special kind without which this project would probably not have happened. Kaufmann's previous house was very conservative, a sub arts and crafts farm of a sensible kind, unlike this extraordinary and audacious work.

The house itself consists of a series of levels. The lowest is at the level of the river, Bear Run, which passes underneath it, having flowed down a ravine and beneath a bridge. The main living area is at level one (as the Americans would have it). On level two is the main bedroom for the Kaufmanns with a study at one end. Edgar Kaufmann Jnr, who was an only child, had the top floor to himself, a wonderful kind of eyrie. To the rear is a guest house, which I shall not talk about very much. It is a more conventional building, beautifully connected to the main house.

One of the obvious characteristics of the house is that floor by floor there is very little apparent coincidence of plan. A consequence is that about 50 per cent of the area is out of doors. It is a composition of extraordinary power and abstraction, but the domestic requirements were very simple. One of its themes is that it is locked into a rock face. It cantilevers out in a most spectacular and, seemingly dangerous way, from that rock face. There is a polarity between the idea of rock, the cavernous nature of rock, defining the inner sanctum where hearth and dining area are, and the idea of projecting the house out over water into space and foliage.

It must also be said that this is not a European work of architecture. It does not readily relate to the European modern movement. Wright was into composition, hence the Mozart analogy and this is an architecture of composition. The modern movement in Europe tried to promote a deterministic architecture, in which architectural form was supposed to derive, in a rational way, from function. At least, that was the ideology. But Wright did not make out that kind of argument.



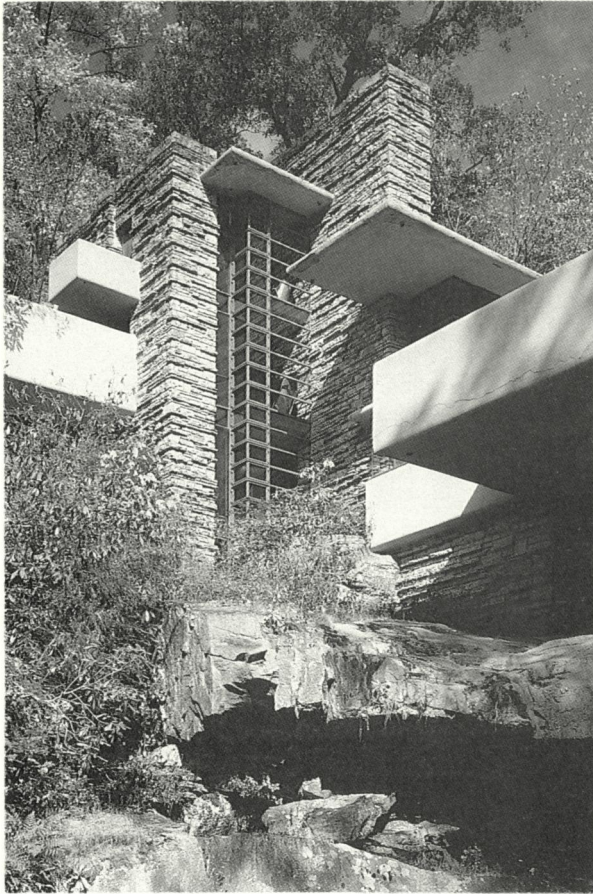
A composition of extraordinary power and abstraction

He composed buildings and in that sense inherited something of the intent of an older European tradition. He regarded himself as a conservative architect. Examinations of Wright's work such as an essay in the recently published *Frank Lloyd Wright – A Primer of Architectural Principles* have demonstrated Wright's basic self-grounding. He was self-taught in the language of classicism.

I feel that his roots go back to the Palladian villa, specifically to the Villa Rotunda. The language of his early works, such as the Robie House is a formal one of architectural parts, podium, plinths, projecting walls, urns and so on, derived from the classical language. Wright breaks out of that language. The dynamism inherent in the cruciform core of the Villa Rotunda, projected out as porticoes, stairs and plinths, becomes an increasing centrifugal force in Wright's work which 'disintegrates' its classical sources.

Another very important influence on Wright (again widely written about recently) was Japan. Wright was in Japan in the early years of the century. He became a prodigious dealer in Japanese prints at a time when European artists were already very interested in the conventions of the Japanese print. Wright was a great collector but his frequent financial problems were met by selling his collection off. There are great affinities of various kinds and at various levels between Japanese art and that of Wright. Most profoundly, the landscape art and architecture of Japan and the religious beliefs they represent are about a balance between man and nature – a submission to nature and an urgency about sustaining affinities with it.

Mark Girouard wrote eloquently on this theme in his introduction to Kaufmann's book *Fallingwater – A Frank Lloyd Wright Country House*, and he also sets out a marvellous argument about a kind of Rousseauistic



Wright extended the strata of the site upwards and wove his artifice of concrete into an artifice of nature

notion of America. For Wright, the American idea of the natural and what he inherited from Japan synchronised. The south-west corner of Fallingwater almost seems to be hewn out of rock; the concrete elements, painted ochre, seem to be embedded in something natural. Wright extended the strata of the site upwards and wove his artifice of concrete into an artifice of nature. It is highly ambiguous, very beautiful, and appears like the subject of a Japanese print.

This synthesis was not entirely new. The great American architect, Richardson, of the previous generation to Wright, was building up massive stone plinths, rather like Japanese temples and fortresses with floating roofs above them. The Japanese tradition is related to an older Chinese tradition of the building as a kind of natural hill or mountain above which roofs hover.

In his early works such as the Hillside Home School and the Heurtley house in Oak Park Wright had already developed the notion of stratified buildings growing out of the ground. They feel geological and this geological phenomenon is amplified by separating the roof with a strip of glazing, usually timber framed, so that the roof appears to float off the base.

I recall, by way of comparison, beautiful drawings by Utzon, designer of the Sydney Opera House. He made a drawing of a Japanese temple with the roof floating above a massive base and a series of drawings and photographs in Central America of relationships between great plateaux or table mountains and cloud formations above. These are the poetic origin of the vast shell/sails of Sydney floating over their stepped base. Wright shares the same sources.

Another connected influence on Fallingwater is the atavistic sense of place which Mark Girouard wrote about in his introduction to the Kaufmann book. It is that feeling which children enjoy when camping – the contrast between security and the wilderness outside. American architecture in the 19th and 20th centuries often reflected such contrasts because America was still in part a sublime and innocent wilderness. The transcendental writers of 19th century America – Whitman and Emerson – gave definition to this and to man's relationship with it. Wright saw mankind as essentially part of nature and architecture as the expression of natural law. He had various terms for what he was doing, of which 'organic' is the best known. Design itself was for Wright, as it was for his great mentor, Sullivan, a force of nature, a great bursting forth of natural energy and vitality.

Wright's west coast contemporaries Green and Green were affected by similar ideas. A balcony from the Gamble house by Green and Green is a wonderfully fragile extension of the house that lets you sleep out of doors, held up towards the sky, and it seems possible that the Kaufmanns might have expected something more like this for their site at Bear Run. An early photograph, probably from the 1940s, of the hearth of Fallingwater vividly conveys how the inner sanctum contrasts with the wilderness outside. The Kaufmanns had gone to Bear Run originally for this kind of 'back to nature' experience. They made their visits to sleep out in the open, on rock ledges above the river. Fallingwater offered them new ledges over the waterfall itself.

Wright in his early development, in the first great



The open terraces float into the foliage over the ravine

phase of his architectural career, when he created what have been called the Prairie Houses, mostly around Chicago, had already evolved interior/exterior contrasts. The Ward Willitts house of 1902, is one of his early masterpieces. In the very middle is a hearth, from which the house stretches out, and like Fallingwater itself, much of the living space is out of doors, with ribbons of French windows that open up the interiors to verandas. All these ideas – the overhanging roofs, the roofs and verandas which do not synchronise in plan, and the hearth in the middle contrasted with the stretching out into nature, are subsequently embodied in Fallingwater.

In Fallingwater itself the hearth is part of a rock which actually emerges through the floor of the living room. The living space stretches out with sliding,

folding windows, opening onto balconies. About half the floor space is in the open air. I do not know how Wright persuaded his client about this. In a prosaic sense the building is very inefficient and it cost many times the original budget. But the contrast between the generosity of the open terraces that float into the foliage over the ravine and the tight cavernous spaces in the core of the building, which are deliberately dark and confined is profoundly dramatic and visceral.

Arriving at Fallingwater you cross a bridge and enter into a narrow space which is dark. You are blocked. You keep having to move sideways in Wright's houses; you are always being shifted around. They are spatially episodic and have a kind of narrative which fascinates and does not reveal itself immediately. Like the 18th century English landscape tradition of the picturesque, a sequence of episodes sustains expectation.

This kind of architecture, which is so engaged with its natural setting and which Wright consistently evolved from the beginning of the century up to the conception of Fallingwater in 1936 was, as I have said, very different from the evolution of modern architecture in Europe. It was perhaps not so different to what was going on in Scandinavia in the work of Alvar Aalto and the subsequent Scandinavian tradition, but it was very different from the architects that we feel represent the mainstream European modern movement such as Le Corbusier. Le Corbusier's Villa Savoye, which is a marvellous work, stands aloof from nature as a self-contained object with a certain arrogance. In his great ideological tract *Vers une Architecture* (1923) he illustrated a series of transatlantic liners which he admired. It strikes me that they were metaphors for what he intended at Villa Savoye. There is a sense that life must be sustained in an artificial environment as detached from nature as a ship from the ocean around it. Subsequently, the Unité d'Habitation can be seen as a vast multi-storey liner, floating on a sea of green.

Wright's philosophy of nature eventually developed into a theory about the future of settlement which was represented in his town planning schemes for a great self sustaining suburban ideal called Broadacre City. In many ways, Wright can be seen as a precursor of our present view of how we use our resources and develop our urban world in ecological terms, but one cannot see someone like Le Corbusier in that light.

Fallingwater was conceived at the end of the depression in the US. Wright had been short of work, and he had been forgotten in many ways. In 1936 he was 69

years old, so he was into his eighth decade during the construction of Fallingwater and thought to be a relic from the past, even a kind of Victorian architect like Lutyens. Younger people, some of whom had been through his office were building dramatic and original interpretations of the white European architecture such as the two Lovell houses by Schindler and Neutra. It seems to me inescapable that Wright was affected by this, although he did not admit it – he rarely admitted to anything. He was reluctantly included in the Museum of Modern Art exhibition of modern architecture in 1932, but the question is to what extent Fallingwater was a response to this kind of modernism. If it was a response, it would have been tempting to think that Wright had fired his last shot. But Fallingwater was not the last shot; it was actually the inception of a period of amazing creativity. Wright had another 20 years of work before him. He went on to invent the Usonian houses, wonderful one-storey houses in the early 1940s. He developed a particular hexagonal geometry out of these houses, the Hanna house being perhaps the most beautiful. He developed a completely new architectural language for the Johnson Wax building at about the time he was building Fallingwater. He invented another polygonal geometry for a scheme that was not built, called Crystal Heights and, of course he went on to design the Guggenheim Museum. What is paradoxical is that Fallingwater signals a new period of indigenous creativity, not just a reaction to Europe. The idiomatic richness and complexity of Wright's late work are overwhelming.

In contrast to the work of contemporaries such as say, Neutra, Fallingwater is, unexpectedly, not white but ochre coloured and the window frames are red. That colour is to do with Japan. For his clients one of Wright's most alarming intentions – and he alarmed them a great deal – was to gold-leaf the whole building, or at least all the concrete. I was baffled by the genesis of this idea until Jocasta Innes, the decorator and writer with whom I live, suggested a connection with Japanese lacquer cabinets that open to reveal gilded boxes. When the building is illuminated, at night it seems to open to reveal an amazing interior richness because all the cupboards and joinery are of deep red timber, American walnut, the veneers cut so that the pattern of the grain, which runs horizontally is gauged at the same intervals as the transoms of the windows. When you open cupboard doors, you find drawers that still run beautifully, with woven cane bottoms, so that



When the building is illuminated at night it seems to open to reveal an amazing interior richness

they do not collect any dust or mildew. The detailed ingenuity of the building is amazing, but that is another whole story.

Fallingwater has a complicated and subtle anatomy which defies minute analysis. But I think to understand it, it is worth looking deeply into how Wright made an underlying classical discipline burst out of its cube. He used the expression that he was trying to 'beat the box'.

Wright was schooled in the Froebel kindergarten when he was a child. Froebel himself was almost certainly trained as an architect in the system of neo classical education dominant in the Ecole Polytechnique in Paris in the late 18th century under Durand, which arranged elements of architecture symmetrically on gridded sheets. Froebel offered an equivalent series of abstract symmetrical pattern making exercises using wooden tablets set out on grids, which he called 'gifts'. Many of these are obviously of classical configuration, consisting of squares with cruciforms generating through them. There are clear parallels in Wright's early work. The plan of the Blossom house relates closely to this kind of Froebel pattern, and, of course, to the Villa Rotunda.

The more advanced Froebel 'gifts' become more complicated and have more elements which move apart. Wright's architectural development in the first decade of the century parallels that advance. The grids become more complicated, the elements start to separate themselves out and to become centrifugal in the way that Fallingwater was finally to be.

This effect of the classical tradition is overlaid with

Wright's profound involvement with Japan. It is not certain whether, when he was in Kyoto, he was aware of the Katsura Imperial Palace but there were other palaces with highly complex shifting plans which he must have seen. The project for the unbuilt McCormick house has Japanese affinities in the way in which the axuality of a simple classical plan is developed three dimensionally into complex shifting episodes.

Even at the level of detail, the Katsura Palace and the south west corner of Fallingwater can be compared; Wright's design emerges from the bed rock. The Katsura is founded on rock. Both have external terraces, roofs that do not synchronise with the terrace plans, but overlap them in different ways and screens and sliding screens which, again, are independent in plan.

There is a surprising reiteration to be discovered in Wright's work. For example, the Robie House has a living room with a balcony which can be compared with the great balcony to the living room of Fallingwater. The Robie house has a master bedroom with a balcony projecting over the living room. Fallingwater has the same arrangement of bedroom and balcony above the main living area. The Robie house locks itself round a mass of vertical brickwork where the chimneys are and Fallingwater also locks itself round a tower of stone that emerges from the bed rock and hearth of the site. The compositional theme repeats itself. This is composition; not simply response to function. It may have been that, too, because that is what architecture is about, but to my mind there is no doubt that the elements of an early work have reappeared as a thematic idea.

Kaufmann's previous house had been a large farmhouse sitting on a plain. When I drove down to Fallingwater recently it seemed to me there were plenty of sensible sites in the area where you could have built a country house. Wright could have built his house on a big flat ledge of rock, but he chose to build the house out from the rock. Constructionally it was pretty risky – and still is. It is moving all the time and always has. Nobody was ever quite certain of its stability. The clients obviously chose the site because of the wonderful river and waterfall tumbling through it but Wright chose to put the building over the waterfall, so that it cannot be seen. He also chose to put it near the bottom of the ravine so views are restricted. On the face of it, all those decisions are the



The sensation of water is pervasive

sort of first decisions that a sensible architect does not make. But what is interesting to me is that those decisions were made deliberately to be transcended. The phenomenon that he created is much greater than the sum of those rather ordinary objectives which he rejected. The client was somewhat taken aback by what he could not have and Wright's response was 'EJ, I want you to live with the waterfall, not just look at it.' One of the magical qualities of the house is that when you open windows you hear water and when you close them all is quiet. The sensation of water is pervasive.

It is arguable that the idea of cantilevering off the edge of the rock is again of Chinese or Japanese influence. Contemporary with Fallingwater is the laboratory for the Johnson Wax Corporation, a great tower of cantilevered floors comparable to the structure of a pagoda. There is also a natural analogy. All around Fallingwater is a landscape of massive limestone strata with trees clinging on to the ledges. The relationship between the house and geology of the site is very similar.

Fallingwater clings to its site. Underneath, four piers grip back into the bedrock, so that the house can cantilever four metres out beyond them. The cantilevered floors are locked into the masonry walls which form the rear of the house. The master bedroom with its balcony which cantilevers even further is held back by a pergola which penetrates back into the bed rock. The great chimney pier acts as a massive root to stop the building toppling over. Nobody, it seems, was quite sure how stable the bedrock itself was and Kaufmann was so alarmed that he called in his own engineers,

without telling Wright. A rather fierce correspondence ensued.

Not only does the main cantilever of the living area project four metres out beyond the piers, but it also cantilevers sideways so that when you walk out onto the end you are over the waterfall. You are surprised to be so high up at the level of the surrounding foliage. The building has an extraordinary affinity not just with the rock, but with the canopies of trees in the forest around it. That additional cantilever has a dramatic, amplifying effect, giving a vertiginous feeling to the place.

The construction of these cantilevers caused the client to experience a massive loss of confidence. As was often the case, Wright was late with construction information and fairly off hand. He did not want to go down to the site too often. After all, he was an old man. Kaufmann became angry about this; he told Wright that he was going to call in his own consultant engineers and this is the letter that Wright wrote to his client: 'If you are paying to have concrete engineering done down there there is no use whatever our doing it up here. I am willing you should take it over, but I am not willing to be insulted. I don't know what kind of architect you are familiar with, but it isn't apparently the kind I think I am. You seem not to know how to treat a decent one. I have put so much more into this house than you or any other client has the right to expect [this last clause was something of a standard one in Wright's letters] that if I haven't your confidence, to hell with the whole thing!'

Here is the great reply: 'Dear Mr Wright, If you have been paid to do the concrete engineering up there, there is no use whatever in our doing it down here. I am not willing to take it over as you suggest, nor am I willing to be insulted. I don't know what kind of clients you are familiar with, but apparently they are not the kind I think I am. You seem not to know how to treat a decent one. I have put so much confidence and enthusiasm behind this whole project (in my limited way) to help the fulfilment of your effort that if I do not have your confidence in this matter, to hell with the whole thing.'

There was an impasse: because Wright did not really want to go to the site, the local engineers, who were convinced that the building would topple into the ravine, stuffed the cantilevers with an enormous amount of reinforcement. There is serious engineering analysis going on at the moment to see what is happening to these structures, but one argument is that this

extra steelwork was too heavy and not very effective. There is continual visible deflection – it is a little like the leaning tower of Pisa. Kaufmann's engineers also instructed the builders to extend one pier out so that the cantilever was given more support. Wright heard about this from his site architect who was asked deceitfully to instruct the builder to leave one course of stonework out between the top of the pier and the underside of the cantilever. When Wright came to the site and went round with Kaufmann, they went underneath and looked at this. Kaufmann said 'Well, see what we had to do, Frank' and Frank said 'Yes, but look at that. It does not actually support it, does it?' The problem was amicably solved – they cut it back again.

One other structure which should be mentioned is the covered way to the guest house. This is remarkable, too. It has only four very thin steel columns supporting it and is, structurally, a helix of stepped concrete, working on the same principle as a 17th century stone spiral stair.

When you are driving down through the grounds towards the house, the road comes alongside the Bear Run river and you begin to hear its sound. The intensity of water noise continually increases as you draw near the house. Then suddenly you witness this amazing relationship of structure to nature and the sensation that the building floats in the trees.

Brendan Gill in his thorough, amusing and mischievous biography of Wright wrote: 'One comes upon Fallingwater as upon some gorgeous apparition, strongly asserting the implausibility of its steel and concrete presence in a fold of the ancient Appalachians. It defies not only gravity, but comity. It is a feat of architecture that in the visitor approaching it for the first time inspires a temptation to applaud as in astonishment one might applaud an exceptional feat of magic on stage.'

Before entering the house you cross a bridge. The bridge is a clever architectural device because it stops you and makes you take in the view of the house before you enter it. There would be no other way of approaching the house because there is a cliff on the other side of Bear Run, but Wright understood the opportunity to pause before crossing the stream, and then enter the house through a dark, cavernous passage. The pergola which ties the house back into the bedrock defines a dropping off point for car passengers. It is typical of Wright that one of the struts was obstructed by a tree so he bent the strut round it. The tree has died,



'One comes across Fallingwater as upon some gorgeous apparition strongly asserting the implausibility of its steel and concrete presence in a fold of the ancient Appalachians'

but another has been planted, which is refusing to grow in quite the right place. A fine Lipchitz sculpture 'Mother and Child' lies just beyond the bridge. You look down at it and into a bathing pool which its base retains.

Entering the building through the tight dark slot of the hall you then look across and out to the forest. As a visitor, you find yourself pivoting around anti-clockwise, taking in the fluent space of the living room, which is deceptively lit. The inner part of the room, around the fire and the dining area, is quite dark, the outer part brilliantly lit by windows and the trick of a partly glass roof. The ceiling is deliberately low. Wright was a very short man and, in places the ceiling height of this house comes down to about six feet, two inches. He did not like tall people, although he often

made himself taller with high heeled shoes. But he did say when people knocked themselves out on his ceilings (which they did and do occasionally), 'My architecture eliminates weeds'.

At the back of the room rising up between strata of stone walls stratified as though they were part of the geology of the site, is the staircase up to the first floor, characteristically very narrow. There is a contrast between the narrow, tight and rocky and the expansive bright and smooth. Your prospect moving round anticlockwise might also come to rest on the stair down to the waterfall, which, like a ship's companion way is contained within a combination of doors and horizontal glass panels which slide back.

The roof over this stair is made of glass in a kind of pergola giving an ambiguity of sensation. You hardly

know whether you are indoors or outdoors. The juxtaposition of daylight coming through from above and light reflected off water, as the stream rushes through underneath, is elemental. The sliding, folding windows which work beautifully still in spite of a lot of structural deflection, open the whole place out to the forest.

On the floor above, Kaufmann's study has the famous corner window that runs right down the building with casements that open so that the corner has no mullions. This is one of Wright's great tricks. The diagonal opening it creates has an immediacy, in connecting interior and exterior, that no ordinary window has. A typical Wrightian touch is that a big inward opening casement carves its way through Kaufmann's desk. It is a kind of game. Like Lutyens he was full of very playful and sometimes rather annoying ideas like that. Adjoining the master bedroom and its huge terrace is the cork-lined bathroom. The Kaufmanns were eclectic collectors of all kinds of objects from Tiffany lamps to 17th century English chairs. A nice touch is that a transom of the bathroom window is extended inwards to form a shelf with a concealed strip light underneath, on which little pieces of Tiffany glass are displayed. At night the glass can be

seen lit up from outside. The place is full of such inventive games.

On the way out to the guest house, on the level above you come into a dark lobby just before you go out of doors. Sometimes, sunlight coming through a small aperture in the roof, lights up a seventh century Indian Buddha surrounded by moss that has been planted both indoors and outdoors. The barely discernible glass of a window goes through the moss and when it is very wet, water seeps in. It is the one time that Wright successfully persuaded his client that the leak was intentional. Water flows down around the Buddha as in a miniature Japanese garden. Right at the top of the building, up the stairs, Kaufmann Jnr slept in an intimate little space with a long gallery, connecting his study full of books and a way out onto a terrace. There he lived until he gave the house over to a conservancy some time ago. The house now remains exactly as he left it, with that intense Proustian feeling of the presence of past lives.

To conclude I cannot do better than quote from Kaufmann's wonderful book and his summation of what he felt about Fallingwater. He said that for him and his family the creation of the house had been 'a transforming adventure... opening the mind of human beings... to a sense of the marvellous'.

DISCUSSION

JONATHAN PENNINGTON: When I see buildings in the flesh that I have seen in photographs, I am often surprised at the scale. When you first saw Fallingwater, was it the size that you expected?

THE LECTURER: More or less. It is a big country house, but what is surprising is the smallness of scale of some of the spaces, such as stairs and landings, where you are deliberately compressed. That smallness is exaggerated by the grossness of some of the elements of which the building is made. Big contradictions between the fineness of the building technically and the deliberate rusticity tend to compress your experience of scale.

ROBERT FAWCETT (Architect): Is the house open to the public?

THE LECTURER: It is open during the summer, but was specially opened for a small group of visitors when I went. I do not recommend the way I went, which was to hire a car in Philadelphia, find my way through six lanes of traffic on to Interstate 76, and drive for five and a half hours.

THE CHAIRMAN: I kept wondering how far the house was from the shops.

THE LECTURER: Quite a long way. There are a few villages around there.

ASHLEY RINGSHAW: I take on board what you said about the Japanese influence of red window panes and Wright wanting gold leaf, but I wonder whether that also had something to do with the autumn colours around.

THE LECTURER: I think it did. Wright said it had to do with the colour that the underside of rhododendron leaves turns in autumn, and other colours of autumn. But like most architects, he used to think up things after the event.

PETER TOMPKINS: Did Wright leave any instructions for the way in which the landscape round the house should be maintained? What are people doing to keep the landscape in the form he built it?

THE LECTURER: I do not know the answer to the first part of

the question. My impression is that it was a very well run estate. Kaufmann Jr decided to give the house over to a nature conservancy and not to an architectural trust, so that aspect of it is being well looked after now. I was a little worried about the physical state of the building, but I do not know whether I have cause for concern.

SARAH WIGGLESWORTH (Principal, SW Architects, Senior Lecturer, Kingston University): How does the house fit in with conceptions of nature? You said that the building had natural elements in it, but its opulence would seem to belie the idea of a simple existence in the woods.

THE LECTURER: What I said owes a great deal to Mark Girouard's introduction to the book *Fallingwater: a Frank Lloyd Wright Country House*. He says that one of the many origins of the house was to do with the English 18th century sense of the sublime and the picturesque. That coincides with the American idea of escaping to the wilderness, and seeing America as still a sublime wilderness compared with Europe.

The house makes itself seem to a certain extent to be part of the natural rock, and to establish that kind of idea internally and externally. The argument would go that it deftly weaves into that proposition which is generally to do with the vertical parts of the building the artifice of concrete construction. The question really is whether we believe that that balance with nature comes off. In some views of the house the concrete is overwhelming, but the view through the foliage when you approach it from the east seems to me to come off absolutely.

According to Mark Girouard it is not the first concrete weekend house in America, but the clients certainly expected it to be made of wood in the tradition of the shingle houses of the 19th century or the Green and Green houses. I think they were a bit astounded when Wright said they would have to have a concrete house.

VINCENT WANG (Vincent Wang Development): You drew a contrast between Le Corbusier's Villa Savoye and Fallingwater, yet one could say that Fallingwater is in a portion of nature to be looked at but not to go for a stroll in, just as the Villa Savoye has great external terraces but only for the purpose of looking at views.

THE LECTURER: I am not a historian, but I liken the Villa Savoye to a classical country house, either French or English, which stands and surveys its estate in a rather aloof way. Nature is something you can go out into, but once you are indoors the house does not have much to do with nature, which is pretty much under control. The building is a complete, perfect entity.

Fallingwater is surrounded by savage nature which is threatening it all the time. It is not a perfect form, but is incomplete without its situation. In your mind's eye you can

pick the Villa Savoye up and think of it as an exquisitely self-referential object. Fallingwater depends very much on its roots; it is like a big shrub that belongs on this cliff face.

SANTARAYMOND (Architect): How good are the proportions of the interior? Is the detailing as messy as it looks in photographs?

THE LECTURER: I have mixed feelings about the interior. Wright did the building for about 6 per cent, which is not much for what he achieved. It is a totally realised idea as a work of art. The master bedroom and bathroom are wonderful, and all the bedrooms feel very comfortable. The ceilings in the bedrooms, unlike that in the living-room, are higher nearer the door and then drop; I think that is something to do with the terraces above and transverse structures. It gives the room a feeling of containment and then of space spreading out. The room I am least convinced by is the living-room, which rather goes to pieces. It is too spacy and there are some gruesomely bad details where the stone piers hit the concrete.

THE CHAIRMAN: Did Wright have any say in the interior decor and furnishing?

THE LECTURER: Yes, everything, and he designed most of the furniture.

GORDON WIGGLESWORTH (Architect): Most of Wright's houses seem to have a modest quality. Do you do not feel that in Fallingwater he is trying to hype the client's feeling about himself by producing a pompous building?

THE LECTURER: There is a paradox about Fallingwater. Wright's houses feel comfortable and easy, but he said, 'I prefer arrogant truth to hypocritical modesty.' Fallingwater is a terrific exhibitionist gambit. To cantilever so far off a cliff, with everyone wondering if the house is going to stay up or not, is an extraordinary thing to do. There is nothing modest about it. Wright was definitely a showman, but there is a combination of deep humanism and an ambition to do extraordinary things.

MIKE HARRISON (Principal Adviser: Science and Environment, RSA): Would modern structural analysis have allowed Wright to execute his vision?

THE LECTURER: I wonder whether any system of building regulations or any sensible engineer nowadays would have allowed him to build Fallingwater at all. It will be interesting to see the results of the analysis. Risks were taken, and Wright was quite ill at certain stages of the procedure. He had pneumonia and was slightly delirious, muttering things like 'Will it hold up?' and 'Will it turn over?' I think he was quite worried, and certainly everybody else was desperately worried.

FRANK LLOYD WRIGHT'S FALLINGWATER

ALFRED ROWE (Architect): When I looked at the plans you showed I was immediately struck by the similarity with Lutyens plans. Lutyens was an almost exact contemporary of Wright. Do you see similarities in some of his later plans?

THE LECTURER: I have never tried to make direct comparisons, but Lutyens does that thing of arresting you and moving you around. Fallingwater cost five times what it was supposed to, but Kaufmann was very rich. Lutyens' Little Thakeham is an example of a crazy house that must have bankrupted the client, and it definitely has some comparable situations in it spatially.

PATRICK GILBERT: How did Wright view Fallingwater later in his life? Did he think it was one of his masterpieces?

THE LECTURER: I do not know. He was not short of self-advertisement, whatever he did, and I am sure he would have gone on saying it was a masterpiece. It very quickly made him a fantastic reputation world wide. After the Depression in the States it got him back on the road as an architect, so in his own career terms, given that he was in his early seventies when he finished it, it was an extraordinary event and the precursor of a flourishing architectural practice that continued for another 20 years. Hope for us all.