ERNO GOLDFINGER

James Dunnett discusses the Structural-Rationalism of Ernö Goldfinger, whose work is on display at the Architectural Association, London, from 1-20 June

1, Suzanne Blum apartment, Paris, by Ernö Goldinger, 1930.
2, factory at St Issoire, by Auguste Perret, 1939.
3, Ernö Goldfinger in his study at Willow Road, Hampstead, in 1983.
4, Le Corbusier's Quartier de la Marine skyscraper project, Algiers, 1939.
5, Goldfinger's proposed housing unit with communal services, exhibited at the CIAM conference at Athens in 1933.
6, Trellick Tower, part of Goldfinger's Cheltenham Estate, Edenham Street, North Kensington, 1968.

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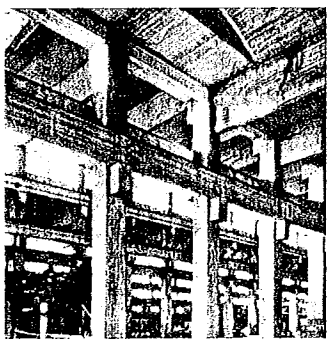

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In the 10 years from 1962 London saw the completion of three major monumental architectural complexes, two of which received little critical notice and the third, whilst gaining some recognition, subsequently fell so far from public attention that architectural ruin was inflicted on it without a word of protest. Yet these projects by Ernö Goldfinger—the GLC housing schemes at Rowlett Street, Poplar, and Edenham Street, and Alexander Fleming House and the Odeon cinema at the Elephant and Castle—represent almost the only examples in England of large-scale works of 'high' modern architecture at its most ambitious. Whilst Goldfinger's 'Modern' contemporaries who built most before the Second World War—Coates and Lubetkin—built little after, he himself, who had built little before the War, was able in the 1960s to build major projects representing that 'follow through', that confident and mature expression of the ideals of modern architecture whose absence from the work of his contemporaries has been regretted.[1]

By the time these projects were built, the concerns of the profession were already moving elsewhere. But the consistency and expressive power of Goldfinger's work make it of permanent importance. It has a unique hardness and excitement that are arguably most expressive at the monumental scale attained in these three schemes.

These qualities can be seen, however, as partly an expression of the influence of an earlier tradition—the French tradition of Structural-Rationalism. This tradition came to him directly through his training under Perret. The interaction between Corbusier's social idealism and Perret's Structural-Rationalism was to be the catalyst of Goldfinger's own architectural development.

In a perceptive essay Paul Turner has said that Le Corbusier, with his almost millenarian viewpoint, should be described as an Idealist rather than a Rationalist.[2] Certainly his sense of ultimate social objectives guided his every design, and his sense of form overrode the immediate considerations of construction. For Perret though, architecture *was* construction. He was the self-conscious heir of the French tradition of Structural-Rationalism, the theory that all architectural forms could, or ought to be explainable by reference to the logic of structural design and technique of construction, which had been so influentially expounded by Viollet-le-Duc and Choisy. Perret exalted the simple constructional logic of post and beam which, like Laugier, he saw as lying at the root of Classical architecture.

As a pioneer of an architecture of reinforced concrete, Perret had attracted Le Corbusier, who worked for him briefly in Paris. But with the development of Le Corbusier's own planar white architecture in the 1920s, which largely suppressed structural expression, and of his involvement with the larger social questions of town planning, their paths diverged. Perret remarked of Le Corbusier's Pavillon de L'Esprit Nouveau of 1925 *'il n'y a pas là d'architecture'*[3], and Le Corbusier wrote of Perret *'(il) n'a pas de tendresse . . . Aussi reste-t-il indifférent à l'urbanisme, indifférent au logis des masses'*[4] and rejected as anachronistic Perret's continuing interest in facade and surface qualities.

Goldfinger's response to the social idealism and spatial interests of Le Corbusier was overlayed by the powerful conviction of Perret's Structural-Rationalism. And it was ultimately to be his distinctive achievement to revalidate the tradition of Structural-Rationalism in terms of the twentieth century, by infusing it with the Idealist commitment of modern architecture.

As an early student of the town-planning course at the Sorbonne, Goldfinger had from the start shown a concern with the wider social issues, and he fully assimilated the commitment to social welfare which was the cornerstone of the Modern Movement. It was the intention that all design should be founded on a systematic analysis of the optimal conditions for the life of the individual; the desire for spatial freedom was but one element in this search.

But in his executed work, such as the office of the Central European Express in Paris of 1927, and the Suzanne Blum apartment of 1930, a Modernist approach is married to an extreme hardness and austerity of detail, and the insistent use of a single expressed material, which reveal more constructional preoccupations, and it was in this direction that Goldfinger's architecture was to develop.

Two other influences may have contributed to this development in his style—that of Adolf Loos (whom he knew well), many of whose interior designs show a marked minimalism of detail, and that of Constructivism, which Goldfinger had encountered in Melnikov's USSR pavilion at the 1925 Paris Exhibition.

The concerns of the Constructivists had, additionally, a political dimension, to which Goldfinger would not have been unsympathetic. The use of bare steel by its slenderness allowed the free movement of space and was a clear expression of structure, but it was also an almost romantic affirmation of faith in modern industry and the power this conferred on organised labour. Goldfinger shared this romantic enthusiasm, and though he was never a member of a political party he was, like many of his contemporaries, attracted by the theory of dialectical materialism. It does not seem too far-fetched to see an analogy

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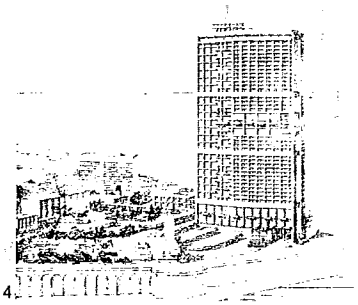
THE ARCHITECT AS CONSTRUCTOR



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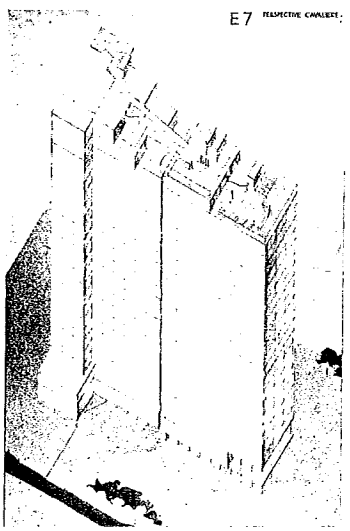

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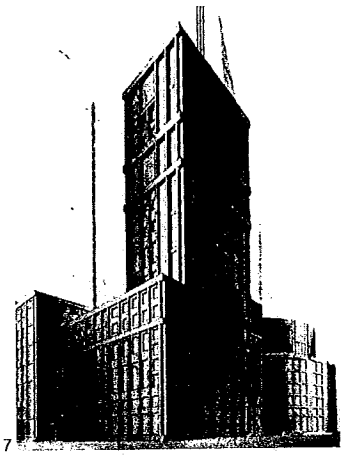
GOLDFINGER

between this systematic but emotive philosophy, and the hard Structural-Rationalism fired with a sense of the ideal which is characteristic of his mature architecture. A love of the use of bare steel I-beams and channels was to be characteristic of his design throughout his career.

In 1934 Goldfinger moved to London, and four years later built the terrace of three houses in Willow Road, Hampstead, which combine a Perret-like sense of formality and expressed constructional materials with a 'Modern' sense of the interpenetration of interior and exterior space. After the war his practice gathered momentum, and he built a number of small concrete frame



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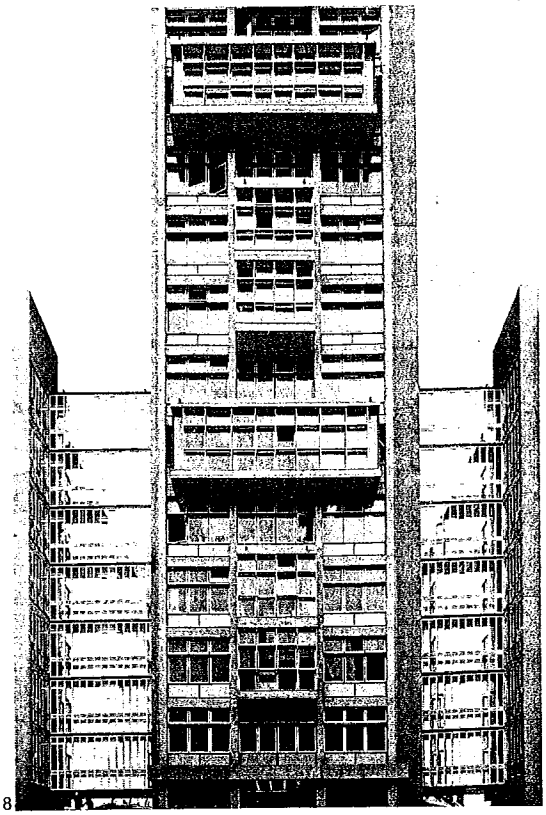

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7, Palace of Labour competition project by the Vesnin brothers, 1923.
8-14, Alexander Fleming House (Ministry of Health) and Odeon cinema at Elephant and Castle, London, by Ernö Goldfinger (in association with J. Blacker), 1959. It is no longer possible to photograph this scheme since the obscuring of its façades by expanded metal screens.
8, view northwards in central courtyard.
9, elevation detail, showing balconies, bay windows, and 'photobolic' windows.
10, courtyard detail.
11, east elevation; 12, west elevation;
13, south elevation; 14, first floor plan.

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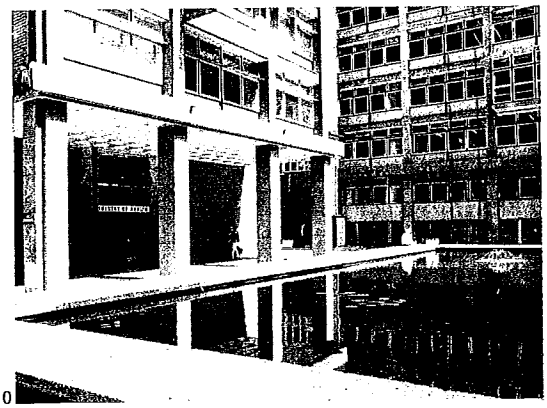

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office buildings, which culminated in 1959 in the substantial complex at the Elephant and Castle. This is composed of the four blocks of Alexander Fleming House, accommodating the Ministry of Health (now the Department of Health and Social Security), the Odeon cinema, and the 'Elephant and Castle' pub with three small office floors above.[5]

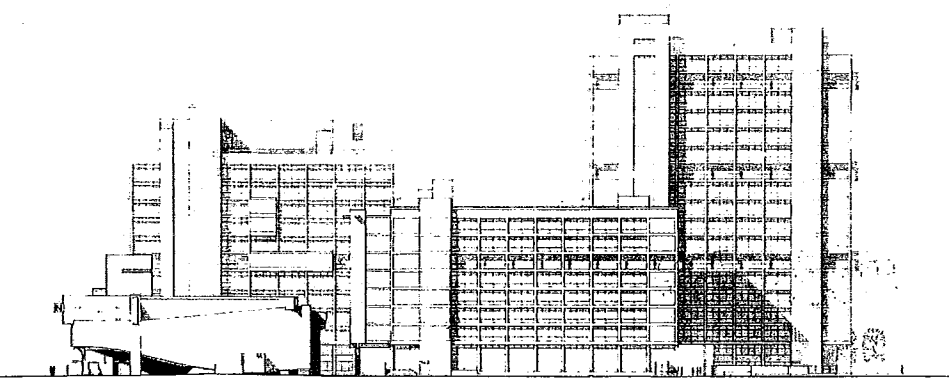
It is a composition of dramatic spatial and volumetric complexity. The four principal blocks vary in height between 18 and eight storeys, and are connected to one another by glazed bridges. There are two service towers in each block, which are expressed on the façade and also project above the skyline, as do tanks, flagpoles, plant housings, railings, and the peripheral open concrete parapet. The façades are heavily modelled with projecting bays or receding balconies wittily treated so as to suggest that a floor of different overall dimensions to the others has been stacked up with them, and forcing a marked spatial penetration of the building envelope. This spatial penetration is maintained on each floor by the 'photobolic' windows—a deep horizontal transom with recessed clerestory above, designed to ensure an even internal distribution of light.[6] The rough concrete texture of these clamorous façades is set off by the cool grey Vitrolite or mosaic cladding of the subsidiary pub block and cinema.

But running through this varied mass is the pronounced presence of the structural framework. On every façade the concrete skeleton frame is expressed. It is carried through insistently, imposing its order on the whole; a clear architectural expression of Structural-Rationalism in the spirit of Perret. The framework is brought to a conclusion at its summit by an emphatic parapet and cornice. The detailing is spare and rigorous— the product of a philosophy which feels that the simplest is always the most elegant—and leaves the structural members to tell, uncluttered. The structural grid of 16ft 6in (six times the basic planning grid of 2ft 9in), is carried throughout the site. A powerful rhythmic unity is established on elevation by the control of the proportion of every element by a single ratio.

The clarity of the structural frame is uncompromised. There are no Corbusian pilotis: the columns come straight down to the ground, and they are not hidden by Miesian glazing sub-frames; and unlike in Perret, the glazing is carried uninterrupted from column to column, leaving them to stand free. The Rationalist language of post and beam has been freed from Perret's vestigial Classicism, and enlivened by the modulation of mass and the interpenetration of space.

But the imagery of the Elephant and Castle is likewise a comment on the idealism of the Modern Movement. The massing of the whole suggests affinities with Constructivist projects of the 1920s, such as the Vesnins' Palace of Labour, or Executive Committee Building of Sverdlovsk, with their highly trabeated façades and additive compositions. If Goldfinger shared many of the objectives of the Constructivists, his realisation in detail is elegant and accomplished in a way that goes beyond their work. Nevertheless, the Elephant and Castle certainly has a 'revolutionary' fervour, with the connotations of both exaltation and threat that implies. The uniformly bush-hammered concrete, the clashing fenestration patterns on the service towers, the jagged skyline, all convey a distinctly minatory impression. One is reminded of the romantic grimness that has been an occasional feature of English architecture—Vanbrugh's 'castle-like' air. But the Elephant and Castle has no theatricality: it is in earnest.

Its message appears to be that the Utopia which was the goal of the Modern Movement will not be



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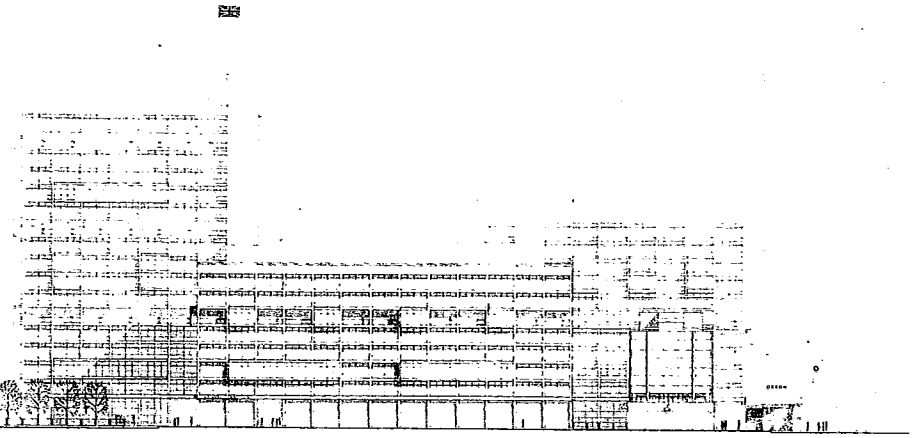
achieved without a grim struggle. Idealism has been confronted with the material imperative of Structural-Rationalism—and has been stiffened by the exchange. To the distant promise of a social revolution has been added a consciousness of the excitement, and violence, of the battle to bring it about.

A similar interaction can be traced in the two GLC housing schemes, though with an outcome of different emphasis. There are varied building types in both estates, but it is possible here simply to concentrate on the most distinctive feature of both—the central slab block.

The theory of high-rise housing is a direct product of the Idealist tradition in modern architecture. The rarefied 'sun, space, and greenery' that was to be provided was of an essentially utopian nature. Furthermore, for many architects the high-rise form offered the opportunity to provide centralised domestic services, and thus to overcome the inefficiencies of individual domestic management—an idea that in the eyes



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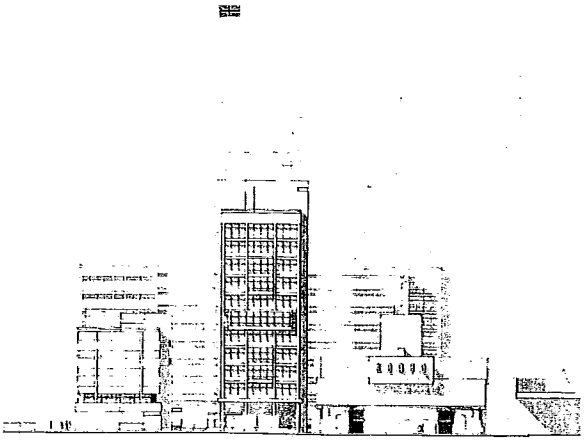

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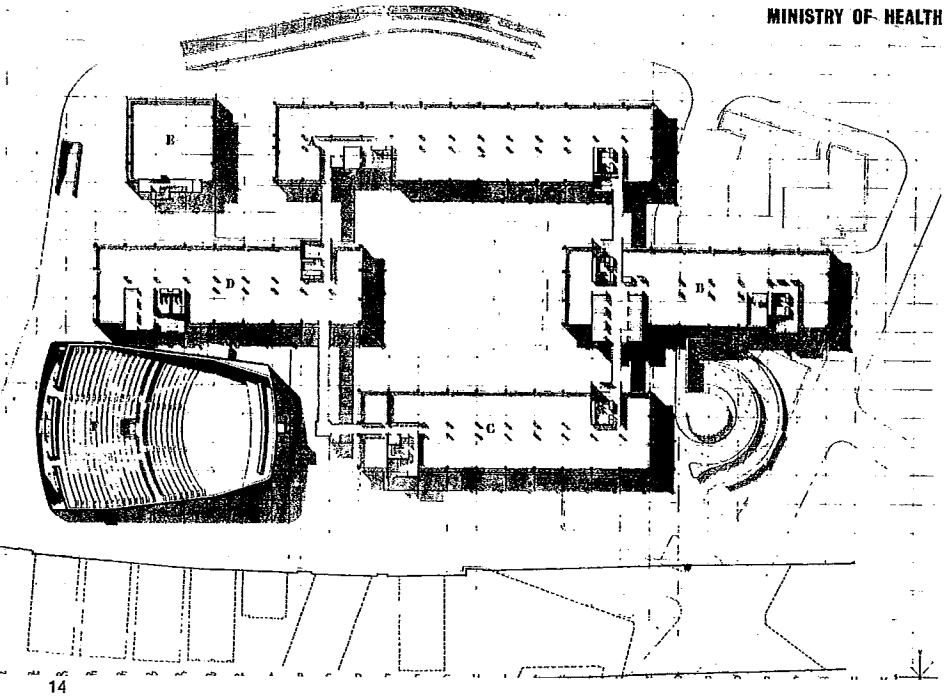

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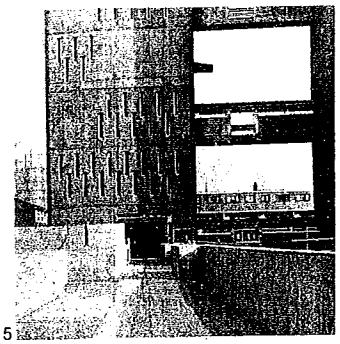
particularly of Constructivist architects had socialist connotations. In 1933 at the CIAM conference Goldfinger exhibited his own such proposal—a high-rise housing unit for 700 people, equipped with centralised communal services. It was to take the form of a free-standing slab 22 storeys high and wedge-shaped in plan, with all the vertical circulation and communal facilities at the broader end.

When in 1963 Goldfinger was offered his first large high-density housing site by the LCC at Rowlett Street in Poplar, it carried a provisional brief for four point blocks. But he combined them into a single slab 27 storeys high, with vertical circulation and communal facilities concentrated at one end, housing approximately 600. A similar block, 31 storeys high and incorporating various improvements, formed the central feature of his Cheltenham Estate at Edenham Street in North Kensington five years later.

Though similar in size to the CIAM housing, these blocks were quite new in plan and section. Instead of a central corridor on each floor, there were now, in response to the LCC brief, dual-aspect flats served by an enclosed access gallery on every

15-17, Balfron Tower, part of the GLC's Brownfield Estate at Rowlett Street, Poplar, by Ernö Goldfinger (in association with J. Blacker), 1965.
15, main entrance approach.
16, west elevation.
17, typical floor plan at access gallery level.
18, elevational detail of phase 2 of Goldfinger's Rowlett Street housing. This is contemporary with and similar to his Edenham Street housing in its elevational treatment.
19-22, Trellick Tower, Edenham Street, part of the GLC's Cheltenham Estate at Edenham Street, North Kensington, by Erno Goldfinger (in association with M. Molis), 1968.
19, façade detail.
20, façade detail, showing access gallery.
21, night view, showing estate lighting from the summit of Trellick Tower (only two out of three lights in operation).
22, analytical part perspective of façade.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third floor. Contemporary schemes based on this principle, such as Park Hill at Sheffield, had frequently involved very tortuous and unsatisfactory flat plans. Goldfinger's section was clear: it allowed three flats to be served per bay by each gallery—a four-person flat above and below, and a two-person flat on the same floor—with access directly into the centre of each flat. As if in response to a more 'Idealist' brief, the architecture here appears more Corbusian in character than at the Elephant and Castle. The row of 'pulpit' balconies at mid-height on the front elevation, which marks the position of a row of six-person maisonettes, and the heavy modelling of the façade are reminiscent of Le Corbusier's Quartier de la Marine office skyscraper project for Algiers, of 1939. The clear articulation of each element is in the Elementarist manner of Constructivism, the wide separation of the tower from the main block allowing a dramatic interpenetration of space.

But the control of detail is Rationalist. The concrete, the predominant surface material, is bush-hammered as in Perret, without the element of 'disguise' intrinsic in the more picturesque Corbusian shutterboarding. The structural slabs and crosswalls are clearly expressed on elevation. The access galleries, which project and with their heavily radiused upper and lower profiles resemble a row of railway carriages, are supported on pronounced concrete brackets, providing a very satisfying visual support. Like many structural elements in Goldfinger's architecture, they are scaled above simple structural necessity in order to provide a sense of visual stability, and thus illustrate the classical French Rationalist belief in the importance of *le vraisemblable* over *le vrai*. The rhythm established by these brackets, and by the windows, the slabs, and the crosswalls is of a profound harmony, the perfect Classical balance of horizontal and vertical elements.

The design of these blocks is in fact a highly original synthesis, and is perhaps Goldfinger's most expressive invention. The lift tower, taller than the main block and set emphatically to one side, creates an extraordinary, almost sinister asymmetrical outline, as though in unstable equilibrium—an effect enhanced by the extreme slenderness of the block. The softness of the high-rise ideal—the *cité-jardin verticale* with its rolling greensward—has been injected with a more urgent imagery. The boiler house at Edenham Street is cantilevered far out from the summit of the lift tower and, with its four chimneys and continuous band of glazing, resembles the bridge of a warship. The sheer concrete walls of the lift tower are pierced only by slits, which cascade down the façade like rain, bearing a hint of menace. Above all the sheer scale of the blocks is exciting, but unnerving—a scale which is emphasised at night by powerful flood-lights which illuminate the estate from the summit of the slab. The battle for the Ideal has still to be fought... 'For me Viollet-le-Duc is the first modern architect . . . It must always be possible to see, and feel, how a building is supported' Goldfinger has said. This Rationalist sense of structural integrity, together with the power of identifying emotionally with the users of his buildings, are the essential elements of his architecture. From them it derives its purity and its power.


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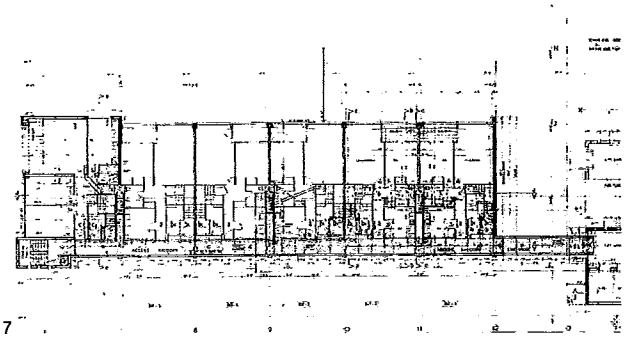
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Notes

1 R. Furneaux Jordan: 'Berthold Lubetkin', AR July 1955, reprinted in *The Rationalists*, D. Sharp, ed, Architectural Press, London 1978.
2 Paul Turner: 'The Beginnings of Le Corbusier's Education, 1902-07', *Art Bulletin*, LIII (June) 1971, reprinted in *Le Corbusier in Perspective*, Peter Serenyi, ed, Prentic-Hall 1975.
3 Le Corbusier: 'Perret', *Architecture d'aujourd'hui*, November 1932. 'There is no architecture in it.'
4 Le Corbusier, *op cit*: 'He has no tenderness . . . and he remains indifferent to town planning, indifferent to the problems of mass housing.'
5 Discussion of this complex, which constitutes one of the most persuasive built statements of the architecture of the concrete skeleton frame, has unfortunately to be in part historical since much of the principal façade has been covered with a mesh screen in an effort to mitigate the particularly unfavourable environmental conditions of the Elephant and Castle traffic.
6 It can here be remarked that this device, though effective at distributing light, does not appear to have been sufficient to control solar heat gain in the three non-air-conditioned blocks at the Elephant and Castle, where the traffic noise dicourages the opening of windows. Hence the mesh screens which have been applied to the buildings. Without carrying out a careful technical analysis, one can only feel that it is regrettable that a solution less damaging to architectural values could not be found.

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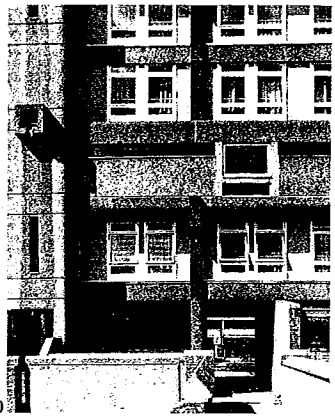

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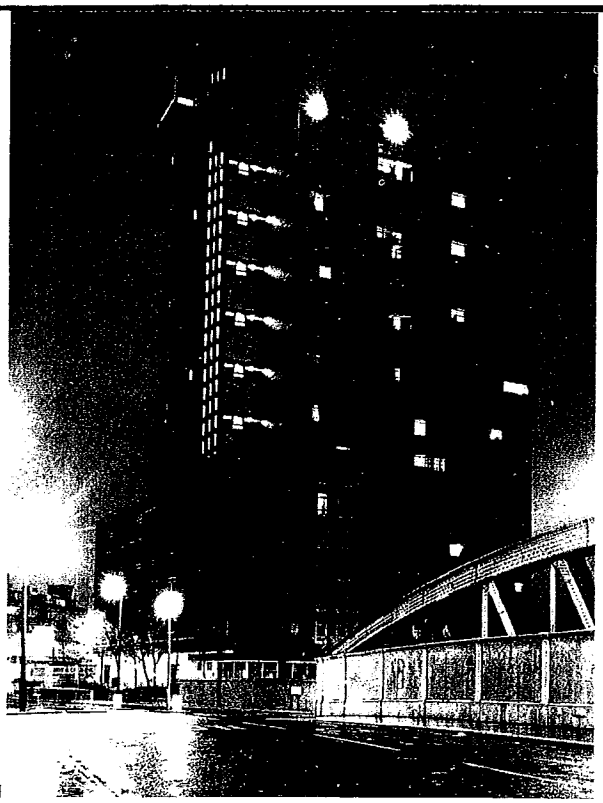

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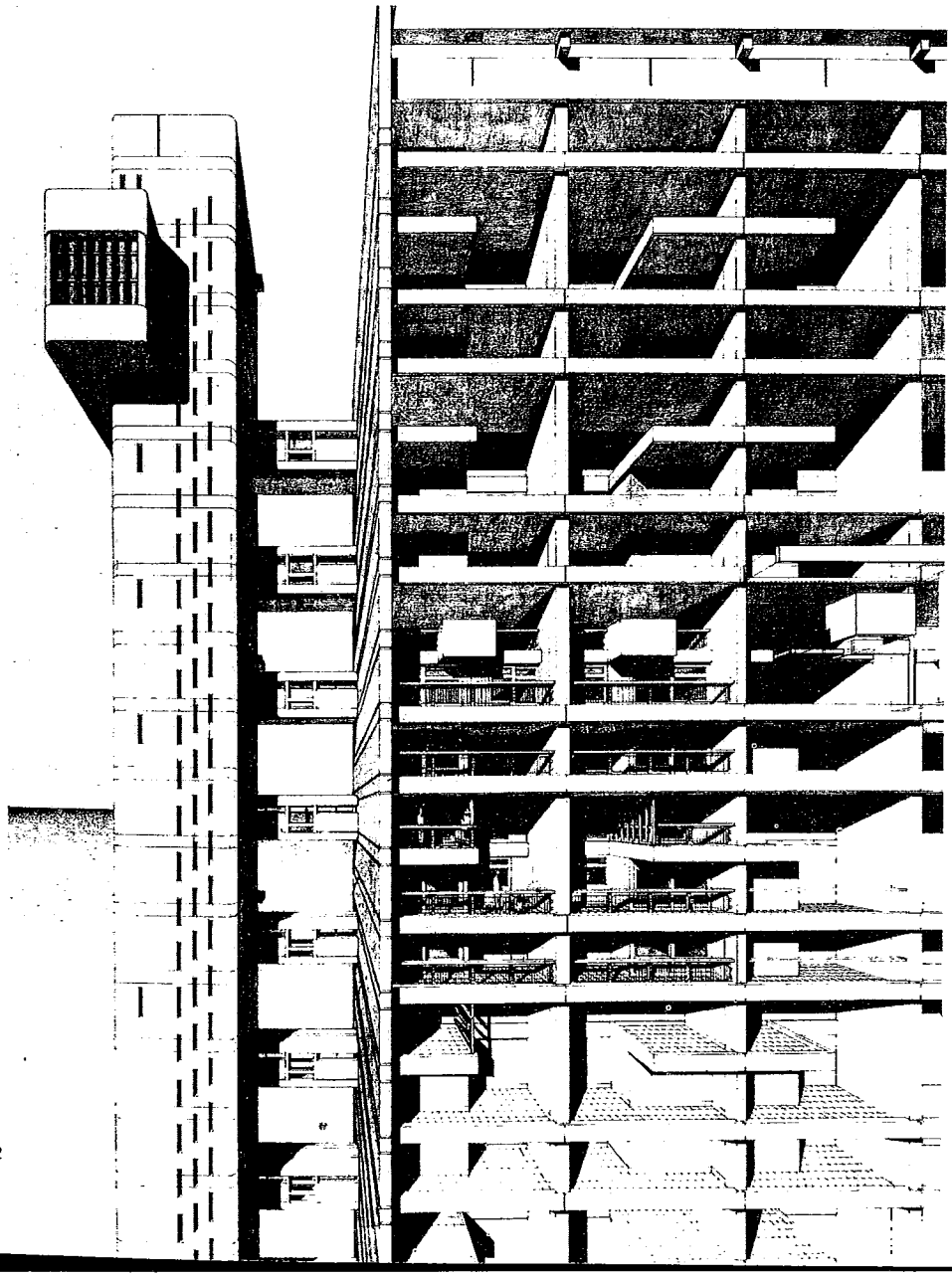

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ERNO GOLDFINGER

talks to The Architectural Review

AR

When did you first want to be an architect?

EG

In 1916 my father bought a house in the hills above Budapest and started rebuilding it. It was the first time I saw plans—marvellous plans in yellows and reds—watercolours. Then Mr Agoston, a Hungarian architect, gave my mother *Das Englische Haus* by Muthesius, in order to interest her in architecture, with little success. Before that I was interested in engineering, then I wanted to be a sculptor.
In 1920 I went to Paris, and stayed until 1934. Mr Agoston had said: 'You must send your son either to Cambridge where they teach architecture marvellously or to Paris'. I went to the Paris Beaux Arts.

AR

In 1920 were not the people at the Beaux Arts in favour of the new architecture?

EG

At the Beaux Arts nobody knew anything about it. I had a cousin who was the patron of Pierre Chareau and her cousin was Jean Dalsace for whom Chareau built the 'Glass House'.

AR

Were the Beaux Arts anti new ideas?

EG

They were anti anything new until after the Second World War. I was at the Atelier Jaussely. M Jaussely was the *chef d'atelier* and professor of archaeology at the Beaux Arts but professed town-planning there instead. There were only three pupils: Van Eesteren*, Pinot† and me. We listened to the new science of town planning.

AR

When did you get in touch with the new thinking?

EG

In 1921-22. Cousin Helene, who is the same age as my mother and still alive, she knew Jean Dalsace, Pierre Chareau, Jean Lurçat and I met them and the rest of a wonderful *salon*. I met all the *avant garde* and then in 1923 read a book called *Vers une Architecture* by Le Corbusier. I already had some inkling—I and my Beaux Arts friends knew that something was up—something in the Beaux Arts was not quite right. We went to see Le Corbusier at his flat in the Rue Jacob. We asked him to form a Beaux Arts *atelier* which he refused and sent us to Auguste Perret. It is thus that we formed the first Perret *atelier* in the Beaux Arts. Perret gave us a section of the prestigious Palais de Bois, his exhibition palace at the Porte Maillot overlooking the Bois de Boulogne.
I never knew Picasso. Braque I knew well. I used to sit at his feet. Braque asked Paul Nelson to build him a house. Nelson said he wouldn't build it, but recommended Perret, which was lucky.

*Chief architect of Amsterdam.
†Later professor of town planning at Dalad University, Indochina.

AR

What of contemporary movements in the rest of Europe? What did you think of the Melnikov pavillion at the 1925 Art Deco exhibition?

EG

I though it was great, but it did not have a special impact on me. I liked the Corb pavilion and the Perret theatre (which all the Modernists were against). The Japanese pavilion was a revelation. It was all pre-packaged. I spent hours watching them unwrap the tissue paper—every piece was numbered. I went to the exhibition with Adolf Loos. We used to sit with him at the Cafe du Dome. One evening an Austrian student came in and went up to Adolf Loos and told him: 'Master, I have a marvellous job. At last Le Corbusier has accepted me to work with him.'. And Loos said: 'You know, when you come to Paris you don't come to learn Esperanto, you come to learn French'.

AR

When did you begin to see yourself as a Rationalist?

EG

I try to solve problems in a rational way. That is to say a problem as given. I try to solve it as one solves maths problems. But then there is this other thing—the architecture of enclosing space. It is a mystery which is a personal affair —no one else's business.

AR

But when you used proportioning devices such as on your Albemarle Street building, what effect did you expect it to have on the pedestrian?

EG

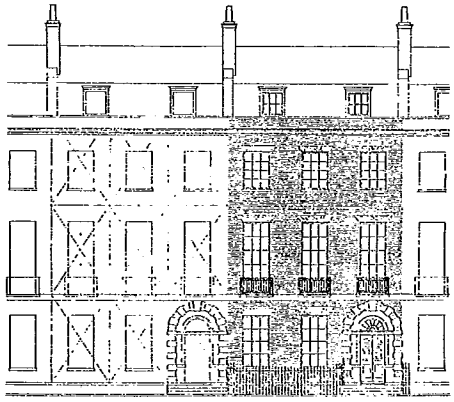
It is the end product which may or may not affect the pedestrian. Subconsciously, I presume. How I built it up, what devices I used, does not interest him, in fact it is none of his business. I'll tell you a secret: since the late 1920s I have used the properties of rectangles which all resemble each other, but have quite different properties. 1:$\sqrt{2}$; 2:3; and the Golden section 1:1·618—looking at the building you cannot tell one from the other but when you build up the façade or the plan you mustn't mix them. They all have their different, and sometimes conflicting, qualities. There is another secret: you know in all my buildings, tall and not so tall, you always see that the vertical columns keep them up. In the Elephant and Castle it is evident first of all how it is held up and even the columns are a bit fatter than they should be. I cheated—I rationalised. It was one of the first tall buildings. To emphasise the height of the Elephant and Castle building every fifth floor sticks out or in. This gives a sense of height. I do not like buildings with masks like those stockings burglars use: 'curtain walling'.

AR

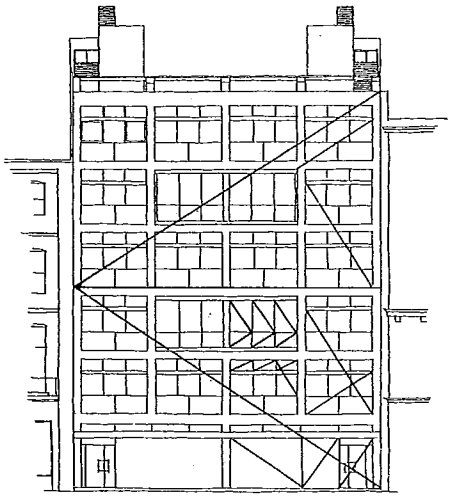
What about the tower you designed for Bloomsbury Square?

EG

Bloomsbury I like—that gridiron system. I thought it justified to create a pivot and put a very tall block on the axis of Bloomsbury Square, as a pivot with a chaos behind. I believe in axes.



Elevation of house in Bedford Square, from Rasmussen's 'London: the Unique City' (1934) showing elevation composed of ratio 2:3.



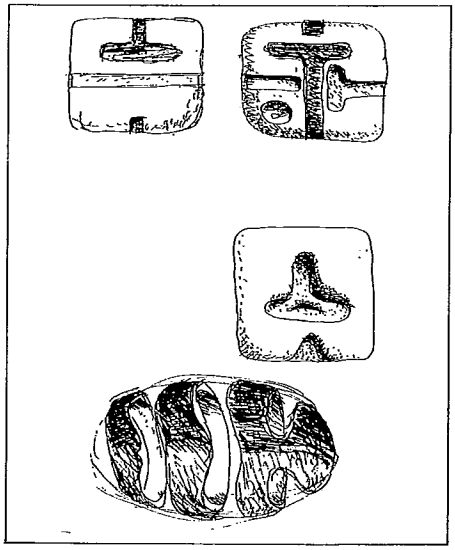
Albemarle Street building designed by Goldfinger in 1958 showing use of 1:1·618 ('Golden section') proportion in composition of elements.

AR

Do you? being brought up on Muthesius and Unwin?

EG

Unwin did not penetrate. Because I do not believe in the *Gemütlich*—rather soppy. I do not like quaintness. It means nothing. I build rational dwellings for people to make 'homes' in. Nobody ever built 'homes' for others.



'Pebble' drawings by Goldfinger, 1979.

AR

What did you feel about the site? After all, where that Bloomsbury building was to go exists a very fine mid-Georgian street.

EG

Quite right. But it was not a complete street; some four or five houses only, and streets with teeth missing are not convincing. I am really a devotée of seventeenth- and eighteenth-century English town architecture (and we mustn't forget Scottish and Irish). I did not know about it until Adolf Loos told me. Of eighteenth-century town houses, some of the best in London are in Bedford Square. At the Bloomsbury Square enquiry Nikolaus Pevsner, testified for me. He said when you replace an old building with a better one, it is permissible. He also said that our plans were *better*. Lionel Brett and James Richards also testified for me.

AR

In the eighteenth century the same proportioning systems that you used were viewed as the basis of a rational architecture in which all parts, details, plans, elevation, could be designed as a related, logical and harmonic whole. Is it as a Rationalist that you admire Bedford Square?

EG

Their use of proportioning systems was merely a system of setting up. I am too old-fashioned: I use systems like Palladio or Vignola—they are like drumbeats. Corbusier had got beyond all this but when I went to see where Le Corbusier got it from it was from Choisy's *History of Architecture* (1899). He never mentions Choisy and Choisy is much more Rational.

AR

If you were given a Rowlett Street or even an Edenham Street site to design housing for today, would you tackle it in the same way?

EG

Of course. I always approach a brief in the same way. I try to satisfy the *requirements* in the case of housing: biological, social, financial etc . . . with the *means* at our disposal: structural, mechanical etc. . . .
If the briefs were identical I would probably find similar solutions, plus the experience of a further 15 years.
I would like to add a few words regarding the controversy of 'high-rise' buildings. The main trouble with 'high-rise' buildings in this country is the incompetence of managements:
1 Rehousing is done in a haphazard way. For instance, so called 'problem families' are dumped into unfamiliar surroundings, saddled with rents they cannot afford and are given practically no help to adjust.
2 Maintenance is lamentable.
3 Supervision is inadequate, incompetent and spiteful.
4 Vandalism is practically encouraged by persons who are antagonistic to this sort of development.
5 Tenants who are satisfied just let it be . . . only those who are dissatisfied complain.
6 The only complaint I came across—when living on the top floor of one of the buildings I designed and when I had my office at the foot of another for three years—was *high rent.*