Australia

Low cost flats for the Housing Commission of New South Wales at Rosebery.

(completed 1967)

Harry Seidler & associates, architects

P. O. Miller, Milston & Ferris
Structural Engineers
Norman & Addicoat Mechanical Engineers

This high density, low cost housing project was built for the Housing Commission of New South Wales on a flat site (which used to be part of an old racecourse) of 200 ft. × 600 ft. (2.75 acres). The project contains 226 apartments with an average population of about 830, which represents a density of 300 people per acre.

The programme required various sizes and proportioning of units. Bed-sitting room flats are provided on the ground level for old-age pensioners:

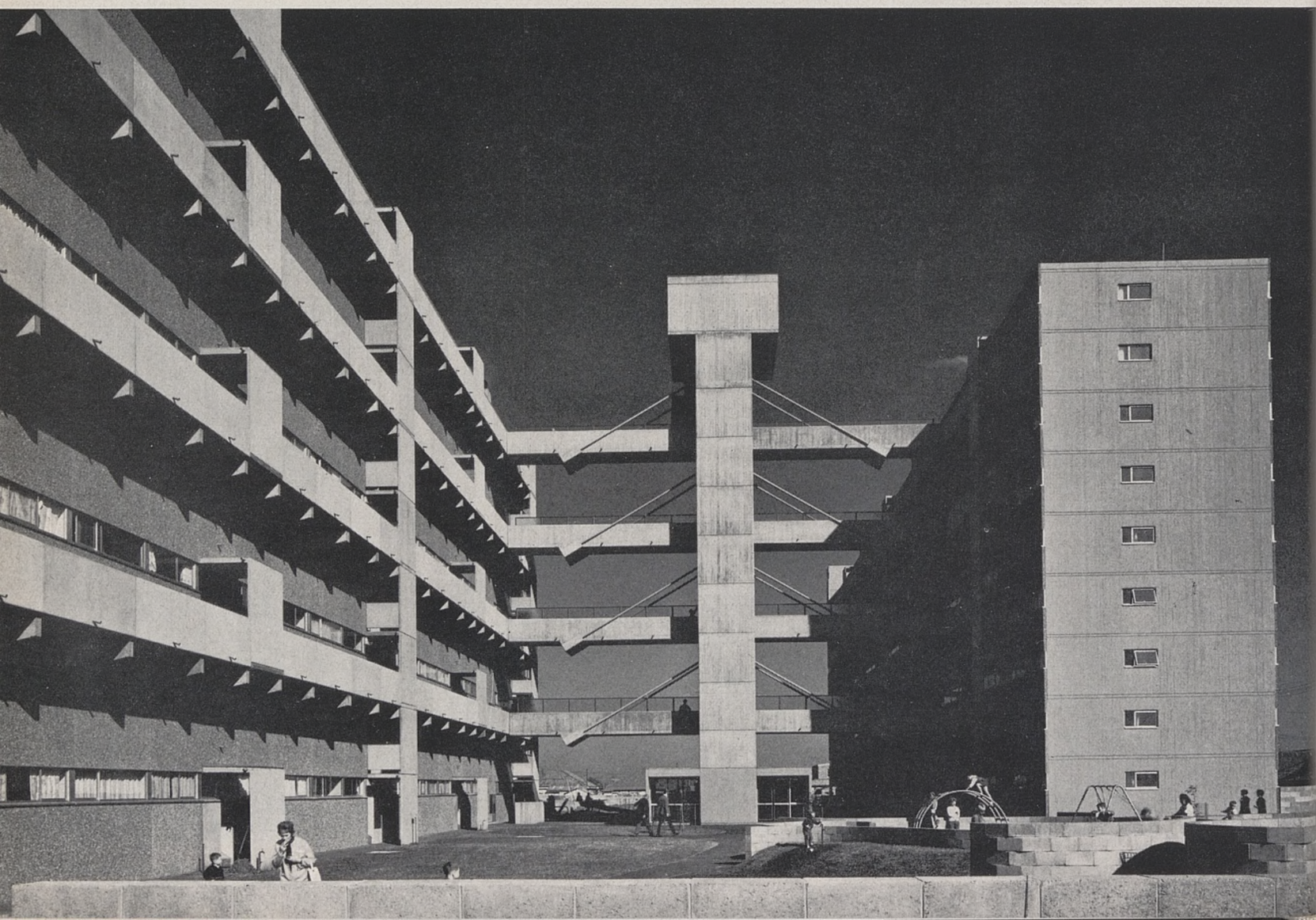
	No. off	% of Total	Area in Sq. ft.
Bed-sitting room flats (single and double)	20	9	291 and 368
Two bedroom flats	154	68	650
Three bedroom flats	52	23	811
Total	226	100	

To build to such a density often results in congestion, but to avoid this from both the point of view of outlook from the flats and general feeling at ground level, two parallel but staggered blocks were planned facing the long site boundaries. This resulted in a sense of openness which is maintained by a transparent bridge connection between the two blocks.

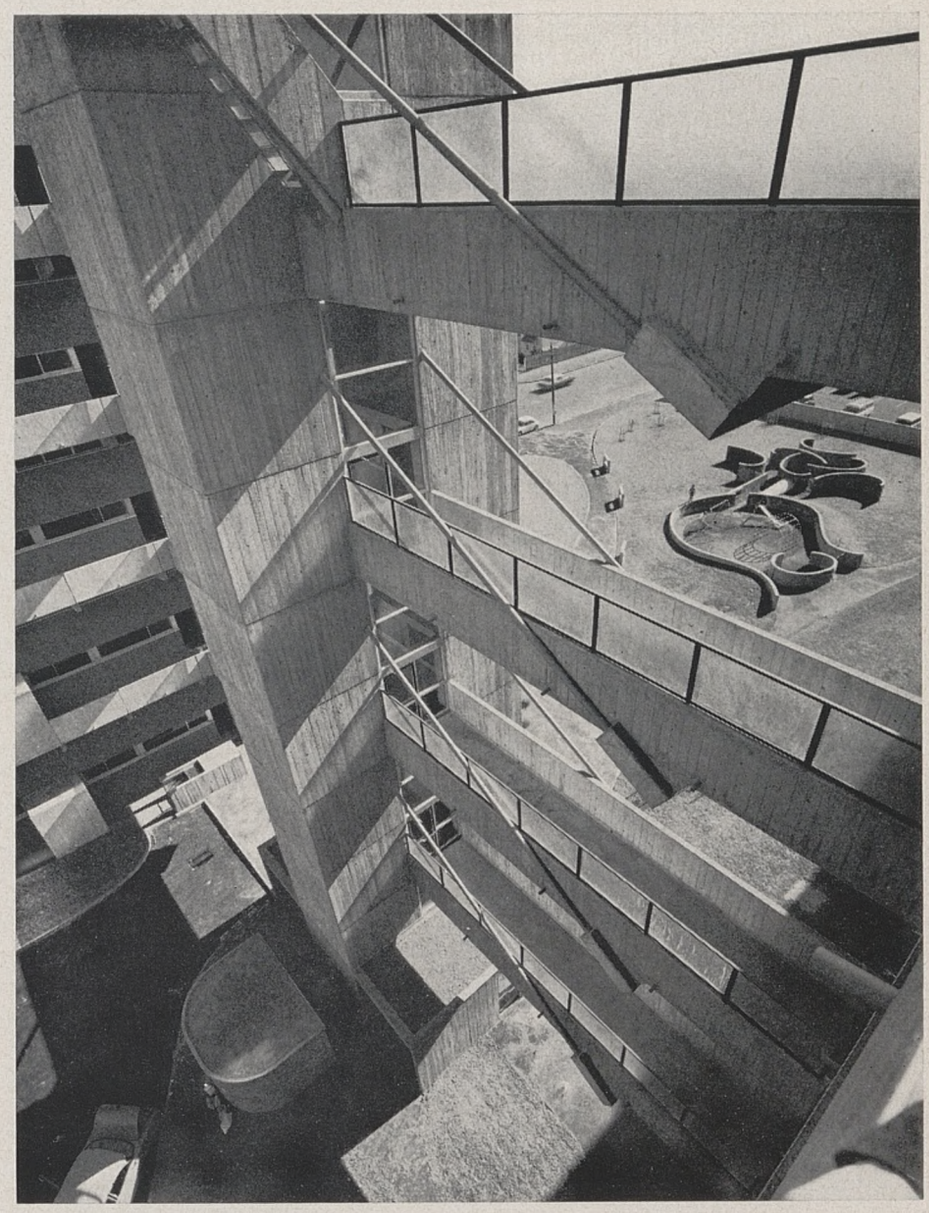
The buildings contain nine storeys with a total height of 80 ft. in order not to come under regulations for higher buildings requiring costly fire detection and fire-fighting equipment. Also, being in an area of landing approach to the airport, the buildings had to stay within a certain height envelope.

The flat plans evolved combine the advantages of cross ventilation to all units with the economy of repetitive small span cross-wall construction. To use the least amount of public circulation space, flats are approached by a system of external access galleries arranged at split levels whereby

General view with play space in foreground and main entrance and lift tower beyond.



View through bridges on to play area.



two floors are reached from one gallery by walking steps up or down. This not only reduced public space but assures privacy to all windows on the approach side (usually the disandvatage of gallery approach).

The sill height of windows are 4 ft. from the floor within the flats, but above head height of persons walking on the galleries. Rain protection is afforded by roofs over the flat entry stair openings. Doors to individual flats do not face on the galleries but are placed well within the buildings.

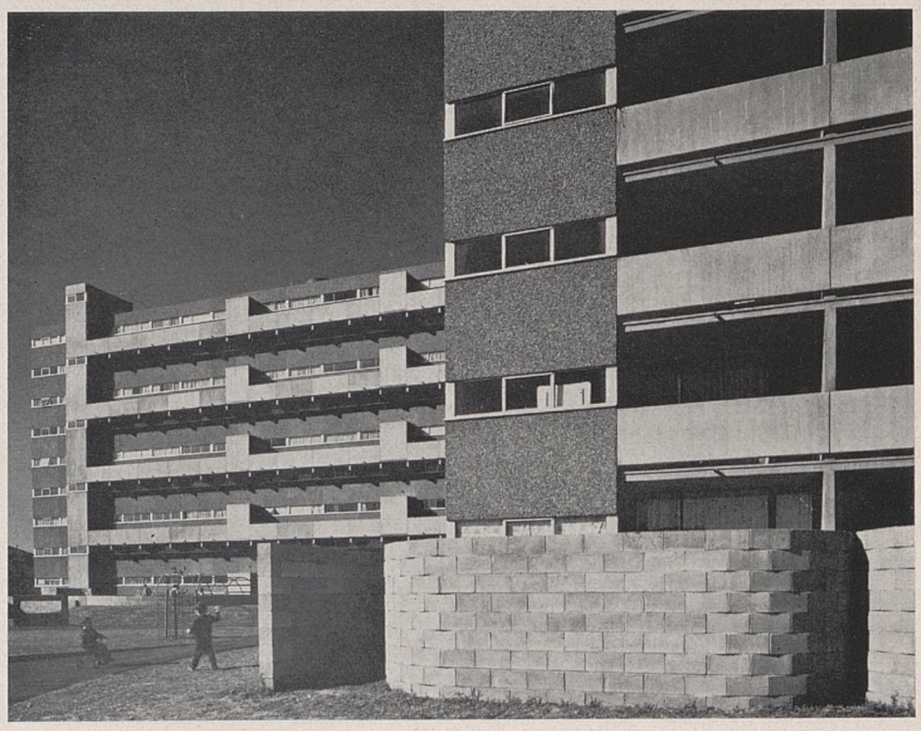
The plans of the flats are simple and direct, dividing the living/kitchen and the bedrooms by a cross wall. Both parts of the flat have windows front and back to facilitate cross ventilation which is important due to the east and west orientations. The living rooms are separated from the kitchen by a screen and have one end fully glazed with a door leading on to a recessed terrace which forms an extension of the interior space and acts as sun-protection to the glass area.

The terrace rails are solid, for privacy and also to hide balcony clutter from the street. Ground floor flats have screened patios to give them privacy; the larger ones of these are particularly suitable for families with children.

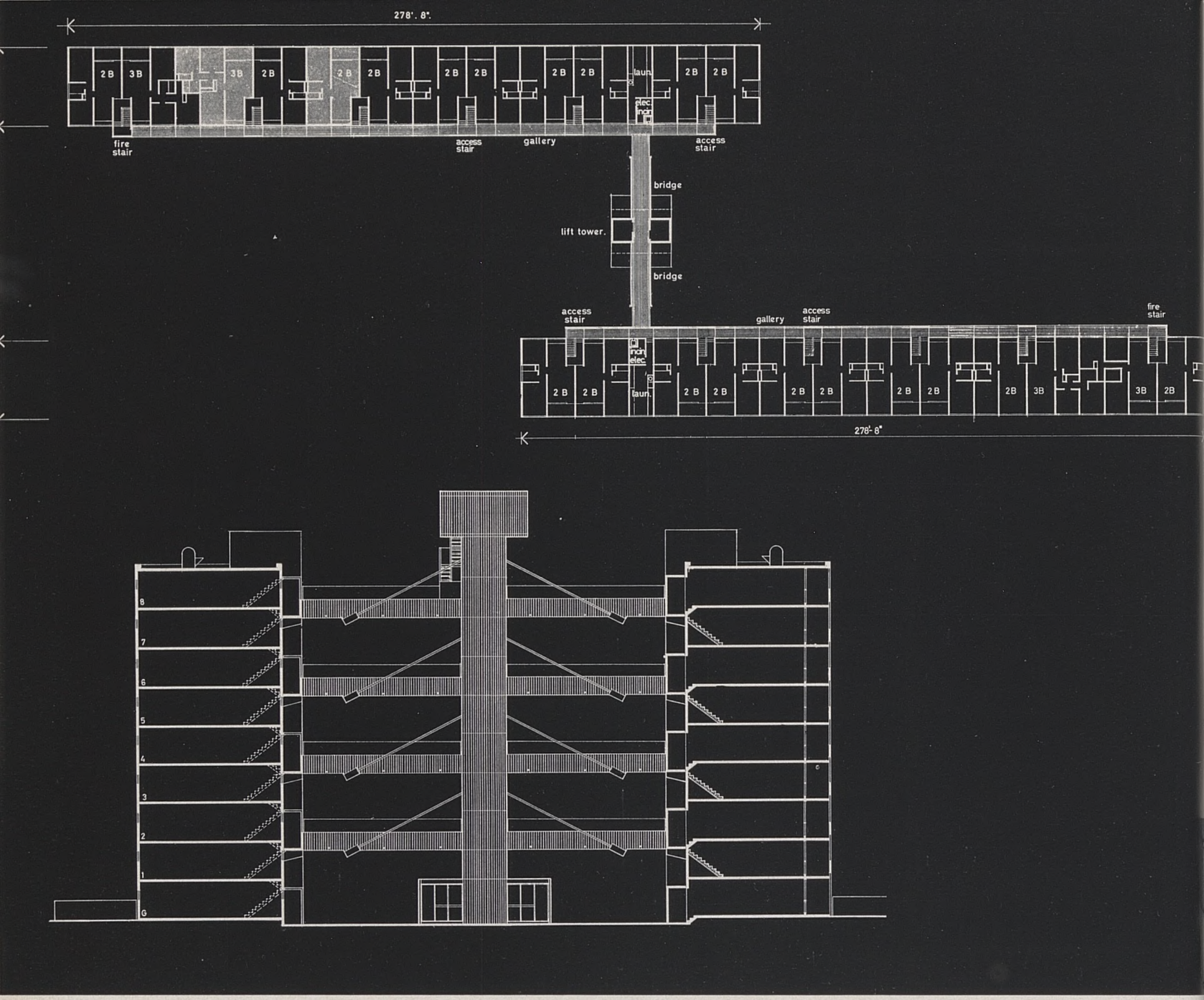
The main criterion of the system of planning adopted is the reduction of longitudinal plan dimension to reduce the access gallery length. This resulted in bathrooms planned back to back internally and mechanically ventilated.

A method of construction was devised as a direct outcome of the system of planning The long blocks of the two joined buildings consist of repetitive bays of bedroom 9 ft. 8 in. wide and living rooms/kitchen and entry 11 ft. 2 in. wide. Cross walls from one long façade to the other cut across the building at those intervals and since they are needed as division walls between flats and between bedrooms and living rooms within each flat. They are also used as the structural support being more soundproof than partition walls.

A conventionally framed building with masonry infill walls is a more costly structure which is difficult to form up and unnecessarily heavy to be strong enough to carry inert division walls. In this scheme division walls and structure are one. The cross walls were built by the tilt-slab method, whereby they are poured horizontally on top of floors (on a parting compound to prevent adhesion) just like



Ground floor flats have screened patios, upper floor units, recessed balconies.



Photos M. Dupain

Typical floor plans and section

another layer of floor. After two days they are strong enough to be tilted up into a vertical position by means of hydraulic jacks. These walls then become the support for the next of the floors which are simple, economically one-way reinforced flat slabs. They have continuous support every 9 ft. 8 in. or 11 ft. 2 in. which make conventional vertical formwork unnecessary. Telescopic beams are used to span between the cross alls for support of plywood forms. The external longitudinal walls are of precast concrete with exposed aggregate finish. These fill the spans between the cross walls and create between them continuous horizontal openings for the insertion of ribbon windows.

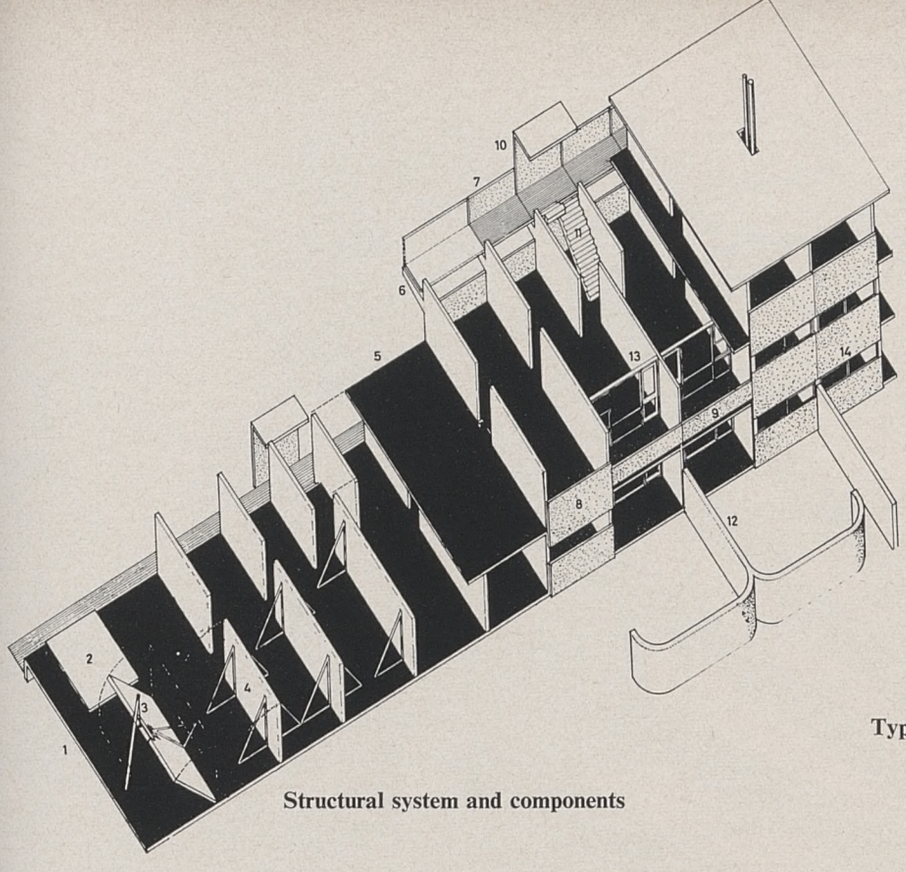
The construction of the exterior galleries at the split levels is by means of precast ‚L' shaped units incorporating floor and solid rail supported on concrete haunches projecting from the cross walls. Exterior galleries and balcony rails have off-form "broomed finish,,.

Vertical approach is by means of a centrally placed double lift tower with access bridges suspended from it by high tensile steel hangers (fireproofed and encased in plastic piping). These are structurally independent of the two buildings containing flats, so that the repetitive prefabricated nature of the flat construction is left unimpaired by special structural conditions. The tower and bridges are off-form concrete poured against rough timber boarding. All windows are aluminium.

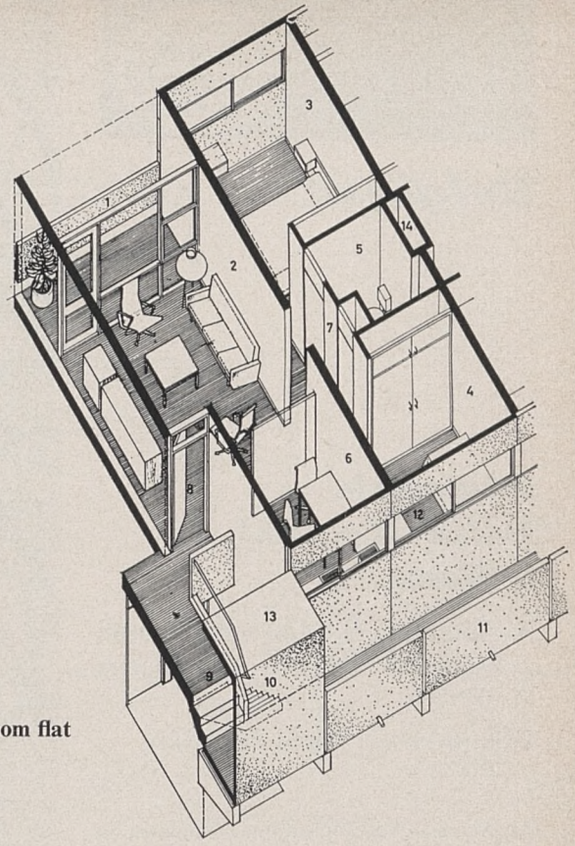
The site is developed in two parts, each serving one block with a screened parking area and children's playground. Due to the length of buildings, it is envisaged that those living on the lower floors of the extreme ends of the buildings would likely use the firestairs or access stairs provided, rather than the central lifts.

Stairs in the two long blocks and the main entrance in the central lift tower are therefore joined to the street and parking areas by a system of footpaths.

The play area screens and maze walls with these paths form a flamboyant contrast to the necessarily rational repetitive buildings.



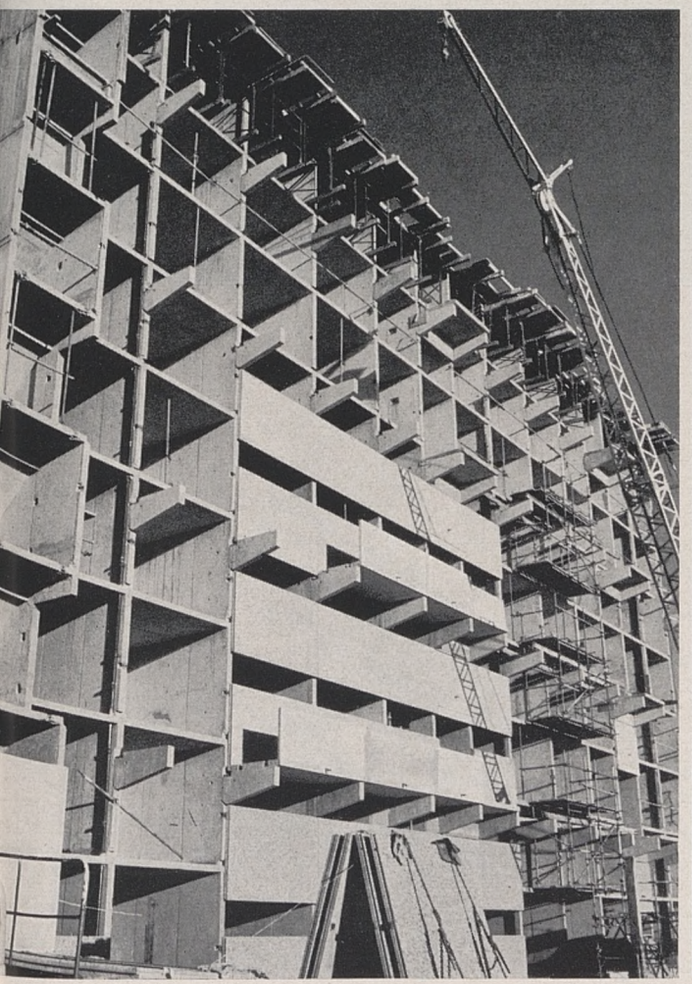
Structural system and components



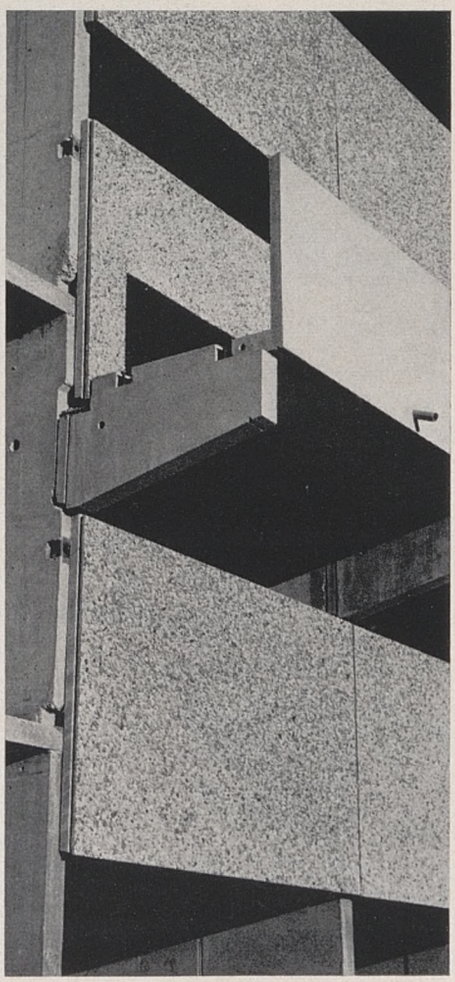
Typical two bedroom flat

1. Balcony 2. Living Room 3. Main Bedroom 4. Second Bedroom 5. Bathroom 6. Kitchen 7. Hall 8. Entry Doors 9. Steps Up 10. Steps Down 11. Gallery every 2nd Floor 12. Ribbon Windows above gallery eye level 13. Roof over Entry Stair 14. Plumbing and Exhaust Duct

Construction, showing precast external walls being hoisted.



Construction, detail of haunches, precast walls and gallery units.



1. Ground Floor Slab 2. R.C. Cross Wall poured on Floor Slab 3. Cross Wall being lifted by 'Tilt Slab' Method 4. Cross Wall erected and shored 5. R.C. Floor Slab poured over Cross Walls 6. Gallery Haunch cantilevered from Cross Wall 7. Precast Gallery Floor and Balustrade 8. Precast Spandrel Panel with Aggregate Finish 9. Precast Concrete Balcony Rail 10. Stair Entry with Hood 11. In Situ Access Stairs to Flats UP and Down from Gallery 12. Privacy Screen Walls to Ground Floor Flats 13. Living Room Timber Framed Glass Wall 14. Bedroom and Kitchen Aluminium Ribbon Windows

They are treated as decorative elements designed to be looked down on from above when walking along the bridges and access galleries.

The playgrounds are for different age group children and consist of an enclosed play area with swings, etc. against which the surrounding ground is banked up. Adjacent are a maze and a concrete pipe tunnel through which children can escape from the maze.

The so often irreconcilables are brought together; the rational rectilinear industrialized architecture of the housing blocks and the opposing playful amoeboid shapes of groundworks and block screen walls.