building, but the hot midday sun can be excluded by the brises-soleils and therefore only the shorter elevations face the low and intense evening sun. Le Corbusier’s first scheme for the Marseilles project shows three rectangular apartment blocks, the two smaller blocks oriented correctly with their long elevations facing more or less north-south, but the main block is oriented with the principal facades facing east-west, where the brises-soleils will be almost useless. The solar conditions for each facade are very different, but the balconies seem to be the same depth for the north and south elevations. These brises-soleils are more to do with decorating the elevation than solar control.

This flaw was not corrected in the final scheme, which, by the evidence of the shading diagram (developed by Olgunuy and Olgunuy) shows that the worst facing elevation (the longest side), allows two hours of solar penetration from 2pm to 5pm in the summer months and only about 20 minutes of direct sun per day in the winter months. By contrast, the shading mask shows that the south (short) elevation works admirably, allowing up to eight hours of sunlight penetration in the winter months, and complete shading from April to September. In other words, if the building was rotated through 90 degrees the brises-soleils would work much more effectively.

Chandigarh

Of course, the commissions that Le Corbusier and his team undertook in India have to be considered in the context of that country. In a letter to Jane Drew, Maxwell Fry and Pierre Jeanneret (December 1951) Le Corbusier described their task as: ‘To give India the Architecture of Modern Times, Modern Techniques, Modern Mind, and adaptation to the surrounding conditions that are extreme over here. The climate is wonderful, heroic and at times overwhelming.’ (Oeuvres Completes, Vol VI pp11).

A common factor in Corbusier’s buildings in India is the way in which the buildings seem to catch and funnel air through them. This is very welcome, and although the weather is at its hottest in Chandigarh in May and June, the climate in August is still over 90 degrees with over 95 per cent humidity. The slightest breeze is probably the most welcome contribution to comfort as it helps evaporation and therefore cooling. It is a perk of only the most senior officials to have an air cooling unit in their office, and not many people can afford them at home. Most public buildings have ceiling fans, but these are not nearly as effective as a breeze. The ability of a building to benefit from a breeze is something that was not apparent to me without the benefit of first-hand experience. Perhaps the orientation of the Marseilles Unité has more to do with catching sea breezes and turning in the hot wind off the Mistral than solar geometry, though there is no evidence to confirm this.

But to a large extent, the same criticism of reality not living up to expressed intentions of dealing with the problems of climate still apply. Le Corbusier’s sketches show how the layout of the city is oriented to take account of the direction of the sun, but this is at

there are just too many of them. Perhaps it is just another example of ideal being overwhelmed by circumstances.

The ordinary buildings of Chandigarh seem to have worked and survived. Somehow Drew and Fry and the rest of the team seem to have managed to provide a fairly successful mix of buildings to suit the needs of Indian life, and the buildings they have designed have proved flexible enough to accommodate the demands put upon them. They are poorly maintained, but to the western observer, the way in which accommodation is arranged gives a sense of dignity and privacy.

The main buildings designed by Le Corbusier are certainly a case of ideal being overwhelmed by circumstance. I started with the idea of trying to test whether or not the brises-soleils were, as Charles Correa described them ‘dust catching, pigeon infested contrivances, which gather heat all day, and then radiate it back into the building at night causing indescribable anguish to the occupants…’ But by the time we got to Chandigarh all that seemed pointless. One of the main problems of the plan, from the point

of view of the architecture achieving its objectives, is the need for a huge security presence, which not only makes the building was surrounded by barbed wire. Another major problem was overcrowding. The Secretariat building, built as the administrative HQ of the Punjab with 1000 staff, now contains two complete sets of bureaucrats. Punjab was divided into two states, Haryana and Punjab, the former being predominantly Hindu, and the latter Sikh (the cause of political tension, with both states laying claim to the city) and the building now contains about 10000 staff. The building is unbelievably chaotic, with balconies being enclosed for more space and in a completely anarchic way that could only happen in India. The same is the case for the High Court building, with the space beneath the parapet roof being glazed (in 1 feel sorry for the occupants who still suffer horribly) and the General Assembly building, being used by two separate parliament, has its marvellously spacious foyer filled with camping soldiers – string beds and washing lines of brown underwear. The Capitol complex suffers from the familiar problem of buildings not being oriented for their best advantage from the solar control point of view, but this seems irrelevant in the context of India. With terrible overcrowding inside the buildings, and the tens of thousands of bureaucrats, the fact that we did not see one single gardener was all the more poignant. There is a lot of open space in Chandigarh, particularly around the Capitol complex, and it is just an overgrown wasteland.

Ahmedabad

The Mill Owners’ Association building in Ahmedabad perhaps sums up what we discovered about Le Corbusier’s work in India. The brises-soleils once again appear as a major compositional element, and once again they seem to be badly oriented. Those on the north east side are angled to ensure that the four ocio sets of the afternoon sun will undeniably penetrate deep into the plan – a completely unnecessary flaw. On the other hand the building is a tremendous spatial composition (extremely generous in circulation space) which allows the breeze from the Sabarmati River to pass right through the shaded outdoor spaces, providing a wonderful retreat from the hostile and chaotic city. In terms of use, it has the opposite problem of the Chandigarh buildings, in that it is almost completely abandoned.

Conclusion

In criticising the design of a city made only three years after Independence, we should bear in mind the optimism for the future that was felt by the people who commissioned the design, to reflect and demonstrate their optimism for Modernism and the new nation. The design of the city, as well as this optimism have been overwhelmed by the weight of history – Chandigarh was an heroic attempt to achieve something that never quite came off. Yet India is still a country of contradictions and great hope. Maybe Chandigarh’s day has yet to come.