

The Planners and the Planning of Chandigarh

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Abstract: *Chandigarh is the first planned city in India, faced innumerable challenges before taking actual shape as a real city. The planning of Chandigarh was not the task of one man but it was a contribution of a team of architects and planners. Though the credit for the planning of Chandigarh has gone to Le Corbusier, but the contribution of the team of architects and planners cannot be ignored. The first plan of Chandigarh was made by an American planner, Albert Mayer, the second plan by Mathew Nowicki and the third one by Le Corbusier which was finally implemented. The present paper discusses the process for the selection of the planners for Chandigarh, their plans and the final implementation in the reality of the city.*

Keywords: Chandigarh, Le Corbusier, Albert Mayer, Capital, Planners

1. Introduction

Chandigarh came into existence as a capital of Punjab State after the partition of India, as Lahore, the capital of Punjab was left in Pakistan. The partition of Punjab shook the administrative, economic and political machinery of the province. The major problem before the country was the absence of a capital in the 'East' Punjab. A new capital was essentially required for the working of administrative mechanism of Punjab as its administrative offices were scattered in Jalandhar, Shimla, Ambala, Kalka, Kasauli, Dagshai and various other places. [1] Punjab Government finalised its decision to build a new capital in March 1948. [2]

Objectives

The main objective of this research paper is to study the process of selecting the planners for Chandigarh, their plans, differences in the plans of Albert Planner and Le Corbusier and implementation of their plans.

Sources:

Various primary documents have been used for this paper such as Punjab and Central Government letters, letters and correspondence of Albert Mayer, Le Corbusier, documents of numerous officials like P.L. Verma. P.N. Thapar and government departments. Besides this secondary sources and unpublished works of Evenson, Ravi Kalia and Surinder Singh Bhatti have also been analysed for supporting some statements.

Selecting the Planners

Though it is known to everyone that the city beautiful is the creation of Le Corbusier but before Le Corbusier, there was a long process for the selection of planner for the planning of new capital of the Punjab. Besides the planners, the contribution of other individuals is very significant like Pandit Jawahar Lal Nehru, the Prime Minister of India; P. N. Thapar as the Chief Administrator of Capital Project, P. L. Varma as the Chief Engineer and M.S. Randhawa. While deciding a planner for the capital, the government of east Punjab had considered the name of James Adams who was the President of the Town Planning Institute. He was contacted through the High Commissioner for India in London. James Adams remarked that he was prohibited by professional custom for giving a single name for the project.

[3] He could give only a list of names from which a selection could be made. He was a regional planner and not an architect therefore he could not advice on the planning of the proposed capital. He could not undertake the detailed work connected with the building of the capital. [4] He advised that certain policy and programme decisions as to the character of the new city, its relations to the surrounding region and the general allocation of land use together with certain other matters should be determined before engaging a planner. In this matter Adams agreed to provide guidance to the government of east Punjab. In August 1949, the Secretaries Committee opined that James Adams should be engaged to advise on certain matters of policy and programme decisions related to the character of the new capital like method of combining the proposed three characteristics of administration, university and commercial activities, its relation to the surrounding region and the general allocation of land etc. [5] However, Adams could eventually not be associated with the project as decisions were delayed. [6]

The officials had contacted other agencies also for the planners. The Federal Works Agency in Washington sent recommendation of various architects and town planner through the Indian Embassy in USA. Their list included the names of Carrol A. Farewell, Lawrence V. Sheridan, John M. Picton, Leslie Williams, Messrs Mayer and Whittlessey, Robert E. Alendander and Antonin Raymond. The Royal Institute of British Architects in London suggested the names of Peter F. Shepherd, F.R.S. Yorke and Peter Shepherd, J.H. Napper, Edwin Maxwell Fry, Colin St. Clair Rycroft Oakes and Philip Edwin Dean Hirst. [7]

The Cabinet Committee initially proposed that no foreign town planner engaged, but with time it seemed imperative and the sub-committee on the capital had decided to obtain suitable planners from U.K. and to send P.L. Varma (Chief Engineer) there for this purpose. [8] The Prime Minister did not agree on this issue as he felt that such selected town planner would not have the requisite knowledge of the sociological and other aspects of the life in this country necessary for the type of planning. [9] To consult a planner from outside would also lead to delay for the project. The Prime Minister recommended the names of Messrs Koiengsberger and Albert Mayer who were in India at that time. [10] P.N. Thapar and Varma had been entrusted with the task of exploring the possibilities of engaging one of

them for planning the Capital. On the advice of Gopi Chand Bhargava, Thapar met Otto Koiengsberger and Albert Mayer. He met Koiengsberger on 13th December 1949 who was interested in the planning of the Punjab Capital. [11] He had to consult with Minister for Health to take up this new work as he was a whole time employee of the Government of India. He had no planning staff of his own and thus he would require a planning unit from the Punjab Government. For the planning of new capital he would take only his day to day expenses. It was not difficult to complete this work within two or three months as a good deal of work had already been done by Varma. He would visit the site and would plan for the new capital in Delhi with the help of planning unit of Punjab. Thapar consulted with Koiengsberger for Albert Mayer. He commended the work of Albert Mayer on the Greater Bombay Scheme. The Indian Embassy in London consulted with Sir Patrick Abercrombie who was associated with the Greater London Plan.

Thapar gave his view that Koiengsberger was an architect and not a town planner in the modern sense. [12] Mayer would be an appropriate choice for the specialised work of planning the capital. He was well familiar with the conditions of India. He had contacts with well-known experts in America in the field of recreation, landscape and traffic. Thapar ascertained the view of the Prime Minister through Shri Dharamvira about the selection of Albert Mayer. The Prime Minister had no objection on the selection of Albert Mayer as the town planner of the new capital. It had been decided in the emergency meeting of the Capital Sub Committee held on 26th December 1949 to engage Albert Mayer for the Capital Project. [13]

Selection of the First Planner, Albert Mayer

Nehru welcomed the selection of Mayer as the planner for Chandigarh and hoped that Mayer would bring in new ideas that would revitalize Indian society. [14] Albert Mayer had given two alternatives. The first one was that Mayer would spend two weeks on the site and collect all the necessary data. [15] After collection he would go to America where he would prepare four or five alternative sketches with the assistance of his own staff and with the advice of American experts. He would present these sketches to the provincial government for approval. The Punjab Government would make a selection from these sketches. Mayer would then prepare the detailed plan on the basis of this selection in America. He would return again with this Master Plan and start the project on the ground. His assistant would complete the task in collaboration with any architectural experts provided by the provincial Government of Punjab. In this option the preparation of Master Plan as well as detailed plan for the capital entrusted to him. The second alternative was to prepare a detailed plan through a planning unit of the provincial government under the direct supervision and direction of Mayer.

He would be paid \$50,000 in the first case that was equal to Rs. 2,10,000 and in the second case \$30,000 (Rs. 1,26,000). [16] In both arrangements the amount included \$10,000 for consultation with experts of America and for collaboration with the Indian architects for the laying out of the sites for the main building and the architectural treatment of main

streets. He promised to complete the plan within a period of four to five months if the government gave quick decisions whenever required in case of first alternative. In case of second alternative, it would take six weeks more to complete the work. The charges were based on the assumption that the Master Plan would cover an area of fifty square miles but the detailed planning was confined to an area of 8000 acres. Mayer was ready to accept forty percent of his total fees in rupee and sixty percent in dollars. Thapar had contacted the Ministry of Finance about the availability of dollars for this purpose. Tarlok Singh informed the Financial Commissioner that there would be no difficulty in the Government of India permitting Mayer to draw sixty percent of his fee in dollars. [17] It was decided that Mayer would plan the capital with the help of a provincial planning unit as it would provide an opportunity to train the local engineers in town planning. It would also be cheaper than the first alternative.

On December 28, 1949 Albert Mayer sent his proposals for the plan and a list of information that he required. He demanded a map of Punjab showing the present and proposed highways and railways, new towns planned with approximate population; indications of roads which would bring most passengers and lorry traffic to the new city; an aerial map of area for 5 mile radius if available that far 6" to 1 mile if available at that scale; a map of area of approximately 15 mile radius marking with important or growing industries in the area a map showing trees and tree groves that were worth preserving and the topographic survey of the area. [18] He sought information on location and climate, latitude, wind direction, intensity at various times of the year, daily temperature ranges, sunshine charts at four different seasons, ground water level, its effects on sewerage lines or buildings if any. For the economic, industrial and social position of the area he required list of industries, amount and character of commerce, particular special elements such as insurance company headquarters; information about any large markets like vegetable market; their types, number and distribution in the area. The social information that he wanted included the total number of families, with a break down into income groups, plot size and types of houses for each. He had also asked whether there were any special requirements for grouping like special areas for ministers, secretaries and clerks. [19] The kind of public buildings required in the new capital; the main could be legislative and secretariat buildings, departmental buildings, high court, museums, public library and railway station. There could also be others like public auditorium, town hall or any large hotels. Mayer required the number of officers of various scales for their accommodation and for the degree of storage. He demanded information on public buildings like schools, hospitals, traffic, landscaping and aerodrome and the storeys required for these buildings.

Mayer visited Chandigarh on 11th January, 1950 accompanied by Chief Engineer, Varma. He presented his Master Plan in the Cabinet Sub-Committee meeting on 27th May 1950. A number of specialists had assisted him in the preparation the Master Plan like James Buckley (city economics and transportation), Ralph Eberlin (site engineering and utilities), Clara Coffey (landscaping), H. E. Landsberg (climatology), Clarence Stein (general consultant), Matthew Nowicki (architectural control and

supervisory work) and his architectural partners Whittlesley and Milton Glass. [20] The Master Plan had been more or less finalised and the details both with regard to architectural treatment and the planning of super blocks which was named as L. 37, had been completed. [21] The Master Plan was to be followed by the preparation of a detailed project plan on which again discussions were to be held among the town planners and the chief engineer. They were of the view that the planning and designing of the main buildings as well as the planning of plots and architectural control of the other super blocks must proceed by time, only then could the detailed project be ready for approval by the government. [22] This work could be done through three agencies: by the government unit, jointly by government unit and a private firm or wholly by private firm on the usual percentage of cost basis. [23] The first choice was the cheapest and the most satisfactory. It could be effective proposition only if some really first class architects of proved ability from abroad could be secured which was very difficult to secure the services of such persons on a whole time basis. 'Therefore, there may be some risk in entrusting the whole of the work to them. Architects who had already made a name and were running their offices had various works in their hand and were said to be more reluctant to go abroad on a whole time basis for any reasonable length of time. They would demand very heavy salaries which could be difficult for the Punjab Government to meet. There may however, be idealists who may be tempted by the idea of building a new city and may agree to come on a reasonable remuneration.'

The second alternative was more viable financially. Under this junior architects and town planners would be recruited from India and they would be headed by one or two promising architects from abroad. It would be possible to get such architects from America, England, France or Scandinavian from about 2500 to 3000 pounds a year. An efficient architectural and planning unit could be organized in the province under the leadership of such architects. Preliminary studies including the functional plans and distinctive architectural forms and elevations of main buildings such as the secretariat offices, the Assembly Chamber, the High Court, the Government House, the Town Hall could be entrusted to well known foreign firms and the finishing and detailing of the same could be done by the government. It would need about Rs. 7 lakhs for a foreign firm and about another Rs. 8 lacs in local expenditure for a period of three years, during which most of the designing and planning work would have been completed.

Under the third alternative all the work would be done by foreign firm whose representative would occasionally visit the site though most of the work would be completed abroad. It would cost Rs. 35 to 40 lacs. It would be much more expensive and actually unsatisfactory without whole time architectural advice or supervision. The supervision was essential for day to day work, at the time of construction of the main buildings. It was also possible that local engineers could carry out modifications in the plan on their own. In this case the opportunity of training of architects in India under experienced planners would be lost. It was an occasion when an architectural school in India could be organised with the help of good architects, 'particularly

when the achievement of this objective leads to the economy also.'

While Mayer was working on the Master Plan, the question of sending Punjab Government officials to Europe once again came up and was brought before Nehru for his approval. Nehru again opposed this idea and wrote to Chief Minister Gopichand Bhargava, "I do not understand how a person touring Europe and America, stopping for a few days at each place, can help in the capital project. It may be good for the persons concerned from an educational point of view. Especially at this time of acute financial stringency any expenditure that is not absolutely essential might be avoided." [24] Nehru gave permission for this only when Matthew Nowicki died in a plane crash in Egypt in August 1950 which left Mayer without an architectural assistant.

Searching a new Planner

P.N. Thapar requested the Indian Ambassador in Holland on behalf of the Punjab Government for the arrangement of two first class architects for their new capital project. [25] He informed him that the plan had been prepared by Mayer and Whittlesley. The work of the building of the new administrative centre had to be undertaken that included the buildings of a Legislative Council Chamber, State Government Offices, State High Court, Government House, new railway station and a new town hall. It also included a large number of houses for government employees from the ministers, high court judges down to clerks and peons. The State Government desired two competent architects, one of whom would be designated as the Chief Architect. He would be responsible for all the architectural problems and should be a 'person with initiative, artistic judgement and a necessary elasticity of mind to be able to adjust his architectural concepts to Indian conditions'. [26] He must also be responsive to functional requirements. He should have enough practical knowledge to ensure that he could be carried out large programme of work efficiently. He would be able to control and inspire a number of junior architects working under him.

The State Government had decided to send P.N. Thapar and P.L. Varma to Europe. They would take with them a copy of master plan and other documents which would describe the topography of the site, the layout of roads and parks and the location of main buildings. They were to leave for a tour to Europe by about 25th of October 1950 for a period of four weeks. [27] They were likely to visit United Kingdom, Holland, France, Italy, Sweden, Belgium, Germany and Switzerland. The new architect was expected to meet two Indian demands included that he would be willing to move to India for a period of three years and accept a yearly salary not exceeding 3,000 pound per annum. [28] The entire European trip was to cost the Indian Government Rs. 15000 excluding the salaries of Thapar and Varma. Nearly half the amount paid in rupees for air passages, the remainder to be paid in foreign exchange. They left India on November 5, 1950. By December 1950 they had signed a three year contract with Maxwell Fry, Jane Drew and Pierre Jeanneret to serve as senior architects at Chandigarh at yearly salaries of 3000 pounds each; Le Corbusier was appointed architectural adviser with a yearly salaries of 2000 pounds plus furnished accommodation transportation and 35 pound

in daily expenses while he was in India subject to a maximum of 4000 pounds per year (including honorarium). He was to receive an additional 4 percent of the cost of any building he designed. [29] The architectural work was divided between Le Corbusier and his associates. Le Corbusier had taken the responsibility of revising the master plan and establishing architectural control. He also reserved the designing of the Capitol Complex. Fry, Drew and Jeanneret were given the responsibility of directing the actual construction of the city like housing for government employees, schools, shopping centres, hospitals and other civic and housing structures of the city. [30] These planners were assisted by the Indians like N. S. Lamba, J.S. Dethé, A.R. Prabhawalkar, as town planners; U. E. Chowdhary, Piloody, B. P. Mathur, M. N. Sharma, Aditya Prakash and Jeet Malhotra as architects. [31]

The basic Master Plan had been prepared by Mayer and his associates. They planned detailed architectural scheme for one superblock, which was finally put in place, with modifications by the Swiss born French architect Charles-Edouard Jeanneret popularly known as Le Corbusier, his cousin Pierre Jeanneret and the English husband and wife team of Edwin Maxwell Fry and Jane Beverly Drew. [32] Mayer's plan was a culmination of the ideas which originated with Radburn and Greenbelt Towns of the 1930s as well as with the superblock development of Los Angeles suburb Baldwin Hills, a superblock development of 1941. These were the expression of the ideas of the 'English Garden City Movement' and had served as inspirations for Mayer. [33] The Mayer Plan placed the town between the two rivers. It envisaged a fan shaped city with a narrow section to the north which contained all the government buildings and the Panjab University. [34] There was to be a large business district in the centre of the city so that when the city expanded southward it would continue to maintain a central position. A smaller industrial site was located to the southeast of the city which was connected with Kalka-Ambala railway line. A curved network of major roads was adapted to the existing terrain surrounded the residential superblocks. This pattern was contrasted with the gridiron pattern of much nineteenth century urban planning. The centrepiece of Mayer's plan was to be a residential neighbourhood unit or superblock that was a planning device developed in the 1920s through an effort to separate residential areas from automobile traffic. [35] In the absence of Mayer, Nowicki had suggested a leaf like basic plan instead of the fan shape, with the stem of leaf as the commercial axis and a vein like system of arteries flowing from it; a continuous park system and design of capitol complex with particular Indian elements for e.g. a *stupa*. [36] He viewed the city as an organic body and placed the university to the west of the Capitol Complex and the industrial district at the opposite end. While planning was going on the publicity of the capital project was also considered. It was felt that the Master Plan and the neighbourhood unit and plans in respect of other parts of the proposed capital were not receiving due publicity. It was emphasised that it was most essential that the public should be involved in the project. The officials wanted to get benefit from the public criticism while the plans were yet in formulation. [37]

Mayer pointed out that most Indians were either villagers or city dwellers of recent village origin. The poverty of the country makes the people more dependent on the pleasures of simple community life, the sociability of the bazaar, the gaiety of street life and the quiet and coolness of the local park. [38] The lack of automobiles or other transport would make people less able to travel long distances and more likely to depend upon community facilities within walking distance. The neighbourhood unit would consist of three superblocks, providing accommodation for approximately 3500 families and 1150 families each. These were completely self sufficient and would contain housing, a small bazaar, primary and secondary schools and a green open space. The middle block was to house a hospital, a theatre, a meeting hall and additional shopping facilities.

Le Corbusier's Plan

Le Corbusier introduced his own ideas although he had been hired to execute Mayer's Plan. [39] He arrived at Chandigarh by February 1951. His plan was based on 'CIAM Town Planning Grid' which was defined by Patrick Geddes. Le Corbusier maintained the coordination among the city's four functions of living, working, recreation and communication and placed these functions in the Master Plan of Chandigarh. He had also taken care of three ingredients of urbanism- sun, space and greenery, introduced by the CIAM charter in 1933 when the conditions of modern cities had been deteriorating with the result of industrialization. [40] Le Corbusier's plan had changed the shape of the city from a leaf to a rectangle. It had considerably reduced the size of the city. [41]. The city was now planned on the grid iron pattern in which roads were built half a mile apart in the east-west direction and three and a half mile apart in the north-south direction. Mayer's plan was thus considerably altered though the neighbourhood idea remained as the basic unit.

In Le Corbusier's plan, the capital complex remained outside the city as its head but was placed at an elevated level slightly to the north east offering a better view of the buildings. It contained the High Court, Legislative Assembly and Secretariat. The civic centre, railway station and industrial complex continued to occupy similar positions. Both plans provided for traffic isolation and neighbourhood units made up the fabric of the city in both instances with some differences [42] The superblocks were now called sectors based on the neighbourhood concept of city within city [43] The sectors were planned for three main density groups of 25, 50 and 75 persons per acre. These were to be self-contained which provided day to day material and social needs of the citizens in easy reach of their homes like schools, shops, hospitals, places of recreation etc. Schools and hospitals were located in central green strips. These green strips ran from north to south through all the sectors and were intersected at right angles by shopping streets running from east to west through the sectors. In this way all sectors were linked to each other and also to the larger city in terms of transport and services. Le Corbusier plan divided the traffic into a series of seven categories comprising a hierarchy of circulation, ranging from arterial roads to apartment house into the city. He termed this system of traffic separation as "les Sept Voies (the Seven V's)". [44] he projected this concept in his post-war planning schemes for

Bogota and Marseilles Sud. V8 was added later for bicycle trails.

Differences in the two Plans

The planning ideas of both the planners, Mayer and Corbusier illustrate some differences. Mayer's plan visualised the impact of the Garden City Movement and the ideas of Camillo Sitte that placed urban design on the random forms resulting from the growth of medieval cities. [45] Le Corbusier's plan was based on CIAM principles, Charter of Athens and believed in the gridiron plan as the only correct way of approaching the modern problems of city planning. Le Corbusier denounced the use of a curve roads as a "pack-donkey way". His support for the idea of grid iron pattern was clear in his book *The City of Tomorrow and Its Planning*. "Man walks in a straight line because he has a goal and knows where he is going; he has made up his mind to reach some particular place and he goes straight to it. The pack-donkey meanders along, mediates a little in his scatter-brained and distracted fashion, he zigzags in order to avoid the larger stones or to east the climb or to gain a little shade; he takes the line of least resistance." [46] The Pack-Donkey's way is responsible for the plan of every continental city; including Paris, unfortunately. "The winding road is the Pack-Donkey's Way and the straight road is man's way. The winding road is the result of happy-go-lucky heed- lessness, of looseness, lack of concentration and animality. The straight road is a reaction, an action, a positive deed, the result of self-mastery. It is sane and noble. A city is a centre of intense life and effort." [47] The circulation of traffic demands the straight line; it is the proper thing for the heart of a city. The curve is ruinous, difficult and dangerous; it is a paralyzing thing. The straight line enters into all human history, into all human aim, into every human act. [48]

At the philosophical level, Mayer had placed greater emphasis on the socioeconomic factors of the city, its potential for future growth, the peculiarities of Indian traffic, the social customs of the people and other related issues. [49] The dominant concern was the quality of domestic life within the city. He was desired to provide a city which would be decently habitable for all its citizens and to make the ordinary actions of daily life both pleasant and easily managed. [50] In his attempt to produce an appropriately Indian plan, he was not thinking in terms of Indian archaeology but of modern India. [51] His aim was to create a "city of satisfactory interrelationships and satisfactory individual lives and moments". He wanted an "essentially peaceful city, not one where complications must be counteracted by other complications." [52]

Le Corbusier on the other hand remained concerned with the physical attributes of the city and monumentality of the building designs. Mayer recommended the inclusion of industry in Chandigarh to stimulate its population growth but Le Corbusier felt that the industry in city was incompatible with its administrative character. The latter's ideal city was to be a city of administration. Although both planners professed to create the city in the Indian idiom perhaps Mayer was more sincere about it. Le Corbusier wanted to produce an architecture that would be "neither English, nor French, nor American," but "Indian" of the

second half of the twentieth century. [53] The sentiment was quite similar to Mayer but with a difference. "Whereas Mayer looked to India's past bustling bazaars and closely knit village communities and Le Corbusier looked to India's future, an India with all the paraphernalia of industrialization. This was intrinsically more appealing to Nehru and to Punjabi officials." [54] In the words of Nehru,

"I have welcomed very greatly one experiment in India, Chandigarh. Many people argue about it, some like it, and some dislike it. It is the biggest example in India of experiment architecture. It hits you on the head, and makes you think. You may squirm the impact but it has made you think and imbibe new ideas, and the one thing which India requires in many fields is being hit on the head so that it may think. I do not like every building in Chandigarh. I like some of them very much. I like the general conception of the township very much but, above all, I like the creative approach, not being tied down to what has been done by our forefathers but thinking in new terms, of light and air and ground and water and human beings. Therefore, Chandigarh is of enormous importance. There is no doubt that Le Corbusier is a man with a powerful and creative type of mind. For the same reason, he may produce extravagances occasionally but it is better to be extravagant than be a person with no mind at all." [55]

2. Conclusion

Thus, the selection of final planner for the city took almost two years for the Punjab Government officials. The planning of Chandigarh was the culmination of the ideas of the planners and the architects like Albert Mayer, Le Corbusier, Pierre Jeanneret, Edwin Maxwell Fry and Jane Beverly Drew. Mayer introduced the ideas of Garden City, neighbourhood unit, superblocks and curving road network in India for the first time while Corbusier introduced grid iron pattern for the road system, linear parks and the division of four functions of the city- living, working, recreation and communication which is implemented very successfully in Chandigarh. Even Nowicki's ideas order and regularity in planning and continuous park system was followed by the latter planners. Thus, we can say that though Le Corbusier is the final planner of Chandigarh but the elements presented by other planners like Mayer and Nowicki are also reflected in the planning of Chandigarh however, in some changed version.

References

- [1] Ravi Kalia, *Chandigarh: The Making of an Indian City*, Delhi: Oxford University Press, 1998, p. 3.
- [2] In 1948, only the broad area was decided for the establishment of new capital. The actual area where Chandigarh has been located today was demarcated after the confirmation of this area in November 1949 by the Punjab Government. Its actual making was started in 1951 after the acquisition of land.

- [3] Copy of letter no. G. 202. 1. 432, dated the 11th June 1949 from James W. R. Adams to the High Commissioner for India in London.
- [4] Copy of letter no. G. 202. 1. 402, dated 23 June 1949 from the High Commissioner for India in London to the Chief Secretary to Government, East Punjab, Simla.
- [5] Copy of resolution no. 9 of Sub Committee meeting held on the 29th August, 1949. 254.
- [6] A Report by Chief Engineer, Development, East Punjab, PWD, B&R branch, for the meeting on 10th November 1949.
- [7] Recommendations made by the Royal Institute of British Architects and by Indian Embassy in the USA.
- [8] Minutes of the Cabinet Committee Meeting held on 23rd September 1949 under S.K. Chibber, Secretary.
- [9] Minutes of an emergency meeting of the Cabinet Sub-Committee on capital held on Sunday 25th December, 1949 at Barnes Court.
- [10] Memorandum for the meeting of the Cabinet Sub Committee of Capital to be held on 30-12-1949. From staff quarters for the construction. 288.
- [11] A letter by Gopi Chand Bhargava to Prime Minister Jawahar Lal Nehru and A letter by Financial Commissioner Relief and Rehabilitation on 28.12.1949.
- [12] Minutes of an emergency meeting of the Cabinet Sub-Committee on capital held on Sunday 25th December, 1949 at Barnes Court.
- [13] Memorandum for the meeting of the Cabinet Sub Committee of Capital to be held on 30-12-1949. From staff quarters for the construction. 288
- [14] Ravi Kalia. *Chandigarh: The Making of an Indian City*. New Delhi: Oxford University Press, 1998. 33.
- [15] Minutes of an emergency meeting of the Cabinet Sub-Committee on Capital held on Sunday 25th December, 1949 at Barnes Court under S.K. Chibber, Secretary of Cabinet Committee Capital. See also Ravi Kalia. *Chandigarh*. 32.
- [16] Ravi Kalia. *Chandigarh*. 32.
- [17] A letter by Financial Commissioner Relief and Rehabilitation on 28.12.1949.
- [18] Appendix to Accompany Proposal to East Punjab Government for Planning New Capital.
- [19] *Ibid*.
- [20] Norma Evenson. *Chandigarh*. Berkeley: University of California Press, 1968. 12.
- [21] Superblock designated L-37 was designed by Nowicki covering an area of 75 acres to accommodate 1175 families mainly from the lower income group. It had communal features of Indian life for e.g. a place for hawkers. The house design also had such common Indian features as courtyards, terraces and walls with Jalis: Deodhar, Pippa Maryann. *Growth of Modern Planned State Capitals in India: A Case Study of Chandigarh*. Unpublished Ph. D. Thesis, Chandigarh: Punjab University, 2000. 38.
- [22] A letter by P.N.Thapar to Mohan Singh Mehta, Indian Ambassador in Holland on 5 October 1950.
- [23] A note on Capital Project. 134. See also Ravi Kalia. *Chandigarh*. 37-38.
- [24] Nehru. Letter to Gopichand Bhargava. August 30, 1950. See also Ravi Kalia. *Chandigarh*. 35-36.
- [25] P.N. Thapar. Letter to Mohan Singh Mehta, Indian Ambassador in Holland. 5 October 1950.
- [26] *Ibid*.
- [27] M.R. Sachdev, Chief Secretary to Government Punjab. A letter to the Joint Secretary to the Government of India, Ministry of External Affairs and Common Wealth Relations, New Delhi on 19th October 1950.
- [28] M.R. Sachdev. A letter to P.N. Thapar, Secretary to Government Punjab, Capital Project on 19th October 1950.
- [29] P.N. Thapar. Telegram to the Chief Minister, Punjab December 3, 1950. Used by Ravi Kalia. *Chandigarh*. 43 and Evenson. *Chandigarh*. 26.
- [30] Ravi Kalia. *Chandigarh*. 88.
- [31] *Ibid*. 106.
- [32] *Ibid*. 23.
- [33] Chandigarh Forty Years after Le Corbusier. 'Birth and Development of Chandigarh' Netherlands: Architectural and Natura. 12.
- [34] Chandigarh forty years after Le Corbusier. 'Birth and Development of Chandigarh' Netherlands: Architectural and Natura. P. 12 See also for details of Chandigarh Plan: Ravi Kalia. *Chandigarh*. Evenson. *Chandigarh*. Surinder Singh Bhatti. *Chandigarh and the Context of Le Corbusier*. Unpublished Ph. D. Thesis. Chandigarh: Panjab University. 1990.
- [35] Ravi Kalia. *Chandigarh*. 35. Evenson. *Chandigarh*. 16.
- [36] Pippa Maryann Deodhar. *Growth of Modern Planned State Capitals*. 38. See also Evenson. *Chandigarh*. 15.
- [37] Minutes of the meeting of the Cabinet Sub Committee on Capital held on 14th August 1950 in Simla.
- [38] Evenson. *Chandigarh*. 17.
- [39] Ravi Kalia. *Chandigarh*. 44, 72, 108, 110 and Evenson 32 -38.
- [40] Ravi Kalia. *Chandigarh*. 105.
- [41] Sangeet Sharma. 2005. *Architectural Aesthetics*. Chandigarh: Abhishek Publication. 90.
- [42] Ravi Kalia. *Chandigarh*. 110.
- [43] Sangeet Sharma. *Architectural Aesthetics*. 90.
- [44] Evenson. *Chandigarh*. 32.
- [45] Surinder Singh Bhatti. *Chandigarh and the Context of Le Corbusier*.
- [46] Le Corbusier. *The City of Tomorrow and its Planning*. Translated from the 8th French edition of Urbanisme by Fredrick Etchells. London: The Architectural Press. 1947. First pub. 1929. 23.
- [47] *Ibid*. 30.
- [48] *Ibid*. 28.
- [49] Ravi Kalia. *Chandigarh*. 88-110.
- [50] Evenson. *Chandigarh*. 17-18.
- [51] *Ibid*. 13.
- [52] Albert Mayer. 'The New Capital of Punjab'. *Journal of American Institute of Architects*. (1950). 116-175. Used by Surinder Singh Bhatti.
- [53] Ravi Kalia. *Chandigarh*. 86-88.
- [54] *Ibid*. 88.
- [55] Jawaharlal Nehru's Speeches 1957-1963. Speech at the seminar and exhibition of architecture, New Delhi, 17 March 1959. 176.