

Toward a New Capital by Le Corbusier – A Synthesis of Images with Different Origins

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Abstract. This study aims to elucidate and situate the design of Chandigarh by LE CORBUSIER among his whole creative activities. To accomplish the aim, I surveyed many documents related to Chandigarh. The result is as follows. On architectural and urban design: 1) His sketch attached to his letter to Yvonne with the date February 26–28th, 1951, shows that his first image of Chandigarh was linked to the Himalayas and his first image of <birth>: a woman holding a baby. 2) I could confirm that his first city plan had a 7/7 square scheme based on an 800 m module. 3) He learned from Indian architecture as follows: a) local properties: accommodation to Indian climate, b) universal properties: grand cultures on a grand geometric scale. On pictorial images: 1) I could confirm that his first sketch of Chandigarh in his letter to Yvonne and another sketch with the date March 3rd, 1951, had his first image of <birth>. 2) His serial sketches showing his second image of <birth> in *Album Nivola 1* were linked with the first creation of Chandigarh, via a sketch among them with the date March 1st, 1951. 3) The serial sketches were linked with <D3 fusion> of *Poem of the right angle* after the first creation of Chandigarh.

Finally I could define Chandigarh as follows: it is not only the creation of a new capital, but the creative play of different images, crossing over the boundaries among different genres, brought together under the context (light) illuminating the place.

Key Words: Le Corbusier, Urban design, Chandigarh, Poem of the Right Angle.
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1. Introduction

LE CORBUSIER, known as a leading modernist architect, designed many cities. However, they had hardly been realized. The target area of this study is his design of Chandigarh that has been only realized.

There are many researches on his design of Chandigarh: a new capital of Punjab (and Haryana) state. They are categorized in 3 genres: urban design, architectural design and their relations to pictorial images. First, on urban design, Norma EVENSON surveyed its making process in detail [4, 5]. Secondly, on the architectural design, Kiran JOSHI documented all of buildings by LE CORBUSIER's office in Chandigarh [8]. Thirdly, on the relations to pictorial images, Morgen KRUSTRUP investigated the enamel doors of the Chapel at Ronchamp and the Assembly Hall in Chandigarh, relating them to many pictorial images in original documents including unpublished albums (sketchbooks). However KRUSTRUP's covered areas were limited within those related to the enamel doors [12].

These previous researches almost stayed in their respective genre except that of KRUSTRUP, and lacked the relations crossing over the boundaries among pictorial, architectural and urban design; especially the relations to pictorial images. Among these current researches, I surveyed his life-span design process toward the Chapel at Ronchamp to situate it among his development of pictorial images from the Acropolis, first visited in his journey to the East [10]. Furthermore, I succeeded in relating his architectural and urban design, including that of Chandigarh, to the landscape axis which he had found in the Acropolis [11].

In this study I will develop my former studies and elucidate his design in Chandigarh from more synthetic viewpoints crossing over his pictorial images, architectural design and urban design.

2. Purpose and method

LE CORBUSIER developed his creative works among paintings, architecture and city. This study aims to situate his design of Chandigarh among his whole creative activities. To accomplish the aim, I collected many documents related to his design of Chandigarh and surveyed their relations, especially the relations to his pictorial images.

The main documents for this study are his letters and sketches. On his letters I referred to published documents [1, 9, 12]. On his sketches I referred to not only those of published sketchbooks [6] and *Le Corbusier Le Grand* [3], but also unpublished albums (sketchbooks): *Album Nivola 1* and *Album Panjab*. On the former, I owed to KULSTRUP's research [12]. On the latter I received useful information from Dr. Takashi OHNO of Chitkara University near Chandigarh [7]. Furthermore I visited Chandigarh to confirm both buildings designed by LE CORBUSIER and Indian buildings which influenced his design, and checked many documents exhibited in the Architectural museum of Chandigarh and Le Corbusier Center.

In this study I will elucidate how his pictorial images had been made and how they influenced his design of Chandigarh in the following order: pictorial images, architectural design, urban design and the linkage of images of <birth> via Chandigarh. Finally I will situate them in his whole creative activities.

3. Development crossing over the genres

3.1. Reflection of pictorial images

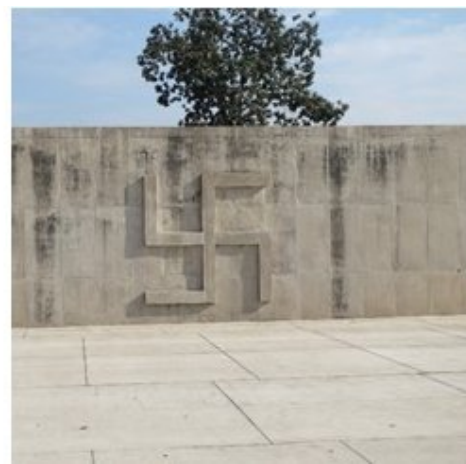
There is a lot of overlap between the term of his designing Chandigarh and that of synthesizing his views or visual images on the world. He synthesized them via making his two works which combined prints and poems. First, in *Poem de l'angle droit* [Poem of the right angle] (made from 1947 till 1953, published in 1955), he synthesized his views on the world around his



(a) Monument of <Open Hand>



(b) Enamel door of Assembly Hall



(c) Images in the walls; left: Modular man, right: Swastika

Figure 1: Reflection of pictorial images (photographs by the author)

beginning period to design Chandigarh [13]. Secondly, in *Entre deux* [Between the two] (made in 1957, published in 1964), he reported his ideas on his visual images in his late period to design Chandigarh [16].

Among many images presented in his two works, those of <taureau> [bull] and <la main ouverte> [open hand] were especially related to Chandigarh. On <bull>, he not only explained that it was born from rotating a purist painting representing <objets-types> [object-types] which took <machines> for a model [14], but also linked its birth to an assembly work, which was composed of <objets à réaction poétique> [objects with poetic reactions] (natural objects as bones or shells etc.) [13]. In *Between the two* he wrote that he suddenly hit upon its sign (image of horns) [16]. The latter became a motif of buildings of Capitol in Chandigarh.

On <open hand>, its three-dimensional monument was designed in Capitol (Figure 1a). He explained it as a symbol of “give and receive” under the title: “Offre” [Offering] in *Poem of the right angle* [13]. In *Between the two*, it was told with <bull> and he related it to Ubu: the hero of a play by Alfred JARRY [16].

On other symbols he not only gathered many Indian symbols such as “Ashoka Chakra” and “Swastika”, while he had contacted India. But he also designed or arranged many symbols on natural objects or lives: sun, moon, tree, frog, snake, etc. They are not only buried in the

reliefs on the concrete walls in the Assembly Hall and several monuments in the Capitol as well as his original motifs such as Modulor man (Figure 1c). But they also became pictorial motifs of the enamel door of Assembly Hall (Figure 1b) and tapestries of High Court, as KRUSTRUP showed in detail [12].

3.2. Development of architectural images

There is a lot of overlap between the period of designing Chandigarh and that of culmination of his architectural designs. After *Unite d'habitation* at Marseille (1945–52), he designed many buildings from the Chapel at Ronchamp (1950–55) to the Monastery of la Tourette (1953–60).

I could confirm that he learned both local and universal properties from Indian architecture. On the first, he accommodated his architectural design to Indian climate in several ways. He was taught the necessity of taking into consideration of Indian strong sunshine by Maxwell FRY. On the evidence of his learning, I could confirm his sketch of a palace with a deep roof: Red Fort in Delhi in *Album Nivola 1* ([12, p. 21]), which became a big roof in front of the Assembly Hall (Figure 2). Furthermore, he refined his *brise-soleil* [sun breaker] for Indian climate.

On the second, Indian “grand cultures on geometry” influenced him. He wrote in his sketchbook E18: “near Ahmedabad there are grand cultures on a grand geometric scale with rectilinear boundaries” (E18-349) [6]. Besides he was so admired Sarkhej Roza that he told to BALKRISHNA DOSHI, “You don’t need to travel to the Acropolis. You have everything there” [21]. Moreover, he made a sketch of Pinjore Garden in his Sketchbooks (E19-392) [6], which shows another example of grand culture on grand geometric scale with an axis. The above texts and sketches show that he was influenced by Indian grand geometry (Figure 3). In addition, I could specify a text referred on Jantar Mantar in Delhi in his sketchbooks (E18-329) [6].



Red Fort (Delhi)



Assembly Hall (Chandigarh)

Figure 2: Accommodation to Indian climate (photographs by the author)

3.3. Development of city images

Before Chandigarh, LE CORBUSIER designed two universal city plans based on perpendicular axes (a cross). First, he designed “La ville contemporaine de 3 million habitants” [A city of 3



Sarkhej Rosa (near Ahmedabad)
Seeing over a grand square pond

Pinjore Garden (near Chandigarh)
Seeing in the same angle as
LE CORBUSIER's sketch

Figure 3: “Grand Cultures on a Grand Geometric Scale with Rectilinear Boundaries”.
LE CORBUSIER had seen them in Indian architecture (photographs by the author)

Million Inhabitants] in 1922, although he had Paris in his mind. It was a central plan with a business district in the center of the city.

Next in 1930, he designed his second universal city plan called “La ville radieuse” [The Radiant City] in response to a request from Moscow. It was a linear plan where the business district was removed to the upper end from the center of the city. Furthermore, it was not the plan of final state but a plan which had potential of extension in the future. Afterwards, he applied the latter in many city plans: Algiers, Geneva, Antwerp, Moscow, Stockholm, Rome, Barcelona. and Nemours before World War 2; furthermore, Sainte Die, La Rochelle–La Palis, Marseille, and Bogota after World War 2. However, no city plan was realized except Chandigarh.

If we overlapped the plan of Chandigarh over his first two city plans, we could understand that the former was a synthesis of the latter two. The city plan based on perpendicular axes (a cross), which has a business district in the center, is an application of “A City of 3 Million Inhabitants”. The linear composition along the axis with Capitor (capital complex) at the end is an application of “The Radiant City” which has potential of extension in the future (Figure 4).

For LE CORBUSIER, “axes” had not been abstract on a geometrical scheme but real based on human horizontal views. He wrote in his article of *L'esprit nouveau*: “They (axes) are seen from the ground, the beholder standing up and looking in front of him” [19, 20]. He learned his axis from the Acropolis of Athens in a grand landscape: from Piraeus (sea) to Pentelikon (mountains). Furthermore he combined it with the horizontal line afar in the Piraeus side [19, 20]. He applied the landscape axis in Chandigarh [11].

3.4. Linkage of images of <Birth> via Chandigarh

LE CORBUSIER had visited India over 20 times to design and realize the new capital. Until the last day of February, LE CORBUSIER had completed his first design, for he told its completion to his wife (Yvonne) in his letter on February 26–28th, 1951 [1, 12] (Figure 5a). On the next day, March 1st, he made a sketch of the function layout of the new capital in Album Punjab. It was a square city plan of 7 : 7 based on an 800 m module with Capitol (Capitol Complex)

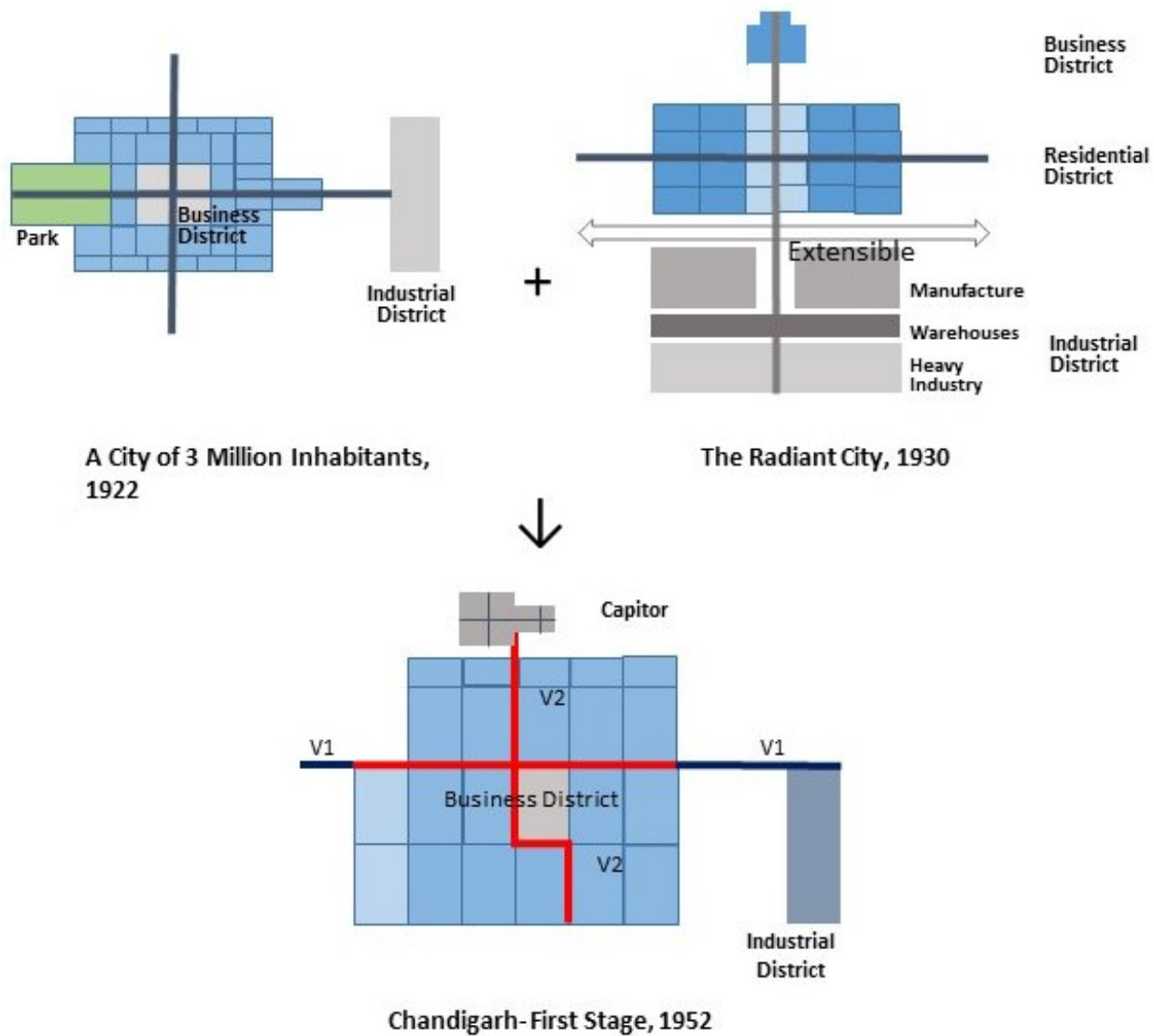


Figure 4: Synthesis of preceding city plans (made by author based on LE CORBUSIER's drawings)

on the northeast side [7] (Figure 6a).

He made some images on the <birth>, when he began to design Chandigarh. First, he made his first sketch showing his first image of Chandigarh, which was attached to his letter to his wife Yvonne with the date February 26–28th, 1951 (Figure 5a). As a whole, it shows a coexistent image of an artificial or geometrical city among natural or geological environment. Seeing analytically, it was composed of the following images:

- 1) the city image: a perspective view of a new capital,
- 2) the first image of <birth>: a woman holding a baby in her arms,
- 3) other images of lives (a bird, a cow, a buffalo),
- 4) the landscape image: the Himalayas beyond Shivalik mountains in the background ([1, p. 169] and [12, p. 9]).

Afterwards this complex image was separated into the two images, both of which had the Himalayas in the background.



(a)
Letter to Yvonne with the
date: 51-2-26-28, cited from
[12], p. 9.



(b)
Chandigarh Naissance d'une
capitale [birth of a capital], 51-3-
03. In *Album Nivola 1*, p. 139,
cited from [12], p.133.

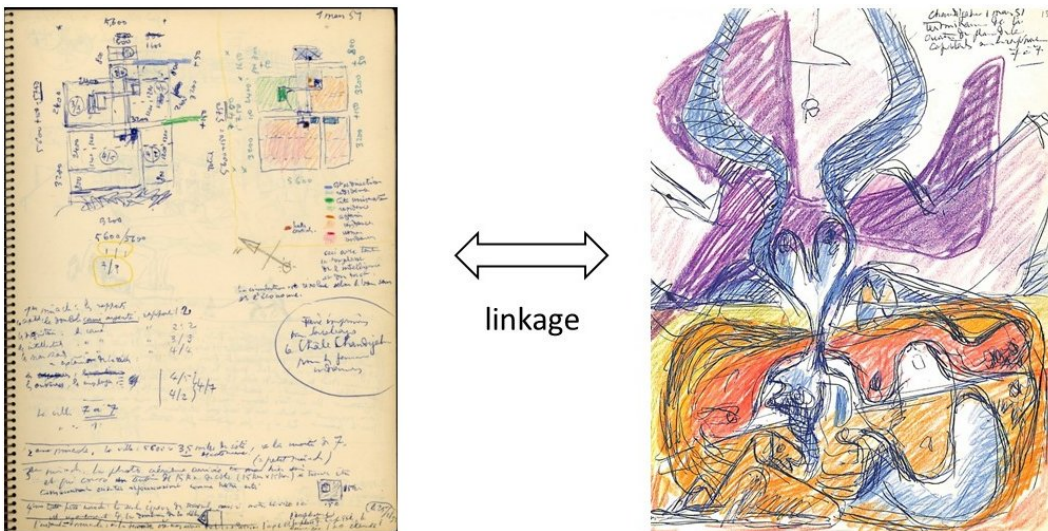


(c)
Letter to Harris Tjader with the
date: 52-3-04, cited from [9],
p.165.

Figure 5: His first image of <birth>

- 1) The image of <birth>: a woman holding a baby, which was repeated in the sketch of *Album Nivola 1* with the date March 3rd, 1951 [12] (Figure 5b) and published in OC5 ([2, p. 139]).
- 2) The <city> image: a perspective view of a new capital, which was repeated one year later in his letter to Marguerite HARRIS TJADER with the date March 3rd, 1952 ([9, p. 165], Figure 5c).

Secondly, he made the following sketches made on the same date March 1st, 1951. They show the linkage of the birth of Chandigarh to his other pictorial images (Figure 6). The first sketch, showing the first layout plan of Chandigarh, was drawn in *Album Punjab* [7] (Figure 6a). The second sketch, showing the second image of <birth>, a man and a woman penetrated by a Unicorn reversed upside down, was drawn in *Album Nivola 1*, with the caption: "Chandigarh, March 1st, 51. Termination of the creation of the plan of the capital



(a) Plan of Chandigarh, 51-3-01 in *Album Punjab*, p. 45, cited from [12].

(b) A sketch with the caption: «Terminaison de la création du plan de la capitale sur le rapport 7 à 7, 51-3-01», in *Album Nivola 1*, p. 137, cited from [8], p. 139.

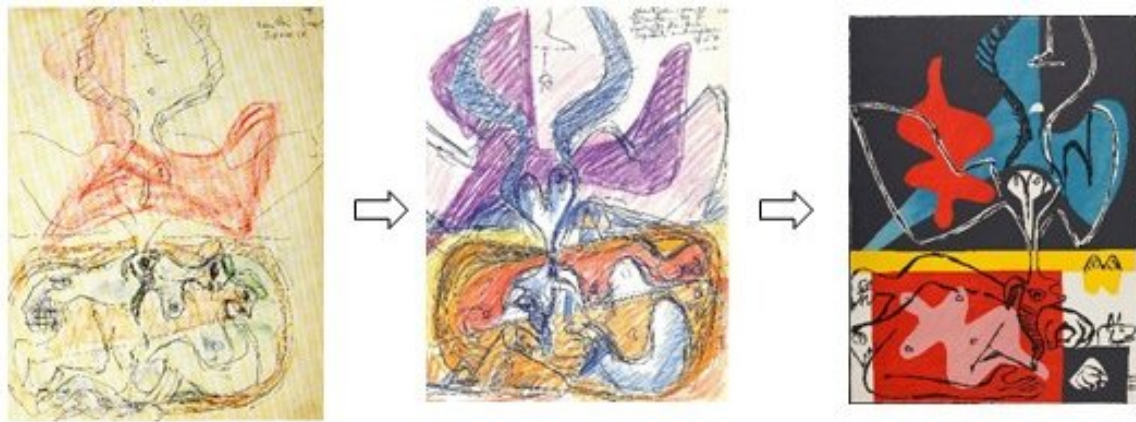
Figure 6: Linkage of Chandigarh to his serial sketches on the second image of <birth>. Two sketches were made on the same date: March 1st, 1951.

on the ratio 7 by 7” [12] (Figure 6b). On the latter, he left serial sketches of the same motif in *Album Nivola 1*: those of pp. 109, 113, 117, 119, 121, 123, 141, 143, and 145. Among them that of p. 109 had the date October 24th (Figure 7a) and that of p. 117 had the date October 26th, 1950 [12]. They show that the serial sketches started before his design of Chandigarh and they were linked to Chandigarh just after he completed his first design of Chandigarh.

Thirdly, I examined the relations between the serial sketches and *Poem of the right angle* (Figure 7). The former sketches (Figure 7a, b) finally became the lithograph <D3 Fusion> of the latter (Figure 7c). However in the early stage, the *Poem of the right angle* had not the section <D3>, as his study sketches of its composition diagram “iconostasis” (pp. 184, 185, 193 and 197 in *Album Nicola 1*) showed. Among them, that of p. 193 had the date October 1st, 1951 and that of p. 197 had the date October 29th, 1951 (Figure 7d). Next, I could confirm two study sketches including <D3>: one with the date December 22nd, 1951 ([3, p. 620], bottom right (I could not identify his sketchbook and the page) and the other with the date December 28th, 1951 in his sketchbook (E22-572) (Figure 7f). Furthermore, I found a definitive sketch showing its making process (Figure 7e), [3, p. 620], bottom left (I could not identify his sketchbook and the page). It was originally made on August 10th, 51 and afterwards he added several comments: “August 10, 51(from memory of 1948) / See similar diagram + text in black Nivola sketchbook 1951 / Added E+F, August 12, 51 / Added later “fusion” between 3 and 4, then you read 2 7 4 4 2 = 19. See black sketchbook of October 29, 51” (underlined by author).

Consequently, he added <D3> in *Poem of the right angle*, after October 29th, 51. Their order is as follows:

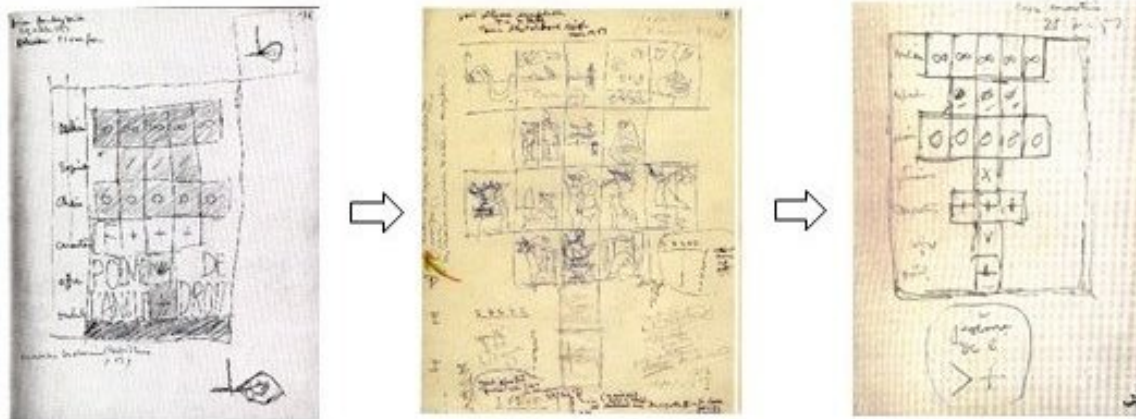
- 1) His serial sketches on the second image of <birth> and preliminary sketches on *Poem of the right angle* started independently before Chandigarh.
- 2) The former were linked to Chandigarh on March 1st, 51.
- 3) One of the former was added to the latter as <D3>.



(a) One of his serial sketches on his second image of <birth>, 50-10-24, *Album Nivola 1*, p. 109, cited from [12], p. 128.

(b) One of his sketches just after he made a first sketch of Chandigarh, 51-3-01, *Album Nivola 1*, p. 137, cited from [12], p. 139.

(c) «D3 Fusion», *Poem of the right angle*, cited from [13], p. 117.



(d) A sketch of «iconostasis», 50-10-29, *Album Nivola 1*, p. 197, cited from [12], p. 135.

(e) A sketch of «iconostasis», 51-8-10 and after, cited from [3], p. 620, bottom left.

(f) A sketch of «iconostasis», 51-12-28, LE CORBUSIER Sketchbook, E22-572, cited from [6].

Figure 7: Serial sketches toward *Poem of the right angle* via Chandigarh. The creation of the plan of the capital (March 1st, 1951) became a hub linking the serial images to *Poem of the right angle*.

To sum up, Chandigarh, the creation of the plan of the capital (March 1st, 1951), became a hub linking the serial images and *Poem of the right angle*. I could show his whole linkage of images of <birth> via Chandigarh as Figure 8.

Last but not least, he referred to alchemy in the text of the section <D3>. It shows the image of <fusion> is linked to alchemy. In this context Chandigarh might have several meanings such as noble metal (particularly gold), elixir of life, philosopher's stone and others.

4. From the Acropolis toward Chandigarh – a synthesis of images with different origins

Adding this study to my previous ones, I can situate his design of Chandigarh in his chronological process, as shown in Figure 9. It shows his creation and development process of images:

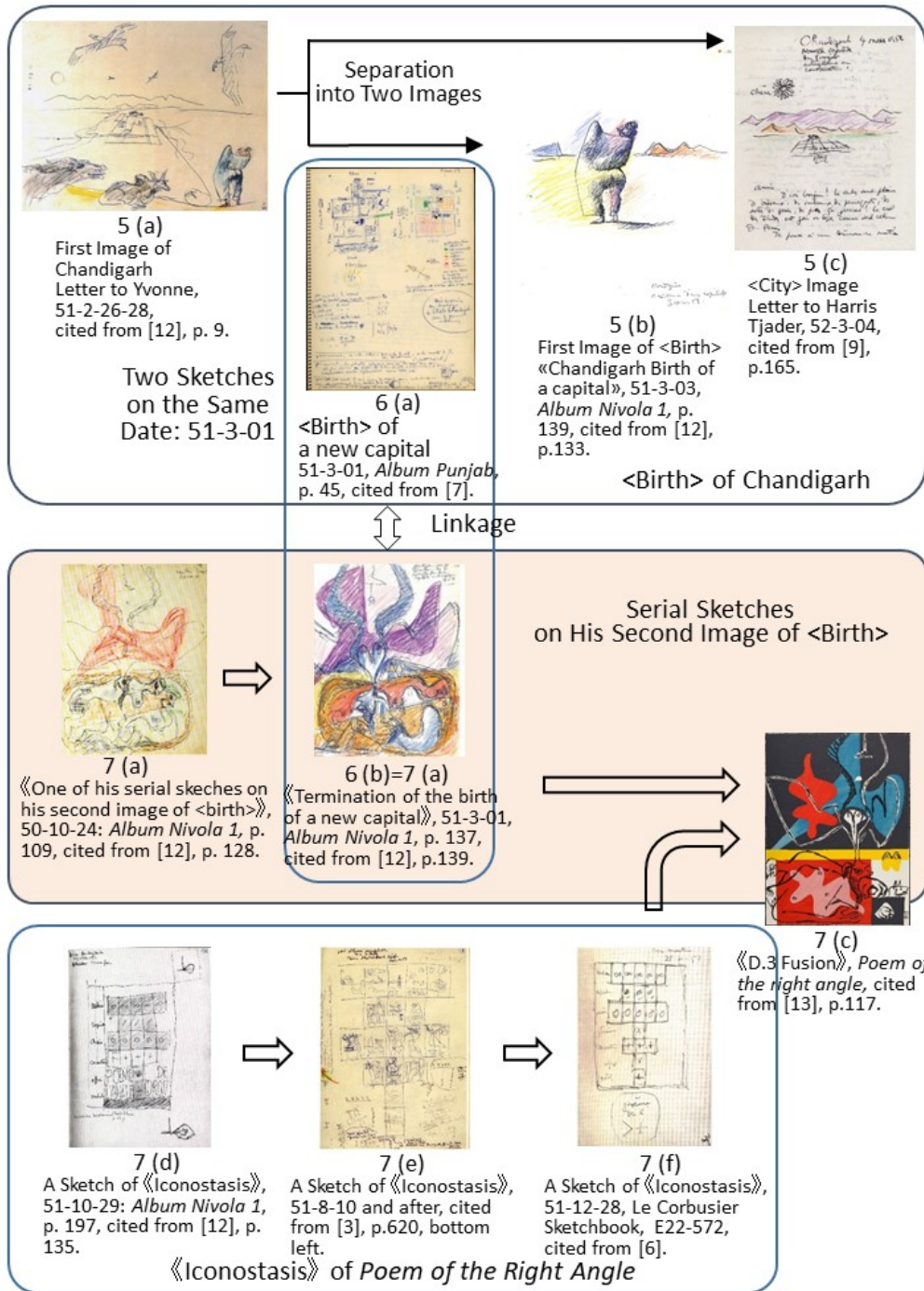


Figure 8: Linkage of images of <birth> via Chandigarh

from the Acropolis toward Chandigarh.

In his formative years, Charles Edouard JEANNERET, later LE CORBUSIER, visited the Acropolis. He was so admired, adored and annihilated with it that he could not understand the reason. Since then, to understand and to overcome the Acropolis became his lifelong task [10].

Just after World War 1, he understood the Acropolis, in his articles of *L'esprit nouveau* [the new spirit], via linkage not only to its <landscape axis> from Piraeus (sea) to Pentelikon

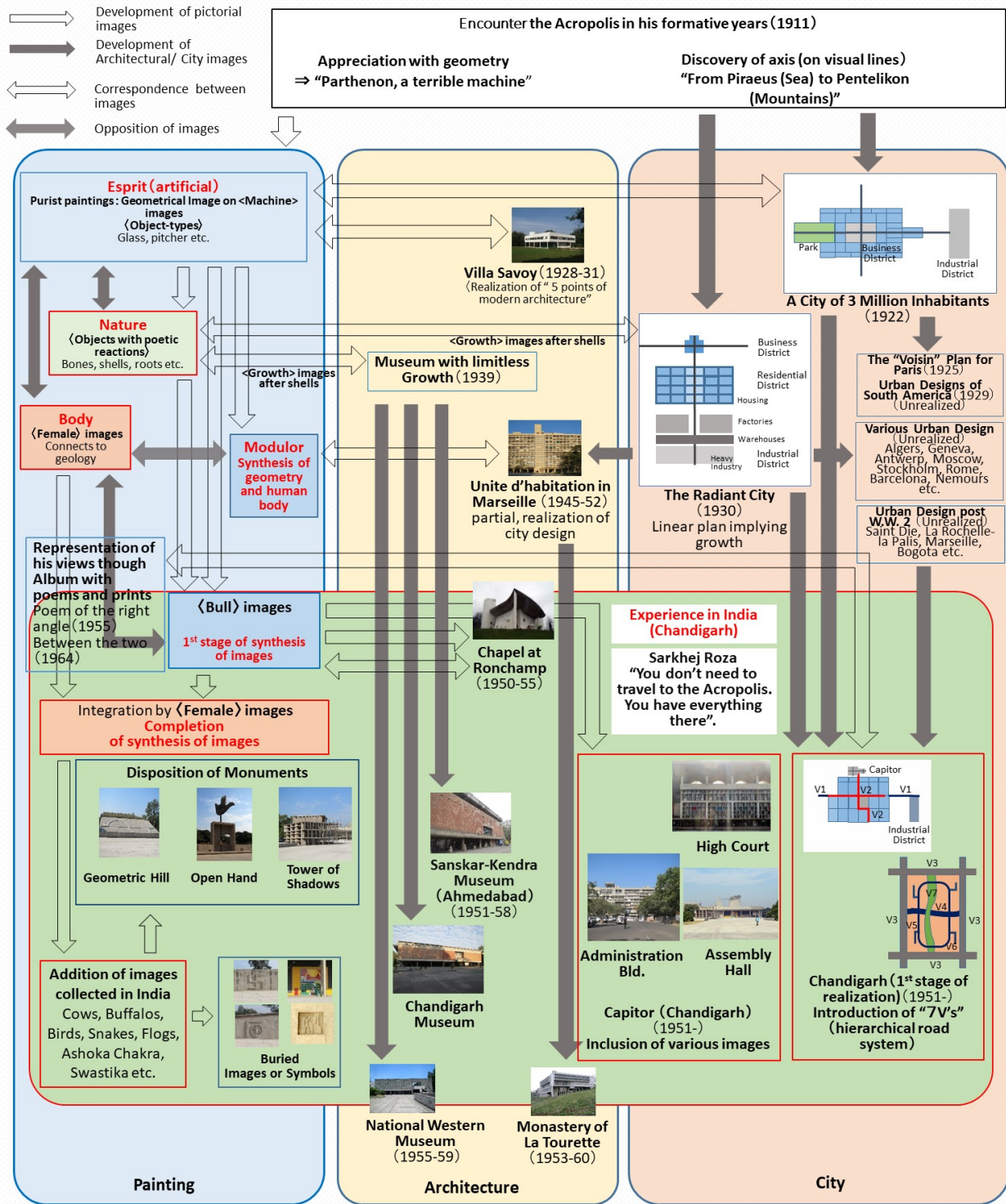


Figure 9: Creation and development process of images: From the Acropolis toward Chandigarh. A city is play of images, which is crossing over the boundaries among different genres, brought together under the context (light) illuminating the place.

(mountains), but also to <machine> images. The latter images corresponded to <object-types>: motifs of purist paintings proposed with Amedee OZENFANT. His typical idea as a machinist was shown as follows: “a house is a machine to live in” [18]. By the early half of

1920s at least, he had confirmed a status of a leading architect as a machinist via publishing a book: *Vers une architecture* [Towards a new architecture] [20], which was composed of his articles on architecture in *L'esprit nouveau*. Finally, in his late years he concluded his machinist idea: “Acropolis, a terrible machine” [15]. After he broke up with OZENFANT, he began to extend his pictorial motifs beyond <object-types>, adding <objects with poetic reactions> and <female> images. He learned his <growth> images from one of <objects with poetic reactions>: shells, which were contrary to <machine> images. After World War 2, he extended his pictorial images, making <bull> images from <object types> and <objects with poetic reactions>. Then he unified them into <female> images via <bull> images [10].

Chandigarh was designed in his final stage. Therefore, Chandigarh had a tight linkage to his many pictorial images.

- 1) His <machine> images influenced his urban design of Chandigarh via “A City of 3 Million Inhabitants”.
- 2) His <growth> images influenced his urban design of Chandigarh via “The Radiant City”. Furthermore, it was linked to “Chandigarh Museum” via “Museum with limitless Growth”.
- 3) His first image of <birth>, attached to the first sketch of Chandigarh in his letter to Yvonne, was repeated independently.
- 4) His second image of <birth> in his serial sketches was linked to Chandigarh just after he completed the first design of Chandigarh and it finally became <D3 Fusion> of the *Poem of the right angle*.

Furthermore, he learned Indian climate and accommodated his design to it. In addition, he was strongly influenced by Indian culture. Especially, “grand cultures on a grand geometric scale” influenced him. He was so admired with Sarkhej Roza near Ahmedabad, that he told BALKRISHNA DOSHI his overcoming the Acropolis.

To sum up, his creation in Chandigarh was the synthesis crossing over beyond the boundaries among different genres: paintings, architecture and city. In addition, it was the synthesis of not only different attitude: artificial and natural, but also different cultures: European and Asian (Indian). In other words, Chandigarh served as if it were a generator of a constellation, combining discrete stars of different images.

To return to his debut in Paris, he defined architecture in his first article in *L'esprit Nouveau* (Oct. 1920): “Architecture is the masterly, correct and magnificent play of masses (volumes) brought together in light” [17]. If I followed this definition, I could define Chandigarh: “A City (Chandigarh) is the creative play of images, which is crossing over the boundaries among different genres, brought together under the context (light) illuminating the place.”

The author first visited India in the same (63) years old as LE CORBUSIER, to contact both the buildings designed by LE CORBUSIER and Indian architecture which influenced LE CORBUSIER. Here I thank Prof. Takashi OHNO for arranging the tour plan of India. Furthermore I thank Prof. Kiran JOSHI for giving me an opportunity to have a lecture on LE CORBUSIER in Chitkara University of India.

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