Plan Libre:
Application of a Historical Architectural Theory

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INTRODUCTION

To better design a creative studio, an investigation was required into methods of flexible spatial arrangement. This lead to me researching and being influenced by the theory behind Le Corbusier’s plan libre, arguably one of the most important concepts contained within his “Five Points of a New Architecture.” As a theoretical guideline for the design process, it aided with balancing ‘division’ and openness, choreographing a journey and manipulating space to better suit the requirement of the brief. As a result, a more successful proposal has been generated, given the freedom of design that theory also provides.

To obtain a better understanding of the plan libre, I have elected to investigate two of Le Corbusier’s own buildings, the Villa Stein-de Monzie (1927) and the Villa Savoye (1931), as well as also doing wider research into the architect’s five points of a new architecture. Furthermore, as a means of evaluation, I looked into the comparisons with Austrian modernist Adolf Loos’ Raum Plan, which took an alternative approach to the design of space.
CHAPTER 1
EVALUATING AN ASPECT OF THEORY: PLAN LIBRE

“The Plan is the generator.” (Le Corbusier, 1923, p.2)

As seen in Le Corbusier’s own publication, Towards a New Architecture, the architect believed that the plan of the building embodied the architecture in its purest form. Through its various iterations and improvements, mass and surfaces were formed to compose the building. Succeeding his earlier ‘Dom-ino’ system, plan libre continued to respond to one of the primary architectural concerns of the time: the limitations of box architecture to achieve desired functions. The theory sought to reduce the constrictions imposed by interior load-bearing walls, by replacing them with a structural grid of reinforced concrete pilotis. Partitions could be placed wherever they were best suited, in a variety of lighter, simpler forms. This deconstruction of the traditional ‘room’ into a simple event on a journey through the space reduces the importance of enclosing an area, with emphasis instead on the arrangement of spaces to create a coherent series of framed views, both of the building and wider context (Hollis, 2013, quoted in Ring, 2017).

However, the theory did not have the intended revolutionary impact, with the late 1920s and early 1930s seeing the continued, though waning, influence of Cubism, even in Le Corbusier’s own work. As with the majority of Modernist architects and theory, geometry played an important role, seeing addition and subtraction of the quadrilateral form and use of 90 degree angles at junctions. This is most obvious in the creation of quadrilateral bays by the placement of the grid of pilotis, providing a modular system of space allocation within the open interior. Standardized spaces and flexible placement of partitioning allowed plans to be coordinated according to the requirements of individual areas, free to be developed with minimal changes to the structure. On the other hand, the columns broke up the space, reducing the need for these partitions to be used for division, rather than to preserve privacy or to provide direction throughout the space (Banham, 1960).

With few divisions, long corridors and lines of sight are created throughout the plan, choreographing a journey within the space, even between floors. The journey is used to highlight key views through the interior or to frame the exterior via large openings in the free façade (a freedom granted by the exterior walls being independent of the structure), naturally illuminating the space. Without partitions blocking it, the light also penetrates to the deep plan spaces, allowing them to be illuminated with only minimal artificial lighting.

To better evaluate the influence of Le Corbusier’s plan libre, it must be compared to alternative theories from the early twentieth century. One such proposal is Adolf Loos’ Raum Plan. The Austrian’s theory, which predated plan libre, bears many similarities, leading to Loos claiming Le Corbusier had plagiarized his verse. Although the Swiss admitted its influence, he also called Loos’ theory irrelevant in the long term (von Moos, 2008). The major difference between theories was the relationship of interior and exterior spaces with Loos seeking a more introverted space, opposed to Le Corbusier’s blending of the two opposites (Hebly, 2008). The protrusion of the raised upper floor provided two fundamental functions within the exterior space: shelter and reclamation. The cover provided allowed people to enter the space without entering the building, creating the effect of widening the
street and inviting people towards the recessed ground floor. Additionally, spaces that would have been occupied by the building’s boundaries would now be accessible, allowing for the outsourcing of the possible functions of the building to the sheltered outside (Cresciani, 2017).

Due to Raum Plan’s influence, the theories shared similar agendas when regarding the organization of space. The unattractive service spaces were to be the least public and thus, were hidden, often at the rear of the plan, allowing the street-front public spaces to remain uncluttered and easily accessible (which takes a larger priority in Le Corbusier’s work, due to the more extroverted approach) (Colomina, 1994). The approach of designing the spaces from the center outwards works well in both theories, essentially seeing the landscaping of the exterior happen as a result of the design of the interior within the Swiss architect’s work.
CHAPTER 2
ANALYSIS OF TWO PRECEDENTS: VILLA STEIN-DE MONZIE & VILLA SAVOYE

To further analyze this aspect of architectural theory, Le Corbusier’s own application of plan libre with his designs serves as primary evidence of its practicality and worth as a theory. Therefore, I have chosen two of the four villas he designed whilst developing his “Five Points”: the Villa Stein-de Monzie (1927) and Villa Savoye (1931), in Garches and Poissy respectively.

The Villa Stein commission by bourgeois art collectors was primarily built around the ‘Dom-inô’ structural framework, filled with both divided and open spaces for the Stein couple and de Monzie to live co-operatively. The structure is somewhat independent of the facades (although the exterior walls are used in conjunction to steady the building), allowing spaces to be allocated by the placement of partitioning walls, occasionally concealing structural columns, when placed on the grid itself (Fazio, 2013). The regular dispersal of the grid laid out various bays, often alternating between larger and smaller dimensions in an ABABA rhythm, used to further differentiate between spaces. These bays often contain within them whole elements of the architecture, such as the main staircase, occupying a single small bay.

![Figure 2.1. Villa Stein-de Monzie - Arrangement of Service Spaces](image_url)
Unlike other villas designed by Le Corbusier in the 1920s, the building is not raised via structural columns. However, within Figure 2.1, it can be seen that the upper floors above the entrance recede into the façade, emphasizing the main entrance, with visitors enabled to orientate themselves as part of an architectural promenade. This also contains a first floor external balcony which acts as a part of the circulation of the plan (Risselada, 2008).

Balconies are also an important inclusion, as the upper floors contain several inward looking spaces, providing a more hierarchical distinction between private and service spaces. The design also aimed to have minimal points of overlap as seen from the shaded service areas of Figure 2.1, hidden from larger public areas.

Le Corbusier had only improved plan libre when he was commissioned by another bourgeois client to design the Villa Savoye in 1928. An iconic piece of architecture, the application of the theory holds a unique power over its occupants, with each step through the space planned out, owing much to the French countryside which surrounds the villa. Much of the choreographed journey is ordered (following the rhythm of the grid) to exploit the lack of high-rise buildings, and to frame the most beautiful views of the natural environment (Colomina, 1994).

The grid of pilotis are applied flexibly as seen in Figure 2.2, preventing columns impeding the functions of spaces. For example, a column which otherwise would lay in the center of the garage (shaded) is placed elsewhere so as to prevent the parking space being obstructed. In addition, the architectural colonnade created by the ‘Dom-inos’ system and its relative placement has led to other functional decisions, such as the distance between the colonnade and ground floor being determined by the turning radius of a 1920s motor vehicle, so that it could turn under the raised first floor and exit by the same route it entered from, manufacturing flow in the external space. This experimentation with his own theory has only resulted in a better experience and cleaner design for the architecture, as seen in the previous case, where space often lost is recaptured and put to functional use to benefit the resident.
Within the architecture, the regular bays are orientated around the large ramp, with the primary public spaces arranged outwards from there. The service spaces once again are pushed to the outer boundaries of the residence, to minimize overlap with public areas, occupied by the residents or guests, without limiting access. Much like the Villa Stein, many service spaces are hidden on the less public ground floor, or as smaller cupboards on more resident-focused floors (Banham, 1960).

Furthermore, the two outer rows of *pilotis* are set back from the facades (with no structural responsibility due to the ‘Dom-ino’ system), avoiding overlap between walls and columns, so that the facades are may be designed primarily to frame views and, aided by the undivided spaces, allow maximum natural illumination of even the deep plan areas.
CHAPeR 3
APPLICATION TO DESIGN PROJECT: CREATIVE STUDIO

Upon beginning to work on the Creative Studio, adopting the right spatial strategy was key to creating a successful proposal. Working primarily in plan to generate ideas and apply plan libre in the development of the design, the aim was to achieve a similar experience to the two precedents.

First, the mezzanine floor and butterfly roof sheltering the more business/design oriented accommodation to the south is raised on several of the nine 600mm diameter columns, laid out on a 4 metre by 4 metre grid, aligned to the north-south axis. The proportions of the square grid were based on a number of factors including the space required by set numbers of people for various activities, the dimensions of furniture and the boundaries of the site. This was to create an open and flexible space, which fit the furnishings which it housed whilst also allowing enough room for circulation within the space and between those adjacent to it.

The rigid implementation of the columns’ placement on the grid divides the space so those adjacent areas appear separate and that which is outlined by the columns is contained within. This deception created on a visual basis also reduces the need to use physical partitioning for the allocation of spaces, which has a great number of benefits to the occupiers. Figure 3.1 illustrates the routes of circulation which are established alongside the columns, without limiting access between covered and non-covered spaces (as shown by the orange snaking path), allowing the community to see the activities and light to penetrate the deep plan spaces.

The raising of the mezzanine on the structural columns uses the concept of rediscovering and recapturing the use of space which would be otherwise occupied by the structure of the architecture, to further encourage the flow underneath, into the work space, promoting passers-by to become involved with projects. This effect is only doubled by the protruding ‘curve’ of the upper floor invading the primarily circulatory space, in the sense that it provides both orientation (as the front of the work space) and signifies a possible entrance to it, where the boundary of the ‘division’ is blurred.

The flow of foot traffic, illustrated by the arrows of Figure 3.1, is also carefully directed by visual cues, such as the orientation of furniture. The locker area is visible upon entering from the south ‘private’ entrance, following the south-facing wall, with the path unobstructed by any columns. Alternatively, by turning right at the entrance, the convex curves of both the street-front façade and mezzanine floor direct a journey through the space, with views outwards onto Lime Street and beyond. Leading north, towards the existing building, there are two choices: the stairs heading the space, featuring a wall of the old canvas works as a backdrop to draw attention, or turning left towards the exhibition and service spaces, with the path indicated by the omission of cover of the mezzanine floor. By having this corner set back from the grid, it creates a curved route of circulation round the work space, which is easier to understand than a 90 degree turn.
Lastly, taking inspiration from the bourgeois-centered separation of public, private and service spaces, the storage and utility areas (shaded) are pushed to the rear of the plan, into bays of their own, even protruding from the main building itself, existing as additional entities. This leaves the work space and circulation spaces as open as possible to be used flexibly whilst providing easy location of and access to the services spaces when required in the background. The segmentation of spaces is also employed via level: the mezzanine floor contains a larger number of individual workspaces and a conference room for more private discussions, most of which is blocked from the view of the ground floor. However, the mezzanine’s protrusion contains a walkway with views outwards into the Ouseburn as well as downwards onto the public spaces, creating a hierarchy within the space.
CONCLUSION

Throughout this investigation, it has become ever clearer that the adaptation of historic theory within the process and its use in designing the space has had a positive net impact on the development, enabling the design as a whole to be better structured, more easily understood and to portray my own initial intentions for the space.

The theory has translated well into successive periods of architecture, inspiring generations of students. However, as previously stated, it should only form a guideline and not dictate the design itself, as it has its criticisms, such as its disregard for other theories and the need for flexibility with its application. Its use must be carefully considered, and even then, the application requires prior knowledge and common sense to establish itself successfully.

The choice to examine and apply Le Corbusier’s *plan libre*, when compared to the development of my own design and the requirements of the brief, was a beneficial one, with the theory inspiring me to choreograph the journey through the space and re-evaluate my own concept of space, especially when considering its division and boundaries. *Plan Libre* has been a considerable influence during the realization of a flexible, open space with all functional needs addressed within, achieving the aims set out for the proposal.
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Figure 2.2 Robson, Connor. “Villa Savoye – Arrangement of Pilotis within the Space.” 2018. PNG file.

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Figure 3.1 Robson, Connor. “Creative Studio – Circulation between Spaces & Arrangement of Service Spaces.” 2018. PNG file.
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