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# EARTHQUAKE AND RESILIENCE POLARIZATIONS ABOUT MODERN PLANNING IN CHILE

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The paper poses the question about the modernization of planning in Latin America and the role that disasters, and specifically earthquakes, could have played in this process. It focuses on the reconstruction of Chillán and other Chilean cities, after the 1939 earthquake. The reconstruction process triggered a debate about the planning methods and criteria that should be implemented on the occasion. This exceeded the technical domain and permeated into the media and public opinion. The paper suggests that the polarization around the ideas of Karl Brunner and Le Corbusier represent two opposing approaches towards modern planning. Resilience, as the capacity of recovering from trauma, can be thought of as a process that offers opportunities to discuss new urban models and paradigms. The debate about the reconstruction of Chillán is not confined to the local realm, but can also be envisaged as expressing some of the internal tensions of the processes of modernization. At the same time, it makes evident a dispute about Latin America, as a professional field for foreign planners.

#### **Keywords**

Planning, modernization, Le Corbusier, Karl Brunner, disasters and resilience

#### **How to Cite**

Perez Oyarzun, Fernando. "Earthquake And Resilience Polarizations About Modern Planning In Chile". In Carola Hein (ed.) *International Planning History Society Proceedings, 17<sup>th</sup> IPHS Conference, History-Urbanism-Resilience, TU Delft 17-21 July 2016, V.03 p.289, TU Delft Open, 2016.*

DOI: <http://dx.doi.org/10.7480/iphs.2016.3.1269>

## INTRODUCTION

The naturalization of the idea of planning has often made us forget about the complexities of its dissemination during the 19<sup>th</sup> and 20<sup>th</sup> centuries. As Eric Mumford has described<sup>1</sup>, even within the restricted circle of CIAM, we can find a wide range of ideas and attitudes about planning practices. What a modern city should be has remained for long, and still remains, as an open question with a variety of answers. Perhaps, the already classical distinction between modernism and modernization<sup>2</sup> would help us to get a better understanding of those complexities, which can be seen as a central issue for 20<sup>th</sup> century history.

Modern planning and architecture developed as a global phenomenon as underlined by Kenneth Frampton<sup>3</sup>. It not only expanded from central locations towards peripheries, but also made those locations the seat of significant discussions and experiments. They often offered to modern planners the opportunity to realize their proposals. Paying attention to the case of Latin America could lend a significant contribution to the history of planning.

The idea of creative destruction developed by Schumpeter in the field of political economy, suggests that the perishing of certain industrial processes could favour the emergency of new ones. Within the urban realm we know that great fires, such as the one in Chicago 1871, provided opportunities for urban renewals, as also happened with European cities after World War II. These were occasions to explore new alternatives for urban planning, housing patterns and building techniques. Chile has always experienced natural disasters, especially earthquakes. As Guarda<sup>4</sup> has described, during the colonial period, they periodically destroyed the cities, mostly built in adobe. Although registered, at least during the 20<sup>th</sup> century<sup>5</sup>, the social and urban consequences of the permanent presence of earthquakes are now beginning to be properly studied, as shown by Crispiani and Errázuriz<sup>6</sup>.

The concept of resilience migrated from the domain of physics and engineering, to those of ecology and social sciences. Within this expansion wave, it also reached the planning domain, not without generating some criticism, as Davoudi<sup>7</sup> has described. Conceived as the capacity of cities to recover from disasters, the concept has become critical in the management of urban risk. But is the idea of recovering able to define the complexities of reactions detonated by a big earthquake? Can resilience go beyond that idea and open an opportunity to rethink the future, within the tragically free space opened by a disaster?

This paper seeks to shed some light upon this kind of problems, focusing on an earthquake occurred in Chile in 1939. The circumstances that surrounded the subsequent reconstruction detonated strong debates within the nascent planners community. They allow us to gain a better understanding about the complexities of the development of modern planning in Latin America. A remote place in a small country would thus offer the occasion for the confrontation of international planning ideas that sought for actual opportunities to be implemented. In this case, the radical or even utopian ideas of Le Corbusier, would confront the much more pragmatic, modest and historically rooted proposals of the Austrian planner Karl Brunner. These confrontations were the result not only of intellectual attitudes, but also a way of disputing a professional field, which by that time had become increasingly international. The presence of a significant number of European and North American planners in Latin America, during the first half of the 20<sup>th</sup> century, As summarized by Almandoz<sup>8</sup>, makes this clearly evident.

What were the main differences between the opposing positions about the Chillán reconstruction? Which were the implications of applying them in a Latin American context? How would they negotiate? How would earthquake destruction make room for such a debate?



FIGURE 1 Chillán Plaza, Old Cathedral and surroundings after Chillán Earthquake and Newspaper publication about the catastrophe.

## CHILLÁN EARTHQUAKE

On the 24<sup>th</sup> January 1939, at 11.30pm a big earthquake shook the city of Chillán, located 400 km south from Santiago, Chile's capital city (Fig 1). A few minutes later it stroke Concepción, a neighbouring city. Both, founded by the Spaniards during colonial times<sup>9</sup>, were heavily destroyed. The death toll varies from 6000, estimated by the government, to 24000 reported by the press. Although less intense than previous earthquakes, like those of Atacama (1922) and Talca (1928) it has been considered to be the deadliest registered in the country. The most significant public buildings, as well as the vast majority of private houses were destroyed. The quake provoked the electricity power and other services outage. The fact that it occurred during the night worsened the damages and made the situation even more traumatic for the population.

The Chillán earthquake found the country in a particular political situation. On the 25<sup>th</sup> December 1938, a month earlier, Pedro Aguirre Cerda, a member of the Radical Party, had assumed the position of President of the Republic, supported by a new political coalition, the *Frente Popular* (Popular Front). The coalition included Radical, Socialist, and Communist parties. The election has been considered a significant shift in the history of Chilean politics. It was about to initiate 14 years of political dominance of the Radical Party, representing middle classes and holding a popular orientation. According to Collier and Sater<sup>10</sup>, the earthquake and the subsequent reconstruction favoured the State's social and economical intervention planned by Pedro Aguirre Cerda, which otherwise, could have been strongly resisted by the political opposition.

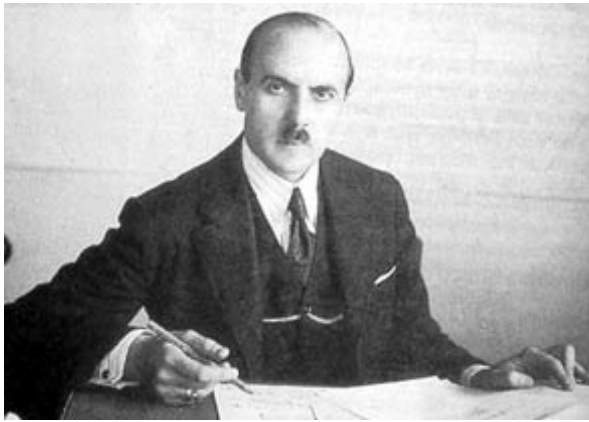


FIGURE 2 Karl Brunner in Santiago and an aerial view of the city probably taken under Brunner's suggestion.

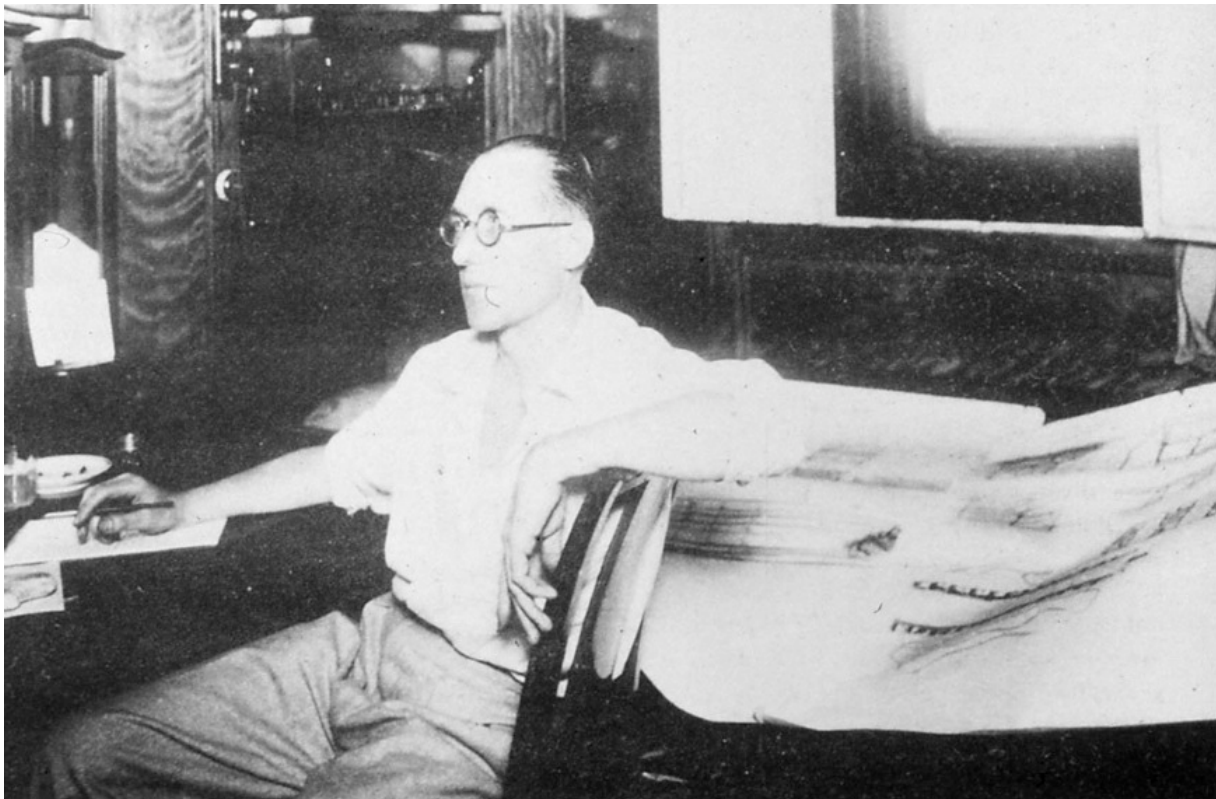


FIGURE 3 Le Corbusier on board traveling back from Latin America in 1929

The traumatic beginning of his period would mark Aguirre Cerda's presidency, tragically interrupted by his death in 1941. More than an accidental event, the earthquake was envisaged and analysed within the frame of wider political picture, including the country's economy and political organization. Education and industrialization were central objectives in the *Frente Popular* program. In fact "governing is educating" was Aguirre Cerda's lemma. In this context, the earthquake destruction and subsequent reconstruction acted, very probably, as a political catalyst, promoting the industrialization and modernization of the country.

Other 20<sup>th</sup> century earthquakes had been critical in activating planning initiatives, under the pressure of destruction and emergency. As Páez<sup>11</sup> has suggested, in the case of Valparaíso, the 1906 earthquake seems to have convinced public authorities to undertake infrastructure works, as well as urban reforms, identified as urgent years before. It also contributed to the introduction of new building technologies, among them the use of reinforced concrete<sup>12</sup>. Following the 1928 Talca earthquake, in 1931, a new building code was promulgated in the country<sup>13</sup>. In the case of Chillán, the focus of the discussion seems to have been the necessity for planning and the specific characteristics that this should assume. In fact, the reconstruction process triggered a professional discussion about urban planning and its application to the reconstruction process. This is particularly well exemplified in a discussion within the national planners community, about an invitation to Le Corbusier to visit the country and participate in the reconstruction. This went far beyond the disciplinary circle reaching the press and therefore the public realm. For some weeks it even became a kind of “trending topic” in the country.

## KARL BRUNNER'S LANDING IN CHILE

In 1929, the same year that Le Corbusier (1887-1965) came to Latin America for the first time, the Austrian planner Karl Brunner von Lehenstein (1887-1960) arrived in Chile. A young Chilean architect, Rodolfo Oyarzun, had met him in Vienna, and convinced the local authorities to hire him as an urban consultant. In Chile, Brunner acted as planning adviser for the Ministry of Public Works and taught at Universidad de Chile. As stated by Pavez<sup>14</sup>, Brunner would organize the first planning seminar of its kind in Latin America and radically renovate the teaching of the subject, which had been introduced in 1928 by Alberto Schade. This gave him the opportunity not only to transmit his ideas to a professional and cultivated audience, but also to educate a generation of planners who would go on to become loyal defenders of his ideas. As an adviser to the government, he would make proposals for Santiago, the capital city, as to others in the country. Among them, according to Hofer<sup>15</sup> there were Concepción, Temuco, Osorno, Valdivia and Puerto Montt. He would remain in Chile until 1932. In 1934 he would come back for a brief stay, to elaborate an urban plan for Santiago, which would be developed by some of his disciples during the following years. As studied by Pavez<sup>16</sup>, Roberto Humeres and Luis Muñoz Maluschka should be mentioned among them.

Karl Brunner had been educated in the Technische Hochschule in Vienna. According to Hofer<sup>17</sup> and the planning ideas of his cultural environment were influential upon him. That was the case with Wagner's Grosstadt, the housing initiatives of the Red Vienna or the Central European Garden City. He was also closely related to Werner Hegemann with whom he shared some editorial endeavours. In 1929 the *Die Baupolitik* journal, edited by Brunner, was associated with other journal, *Städtebau*, published by Hegemann<sup>18</sup>.

Both Le Corbusier and Brunner were deeply interested in airplanes, although in very different ways. Brunner considered that airplanes could become technical tools to gain a better understanding of cities and territories. He had had the experience of being a pilot during the First World War, having participated in aerial photography missions. He published an interesting book on the subject<sup>19</sup>, shortly before arriving in Chile. During his stay in Chile, he promoted the use of aerial photography, to inform urban projects (Fig 2). Le Corbusier<sup>20</sup>, instead, saw the plane as a kind of metaphor of the well-posed architectural problem.

Totally aware about the problems of modern cities, such as traffic, population growth and housing provision, Brunner was convinced about the interdisciplinary nature of planning and the inherent complexities of its implementation. One of his contributions to the planning practice was the inclusion of population data. As described by Hofer<sup>21</sup>, he used the concept of *Baupolitik* to define his approach to planning. Brunner didn't believe in radical renovation, but in gradual interventions, able to produce the desired effects with minimum resources.

After teaching and working in Chile, Brunner would move to Colombia, where he stayed during the Second World War, also doing some work in Panamá. In 1939, the year of Chillán earthquake, he would publish his *Manual de Urbanismo*<sup>22</sup> in Colombia. There he summarizes a kind of state of the art about urban planning, including European, North American and Latin American examples. Brunner's planning criteria would confront Le Corbusier ideas in Colombia, when the latter was hired, together with José Luis Sert and Paul Lester Wiener, to develop a Plan for Bogotá in 1948. At that time Brunner would leave Bogotá for Vienna, where he went on working as a professional planner.

## A PROBLEMATIC AND CONFUSING INVITATION TO LE CORBUSIER

Le Corbusier could have visited Chile in 1939<sup>23</sup>. In that case he would have added another South American country to the list of those already visited in 1929<sup>24</sup> (Fig 3) and 1936<sup>25</sup>. However the visit, surrounded by a series of equivocal and even surreal circumstances, never happened.

In November - December 1938, two months before the Chillán earthquake, two Chileans, Roberto Dávila and José García Tello<sup>26</sup>, independently contacted Le Corbusier. They invited him to visit the country and eventually do an urban plan for Santiago. Those contacts seem to be part of a wider initiative to bring Le Corbusier to Chile, a country where he had many admirers. They knew that offering a commission was the only way to convince him to come. Therefore, they managed to get the support of the Municipality of Santiago to offer him to do an urban plan for the city.

As described by von Moos<sup>27</sup> in his biography, by that time, Le Corbusier was working on the Buenos Aires plan, together with his Argentine collaborators Juan Kurchan and Jorge Ferrari Hardoy. He was also working on the Algiers Plan, tightly connected to his sketches for Rio de Janeiro. None of them would actually be implemented. Since his 1929 visit, he had had great expectations about the possibility of applying his ideas in Latin America as he expressed in his *Precisions*<sup>28</sup>. Therefore, the invitation appeared as a significant opportunity to recover his South American contacts, especially those of Brazil and Argentina. Le Corbusier accepted Dávila's invitation, charging the amount of USD 20.000, plus travel expenses, to do the plan<sup>29</sup>.

Following the first contacts, the Chillán earthquake took place. Informed about it by the press in Paris, Le Corbusier saw that the possibilities to make the visit and obtain a contract increased. He hurried to offer a reconstruction plan for Chillán, Concepción and Talcahuano<sup>30</sup> for free, if he were hired for the Santiago plan<sup>31</sup>.

Two weeks after the earthquake, a Municipality officer, Carlos Charlín, apparently with no connection with the previous contacts, sent an official letter to Le Corbusier<sup>32</sup>. Charlin invited him to visit the country and collaborate in the reconstruction process. Following that, on February 15<sup>th</sup>, Graciela Contreras de Schnake, by then the Mayor of Santiago, sent him a confusing telegram asking once again about his fees, a subject that had been responded by Le Corbusier more than once. Later on, Charlin would do his best to clarify that mess of communications and contacts<sup>33</sup>. García Tello, one of the initial promoters of the visit, in a new contact with the master, suggested that contacts had been made even with the President of the Republic, which would support the invitation<sup>34</sup>.

To make the situation more complex, Le Corbusier made his own contacts with the French Ministry of Public Affairs<sup>35</sup> and the Chilean legacy in Paris. He considered that the support of highest political authorities was indispensable to make viable a plan of such characteristics. When asked about a travel date by the Municipality, he suggested that it could be in the month of May, under the condition of having received a contract and a portion of the fees<sup>36</sup>.

In the middle of this chaotic series of crossed contacts, neither the National Government nor the Municipality were actually committed to hire Le Corbusier and to pay him the US 20.000 plus travel costs he had solicited. Against such scenario, the promoters of the visit tried to convince the master to come and deliver lectures. Once in the country, he could get an official contract. Le Corbusier was strongly against that. After his 1929 trip he had decided not to do any more lecture tours and travel only under a reliable promise of a project.

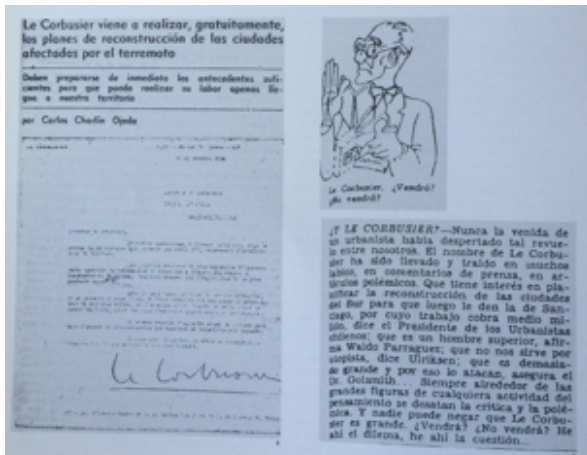


FIGURE 4 Visit of Le Corbusier publicized in two issues of Zig-Zag social magazine, February 1939



FIGURE 5 Chillán Cathedral and Plaza after reconstruction

At the beginning the press, and subsequently the public, was happy to hear that such a renowned architect was ready to collaborate in the reconstruction of the area devastated by the earthquake. The public opinion turned less favourable when it was revealed that Le Corbusier’s collaboration pended from a parallel contract in Santiago. Its opponents<sup>37</sup> used this as an argument against the visit.

Finally, amidst turmoil of economic, political and professional difficulties, and given the urgent need to give an effective response to the devastated area, the idea of the master’s visit was abandoned. Le Corbusier never understood that and continued doing efforts with the political authorities in Paris, to revive the initiative until mid 1939. Writing to his Chilean friends, he bitterly regretted the informality of Chilean authorities, which having sent official invitations, were not able to make them effective.

## A PROFESSIONAL AND PUBLIC BATTLE

Amidst the confusing contacts and the urgent demands of the affected territories, a public and professional battle had been detonated by Le Corbusier’s invitation. It developed at different levels and in such complicated and confusing circumstances as the invitation itself.

In the first place there was the political debate. Le Corbusier’s invitation had been in part associated with the renovation expected from the rise to power of the *Frente Popular*. This new political movement was supposed to be opened to innovative urban and architectural ideas. In fact, this government undertook building initiatives that allowed avant-garde architects to capture official commissions<sup>38</sup>. However, their popular and left wing orientation prevented the authorities to invest extraordinary resources to pay for a foreign adviser. Given the difficulties of the situation, this could have been judged as superfluous by the public opinion.

At a professional level, there was the classical dilemma of locals and foreigners. Was it indispensable to hire foreign professionals to face the reconstruction? Was it the case that local architects or engineers were not capable of confronting this challenge? Was the professional community able to loose the economic and technical opportunity offered by the reconstruction process? Those questions were posed, in a more direct or indirect way, during the months that followed the disaster.

Finally and perhaps most interestingly, at a disciplinary level, there was the discussion about planning orientation, polarized between the Le Corbusier partisans and the Brunner disciples. Brunner's followers legitimately considered that their master and themselves had introduced planning as a science to the country. They shared Brunner's pragmatic and illustrated approach and had witnessed his effort to propose a scientifically based plan for Santiago. Having worked for more than four years developing that plan, their authors were not happy to discover that they could have been wasting their time. Some of them were part of the public administration and had connections with university teaching. Therefore, they had deep knowledge about the political procedures that were needed to carry out an urban plan. This had been Brunner's strength from the beginning. He came thanks to an official invitation and was skilled enough to convince his counterparts that he was well prepared to solve urban problems, both with technical skills and a realistic approach. Finally, they had a critical view about Le Corbusier's procedures. Following Brunner<sup>39</sup> they considered him to be utopian, as well as ignorant of the economic and social aspects of urban reality.

On the other side, Le Corbusier's followers considered Brunner's approach completely insufficient to confront 20<sup>th</sup> century urban challenges. They judged their strategies to be completely insufficient: no more than a few street openings, using the old-fashioned resource of diagonals to solve traffic problems. On the contrary, they adhered to what was defined as *functional planning*<sup>40</sup>, involving a radical reorganization of the city. They sought a radically new image and a new functionality for cities. These could require changes in the urban property regime. Such political attitudes were, very probably, considered threatening by the more conservative political forces<sup>41</sup>.

The debate happened mainly within the Instituto de Urbanismo (Planning Institute), which grouped those interested in the field of planning. Brunner's disciples and the Le Corbusier partisans had peacefully lived together until then, but the possibility of Le Corbusier's visit broke that coexistence. Some of the polemics reached the press (Fig 4) turning the apparently technical debate into a social and political one<sup>42</sup>.

## CHILLÁN EARTHQUAKE AND THE CONSTRAINTS OF ITS RECONSTRUCTION

After the first traumatic days, there were a series of private and public reactions about the reconstruction of the devastated area. The government had to provide urgent solutions, such as provisional homes, making the economic and institutional arrangements to undertake the rebuilding endeavour in the long term. The earthquake undoubtedly awoke expectations about the needs of modernizing cities. Thus, a series of plans, images or suggestions were proposed to the authorities, not only to get the destroyed area to the previous situation, but to project it to a new and better condition. Among the multiple proposals, that of the architect Waldo Parraguez<sup>43</sup>, strongly in favour of Le Corbusier, was one the most radical. Local planners of the destroyed area, on their part, struggled to have a say in the reconstruction, defending that they had a closer knowledge of the local population's effective needs.

In addition to the emergency measures, in February 1939, President Aguirre Cerda proposed the creation of the *Corporación de Reconstrucción y Auxilio* (Reconstruction and Aid Corporation) and the *Corporación de Fomento a la Producción*, CORFO (Production Promotion Corporation). The first would take care of the reconstruction task. Later it, as studied by Carvajal<sup>44</sup>, would expand its influence to other areas. Until 1952, it would become a fundamental instrument for the provision of national housing. CORFO, still in existence, is universally recognized to have played a decisive role in the industrialization of the country.

Le Corbusier's invitation made blatant the different attitudes existing within the Planning Institute that were relatively hidden until then. Le Corbusier's invitation seems to have threatened Brunner's followers in two ways. Firstly, because they didn't adhere to CIAM proposals and therefore didn't want a plan based on them. Secondly, because Le Corbusier's plan would have meant losing a decade of dedicated work, following Brunner's directions.



Their opponents, on their side, aspired to a radical urban renovation, getting rid of the colonial grid and the traditional street as a dominant urban device. They imagined totally renovated cities populated by superblocks and all the new typologies provided by modern architecture.

Brunner's group was skilled enough to get their plan for Santiago approved in March 1939. This, in charge of the architect and painter Roberto Humeres, had been prepared during five years following Brunner's 1934 suggestions. Having done that, Le Corbusier's visit began to appear useless. Santiago already had an urban plan and it would have been a waste of money and time to hire a foreign adviser. Even the initial promoters finally resigned the invitation

Chillán, Concepción and the areas around them were reconstructed following rather conservative urban criteria that were closer to Brunner's than to Le Corbusier's ideals. The existing urban fabrics didn't suffer radical changes. The vast majority of the new buildings had to adapt to those grids and the existing land division. However, most of them were modern in terms of their use of materials, such as reinforced concrete, in the lack of classical or stylistic decoration and in the simplicity of their volumes. New typologies, or references to the artistic or architectural avant-garde, had scarce presence, with very few exceptions<sup>45</sup> (Fig 5). The great majority of architects accepted the rules and tried to get commissions during the reconstruction process.

## CONCLUSION

Le Corbusier's failure to visit Chile wasn't an isolated event. Under different circumstances, the plans for Buenos Aires and Bogotá, also failed to be carried out. In spite of its cultural prestige, radical planning found difficulties to be implemented in Latin American capital cities. The only exception would be new cities like Brasilia's Pilot Plan that happened some decades later. Chillán's case can be seen as a symptom of a tension behind planning modernization: the struggle between radical utopia and reformism. It wasn't, in fact, the opposition between tradition and modernization, but instead responded to different ways of conceiving planning and urban renovation. Reformism, as that of Brunner, was easier to be applied and gradually implemented. In Chile, as in other Latin American countries, when more radical principles became dominant, they were applied onto urban fragments and rarely to a whole city. Karl Brunner's idea of *Baupolitik* undoubtedly had a better understanding of the complexities associated to implementing urban planning: a mixture of political, social and economic decisions.

The idea of radically reforming existing cities scarcely succeeded in Latin America. This could be attributed, among other factors, to the complexities of real planning and also to the emergent conviction about the values of traditional cities, even within CIAM discussions. The increasing importance of urban heritage would accompany this process. On the other hand, modernization as Berman (1982) has suggested, not always coincides with modernism.

The case of Chillán sheds light upon the fact that disasters could open opportunities for renovation, undermining the difficulties and tensions usually involved in those processes. In this context, as Davoudi<sup>46</sup> has suggested, resilience, if applied to the urban realm, can mean something more than returning to the state existing before trauma. Overcoming disasters, like that of Chillán, asks for a great deal of effort but, at once, might offer unique opportunities for a new beginning, re-evaluating planning methods and ideals.

Perhaps planners, such as Brunner or Le Corbusier, don't simply fail or succeed. Instead, they seem to offer provisional horizons, partially incarnate in the urban reality. Le Corbusier's ideas, more associated with modernism, acted as powerful mobilizing images, while Brunner tried to act from a *less is more* attitude upon actual cities. Behind those attitudes, there were intellectual and cultural traditions, sometimes difficult to reconcile. There was also a dispute in the professional field involving not only individuals, but also countries, which saw planning and architecture as part of their international affairs.

## Disclosure Statement

No potential conflict of interest was reported by the author.

## Notes on contributor

Fernando Perez Oyarzun was born in Santiago in 1950. Architect, Universidad Católica de Chile (1977) and Doctorate in Architecture at the Universitat Politècnica de Catalunya (1981). Professor at the Universidad Católica de Chile, Head of the Doctorate Program in Architecture and Urban Studies (2004 - 2016). Director of the School of Architecture (1987-1990), Dean of the Faculty of Architecture and Fine Arts (1990-2000) and Director of the Cultural Heritage Centre (2007-2012). He has authored or co-authored ten books and published a significant number of articles and chapters both in Chile and abroad. Visiting Design Critic at Harvard University, Simón Bolívar Professor at the University of Cambridge and Fellow of the Swedish Collegium for Advanced Study (SCAS).

## Endnotes

- 1 See Eric Mumford, *The CIAM Discourse on Urbanism* (Cambridge Massachusetts, London: The MIT Press, 2000).
- 2 The distinction was done in the already classical Marshall Berman, *All that is Solid Melts into Air* (New York: Penguin Books, 1982).
- 3 On the subject see Kenneth Frampton *Modern Architecture a Critical History* (London: Thames and Hudson, Fourth Edition, 2007).
- 4 Gabriel Guarda, *Historia Urbana del Reino de Chile* (Santiago de Chile: Andrés Bello, 1978).
- 5 Earthquakes were widely registered by the press. In addition to this, it usually appeared in specific publications like the well-known album of the Valparaíso earthquake: *Recuerdos del Terremoto del 16 de Agosto de 1906* (Memories of the earthquake of the 16<sup>th</sup> August 1906) (c 1907).
- 6 Alejandro Crispiani and Tomás Errázuriz, “La Reparación de lo Público. Experiencias de Habitación Durante el Posterremoto,” *Revista 180*, n°31, (2013): 16-21.
- 7 Simin Davoudi, “Resilience: A Bridging Concept or a Dead End?,” *Planning Theory & Practice* 13, n°2, (2012): 299-307.
- 8 Arturo Almandoz, *Planning Latin America's Capitals Cities 1850, 1950* (London: Routledge, 2002).
- 9 Martín Ruiz de Gamboa founded Chillán in 1580. The city suffered various earthquakes and floods, leading to its relocation several times. In 1939 it was divided in two main areas. The first one was Chillán Viejo (old Chillán) corresponding approximately to the foundation of Governor Ortiz de Rosas in 1751, result of the destruction it had suffered due to a big earthquake in the same year. Another earthquake in 1835 provoked a re-foundation nearby. This area is known as Chillán Nuevo (new Chillán). Pedro de Valdivia founded Concepción in 1550 by the Bío-Bío River. Due to the Arauco war it was re-founded several times changing its original position.
- 10 Simon Collier and William Sater, *Historia de Chile 1808-1994* (Madrid: Cambridge University Press 1999), 213.
- 11 Pablo Páez, *La oportunidad de la Destrucción en la Urbanística Moderna. Planes y Proyectos para la Reconstrucción de Valparaíso tras el Terremoto de 1906* (Master Thesis, Santiago de Chile: Pontificia Universidad Católica de Chile, Instituto de Estudios Urbanos y Territoriales, 2008).
- 12 *The Compañía Holandesa de Obras de Cemento Armado* (Dutch Company of Reinforced Cement Works) was established in Valparaíso in 1906 and would make a significant contribution to the dissemination of reinforced concrete in the following years. The French architect and builder Victor Auclair, expert in reinforced concrete techniques came to Valparaíso on the occasion of the 1906 earthquake. He stayed in Chile for 18 years making a significant contribution to the establishment of this building technique.
- 13 A general regulation on building and planning was promulgated by the national government in May 1931 (DFL345).
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- 18 Andreas Hofer, *Karl Brunner*.
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- 22 Karl Brunner, *Manual de Urbanismo* (Bogotá: Consejo Municipal de Bogotá, 1939).
- 23 All the details of the frustrated visit in Pedro Bannen, Fernando Perez, and Claudio Vazquez, “Entendidos, Subentendidos y Malentendidos sobre el Urbanismo Moderno: Alternativas del Frustrado Viaje de Le Corbusier a Chile,” in *Massilia 2003. Anuario de Estudios LeCorbusierianos* 130-151, (Barcelona: Fundación Caja de Arquitectos, 2003), 130-151.
- 24 See Fernando Pérez “Le Corbusier y Sud-América en el Viaje del 29” in *Le Corbusier y Sud-América Viajes y Proyectos*, ed. Fernando Pérez, (Santiago de Chile: ARQ, 1991), 14-41.
- 25 See Cecilia Rodríguez dos Santos, Margareth da Silva Pereira, Romão Veriano da Silva Pereira and Vasco Caldeira da Silva “El Viaje del 36” in *Le Corbusier y Sud-América Viajes y Proyectos*, ed. Fernando Pérez, (Santiago de Chile: ARQ, 1991), 42-49.
- 26 The Chilean architect, Roberto Dávila, who had worked with Le Corbusier in Paris in the early thirties, wrote to Le Corbusier on the 25<sup>th</sup> November 1938. José García Tello, a physician interested in architecture, who would become a teacher at Universidad de Chile, apparently had a correspondence with Le Corbusier and wrote to him on the 10<sup>th</sup> December.
- 27 Stanislaus von Moos, *Le Corbusier* (Barcelona: Lumen, 1977).
- 28 Le Corbusier, *Précisions sur un état présent de l'architecture et de l'urbanisme* (Paris: Les Éditions G. Crés et Cie., 1930).
- 29 Letter from Le Corbusier to Roberto Dávila Carson, 10<sup>th</sup> December 1938. FLC A3-11-123.
- 30 Talcahuano is a seaport close to Concepción.
- 31 Letter from Le Corbusier to the Municipal Council, 29<sup>th</sup> January 1939. FLC A3-11-128 to 131.

- 32 Letter from Carlos Charlin to Le Corbusier, 31<sup>st</sup> January 1939. FLC A3-11-127.
- 33 Letter from Carlos Charlin to Le Corbusier, 16<sup>th</sup> February 1939. FLC A3-11-136.
- 34 Letter from José García Tello to Le Corbusier, 21<sup>st</sup> February 1939. FLC A3-11-138.
- 35 Letter from Le Corbusier to Mr Commert, in charge of American Business of the French Foreign Affairs Ministry, 2<sup>nd</sup> February 1939. FLC A3-11-128 to 131.
- 36 Answer from Le Corbusier to the Mayor of Santiago, after receiving a telegram from her, 26<sup>th</sup> March 1938) supposedly accepting his economic conditions. FLC A3-11-118.
- 37 Among them was Federico Oehrens (El Frente Popular, 11<sup>th</sup> February 1939), who despised Le Corbusier for being an inexperienced theoretician.
- 38 This is the case of the Hogares Defensa de la Raza (Race Defence Homes) in Santiago, social facilities for young people, designed with the participation of Enrique Gebhardt, young avant-garde architect and adherent to Le Corbusier's invitation.
- 39 Karl Brunner, *Manual*.
- 40 Pedro Bannen, Fernando Pérez and Claudio Vásquez, "Entendidos", 135.
- 41 See Guillermo Ulricksen "La tierra liberada para edificar (a propósito de las teorías de Le Corbusier)" (Liberated land for building, about Le Corbusier's theories), *El Frente Popular*, 15<sup>th</sup> February 1939.
- 42 This happened mainly during the last two weeks of February 1939.
- 43 Waldo Parraguez, together with Enrique Gebhardt, who would later become secretary of the local CIAM, was part of functional planning group. His proposal included a low-rise version of Le Corbusier redents.
- 44 David Carvajal, *Institucionalidad Nacional y la Catástrofe de Chillán. La Corporación de Reconstrucción y Auxilio en la reconstrucción de Chillán (1939)* (Master Thesis, Santiago: Instituto Estudios Urbanos Pontificia Universidad Católica de Chile, 2011).
- 45 The new cathedral by Hernán Larraín, with its parabolic nave, was an exception.
- 46 Simin Davoudi, "Resilience".

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### **Image Sources**

Figure 1: National Library Archive, made available on line by Memoria Chilena, and El Mercurio newspaper.

Figure 2: Andreas Hofer Karl Brunner y el urbanismo europeo en América Latina. Bogotá: El Ancora editores, 2003.

Figure 3: Fondation le Corbusier, published in Cecilia Rodrigues dos Santos et al Le Corbusier e o Brasil.Sao Paulo: Tesela Projeto 1987

Figure 4: Zig-Zag magazine collection, 1939, published in Massilia.

Figure 5: Post Card, Quintana Photographer.