Humanitarian Architecture – Polish and Chilean Perspective

Kazimierz Butelski

Cracow University of Technology, Department of Architecture, Institute of Architectural Design, Chair of Social and Public Buildings, Warszawska 24 str. Krakow, Poland

kbutelski@pk.edu.pl

Abstract. Poland and Chile are located on different continents, despite this remoteness to the geographical distance they have many common features like a complicated history and today similar level of economic development. Income per person in Chile and in Poland is similar around 900 Euro per month. Of course, apart from the similarities, there are also significant differences between these countries for examples, this concerns climate, population density and cultural history. In recent years, the concept of humanitarian architecture appeared in the public space due to the interest caused by the appointment in 2016 of the Chilean architect Alejandro Aravena, curator of the Venice Architecture Biennale. His message addressed to the curators of national pavilions was to define the problems facing their countries in the form of a "report from the front" and then an attempt to define actions to solve them through architecture. The nature of these issues could potentially vary widely, from food security to mass migration, from illiteracy to the polarization of social wealth. Thanks to this, the role of discussions about architecture has been reversed from studying its formal role in society towards the humanitarian role of the architect in society. So, what does the term humanitarianism mean? According to the dictionary definition, humanitarianism is "an attitude characterized by respect for people and care for its good", so it is a very broad concept that can be attributed to many issues. The purpose of this article is to present this phenomenon based on the architectural experience of Chile and attempt to describe its occurrence in Poland, to answer the question: what is modern architecture today?

1. Introduction

In recent years the notion of humanitarian architecture has appeared within public discourse due to the interest sparked by the appointment of the Chilean architect Alejandro Aravena as the curator of the Venetian Biennale of Architecture in 2016. His message addressed to the curators of the national pavilions was for them to define of the problems that their countries were facing in the form of a "report from the front", and afterwards, to try at defining measures meant to solve them through architecture. The character of these problems could have, potentially, differed quite substantially, ranging from food security to mass migration, from illiteracy to the economic polarisation of society. Thanks to this, the role of the discussion on architecture has been reversed, from studying its role in society, towards the direction of the humanitarian role of the architect within said society. What, then, does the term "humanitarianism" mean? According to the dictionary definition, humanitarianism is "an

\footnote{1 A 2016 Pritzker Prize laureate. In its laudation, the Jury stated, among other things, that he practiced architecture by designing it for both private developers, as well as for the public and personifies the rebirth of a more socially involved architect.}
attitude that is characterised by respect to fellow humans and a concern for their wellbeing”. It is thus a very broad term, to which many notions can be ascribed. The goal of this book is presenting this phenomenon based on the architectural experience of Chile, in addition to and an attempt at describing its occurrence in Poland, in order to, as a result, answer the question about what architecture currently is. Reports concerning both countries must refer to the main problem, which is the insufficient number of dwellings in relation to the requirements of the public and which is one of the lowest among developed countries.

1.1. Chile - basic facts concerning history and economics
Before the arrival of the Spanish, in the sixteenth century, the north of what would later become Chile was ruled by the Incas, while the south and the central region - by the Mapuche, who were called Araucanians by the Spanish. The Spanish conquistador Pedro de Valdivia, who founded numerous cities, including the largest Chilean city of Santiago de Chile, is the father of contemporary Chile. De Valdivia died tragically, caught by the Mapuche when searching for gold, he was murdered by having molten gold poured down his throat. However, before that, he had managed to create the foundations of a political and economic system that is functioning to this day, by, among other things, granting immense tracts of land - called latifundia - to his soldiers and companions. In 1818, eight years after the breakout of an anti-Spanish uprising, Chile became an independent republic. The borders of Chile were established after a victorious war against Peru and Bolivia in the years 1879-1883 - which was called the War of the Pacific - and the annexation of the entire Bolivian coastline and the desert, southernmost province of Peru. Today Chile has borders with Peru, Bolivia and Argentina, with which it has the longest land border, which runs along the Andes. In the years 1970-1973 Chile was ruled by the Marxist government of Salvador Allende, which was toppled as a result of a military coup under the leadership of general Augusto Pinochet. Democracy and free elections were reinstated in 1990. Augusto Pinochet transferred power into the hands of the newly elected president, remaining at the head of the army until 1998. Chile has a population of 17.7 million people, of which 88.9 % has no relation to the native population that had resided in the area before the arrival of the Spanish. Among the natives, the largest part of society is the Mapuche people, who comprise 9.1% of the entire population. The official language is Spanish. Catholics comprise 66% of society, while protestants of various branches constitute 16.4%, Jehovah’s Witnesses 1%, with the remaining 3.4% of the population professing various religions and 12.6% of Chilean society being irreligious. In Chile, similarly to other developed countries, we can observe the process of the aging of society, as well as a negative rate of natural increase. The largest group within the population are people of working age, between 25-54 years old, of which there are 43%. Chile has traditionally been a country of emigrants. However, along with an improvement of economic conditions in recent years, an increasing migration from Peru to Chile has been observed. Most of the population lives in the central part of the country around Santiago, with the desert north and the cold south being sparsely populated. Up until the 1940's the urban and rural population remained in a state of relative balance. Contemporary Chile is characterised by a very high degree of urbanisation, as 90% of its population lives in cities. The largest city is Santiago, inhabited by 6.5 million people. The next two large cities, with a similar population count of around 900 thousand people, are Valparaiso and Conception. Small and medium-sized cities, in which the remaining part of the urban population resides, constitute the majority of all cities. Chile is located along the western coast of South America and is the longest country in the world along the north-south direction, as it crosses over 39 degrees of longitude. The country is strategically located between the Atlantic and the Pacific oceans. Chile is in three climate zones, with the north having a desert climate, the central zone having a Mediterranean one, while in the south it is humid and cold. The territory of Chile is a site of significant earthquakes, active volcanoes and tsunamis. These natural threats, as well as climate conditions, have been the deciding factors in the degree of urbanisation and

2 Magellan Strait, Beagle Channel, Drake Passage
3 The Atacama Desert is the driest desert in the world.
the distribution of the population. In South America 33% of the population resides in slums. Chile is an exception here, as this indicator has been lowered in recent years, down to 4%. Slums are residential structures built without permission and planning. Currently most buildings in slums are makeshift structures built from whatever their residents could find (e.g. boards, crates and corrugated steel sheets). Slums usually do not have paved roads, electricity, sewerage or running water. Organized crime groups often hold actual power over such districts. (Wikipedia, 2018).

Figure 1. A slum on the outskirts of Santiago de Chile, 2017, photo by Kazimierz Butelski

1.2. A modern housing programme in Chile
In Santiago in the 1950's the rural population that was coming into the city was settling mostly in the city centre. The existing spaces of buildings were divided into smaller ones and were being moved into by new residents. In the 1960's this tendency became reversed and the northern and southern outskirts of the city became the main area that was being settled by newly arrived people, as well as where the poor population from the centre was relocating to. This status has remained unchanged to this day5. The relocation of the poor to the outskirts of the city worsened their situation in terms of access to various forms of municipal services, such as circulation, electricity, water and sewerage. Slums, whose construction was not subjected to any legal regulations whatsoever, were being built.

The main spatial principle of the development of this structure is based on the construction of rooms and additions to a pre-existing building in every possible direction, with these spaces then being occupied by "Allegados", who are the relatives or friends of the original owners. In order to improve the situation, in the 1970's the government introduced subsidies for private construction companies which were meant to build dwellings for the poorest residents. In the 1980's this system was changed to an on-demand one, offering subsidies of 60% for people for the purchase of real estate and

4 Data taken from https://www.cia.gov/library/publications/the-world-factbook/
5 The terms rich and poor refer to a classification comparable to other cities of South America. Currently in Chile in the twenty-first century, in the central district of Santiago, at several hundred metres from the La Moneda presidential palace, purchased items are being handed through barred windows due to the high crime rate.
requiring them to provide 20% themselves and obtain a loan for the remaining 20%. This system, which had initially functioned quite well, was changed in 2002 due to the fact that many families were not able to pay back the loans. The change was based on correcting the percentage values of each element of the system, making them dependent on the income of the applicants. For families whose yearly income amounted to less than 15,000 USD, government subsidies amounted to 90%, while their own contribution was 10%. Loans have been entirely eliminated in such cases. At the same time, the value of a building has been restricted so as not to exceed 35,000 USD or be lower than 25,000 USD. For families whose yearly income exceeded 15,000 USD it is only possible to purchase buildings with a value between 20,000 USD and 70,000 USD. In this case subsidies amount to 20% and 20% has to come from a family's own savings. The remaining 60% has to be loaned by the family. In order to obtain funding, one can either directly apply to the Chilean Ministry of Construction and Urban Planning or use the help of non-government organisations, which group future buyers and buy land in their name, commissioning construction companies, architects and supervisors throughout the entire process of the carrying out of a development project. Thanks to this system, around 50,000 housing units are being built every year. In this manner Chile has achieved the lowest ratio of slum residents relative to the population in comparison to the remaining countries of South America. Thanks to this, the technical condition of these buildings during their period of occupancy does not require further public funding. The lack of corruption - due to the transparency of the system's organisation - is also important. The third subsidy system introduced in the year 2005 features subventions for the improvement of existing infrastructure. The construction boom of the 1990's and a policy set on increasing quantity were not conducive to the construction of high-quality buildings. Thus, came the need for their modernisation, for which the ministry is currently allocating around 30% of its budget.

1.3. Elemental

The founding of the Elemental group in 2002 on the initiative of the Pontifical Catholic University of Chile was not the beginning of the process of solving the housing problem in Chile, but rather another stage of this process. Thus, basing on previous experiences which had led to a significant reduction in the number of slums and the construction of social housing, innovative solutions for those areas of slums that had remained started to be sought. One essential design premise that was characteristic of this new approach was recognising the social value of the locations in which slums had previously existed. Although their structure was flawed, it simultaneously led to the creation of essential social values, which should be protected, because building social ties from the ground up in a new location is a difficult and long-term process. Thus, leaving the residents in their current location was deemed as a significant value. Thanks to this the community could still make use of the employment, schools, and the entire social infrastructure available in the area, which, in the case of the resettlement of the residents, would have been lost forever. Such values like: the quality of architectural form, the use of structures that provide safety from earthquakes, appropriate building density and the establishment of an open structure that can be redeveloped were considered as important. A significant part of the design and construction process were social workshops with the participation of the residents of the area that was to be improved, during which existing problems were identified, in addition to the integration of the community around the carrying out of the goals defined because of consultations.

Alejandro Aravena has been the executive director of ELEMENTAL, based in Santiago, since 2001. Elemental is a "do tank", opposed to a "think tank". Aravena’s partners are: Gonzalo Arteaga, Juan Cerda, Victor Oddó and Diego Torres. ELEMENTAL focuses on public building projects and affecting society, as well as on residential construction, public spaces, infrastructure and transport. http://www.elementalchile.cl/en/
Elemental defined 5 conditions that need to be met during the implementation of the concept of *Incremental Housing*:

1. Good location: as a result, the structure of the built-up area needs to be sufficiently dense and intensive to pay for the expensive and well-placed plots.
2. Harmonious development over time: the first stage includes the structure (envelope) the bathroom, kitchen, stairs and the roof. This will make it possible to expand and supplement the functional programme in the future within the existing structure. It is necessary to plan for development over time, for the entire complex and its individual elements, in order to obtain a personalisation of the environment, instead of its deterioration.
3. A common housing space for a maximum of 25 families: the introduction of a common space between the private space and the space of the street, meant for no more than 25 families, so that the social structures will be upheld, and the residents will not be alienated within a larger community.
4. Building the structure (to be filled up) of the final shape of the building complex, and not only a part of the structure for the initially assumed construction of a half of a house.
5. A model programme for a middle-class home: The size of the building for the final stage of the expansion is at least 72 m² or 4 bedrooms (3 x 3 m) with a space for a wardrobe or a double bed. Bathrooms should be located far from the entrance due to the ease of placing installations and should be fitted with a bathtub instead of just a shower, as well as feature a place for doing laundry. Every house must allow the provision of a parking space.

None of these rules were used in the construction of social housing prior to Elemental. As we can see from the abovementioned assumptions, the original residential floor area within an apartment was around 36 m² along with the built volume, which was suitable for creating additional living spaces.

### 1.4. It all started in Iquique

Elemental’s first project - Quinta Monroy Housing, was built in 2004 in Iquique, in the northern part of Chile, on the edge of a desert. Iquique is a city of 200 thousand, which can be reached from Santiago by a 3-hour flight. This pioneering project focuses all the new architectural ideas that Elemental has introduced. The selection of the site was a result of financial conditions because property prices in Iquique were lower than in Santiago. "A half of a good house" is the shortest and most straight-to-the-point idea of this project. Both the economic and spatial concept of the buildings was based on this principle. This idea starts from a very clear and simple assumption - if you cannot afford an entire house, build only a half of it. This "half" must function independently, it must feature a technical structure and urban design solutions that enable its extension. Through the Elemental institution and its concept of public participation in the project and dialogue between the state and the residents, the following assumptions were formulated:

1. Taking into consideration the attachment of the residents to an illegally settled site, with a high crime rate and a lack of access to running water and sewerage.
2. Changing the through the removal of the flawed structure and legally financing the newly built housing estates composed of a structure that is, in urban planning-related terms, ready for extension, featuring sewerage and running water.
3. Deliver independently functioning parts of the building, composed of units with a structure that is ready for extension by the residents themselves. The extensions, built in accordance

---

7 Name provided in English. Its Spanish original is „La Vivienda Incremental” and it does not have an appropriate Polish translation, which is why it has been provided in English. Possible Polish translations include equivalents of added, growing or developing buildings, but these are not fully adequate to the phenomenon being described and do not fully reflect its essence.
with the individual capabilities and wishes of the residents of thusly-transferred "halves" of houses, were meant to allow the residents to strongly identify with the surrounding space, and, consequently, provide them with a feeling of pride and value.

A unique structure, co-created by architects and residents, was built as a result, with the housing estates thus built becoming free of pathological qualities and turning into well-functioning parts of the city. Confirmation of these achievements came in the form of, on the one hand, a lack of protests on behalf of the residents and their support for the construction, while on the other, an almost threefold increase of the value of buildings built following these principles, i.e. to 20 000 USD, over the course of three years. Additional aesthetic values of these residential structures also appeared, being a result of the high rigour established by the architects and the freedom and imagination proposed by individual residents. Although many of these solutions would be considered kitsch from a traditional perspective, they nevertheless are an exceptionally interesting example of an aesthetic that arose as a result of a democratic process and are a positive image of Chilean society. From a European perspective, in which aesthetic is assigned to a function by an architect, this can appear controversial. Design conducted with an awareness of a process taking place over time and the role of the architect based on designing this process goes beyond the traditional boundaries of designing a building. Furthermore, it is the architect who, from the outset, assumes and agrees with changes to the designed form, only initiating the process. This resembles somewhat the work of a contemporary programmer, who establishes a structure of rules instead of a finished, closed-ended product. The challenge that was placed before the Elemental group in Iquique was based on designing houses for 100 families, funded by government subsidies equal to 7 500 USD per family. The families had been living in this area in a slum that existed for 30 years, located on an area of 5.000 m². When removing the flawed spatial structure, it was decided to preserve the community that resided there, offering it a new spatial structure that guaranteed: the possibility of building extensions, seismic structural safety and appropriate sanitary conditions. The halves of houses that were built could, by default, be extended "to the side", filling in the spaces between each element. Furthermore, an urban layout of these units was formed around internal courtyards, which served as access paths to individual buildings, preventing them from being built up later, ensuring access to light and ventilation. This planning proposal of loosening up the structure was an answer to the exceptionally dense structure of the slums, devoid of any public spaces whatsoever. This is how Alejandro Aravena, one of the authors of the idea, spoke about it: "The aim was to keep the families’ social and economic networks, which they had created close to the centre city, instead of evicting the families to the periphery. And we wanted the families to live in houses able to achieve a middle-class standard instead of condemning them to an everlasting social housing one. None of the solutions in the market solved the equation. So, we thought of a typology that, as buildings — could make a very efficient use of land and as houses — allowed for expansion. We provided the families with the “half a house” that would be difficult for them to build for themselves and we gave them space to “complete the house” as their means allowed". (Hayatt Foundation, 2016). The actual condition shown on illustration 5 fittingly describes the urban planning-related dilemma of cheap, mass housing, depicting two typologies of buildings used to solve this problem. On one side we can see a panel apartment block from a house factory, along with its full anonymity of residents and a lack of social ties, while on the other we can see high-density single-family buildings built in complexes meant for expansion with a specified number of units. The latter example builds and respects social ties. Incremental Housing also respects the differences in taste, creating a reflection of a democratic society in its final architectural form. The typography of housing blocks visible on the second plane is, in turn, an expression of totalitarianism and of a lack of social dialogue, the effect of which is the alienation of residents and a lack of social ties.
Figure 2. Part of a facade of the Quinta Monroy Housing complex, Iquique, Chile, 2004, Illustration from: www.elementalchile.cl/en

Figure 3. Interior of the Quinta Monroy Housing complex, Iquique, Chile, 2004, illustration from: www.elementalchile.cl/en
Figure 4. Part of the Quinta Monroy Housing complex, Iquique, Chile, as seen in 2017, phot. by Kazimierz Butelski

Figure 5. The urban context of the buildings of the Quinta Monroy Housing complex, Iquique, Chile, as seen in 2017, phot. by Kazimierz Butelski

1.5. Elemental in Santiago

After the pilot housing estate in Iquique the time came to try out the idea of building houses meant for extension in large cities. The Reneca 1 complex was designed in the capital of Santiago in 2007, with construction being completed a year later. It is composed of 170 housing units and a Cultural Centre with a floor area of 370 m². The initial floor area of a housing unit was 28.2 m², with the target floor
area amounting to 67.8 m². The complex was built on a plot with an area of 28,700 m². In contrast to the designs in Iquique, the extensions were meant to be performed inside the volume through partitioning internal space with floor slabs. What is characteristic in this project, which is pioneering for Santiago, is that the Elemental group served as the developer. However, in the case of a subsequent housing estate, called Reneca 3, built in 2008, it was the Un Techno para Chile company that played this role. In this case, 74 housing units and a Cultural Centre were built. The initial floor area was 44,11 m² with a possibility of planned extension up to an area of 66,39 m². The principle of extension was analogous as in the case of Reneca 1, which means that it took place inside the volume. It should be highlighted that in each of the examples discussed here, apart from the extension assumed by the authors, spontaneous extension - which had not been planned by them - was also taking place. In the case of the Reneca complexes this meant extensions towards the front of the plot, in front of the house, as well as towards the backyard. During field research performed in 2017 it was also observed that in some units this process was still ongoing and, apart from ground floor extensions, extensions of the first floor - both from the front, as well as from the back of the buildings - were being built.

In the case of the Reneca project, due to the necessity of replacing the soil, which increased the cost of the plot, attempts were made to obtain the highest possible building density, demarcating row house complexes of up to 25 units along shared-space passages. The houses were separated from each other with walls that had a height that was three times as high relative to the needs of a single storey to make it possible to divide the space into 3 storeys later. Another essential urban planning-related measure was the construction of a mound composed of the earth that had to be removed from the site, which created a recreational area and isolated the buildings from the noise generated by the nearby motorway.

Figure 6. View of a street frontage with unplanned extensions featuring stores and restaurants. Reneca 1 Incremental Houses Complex, Alejandro Aravena – Elemental Reneca, Santiago| Chile 2008. as seen in 2017 phot. by Kazimierz Butelski
Figure 7. Cross-section through a building with minimalistically planned sanitary fixtures. INCREMENTAL HOUSES COMPLEX Reneca, Santiago| Chile 2007, Alejandro Aravena – Elemental, illustration from: www.elementalchile.cl/en

Figure 8. A single neighbourhood unit. INCREMENTAL HOUSES COMPLEX Reneca, Santiago| Chile 2007, Alejandro Aravena – Elemental phot.by Kazimierz Butelski

Similar principles of growth through dividing the originally built volume using floor slabs were used in subsequent projects located in Santiago, such as: PUDAHUEL, Santiago| Chile 2010, PUDAHUEL, Santiago| Chile 2010, Reneca II Santiago| Chile 2008.
Conversely, in the 2007 Lo Espejo Santiago, Chile project, a similar principle of extension to that from Iquique was used, i.e. extension to the sides. However, the form was defined differently than in Iquique, through covering the spaces meant for the extension with a roof, which had not been present at Iquique. The initial unit had a floor area of 36.2 m², while the target one had 60.5 m² or 72.5 m². The essential social concept of extension over time as the tenants became wealthier, although it had been planned, was not tested here. The community had received an additional government grant and, instead of a structure for further extension, complete buildings were built. The state thus did not subsidise a half of a house, but an entire one.

The process of the unplanned extension of the ground floor section both from the front and the back, as shown on illustration 11, also applied to this complex. The illustration documents an important social principle, that items received for free are not considered to be of value. The plants growing in the drainage pipes of the roofs are proof of the fact that the residents do not put much effort in maintaining the technical condition of the buildings. Such conduct will, as a consequence, lead to their degradation and a repeated transformation into the structure of a slum, even though they were meant to constitute a remedy for it.
Of key importance to the founding of Elemental and its operation was the forgotten experiment that was carried out in the capital of Peru, Lima, in 1973 under the name PREVI\(^8\). In 1965 the government of Peru and the United Nations asked British architect Peter Land\(^9\) to create a mass housing construction strategy as an answer to the problem of the slums that had been appearing in masse on the outskirts of Lima. He proposed the organisation of a competition for the design of 1500 housing units on a desert area of 40 ha, located to the north of the city centre of Lima. 13 foreign architects had been invited and a competition for Peruvian architects was organised, with 13 additional architects being determined as winners.

The following assumptions were presented for implementation:
1. The establishment of a neighbourhood structure based on high-density and low-height concepts, using a modular layout, making future continuation possible.
2. Creating a conceptual design of a house that had a courtyard and that was possible to extend.
3. Tying the urban layout with that of the houses into one structure.
4. Basing the entire circulation inside the complex on pedestrian circulation.
5. Developing a structure and a method of buildings houses that is resistant to earthquakes
6. Harmoniously blending in the entirety into the landscape. (Mateo, 2016)

As a result, three teams were determined to be the winners: Kikutake-Kurkowa-Maki, Herbert Ohl and Atelier 5. A decision was made to implement 26 designs that featured very high architectural quality, with Peter Land, who supervised and coordinated the entirety, proposing for each architect to design 20 dwellings. For economic reasons, instead of the previously planned 1500 houses, only 500 were built and assigned for occupancy. The construction was finished in 1973. PREVI was a unique

---

\(^8\) Proyecto experimental de vivienda - Experimental Housing Project.

\(^9\) Peter Land is a professor of IIT. He obtained his professional education at the AA and the Royal Academy Schools in London. He holds master’s degrees from the universities of Yale and Carnegie Mellon in architecture and urban planning; he is a member of the Royal Institute of British Architects and a licensed British architect. He used to be a direct of the UN Experimental Housing Project in Lima (PREVI). After PREVI he worked at Harvard University and IIT, he conducted research and developed designs concerning the densification of cities, energy efficient and sustainable housing construction and planning. He also conducts research work at IIT based on the interdisciplinary design of energy efficient long-span structures.
occasion to confront the informal structures of the slums with the architectural ideas of late modernism and Team X. The housing estate that had been built influenced many architects and urban planners in that period through a feedback loop effect. (Mateo, 2016)

PREVI was designed as an open platform for the growth and incremental adaptation to the changing needs of a family over the course of its life. The design assumed an evolution of the structure and changes within it. The authors probably had not thought that they would be so far-reaching. Over the 45 years of its existence, the residents radically changed the form of the buildings and the original functional programme. The transformation of PREVI reflects the dynamic character of the changes of the local community, which only partially accepted the solution that had been prepared for them by the architects. We can label this situation as a form of dialogue between the professional and non-professional participants of the process of building and designing with the goal of creating an optimal housing environment. If we perform such an evaluation, then there exists a need to redefine the role of the architect within society.

### 1.7. Chile - conclusion

The Chilean experiment, shown on illustrations from the year 2017, from a perspective of 10 years of functioning, is notable because it attempts to not only innovatively solve housing problems, but also the structural problems of a city in which a decayed slum structure exists. It focuses the attention of the consumers of the proposed architecture and urban planning on the social issues of solving this problem, changing the optics of the interests of architecture and of architects themselves in a direction that is opposite to solely formal solutions, which are often their main area of interest.

Fashion trends and the building of icons instead of rational architecture solving social problems has become the dominant tendency in architecture in the 1970's. Societies all around the world are facing problems brought on by housing shortages, population growth and the dynamic process of urbanisation. The role of architects is proposing solutions to those problems. Such an attempt has been made in Chile, under the conditions of a free market economy. Will it be a success not only in terms of spreading this idea, which has so far largely been successful, but also in terms of the actual improvement of living conditions? Time will tell. For time is the most fitting arbiter of architecture. Incremental Housing also does not resort to proposing aesthetic elements, although they are an effect of the adopted design method and it assumes public participation in their creation. This solution appears to be quite controversial to architects who are accustomed to their role of guides, to avoid using the term "aesthetic dictators". One significant threat to this idea is the "power of the slum structure" that surrounds the complexes that are being built. The unplanned redevelopment and extension of the forms of these buildings can turn them into slums once again.

---

*Figure 11. Slums absorb new housing estates Incremental Housing Units, Alejandro Aravena – Elemental, Reneca II, Chile 2007, as seen in 2017 phot.by Kazimierz Butelski.*
1.8. Poland - basic facts concerning history and economics

Poland has had a much longer history as a country than Chile, with its beginnings going as far back as the tenth century. Poland's appearance on the map was associated with a conversion to Christianity. From the sixteenth century all the way to the end of the eighteenth century, thanks to its union with Lithuania, Poland was one of Europe's superpowers, with a democratic system of government and an elective monarch. Towards the end of the eighteenth century it lost its independence and remained partitioned throughout the entirety of the nineteenth century, with its territory occupied by Austria, Prussia and Russia. Poland regained independence because of World War I. During World War II Poland was simultaneously attacked by the Germans and the Soviet Union, and then divided among them. After World War II it lost its freedom and democracy, finding itself under Soviet occupation. The end of this totalitarian system would come as late as 1989, with the last Soviet soldier leaving Poland in 1992. We can consider this moment to be a true regaining of the country's sovereignty and the ability to rebuild a democratic political system. Becoming a member of NATO in 1999, as well as accession into the European Union in 2004, were important events that severed the country's ties with its communist past. The first Polish Pope, John Paul II, is considered to have had the greatest influence on social transformations at the turn of the twentieth and the twenty-first century - both in Poland, as well as across the entire world.

His long pontificate, which ushered the Church into the new millennium, lasted from 1979 to 2005. The nineteenth century, when Poland could not be found on the world's maps, brought with it many waves of migration, including to Chile. One of the most famous Polish emigrants was Ignacy Domeyko, who would become a rector of the University of Santiago, contributing greatly to his new homeland. Despite significant historical differences, we can see certain similarities over the past 50 years, particularly in the period of departing from the left-wing communist dictatorship in Poland and the right-wing dictatorship in Chile. Both general Pinochet in Chile in 1990 and general Jaruzelski in Poland in 1989 were forced to relinquish power in a similar period, although for different reasons. The transfer of power and the road to democracy in both countries was also similar and took place without bloodshed, as a result of democratic elections. Both societies also share a similar opinion of their governments, which has led to internal divisions that are present to this day. However, one common characteristic of Polish and Chilean society is a similar economic development, as well as the average income per resident in both countries, which amounts to around 900 euro per month.

However, it needs to be highlighted that the end of Pinochet's rule in Chile was not associated with the economic bankruptcy of the existing system, which functioned very well during his time in power, while in Poland the period of Jaruzelski meant not only a lack of democracy, but also an inefficient economic system that resulted in the rationing of basic foodstuffs. Hence, over the past 29 years Poland has had to build both its democracy and its economic system from the ground up. This has largely been successful considering the starting point as a reference. Privatisation of many sectors of the economy, including construction, took place during this time, the degree of urbanisation in Poland amounts to around 60% and its growth has not been forecasted to rise in the coming years. The geographical location, climate and topography of Poland are also fundamentally different from those of Chile. The landscape of Poland is dominated by lowlands. The only mountains it has are in the south, near the border with Slovakia and the Czech Republic. Poland is in one climate zone and there are no earthquakes or tsunamis on its territory, which do take place in Chile. As a result of World War II, Poland incurred some of the heaviest losses, both in terms of material and casualties.

In particular, a large portion of its housing capacity was destroyed, while its borders were moved from east to west. Many historical Polish cities have found themselves outside of the borders of the new state, including L'viv (Lvów) and Vilnius (Wilno). As a part of "compensation" for the loss of its historical territory, Poland gained Wrocław, Gdańsk and Szczecin. The new cities gained in this manner were in complete ruin. Wrocław, which had been turned into a fortress by the Germans and capitulated after the fall of Berlin, was destroyed and can serve as a classic example of this
The capital of Poland, Warsaw, after the suppression of the Warsaw Uprising by the Germans, was being systematically levelled by them. The post-war resettlement of the population destroyed social ties and severed cultural continuity. Losses among the population left the country without the manpower necessary for reconstruction. Additionally, the economic system based on a free market economy that had been known before the war was destroyed, with a new, communist system being imposed by the USSR, featuring no private ownership.

The totalitarian communist system tried to solve housing problems in a centralised manner, without any public discussion, making arbitrary decisions and implementing them all by itself. The socialist realist doctrine, which was not present in democratic states, was imposed in Poland after the War. Socialist realism contradicted all the values of modernist architecture that had dominated Poland up to World War II. Thanks to modernist ideas, Poland saw the construction of new functionalist cities like, for instance, Gdynia, in the interwar period. Poland, similarly to many countries in the Soviet sphere of influence, copied solutions developed in the Soviet Union both in terms of urban planning, as well as the typology of buildings. The latter were being produced towards the end of the PRL (Polish People's Republic) in so-called "house factories" and were being built by so-called "housing cooperatives".

So-called registrations were organised for people who wanted to obtain an apartment, which took on the form of waiting lists with criteria that were preferred considering access to dwellings. The waiting period was several-years long and it was never possible to provide a sufficient amount of housing in relation to public needs. This process was directed and supervised by the Party.\textsuperscript{10} The quality of the buildings that were designed was meant to be regulated by so-called normative housing standards. The first normative standard was introduced in 1959, with an amendment being performed in 1974. The changes from 1974 were a result of the necessity to adapt the size of the apartments to their "production" at house factories.

Table 1 Comparison of normative standards from 1959 and 1974

| Apartment category | Apartment floor area 1959 (m²) | Apartment floor area 1974 (m²) | Admissible increase of the upper limit for technological reasons (m²) | Maximum upper limit to the size of an apartment of a given category (m²) | Number of people in an apartment |
|-------------------|-------------------------------|-------------------------------|-------------------------------------------------|-------------------------------------------------|------------------|
| M-1               | 17-20                         | 25-28                         | 1                                               | 28                                               | 1                 |
| M-2               | 24-30                         | 30-35                         | 4                                               | 36                                               | 2                 |
| M-3               | 33-38                         | 44-48                         | 2                                               | 52                                               | 3                 |
| M-4               | 42-48                         | 56-61                         | 3                                               | 63                                               | 4                 |
| M-5               | 51-57                         | 65-70                         | 85                                              | 73                                               | 5                 |
| M-6               | 59-65                         | 75-85                         | Not standardised                                | 85                                               | 6 or 7            |
| M-7               | 67-71                         | Not standardised              |                                                 |                                                  |                   |

Source: Resolution no. 364 of the Council of Ministers of 20th August 1959 on approving design normative standards for residential construction, „Monitor Polski” (Polish Monitor), is. 81, poa. 422, p. 687. W. Korzeniewski, Normatyw urbanistyczny i mieszkaniowy (Urban and residential normative standard) – 1974, Warszawa 1980, p. 62;

After the change in the political system in 1989, free market conditions in residential construction have been reintroduced in Poland, with private property becoming their foundation. Real estate development companies, unknown during the period of the communist economy, have started to

\textsuperscript{10} PZPR Polska Zjednoczona Partia Robotnicza (Polish United Workers' Party) was the sole political party, performing a so-called executive role in the state and, as any totalitarian organisation, it tended to control the totality of the activity of every citizen, ranging from their promotion to all employment positions, to regulations concerning the sizes of apartments.
operate on a large scale. The role of mortgages as the main source of financing residential development projects has also risen quite significantly. Despite these positive changes, according to an OECD report (OECD, 2017) the overall number of dwellings relative to the population was the highest in Greece, Portugal, Bulgaria, France and Spain - while the lowest was in Chile, Mexico, Slovakia and Poland. According to that same report, the lowest number of dwellings per 1000 residents among developed countries was in Chile, where this number was reported to be equal to 290, while in Mexico it was 314, in Slovakia 360 and in Poland 363. The highest number of dwellings per 1000 residents was in Greece and Portugal, where this number amounted to 570, which was almost twice as much as in Chile. As it can be seen from the data provided above, there are far reaching similarities in this department. Throughout the entire period after the year 1989 the state and the government exerted their influence on the real estate market mostly using financial instruments and legal restrictions concerning real estate trade. Only in recent years has the government decided to actively involve itself in the process of increasing the amount and accessibility of dwellings. To this end, a special purpose programme called Mieszkanie Plus (Apartment Plus) has been established, with its name being a reference to a different social programme called 500 Plus, which offered financial benefits to families with two or more children, per every child except the first.

1.9. The Apartment Plus programme

Apartment Plus is a government programme aimed at people who do not have a sufficient income for a bank to give them a mortgage loan. For these people, the government wants to build apartments for rent, with a buyout option. Funds for the Apartment Plus programme come from the state budget, the National Environmental Protection and Water Management Fund, as well as European funds. The development projects, the aim of which is the construction of affordable rental housing (with a buyout option) are being built on the basis of a cooperation between the BGK Nieruchomości company and local government authorities. Dwellings will be built on land belonging to the State Treasury. In order to achieve this goal, the state established the National Real Estate Stock which will fulfil the role of a "land bank". The Stock will gather real estate belonging to the state and manage it so that the supply of real estate for housing will increase. The proposed rent is to range from 10 to 20 PLN per m², while with a buyout option it will be between 12 - 24 PLN per m². In the case of forgoing buyout or the death of a tenant, any excess payments will be returned, with tenants not being evicted in the case of not being able to pay their rent due to loss of employment\(^{11}\). The main goal of the National Housing Programme, whose element is the Apartment Plus programme, is increasing the number of dwellings per 1000 inhabitants to the mean amount of dwellings in the European Union, which is 435 dwellings per 1000 inhabitants, from the current level of 363 dwellings.

\(^{11}\) Information about the programme has been taken from government-issued information [https://www.miir.gov.pl/strony/zadania/mieszkanie-plus/](https://www.miir.gov.pl/strony/zadania/mieszkanie-plus/)
1.10. Biała Podlaska - the Polish Iquique

Biała Podlaska, among other locations, was chosen for the implementation of the pilot Apartment Plus programme. It is a city located near the border with Belarus, and which does not have a significantly developed industry. Biała Podlaska has around 47,000 inhabitants and is a medium-sized city under Polish conditions\(^\text{12}\). The Apartment Plus programme is addressed to young people who cannot afford a mortgage but can rent an apartment on the free market. The option of obtaining ownership is key and involves raising rent payments by 20% per month in comparison to those tenants who will not want to become the owners of apartments. To carry out the development projects, a special purpose vehicle was established in the form of the MP Biała Podlaska company, to which the city has contributed in kind in the form of a plot along with a building permit. The city’s partner in this company is the BGK bank, operating through its subordinate company BGK Nieruchomości. The plot is located in a section of an existing large housing estate, with good infrastructure and circulation. A hospital, schools, kindergartens, shops and supermarkets are located nearby.

After the project is finished, the city will withdraw from the special purpose vehicle and will receive 62 apartments in payment for its contribution. A new architectural design was not developed for the purposes of the Apartment Plus programme in Biała Podlaska. The buildings to be built are a continuation of an idea and of a design from couple of years ago. The author of the design is architect Jacek Nawrocki from Warsaw. The design was selected through a competition. The assumption was the construction of a complex of four modern four-storey buildings with a usable floor area of around 13,000 m\(^2\). 186 apartments will be built in total, with a floor area ranging from 40 m\(^2\) to 55 m\(^2\) each, along with 175 parking spaces, playgrounds and green areas. Out of the four buildings, one was

---

\(^{12}\) In Poland cities are considered large if they have more than 100,000 residents, medium-sized ones if they have between 20,000 and 100,000, while small cities have less than 20,000 residents.
already built using the funds of the municipality of Biała Podlaska, while the three remaining ones became a part of the Apartment Plus programme. The apartments are being built by three local construction companies that were selected through a call to tender. The cost of construction is 14 870 000 PLN. Admission into the programme started in the middle of 2017. Interest in the apartments has proven to be enormous. Over 1000 applications have been filed. The estimated rent value is to be around 10-12 PLN per m², while in the case of the buyout option it will be 20% more. The total number of apartments is 186, including 174 having two rooms and 12 having three rooms. The floor area of the apartments ranges from 39 to 55 m². Hence, the highest rent without buyout will amount to 660 PLN per month, while with the buyout option it will be 792 PLN per month\(^\text{13}\). 80% of the applicants declare interest in the option of renting with a buyout. The number of applications, which is 1000 per 186 apartments, shows just how high the housing demand on the rental market is.

Benefits of the Apartment Plus programme are being observed in Biała Podlaska in the form of:

1. the stabilisation and the covering of the apartment rental market, which has largely been based on occasional rental so far, with state protection.
2. the creation of a stimulus for young people to become independent, for them to establish new families and for society to become rejuvenated (many applicants currently living with their parents).
3. creating an alternative in obtaining ownership through increased rent gives a large part of society the chance for stabilisation without the need to get indebted to banks (over 80% of the applicants declared rental with buyout).
4. increasing the role of the local government through the possibility of determining the site of a project (development plans), the establishment of new technical infrastructure, all the way to influence on the rules of the qualification of beneficiaries - will provide a development that is most appropriate to local conditions and make it possible to avoid the marginalisation of social groups.
5. reversing undesirable migration tendencies - the influx of people from outside, preventing population flight (applications filed by people from outside the city).

In architectural and urban planning-related terms, the conceptual design that is being implemented reflects a typology that has seen broad use in housing construction in Poland in commercial conditions. It is a four-storey building with internal circulation in the form of a stairwell, around which two apartments are available every half-a-storey. The entire building is composed of three such segments. In urban planning terms, after the performance of a daylighting analysis, the buildings have been oriented with their longer axes along the north-south direction, in parallel to each other. The individual buildings are slightly zigzagged, which provides the urban interiors between them with individual characteristics. There is no semi-public or private spaces between the individual elements of the complex, which is in line with the principle establishment many years ago by Le Corbusier in the design of the Unité d'habitation in Marseilles, understood as a sculpture within public space.

The structure of the apartments was based on real estate market research and indications concerning demand. This problem was widely discussed in, for instance, the publication of the General Statistics Office of Poland - "Gospodarka Mieszkaniowa 2015" (Housing Economy 2015). Similar data was contained in the document called "Raport o sytuacji na rynku nieruchomości mieszkaniowych i komercyjnych w Polsce w 2015 r." (Report on the situation on the housing and commercial real estate market in Poland in 2015) prepared by the National Bank of Poland. The authors of the report concluded that "the highest prices per square metre on the primary and resale market in Warsaw, as well as in the six largest voivodship cities (6M) were registered for small premises (with a floor area up to 40 m² and with 1 room) as well as large ones (with a floor area of 80 m² or more and with 4 rooms or more). Meanwhile, on the markets of the remaining 10 cities (10M) the highest prices per square metre were registered for apartments with a small number of rooms and a low floor area".

\(^{13}\) The information listed above was provided by the Office of the City of Biała Podlaska
Figure 13. Mieszkania Plus – Biała Podlaska arch. Jacek Nawrocki, competition conceptual design, urban layout. Illustration from Ronet.pl

Figure 14. Apartment Plus – Biała Podlaska arch Jacek Nawrocki competition conceptual design, apartment structure. Illustration from Ronet.pl
2. Conclusion

The right to live in fitting conditions is one of the basic human rights. Providing affordable housing to citizens who cannot do this themselves is one of the elements of humanitarianism espoused by contemporary societies. The examples from Chile, Peru and Poland that have been discussed are varied in terms of approaching this global problem. Of note in each of these cases is the undertaking of attempts at solving this problem with the participation of architects and urban planners. The main differences in architectural and urban planning terms between the concepts refer to:

- The scale of the buildings - up to 2 storeys of row houses versus 4 storeys in an apartment block layout.
- The urban structure - a closed-ended, finished structure versus an open platform for future extensions.
- Ownership and land use - from a varied, public, semi-public and private to a completely public one.
- Public participation in the final development of the forms of buildings, from an active to a passive one.

Among the differences listed above, the first apply to examples from South America, while the second apply to Poland. Another significant difference was in the moment of introducing architects into the development process. In Chile they participated right from the start, during the programming stage of a development project and its placement decisions, they participate in negotiations with residents, implementing the design and in the supervision of the construction, while in Poland they were present from the moment of the competition for the development of a design on a predetermined site and with present functional with parameters. The matter was similar in terms of the participation of the future users in Chile, where they acted in parallel to Architects right from the start of the development process, while in Poland they did so from the moment of applying for the programme, which was already during the construction phase of the development project.

Because architecture and urban planning have a strong social function, the Chilean and Polish models lead to the building of two different communities residing within the spaces that have been discussed. In the first case it will be a society that is active in the solving of its problems, while in the second it will be a society that passively waits for a solution that, by definition, cannot satisfy everyone. Thus, arises the postulate of correcting the housing programme that is being implemented in terms of making it more community-based, because only this way can the invested funds provide aid in the building of a strong and conscious society, which is a state-building value. Poland has already implemented such a programme in the interwar period, an example of which is Gdynia, in which we can currently observe a strong identification with the city among its residents. The formation of an active and involved local community in Gdynia is an effect of the establishment of a modern city, which should be the goal of the efforts of the state, which in turn will become stronger as a result.

References

[1] DeLanda, Manuel. 1997. A Thousand Years of Nonlinear History. Boston : The MIT Press, 1997.
[2] Hayatt Foundation. 2016. Pritzkerprize.com. 2016-Pritzker-Prize-Image_Book_0.pdf. [Online] 2016. [Cited: 04 03 2018.] Pritzkerprize.com.
[3] (Mateo, Josep Lluís. 2016. PREVI Experience. Transfer Global Architecture Platform. [Online] Feb 26, 2016. [Cited: March 1, 2018.] file:///C:/Users/KLB/Desktop/A24%20Dell/Chile/literatura/PREVI%20Lima%201969%20% E2%80%93%20Transfer.html.
[4] Podhalański, Bogusław 2013, Integrowanie przestrzeni metropolitalnych. Kraków 2013 Wydawnictwo PK 2013".
[5] OECD. 2017. HM1.1 HOUSING STOCK AND CONSTRUCTION. [Online] 2017. [Cited: 30 March 2018.] http://www.oecd.org/social/affordable-housing-database.htm.
[6] Rada Ministrów. 1959. Uchwała nr 364 Rady Ministrów z 20 sierpnia 1959 r. w sprawie zatwierdzenia normatywów projektowania dla budownictwa mieszkaniowego (Resolution no. 364 of the Council of Ministers of 20th August 1959 on approving design normative standards for residential construction). „Monitor Polski” (Polish Monitor), iss 81, 20 August 1959, pages of pos. 422, p. 687.

[7] Weston Richard. 2010. *Key Buildings of the 20th Century*. 2. New York, London: W.W. Norton, 2010.

[8] Wikipedia. 2018. Slumsy (Slums). [Online] 2 April 2018. [Cited: 2 April 2018.] https://pl.wikipedia.org/wiki/Slumsy.

[9] Władysław Korzeniewski. 1980. *Normatyw urbanistyczny i mieszkaniowy - 1974 (Urban Planning and Housing Normative Standard - 1974)*, Informator (Informer). Warszawa: Centralny Ośrodek Informacji Budownictwa, 1980.

[10] Joint publication. 2018. Słownik Języka Polskiego PWN (PWN Polish Language Dictionary). *Słownik Języka Polskiego PWN (PWN Polish Language Dictionary)*. [Online] https://sjp.pwn.pl/słowniki/humanitaryzm.html, 9 2 2018. [Cited: 9 2 2018.] https://sjp.pwn.pl/.