CONTEMPORARY RECONSTRUCTION:
CELEBRATING DESTRUCTION IN THE BASILICA OF EL SALVADOR

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INTRODUCTION

In a highly seismic active country like Chile, reconstruction is a periodic exercise. Every 10 - 25 years there is an earthquake greater than 8.0 at the Richter scale, which leaves enormous human and material loss. Our surviving built heritage also suffers devastating structural and material damage, which oftentimes is left in neglect and abandonment after the event because of lack of funds. The Basilica of El Salvador in Santiago Chile, completed in 1920 and designed by German architect Theodore Burchard, is one of these cases. The architect did not take into account the seismic condition of the country, and the building has been seriously damaged over and over again. The Basilica closed after the 1985 earthquake because of safety reasons and later, in the 2010 earthquake, damage increased leaving it in a sad yet appealing state of ruin.

The history of the Basilica is one about social change, religious symbolism, architecture and decorative arts, but it is also a history of destruction and reconstruction. This thesis intends to explore destruction as an aesthetic and historic value worth preserving and an opportunity for interpretation and design, by proposing a restoration project for the Basilica that reuses the damaged structure as an Earthquake Center for the research and education of seismic activity in Chile.

The design - based on international recommendations and theories of restoration, by authors such as John Ruskin, Camillo Boito and Cesare Brandi - will respond primarily to the need for structural retrofit, levels and methods of intervention, and the interpretation of the building itself and its fragments as a prototype and laboratory.
THE STRUCTURE AS A DOCUMENT:
Background and precedents

"En realidad, todo problema de intervención es siempre un problema de interpretación de una obra de arquitectura ya existente, porque las posibles formas de intervención que se planean siempre son formas de interpretar el nuevo discurso que el edificio puede producir"¹

("In reality, every problem of intervention is always a problem of interpretation of the existent architecture work, because the possible forms of intervention that are proposed are always modes to interpret the new discourse that the building can produce")²

Intervening a building is a broad concept. Any work that is done on an existing building is to be considered an intervention. From superficial work, such as re-painting, to structural work, as rebuilding or adding elements, we always alter the original building.

Whenever intervening in historic buildings, the exercise of interpreting what the building is today and what the building was in the past is supported by the evidence we find. The remains, the missing and the hidden material and history of the building are precedents that need to be taken into account in order to intervene in a meaningful way.

The Basilica of El Salvador has many layers of history to be exposed. It is a structure recognized for its political, religious, artistic, architectural and urban significance, but it is also a survivor of intense seismic activity in Chile. This chapter will describe the explorations of its multiple layers of significance, including its history of destruction and reconstruction, one that must be told in order to celebrate it as a structure of permanent rebirth and resilience.

² Ibid. Translated by the author
**HISTORY 1: Political and religious**

“Para celebrarla o criticarla, todo investigador del pasado debe comenzar por ella: el filo de la espada conquistadora, en el largo plazo, fue mucho menos significativo para la cultura nacional, que la huella de la cruz.”

("To celebrate or to criticize it [the church], every researcher of the past must start with it: the blade of the conqueror sword, in the long term, is less significant for the national culture, as is the trace of the Cross")

The history of the Basilica starts in 1863, when in December 8th -the last day of the Month of Mary- the paper flowers that adorned the Jesuit Church of La Compañía (The Company) caught fire. (Image 1) The doors of the church opened towards the inside, and around 2000 parishioners (mostly women) were burnt to death. Statistics say that 1 of every 27 women in Santiago died. Just a few months later, in May 1864 the Archbishop Valentin Valdivieso, ordered the construction of a new Church under the name of La Nueva Compañía (The New Company), dedicated to the Savior of the world, and which would later be known as the Church of El Salvador.

1. Lithograph by Morand, 18..?

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4 Ibid. Translated by the author.
The Cross is interpreted as the symbol of the Catholic Church.
5 The Jesuits are a religious congregation founded by Ignatius of Loyola. They call themselves The Company of Jesus from which the name of the Church came from.
The Church of the Company was the most important church in Santiago for the upper-class, who celebrated their life sacraments in this structure. It represented the power of the conservatives and the power of the Catholic Church as an institution in the Republic of Chile. Its destruction on the other hand became to represent a shift in these powers.  

At the time, the state and the church were united. This tragic event triggered the conflict between liberals and conservatives, and opened the discussion of the separation of these institutions. On one hand the liberals believed that the church had too much power and that both institutions must be independent, having a secular state; and on the other hand, the conservatives defended the church and its moral order to be part of the State’s power.

The conservatives built the Church of El Salvador (early on known by this name) as a way to symbolize the power of the church. The foundation stone ceremony was in 1870, but it wasn’t until 1873 that the construction began. The Church was financed by donations of a society fearful of god, who linked its salvation with giving alms. Also different confraternities paid to have their altars in this new and magnificent church. Especially important was the Confraternity of El Carmen, which promoted the devotion to The Virgin del Carmen, the Patron saint of the Army of Chile. (Image 2)

![Image 2](image2.jpg)

2. Monseigneur Rafael Edwards Salas with the Virgin del Carmen

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8 Serrano. Qué Hacer con Dios en la Republica? P. 27-39
9 Serrano. Qué Hacer con Dios en la Republica? P. 27-39
The process of the construction of the church was not easy. It was interrupted by at least 3 economic crises and the War of the Pacific (1879-1883). Finally in 1892 the structural work was completed and the Image of the Virgin del Carmen arrived from the Church of San Agustin. Since then the Church of El Salvador was a place of pilgrimage and religious devotion, and from which the procession of the Virgin del Carmen departed every third Sunday of October towards the Cathedral of Santiago. (Image 3)

In 1888 the archbishop of Santiago Mariano Casanova, in the midst of a constitutional reform that promoted the separation of church and state, promised to consecrate the Archbishopric of Santiago to the Sacred Heart of Christ and that the Church of El Salvador would be finished to represent the consecration and plea for Christ to save Chile from the unfortunate ideas of a secular state. The promise of consecration was finally accomplished in 1900 in a multitudinous religious celebration in the Basilica. Since then, despite the fact that the Church was unfinished, the sanctuary was the busiest of the Capital and was the background for many religious expressions of collective faith.

The Virgin del Carmen grew in religious significance when in 1926, one year after the official separation of the Church and the State, she is recognized as the Patron Saint not only of the Army but of Chile as a nation. Because of the presence of the image of the Virgin, in July 24th of 1938 the Church was raised to the rank of Minor Basilica by Pope Pious XI further enhancing its religious importance in the history of the Catholic Church in Chile.

3. Procession of Virgin del Carmen outside the Basilica of El Salvador, September 28, 1980

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12 Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 7
15 Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 15
16 Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 16
HISTORY 2: Architectural and artistic

"…Ahí están sus bellos frisos y plafonds para admirarlos aún: el altar mayor, los santos y la virgen María parece que estuvieran hablando"17

("…The beautiful friezes and ceilings are still there to admire: the Altar, the saints and the Virgin Mary seem to be talking")18

The architecture and interior decoration of the church tell a different story. One of an institution that is trying to recover its power and the story of a nation that wants to demonstrate its importance as an independent republic by importing European styles and aesthetics.

The architect of the Church of El Salvador was Theodore Burchard, a German architect from Hamburg. He was brought to Chile by the Government and the Church in 1855 along with other European professionals, in order to introduce the classic and eclectic style of modern countries in the new Republic leaving behind the colonial architecture.19 He was born in 1814 in Germany and was an apprentice of Karl Friedrich Schinkel, a renowned neoclassical architect who also introduced the neogothic style in Germany with the design of the Friedrichswerdersche Kirche in Berlin in 1831.20

Just like that church, Burchard designed the Church of El Salvador in a neogothic style, using the typology of a Hallenkirche or Hall church, in which the lateral naves were of a similar height to the central nave, forming a unified space. Another characteristic of this typology is that the clerestory (high section of the wall pierced with windows above eye level) is part of the lateral naves, as opposed to other gothic churches and Roman Basilica’s in which the clerestory is part of the central nave.21 (Image 4) He was also influenced by the Backsteingotik, or Brick gothic developed in countries of northern Europe where there are no stone resources.22 In order to make a correct neogothic church, Burchard uses most characteristic elements of the style such as a vertical emphasis with the use of pointed arches and great height, an upper clerestory of stained glass, cluster or compound columns, ribbed vaults, buttresses and exterior ambulatory.

The church is 89 meters long (292’-0”), 30 meters wide (98’-0”) and reaches 37 meters in height (121’-0”).23 (Image 4) The grand dimensions of the church and the neogothic style, with its height and its

18 Ibid. Translated by the author
21 Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 27
22 Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 28
23 Laborde, Templos Históricos de Santiago. P. 42
Historicity were clearly meant to impress, remind and educate the faithful of the power, presence and importance of God in society, just as the medieval churches once did in the twelfth century. It was a way to express physically that the Church had eternal power and to suggest that the Institution was and should be over the State.

The overall original aspect was bold, sober and powerful. The exterior brick and the geometry of the façades and general configuration were straightforward in expressing the presence of the church. The interior, on the other hand, was highly decorated and colorful. The polychromies, the stained glass, and the many sculptures and altarpieces contribute to a rich and vibrant atmosphere.

4. Cross section and Plan of the Basilica. The yellow arrows show the lateral clerestory.

It was around 1901 when the 16-year-old artist Aristodemo Lattanzi started to paint the interior of the church. He had arrived to Chile in 1889 at the age of 5 with his family. At an early age he worked with Saverio Morra painting the ceilings of the Cathedral and demonstrated great talent in polychromy and interior decoration skills. His work at the Basilica was the beginning of a prolific career as an artist of decorative arts and a well-known painter accomplished in portraiture and rural landscapes.

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24 La Dinastía Lattanzi. Exhibition Catalogue Casa de Piedra. Santiago: 19?
Beside the polychromies that decorate the complete interior structure with geometric forms and symbols like the fleur-de-lis, he also painted delicate images of angels, saints and religious motifs on canvases, which were installed directly on walls and niches as architectural elements of the church. The use of gold and silver paint gave the Basilica the popular name of the Golden Church.25 (Image 5)

5. Lateral Nave of the Basilica. Watercolor by Haagensen.

The glittering aspect was enhanced by the diffused light that came through the stained glass designed by Studio Meyer and imported from Munich. There is no certainty of when they arrived, but what is clear is that by 1920 they were already installed.26 They were assembled in a metal structure in the studio and brought to Chile presumably with great difficulty by ship to Valparaiso and then on by train. All of the panels have the form of a pointed arch and follow the same formula: a two-dimensional outline with gothic motifs and in the center a religious figure depicted with great detail and perspective. It is possible to distinguish 2 series and one unique panel. The first series has 11 panels (5’ x 19’-8”), located around the central and lateral altars and representing various saints of the Church. From this series, all survive. The second series (9’-10’ x 19’-8”) had 14 panels with representations of the life of Christ. Unfortunately, from this series only 8 survive intact in the church, 2 were replaced in the 1986 reconstruction and 4 were destroyed during the 2010 earthquake. The unique panel is the only one made especially for the Basilica (the

25 Tres Recuerdos Históricos. P. 13
rest were ordered from a catalogue), and is also the largest (14’-8” x 26’-2”). It is located over the Choir, and
the image represents Archbishop Mariano Casanova offering the Church of El Salvador to Christ.\(^7\) (Image 6)
It is interesting to note that this stained glass has the image of the church with the original brick façade
before it was stuccoed in 1935.

As mentioned above, the arrival of the Virgin del Carmen brought money and valuable objects to the
Church. Since she was the Patron Saint of the Army, the cannons used in the Pacific war, were melted down
to cast the bronze altar doors. But more important were the donations of the Confraternity of the Virgin,
which was settled in the Basilica in 1890.\(^8\) Its members, from the most distinguished families of Santiago,
donated a great deal of money for the finishes of the church. They also donated the money for the
acquisition of a German organ with 3 keyboards and 36 registers. Each pipe was made of a special alloy of
silver and tin, which gave it the perfect sound, claimed to be the best of Chile.\(^9\)

6. Stained glass panel showing Archbishop Mariano Casanova offering the Church of El Salvador to Christ.

Besides the above-mentioned items, other elements were commissioned from well-known artists,
such as the bronze chandeliers, designed by Virgilio Arias.\(^9\) All these interior finishes and artistic
contributions were finally completed in 1920, some 50 years after the groundbreaking ceremony.

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\(^7\) Díaz, Vitrales en Santiago de Chile. P. 87-95
\(^9\) Tres Recuerdos Históricos. P. 13
\(^9\) Pérez Oyarzun, 14 Iglesias de Santiago de Chile. P. 138
A great change in the aspect of the church was made between 1935 and 1945, when the architect Josué Smith Solar decided to change the north and main façade of the church by stuccoing it completely with cement and updating it to an intricate neogothic style. (Image 7 & 8) Influenced by his studies in the United Stated and the English neogothic style, he added pinnacles, gargoyles and saints imitating stone. He also included some humor in his design by substituting figures of saints with well-known characters of Santiago. Smith Solar had been using the neogothic style mostly in residences, but could fully develop this architectural language in his religious projects, especially in the Basilica. There is physical evidence that suggests that he intended to stucco the whole structure, but probably because of lack of funds this was not achieved.

The historic, architectural and artistic significance of the Basilica was recognized on the 24th of November in 1977, when the President at the time, Augusto Pinochet, signed its designation as a National Monument.

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32 Ministerio de Educación Pública, Declaración Monumento Nacional 933. Santiago 24 de Noviembre de 1977
"... Este lugar ha llegado a ser hoy día el centro principal de vida y alegre pasatiempo, de lujo y ostentación, de riqueza y comercio en Santiago de Chile..."\textsuperscript{33}

("This place is today the main center of life and happy pastime, of luxury and ostentation, of richness and commerce in Santiago de Chile"\textsuperscript{34}

The Basilica of El Salvador is located in what today is known as the Barrio Brasil in the Municipality of Santiago Centro. The City of Santiago was founded in 1541 by Pedro de Valdivia, a Spanish conqueror who chose the site because of the Mapocho River and its fertile lands. The Spanish grid plan was imposed on the landscape and developed around the Main Plaza. It was a small city until the 1838 when it began to expand towards the northwest, creating the Barrio Yungay, where most landowners would build their houses. In between these two prosperous neighborhoods was an area limited by the Cañada de Negrete, a canal that took water from the Mapocho River. Its surroundings were like a dump, dirty and unhealthy, until Benjamín Vicuña Mackenna, the Intendant of Santiago and responsible for the beautifying of the city, decided to cover the canal.\textsuperscript{35} This area was later known as the Barrio Brasil.

Santiago was growing and a new upper middle class was emerging. In 1880 the obvious area for expansion was the Barrio Brasil. (Image 9) The presence of the construction of the Church of El Salvador was an important symbol of wealth and was an important structure for the settlement of the neighborhood.

In 1906 the Plaza Brasil is built and by 1913 the area was known as a wealthy neighborhood of an educated, stable upper middle class. For their residences they used neoclassical and eclectic styles. Theodore Burchard was also the architect of the Cazotte Mansion, built on the boundaries of the neighborhood in a Moorish eclectic style. In 1925, with the great Church of El Salvador as a backdrop, the area was at its peak. But it wouldn’t last long.\textsuperscript{36}

\textsuperscript{33} Maturana, Víctor, Historia de los Agustinos, cited in Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 12
\textsuperscript{34} Ibid. Translated by the author
\textsuperscript{35} Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 9-11
With the migration of rural habitants to the city, Santiago underwent a great transformation. In the 1940’s the wealthy families were moving towards the west of the valley, abandoning the historic downtown. The big mansions of the Barrio Brasil were now subdivided and rented by a lower middle class, who couldn’t afford to maintain the houses, and which began to fall into disrepair. Many others rented rooms to students who came from other regions of the country. With this change of population, in the 1950’s the area was known to be bohemian, where parties, shows and literary discussions were part of the life in the neighborhood. Even though the Processions of the Virgin del Carmen continued to start off from the Basilica, its space now served a more local and less affluent population.

In the 1970’s the North-South Highway was built and literally cut downtown Santiago in two: the western and the eastern parts. The western area, where the Barrio Brasil is located, was isolated from the original downtown and was being populated more and more with lower income residents who could no longer maintain the houses, falling into a complete disrepair.

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37 Laborde, Santiago Poniente: Desarrollo Urbano y Patrimonio. P. 113-115
After the 1985 earthquake the Basilica suffered the sad fate of the neighborhood. Although funds were donated for the restoration of the Basilica, the extreme damage mandated its closure. After democracy was restored in 1989, the area was populated again with a young generation of artists that began to recover the area. In 1992 the Plaza was restored and from then on the area has seen new real estate development. But the Basilica continued to deteriorate.

In 2009 the area was designated as a Historic District by the National Monuments Commission and as for today, the area is struggling to recover its vibrant life of the past as a tourist route and a university area. The Municipality has also launched several projects that will activate the neighborhood, such as the partnering with the Ministry of Housing and Urbanism to buy and restore historic houses for subsidized public rental housing. Another project important worth noting is the Welen Project, which proposes Huérfanos Street to be a pedestrian promenade. (Image 10) The Basilica’s main façade faces this street, which could mean greater exposure and connection with downtown east and west.

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38 Laborde, Santiago Poniente: Desarrollo Urbano y Patrimonio. P. 113-115
39 Jaime Pujol (Architect Heritage Division, Planning Secretariat, Municipality of Santiago) in conversation with the author, December 2014
"Protégenos de terremotos y guerras; sálvanos de la discordia; asiste a nuestros gobernantes: concede tu amparo a nuestros hombres de armas; enséñanos a conquistar el verdadero progreso, que es construir una gran nación de hermanos donde cada uno tenga pan, respeto y alegría."^{40}

("Protect us of earthquakes and wars; save us from discord; assist our governors: concede your protection to our men of weapons; help us conquer the true progress, which is to build a great nation of brothers and sisters where each has bread, respect and joy")^{41}

Earthquakes are a part of Chilean culture. As mentioned above, in the past 100 years there have been over 11 earthquakes above 8.0 Richter scale, as well as numerous lesser ones. (Image 11) Over the years earthquakes have shaped a permanent seismic consciousness in Chilean culture and have influenced the methods of construction and reconstruction.

![Map of Chile with earthquake data](image11.png)

**Image 11.** Chile and the last 11 Earthquakes over 8.0 Richter Scale.

^{40} Oración por Chile, Novena de la Virgen del Carmen. Folleto. Santiago, 18..?

^{41} Ibid. Translated by the author
But at the time Theodore Burchard designed the Church, there were no appropriate codes, nor seismic engineering that assured the stability of the structure. This is why the history of the Basilica is also about seismic destruction and restoration, and it constitutes an important layer to its significance.

The structure of the Basilica is of unreinforced brick masonry with little or no internal anchoring and lateral ties, which gives the structure no lateral stability at all. Supposedly the architect trusted the thickness of the walls, the weight of the structure and the narrow lateral buttresses to resist any lateral forces, but clearly this wasn’t enough. It was already in 1906, with the Valparaíso Earthquake, that the Basilica suffered for the first time the forces of nature. The structure had been finished in 1892 and at the time of the earthquake it was in the process of interior finishing. According to the literature, with this event several parts of the façade were damaged, the upper lateral buttresses were destroyed and removed, and the tiled roofing destroyed. (Image 12) The repair consisted in replacing the roofing with galvanized steel sheets and the restoration of brick elements of the façade. With the replacement of the roof the lateral walls were tied to the roof structure with steel elements and gutters were poorly installed, which deteriorated the original brickwork.42

The building was further weakened in seismic events in 1927 and 1928 and was finally restored between 1935 and 1945 by Josué Smith Solar. He stuccoed the main façade, by which the church added its first evident intervention. The work of Smith Solar was not a restoration, but more of a new project. He completely erased Burchard’s façade and added a new layer to the Basilica’s architectural history. His intervention, though, was more focused in the exterior makeup of the appearance of the church, than to structurally retrofit the Basilica for future earthquakes. The juxtaposition of the rich stuccoed façade and the sober brick structure are explicitly evident on the side elevations. The earthquakes of 1960 and 1971

continued to weaken the structure leaving cracks over the keystones of the arches and other visible and invisible damage. On March 3rd 1985, after more than 80 years of silent deterioration, the Basilica partially collapsed. The 8.0 earthquake destroyed the upper sections of the transept and choir, parts of the lateral galleries, 2 structural columns and significant exterior wall sections, including panels of stained glass.\(^{43}\) (Image 13) With a donation from the German Catholic Church the archbishopric was able to rebuild the damaged transept and replace the columns with concrete elements. They also built a concrete tie over the walls of the apse and refilled the cracked areas above the arches with concrete. But the money wasn’t enough to finish the restoration work and the building remained closed. Even though the small chapel at the back continued to function for ceremonies and masses, the main space was closed to the public after the earthquake. It has been 30 years since this event, no work has been done and the church is in a state of complete ruin.

![Damage of the Transept in the 1985 Earthquake](image13)

13. Damage of the Transept in the 1985 Earthquake

The last severe event was the 28th of February of 2010 with the 8.3 Richter scale earthquake in Santiago. Great areas of the side walls were destroyed, leaving huge openings to the exterior, another column collapsed, and portions of the ceiling and other architectural elements were severely damaged. Despite the state of ruin in which the Basilica is today it hasn’t lost its magnificent and awe inspiring space. The atmosphere is powerful and it tells a story of survival and of the geologic activity of Chile, which reminds us of our fragile condition. (Image 14)

\(^{43}\) Behr, et al. Estudio Preliminar para un proyecto de restauración de la Basílica del Salvador. P. 34
1882
Original Structure

1906
Replacement of roof and removal of gables

1935
Stuccoing of Facade

1985
Damage and reconstruction of transepts and columns

2010
Collapse of walls and Column

THE STRUCTURE AS HERITAGE

The preservation of historic structures is, primarily, to protect it from destruction by keeping it safe from harm or loss. In order to achieve this, it is generally necessary to intervene in some form. Whether it is necessary just to stabilize in order to maintain the actual state or to return to a previous one, the architect must make decisions based on certain guiding principles.

The Basilica of El Salvador is today in an evident state of ruin. Not only has its original fabric collapsed, but it has been closed and has lost its purpose. I have determined though that this state of ruin is aesthetically and historically a value worth preserving, and to do so the ruin must be preserved.

At the same time the structure as it exists is in itself a document of significant historic, aesthetic and urban values. These values are also worth preserving for future generations, and in order to do so, the structure must be restored to some degree.

For the purpose of defining my design decisions I have established these two issues as overall guiding principles:

- Valorize destruction as an aesthetic and historical value.
- Reestablish the unity of the structure and its image

These somewhat contradictory principles are the main goals of the project and are further discussed in the remainder of this chapter.
"Sublime violence, again either human and historical (war, pestilence, famine) or natural (earthquake, volcano) are processes of creative destruction that offer ruins as sites of ambivalence, whose collective memory requires ongoing philosophical interpretation"\textsuperscript{44}

The present state of the Basilica of El Salvador is devastating. The atmosphere of destruction and decay is powerful. Light penetrates intensely through thick walls that were never meant to be open, painting has faded and washed out, debris is scattered all over, and the missing ceiling exposes the interior roof structure. (Image 15)

This state of deterioration is dramatic, but is actually appealing from an aesthetic point of view. The scale and the level of decay suggest nostalgia and beauty. Why is this? How can destruction be beautiful and a value worth preserving? To understand the value of destruction it is important to understand the concept of the ruin, and what has been its significance and aesthetic value throughout time.

The origins of the word ruin come from the Latin *ruere*, which means ‘to fall’ and is used in English in the sense of collapse. Today the word ruin is a noun and a verb that indicates destruction and devastation of physical material. It can be stated that the Basilica of El Salvador after the earthquakes of 1985 and 2010 was left in a state of ruin, and for the purpose of arguing the value of destruction on the Basilica I will refer to the concept of ruin.

The aesthetics and meaning of ruins have changed throughout history, but have always been a physical link to the past. A ruin is what is left of something that will never be again. In the Encyclopedia of Aesthetics of Oxford University Press, the aesthetics of ruins and their connection with history is attributed to Petrarch, who visited the crumbling and overgrown ruins covering Rome in the XIV century. Before that, ruins were considered marvels, which linked them into an eternal present. The Encyclopedia states “Petrarch divined history from the ruins, and he did so through an act of imaginative projection. History is inaugurated through ruins when ruins prompt the historical imagination, yet it is the muteness of ruins- one might say, their very state of ruin – that allows for imaginative projection in the first place” The connection of a past history with the present is the great message of ruins.

In the Renaissance, ruins started to appear in paintings as a backdrop of religious compositions. It symbolized the decline of empires, the decay of pagan beliefs and the victory of religion. Ruins in images of Nativity, for example, were the interpretation by Christian artists of the Legend of the Temple of Peace in Rome, when the Oracle of Apollo declared that the building would stand until a virgin gives birth to a child, as a guarantee of eternal life. (Image 16) Ruins in this case are a symbol of a pagan past worth forgetting. But, on the other hand, ruins were also a source of an aesthetic worth recovering. After the middle ages, during the Italian renaissance surged an interest in classical architectural language tied to Ancient Roman history. Classical ruins were a source of knowledge for this recovery. Ruin and resurrection, loss and rebirth, were what Renaissance architecture and philosophy were about.

Fast forward to the eighteenth century, the moment of Enlightenment and an era of cultivation of ruins. It was the beginning of scientific archaeology in the excavations of Herculaneum and Pompeii, and a period of discovery of relics of the past as artifacts of historical and aesthetic value, rather than sources of treasure hunting. Eighteenth century intellectuals though, used the ruin as a metaphor to suggest a civilization in decay but at the same time a sense of continuing vitality. During this period, ruins were admired as fragments and vestiges of the past, but were also artificially created as aesthetic features of the landscape. The reason for building artificial ruins is not very clear, but one of the most interesting features of discussions on ruins is the tension between and the intertwining of the man-made and nature. George Simmel, German

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49 Lang Karen, Encyclopedia of Aesthetics. P. 431
50 Wanning, The Unfinished Manner. P. 57
sociologist, says in this regard “It is the charm of the ruin, that here a work of man is finally felt to be a product of nature.” Artificial ruins were scattered in gardens and parks as a way to insist in a cooperative work between man and nature. For the author Elizabeth Wanning this “…reflects the nostalgic denial of the technological that is an important theme both in the nascent industrial age and our own”. (Image 17) The artificial ruin was architecture and nature united and even though it has multiple ironies and paradoxes “…they seem to wish that these buildings might symbolically repair the damage that human history has done, return us to a mythical state in which art and nature are again allied”.

In the 20th century war ruins meant something entirely different. In Nazi Germany the traces of damaged monuments and significant buildings were symbols of Nazi victory. Significant political buildings such as the Reichstag, destroyed by a deliberate fire in 1933, were left in ruins as reminders of the political chaos that characterized the Weimar Republic. This structure, after World War II and the damage suffered

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51 Simmel, George cited in Wanning, *The unfinished manner*. P. 62
52 Wanning, *The Unfinished Manner*. P. 69
53 Wanning, *The Unfinished Manner*. P. 69
by the air raids, was reconstructed in 1964 following the design of Paul Baumgarten which retained the outer walls and stripped statues and decorations. By doing this the effect of the war was in a way erased and forgotten. A complete opposite is the case of the ruin of Kaiser Wilhelm Church, which still stands in a complete state of ruin in Berlin, next to the new church completed in 1963. The ruin is a survivor and reminder of the horrors of war as a memorial that commemorates the fallen, the absurdity of war and the rebirth of a nation. (Image 18)

The ruins of modernity are similarly the subject of fascination. (Image 19) “The twentieth century ruin has become the preserve of countless urban explorers and enthusiasts of decaying concrete”55 Thousands of images in websites, books and films present abandoned factories, haunted asylums, silent theatres and vacant bunkers as artifacts of a lost past for better or for worse. In the case of industrial ruins the huge scale of factories in disuse, are the remains of an era tied to public culture of industrial labor and political organization. “We are nostalgic for the ruins of modernity because they still seem to hold a promise that has vanished from our own age: the promise of an alternate future.”56

Today in the 21st century, in an increasing digital age, ruins seem to be literally endangered, which has created a great fascination with ruined structures. According to Andreas Huyssen, the chance for something to age and deteriorate is diminishing under the ideals of capitalism and rapid results. The present is an age of preservation, restoration and authentic remakes, all of which cancel out the idea of the authentic ruin that has itself become historical. Ruins today are used as the foundations, or the base for renewal. They constitute a part of a built palimpsest that shows the layers of time and change.

Ruins are after all reminders of the past and different events, providing an aesthetic completely opposite to that which is in continuous use and new. The aesthetics of a ruin evoke the inexorable passing of time and “they have the power to connect groups in a common reflection on their relationship to history”. They preserve an eternal tension between utility and decay, nature and spirit, past and present. Ruins are overall subjects of nostalgia, as something that produces the longing for something far away or long ago, and its disappearance has created an increasing interest for them. “This contemporary obsession with ruins hides a nostalgia from an earlier age that had not yet lost its power to imagine other futures”.

Finally, the contemplation of destruction is a way of social mourning, which binds the past with present. The emotional impact in the contrasting forces of creation and destruction in a way illustrates the cyclical aspect of time and life.

57 Huyssen. Grey room. P. 20
58 Huyssen. Grey room. P. 20
59 Wanning. The Unfinished Manner. P. 92
60 Huyssen. Grey room. P. 7
The state of ruin of The Basilica of El Salvador is not because the structure belonged to a lost civilization; it is not an artificial ruin created in the 18th century; it is not an abandoned industrial structure and neither a ruin that resulted from war. The Basilica was ruined by the very forces of nature. In a sense the land has reclaimed its property, over and over again reminding us of the power of nature, and that in order to coexist with nature, man must not work against it, but with it. The power of nature, or for some, the power of god is superior to that of men, which in a way confirms the former intention of the construction of the Basilica as a symbol of the ideal supremacy of the church.

The great openings of the side walls, the fallen ceiling, the collapsed column and the cracking paint on one hand reveal the building, making its materiality and dimensions visible, but on the other hand they are signs of decay that add to the atmosphere and seductive aesthetic of the Basilica. In every void of missing fabric there is victory of time and nature, and it is in this hybrid, contrasting and evocative aesthetic that destruction is transformed into a value worth preserving.

The design for the restoration project of the Basilica of El Salvador must respect these voids as such in order to maintain the atmosphere and to deliver the message of the value of destruction.
THE WORK OF ART: Restoring the image

“A work of art as such is not composed of individual parts but constitutes, as an image, a whole endowed with its unity, realized in the continuity of the form – a unity therefore essentially different from that of the things represented. Any discontinuity, any interruption inevitably disturbs the reading of this rhythm.”

It has been stated that the Basilica of El Salvador has historical, architectural, artistic and urban value, which earned the structure the designation as a National Monument in 1978. The public character of the church in a way ensured that the structure would be open and serve as a historical document for the enjoyment of the people. But, as mentioned, after the earthquake of 1985 the structure was closed and left in a state of ruin. (Image 20)

20. Fragments in the Interior of the Basilica of El Salvador

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62 National Monument is the literal translation of Monumento Nacional referred to designated landmarks.
Because of the damage and the voids of missing fabric, the structure no longer serves its purpose and no longer delivers the powerful image of artistic and historic value. For this reason it is necessary to rehabilitate the completeness of the structure as a whole.

Restoration can be defined as the process of returning something to a previous condition. In this process the ultimate goal is to reinstate the completeness of the image of the work of art by integrating the fragments that remain and recreating a state that resembles the old without interruptions.

Early on the discipline of historic preservation was the theory of the French architect Eugène Emmanuel Viollet-Le-Duc, who stated, “To restore a building is not to preserve it, to repair, or rebuild it; it is to reinstate it in a condition of completeness which could never have existed at any given time.” He claimed that modifications were essential to the built environment and that many times those alterations were made poorly. Viollet-Le-Duc advocated for a full stylistic restoration, where the architect had the responsibility to erase any non-original modifications and reestablish the original aspect of the building. This in some cases even meant that the architect could make it better than the original, both structurally and aesthetically, under the justification of restoring the design intent.

With the development of the criteria of authenticity, the stylistic strategy of Violet-Le-Duc by completing the structure based on well-educated assumptions has been abandoned. Nevertheless, the idea of the significance of the reconstitution of an image is still present until today.

The Italian art critic and historian Cesare Brandi advances the justification of restoration. For Brandi the restoration of a work of art (including architecture) is “the methodological moment in which the work of art is appreciated in its material form and in its historical and aesthetic duality, with a view to transmitting it to the future”. In this context, for Brandi the unity of the material form is crucial. The material form according to Brandi is the image’s manifestation which it ensures the transmission of the image to the future, and guarantees its perception and appreciation within human consciousness. The importance of the visual unity of a work of art is stated clearly in his second principle of architecture: “Restoration must aim to establish the potential unity of the work of art, as long as this is possible without producing an artistic or historical forgery and without erasing every trace of the passage of time left on the work of art.”

Brandi describes a work of art made up of several components, which individually have no particular aesthetic significance, but together form the work of art. Just as words in a dictionary, stones are single elements, but once words are assembled in a narrative or stones are stacked in a building the artist creates

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64 Eugène - Emmanuel Viollet-Le-Duc, (January 27, 1814 – September 17, 1879) French Architect and writer, well-known for his Interpretative restorations in medieval buildings and for his gothic revival style architecture.
poetry and architecture. It can be understood that what Brandi refers to as unity is a visual condition by which the components of a work of art (or architecture in this case) are perceived as an ensemble. In damaged works, the missing voids must be reconstituted to perceive the work of art as a whole and not as separated elements. The means by which this unity is achieved and the levels of distinction between the original and the restoration can vary.

As previously stated the Basilica of El Salvador is in a state of ruin, or in other words the structure is fragmented. In order to reinstate the visual and structural unity of the structure and permit its use it is necessary to deal with the voids by infilling them. This principle is in a way opposed to the first described principle of maintaining the ruin. How I decide to deal with this contradiction is further discussed in the following chapter.
THE STRUCTURE AS A PALIMPSEST

The project for the Basilica of El Salvador is above all a conservation project, understood as “the necessary processes of looking after a place, so as to retain its cultural significance.” In order to retain its cultural significance I have established two principles that will mandate my design decisions for the project. These are to valorize the destruction and to reestablish the image and structure to make the building legible.

At first it seems that both goals are contradictory and impossible to achieve together. If the structure is preserved and left as a ruin, for security reasons, nobody would be able to enjoy it and would no longer achieve the function of being a historic document. On the other hand if the structure is restored in order to reestablish the original aspect and to give it once again a function, the physical aesthetic of destruction would be diminished.

Are the intentions of preserving the ruin and restoring a unified image actually opposed or is there a way they can be juxtaposed? Based on theories of authors such as John Ruskin, Camilo Boito and Cesare Brandi I have defined three basic criteria for the conservation project:

1- Respect the traces of time
2- Recognize and respect past interventions done in the history of the structure as an important layer
3- Every new intervention shall be easily recognized as a new layer of history.

These three criteria inform the intention to create a palimpsest that shows the multiple layers of history, including the new intervention that valorizes the repeating history of destruction and reconstruction.

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**CRITERION 1: respect the traces of time**

“Time pervades and changes all the material that constitutes an object; it acts especially on the surface where its effect is partly to change and destroy the original features and appearances of the object, and partly to increase its appeal”\(^6^8\)

The current powerful atmosphere of the Basilica is a result of the aesthetics of decay. The soaring empty space is dramatized with the chipping and complete washing out of the interior polychromy and the voids of missing fabric that speak of abandonment, and above all, of the passing of time.

The notion of the aesthetic value of the traces of time has its origin in the texts of the English writer, art critic and social thinker John Ruskin, (February 8, 1819 – January 20, 1900). For Ruskin the patina of a building was essential and could not be reversed. “For, indeed, the greatest glory of a building is not in its stones, nor in its gold. Its glory is in its Age, and in that sense of voicefulness, of stern watching, of mysterious sympathy, nay, even of approval or condemnation, which we feel in walls that have long been washed by the passing waves of humanity […] it is that golden stain of time, that we are to look for the real light, and color, and preciousness of architecture.”\(^6^9\) The physical trace of the passing of time is, in the eyes of Ruskin, an aesthetic worth preserving as it is the witness and the physical representation of the age of the building.

Often times this description can be related exclusively to the concept of patina. This term was defined by Baldinucci in 1681 as the “general darkness which time causes to appear on paintings and which often enhances them as well”\(^7^0\). But the passing of time can also be expressed in the damage, in the collapsed and in the fragmented fabric.

**CRITERION 2: recognizing and respecting past interventions**

The Basilica of El Salvador has had a long history of construction, destruction and reconstruction. Several earthquakes have damaged the structure and have ended in reconstructions of the missing fabric. In 1906 the roof was replaced, in 1935 the façade was stuccoed and in 1985 the transepts were rebuilt.

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As abovementioned, restoration is defined as the process of returning something to a previous condition.\(^{71}\) Does this mean that the 1906, the 1935 and the 1985 interventions should be erased to reinstate the original work of the architect?

If we followed the early theory of Emmanuel Violet-Le-Duc, who believed that the goal of a restoration project was to reinstate the original condition, any later additions would have to disappear. Opposed to this idea, was the school of thought of Ruskin, which advocated for retaining the traces of time, including the patina, as previously explained, but also including every layer of intervention.

William Morris, English writer and designer, who followed Ruskin’s ideas, wrote in 1877 for the Manifesto of the Society for the Protection of Ancient Buildings (SPAB): “…every change, whatever history it destroyed, left history in the gap, and was alive with the spirit of the deeds done midst its fashioning. The result of all this was often a building in which the many changes, though harsh and visible enough, were, by their very contrast, interesting and instructive and could by no possibility mislead.”\(^{72}\)

The Venice Charter states in its article 9 that “The process of restoration is a highly specialized operation. Its aim is to preserve and reveal the aesthetic and historic value of the monument and is based on respect for original material and authentic documents.”\(^{73}\) Nevertheless in Article 11 it says: “The valid contributions of all periods to the building of a monument must be respected, since unity of style is not the aim of a restoration.”\(^{74}\)

In the case of this project, every layer of reconstruction should be respected as they all depict a history of collapse and rebirth worth making legible to the public. The recognition of these layers adds to the goal of valorizing destruction as a significant part of the history of the Basilica.

**CRITERION 3: every new addition and reconstruction must be evident**

Following the idea of Criterion 2, the future intervention on the Basilica must be treated as another layer added to the structure. This intervention must then be evident to the visitor in order to add to the legibility of the history of destruction and reconstruction.

The evidencing of additions and completions has its origins in Camilo Boito who understood the contradicting issues of authenticity between the original work and restorations. To understand his position it


\(^{74}\) ICOMOS, *The Venice Charter “Article 11”*
is necessary to briefly go back in history to the beginnings of historic preservation theory and the ferociously opposing forces of John Ruskin and Emmanuel Violet-Le-Duc.

For John Ruskin preservation had to do exclusively with conservation and not restoration. His extreme position claimed that any work of restoration was the “…most total destruction” and further more “… a lie from beginning to end.”\textsuperscript{75} For Ruskin, trying to revive the decayed was impossible since the spirit of what was built was given by the hand and eye of the workman. Any intention of recreating that spirit was false and must be considered a new building. Instead, Ruskin insisted on maintenance and conservation of buildings for their lasting. “Take proper care of your monuments, and you will not need to restore them… Count its stones as you would jewels of a crown; set watches about it as if at the gates of a besieged city; bind it together with iron where it loosens; stay it with timber where it declines; […] and do this tenderly, and reverently, and continually, and many a generation will still be born and pass away beneath its shadow.”\textsuperscript{76}

From Ruskin’s point of view, buildings should die eventually. “Its evil day must come at last; but let it come declaredly and openly, and let no dishonoring and false substitute deprive it of the funeral office of memory.”\textsuperscript{77} By interpreting Ruskin’s ideas the Basilica of El Salvador should be maintained as a ruin. We should do everything possible to maintain it standing until it completely collapses, but should never restore it.

In opposition to Ruskin was the position of the French architect Eugene - Emmanuel Viollet-Le-Duc, who advocated for a full restoration of significant monuments based on the ultimate goal of completing the image of the building to its original intended state, even though this often times meant that the architect would infill based on assumptions. (See Chapter 2)

In the eyes of Violet- Le- Duc, the Basilica of El Salvador should be fully restored to its original aspect by rebuilding any missing element, and cleaning the structure to reinstate a crisp aspect, with no traces of the passing of time. It should even include elements that the original architect may have wished to have.

As noted, the terms conservation and restoration have historically and culturally differed, but what was ferociously oppositional in the nineteenth century has found a way to compromise by a positive juxtaposition of the best of both theories, which can no longer be separated from each other.

In between these two opposed positions was the theory of differentiation or visual distinction of Camilo Boito.\textsuperscript{78} In his text “Conservare o restaurare” published in 1896 Boito presents a dialogue between

\textsuperscript{75} Ruskin, \textit{The Seven Lamps of Architecture}. P. 19
\textsuperscript{76} Ruskin, \textit{The Seven Lamps of Architecture}. P. 19
\textsuperscript{77} Ruskin, \textit{The Seven Lamps of Architecture}. P. 19
\textsuperscript{78} Camillo Boito (October 30, 1836 – June 28, 1914), Italian Architect, art critic and writer. His suggestions presented in the document “La Prima Carta de Restauro” in 1883 are still influential today in documents about restoration work, including the Venice Charter in 1964 (ICOMOS).
two anonymous subjects: one representing the ideas of Violet-Le-Duc and the other as the alter ego of Boito that uses arguments from Ruskin to criticize the first. He constructs his own doctrine which surpasses the others. Boito bases his notion of authenticity on Ruskin, claiming that the accumulative patina from age must be preserved as also any later additions and modifications as part of the living character of the building, an issue that Viollet-Le-Duc was completely opposed to. But, on the other hand, Boito agreed with Viollet-Le-Duc and was against Ruskin by sustaining the priority of the present image for a complete perception of the work of art, defending the legitimacy of restoration work as a complement to conservation work.

His proposal tries to reconcile the conflicting ideas of the previously mentioned authors, suggesting that every new intervention and creation should be clearly identifiable and at the same time subtle. “In the additions, the mass, the contour, the overall appearance should not clash with the monument; the differences will be in the details.” In the same text he proposes eight recommendations for this purpose, all of which point to the differentiation of restoration works:

1. difference of style between the new and the old;
2. difference of construction materials;
3. suppression of profiles or decorations;
4. exhibition of removed old pieces, installed next to the monument;
5. incision in each restored [rinnovato] piece of the date of restoration or of a conventional sign;
6. descriptive epigraph carved on the monument;
7. description and photographs of the different phases of the work, placed within the building or in a place close to it, or description printed in a publication;
8. notoriety.

These suggestions for interventions have been widespread and have been the basis for other theories and charters that set guidelines for the restoration of buildings, such as the Venice charter in 1964, which will be discussed further on.

If Boito introduced the concept of differentiation into architecture, in restoration works related to paintings, it was Italian art critic and historian Cesare Brandi. It has been previously discussed that Brandi was in support of restorations as they reintegrate the work of art for it to be legible for the spectator. The perception of the work of art must be complete in order to understand its aesthetic value.

The missing sections of a work of art is defined as a lacuna and for Brandi the problem of having lacunae is that these voids often times become more present than the work of art itself. For Brandi the interruption of the material can be perceived as the foreground and in order to reestablish the prominence in the work of art, and not of the void it is important to restore.

80 Boito, Future Anterior. P. 76
81 The term Notoriety I believe should be interpreted as distinctiveness, from the definition of the Italian word Notorietá, which means, fame or well-known, without the connotation of being well known for something bad.
But this restoration must also be evident so that it does not pretend to be original. For this purpose, Brandi suggests the method of Trateggio, in which the damaged painting is restored by filling the missing color with a mass of tiny lines instead of a solid color. This would clearly indicate that it was damaged and repaired. This was a way of compromising between the retaining of integrity and unity of the image, and at the same time differentiating what is original from what is new.

Finally the recommendations for differentiation were included in article 12 in the Venice Charter: “Replacements of missing parts must integrate harmoniously with the whole, but at the same time must be distinguishable from the original so that restoration does not falsify the artistic or historic evidence.”

The issue of what to do with the voids, or lacunae in architecture is one of the most controversial aspects of a preservation project. The voids left by missing fabric create a disunity of the work as a whole and in order to reinstate the unity it is necessary to make decisions about whether or not to infill what is lost. How to deal with the reintegration of losses is exactly where the opportunity of design is.

In the Basilica of El Salvador this is a particularly important issue to address, since the structure has suffered the collapse of many of its elements, fragmenting the structure and the overall appearance. Following the recommendations of Boito, Brandi and the Venice Charter, the reconstitution of these voids must be evident. At the same time every addition must be also differ in material and aspect.

**CONTEMPORARY RECONSTRUCTION**

“Citation secures the presence of the past in the present by an authorial decision, rather than by direct work-to-work survival. Citation symbolizes the capacity of the author to make decisions”

The design challenge for the restoration project of El Salvador is to take advantage of the voids as spaces for design. The infill design must depict the space as destruction and at the same time it must reintegrate the remaining fragments in order to achieve a complete image of the structure.

I have defined the term Contemporary Reconstruction as a way to define my design strategy. It is a reconstruction because the process of infill uses new materials and it is contemporary because it uses a new architectural language to differentiate from the original fabric.

In each void there is an opportunity of design in which the two main principles must be achieved: to celebrate the destruction and to reinstate a sense of completeness. In this way the project intends to deal with the contradictions of both concepts.

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82 ICOMOS. *The Venice charter*. “Article 9”.
83 Nagel, Wood. *Anachronic Renaissance*. P. 357
In a way this strategy is a co-creation between the past architect and artists and the current ones. It is a close collaboration between the past and the present. The result is an architecture that is eclectic and promotes an extension of the past but at the same time an advance towards the future.

For the project of the Basilica of El Salvador the theory of differentiation will be further advanced by taking it to an extreme as a way of being honest with new interventions and presenting them as such, but also as a way of valorizing destruction as a visual quality. By this I mean that every reconstructive gesture and any infill element will differentiate from the original fabric and at the same time will reference the form of destruction.

Reference Projects:

With the understanding that the Basilica of El Salvador needs to infill the voids of material loss I have analyzed four projects that have dealt with the infill or reconstruction in a more contemporary architectural form. In doing so, all of these projects have followed the principles of differentiation and of recognition of destruction as a fact and as a value, seeking the ultimate goal of reintegrating the structure as a whole.

**Alte Pinakothek:** Leo Von Klenze (1826-1836) / Hans Döllgast (1952-1957)

The appearance of the Alte Pinakothek in Munich is a result of two different periods of German history: The early nineteenth century and the post-war years of the twentieth century. King Ludwig I of Bavaria commissioned the new museum from Leo von Klenze, Bavaria's most prominent architect of the time. He designed the grand structure in a neo-renaissance style. During World War II the building was severely damaged by bombs and one third of the building was completely destroyed. German architects were faced with the task of reconstruction and at the same time dealing with the past.

Hans Döllgast introduced the concept of “Creative reconstruction” in which he constructs the missing voids but in a way that it is evident to the observer. By this method he takes into account the history of the building including its destruction and reconstruction. The missing parts were not imitated, but instead were reinterpreted and abstracted to simple forms. (Image 21) “Nowadays, decades after the Venice charter, we may have got used to the contrast of the “old and simplified new” look, but in the immediate post-war context, his solution was groundbreaking”\(^{84}\)

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The Neues Museum in Berlin was commissioned by King Friedrich Wilhelm IV of Prussia to the architect August Stüler. Extensive bombing during World War II destroyed several parts of the building leaving it in a complete state of ruin. There were several attempts to stabilize and protect the structure, but it wasn’t until 1997 that there was a real intention to restore. David Chipperfield Architects was appointed for the project and aimed to recomplete the original volume. “When considering the way forward, it was clear that the ruin should not be interpreted as a backdrop for a completely new architecture but neither was an exact reconstruction of what had been irreversibly lost in the war seen as an option. A single continuous structure that incorporates nearly all of the available damaged fabric while allowing a series of contemporary elements to be added became the preferred path”85 (Images 22 & 23)

Similar to the strategy of Hans Döllgast, Chipperfield simplifies forms and differentiates the reconstruction with color and materiality. By manifesting the new, the old also stands out as unique.

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Park Avenue Armory, Company Rooms D & E: Pottier & Stymus (1880) Herzog & De Meuron (2006-2011)

The Seventh Regiment Armory in New York was built between 1877 and 1881. It was home for the Seventh Regiment of the New York Militia, a volunteer part time military unit of citizen soldiers, which included the men of the most elite social class of New York. Since the soldiers were part of an educated class, they were refined in taste, and commissioned each of the rooms from the most prominent architects and designers.

During 120 years of use, the structure fell into some state of decay in which alterations, repairs and adaptations degraded the original interiors. In 2006 Herzog & de Meuron begun the restoration and started with Company rooms D & E originally designed by Pottier & Stymus in 1880 in the Renaissance revival style. In the restoration project Herzog and De Meuron decided to remove later additions of plaster and strap work in order to reveal the high quality original stencil work. This would be against the principle of leaving every layer as evidence of the passing of time, but the delayering not only exposed the original paint, but also evidenced the damage of the later interventions over the original paint. This damage is preserved as signs of the later interventions so in a way they are leaving the trace of time by other means. (Image 24 & 25)

![24. Company D before restoration showing the plaster and strap work intervention](image24)

![25. Company D ceiling after delayering. On the right is the final aspect after the restoration which conserves the traces of the removed strap work as signs of the later interventions](image25)

Also, similar to the previous cases, but in different scale, wherever there was missing fabric, it would be infilled by a reinterpretation of the original fabric. This would clearly indicate that that portion is part of a contemporary layer. (Image 26)
Archaeological laboratory next to the Baths of Tito. Anonymous / Spazi Consonanti (2004-2013)

Next to the ruins of the Baths of Tito in the municipality of Castel Sant’Angelo in Italy there was an abandoned ancient farmhouse. It was decided that it would be restored and open to the public as an archaeological laboratory. Spazi Consonanti, the architects in charge of the design, decided to evidence their intervention specifically in the spaces left by damages and loss. They reintegrate windows, doors and collapsed walls with simple and subtle interpretations appropriating destruction as an opportunity for design. (images 27 & 28)
- IV -

THE PROJECT

In this chapter I define the main design decisions that guide the project. The first of these decisions is to define what will be preserved. The second decision is to address the program of the building and the option of its adaptive reuse as a seismology center to serve a broader public and to contribute to an educational function. The third decision is to address the seismic retrofit necessary for an effective reconstruction and re-use. The fourth decision is how to restore/reconstruct the missing fabric as to achieve the two main principles previously stated. Finally, the project must define how the building serves its new purpose as a seismology center, being an interpretative artifact that advances and contributes to the understanding of seismic construction, of earthquake effects and seismic structural retrofit.

1. THE STRUCTURE AS A DOCUMENT: What to Preserve?

In any restoration or reconstruction project the first question is what to preserve of the physical fabric. The decision of which are the elements, spaces and features worthy of preservation is an editing process based on the assessed values.

In the case of the Basilica the material fabric speaks of history, artistic and architectural value. But most importantly it speaks of the constant construction and reconstruction efforts. Continuing with the criterion 2 of recognizing and respecting past interventions as part of this history I have decided to preserve the following (Images 29-35):

- Original structure 1870-1920:
  - Theodore Burchard’s remaining brick structure
  - Aristodemo Lattanzi’s polychromy and canvas paintings
  - Studio Meyers surviving stained glass panels in situ.

- First restoration 1935-1945:
  - Josue Smith Solar’s stuccoed front façade

- Second reconstruction After 1985:
  - Reconstructions of the upper sections of transept
  - Concrete columns
  - Security pyramid
29. Brick Structure (1870-1920)

30. Polychromy (1870-1920)

31. Stained Glass (1870-1920)

32. Façade (1935-1945)

33. Transepts (1985)

34. Columns (1985)

35. Pyramid (1985)
2. **THE STRUCTURE AS AN ENVELOPE: Reusing the historic structure**

From the very beginning of Chile’s conquest and colonization Catholicism has been present and played a prominent role. It was not until 1925 that the state finally was separated from the church, but by 1930 still 97.7% of the population considered themselves Catholics. Today secularization is rising and Catholicism is declining at a rapid rate. In 1970, the percentage had decreased to 80.9% and by 1998 to 72%.\(^{86}\) Furthermore in a recent survey in 2014, only 59% considered themselves as Catholics.\(^{87}\) (Image 36)

On the other hand, the proportion of Catholics that consider themselves practicing has also decreased. Practicing Catholics are defined as those who go at least once a week to church. In 1958 33.2% of the Catholics in Santiago were active practitioners, in 1998 18%, and in 2012 only 14%.\(^{88}\) (Image 37)

This situation is especially important when we consider that as of 2014, 27% of Chile’s designated National Monuments are religious structures.\(^{89}\) (Image 38) This could be understood as something normal due to the social meaning of a church. Special economic and artistic efforts are normally intrinsic in the construction of religious buildings and often times are representatives of architectural typologies and artistic expression throughout history. It could be stated that religious buildings are artifacts that are container of these artistic and aesthetic values and have the role to transmit them from one generation to another, but as Catholicism is declining this diffuser role of churches is also decreasing. Who is actually visiting these

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\(^{89}\) Percentage based on the list of designated landmarks as of October 2014. *Consejo de Monumentos Nacionales de Chile website*. Accessed April 2015 at: [http://www.monumentos.cl/consejo/606/w3-article-22594.html](http://www.monumentos.cl/consejo/606/w3-article-22594.html)
monuments? Is there a real connection of the citizenship with their monuments, and consequently with their
history and identity?

Article 5 of the Venice Charter states: “The conservation of monuments is always facilitated by
making use of them for some socially useful purpose. Such use is therefore desirable but it must not change
the lay-out or decoration of the building”. The whole purpose of National Landmarks is that they contribute
to the forming of national identity by transmitting its significance, but if the landmark is not transmitting the
message it might as well be adapted to do so.

In March 2015 was the 30th anniversary the Basilica of El Salvador being closed. The Virgin del
Carmen has been moved to the Cathedral of Santiago and there are no longer any masses or sacramental
ceremonies for the community. Younger generations never got to enter this place, nor do they have any
spiritual connection to it. The idea of connecting this significant structure to a broader public and making it
socially purposeful made me think of the reuse of it as part of a broad trend around the world, in which
Churches worthy of preservation but unable to sustain their maintenance have chosen to use the structure
as significant envelopes for other uses, such as hotels, residences, libraries, event spaces and bookstores.

As explained previously, Chile has a vast history of major earthquakes. The constant and sometimes
violent movement of the earth is something embedded in Chile’s idiosyncrasy. Seismic events are a daily
topic in the news, building codes are frequently updated to address seismic resilience, and children learn
from early age how to react in the face of a major event. The Basilica of El Salvador is a structure that has
survived several of these events and, in a way, the damaged structure is a perfect backdrop to talk about
earthquakes, their history and impact. The idea of maintaining public access and interpreting
destruction brought me to the idea of using the space as a National Earthquake Center for the study and education of
seismic events, to which people would go to learn about earthquakes, remember past events, and be a
place where geological and structural research is advanced.

90 ICOMOS. The Venice charter. “Article 5”
3. THE STRUCTURE AS A PROTOTYPE: Seismic retrofit and resilience

In order to be able to enter the Basilica and use it for the benefit of the public, the first thing that needs to be done is to make it safe. Ensure the safety of the public that will work in the building and ensure the preservation of the structure as a historic document for the future.

It is important also that the methods of seismic retrofit should be readily visible and evident to the visitor as they will be a layer interesting to appreciate for the understanding of seismic solutions and resilience methods. They are also a design opportunity for the interpretation of the building and the structuring of the infill material.

There are 2 methods of seismic retrofit that will be used in this project:

1- **Base isolation:**

In seismic design, the ductility of the structure depends on the structural members and connections. But the masonry structure of the Basilica, as explained before, is not designed as a ductile structure. The Base isolation approach aims to control, reduce and limit the effects of a seismic event on the structure by adding special devices between the foundations and the superstructure that reduce the input energy to the structure. The base isolation devices reduce the amount of the energy transmitted to the structure and are appropriate for masonry buildings that are freestanding and able to move in all directions unrestrained.91 (Image 39)

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91 *Earthquake protection of historical buildings by reversible mixed technologies* / chairman, Federico M. Mazzolani; editorial board, Federico M. Mazzolani. Monza, Italy : Polimetrica, c2012 Volume II Chapter 4 Seismic Protection Systems P.181
In order to do this it is necessary to separate the structure from its foundations and to have a moat along its perimeter to allow for lateral movement. By excavating underneath the existing floor, these damper devices can be placed under the existing structure. This requires the creation of a subterranean space where the devices can be installed and maintained. While this subterranean space needs only to be minimal, the creation of a modern day croft also opens new possibilities. The new slab becomes a diaphragm on which the original structure sits. (Image 40)

The greatest advantage of this system for existing structures is that the seismic isolation reduces the extent and intrusion of structural modification on historical buildings that would otherwise be required to meet the same desired performance levels. Some examples of existing and historic buildings that have used this system have been the City and County Building in Salt Lake City, Utah, USA and the Parliament House in Wellington New Zealand.

From a level of intervention point of view, this system is highly recommendable because the interior and exterior of the building are fully preserved with minimal impact on the remaining original fabric. More conventional methods would require insertion of substantial structural components that would obscure or damage original materials. The floor intervention leaves the rest of the structure free of structural interventions. It is questionable, though, from an archaeological point of view as the method will disturb the historical layer of soil surrounding and under the structure. This means that the project will need a management and documentation plan for excavation and the eventual findings of archaeological objects.

The disadvantage of base isolation is that the insertion of the system requires for the structure to be cut at the level of the foundations which presents a risk. The delicate underpinning operation could induce damage to the existing historic fabric and must be meticulously engineered and staged. The other great disadvantage of this system is its relative high cost.

2- Structural reinforcement with steel members:

Besides the base isolation that reduces the energy transferred to the original non seismic structure, the existing fabric that is today fragmented must be made structurally whole again. With the collapse of structural elements and material the walls, columns and roof of the Basilica are working independently. In order to ensure its stability all its elements should be tied together.

For this I have proposed a permanent secondary steel structure that in a way replicates the original structure underneath it. The columns will be surrounded by steel colonettes that replicate the compound neo gothic column. It will be tied over the capital with a steel ring that will at the same time be the base for a new ribbed vault structure that follows the original vault lines, recalls the original structure and supports the remaining ribs. In addition to this there will be diagonal members that recreate a 2d projection of the vaults at the level of the capital ring in order to create a diaphragm and stiffen the structure. The dimensions of the
steel members will be optimized in order to minimize obstruction and maximize the exposure of the historic fabric. (Image 40)

This secondary structure will at the same time be the structure for the infill and new works. Every reconstructed element, such as the ceilings, and new element, such as the walkway, will be attached to this secondary structure and will be supported by it.

This secondary steel structure will also be necessary for the inclusion of the Base Isolation.
4. THE STRUCTURE AS A RUIN AND A WORK OF ART: Levels of Damage = Decisions of Intervention

In the current state of the Basilica it is possible to distinguish different levels of damage that contribute to the overall atmosphere of an aesthetic decay. All of these levels of damage can all be interpreted as voids of missing fabric and there difference is in its location and function of this fabric; that is, whether it is structural, ornamental, or superficial.

How to treat each of these levels of damage or voids? Should they be preserved as such, restored or reconstructed? What is the difference between these three strategies?

The latest version of the Burra Charter, (The Australia ICOMOS Charter for Places of Cultural Significance) defines these three concepts as follows:

- **Preservation**: maintaining a place in its existing state and retarding deterioration.
- **Restoration**: returning a place to a known earlier state by removing accretions or by reassembling existing elements without the introduction of new material.
- **Reconstruction**: returning a place to a known earlier state and is distinguished from restoration by the introduction of new material.

On the other hand I have established three levels of deterioration associated to the kind of voids: (See Appendix page 78)

- **Level 1**: Superficial voids: referred to paint, plaster, stucco of brick deterioration
- **Level 2**: Ornamental voids: referred to ornamental elements such as the ceilings, façade features.
- **Level 3**: Structural voids: referred to elements which the stability of the building depend on.

Depending on the location (exterior and interior) each of these levels of damage will have a different strategy on how to treat those voids, always aiming to accomplish the two principal goals of celebrating destruction and completing the image as a whole.

The mixed use of these strategies express interesting contradictions between the historic and the new, between destruction and reconstruction, and between decay and improvement.
EXTERIOR

The approach of the structure from the city must be an experience of seeing an important and historical structure. From the exterior the idea is for the facades to have a clean, crisp aesthetic that speaks of its significance and presence in the urban fabric. The general strategy for this is to restore the voids by infilling with the same form and materials so it looks as similar as possible to the 1935 state of the building, but expressing certain differences to the intervention.

Level 1: Superficial voids

The front stuccoed façade and the original brick facades have several superficial damage, such as patches of detached stucco and deteriorated bricks. The stucco voids will be restored to their original state with tinted concrete that will make a slight and subtle contrast to the authentic fabric to identify the new from the old without disturbing the overall visual unity. (Image 41) The deteriorated bricks will be replaced using bricks that will be differentiated with the original bricks by a slight difference in color and quality.

Level 2: Ornamental voids

The stucco north façade of the Basilica, designed by Jose Smith Solar and built between 1935 and 1945 has considerable damage to its ornamentation. The intricate gothic revival aesthetic is achieved with very delicate and thin concrete ornamental elements reinforced with steel rebars. Many of these ornaments have fallen, leaving the façade incomplete.

As the superficial voids, these missing elements will be restored to their original state using the same forms but made with tinted concrete that will make a slight and subtle contrast to the authentic fabric to identify the new from the old without disturbing the overall visual unity. (Image 42)
Level 3: Structural voids

On the West façade there are brick masonry columns and vaults that have collapsed because of the lateral force imposed during seismic events. These elements will be restored using bricks that will be differentiated with the original bricks by a slight difference in color and quality. While the pattern will be the same the jointing will also differentiate the original from the reconstruction. (Image 43)

The original ceramic tile roof collapsed in the 1906 earthquake. With it the triangular gables also collapsed. The roof was replaced after the event with galvanized steel sheets. This roof has been poorly maintained and is causing severe water infiltrations to the interior. The roof will be replaced with new metal roofing. Further surveys must determine the condition of the roof structure, but it is assumed that it should be replaced. In this case this structure will help to tie the existing structure.
INTERIOR

From the austere and crisp exterior one will enter the huge, overwhelming and awe inspiring decorated interior. But the experience is the complete opposite to the exterior experience, as the overall feeling must be to enter a ruin, a damaged and beautifully decayed space. In the interior, the visitor will experience the effects of an earthquake and the resulting destruction.

Level 1: Superficial voids

The polychromatic interior painted by Aristodemo Lattanzi is critically important to the overall appearance and experience of the space, but has been damaged over the years of abandonment by direct water, dampness and pollution. The painting has washed out in several locations and has chipped in others. In other cases the base plaster has fallen leaving the brick structure in evidence. This level of damage gives the Basilica its special atmosphere and aesthetic of decay. These voids are to be preserved as they are. The surface will be cleaned, but the voids will remain showing the traces of time. (Image 44)

Level 2: Architectural Voids

The most evident signs of destruction are the architectural elements that have fallen, collapsed or detached from the original structure. These elements, such as the vaulted ceiling, the choir parapet, the choir staircase enclosure, amongst others are the elements that express the level of destruction of the building. Without these elements, the remaining ones are like fragments.
The continuity and unity of the overall aspect of the building depend on the infill of these voids. Each of these voids is to be carefully reconstructed in its form, but not in its materiality. I have chosen weathering steel to reconstruct these elements as it is a material that blends with its color and patina with the rest of the architectural elements. (Image 45)

45. Reconstruction of ceilings and choir arch

Level 3: Structural Voids

The most explicit and dramatic aspects of the current structure are the huge voids in the east and west walls and the missing column. These voids will be reconstructed more radically, not as they were, but rather as completely new elements. The voids on the wall have sliced away sections exposing the inner cores of the walls and created openings that let us see to the exterior in a way that was never meant to be. This will be enhanced by transforming the voids into windows inset into the wall thickness.

On the other hand the fallen column creates a space that opens the possibility to create a new structural and sculptural element. This is further advanced by reconstructing the column as a staircase, to enable the experience of being in the upper level of the Basilica. (Image 46)
46. New windows and column/stair
5. **THE STRUCTURE AS AN ARTIFACT: Interpreting the ruin**

The Basilica of El Salvador is presented not only as an envelope for a new seismology center, but is itself an artifact that contributes to the understanding of seismic construction, of earthquake effects and seismic structural retrofit. The original fabric, its decay and its reconstruction are elements that explain to the public the effects of earthquakes on built heritage. And at the same time, the exposure of the base isolation and structural steel armature are showing the retrofit solutions applicable today.

**Two separated, but related uses**

The building will have two separate functions: First as an education center for learning about the phenomenon of earthquakes, the history of earthquakes in Chile and how they influence construction and affect our heritage. The other related function will be as a research center for geologists, working to better understand earthquakes and advance knowledge in the predictability of these events, and for structural engineers advancing new technologies for the safeguard of new and existing built structures in the face of seismic events.

Given the fact that an underground level must be created to install the base isolation devices, I have decided to separate the two functions. The lab and research space will go in the underground and the visitor center on the ground floor. (Image 47) The creation of an underground space is also in keeping with the tradition of a church, which often had a crypt.
The access for both functions will then also have to be separate. The visitors will enter from the main urban thoroughfare through the original narthex in the north façade the main historic entry into the church. This entrance will be facing the future urban project of Paseo Welen, a pedestrian corridor that connects the east and the west areas of downtown Santiago. (See page 20) The laboratory space will have its entrance through the west side chapel on the back.

Nevertheless, these functions must also interact and be connected. The experience of the visitor should include seeing how earthquakes are studied on a professional level, and on the other hand the professionals working in the research labs must also be exposed to the general public and experience the historic structure.

I have proposed 3 elements that will create this connection between the two functions: (Image 48)

1. **The crypt**: where visitors are able to penetrate the earth to see and understand how the base isolation works, and to see the lab and work space in action.
2. **The shaking table**: The security pyramid built after the 1985 earthquake will be encased in glass and will cover a floor opening over the shaking table that is in the lab. This shaking table is almost a metaphor for the base isolation of the building because it is here that the structural engineers test scale model prototypes against simulated seismic forces and study the performance of structures. That will be visible to the visitors. At the same time from the lab space the researcher can appreciate the historic structure above them and be reminded of the importance of their work.
3. **The glass staircase**: The researchers would enter the building from the back of the church through a side chapel. To go downstairs they will enter briefly into the Basilica space, descending in an enclosed glass staircase, they will be able to appreciate the scale of the building.
Upper Walkway

The experience of the visitor in the basilica is further advanced and differentiated by an elevated walkway at 8.5 (27' 8") meters above the main floor. (Image 49) The visitor will use the reconstructed column-stair to access this level and will have the opportunity to see up close the stained glass and appreciate the differences between the 1920, the 1985 and the 2015 stained glass works. It will also be again a viewpoint towards the shaking table pyramid and the 1985 reconstructed transepts. Furthermore the visitor will be able to experience the space in a new way, since elevated views in churches are rarely open to general public.

Underground patios or moats

Lastly the base isolation strategy creates a new floor for the Basilica, which in a way floats over the absorbing devices and functions as a structural diaphragm. As noted this is reminiscent of the shaking table in the seismic laboratory below. This new floor must be separated from the underground retaining walls to allow for uninhibited lateral movement during seismic events. As a way to further advance this idea and express the strategy in the building, the peripheral spaces under the original exterior corridor of buttresses is left open. This makes the base isolation visible from the outside and permits daylight and air to enter into the underground lab space. (Image 50)
50. Underground patios
All plans were drafted based on the survey drawings done by Joannon Architects in 2008 for the Chilean Ministry of Public Work.

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01: Roof Plan
02: Plan Level +1.50 meters
03: Plan Level +12.00 meters
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06: West Elevation
07: East Elevation
08: Section AA’
09: Section BB’
10: Sections CC’ & DD’
11: Column & Walkway detail
12: Interior Image from Security Pyramid
13: Interior Image from Choir
14: Interior Image from Walkway
15: Interior Image of Column-Staircase
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**Other sources:**


Image Sources


- 5: Lateral nave of the Basilica. Watercolor by Haagensen. Private Collection Aristodemo Lattanzi Villela

- 6: Stained glass. Photomontage and photograph by the author.

- 7: Façade Before 1906. Photograph from Ministry of Public Infrastructure Photographic Archive (MOP) website. Accessed April 2015 at: http://www.afda.cl/detalle_imagen2.php?i=PL-001840&busq=basilica&pamg=1&modo=0&v=bcf9713021bb36a459eb819fc20899f5548f65acb253f6568d045866bf5d3e98e9c0ef24497ad70a3c159a22c4f4d966aad620121d9bb23d73e6ece8a35a2&cat=placas


- 10: Plan of Santiago. Image by the Author

- 11: Chile and the last 11 Earthquakes. Image by the Author


- 13: Damage of the transept after 1985 Earthquake. Photograph by Luis Poirot

- 14: Evolution of the building. Image by Tandem Limitada


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APPENDIX Survey Drawings

Updated survey drawings based on the survey drawings done by Joannon Architects in 2008 for the Chilean Ministry of Public Work.

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S-02: Plan Level +1.50 meters
S-03: Reflected ceiling plan
S-04: North & South Elevations
S-05: West Elevation
S-06: East Elevation
S-07: Section AA'
S-08: Section BB'
S-09: Sections CC'
S-10: Sections DD'
S-11: Sections EE'
S-12: Sections FF'
S-13: Sections GG’ & HH’
S-14: Sections II’ & JJ’
PLAN LEVEL +1.50 1:250

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

LEVEL 2: ornamental
- Missing architectural elements

LEVEL 3: structural
- Architectural voids
REFLECTED CEILING PLAN

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

SURVEY LEGEND

LEVEL 2: ornamental
- Missing architectural elements

LEVEL 3: structural
- Architectural voids
SECTION A-A' 1:250

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

LEVEL 2: ornamental
- Missing architectural elements

LEVEL 3: structural
- Architectural voids

SURVEY LEGEND
SECTION B-B' 1:250

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

LEVEL 2: ornamental
- Missing architectural elements

LEVEL 3: structural
- Architectural voids

SURVEY LEGEND:
- LEVEL 1: superficial
- LEVEL 2: ornamental
- LEVEL 3: structural
- Architectural voids
SECTION D-D' 1:250

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

LEVEL 2: ornamental
- Missing architectural elements

LEVEL 3: structural
- Architectural voids

SURVEY LEGEND
SECTION E-E' 1:250

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

LEVEL 2: ornamental
- Missing architectural elements

LEVEL 3: structural
- Architectural voids

SURVEY LEGEND
SECTION F-F'' 1:250

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

LEVEL 2: ornamental
- Missing architectural elements

LEVEL 3: structural
- Architectural voids

SURVEY LEGEND
SURVEY LEGEND

LEVEL 1: superficial
- Stucco detachment
- Brick erosion
- Dampness erosion

LEVEL 2: ornamental
- Missing architectural elements
- Architectural voids

LEVEL 3: structural
- Structural voids