

REHABILITATION OF A BUILDING

Old Emergency Service on the street Zygmunta Starego 16



UNIVERSITAT
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DE VALÈNCIA

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ABSTRACT



In this project, has been performed a proposal of rehabilitation on a building in Gliwice, Poland.

First of all, we have considered various options on existing buildings, finally choosing a building, now disused, which is very close to the historic centre of the city.

Once decided the building object, it starts collecting information, as well as its history and architectural influences at the time of its construction.

After this, has been done a thorough data collection in order to make the drawings and plans of the building such as elevations, flat roof and horizontal section necessary for the project.

Before focusing on the lesions, which subsequently will be found in the facade of our building, we need to know those factors that may affect the materials used in our building.

Once known, we analyze our facade lesions and match them to previously submitted factors, in order to know its true origin and be able to act on it, being the only way to correctly remove a pathology. Once located and analyzed all lesions, the proposal of intervention must be prepared, naming the interventions of a more general carácter, and the most relevant for the proper rehabilitation of the facade.

For these interventions to be carried out, the assembly of a scaffold is necessary for operators to have a good working position, and the plan of assembly of scaffolds will be explained step by step, as well as the security measures that should be taken into account.

At the end of the project an assessment of the objectives and benefits that would bring these interventions is carried out, as well as a personal assessment

En el siguiente proyecto, se ha realizado una propuesta de rehabilitación sobre un edificio situado en Gliwice, Polonia.

Antes de nada, se han barajado varias opciones sobre edificaciones existentes, escogiendo finalmente un edificio, ahora en desuso, que se encuentra muy cerca del centro histórico de la ciudad.

Una vez decidido el edificio objeto, comienza la recopilación de información, así como su historia y las influencias arquitectónicas en el momento de su construcción.

Después de esto, se ha realizado una toma exhaustiva de datos para poder realizar el levantamiento de los planos del edificio (alzados, planos de cubierta y sección horizontal) necesarios para el proyecto.

Antes de centrarnos en las lesiones, que posteriormente encontraremos en la fachada de nuestro edificio, debemos conocer aquellos factores que en mayor o menor medida pueden afectar a los materiales empleados en nuestro edificio.

Una vez conocidos, analizamos las lesiones de nuestra fachada y los relacionamos con los factores y causas anteriormente presentados, con el fin de conocer su verdadero origen y poder actuar sobre éste, siendo el único modo para eliminar correctamente una patología. Una vez localizadas y analizadas todas las lesiones, se elabora la propuesta de intervención, citando las intervenciones de carácter más general y las más relevantes para la correcta rehabilitación de la fachada.

Para que estas intervenciones se puedan llevar a cabo, es necesario el montaje de un andamio para que los operarios tengan una buena posición de trabajo, y se explicará paso a paso el plan de montaje de los andamios así como las medidas de seguridad que se deben tener en cuenta.

Al final del proyecto se realiza una valoración sobre los objetivos y beneficios que aportarían estas intervenciones, así como una valoración personal.



PERSONAL CONTEXT



Why I decided to make this type of project?

I have decided to do this type of project because it is one of the areas that most have liked to study throughout my career as it implies the knowledge of the techniques of execution of different building elements, essential to be able to provide a technical solution to the pathologies that arise in this case, in the front of our building.

On the other hand, Spain is living a time which anyone building new constructions, because there is an excess of new empty constructions. So the best solution work, and currently the only, is in the field of the rehabilitation of existing buildings, providing constructive solutions and improvements.

¿Porque he decidido realizar este tipo de proyecto?

He decidido hacer este tipo de proyecto porque es una de las áreas que más me han gustado estudiar a lo largo de toda mi carrera porque implica el conocimiento de las técnicas de ejecución de diversos elementos constructivos, imprescindible para poder aportar una solución técnica a las patologías que se presentan, en este caso, en la fachada de nuestro edificio.

Por otra parte, en España, se vive una época en la que no se construye ningún edificio de obra nueva, porque hay un exceso de obra nueva vacía. Por lo que la mejor solución laboral, y en estos momentos la única, está en el sector de la rehabilitación de edificios existentes, aportando soluciones constructivas y mejoras.



HISTORICAL BACKGROUND



In the twentieth century and during World War I Germany and Austria-Hungary occupied the whole of what in the past was the Polish territory.

In 1918 the command of the Polish territory is transferred by the Germans to Jozef Pilsudski, who would be in charge of forming the new independent nation after more than a century and was, after the Treaty of Versailles and ending the First World War, when internationally recognized sovereignty of the Republic of Poland. In the agreement the new western border is defined.



Germany after Treaty of Versailles, 1920

The issue of delimitation of the eastern borders was another matter. In the years following the end of World War I the environment for the region of Eastern Europe was tense and unstable. In this region of Europe had a large number of nationalities and political interests seeking to create their nation.

After having wars with Ukraine, Lithuania, Russia and Czechoslovakia was not until 1921, after the victory in the war against Russia and the signing of the Treaty of Riga, when the eastern limits were defined. Even with the signing of treaties and agreements between the countries of the region, in the following years the environment for the area was not good atmosphere.

Because it, 1st of September 1939, Nazi Germany invaded Poland and days later, as a result of alliances signed in the interwar period, France and England declare war Germany, beginning World War II.



Later the Soviet Union enters in the conflict a, in theory, Poland allied. The country was invaded ni the East while the West came Nazi. Germans and Soviets divided Poland and because of the Ribbentrop-Molotov Pact, nonaggression treaty that did not any results later.

After the war, Poland fall under the domination of the Soviet Union. With the new borders Poland lost its eastern territories (what is today western Ukraine) including the important city of L'wow and Lithuania but instead won a part of East Prussia, territories and cities like Wroclaw, Poznan or Szczecin.

For over thirty years Poland was under the rule of the communist regime imposed by the Soviet Union. Although it was not as extreme communism like the USSR had, but any opposition to the regime was eliminate.

The Communist years are remembered for the protests of the workers and the role played by the Church in supporting those who opposed the regime. It is in the 80's when the revolts were intensified.

The fall of the Berlin Wall in 1989 marked the end of communism, at least in Europe. The Warsaw Pact was dissolved and after a period of economic stabilization and transition to a free market economy, Poland begins to enter into international institutions like OTAN in 1999 and 2004 in the European Union with plans to adopt the Euro.



GLIWICE NOWADAYS



Nowadays, Gliwice is a city in continuous evolution. The attractiveness of urban space greatly improved in recent years thanks to the modernization of the squares, the area around the radio station and reforms and investment in public space. The important role played by galleries and new private investment in shopping malls, restaurants, cafes, as well as sports and recreational facilities, concert halls, etc.



Among the 73.800 working Gliwiczan (according to data from 2011) 89,4% are employed under contracts and civil law contracts and 10,6% is working on its own. In Gliwice is about 75,000 people public and private entities employing more than 9 persons, including more than 30,000 people in the industry and in the construction industry, which represents 40% of the population of Gliwice, where in Poland this ratio is 28%.

Other entities are big companies, employing over 250 people, these companies operate on the world stage and must take care of their competitiveness, pursuing continuous improvement in productivity. Employ them not only specialists from Gliwice, but from all over the province, as well as with the province of Opole. In their interest to have access to the best prepared. Therefore, it puts a large emphasis on collaboration between companies and professional and technical schools and universities.

Unemployment in Gliwice at the end of 2012 it stood at 7,3% registered in the District Labor Office There were 7.293 people without work. In the period 2014-2020 the resources available in the framework of the European Fund for The social will be used by training institutions, organizations and employment the company under local employment pacts. This will allow you to customize the training offer for the unemployed and persons requiring retraining to meet the needs of businesses. Gliwice on the creation of a flexible labor market, where residents and people working in Gliwice freely can develop and adapt to new requirements in the economy.

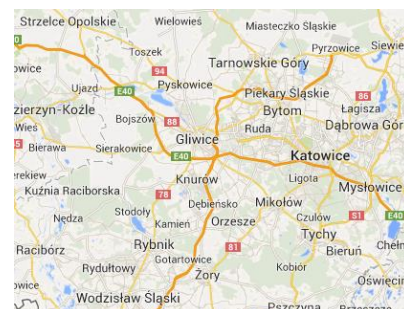
Continuing the previous actions on a large scale in the field of the promotion of entrepreneurship In Gliwice, the Technological and scientific Park "Technopark in Gliwice" SP. z o.o., Górnośląską Enterprise Agency and development SP. z o.o. and non-governmental organizations will also be in subsequent years actively support entrepreneurship and resourcefulness among young people. Gliwice are counting on is that young leaders will not only be shape your own future, but also the future of the city.



Gliwice is an important business centre in Silesian Voivodeship. The proximity of the Silesian University of technology and a wide range of schools Professional and technical research provides businesses access to highly qualified workers. The city actively works with partners in international forums, including, among other things, the World Technopolis Association (WTA).



Gliwice as a cross between the motorways A1, A4 Road and Route Średnicowej-near airport in Pyrzowice became a strategic point on the international map of logistics. Śląski Logistics Cluster based in Gliwice has more than a dozen major players in the market of logistics, who jointly promote Gliwice Silesian Conurbation and as an appropriate location for subsequent commercial and industrial investment.



Upper Silesian Regional Development Agency Co (Górnośląska Agencja Rozwoju Regionalnego S.A) and science and Technology Park "Technopark Gliwice "SP. z o.o. in recent years have proved to be important drivers for the development of new activities business, including technology companies. In the period of 2011-2012 promoted one rising over 50 new innovative companies. Together with the other institutions the business environment, such as chambers of Commerce and Chamber of Commerce crafts, they provide information, training and consultancy for micro, small and medium-sized companies operating in Gliwice. Employment also plays an important role in the creation of new of economic activities. In the period of 2011-2012 was created thanks to the financial wsparciom nearly 300 new companies.

In turn, in the Gliwickiej Subzone, Katowice Special economic zone are from the years develop supplier automotive sector around General Motors Manufacturing Poland SP. z o.o., as well as companies from the industry industrial automation, metallurgy, chemical and construction. Not without significance in the structure of the the economic cities are numerous electronic and information companies that consistently implement innovation and operate on international markets.



In addition, education is a key for the Silesian Centre of knowledge in the field of science technical. Among the leading scientific bodies in the country can be found here: Silesian University, Institute of Non-Ferrous Metals, Iron Metallurgy Institute, Institute Of Technology, KOMAG Mining, Welding Institute, Fertilizer Institute, A Division Of Inorganic Chemistry, A Branch Of The IChN Refractory Materials Institute Ceramics and building materials, the Cancer Center-Institute im. Marie Skłodowska-Curie Branch research and Development Centre in Gliwice, Polymeric materials and Coal of the Polish Academy of Sciences and the Institute of theoretical computer science and the Polish Academy of Sciences.



They collaborate with other units of scientific research strategic, participate in international research projects and with companies industrial research and development, ending new deployments. Some research teams are currently, leaders in their field. Gliwice connects thought scientific and technical thought process Engineering.

So far, the strength of the economy Gliwice was first all of the major companies located in the Katowice Special Economic Zone. A few of years appers more and more technology companies in industries such as: IT, engineering industries, industrial automation, energy, aviation and other with which to date Gliwice were not associated. An Important role in their creation of, among other things, play Park Science and technology "Technopark Gliwice" sp. and Area Enterprise Agency and development SP. z o.o. in order to secure the dynamics the development of the economy in the next decade, Gliwice on technology companies.



They will provide new skills and create new products and services that will be implemented on the markets International. This will allow for the positioning of the Gliwice as a city with special gaps, what it can attract the attention of multinationals, who are looking for a place for your new investment. In other words, focusing on the development of companies technology, Gliwice may increase their investment attractiveness for other companies.

CONCEPT OF REHABILITATION



INTRODUCTION

It is considered that the useful life of a building is about 80 years, from which must be carried out important repairs or comprehensive rehabilitation proceedings because there would be the ruin of it.

During this period, there are a number of factors that directly influence the conservation of the building.

The passage of time.

The use of the building.

External agents, such as the weather: water, rain, wind or snow.

Occasional accidents for example: hits on the facades or acts of vandalism.

When we talk about maintenance, we mean a set of operations that will allow us to good use of the building, and that have the following characteristics:

Guarantee the conditions of habitability and comfort;

Prevents the possible risks that may affect the safety of the building;

Ensure the proper functioning of the facilities.

The absence of proper maintenance is a significant reduction in the useful life of the building and the increase in the cost of repairs, in its constructive elements and facilities.



REHABILITATION

The rehabilitation of a building involves the recovery of its main functions through different actions of the elements that have lost their constructive function.

To act on these constructive elements in addition to previous historical studies will be essential to consider the building as an object composed of elements with mechanical, physical and chemical characteristics that can be injured.



The set of lesions that can appear in a building is very extensive due to the variety of materials used in its construction.

To obtain good results, in all rehabilitation, should be a sequence of actions should be followed before reaching remedial interventions.

The first thing that has to be is an exhaustive study of the location of the item to be repaired in order to meet all their lesions and get an analysis with reliable results. To get it you must make an observation of the whole "in situ", know in depth the state of deterioration of the facade, location and characterization of existing cracks, check for humidity content, etc.

If data collection were not sufficient to calibrate the causes affecting the facade, it would proceed to testing, which would provide more specific information. It is also important to know the data of the building, structure, building materials, etc.

Once these data collection is obtained, proceed to compilation of all of them and the research process for the causes by which it is occurring or has occurred the lesion that appears on the facade. The greater the number of data that we have, deeper can research and more reliable will be the final conclusion.

This is the process of diagnosis, in this process the causes that have led to lesions should be established during the recognition, as well as determine its severity and urgency of the intervention.

PATHOLOGICAL STUDY

The pathological study is intended to provide a diagnosis about the constructive element.

We can define this study as the exhaustive analysis of the pathological process in order to reach conclusions that will allow us to repair the constructive element. The analysis should be inversely to the pathological process, from the effect that has caused to their origin, through the processes of evolution, symptom and cause. The steps of this study will be:

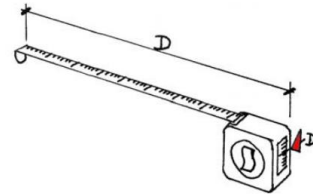
Observation

Observation of the lesion or lesions showing as a symptom of a pathologic process:

- Detect the damage.
- Identify the damage.
- Classify the damage.

Data collection

Data collection involves a minimum number of visits to the building to observe the evolution of the damage, the use of measuring devices and, of course, the use of photographs that allow you to show graphically the damage at any time.



Process analysis

Once you have finished the data collection, we can try to learn how it has developed the process pathologic, its origin and its causes, its evolution and its current state. At the start of this process, we can reach a definitive diagnosis and conclusions for subsequent repair of the affected components. This analysis should include:

- Causes that have caused the process, can be direct or indirect.
- Evolution of the pathological process.
- Current state.

Proposed action

Finally, the diagnostic of the previous point enables us to establish the proposed action, whose misión will be to return the constructive function to the element.

Proposed repair:

In case of defective materials, we must study their possible replacement or if it is better make some kind of treatment to regain their properties.

In case of constructive disposal problem, we can study change their disposal or the addition of new constructive elements that corrected the defect.

In case of problems of maintenance, we will have to study the corrections that we must apply.

Direct causes can be corrected by substitution or placement of other constructive elements, however, they are difficult to remove.

When we talk about Mechanical causes, we can act in efforts or loads that are predictable and will try to eliminate or limit them.

Physical causes, such as rain, wind, temperature... are impossible to delete and we must use physical or chemical protection from the elements.

Chemical causes, may be faced as direct causes when it comes to atmospheric pollution. If we have problems of interactions between materials, we can resolve it with protective barriers between them, in this case, it will be indirect actions.

After correcting the cause, we must repair the effect and return constructive element to its original appearance and functionality.

Proposal of maintenance

The proposal of repair of a pathologic process, must be accompanied of a proposal of maintenance of the repaired object.

The most important aspects that a proposal for a maintenance must have are:

Periodically visual reviews of elements injured and repaired.

Periodic replacement of the surface material.

Periodic cleaning of surfaces and draining elements.

The proposal of maintenance should include all those actions intended to maintain the integrity of the repaired element, as well as materials and elements that have contributed to their repair.



MAINTENANCE

The maintenance consists of a series of checks and transactions carried out in the constructive elements that make up a building and facilities that give service, in order to keep it in the best possible conditions. These operations or activities should be performed periodically. These tasks or maintenance instructions should be appropriate for each building and different in each case.



Maintenance involves performing a series of activities.

Cleaning.

They are operations designed to remove dust, grease, or any debris that prevents the proper functioning and impair the general appearance of the building. Their cost is high because they are frequently performed. It is not necessary qualified personnel.

Maintenance inspections.

They are derived from the normal use of the building or its installations and are performed on a regular basis, to ensure its smooth operation. With these operations is detected the need to replace obsolete elements: oil filters machines, Elevator cables, machinery, etc. Performed by qualified personnel.

Repair or replacement.

The objective of these activities is to return functionality to any element that has lost it, as, for example: broken steps, not operational locks, breakdowns in machines, etc. They are conducted by specialized operators.

All these actions involves a series of advantages.

The use of the building is more convenient and comfortable.

The progressive deterioration of a building may cause the ruin of it.

The user is more secure and protected.

The 75% of the actions of firefighters in claims occurred in buildings occurred due to the lack of maintenance on them.

To learn activities that include the maintenance of a building, the expert must develop a programme adapted to the characteristics of the building. These will depend on:

Construction systems.

The materials that make up the building blocks.

Facilities.

These factors will determine the activities of maintenance and when to perform them.

The monitoring of this programme will take us to a knowledge of the building with all its components. In addition, it will give us an idea of the conditions in which they are. In this way, all problems arising to achieve the perfect operation and maintenance of one may face in an organized manner.



ARCHITECTURAL INFLUENCES



As a result of the First World War, the Prussian province Silesia suddenly found itself in an exposed border situation, "surrounded" from the north, the east and the south by the foreign or even hostile states of Poland and Czechoslovakia.

Tension reached its peak when the industrial region of Upper Silesia was divided into a German and a Polish part in October 1921. The loss of coalmines, industrial facilities, and markets increased the dramatic economical problems the German province had to face.



Upper Silesia Map, 1921

On the Polish side, the situation was not easy either: after the long period of non-existence, the new state, disposing of modest means only, had to build up structures of administration, economy and communal life in a region with a high quota of German inhabitants. National antagonisms between Germans and Poles gained a wide influence on everyday life. Both sides were anxious to prove their territorial rights by claiming their own nation's historical and cultural relationship to Silesia.

Thus, the Polish architect Adolf Szyszko-Bohusz in his announcement to the competition for the new Silesian Parliament [Sejm] in Katowice demanded "to erect, in the capital of our Western border region, a monumental building which represents our culture and contrasts with the culture of the maniacally imperialistic nation, manifested by the fully north-German character of the actual Sejm building" (the parliament was temporary located in the former Baugewerkschule). "Polish culture" should form an opposition to the German/ Prussian brickwork neo-gothic prevailing in Katowice's prewar architecture.

Therefore, according to the actual discussion on a national style, both of the most prestigious buildings in Upper Silesia - the Sejm and the cathedral of the newly formed Katowice diocese - were realized in neo-classical forms. When the Upper Silesian Parliament was inaugurated in May 1929, Michal Grazynski, President of the Province of Upper Silesia, in his speech called the building a "material symbol of Polish culture and power".



Silesian Parliament

Of course, the dimensions of the four-ailed building with its monumental corner pavilions demonstrate the will of power, but its neoclassical forms, rooting in European art history, can hardly be interpreted as a typical expression of Polish culture. So here, like before in the building of the Royal Settlement Commission in Poznan, it is only the iconography of the architectonic detail, which declares the building to be "Polish": the ionic capitals of the columns and pilasters bear the Polish Eagle, the friezes are decorated with reliefs representing lictor's fasces, and shields with the initials RP (for Rzeczpospolita Polska/Republic of Poland).

Due to the great number of refugees coming from the now Polish parts of Upper Silesia and from Wielkopolska, the construction of houses and schools was the main task for the municipal administrations of the three towns of Gliwice, Bytom and Zabrze. Whereas on the Polish side public projects were worked out mainly by free-lance architects, in the German towns architects employed in the Municipal Building Offices dominated, therefore creating a rather monotonous architecture.

Until the late Twenties, traditionally structured architecture prevailed in all categories of buildings, but its details derived rather from the Biedermeier-style "circa 1800", which was propagated by the German Heimatschutz reformers, such as Paul Schultze-Naumburg or Paul Mebes in the first decade of the 20th century.

The most representative building on the German side, the hotel "Haus Oberschlesien" in Gliwice, which not only had to serve as a first-class hotel, but as a cultural center for the whole region, shows the bulky forms with a rather modest decoration, which were typical in these years.

The monumental corpus covered by a steep roof is structured by an uprising front-risalite, which is decorated with colossal pilasters. The building had been designed by the Breslau architects Richard Gaze and Karl Böttcher in 1923. As the investor went bankrupt, municipal and governmental authorities supported the completion of the building "because of its cultural importance". Currently, all the old hotel rooms are occupied by the Municipal Office of Gliwice



Hotel Haus Oberschlesien, 1928 Gliwice

Although only few expressionist buildings came to realization, the typical steep and uprising expressionist forms remained in use during the whole decade, mainly as elements of decoration. One of the rare examples of structural use of the expressionist form is the Eichendorff High-School at Gleiwitz (1925) And the Main post office building in Gliwice which was built in 1903-1906. Decorated in historicist style, with elements of neo-Gothic style is one of the most beautiful Gliwice. Due to the diversity of its body architecture and interesting decoration of the facade has been entered in the register of monuments of the province of Silesia. Once inside the building, should pay particular attention to the original lighting of the main hall, which is both an interior courtyard.



Main Post Office, 1906 Gliwice

Also in Katowice some examples of expressionist architecture designed by architect Tadeusz Michejda, who designed several schools and residential buildings that overshadowed in this period.

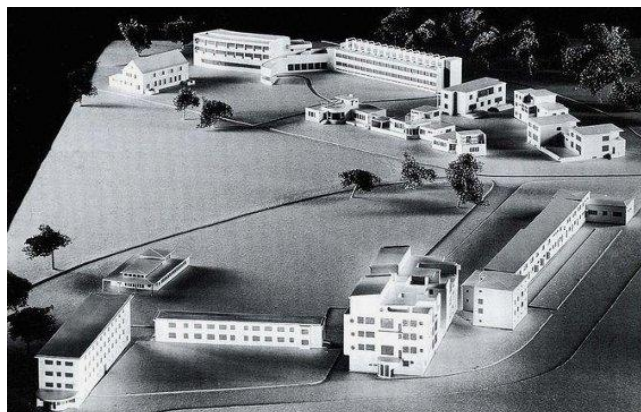


Residential building, 1931, Katowice

Modern 'cubic' architecture in Polish as well as in German Silesia could overcome conservative tendencies only in the later Twenties. Architects who wanted to realize new conceptions had to face the opposition of building authorities. But in the course of time, authorities, want to present Silesia as a prosperous and modern region and competing with the disliked neighbor, could no longer reject Modern Movement Architecture.

For the German part, the artistic circles around the Breslau Academy of Arts played a precursory role, planning and realizing a model housing estate ("Wohn- und Werkraumaustellung") in 1929. To get financial support from municipal authorities, architects had to make concessions, their plan to invite, like in the Stuttgart Weißenhof Exhibition in 1927, foreign architects to demonstrate the international dimension of Modern Movement Architecture, was rejected.

Municipal administration demanded a demonstration of Silesian architecture, manifesting modernity and creativity. Some of the commentators even wanted to see the "WuWA" as an "efficient counterpart to the Poznan Exhibition planned in 1929".



Mockup WuWa architecture, Wrocław

Most modern architecture buildings were erected under the rules of the quietly progressive Municipal Architect M. Wolf in the young city of Hindenburg (founded in 1922), where there was still a lack of buildings of urban life and administration. In 1930, the Cologne architect Dominikus Böhm projected the most impressive church (St. Joseph) in the whole of Upper Silesia.



St. Joseph Church, 1930, Zabre

On the other side, in Katowice, in the decade up to the beginning of the Second World War, there arose some of the best Modern Movement buildings in Poland. They are comparable only to Warszawa - and to Gdynia, where the situation was very similar to that of Upper Silesia. "Upper Silesia is the most American part of Poland", wrote the architect Witold Klebkowski in his description of the Revenue Office.

The new buildings seem to continue the quarrel by the means of modern architecture. Both projects were part of a representative urban square. Especially the Polish museum situated at the city "forum" opposite the Silesian Parliament.



Silesian Museum, Katowice

With all this, we can understand the influence on our building about architectural currents at the time of its construction.

BUILDING HISTORY



The year 1933 was the time of big changes in Gliwice (then Gleiwitz). It is the period when Adolf Hitler and National Socialists had started to govern and, as result of that, the Neumann family (famous Gliwician family of publishers and printers) needed to forcibly submit to the new authority and rules.

In 1936 the Neumann's newspaper called 'Wanderer' became a property of the company "Oberschlesische Druckerei und Verlagsanstalt GmbH", in 1939 it was connected with journal "Deutsche Ostfront" and their offices were located in the building object of our project



The whole property had been included into a huge party's publishing concern NSDAP NS-Gauverlag Oberschlesien GmbH, which had been the publisher of 'Wanderer' until 1945. The Newspaper, which was trying to be apolitical until 1933, became a typical political bodies.

The end of Neumann's business was in 1945. The whole building's equipment has gone, it was changing owners a lot of times. It was the place of sanatorium for students of Silesian University of Technology, later kindergarten and finally it was the office of 'House of Polish-German Cooperation'.

Redaction was located in the building where, until a few years ago, was the emergency service on the street Zygmunta Starego 16.

February 13, 2013, its sale was published in www.24gliwice.pl.

"1.2 million is the asking price, which the city proposes for the sale of the old building on the alert.

Building at ul. Sigismund the Old requires a thorough overhaul, but has the advantage of good location.

The future owner will have to lead in this space service activities. The building of the former emergency room has three floors, the floor area is approximately 450 m², plot area is 754 m².

The place was deserted after the ambulance moved to st. Konarskiego. The tender for the sale of the building will take place on March 12."

CZY ZNAJDĄ SIĘ CHĘTNI NA TEN BUDYNEK?

Dawna siedziba pogotowia pójdzie pod młotek. Miasto chce minimum 1,2 mln zł

13.02.2013



1,2 miliona złotych to cena wywoławcza, jaką miasto proponuje za sprzedaż dawnego budynku po pogotowiu.

Obiekt przy ul. Zygmunta Starego wymaga gruntownego remontu, ale jego niewątpliwą zaletą jest dobra lokalizacja.

Przyszły właściciel będzie musiał prowadzić w tym miejscu działalność usługową. Budynek po dawnym pogotowiu ma trzy kondygnacje, jego powierzchnia użytkowa to około 450 m², powierzchnia działki wynosi 754 m².

Miejsce to opustoszało po tym, jak pogotowie ratunkowe przeniesiono na ul. Konarskiego. Przetarg na sprzedaż budynku odbędzie się 12 marca.

Tagi: budynek po pogotowiu, Gliwice |

The current owner is GMB INWESTYCJE SPOLKA Z O.O.

Nr kancelaryjny: GE.6621.1697.2014

Strona 1 z 1

**Prezydent Miasta
Gliwice**

Województwo: śląskie
Powiat: m. Gliwice
Jednostka ewidencyjna: 246601_1, Gliwice
Obręb ewidencyjny: Nr 0054, Stare Miasto

(nazwa organu wydającego dokument)

WYPIS Z REJESTRU GRUNTÓW

sporządzono dnia: 19.05.2014 12:45:49 według stanu na dzień: 19.05.2014 12:45:49

Nr jednostki rejestrowej: G1060

KW GL1G/00048090/2

Osoby: 1

Udział Forma władania	Dane osoby fizycznej / instytucji
1/1 właściciel	GMB INWESTYCJE SPÓŁKA Z O.O. siedziba: ul. Sokolska 70A, 41-219 Sosnowiec

Działki ewidencyjne: 1

Arkusz	Nr działki	Adres lub położenie	Powierzchnia [ha]	Użytek i klasa bonitacyjna		Nr KW lub inne dokumenty
				Rodzaj	Pow [ha]	
-	598	ul. Zygmunta Starego 16	0.0754	Bi	0.0754	GL1G/00048090/2
Identyfikator: 246601_1.0054.598 Rejon statystyczny: 268680						
Razem powierzchnia działek:			0.0754	ha		
Słownie:			siedemset pięćdziesiąt cztery metry kwadratowe			

Oznaczenia klas i użytków

Bi - Inne tereny zabudowane

Nie podlega opłacie skarbowej na podstawie art. 3 ustawy z dnia 16 listopada 2006r. o opłacie skarbowej (Dz. U. z 2012 r. Nr 0, poz. 1282 i), z późniejszymi zmianami) z uwagi na rozporządzenie Ministra Infrastruktury z dnia 19 lutego 2004r. w sprawie wysokości opłat za czynności geodezyjne i kartograficzne oraz udzielenia informacji, a także za wykonywanie wyrysów i wypisów z operatu ewidencyjnego (Dz. U. z 2004 r. Nr 37, poz. 533).

Anna Taszarek
dnia: 19.05.2014

Anna Taszarek
(sporządził: data i podpis)



Z up. Prezydenta Miasta
Inspektor
Anna Taszarek

Anna Taszarek

2014-05-19

(imię i nazwisko osoby reprezentującej organ)
data i podpis



BUILDING DESCRIPTION

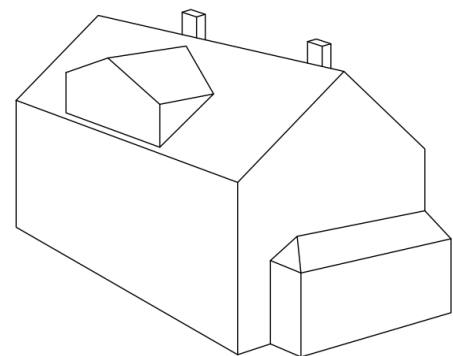
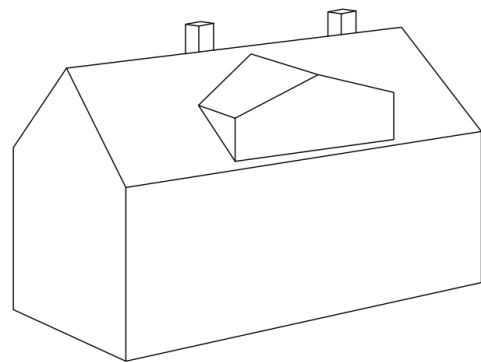




Facade South East



Facade South West

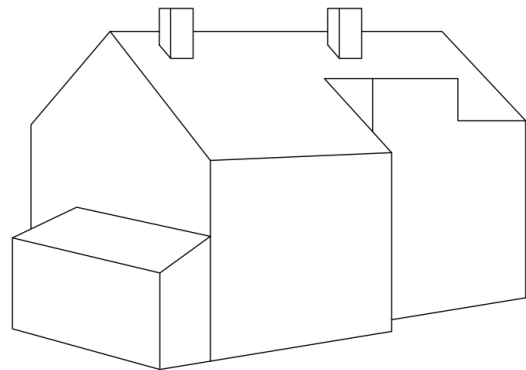
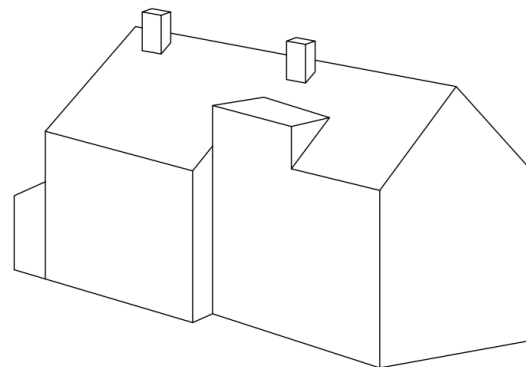


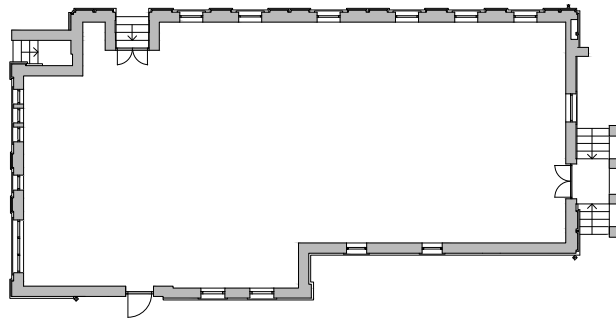
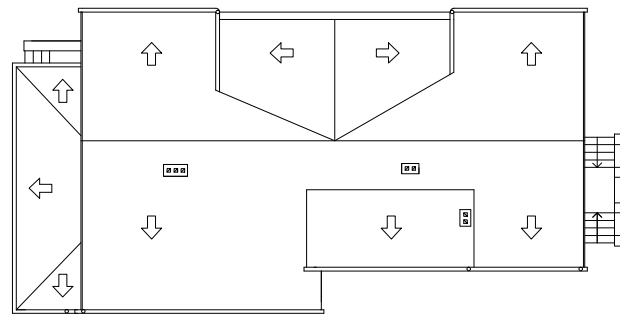
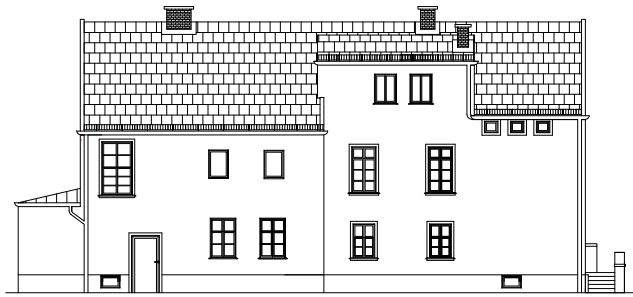
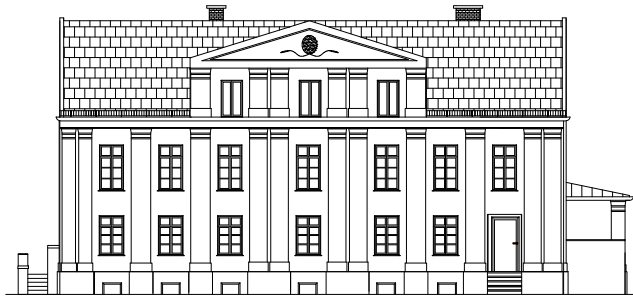


Facade North West



Facade North East







*The present building marked in red.
Yellow dashed line shows the approximate boundaries of the plot.
Arrows indicate the existing entrances to a building.*

The present building is a building detached, three-storey semi-basement, made in the traditional technology of ceramic brick. The period is estimated to have a building for the period 20th century.

Building disused for several years in the cellar floors are storage rooms and technical rooms. The building has three floors above ground and attic.

The building has three entrances, one from the street Zygmunt Starego, 16 second and third from the side of the car park of the building.

Basement walls.

Exterior walls are made of ceramic brick with a thickness of 70cm.

Interior walls construction with ceramic brick with a thickness of 30 - 60cm. Walls are made of plaster on both sides cement-lime plaster.



Ground floor walls.

Exterior walls are made of solid brick with a thickness of 70cm.

Interior walls construction with ceramic brick with a thickness of 30 - 60cm. Walls are made of plaster on both sides cement-lime plaster.

First and second floor walls.

Exterior walls are made of solid brick with a thickness of 60cm.

Interior walls construction with ceramic brick with a thickness of 25 - 30cm. Walls are made of plaster on both sides cement-lime plaster.

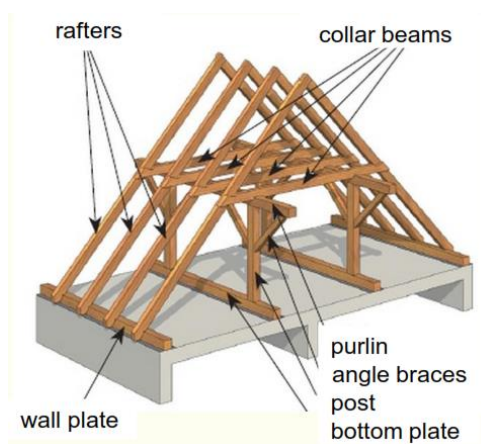
Attic walls.

Exterior walls are made of solid brick with a thickness of 50cm.

Interior walls construction with ceramic brick with a thickness of 25 - 30cm. Walls are made of plaster on both sides cement-lime plaster.

Gable roof.

Timber roof structure with the purlin-collar system, supported on the main trusses. The roof is covered with the steel tiles. Rafters: 15x15cm and 10x15cm - spacing 90-130cm. Collars: 14x14cm. Floor beam, wall plates 14x14cm. Posts in main trusses 14x14cm. Drainage system consist of gutters and downpipes (made of PVC and galvanized steel) and is connected to the water drainage.



Chimneys.

The building has three chimneys built of ceramic brick, two of which run throughout the building from the basement, while the third one is only found in the attic.

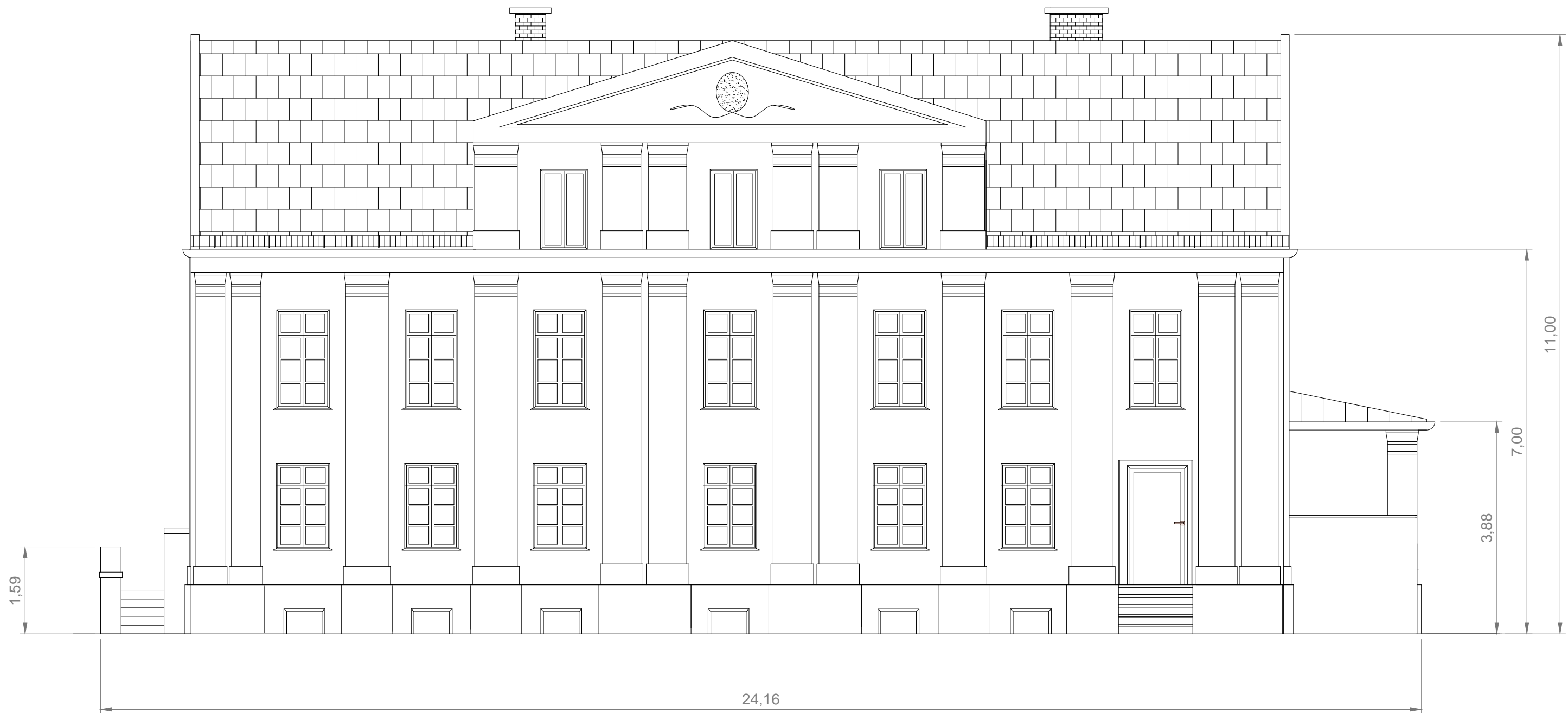
Windows and doors.

The windows of the ground floor are protected by external bars, all windows frames are made of wood.

Exterior doors of wood and metal. Interior doors of wood placed on metal frames.

FLOOR PLANS AND ELEVATIONS





UNIVERSIDAD
POLITECNICA
DE VALENCIA

FACADE S.E.



UNIVERSIDAD
POLITECNICA
DE VALENCIA

FACADE N.W.



FACADE S.W.

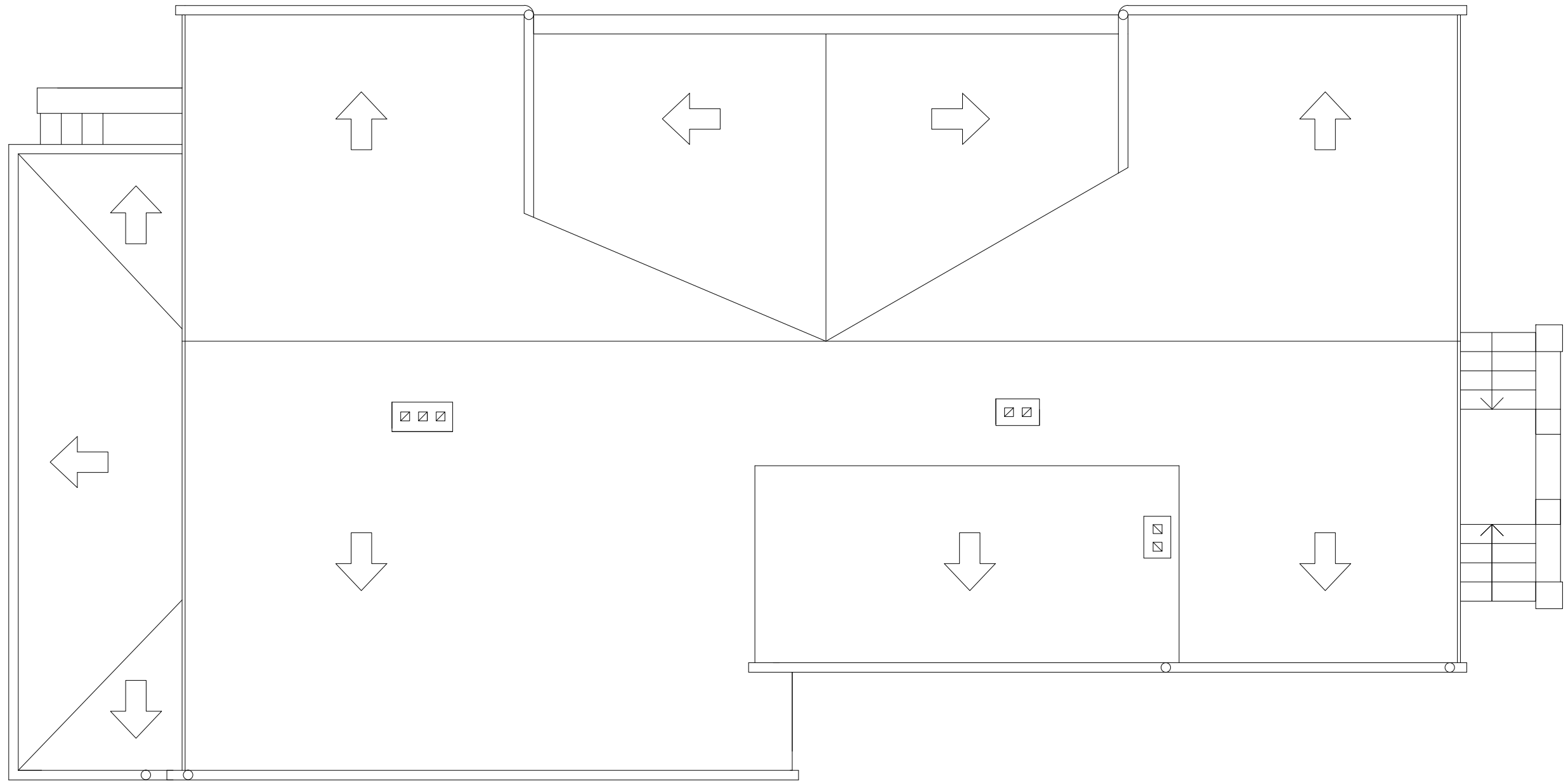


FACADE N.E.



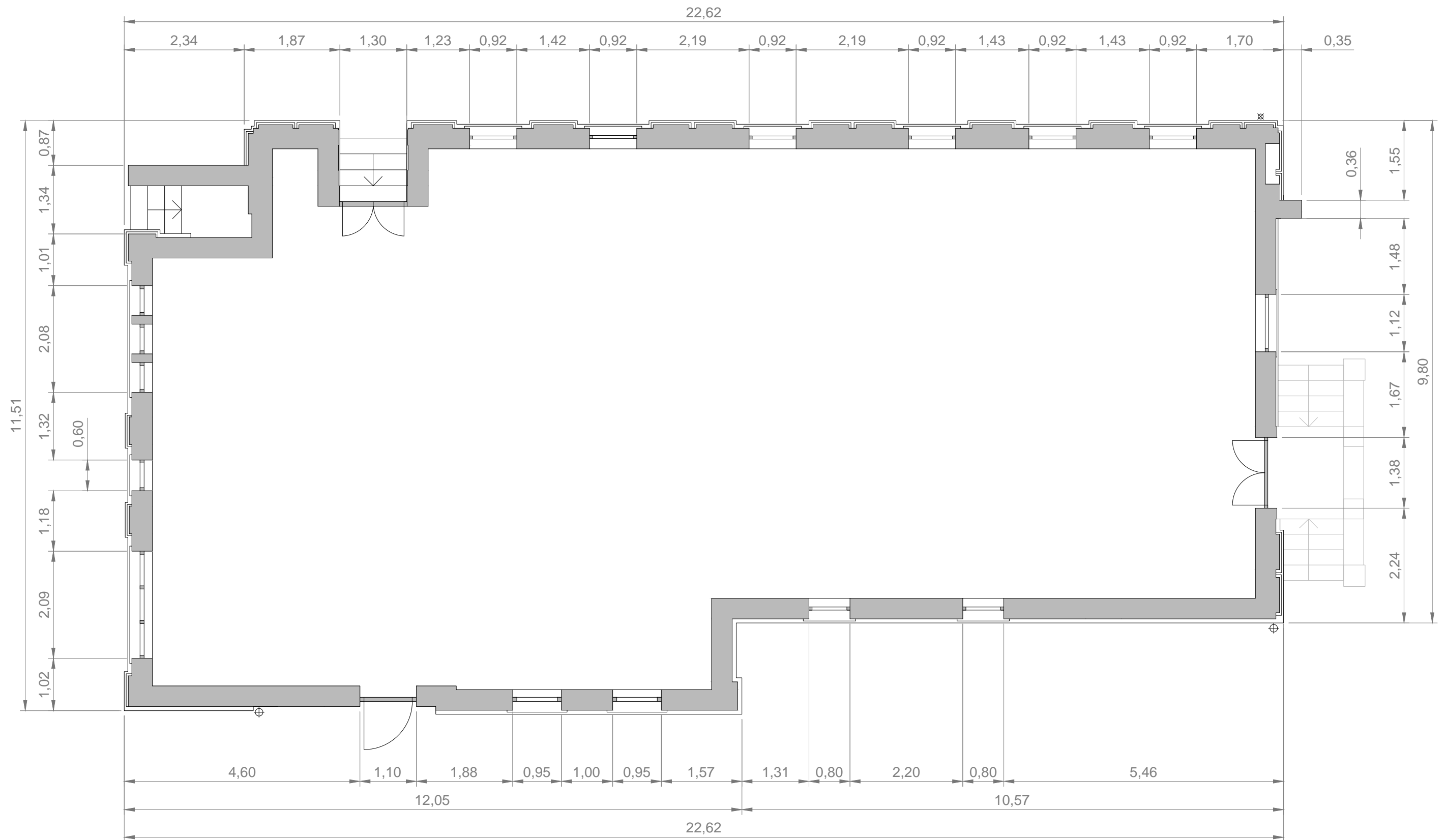
UNIVERSIDAD
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DE VALENCIA

FACADE S.W.
FACADE N.E.



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DE VALENCIA

ROOF PLANE



UNIVERSIDAD
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HORIZONTAL
SECTION

CAUSES THAT CAN AFFECT MATERIALS OF OUR BUILDING



PHYSICAL CAUSES



They are all those lesions based on facts physicists, as fouling particles, freezing, condensation...

Generally, the cause of the origin will be also physical, and its evolution will depend on physical processes, without the need for any chemical process of the affected materials. However, can be a change of shape and color of the item.

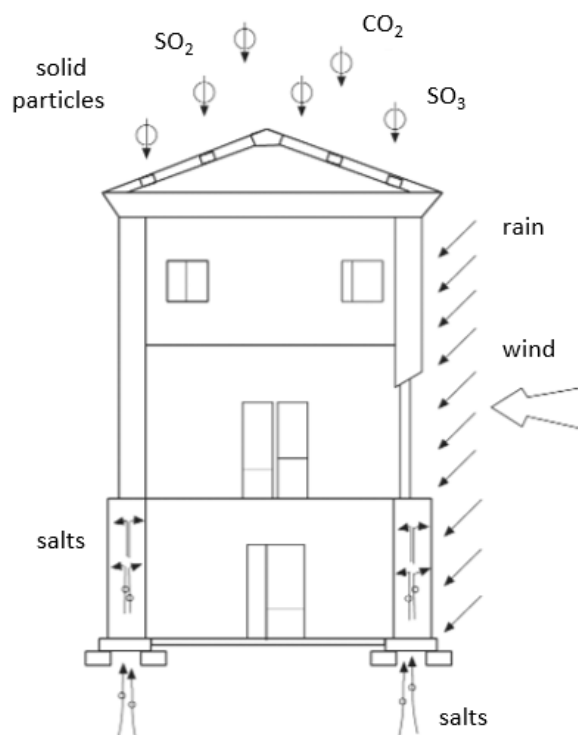
HUMIDITIES:

It is the presence of liquid water in places where it is not provided and for variable periods of time.

Weather conditions play an important role in this issue, for example, rainwater can cause the appearance of damp. The appearance of humidity causes pathologies such as decompositions or disintegrations, unpleasant effects such as odors, stains, discoloration... are also the source of most serious construction lesions and sometimes create detrimental health environments. Because of that, it is necessary to have a great knowledge about the characteristics of water.

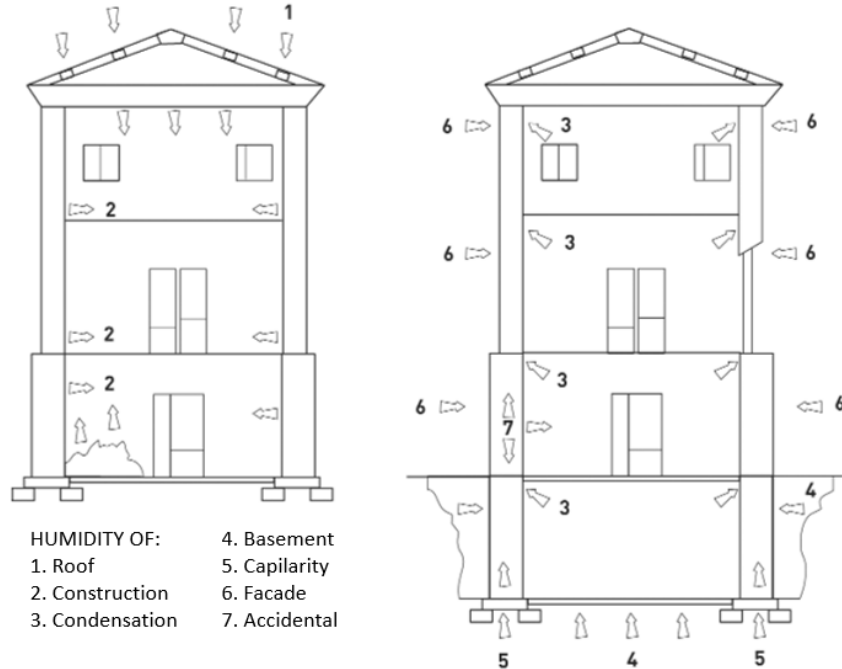
Water is the only substance that can be in three states, solid, liquid and gas, in addition can change its state easily. Its instability can affect materials when, for example, water turns from liquid to solid state, undergoes an expansion that can damage materials, important aspect given the climate of the city of Gliwice and porosity of the materials used in these building.

In relation to the weather, we should mention the rainwater, which carries solid particles and carbon dioxide derived from the combustion of the vehicles and sulphides and sulphates of the atmosphere, in the case of Gliwice with a high degree of contamination.



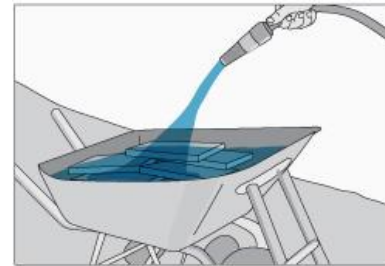
TPOLOGY OF HUMIIDITIES

Depending on the origin or how to extend the water, can be distinguished the following types of humidity



Construction humidity:

Construction humidity is defined as water contained in materials used in the work and for the facilities of the work during construction. Water which causes the humidity may appear from water retained in some exterior materials, water retained in some interior materials, water necessary certain processes or rainwater.

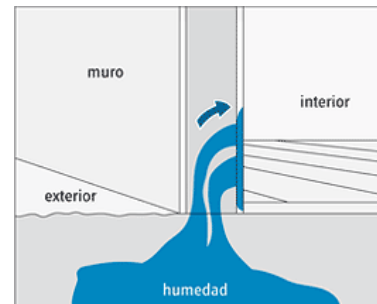


Many materials used in construction contains certain amount of water.

Capillary humidity:

Capillary humidity is caused by the rise of water through the foundation and walls of the building in contact with the ground.

To know the possibility of occurrence of capillary humidity is important to know if the part of the building is submerged in the phreatic level reaches the ground or remains above it.

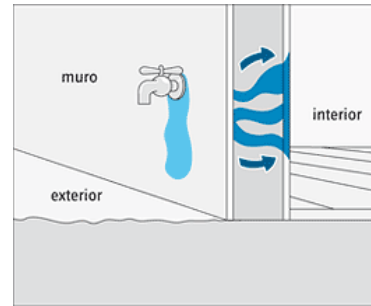


In the first case, the water acts with high pressure and all walls or materials that are in contact with the ground. In the second case, the absorption of water occurs through porous structure of the materials.

We need to know that the construction materials with high level of porous facilitate capillary rise, and it is not necessary lot of water under the foundation to produce it.

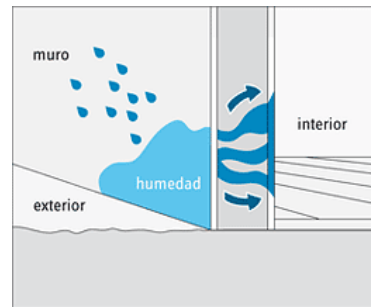
Filtration humidity:

It is defined as the humidity filtration caused by the water coming from the outside into the interior of the building through its walls. Rainwater is the main agent of the humidity filtration



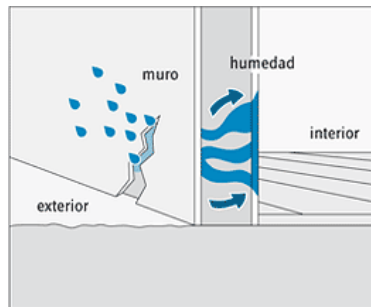
Condensation humidity:

The phenomenon called condensation occurs when air is cooled to reach saturation level, is the water release from the saturated air. It is not generated by humidity penetration or water transport, it is a consequence of a change of physical state.



Accidental humidity:

Caused by lack of maintenance of the building facilities or some failure that can cause humidities. We can say that accidental humidities are those that appear in a building whose damage and causes can not be classified in humidities previously described.



Usually, breaks and leaks in pipes and ducts that cause outbreaks humidity more or less near its origin and it can be easily detect and repair and definitely get remove humidity. The problem is that sometimes the cause of occurrence of an accidental humidity can be confused with events of condensation or water infiltration from the outside.

EROSIONS

Physical erosion of materials is defined as the result of the destructive action of atmospheric agents through physical processes that can cause alteration and progressive deterioration of materials, sometimes even total destruction, without changing their chemical composition.

Materials eroded because of an alteration process natural due to the action of natural agents, this problem is serious, especially in the case of water, by the increase in air pollution, which is increasingly more contaminated.

Water

Water can attack a building materials in very different ways. Rain, hail or snow, can damage the building when they hit their facades. The water wears away the material and causes landslides and crawls of particles of the same.



These continued damage can soften resistant properties of a material and eventually lead to cracks.

When the water that penetrates the Interior of clay bricks pores freezes, it expands and disintegrates and peel the surface thereof. There are many different types of bricks, each of which presents a different frost resistance. The most vulnerable are the very porous and with a large number pores open and interconnected.

Wind

The erosive action of wind occurs when the transport of atmospheric particles launch the against the walls eroding their surfaces. Areas of a building most exposed to the deterioration caused by the wind are the highlands.



Moreover, the action of the wind helps to intensify the power of penetration and capillary movement of water, travelling great distances.

We can say that to avoid that the facades can erode it is essential to know agents that can cause such erosion and choose the most suitable construction materials. It is also important to avoid humidity, since as we have seen, the presence of water is a constant in nearly all forms of erosion.

DIRTNESS

The dirt of a facade can be defined as the deposit and the accumulation of particles and substances contained in the atmospheric air in the outer surface of the facade and also on the inside of the pores of the same. The latter is the more harmful for facade material, because it is the final part of the pathological process of fouling. The fouling of facades, is related to some pathologies of chemical origin.



Particulate pollutants

They are the particles suspended in the air, from the atmospheric dust and combustion of different products. They are the immediate and direct cause of physical contamination of facades. When they accumulate on the walls, they can cause a change in color of the surface.

The particulate pollutants can be natural and artificial origin.

The first ones may produce a light soiling, but they are not dangerous from the point of view of pathological.

The second ones are dangerous for facades, because they have a high fouling power, by its larger size and its color, which is usually grey or black. The sources that produce this type of particles are, for example, road traffic, heaters and combustion and various chemical reactions that develop in the industries.

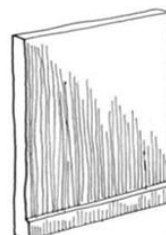
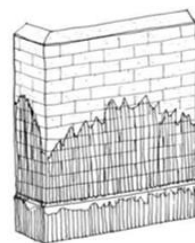
Types of dirt

In general, usually distinguish two types of fouling, deposit and washed differential, although we must take into account that, in a same facade, the final result of the fouling process is always a mixture of both.

Fouling deposit:

It is the first phase of the process of fouling resulting from the deposit of particulate pollutants on the surface of the material of the facade or inside of the pores of this material. This contamination is commonly called simple. Two types of fouling deposit are distinguished by:

- Superficial deposit: When the particle stays on the surface of the material, it may cause the formation of more or less permanent dirt because of the rain can delete or drag quite easily particulate foulants.
- Internal tank: When pollutant particle enters the pore of the facade material. This phenomenon takes place when the front is wet or when the deposit of particulate foulants is produced by the action of rainwater, When the water which has penetrated into the pores evaporates, particulate foulants will remain inside them.



Washing differential fouling:

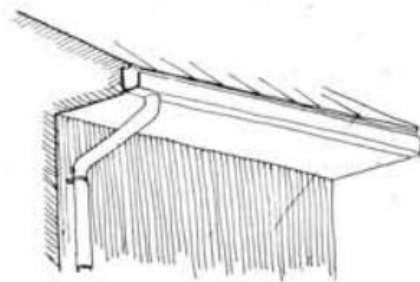
As we all know, a facade is never completely smooth, and therefore in its travel, water will find obstacles, reliefs, bosses or plane changes, that will change speed and direction, because of that then there will be a marked contrast between clean and dirty areas, and these usually receive the name of drippings or in Spanish "churretones".



The geometry of the facade is another important factor that determines the route and speed of water from rain and, consequently, its action in the process of washing or fouling.

Constructive elements that we find this type of dirt:

- Window sills
- Balcony sills
- Cornices
- Reliefs and frames



MECHANICAL CAUSES



Mechanical actions provoke movements, deformations and cracks that appear when a material is unable to resist mechanical stress that is undergoing.

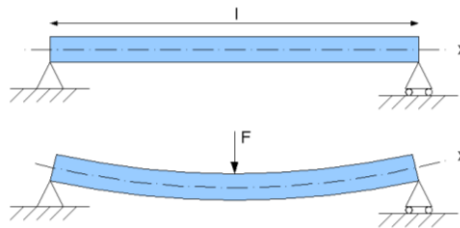
Breaks more frequently manifest themselves in the form of cracks, cracks or detachments which constitute a great danger, cause wear of the material and favour the entry of air and water, made that can give rise to the appearance of pathologies of physical or chemical type.

The most frequent causes of mechanical deterioration of a building elements are, for example, poor quality in materials of union, the tensions caused by the excessive thermal stress, displacement of structure by building settlement, effects caused by misuse of people about materials and construction elements.

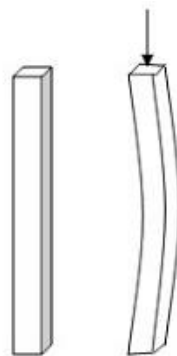
DEFORMATIONS

We can distinguish four types of deformations.

Displacement: They are result of Flex elements horizontal, such as beams and slabs, to an excess of transmitted from other adjacent structural elements or vertical loads.



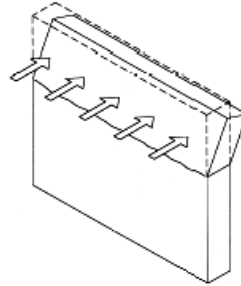
Buckling: Occur as a result of an effort of understanding about a vertical element greater than its carrying capacity.



Warp: They are the result of a rotation of the constructive element normally caused by horizontal forces.

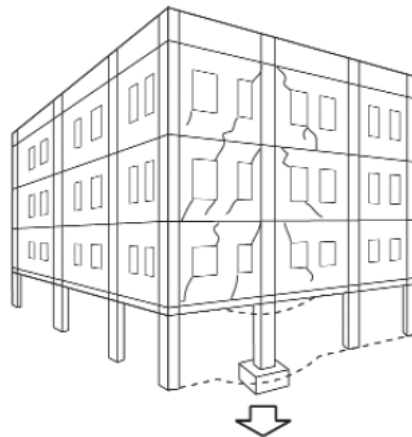


Collapse: They are the result of a translocation the head of the vertical elements caused by the horizontal thrusts.



Deformation by generalized movements

These deformations arise as a result of a decrease in level of a building with respect to another zone caused by a displacement of the foundation or by the instability of the ground where the building is supported. This movement of the soil might be that the building is seated on grounds of sedimentation, to variations in humidity or an underground collapse.



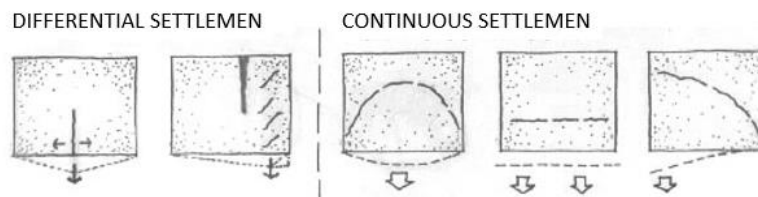
In the latter case, the collapse can be increased by waters cause a continuous washing of lands. In general, the various movements of the soil can occur due to three causes:

- Consolidation and expansion of the ground: Retraction and expansion of the field is one of the reasons for the appearance of deformations in buildings, because they are not able to assimilate this kind of movements.

- Digs from the ground: They tend to affect buildings constructed on slopes, where the land may suffer an increase in volume that will increase the pressure on the construction. This increase in pressure is too strong for the constructive elements, will produce the appearance of deformations and cracks.

It may also occur the reverse phenomenon, which lands are to weaken and diminish pressure on the building, then will originate a few movements in the building which can also cause serious mechanical lesions.

Land pressure changes due to very specific factors: changes in the level of water, subsidence, erosion of upland areas associated with an accumulation of land, erosion and washing them, etc.



- Changes in the nature of the land: They concern buildings founded below the vegetable layers and clayey soils, those factories whose foundations reaching levels more resistant and waterproof. If on these soils circulates the water, over time deteriorate and will vary in their characteristics and their resistance. There will be a change in the nature of the land.

Sometimes when the foundations are exposed because the 'weak' land disappear due to erosion or transformation of streets and access.

CRACKS AND FISSURES

They are uncontrolled longitudinal openings that reveal the existence of a serious defect or bad behavior in the building.

We can distinguish between cracks and fissures according to its amplitude and classify them in:

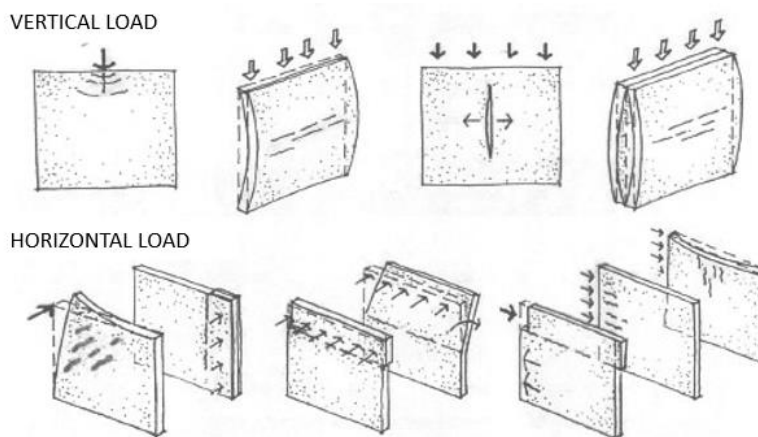
Micro fissure: They are very small openings that are not visible.

Fissures: They have less than 1 mm wide and only affect the surface of the material or constructive element or the surface finish. Within the fissures, we can be found dead fissures, which doesn't vary length, and living fissures, the length of which varies over time and it is necessary to act on them and repair it.

Cracks: They are openings of more than one mm of width that affect the entire thickness of the material or constructive element, so it cause the loss of consistency.

Cracks and fissures are mechanical lesions that affect structural elements, as partitions or facades, which is subject to unforeseen charges.

In general, the cause of appearance of cracks or fissures in the surface finish is due to the phenomenon known as reflection of the support. Cracks occur when support suffers a movement or deformation that surface finish can not resist.



DETACHMENTS

Uncontrolled separation of the surface finish of a material of a constructive element, such as the outer walls of a building. Normally, this lesion occurs as a result of previous lesions, deformations, cracks and fissures, poor execution on site or incompatibility of the materials used.

In any case, detachments always force the demolition and replacement of the surface finish. Depending on the intensity and extent of the lesion, this substitution may be partial, only the affected parts, or total.

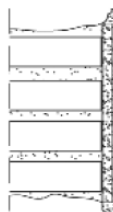
The adhesion between the walls of brick and mortar plaster is usually lost by the presence of humidity, can be by capillarity or leaks.

Another possible cause could be movements that may occur in the structural elements, the mortar plaster has not enough elasticity to retain its grip and follows from the wall.

We can see in the next pictures different schemes on the correct placement of the plaster mortar on a wall of bricks.



BAD



GOOD



BETTER

In the first example, the mortar plaster is executed without cleaning the brick wall joints.

In the second example, is only cleaned the brick wall joints

In the third example, its made with the cleaned of the brick wall joints and the mortar plastered its introduce into the joints.

CHEMICAL CAUSES



They usually consist of chemical reactions of salts, acids or alkalis that produce some kind of decomposition of the affected material. This material will be losing their integrity because this kind of pathologies affect the durability of the materials.

Chemical origin lesions develop through processes clearly different to the pathologies of physical and mechanical character, but nevertheless sometimes its symptoms can become confused.

EFFLORESCENCES

They are crystallization on the surface of a material of soluble salts contained in it. The phenomenon occurs when water that lies in the interior of a material, and containing a solution of these salts, evaporates relatively quickly.



During evaporation, water, that goes from the inside to the outside, drag the saline solution up to the surface of the material and, once there, while evaporation is completed, the solution starts a process of concentration which can lead to their saturation and subsequent crystallization. Those are often manifested in the form of white spots that ruin the appearance of the enclosures and deteriorate the material.

This lesion affects more frequently to more porous materials or more open textured and with certain capacity of absorption of water, such as brick, stone or mortars.

In terms of the ease of cleaning of salts, we can distinguish the following efflorescence:

Temporary: Those are composed of easily dissolve salts and therefore easy to clean. In many cases, the action of rainwater is sufficient to eliminate them. This group also includes the efflorescence very superficial and with little adherence, fact that makes them easy to clean.

Permanent: Those have a huge difficulty for cleaning due to its high adhesion, caused by the type of salts or because they are embedded in the pores of the material. On disposal, should carry out cleaning operations using mechanical or chemical means.



The causes and most relevant conditions involved in the development of the efflorescence are:

The main physical phenomena affecting the formation of efflorescence are capillarity, permeability, evaporation rate, contact time of the solution and open porosity

Environmental conditions favoring the appearance of efflorescence are the element is at relatively low temperature and be under the wind and the sun to allow a rapid evaporation.

OXIDATION AND CORROSION

Oxidation and corrosion are the molecular transformation and loss of material on the surfaces of metals, especially iron and steel. In other words, are the chemical destruction of a metal surface by interaction with agents with which it is in contact.

They are two different lesions, specially because their pathological processes are different, are usually group because his appearance in a metal is usually simultaneous or successive.



Oxidation

It is a chemical process by which the surface of a metal reacts with oxygen in the air and turns into rust. This is because metals, normally, are chemically unstable and tend to become rust, which is more stable.

In most metals, oxidation is a surface film of oxide that has a protective function, because prevents metal follow by oxidizing below its surface. Oxidation grows more slowly in dry atmosphere.

At this point we must know that iron is the only metal that the surface film formed by oxidation does not act as a protection for the rest of the metal.

On the other hand, the constructive elements of zinc, copper or aluminum, metals very used in the facades of the buildings, form a rust surface film of high resistance. The only negative aspect of this lesion is that the affected element takes a look and feel disagreeable. Therefore, when it comes to railings or steelwork of windows is almost forced to apply a surface treatment that prevents the item from rusting.

In general, oxidation is an easy lesion to prevent and repair.

Corrosion

It is a chemical reaction accompanied by the passage of electric current that is often called electrolytic oxidation.

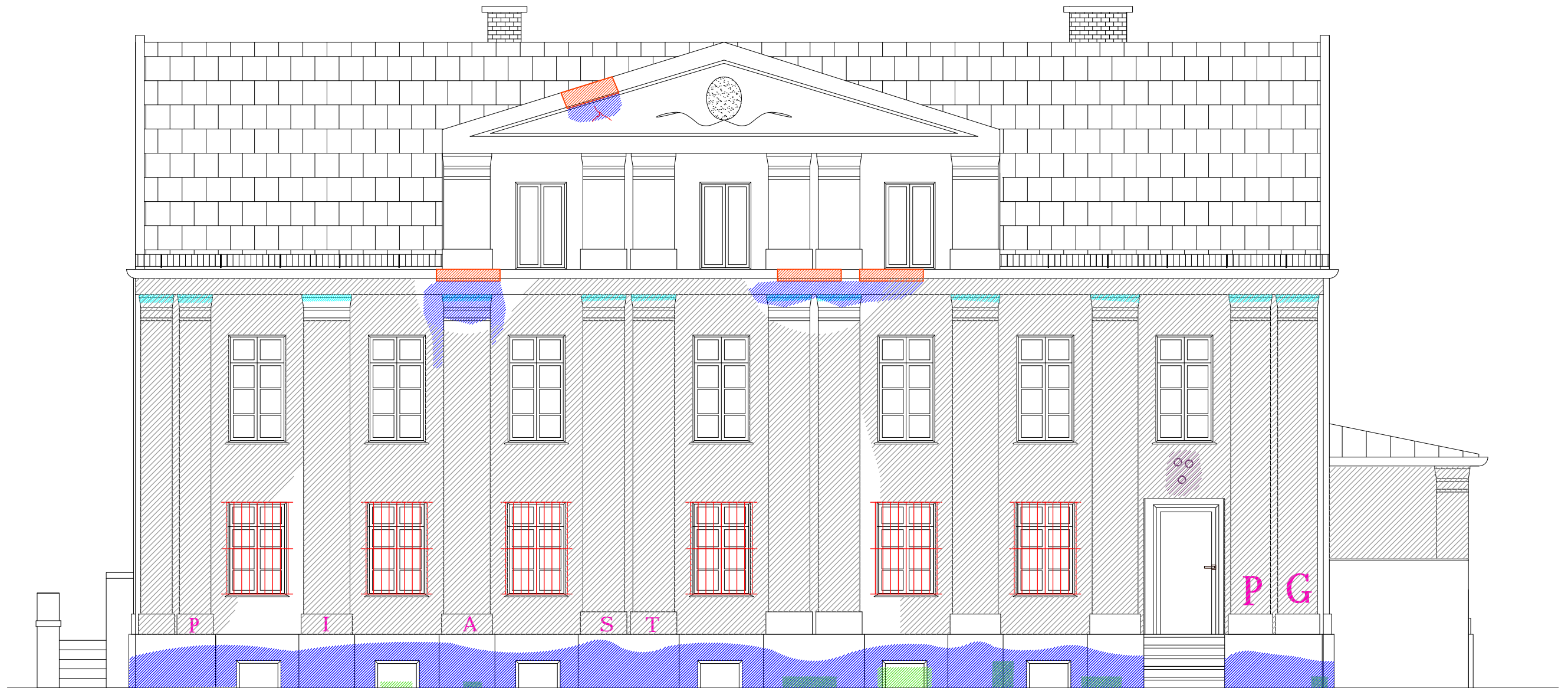
Corrosion does not only affect the surface of the metal, this attack continues until the total destruction of the material.

In corrosion, corroded metal takes up more space than before to be affected by this disease. For example, the iron oxide tends to occupy more volume than the iron content. It is something that should be taken into account in the construction, especially when a metal is inside of another material, corrodes and increase the volume causing fissures, cracks and even breaks.

Therefore, it is clear that the pathological processes of oxidation and corrosion are very different, although both are chemical processes and occur in the same materials.

PLACEMENT OF LESIONS



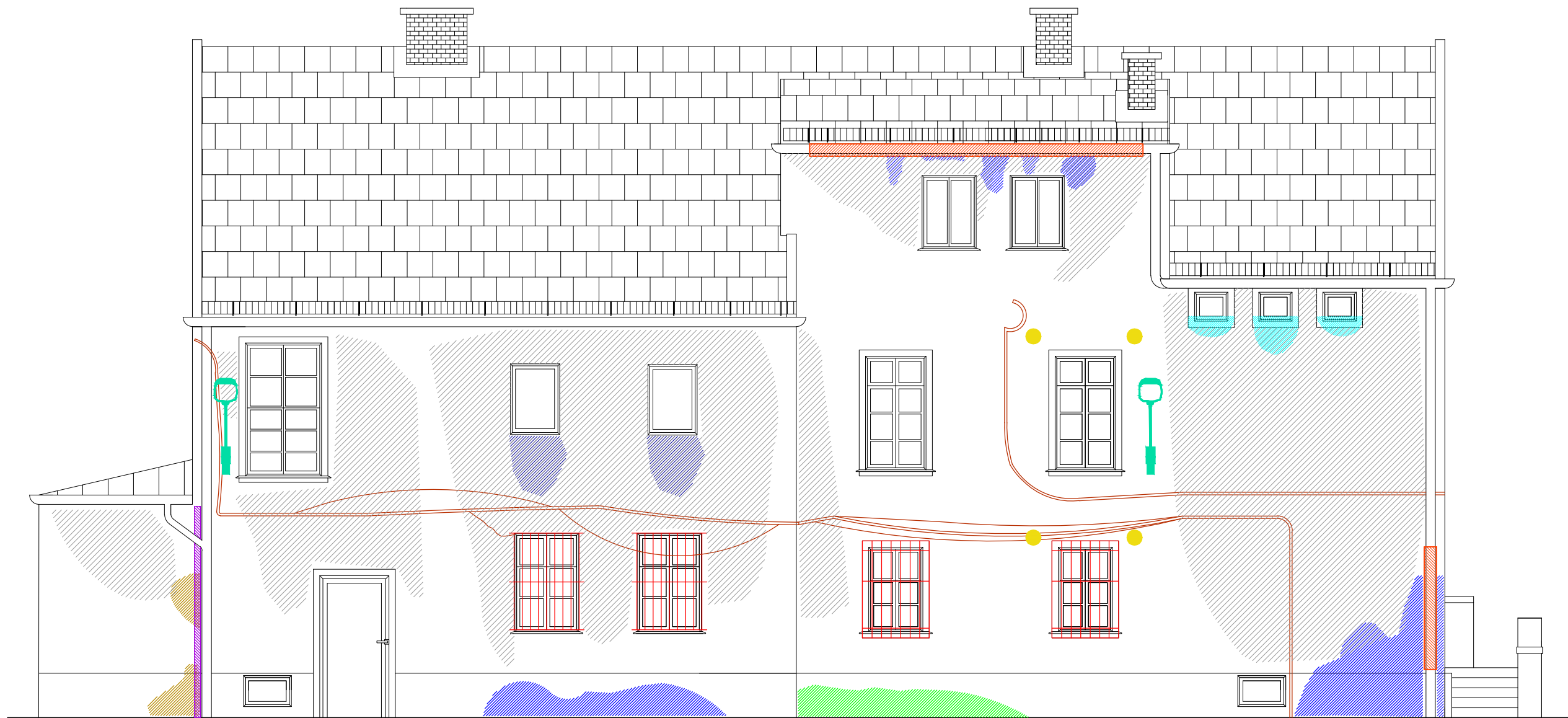










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|  |  |  |  |
| BLAKEING | HUMIDITY BOTTOM | INCORRECT EXECUTION DRIP EDGE | RUSTY BARS |
|  |  |  |  |
| GRAFFITI | IMPROPER ELEMENTS | LEGACY PREVIOUS INSTALATIONS | VEGETATION BOTTOM |
| |  | | |
| | IMPROPER GUTTER REPAIR | | |



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LESIONS FACADE S.E.



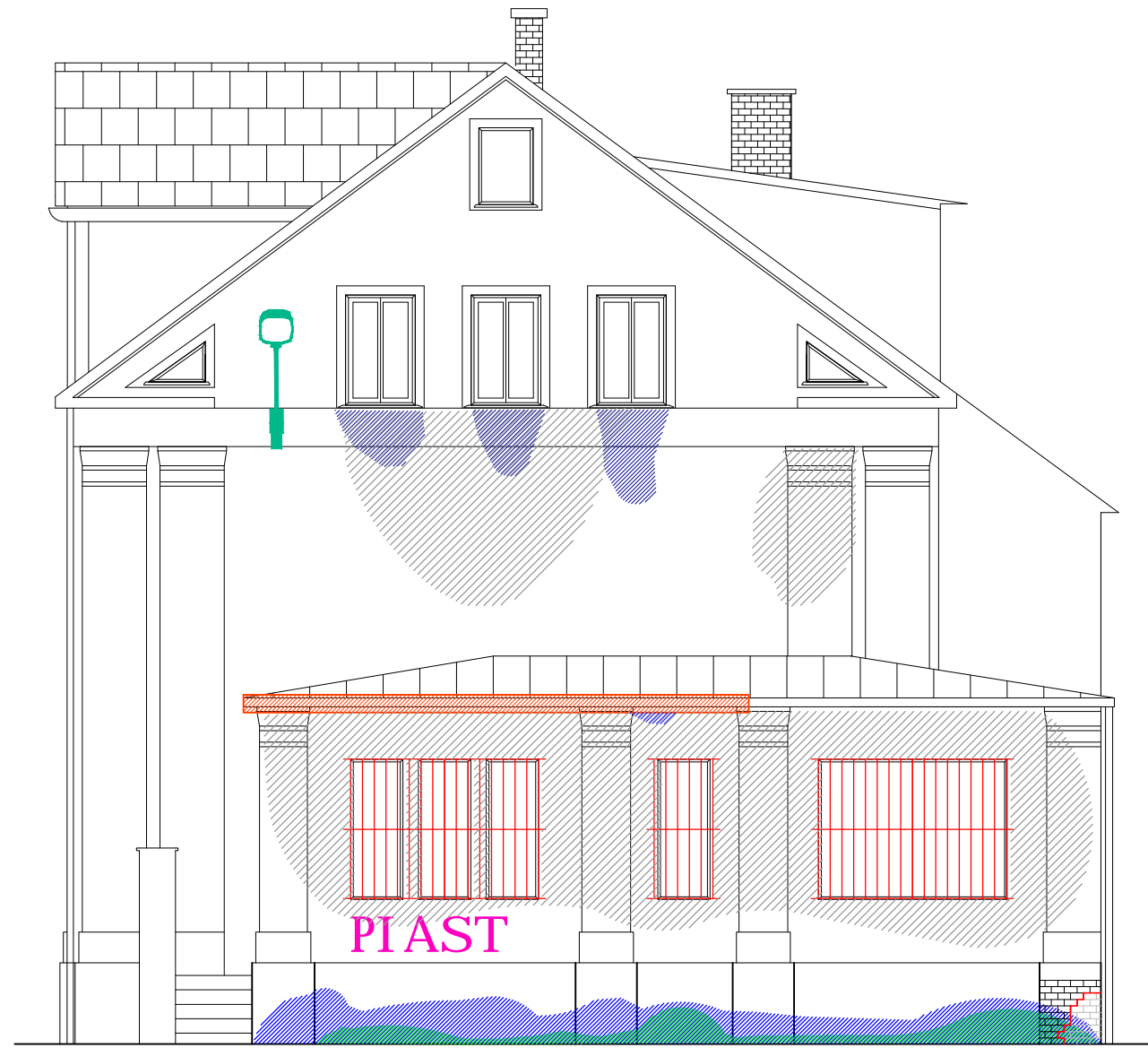
- | | | | |
|--|---|---|--|
|  |  ELECTRICAL WIRING |  IMPROPER ELEMENTS |  RUSTY BARS |
|  |  HOLES IN THE FACADE |  LEAKAGE ROOF - GUTTER |  SURFACE RUNN OFF |
|  |  HUMIDITY BOTTOM |  MOULD |  VERTICAL CRACK |
|  DETACHMENT | | | |



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ADRIAN BERMELL HOSTALET
REHABILITATION OF A BUILDING - ZYGMUNTA STAREGO, 16 GLIWICE

LESIONS FACADE N.W.



-  DETACHMENT BRIKS
-  GRAFFITTI
-  HUMIDITY BOTTOM
-  IMPROPER ELEMENTS
-  MOULD
-  RUSTY BARS
-  SURFACE RUN OFF

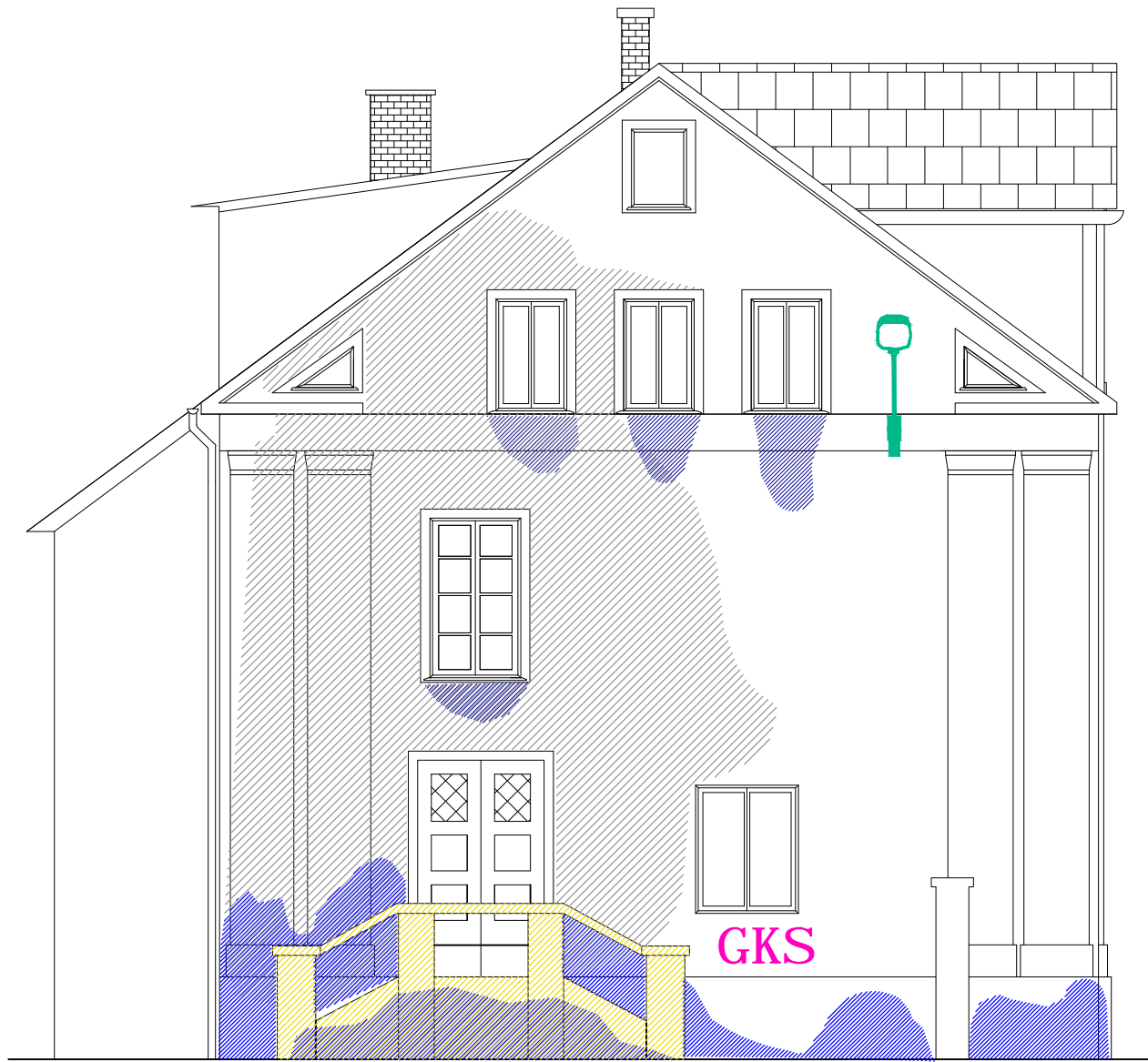


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LESIONS FACADE N.E.

SCALE
1:75



-
-
-
- STAIRS
- SURFACE RUN OFF



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REHABILITATION OF A BUILDING - ZYGMUNTA STAREGO, 16 GLIWICE

LESIONS FACADE S.W.

PATHOLOGICAL TABS



Facade South East



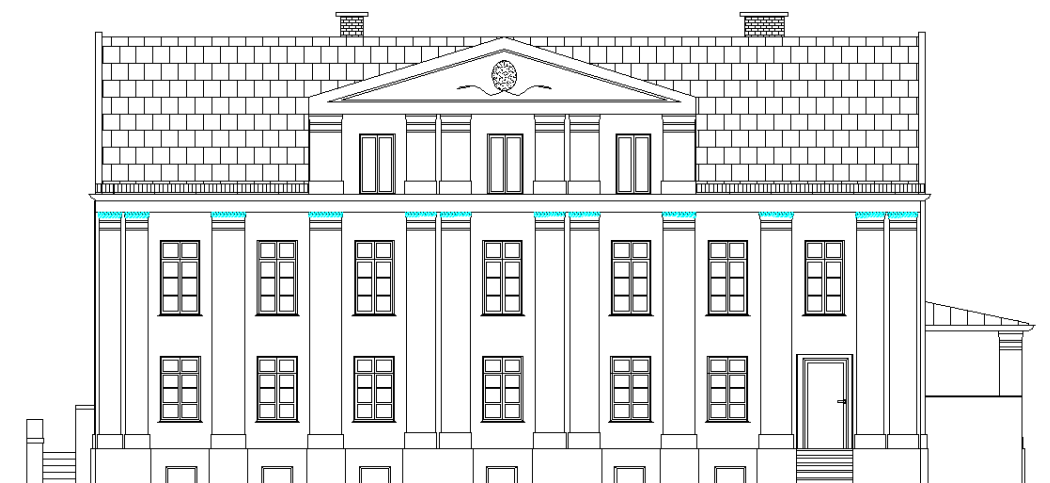
FACADE SE - BIOLOGICAL AGENTS

ANALYSIS:

Deposits of organic origin, and especially droppings of pigeons and other birds, are the most relevant in terms of changes in materials. This is due to its acidity, making it become harmful agents.

The excrement of pigeons and other birds very present in urban areas contain a 2% of phosphoric acid, whose action causes a gradual disintegration of materials with calcareous substrate, as well as corrosion of metals.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

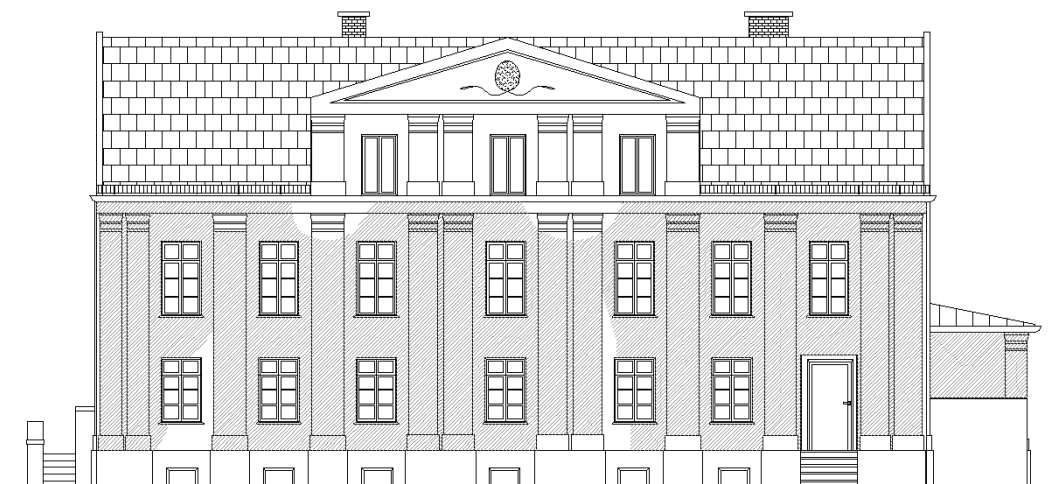
Entire area is dampen to avoid breathing the dust caused by the dry droppings and will be cleaned the affected area using a plastic spatula, carefully to prevent damage to the wall of the facade. Operators must use masks.

FACADE SE - BLAKEING

ANALYSIS:

It occurs as a result of deposits of dust, soot, and dust that by the action of humidity accumulate forming deposits of black coloration, creating a layer with great power of penetration into porous surfaces.

LOCATION:



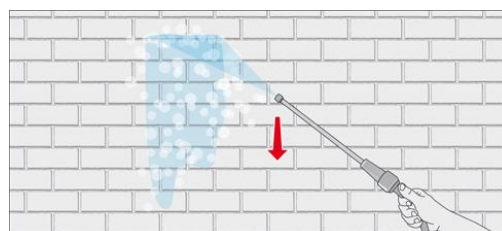
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

For the elimination of the blackening we must analyze stains and its adherence to the surface, to then clean with the most suitable method for each type of stain and support.

Wash from top to bottom, with the pressure washer, all the area affected by the blackening. In the pressure washer we can combine water with some special product for cleaning facades that will leave a better result.

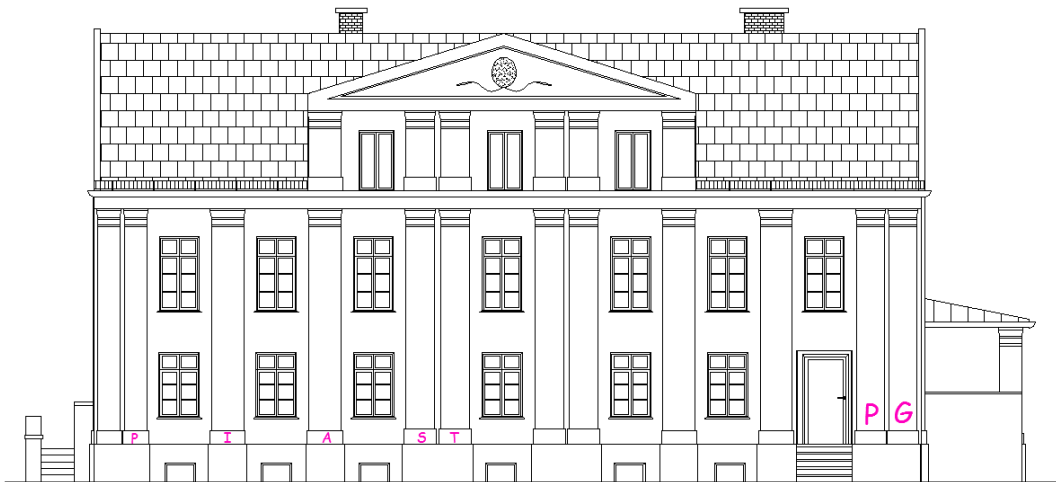


FACADE SE - GRAFFITTIS

ANALYSIS:

Painted with sprays made improper aesthetically damaging the building facade.

LOCATION:



GRAPHIC DOCUMENTATION:



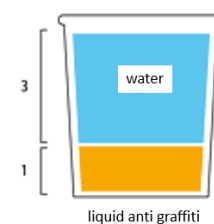
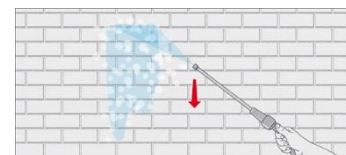
PROPOSED INTERVENTION:

Proceed to the cleaning of graffiti by the most appropriate technique according to the characteristics of the parament to intervene. We always will choose the least abrasive and effective option.

Pressure washing:

It is one of the most commonly performed procedures, the washing is done with a machine to pressure type karcher, combined with a specific solvent graffiti or graffiti removal; the most effective way of proceeding is by first soaking all the graffiti with the mentioned fluid and leave to act for 5 minutes, to wash combined water pressure water / liquid anti-graffiti (3/1).

Baking soda in the form of greasy coating, applied directly to the painting gives very well result in the part of the finish; also prevents wear of the surface as a result of the force of the water.

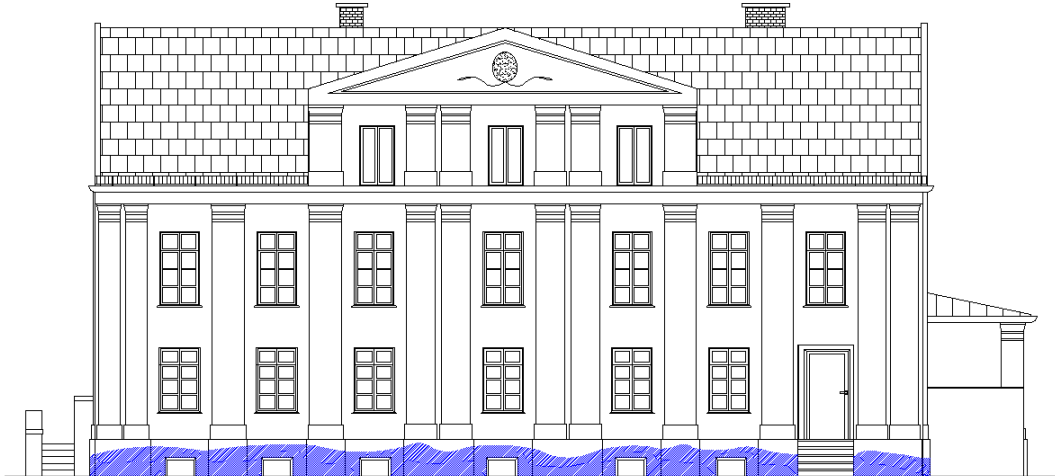


FACADE SE - HUMIDITY ON THE BOTTOM OF THE FACADE

ANALYSIS:

Surface tension between solid and liquid causes the ascent of humidity by capillarity, causing detachment of the coating facade.

LOCATION:



GRAPHIC DOCUMENTATION:



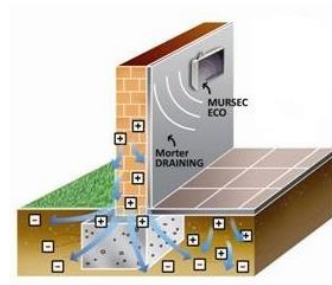
PROPOSED INTERVENTION:

Electrical drainage:

It's linear drains, usually placed at the start of the walls, laying down an electric current between it and the ground contact, negative pole on the wall and positive in the land, forcing the water, as a conductor, to descend.

After you run the drains, all the affected facade cladding will be removed and will run the trim of mortar and be painted.

The best of this system is that it is not needed to do work because it installs quickly and easily. There is no risk to people, animals or plants, and requires no maintenance.

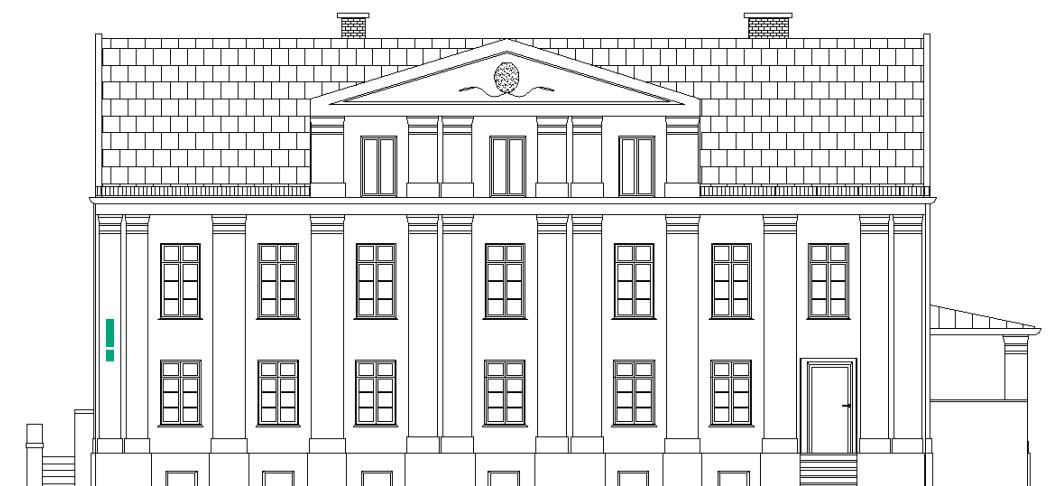


FACADE SE - IMPROPER ELEMENTSS

ANALYSIS:

Improper items placed in the facade that break the aesthetics of the building and cause cracks and fissures in the surface.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Elimination of the improper element and repair the fissures

Cracks should be cleaned inside by brushing to ensure the subsequent accession of special fillers.

Application of sealants on the surface and wait for it to dry between 12 and 36 hours. Do not apply on wet surfaces.

Reduce possible imperfections by sanding to the surface in perfect condition. Then the entire surface is painted.

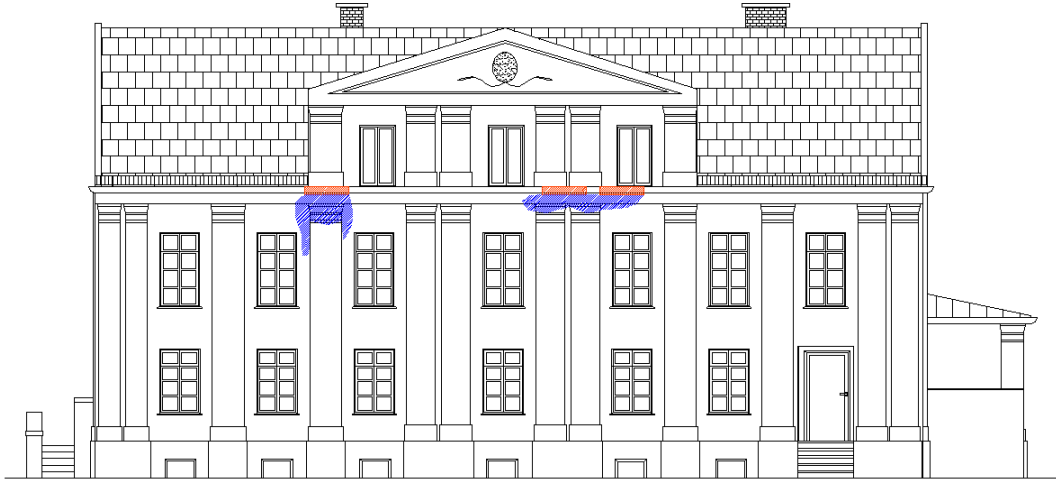


FACADE SE - IMPROPER GUTTER REPAIR

ANALYSIS:

Bad execution of the gutter repair has caused unwanted stains due to leakage of water from it.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

First of all removing the existing gutter and repair the stains of the facade.

Will proceed to the elimination of these washes by choosing one of the different existing techniques for cleaning of facades; for each case choosing the most appropriate option according to the material which is going to act and the dirtiness level that presents, opting for the less aggressive solution of all.

Cracks should be cleaned inside by brushing to ensure the subsequent accession of special fillers.



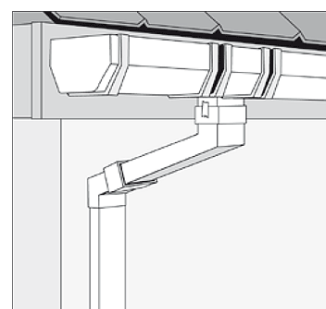
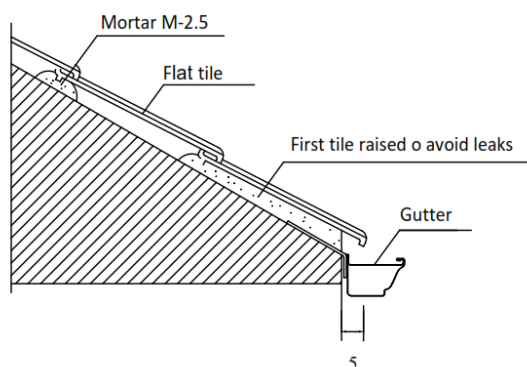
Application of sealants on the surface and wait for it to dry between 12 and 36 hours. Do not apply on wet surfaces.



Reduce possible imperfections by sanding to the surface in perfect condition. Then the entire surface is painted.



Finally, replace the gutter in the correct position controlling the slope of the gutter with a bubble level to place it in the correct form and with his appropriate slope for the correc wáter drainage.

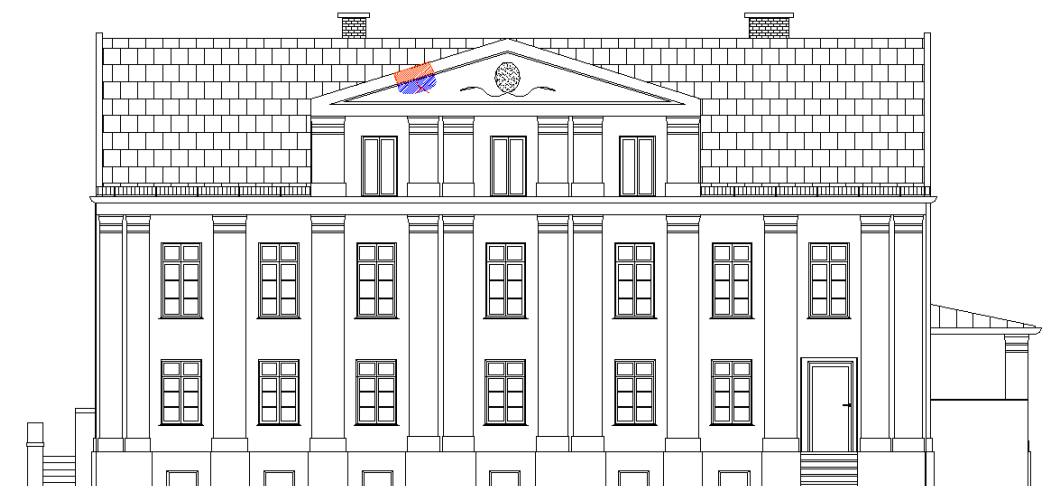


FACADE SE - INCORRECT EXECUTION OF DRIP EDGE

ANALYSIS:

Incorrect execution of the drip edge that caused leaks in joints and unwanted stains on the facade.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Cracks should be cleaned inside by brushing to ensure the subsequent accession of special fillers.

Application of sealants on the surface and wait for it to dry between 12 and 36 hours. Do not apply on wet surfaces.

Reduce possible imperfections by sanding to the surface in perfect condition. Then the entire surface is painted.

Regarding the drip edge, rerun the affected area controlling joints on both sides with the old areas and paint.

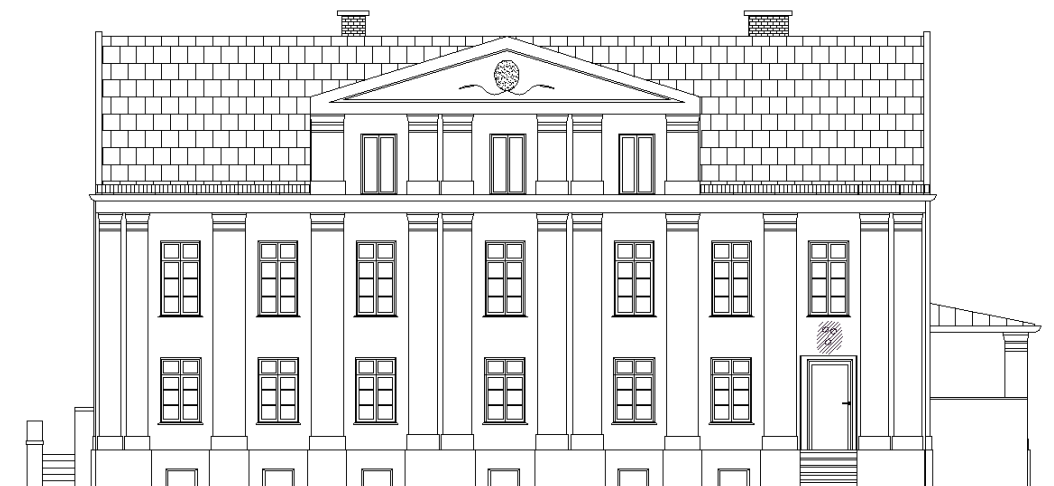


FACADE SE - LEGACY OF PREVIOUS INSTALATIONS

ANALYSIS:

Visible legacy of previous installations in the facade, that have produced holes in their retreat.

LOCATION:

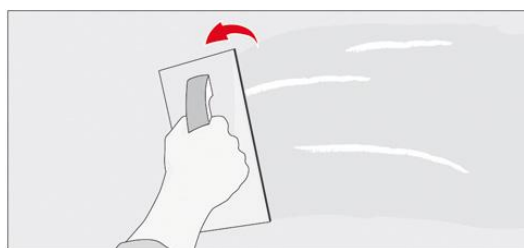


GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Withdrawal of the entire coating to appreciate the damage on the factory. Replacing parts damaged or sectioned of the structural elements, clad the facade with trim of mortar and finally paint área.



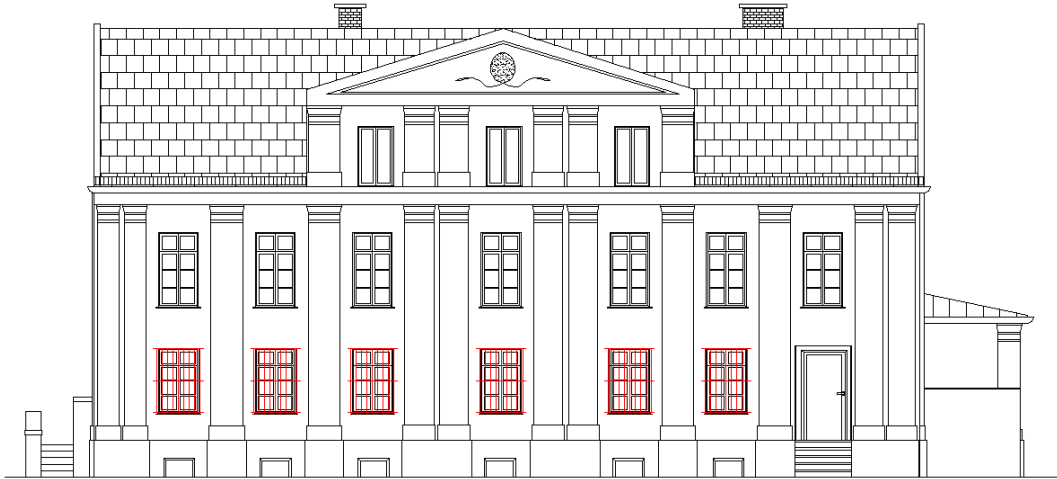
It is advisable in future anchors on to the factory, made so in its possible withdrawal, the facade does not suffer damage as the existing.

FACADE SE - RUSTY BARS

ANALYSIS:

It is a chemical process by which the surface of a metal reacts with the oxygen in the air, and it becomes in oxide, this is because metals are chemically unstable and tend to become stay in rust, which is more stable.

LOCATION:



GRAPHIC DOCUMENTATION:

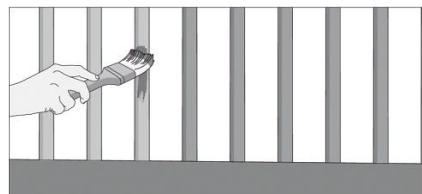
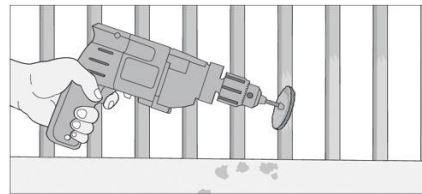


PROPOSED INTERVENTION:

It will proceed to the removal of the oxide by means of pickling products and brushed machines and then protect the element with an antioxidant product.

There shall be brushed with metal brush, and subsequently to the rubbing of the rusted areas. Then will be cleaned up bars with a soft cloth and a solution of soap and hot water to remove residue.

After that, apply a layer of anti-rust only in the affected areas, if one grid is all oxidized, it shall apply to all grid. Finally the grid will be painted.

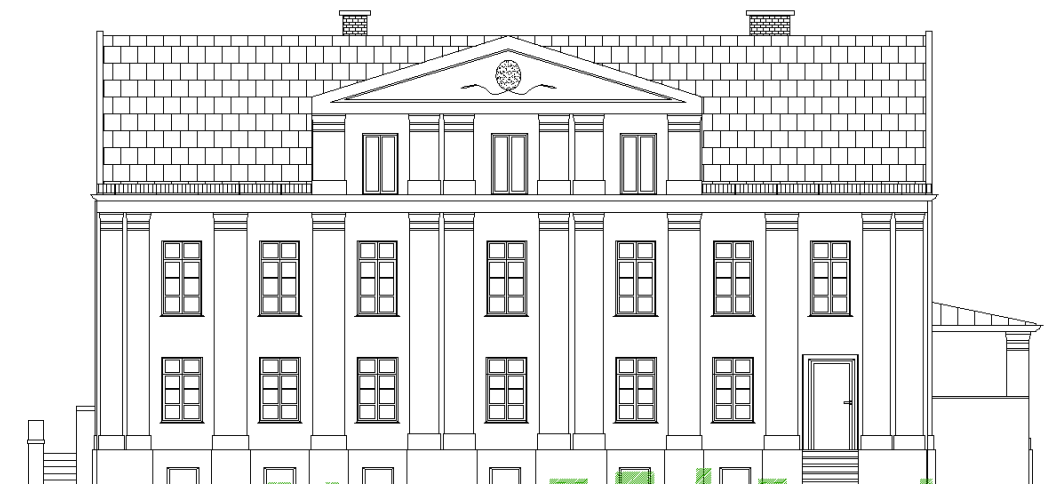


FACADE SE - VEGETATION BOTTOM

ANALYSIS:

Vegetation is located in the bottom of the facade in the form of small shrubs due to the humidity in that area of the facade and the depositions of microorganisms causing the growth of vegetation.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

The choice of the method of cleaning depends on the characteristics of the wall and its conservation status.

First of all, be charged a product that destroys the microorganisms and having no harmful agents for the surface of the facade.

After their destruction are removed more easily from the surface and is performed a mechanical cleaning based on the projection of abrasive and water at low pressure, in order to undo the topsoil strongly adhered to the wall.

Facade North West



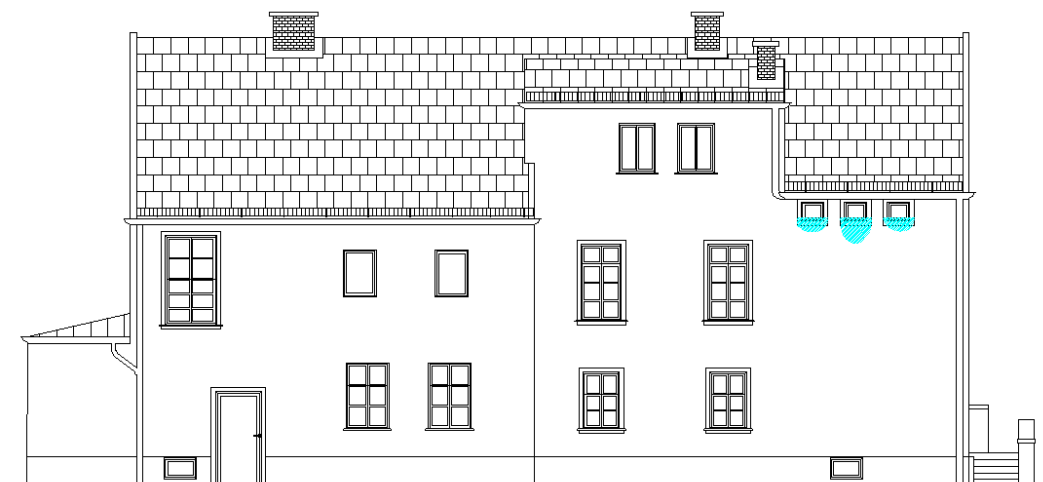
FACADE NW - BIOLOGICAL AGENTS

ANALYSIS:

Deposits of organic origin, and especially droppings of pigeons and other birds, are the most relevant in terms of changes in materials. This is due to its acidity, making it become harmful agents.

The excrement of pigeons and other birds very present in urban areas contain a 2% of phosphoric acid, whose action causes a gradual disintegration of materials with calcareous substrate, as well as corrosion of metals.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

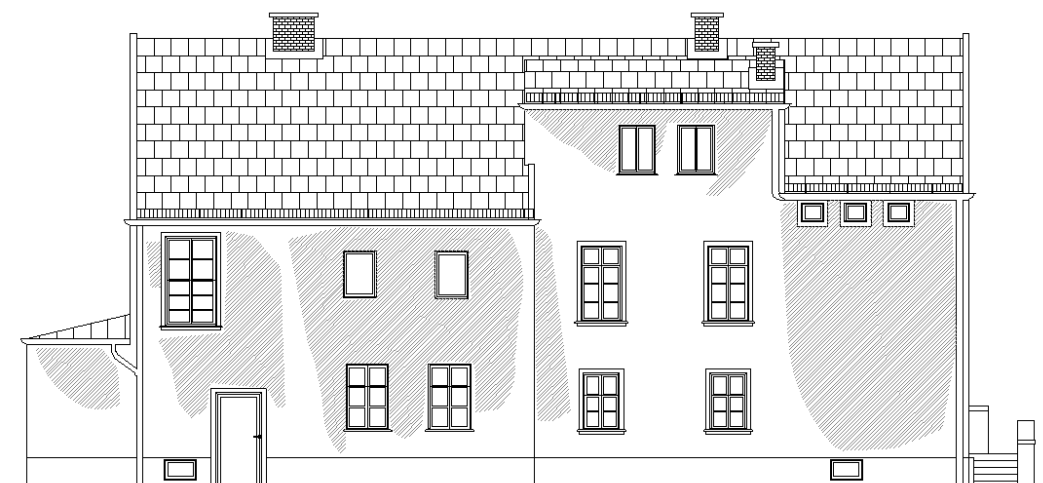
Entire area is dampen to avoid breathing the dust caused by the dry breathing the droppings and will be cleaned the affected area using a plastic spatula, carefully to prevent damage to the wall of the facade. Operators must use masks.

FACADE NW - BLAKENING

ANALYSIS:

It occurs as a result of deposits of dust, soot, and dust that by the action of humidity accumulate forming deposits of black coloration, creating a layer with great power of penetration into porous surfaces.

LOCATION:



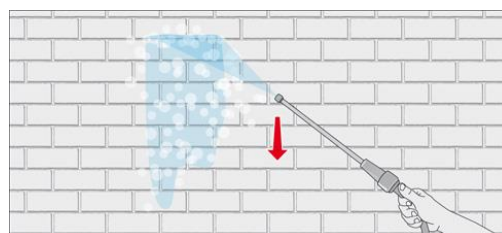
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

For the elimination of the blackening we must analyze stains and its adherence to the surface, to then clean with the most suitable method for each type of stain and support.

Wash from top to bottom, with the pressure washer, all the area affected by the blackening. In the pressure washer we can combine water with some special product for cleaning facades that will leave a better result.



FACADE NW - BREAKAGE DOWNSPOUT

ANALYSIS:

We can see a lack of tightness in the downspout, which produces a constant wetting of the affected area. In addition, due to the vibrations of the downspout and the lack of maintenance of the facade are accentuated the process of decomposition, disrupting the finish plaster and causing cracks and curvatures on it.

LOCATION:



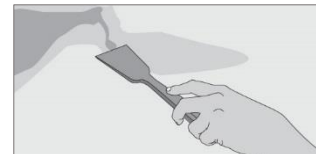
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Proposed withdrawal completely of affected downspouts. Once free of defective items, will proceed to the repair of the facade:

Scraping with the spatula all loose paint and cement mortar affected by humidity. And then wash the whole area.



Once the wall is dry we can repair with plaster or wall paste those cracks that were left after the cleaning.



Pass a sandpaper to polish the surface, eliminate imperfections and Paint.



Repaired the facade will only be reinstallation of the new downspout.

New installation of downspouts, will be controlled by proposing a solution that avoids the vibrations and allow a fixed which do not damage the facade.

FACADE NW - DETACHMENT

ANALYSIS:

General detachment of the coating even loss of material in the structure of the wall of brick due to excessive humidity.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

First of all check of the general condition of the surface in the injured areas and in areas close to lesion.

Change the pieces of the brick wall that appear to be affected by new ones. Later will be to apply the plaster surface of the facade.

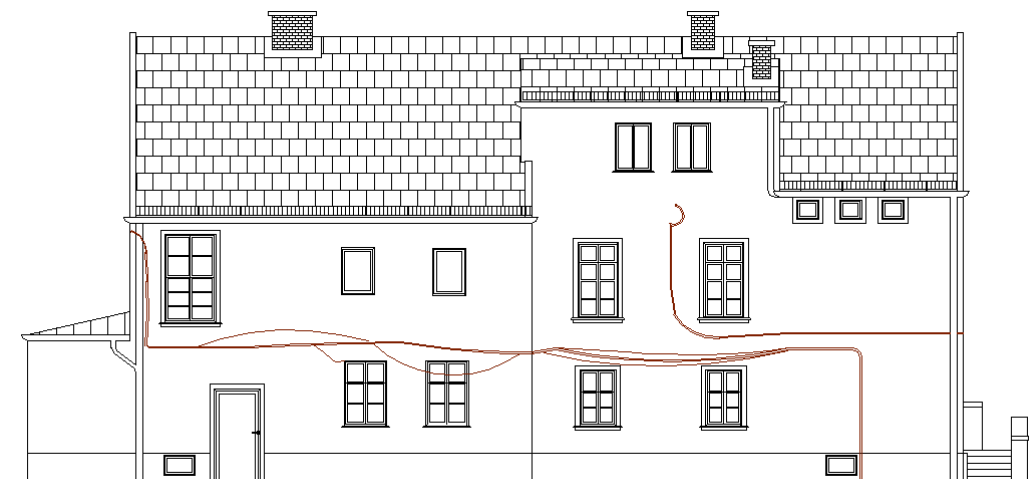


FACADE NW - ELECTRICAL WIRING

ANALYSIS:

Electrical wiring on the surface of the facade with parts in the air and hanged down without any order due to lack of maintenance and poor execution of the clamping.

LOCATION:



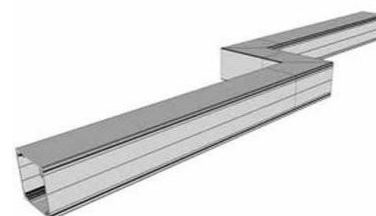
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Collect and redirect facilities ranging for the façade by gutters of PVC that protects them from atmospheric agents.

These gutters can be painted the same color of the facade to hide their placement and improve the aesthetics of the facade.



FACADE NW - HOLES IN THE FACADE

ANALYSIS:

Holes in the facade caused by the withdrawal of old facilities.

LOCATION:

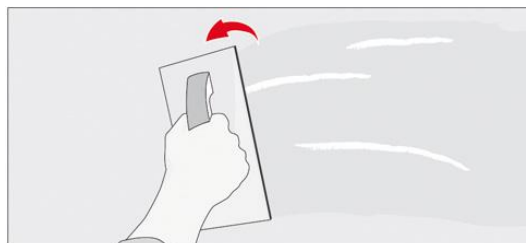


GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Fill the gaps of the facade with paste cement, clad the facade with trim of mortar and finally paint area.

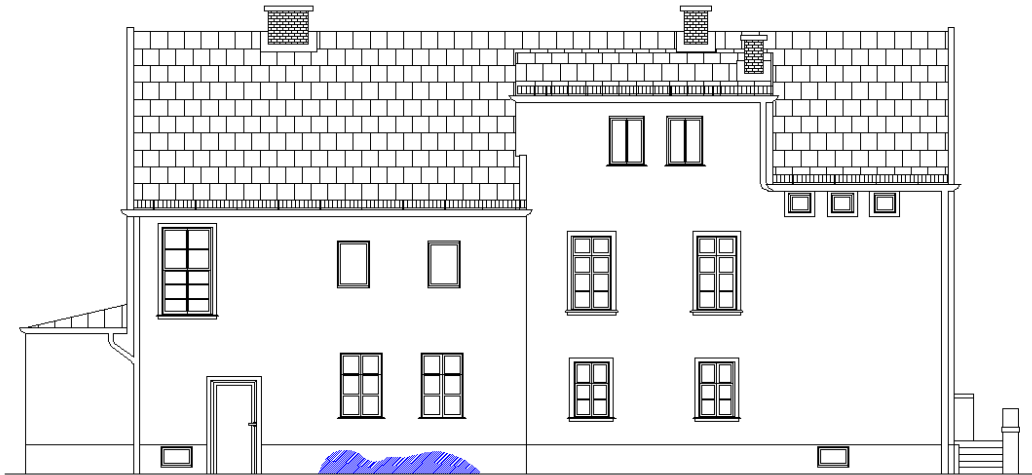


FACADE NW - HUMIDITY ON THE BOTTOM OF THE FACADE

ANALYSIS:

Surface tension between solid and liquid causes the ascent of humidity by capillarity, causing detachment of the coating facade.

LOCATION:



GRAPHIC DOCUMENTATION:



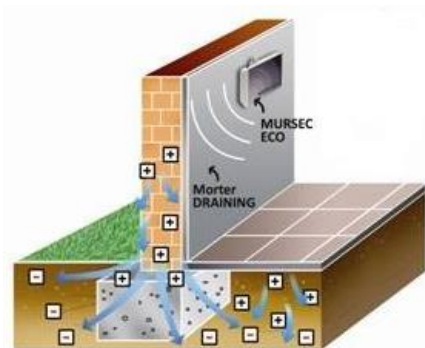
PROPOSED INTERVENTION:

Electrical drainage:

It's linear drains, usually placed at the start of the walls, laying down an electric current between it and the ground contact, negative pole on the wall and positive in the land, forcing the water, as a conductor, to descend.

After you run the drains, all the affected facade cladding will be removed and will run the trim of mortar and be painted.

The best of this system is that it is not needed to do work because it installs quickly and easily. There is no risk to people, animals or plants, and requires no maintenance.

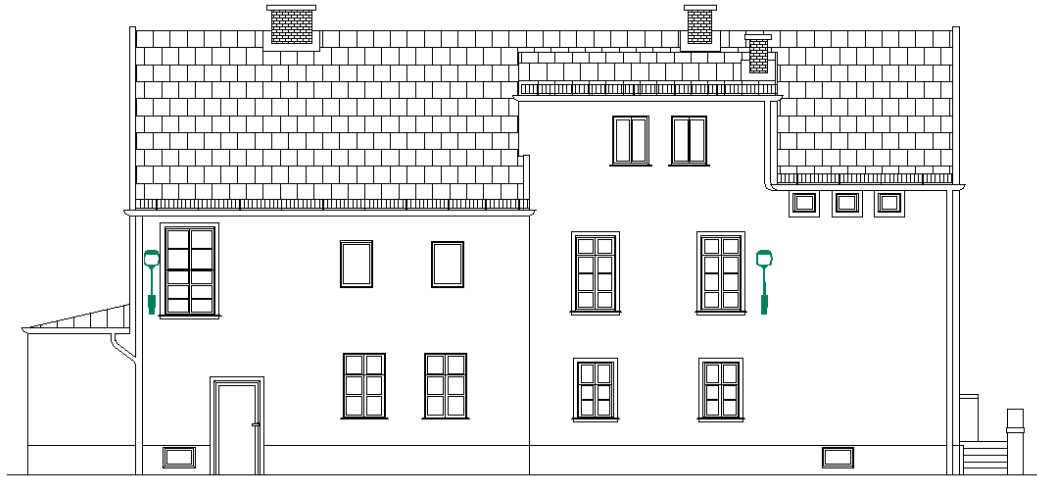


FACADE NW - IMPROPER ELEMENTSS

ANALYSIS:

Improper items placed in the facade that break the aesthetics of the building and cause cracks and fissures in the surface. Also it does not work and are not necessary, because of that, their withdrawal is proposed

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Elimination of the improper element and repair the fissures

Reduce possible imperfections by sanding to the surface in perfect condition. Then the entire surface is painted

If necessary, we can propose another type of lighting with lampposts placed around the perimeter of the building to light accesses and parking back because that plot belongs to our building.



FACADE NW - LEAKAGE BETWEEN ROOF AND GUTTERS

ANALYSIS:

Leakage between roof and gutters, causing stains on this zone of the facade, because the distance between gutter and the drainage of the roof it is not correct.

LOCATION:



GRAPHIC DOCUMENTATION:

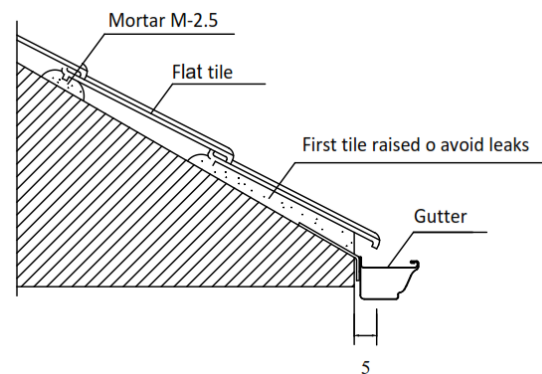


PROPOSED INTERVENTION:

First of all, remove the gutter and clean the affected area of the facade.

Will proceed to the elimination of these washes by choosing one of the different existing techniques for cleaning of facades; for each case choosing the most appropriate option according to the material which is going to act and the dirtiness level that presents, opting for the less aggressive solution of all.

And finally, replace the spout in the correct position, controlling the distances between the gutter and the drainage of the roof.

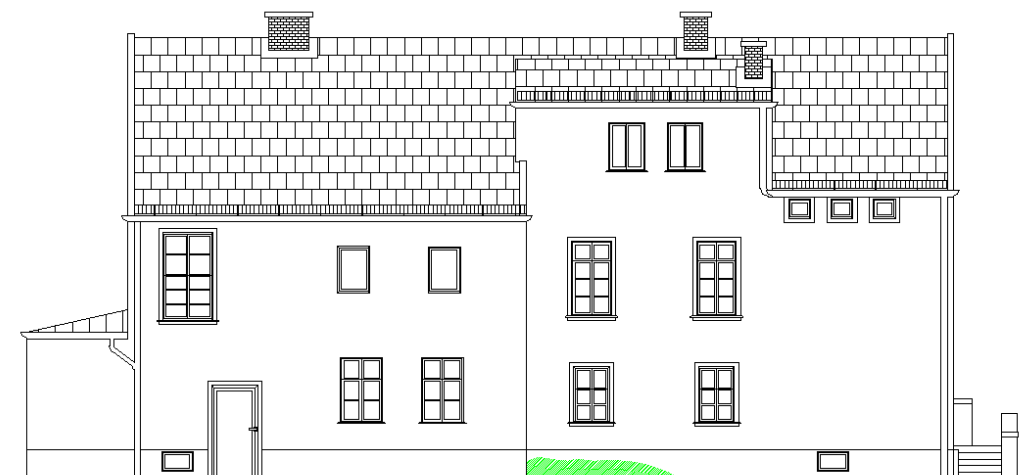


FACADE NW - MOULD

ANALYSIS:

The presence of mould indicates humidity. In fact, it is often found near drains and in the lower parts of the buildings with capillary problems. It has a destructive effect on the surface.

LOCATION:



GRAPHIC DOCUMENTATION:

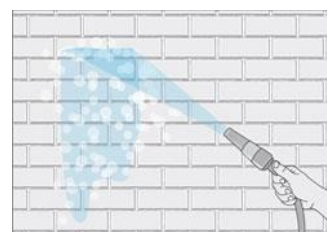
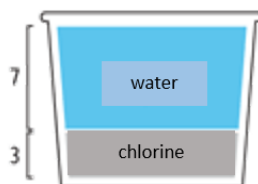


PROPOSED INTERVENTION:

Scrape with a dry brush the entire affected area.

Wet the nylon bristle brush in water + chlorine solution and wipe the surface. Soak it enough and leave for 10 minutes.

Use the pressure washer to rinse the entire area and remove all chemical that has washed.



Gloves for chemicals, mask and goggles should be used.

FACADE NW - RUSTY BARS

ANALYSIS:

It is a chemical process by which the surface of a metal reacts with the oxygen in the air, and it becomes in oxide, this is because metals are chemically unstable and tend to become stay in rust, which is more stable.

LOCATION:



GRAPHIC DOCUMENTATION:



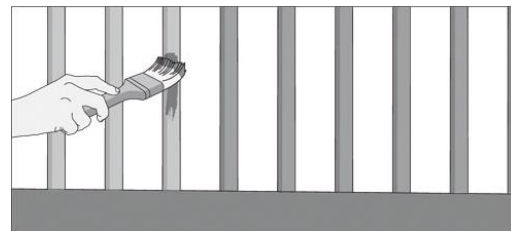
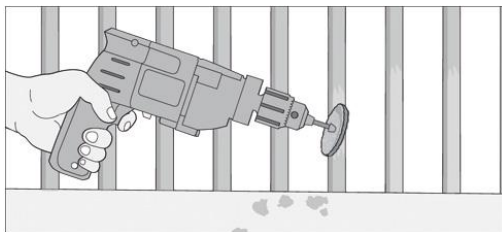
PROPOSED INTERVENTION:

It will proceed to the removal of the oxide by means of pickling products and brushed machines and then protect the element with an antioxidant product.

There shall be brushed with metal brush, and subsequently to the rubbing of the rusted areas.

Then will be cleaned up bars with a soft cloth and a solution of soap and hot water to remove residue.

After that, apply a layer of anti-rust only in the affected areas, if one grid is all oxidized, it shall apply to all grid. Finally the grid will be painted



FACADE NW - SURFACE RUN-OFF IN WINDOWS

ANALYSIS:

This type of washing is produced due to water runoff and consequent dirt drag across the surface of the wall, usually in areas where the geometry favors this accumulation occur.

LOCATION:



GRAPHIC DOCUMENTATION:

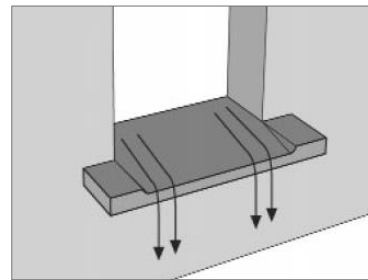
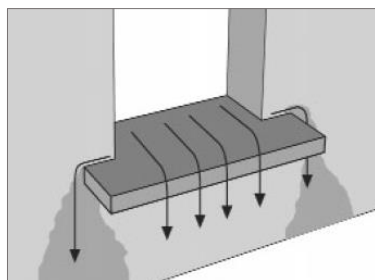


PROPOSED INTERVENTION:

Will proceed to the elimination of these washes by choosing one of the different existing techniques for cleaning of facades; for each case choosing the most appropriate option according to the material which is going to act and the dirtiness level that presents, opting for the less aggressive solution of all.

Apply a special product for cleaning the facade, let the product act for 4 or 5 hours until it is dry and clean the area with a wet brush.

To solve the problem, we can also replace the window sills of the windows, choosing a best geometry to facilitate the evacuation of the water.

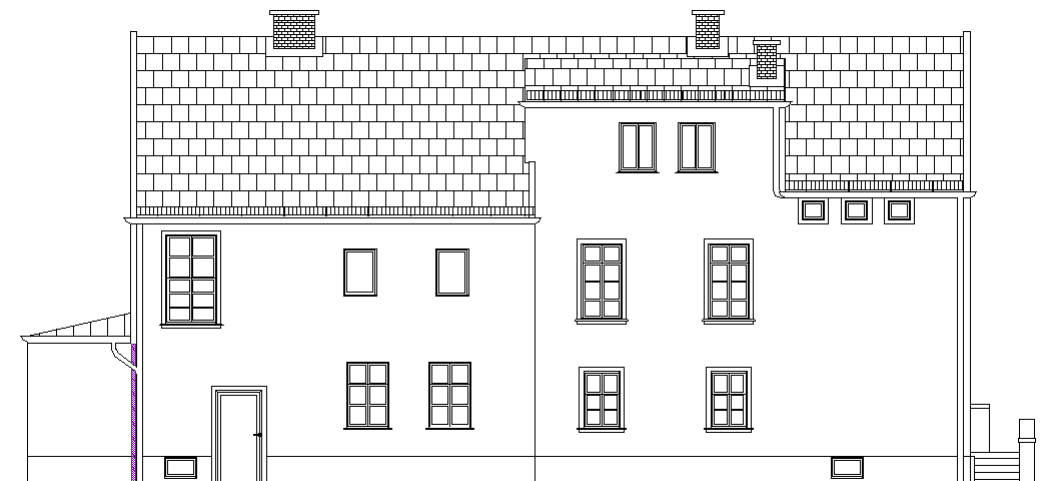


FACADE NW - VERTICAL CRACK

ANALYSIS:

Vertical crack in the union between two different buildings blocks due to the incorrect execution of the encounter between the different construction elements.

LOCATION:



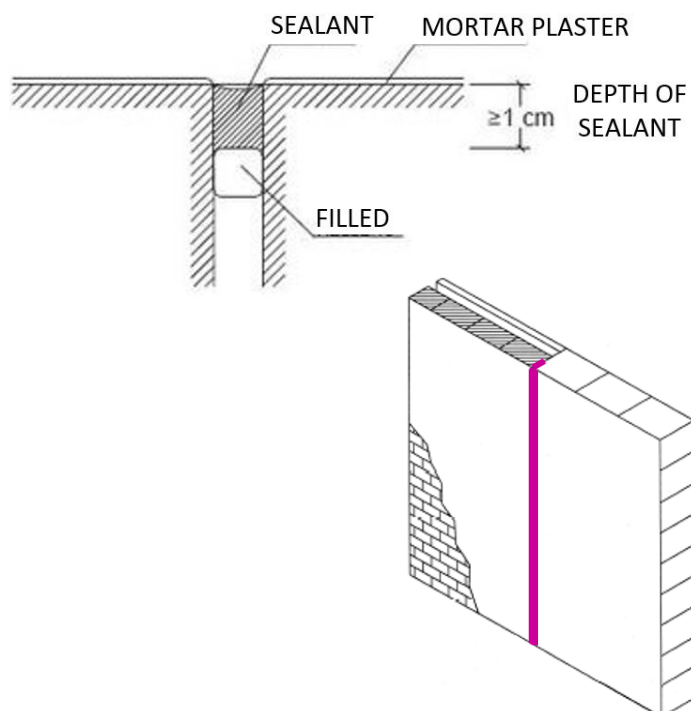
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

First of all, clean all dirtiness from the inside of the crack.

And then place inside an elastic material able to assume the efforts and movement between the two blocks.



Facade North East

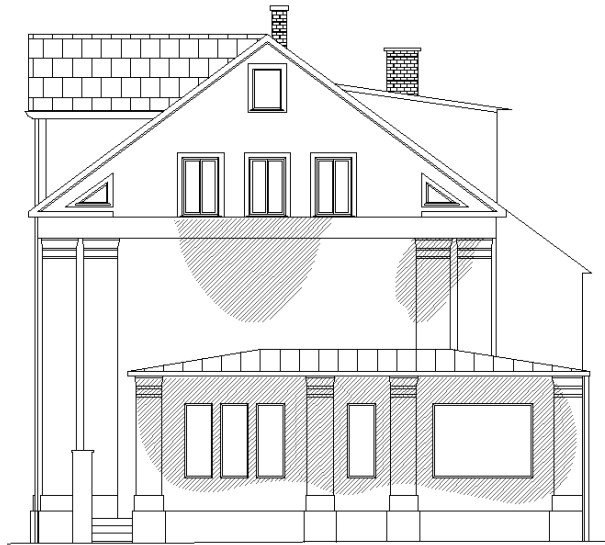


FACADE NE - BLAKENING

ANALYSIS:

It occurs as a result of deposits of dust, soot, and dust that by the action of humidity accumulate forming deposits of black coloration, creating a layer with great power of penetration into porous surfaces.

LOCATION:



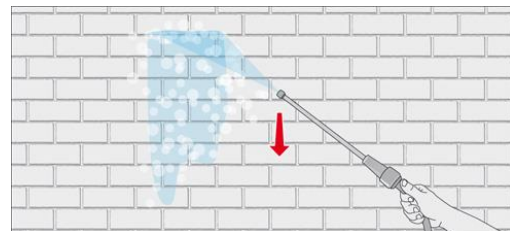
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

For the elimination of the blackening we must analyze stains and its adherence to the surface, to then clean with the most suitable method for each type of stain and support.

Wash from top to bottom, with the pressure washer, all the area affected by the blackening. In the pressure washer we can combine water with some special product for cleaning facades that will leave a better result.



FACADE NE - DAMAGED GUTTER

ANALYSIS:

Gutter damaged and with vegetation inside because the sloping of the water drainage and the lack of maintenance, which has led to the accumulation of substances that have become vegetation.

LOCATION:



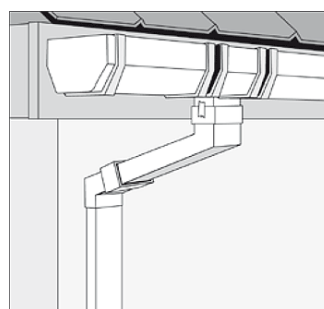
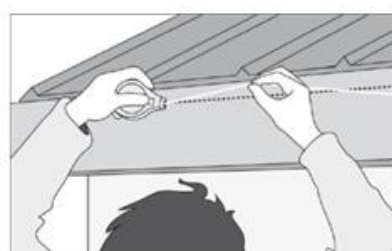
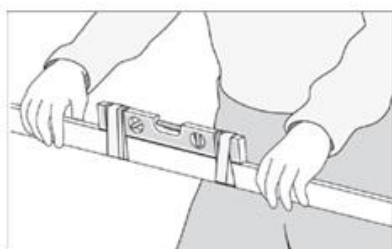
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

First of all, remove the gutter and clean the affected area of the facade.

Replace the gutter in the correct position controlling the slope of the gutter with a bubble level to place it in the correct form and with his appropriate slope for the correc wáter drainage.



FACADE NE - DETACHMENT BRIKS

ANALYSIS:

Detachment of the bricks that make up the corner column, it may be due to the environment that the walls have been subjected, too much humidity or any accidental cause because of the traffic.

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

First of all, remove de vegetation in the bottom applying product to destroy the microorganisms and with no harmful agents for the surface of the facade.

Check of the general condition of the surface in the injured areas and in areas close to lesion, especially controversial parts.

Demolition of partial or total constructive element and restructure, including the injured party and the surrounding area.

Redo the injured zone using waterproof mortar in the ejecution.



FACADE NE - GRAFFITTIS

ANALYSIS:

Painted with sprays made improper aesthetically damaging the building facade.

LOCATION:



GRAPHIC DOCUMENTATION:

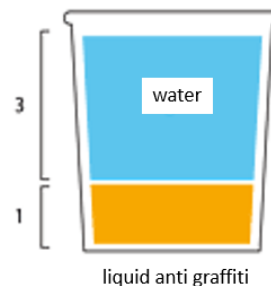
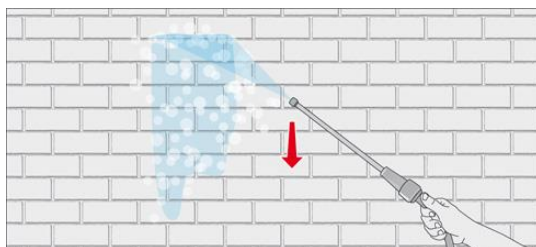


PROPOSED INTERVENTION:

Proceed to the cleaning of graffiti by the most appropriate technique according to the characteristics of the parament to intervene. We always will choose the least abrasive and effective option.

Pressure washing:

It is one of the most commonly performed procedures; the washing is done with a machine to pressure type karcher, combined with a specific solvent graffiti or graffiti removal; the most effective way of proceeding is by first soaking all the graffiti with the mentioned fluid and leave to act for 5 minutes, to wash combined water pressure water / liquid anti-graffiti (3/1).



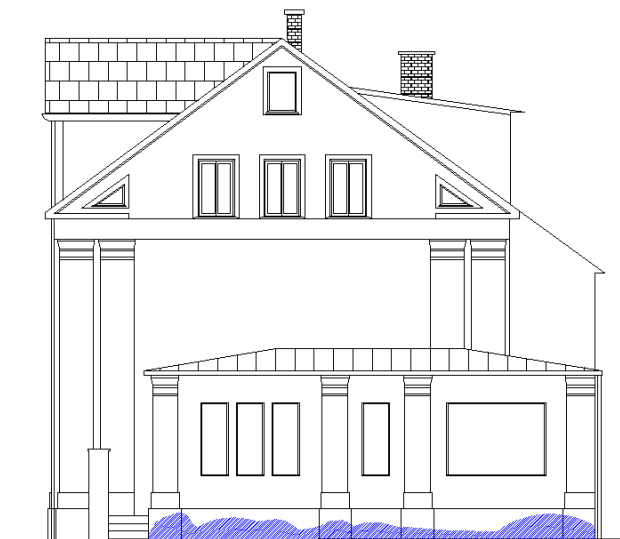
Baking soda in the form of greasy coating, applied directly to the painting gives very well result in the part of the finish; also prevents wear of the surface as a result of the force of the water.

FACADE NE - HUMIDITY ON THE BOTTOM OF THE FACADE

ANALYSIS:

Surface tension between solid and liquid causes the ascent of humidity by capillarity, causing detachment of the coating facade.

LOCATION:



GRAPHIC DOCUMENTATION:



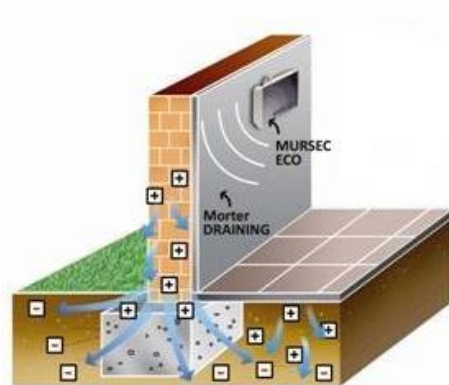
PROPOSED INTERVENTION:

Electrical drainage:

It's linear drains, usually placed at the start of the walls, laying down an electric current between it and the ground contact, negative pole on the wall and positive in the land, forcing the water, as a conductor, to descend.

After you run the drains, all the affected facade cladding will be removed and will run the trim of mortar and be painted.

The best of this system is that it is not needed to do work because it installs quickly and easily. There is no risk to people, animals or plants, and requires no maintenance.

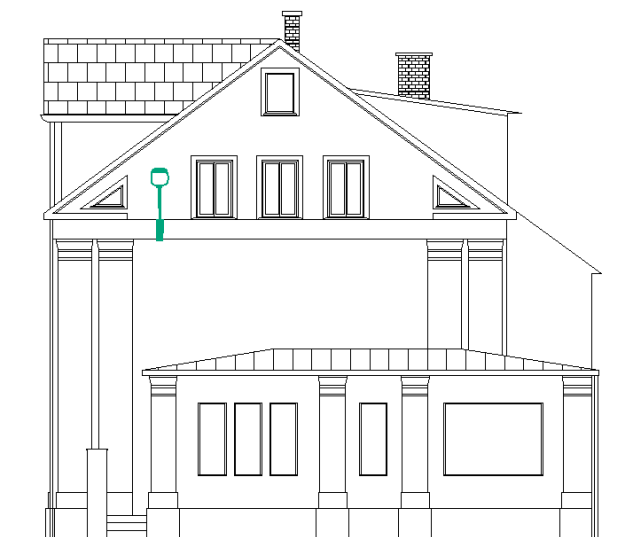


FACADE NE - IMPROPER ELEMENTSS

ANALYSIS:

Improper items placed in the facade that break the aesthetics of the building and cause cracks and fissures in the surface. Also it does not work and are not necessary, because of that, their withdrawal is proposed

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Elimination of the improper element and repair the fissures

Reduce possible imperfections by sanding to the Surface in perfect condition. Then the entire surface is painted

If necessary, we can propose another type of lighting with lampposts placed around the perimeter of the building to light accesses and parking back because that plot belongs to our building.



FACADE NE - MOULD

ANALYSIS:

The presence of mould indicates humidity. In fact, it is often found near drains and in the lower parts of the buildings with capillary problems. It has a destructive effect on the Surface.

LOCATION:



GRAPHIC DOCUMENTATION:

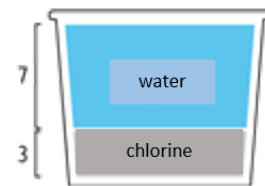


PROPOSED INTERVENTION:

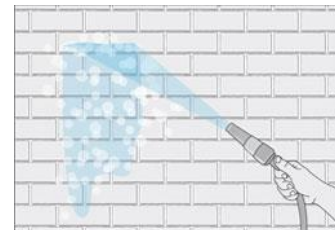
Scrape with a dry brush the entire affected area.



Wet the nylon bristle brush in water + chlorine solution and wipe the surface. Soak it enough and leave for 10 minutes.



Use the pressure washer to rinse the entire area and remove all chemical that has washed.



Gloves for chemicals, mask and goggles should be used.

FACADE NE - RUSTY BARS

ANALYSIS:

It is a chemical process by which the surface of a metal reacts with the oxygen in the air, and it becomes in oxide, this is because metals are chemically unstable and tend to become stay in rust, which is more stable.

LOCATION:



GRAPHIC DOCUMENTATION:

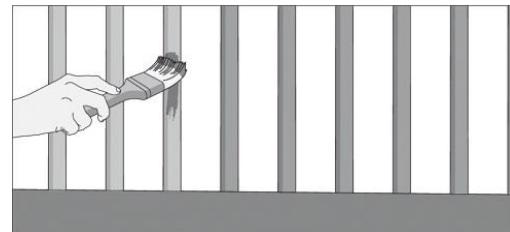
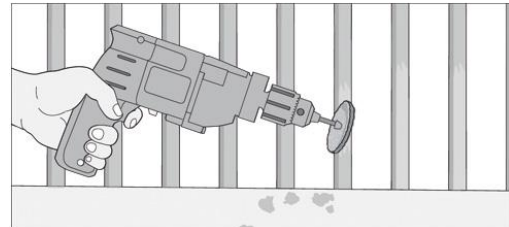


PROPOSED INTERVENTION:

It will proceed to the removal of the oxide by means of pickling products and brushed machines and then protect the element with an antioxidant product.

There shall be brushed with metal brush, and subsequently to the rubbing of the rusted areas. Then will be cleaned up bars with a soft cloth and a solution of soap and hot water to remove residue.

After that, apply a layer of anti-rust only in the affected areas, if one grid is all oxidized, it shall apply to all grid. Finally the grid will be painted.



FACADE NE - SURFACE RUN-OFF IN WINDOWS

ANALYSIS:

This type of washing is produced due to water runoff and consequent dirt drag across the surface of the wall, usually in areas where the geometry favors this accumulation occur.

LOCATION:



GRAPHIC DOCUMENTATION:

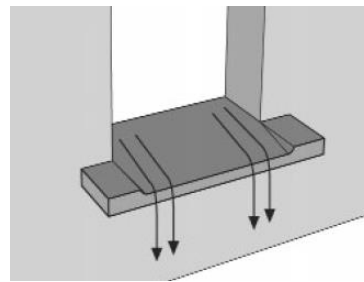
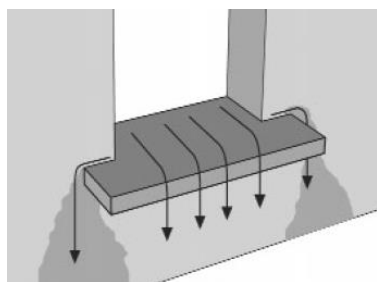


PROPOSED INTERVENTION:

Will proceed to the Elimination of these washes by choosing one of the different existing techniques for cleaning of facades; for each case choosing the most appropriate option according to the material which is going to act and the dirtiness level that presents, opting for the less aggressive solution of all.

Apply a special product for cleaning the facade, let the product act for 4 or 5 hours until it is dry and clean the area with a wet brush.

To solve the problem, we can also replace the window sills of the windows, choosing a best geometry to facilitate the evacuation of the water.



Facade South West



FACADE SW - BLAKENING

ANALYSIS:

It occurs as a result of deposits of dust, soot, and dust that by the action of humidity accumulate forming deposits of black coloration, creating a layer with great power of penetration into porous surfaces.

LOCATION:



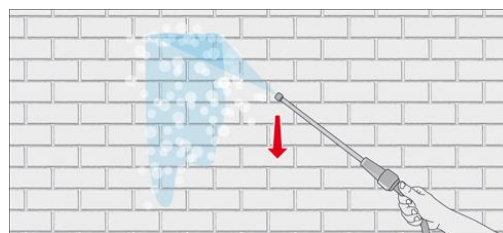
GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

For the elimination of the blackening we must analyze stains and its adherence to the surface, to then clean with the most suitable method for each type of stain and support.

Wash from top to bottom, with the pressure washer, all the area affected by the blackening. In the pressure washer we can combine water with some special product for cleaning facades that will leave a better result.



FACADE SW - GRAFFITTIS

ANALYSIS:

Painted with sprays made improper aesthetically damaging the building facade.

LOCATION:



GRAPHIC DOCUMENTATION:

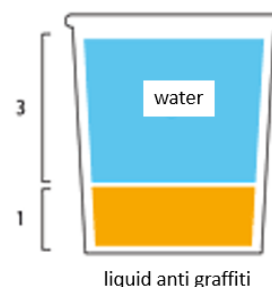
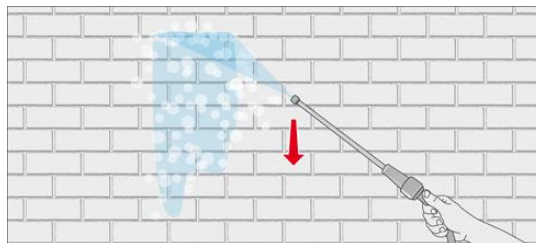


PROPOSED INTERVENTION:

Proceed to the cleaning of graffiti by the most appropriate technique according to the characteristics of the Parament to intervene. We always will choose the least abrasive and effective option.

Pressure washing:

It is one of the most commonly performed procedures; the washing is done with a machine to pressure type karcher, combined with a specific solvent graffiti or graffiti removal; the most effective way of proceeding is by first soaking all the graffiti with the mentioned fluid and leave to act for 5 minutes, to wash combined water pressure water / liquid anti-graffiti (3/1).



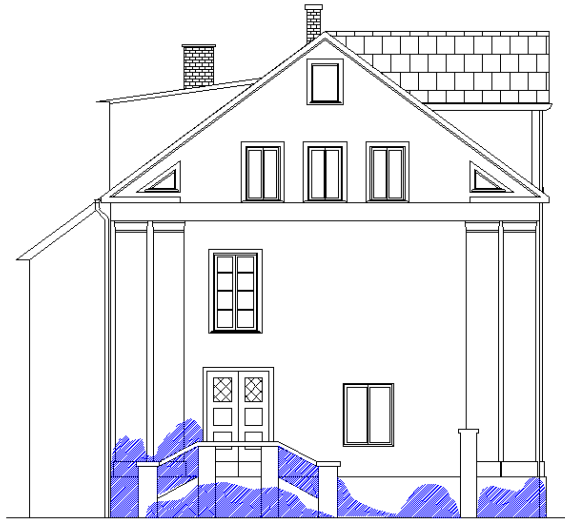
Baking soda in the form of greasy coating, applied directly to the painting gives very well result in the part of the finish; also prevents wear of the surface as a result of the force of the water.

FACADE SW - HUMIDITY ON THE BOTTOM OF THE FACADE

ANALYSIS:

Surface tension between solid and liquid causes the ascent of humidity by capillarity, causing detachment of the coating facade.

LOCATION:



GRAPHIC DOCUMENTATION:



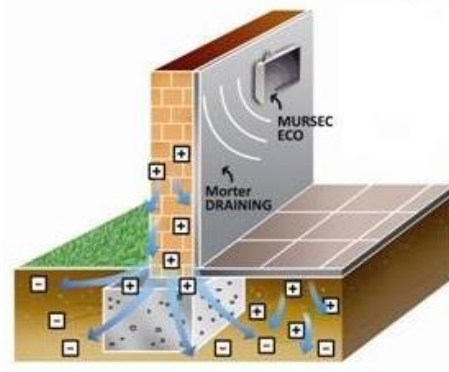
PROPOSED INTERVENTION:

Electrical drainage:

It's linear drains, usually placed at the start of the walls, laying down an electric current between it and the ground contact, negative pole on the wall and positive in the land, forcing the water, as a conductor, to descend.

After you run the drains, all the affected facade cladding will be removed and will run the trim of mortar and be painted.

The best of this system is that it is not needed to do work because it installs quickly and easily. There is no risk to people, animals or plants, and requires no maintenance.

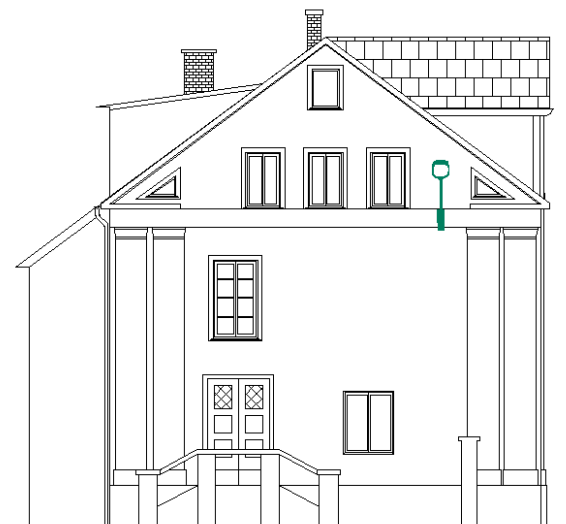


FACADE SW - IMPROPER ELEMENTS

ANALYSIS:

Improper items placed in the facade that break the aesthetics of the building and cause cracks and fissures in the surface. Also it does not work and are not necessary, because of that, their withdrawal is proposed

LOCATION:



GRAPHIC DOCUMENTATION:



PROPOSED INTERVENTION:

Elimination of the improper element and repair the fissures

Reduce possible imperfections by sanding to the Surface in perfect condition. Then the entire surface is painted

If necessary, we can propose another type of lighting with lampposts placed around the perimeter of the building to light accesses and parking back because that plot belongs to our building.



FACADE SW - STAIRS

ANALYSIS:

All the constructive element this deteriorated, by capillary moisture and rain water, and the action of the cars driving around.

LOCATION:



GRAPHIC DOCUMENTATION:



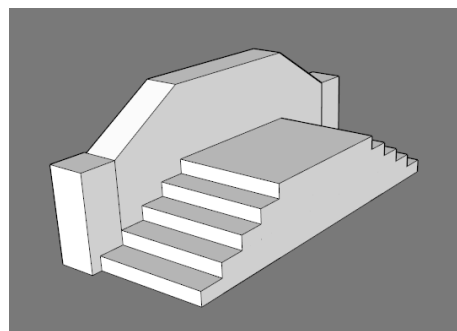
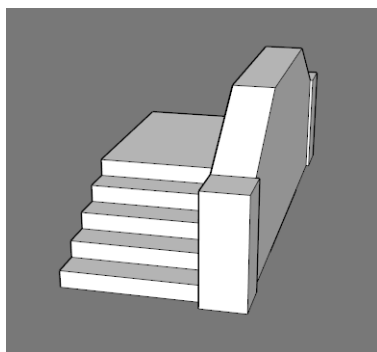
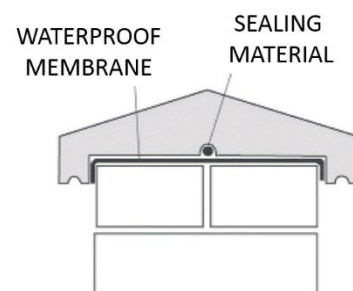
PROPOSED INTERVENTION:

Repair all damage from the ladder, starting by removing de vegetation in the bottom applying product to destroy the microorganisms and with no harmful agents for the surface.

Replace all the rusted bars that are part of the structure of the stairs.

Solve all detachments of material, replacing the affected parts and reviewing areas close to the lesion if it is necessary to replace them also.

Placement of a parapet on the part of the handrail, including a waterproofing material between the parapet and brick wall to prevent humidity.



FACADE SW - SURFACE RUN-OFF IN WINDOWS

ANALYSIS:

This type of washing is produced due to water runoff and consequent dirt drag across the surface of the wall, usually in areas where the geometry favors this accumulation occur.

LOCATION:



GRAPHIC DOCUMENTATION:

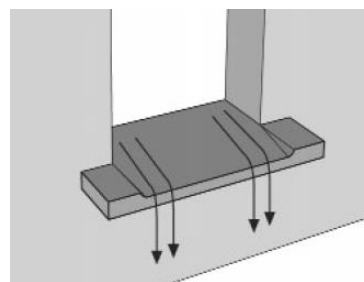
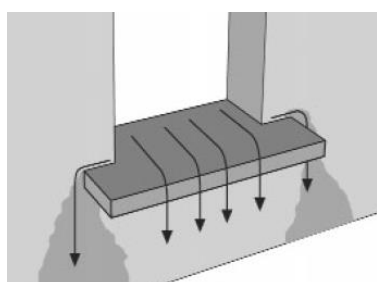


PROPOSED INTERVENTION:

Will proceed to the elimination of these washes by choosing one of the different existing techniques for cleaning of facades; for each case choosing the most appropriate option according to the material which is going to act and the dirtiness level that presents, opting for the less aggressive solution of all.

Apply a special product for cleaning the facade, let the product act for 4 or 5 hours until it is dry and clean the area with a wet brush.

To solve the problem, we can also replace the window sills of the windows, choosing a best geometry to facilitate the evacuation of the water.



PROPOSAL INTERVENTION



Standard of intervention

First of all should distinguish two areas of works which can be any conceptual confusión (restoration and rehabilitation).

We will consider as rehabilitation works in buildings which intends a renewal and upgrading of building systems because they are outside the standards of quality and comfort of the moment.

In any technical intervention should always be applied in three phases:

Prior pathological study (already done in the previous chapter) in order to achieve an accurate diagnosis that allows us to know, more accurately the pathological process affecting the element in question.

The cancellation of the cause that produces the pathological process, with the objective that no reappears after the intervention.

The repair of the lesion that has manifested as a symptom of the pathological process.

These three phases of the intervention must always follow the same sequence and we complete each of them with the greatest of care and attention to the building and its historic values.

Classification of pathologies

Following an analysis of different pathologies of the building we had to make a classification according to the level of severity for them and their possible consequences for the future integrity of the building.

MAINTENANCE	SLIGHT	SERIOUS
Stain	Surface run off	Humidity
Dirtiness	Graffittis	Cracks
Vegetation	Detachments	
Biological agents	Blakeing	
Mould	Improper elements	
Oxide	Leakages	
	Fissures	

Lesions Tab

	FACADE S.E.			FACADE N.W.			FACADE N.E.			FACADE S.W.		
	bottom	middle	top	bottom	middle	top	bottom	middle	top	bottom	middle	top
Stain	X	X	X	X		X	X	X	X	X	X	X
Dirtiness		X	X	X	X	X	X	X	X	X	X	X
Blakeing	X	X		X	X	X	X	X		X	X	X
Graffittis	X						X			X		
Oxidation		X			X			X				
Fissures	X	X	X	X		X	X			X		
Cracks				X	X							
Leakages			X			X						
Detachments				X	X							
Humidity	X			X			X			X		
Surface runn off						X			X			X
Mould				X			X					
Vegetation	X						X	X				
Biological agents			X			X						
Improper elements		X			X	X			X			X



GENERAL INTERVENTION

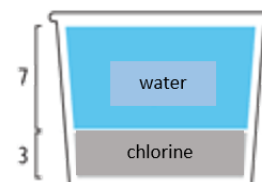
Then we will go to develop the different work to be carried out at a general level in the building.

1. Cleaning mold and vegetation:

Both located in the bottom of the facade.

Moulds will be cleaned scrapig with a dry brush the entire affected área. Wet the brush in water + chlorine solution and wipe the surface. Soak it enough and leave for 10 minutes.

Then, use the pressure washer to rinse the entire area and remove all chemical that has washed.



Vegetation will be deleted through the application of a product that destroys the microorganisms and have no harmful agents for the surface of the facade.

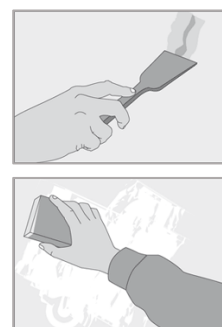
After their destruction are removed more easily from the surface and is performed a mechanical cleaning based on the projection of abrasive and water at low pressure, in order to undo the topsoil strongly adhered to the wall.

2. Cracks and fissures.

Cracks and fissures should be cleaned inside by brushing to ensure the subsequent accession of special fillers.

Application of sealants on the surface and wait for it to dry between 12 and 36 hours. Do not apply on wet surfaces.

Reduce possible imperfections by sanding to the surface in perfect condition.

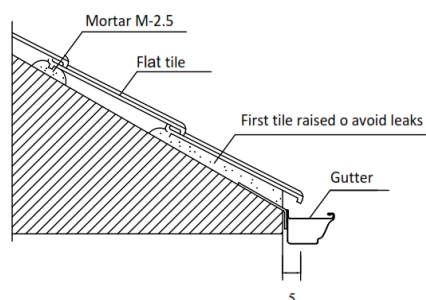


3. Improper elements.

Remove the improper elements (street lamps and pharmacy sign) repairing the cracks and fissures that they have caused in the surface of the facade.

4. Leakage from gutters

It will be solved removeing the gutter, clean the affected area of the facade and replace the spout in the correct position, controlling the distances between the gutter and the drainage of the roof.

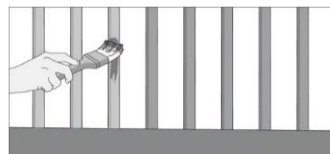


5. Oxidation

This procedure is intended to achieve the elimination of traces of dirt and rust in the bars that protect the windows of the building.

It will proceed to the removal of the oxide by means of pickling products and brushed machines and then protect the element with an antioxidant product.

After that, apply a layer of anti-rust only in the affected areas, if one grid is all oxidized, it shall apply to all grid. Finally the grid will be painted.



6. Detachments

First of all check of the general condition of the surface in the injured areas and in areas close to lesion.

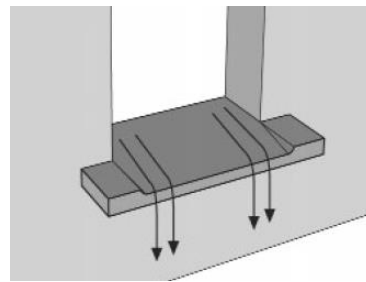
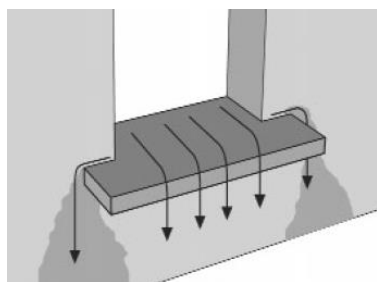
Change the pieces of the brick wall that appear to be affected by new ones. Later will be to apply the plaster surface of the facade.



7. Windows

Is proposed the change of all carpentry windows of the facade, also will prevent future diseases and improve the aesthetics of the building.

We will also replace the window sills of the windows, choosing a best geometry to facilitate the evacuation of the wáter and avoid the surface run off under the windows.



PARTICULAR INTERVENTION

After analyzing the existing pathologies in the building we will develop the proposed intervention.

1. Humidity on the bottom

One of the problems that often occur in ground floors and basements is humidity by capillary action.

This humidity rises through the pores of the material, as to be in contact with the ground, they function as capillary tubes that absorb humidity, climbing through these pores, to heights that will depend on the size of capillaries, its structure, atmospheric pressure and the electrical potential of the wall against water, reaching up to 1 meter of altitude.

Water is able to ascend through many materials, even against the action of gravity, transporting saline substances (minerals, sulphates and chlorides), the amount they evaporate and crystallize, staining the walls and pervading the atmosphere of humid air, and finally destroying the walls and the surface.

It is frequent that the damp stains present a bulging of the painting as well as the detachment of the plaster.

There are several solutions on the market for this type of pathology.

PHYSICAL BARRIER:

Used mainly on brick walls, and consists of a cross cut of the wall with specialized machinery and insert a waterproof sheet, in such a way that the water can not pass the level in which the blade is positioned. This method is the usual on new buildings to prevent the problem, but in old buildings requires to mouch work and have lot of disadvantages.

CHEMICAL BARRIER:

A chemical barrier is formed by wetting the inside of the wall with products repellents to the ascension of the water but permeable to vapour. Usually they are silicone compounds dissolved in water.

This method is valid but need to ensure their proper disposal, because if the waterproofing fails in some area, humidity appears again.



ELECTRICAL BARRIER:

This method is based on the use of electronic devices that emit an electrical signal that cancels out the electrostatic field of the wall (charged positively) by reversing the polarity and making that humidity can not reach by the capillaries.

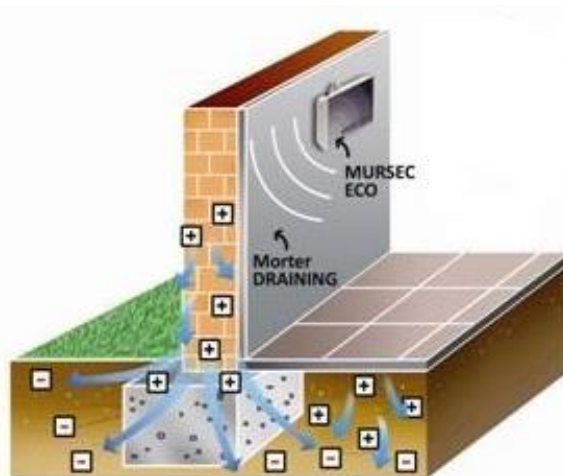
The best of this system is that it is not needed to do work because it installs quickly and easily, and also acts on other surfaces such as pavements.

What should be done once removed the humidity by capillary action is to clean up materials or affected surfaces, always using breathable mortars and paintings.

In our proposal, we will make a solution based on electrical barrier opting for the placement of a set of electro-osmosis. Specifically the MURSEC wireless system which is less destructive and more effective solution.

With this system of electro-osmosis acting on the wall causing water to descend through the wall into the subsoil.

MURSEC wireless ECO, is a completely electronic device based on VLF (Very Low Frequency) technology that acts over a certain range allowing the reduction of humidity and drying of walls, walls and floors, and preventing humidity returns to go up in the future. And all without perforations, cables and electrodes.



The system also based its effectiveness treating humidity in walls and humidity in walls favoring the evaporation of moisture from the wall. This system is a treatment for the humidity without chemical products, with maximum efficiency, guarantee and experience.

It is no matter the composition and the thickness of the walls this system is able of drying any moisture on walls affected by capillary action.

2. Cleaning of the facade

The choice of the cleaning system, should analyse the material that has been used in the facade, the type and soil level, and the degree of deterioration of the material. To verify the efficiency and non-aggressiveness of the system that will be used, previous tests were carried out.

Facade cleaning is not limited only to clean a coating, but also stabilizes and even eliminates a pathology related to biochemical phenomena and preparing the subsequent application of repair or protection products.

It should be noted that all cleaning generates a certain change in the surface structure of the facade which, however, was already affected by the process of dirtiness.

There are several types of cleaning processes and all of them are usually applied combined to ensure a complete cleaning.

In this case, it is chosen the mechanical cleaning.

MECHANICAL CLEANING:

Consists of projecting a jet of water mixed with abrasive granular at a pressure of 1 to 3 atmospheres.

The water softens the impact, resulting less violent for the facade than the projection in dry, but also produces an erosion and wear on the facade.

We must prevent operate less than 30 cm from the wall and try to use a little high pressure to be able to have the work under control.



This system manages to eliminate the cloud of dust generated launched dry abrasives and even dampen the noise from those, but on the other hand generates a smear that, by splash, is deposited on the wall and is to be subsequently removed by washing.

The cleaning will be completed with a general review of the facade by elimination of loose elements to avoid their detachment.

Gaps in doors and windows will be protected to prevent water from entering the interior of the building by placement of mesh and plastic protection.

TUBULAR SCAFFOLDING ASSEMBLY

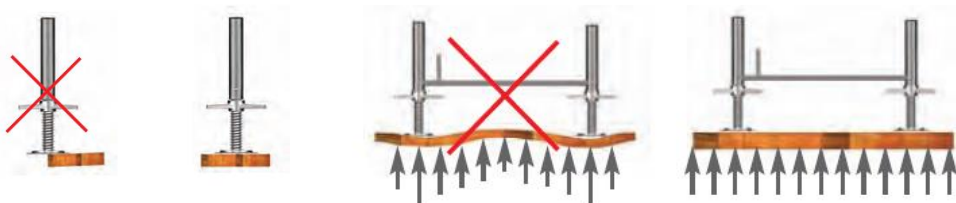
To perform the rehabilitation on the facades of the building, should be placed a tubular scaffolding in order to carry out all the necessary work from a correctly and safely position of all operators.

Tubular scaffolds are one of the ways more common to work on facades of buildings. They are very useful because they are very easy to assemble, and usually a group of 3 persons can do so without any problem. Another advantage of the tubular scaffolding is that they are cheaper than other types of scaffolding.



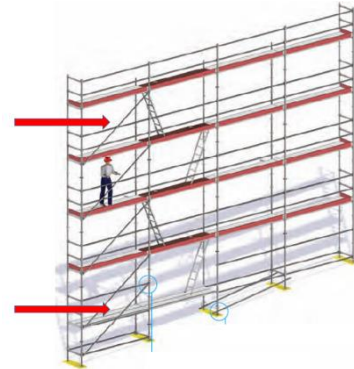
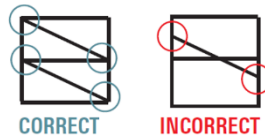
The reason why is chosen this type of scaffolding in front of the other types because they have a great variability in the form of join points of anchorage between the supports.

Should be checked the correct position of the bases of the scaffold.



The diagonals show various aspects relating to the diagonalization of modules to obtain a correct bracing of the structure's scaffolding.

In an extreme case, the absence or even lack of diagonals could cause the collapse of the scaffold.

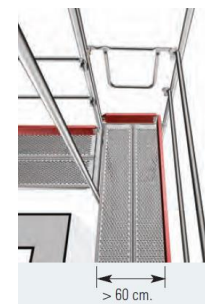


The platforms are designed for loads of people, objects, or both. Therefore, they have to transmit correctly and uniformly vertical loads to the structure.

As a working floor must provide the rigidity needed to perform tasks safely and comfortably. Therefore they must be securely fastened to the support elements.



A platform aim is to provide a safe working level scaffolding. In regards to step dimensions, should be allowed at all times carry out assemblies in accordance with the regulations.



Handrails and baseboards are elements intended to protect individuals against falls from a height and also avoid objects falling from the scaffolding.

Signage will be placed with dangerous areas of fall from height of more than 2 m.

1. Handrail located 1 m above the platform level.
2. Intermediate handrail to 50 cm. above the platform.
3. Complete protection with skirting perimeter reaches, from platform level a minimum height of 15 cm.



Access to the various levels of work that comprises a scaffolding must always be done on the inside of the same, without any risk of a fall from height with a series of stairs of access included in the assembly of scaffolding that guarantee the safety of the user and to facilitate assembly and disassembly works.



Assembly instructions

Full scaffolding can be erected from his base until his coronatio using the fewest number of basic parts. These parts should be light and manageable for ease of use and in addition has exist an excellent ratio between its load capacity and its own weight for precise stability.

This represents the fundamental advantage in achieving fast and economic assemblies. Assembly instructions set out represent a guideline to follow as a logical sequence of mounting

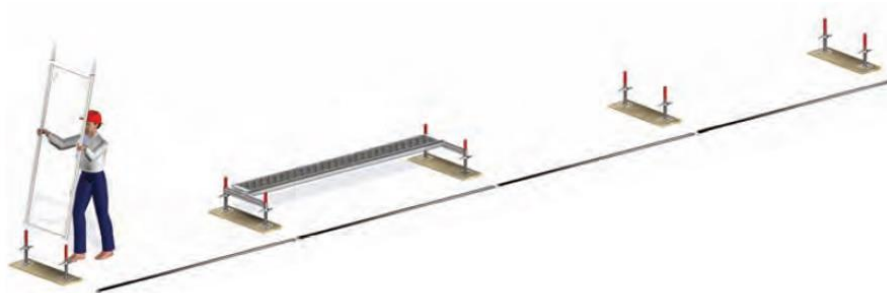
Stakeout:

Placement of the bases and alignment in both directions



Frames placement:

Placement of the module of access platforms and placement frames.



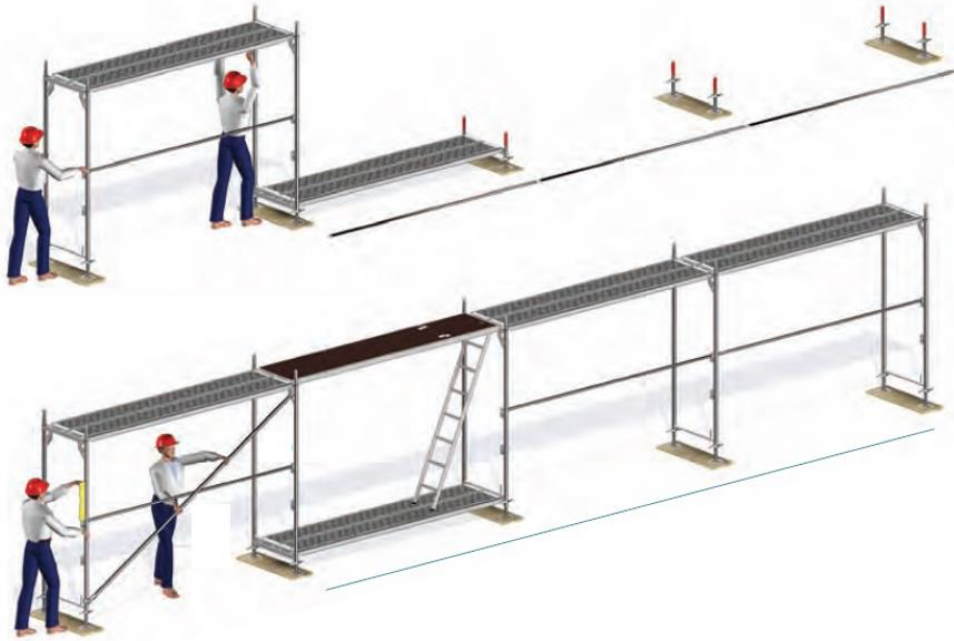
Training modules:

Placement of the second frame and the handrail to 1m in height.



Closing of the base module:

Placement of the diagonals, leveling of the frames and execution of other modules



Handrail mounting:



Second level mounting:

Placement of the frames of the second level, placement of the side guardrail, placement of guardrail to 50 cm and placement of the handrail to 1m in height.



Placement of the skirting boards:

Placement of the side skirting board, placement of the rest skirting boards, placement of the second platform level, placement of the second level diagonal.



Placement of platforms:

Placement of the access platform, placement of the rest of platforms and placement of the mounting rails.



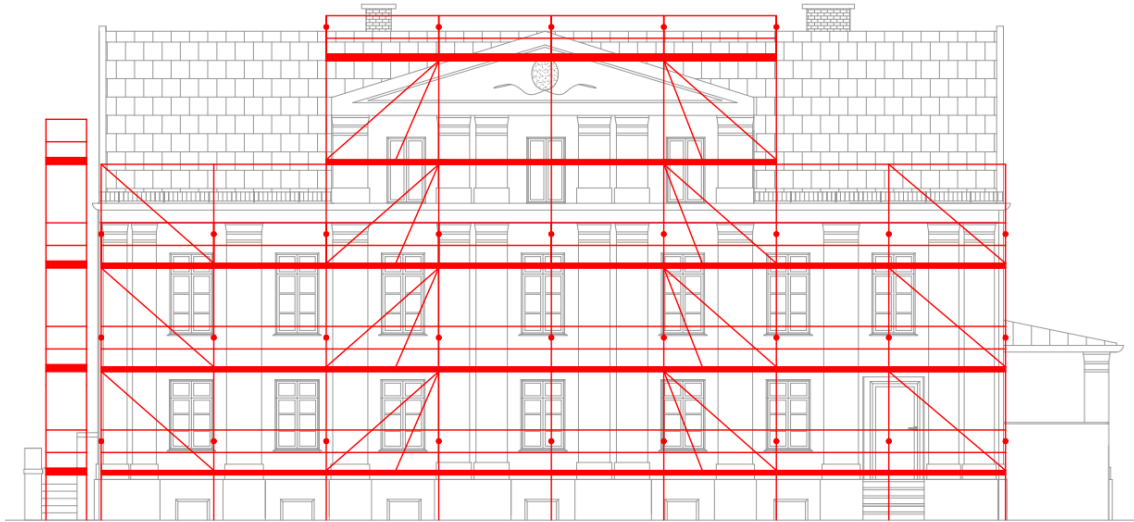
Third level mounting:

Setting anchors, frames placement and placement of the handrail to 1m in height.

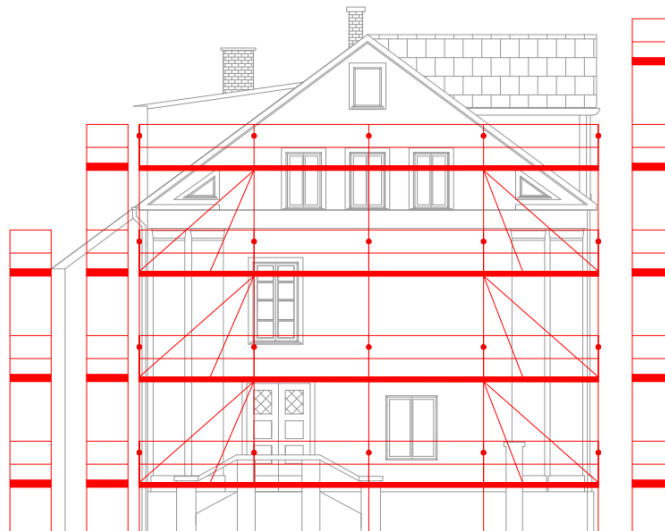


Finally, the scaffolding be placed in this way in our building.

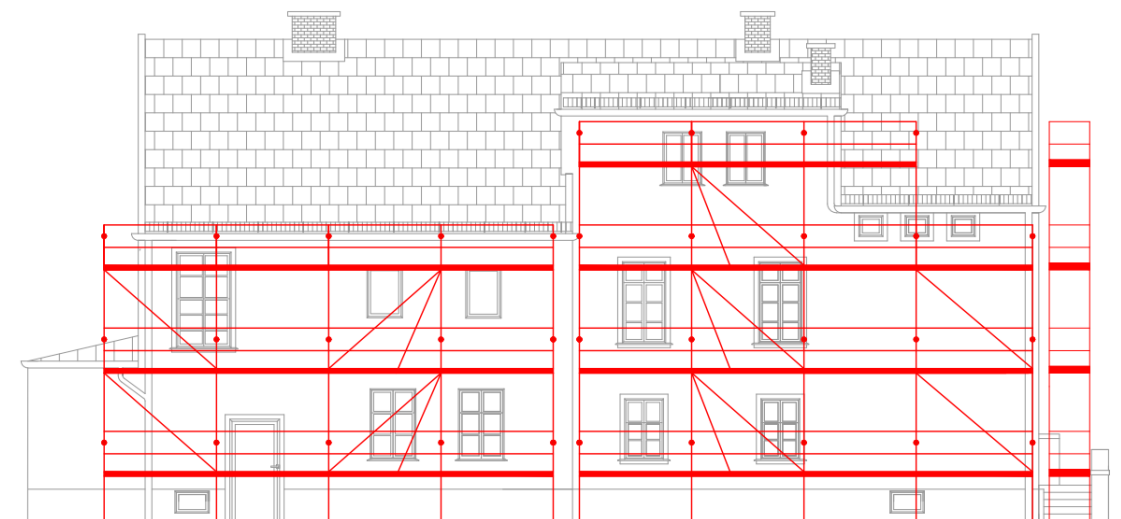
SCAFFOLDING FACADE S.E.



SCAFFOLDING FACADE S.W..



SCAFFOLDING FACADE N.W.



Tubular scaffolds will be used in all fronts less in the Facade N.E. where be worked by mobile elevating work platform because of the facade geometry and because most of pathologies in this facade are in the bottom and middle and operators can work without scaffolds.

Platforms forklift moving personnel articulated are machines designed to lift people in different positions by using a structure of articulated arms attached to the chassis.

It has a working platform surrounded by a handrail around the perimeter. The articulated structure consists of a series of arms with a large amplitude of movements.

They allow obstacles under the work area, and save large displacements. Other features that have is that they can be rotated 360 °.

These platforms can move to better access the working point.



RESULTS AND CONCLUSIONS



RESULTS

At this point, I consider that the objectives mentioned at the beginning of the project have been achieved. The building has been studied since its construction, although it is a shame not having been able to get more information about its history and previous functions, for sure as relevant as its last use as Emergency Service that was moved to another area of the city.

The rehabilitation of this building seems a viable solution, as it is a building located in an optimal emplacement in the city of Gliwice, near to the city center. The building does not present serious pathologies, so with a reasonable investment, it could have any other use and get a refund of that investment. In addition, after all proceedings, the facade towards to Zygmunta Starego Street may show an elegant look representative of the time of its construction.

CONCLUSIONS

In this project, different types of work, data collection, surveying, collection of historical information, analysis of pathologies, explanation of techniques of execution and constructive solutions, construction equipments, assembly scaffold have been performed, in order to make a project as complete as possible.

The point of gathering the information from the building has been one of the ones I have spent more time although, unfortunately, the result has not been the expected. All of that thanks to the help from Adrianna Kubat and Magda Czarnecka, who have accompanied me to the City Hall and various offices of the city of Gliwice, and which I thank for their great help.

My personal position as concerning to the project is satisfactory, taking into account that I have not spent all the time that a project of this nature deserves, as I have been able to develop many of the skills acquired through my studies.



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Course notes CONSTRUCTION VI

Course notes CONSTRUCTION MATERIALS III

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