

PRIMARY STRUCTURES

Factories

Floris De Bruyn
Philippe De Berlangeer
Frederick Verschueren

KU Leuven Department of Architecture (Belgium)
Master Studio Primary Structure icw Olivier Goethals

GAFPA

GAFPA has always been fascinated by the qualities that can be found in contemporary vernacular architecture. We are triggered to understand how a purely functional construction could transform into what we call architecture. It is the notion of necessity and the undesigned everyday quality that intrigues us.

We like the contrast between the almost anonymous quality of the raw built form and the human qualities it can generate. We spend a lot of time analyzing what is already there. Until you understand it to a degree that you can take it apart and put it back together again. We see our practice as rearranging found 'ready-made' elements, both historical, contextual, and material, composing them in a new meaningful way. A method reminiscent of Aldo Rossi who, lying in the hospital after a car crash, made the analogy with the skeletal structure of the body made of fractures to be reassembled. Rossi's main obsession could be described

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G1812 Industrial building, Gent (BE), 2021, GAFFA

as finding a general order or structure with which to arrange ‘as found’ fragments into a meaningful whole. In his *Scientific Autobiography* he writes that he ‘loves things that are broken and then reassembled as in archaeological and surgical operations’. He refers to observation as being his most important formal education. It is this aspect of appreciation of what exists in combination with the act of recomposition that interests us. Although the fragments Rossi deals with are historically charged and our office is maybe less concerned with this Post-Modernist sensibility, he speaks of the desire to re-make. “Similar to retaking the same photograph: no technique is ever sufficiently perfect to prevent changes introduced by the lens and the light, and in the end, there is always a different object anyway.” This notion of an architecture that creates the same thing again and again illustrates Rossi’s concern with continuity. It shows his confidence that this attitude invariably produces something interesting without desperately looking for invention.

Confronted with a project we try to construct a syntax or grammar by means of observation and analysis of the surroundings. Sometimes it’s the specific shape or atmosphere of a site, the constructive logic applied in the neighboring buildings, or a found building material that triggers the initial concept. It’s the thrill of finding new ways of expression by using what is found, the transposition of a building system, and the beauty of the space produced by the result, almost as a side effect. The naked ‘primary’ structure, the most essential part of a building, is our focus, to be inhabited or used in the way people feel like. The

program is an excuse to create space which can only exist in that place, and at the same time is universal in its nature.

In the 1940's Nikolaus Pevsner qualified a bicycle shed and by extension any space big enough for humans to move around in as a building. He argued that the term architecture applies only to buildings designed with a view to aesthetic appeal. It is enough to think of the bicycle shed designed by Rietveld to show the predicament of this statement. It would be more precise to say it is a question of quality, not size or program. However, the main issue that seems important to Pevsner is the intentional aspect of the design and the focus on aesthetics for a building to qualify as architecture. The bicycle shed by Rietveld was a temporary construction. Constructed of wood and



1967 Gerrit Rietveld, Temporary Bicycle Shed, Utrecht

metal, painted in the typical primary colors. A large canopy makes a generous gesture to the street. White light-boxes for advertising look like the protruding windows of a façade. Every element is functional and yet the result is strongly architectural. Although a late work in his oeuvre it is not included among the works in his Wikipedia page. The building mediates between the utilitarian and the architectural and if it would have been built in England it would be interesting to know if it would have made it into the 50 volumes of Pevsner's publication.

The issue of qualification is maybe less interesting, but it generally is the case that what is not labelled as architecture is less studied or simply neglected. Vernacular buildings are usually studied in the context of historically accepted typologies or the exotic primitive examples of man-made structures.

The fascination of architects who had the undesigned as a source of inspiration has a longstanding tradition. Laugier cultivated a romantic longing for the primitive hut as an undesigned fictional ideal. Factories, ocean liners and the mass of the industrial grain elevators were presented as an ideal of engineer aesthetics by Le Corbusier in *Vers une architecture*. Venturi Scott Brown analyzed in their book on Las Vegas the undesigned buildings on the strip. Although the main preoccupation was the image and the symbol, the openness of what architecture could be in their work is refreshing. In his book *Architecture without architects* Rudofsky covered picturesque examples of indigenous

building. Ungers spent years analyzing Berlin surrounded by the Wall. This in turn gave the spark for Koolhaas manifest Delirious New York and the theory of the Automonument, a building that by its scale renders design pointless.

The above examples are theoretical works that were almost invariably idealistically motivated. The analysis of the existing is often used as a metaphor to make a statement.

The grain elevators were not to be taken literal. The maison-Domino was a translation of the steam liner.

And yet we think a lot can be gained from a direct analysis of the thing itself. The talent of the architect lies in the discovery of what can be useful or beautiful in the as found. Additionally to an understanding of the masterpieces in architecture, these structures of necessity can be excellent teachers if one is willing to listen.



Canadian grain stores and elevators, Le Corbusier, *Vers une architecture*.

In our teaching we have tried to find a way to address these issues by introducing methods of observation and analysis. By applying them to 'anonymous' architecture the discussion with the students transcends the aspect of style or authorship and is only aimed at understanding how the building was made. Together we look for architectural qualities or interesting structural systems.

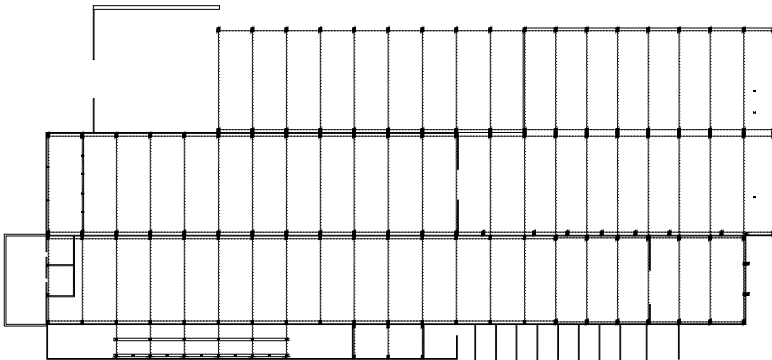
In the master studio Primary Structure, we have been archiving for the past years' different types of built structures. We examine anonymous buildings, industrial artefacts, historic factories, barns, and supermarkets. We deliberately postpone the design act and start by drawing and discussing in detail every aspect of the building. At the end of this first phase the student presents the work as if it were their own design. Without explanation the drawings have the structure must be clear. Important details must be highlighted and specific parts that have architectural potential made in a 3d model.

This analysis has equal value to the second part in which the students use this knowledge to make either an adaptation or a new design depending on the situation. This group research is considered as a shared grammar that can be used by anyone, as is the growing archive of the former years. The analyzed building is presented as a standalone primary structure stripped of program and site. Its potential quality as a resilient structure is evaluated.

We are influenced by the methods of Giorgio Grassi and his search for necessity and understanding in architecture,

Venturi Scott Brown and their book on Las Vegas or Bernd and Hilla Becher and the Dusseldorf photography school. These authors could be linked by the desire to find a methodical analytical approach that structures observation. The Dusseldorf school is famous for its neutral framing of industrial objects that can be compared in a sequence of images. Used In the context of this studio this last approach could be accused of being 'superficially' concerned with the surface. Because of the 'absence of the architect' in the chosen examples however there is often a direct link between the internal structure and the image it generates.

A similar academic attitude can be found in the work of Grassi in his preoccupation to avoid the act of 'invention' in architecture and build upon what is already there. Venturi Scott Brown combine this methodical approach



Primary Structure 2021, ElBeton prefab factory, Aalter. Plan by Tycho Maes and Alexandre Moens. In this drawing the system of different sheds built alongside each other is shown.

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with an interest in the ambiguity of structure and image. The selected method can be varied corresponding to the situation. By adopting this form of visual analysis the students are invited to look through the lens of a specific artist or architect to alter their view on reality. The aim is to find a research method which generates continuity devoid of stylistic restrictions or a fixed formal language. We want to find a way to generate meaningful space which is specific and flexible at the same time without being generic or isotropic. It comes from a general concern with what will be left of the architects' endeavor after it is stripped of its ornaments, façade, and function. The quality of the primary structure determines the quality and hence the corresponding label. Or in the words of Auguste Perret. Architecture is what makes a beautiful ruin.



Primary Structure 2021, Model of an Airoplain shed, Wevelgem. Helene Callewaert and Lennert Verbrugge

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This year we analyzed factories. We specifically looked for recent ‘non architectural’ industrial structures in Flanders.

We assembled a grid of industrial buildings following the method of the Bechers. Photographs were taken without distortions and with a clear sky. We asked students to make photographic series according to different principles they found. Aspects such as symmetry, repetition, proportions, or typology were discussed and illustrated by means of a serial composition. In the next step the students were asked to choose and analyzed one industrial artefact for each group. We discuss how the structure works, determine the different phases in which the factories were built. If the building system was compromised by the site or how certain abnormalities could have arisen. Because there is no



Primary Structure 2021, grid of the industrial vernacular. Group exercise adopting the method of the Bechers.

signature of the architect, every solution is generated by a contextual economic or pragmatic reasoning. We encourage them to find out what determines their anonymous quality. Additionally, theoretical research is done on the topic of structure and how architects dealt with this issue in history. An (industrial) construction site had to be visited and documented and examples from the practice were shown and the problems and constraints in budget and construction process explained. After the presentation of the existing building the students are encouraged to look for an interesting building system, a beautiful proportion, material use or a strange detail that can be the start of the design.

The site we selected for the student assignment is an industrial site in Ghent. Located in the vicinity of the harbor



Primary Structure 2021, industrial site, Wiedauwkaai, Ghent. Located in the centre in between a railroad and a dense residential area on the left and a small stream and industrial activity on the right near the canal.

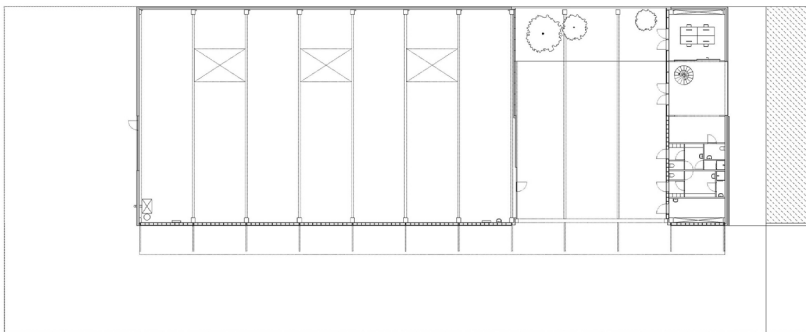
it sits in between a dense residential tissue. The site was isolated, cut off between the old railroad and the Lieve, a small stream of water. Recent new connections and road network makes it accessible again. The goal is to keep medium scale industry within the city, so mono functional residential developments are banned. Only offices and housing for company purpose is allowed. The result is often a strange mix of pragmatic functional boxes combined with 'representative' office and residential space to brand the company.

We are familiar with the site in the office since we recently built a new factory for Lab15 on one of its plots. The project is an industrial building of 1000m² consisting of production and office space for a contractor. The client is a woodworking company with which we have collaborated for years. Because it is a young company, we had to find solutions within a tight execution budget of 800.000€. In spite of this we convinced the client to build larger than initially requested. We proposed one big structure housing both the warehouse and the offices, separated by a generous covered space which was to become the heart of the project. The covered space although not asked in the brief could provide dry delivery for trucks and waiting space for finished products to be exported. When not in use the multipurpose space was free for after work drinks, BBQ and simple leisure. As opposed to regular planning regulations it is allowed to build the whole of the plot. To avoid either to completely fill the plot or to create 'non spaces' surrounding

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the building we chose to use the plot limits on two sides to keep a maximum of space free on the other side. We argued to the client that the resulting long facade adjoining the main outside space would be perceived as the 'front facade' and not the one facing the street. This façade was clad with prefab wooden panels of equal size as the concrete ones used in nearly every surrounding building. The simple placement of the inevitable big box on the site becomes the most important architectural decision. The observation of the qualities of covered spaces and non spaces in the neighboring buildings proved instrumental to the project.

For the main structure we used the standard elements from which most of the industrial neighbors were constructed. A standard wooden beam was used upside down. This choice resulted in an angled roof that heightens the space on one side to provide an extra 4m high space for natural light to enter.



G1812 Industrial building, Gent (BE), 2021, GAFPA. Plan to illustrate the placement of the building in the right corner of the plot. Production hall and offices in one space separated by a canopy.

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G1812 Industrial building, Gent (BE), 2021, GAFFA

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The theme of the concrete panels was used in three walls. The fourth wall was made of panels in wood, prefabricated and identical in size. For the protection of the wood a metal canopy is introduced which almost feels like a vernacular solution. As in the transport factory the columns facing the covered space are cut and replaced by a giant wooden Vierendeel truss. One overall structure is continued throughout the project, the offices are built in the first bay using a metal wood structure that can be dismantled to restore the original primary structure.



G1812 Industrial building, Gent (BE), 2021, GAFPA. A facade of prefab wooden panels mirrors the concrete replica's of the neighbours.

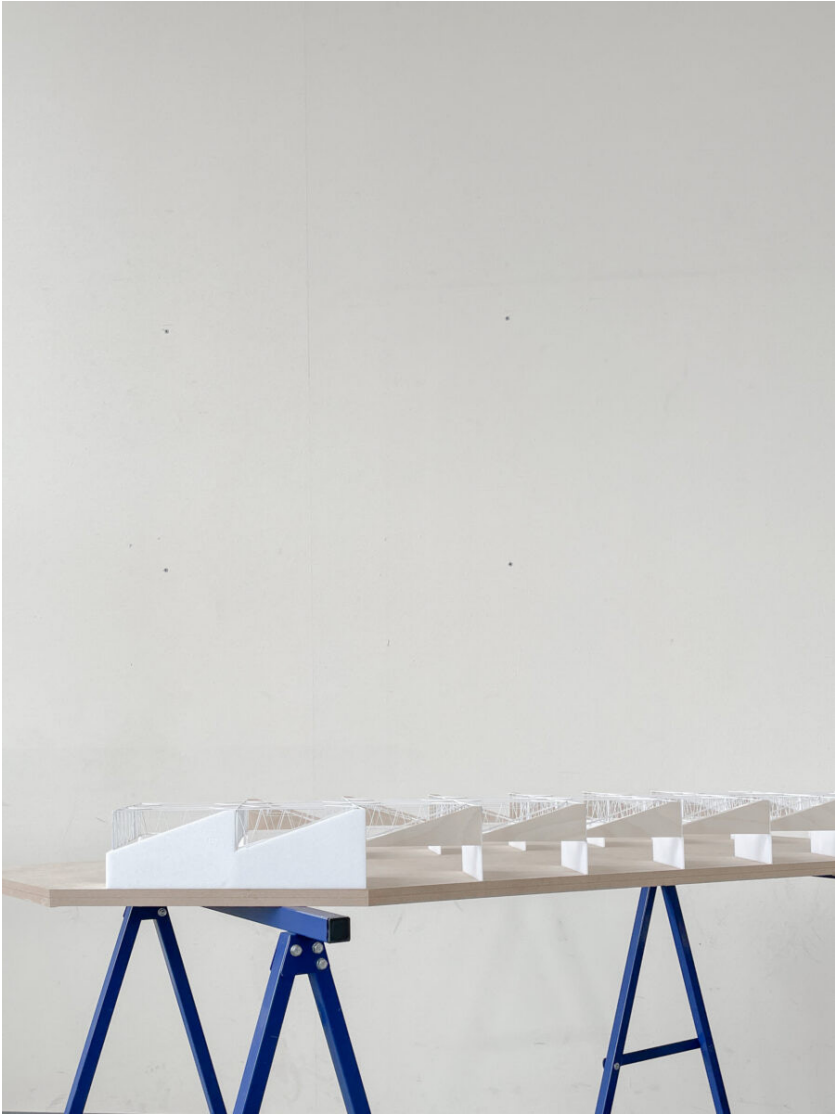
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The students were asked to design a factory building for one of the neighboring plots on the site. They were given the cad drawings of the site. The conducted research in the first phase was to serve as inspiration for their design. Direct architectural references were avoided unless they offered a specific structural solution for a problem found on site. Prefabricated solutions had to be economic and illustrated with factory catalogues. Material and building system choices were considered within the principles of circular building. The systems or solutions they found in the first phase had to be updated and adapted to become an architectural system. What was an strange abnormality or pragmatic found solution had to be transformed into a system or a structural logic. In this way the anecdotic aspect has to be overcome and incorporated in the architectural language of the student. A form of appropriation in which the found element and the adaption are difficult to entangle.



Primary Structure 2021, overview of all the projects outlined on the site

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Final model showing the primary structure of the project, Art frame factory, Maxim Lannaux and Corentin Lefebvre

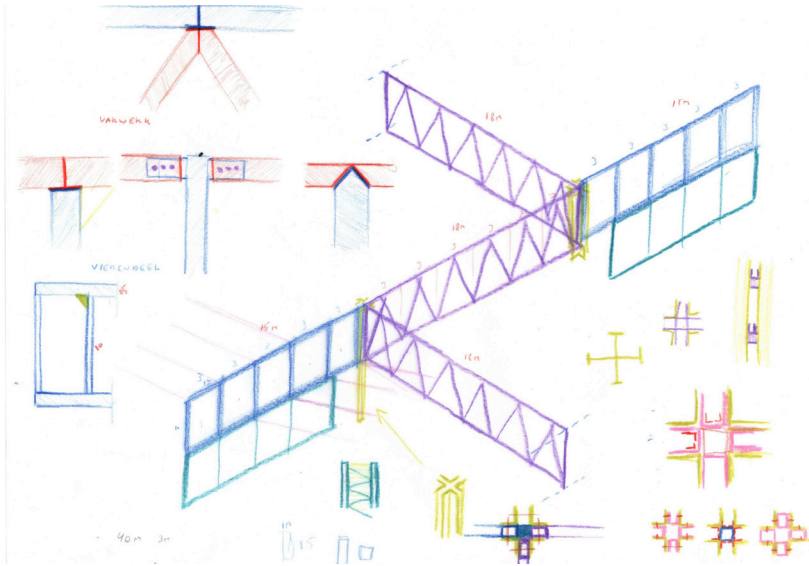
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To make room for expansion in a transport depot an existing column was cut and held up by means of an improvised red painted truss. This resulted in a sort of gravity point as the intervention was clearly felt in the space. In the student design this exception was used as the engine for the main solution of the roof construction. On both sides of the space a vierendeel is put on top of a concrete wall made to extend by one bay. In between these 'gravity points' a new lighter 'W' truss is suspended. The light enters the space trough these structures. The initial found idea is thus sublimated and translated into the new project.

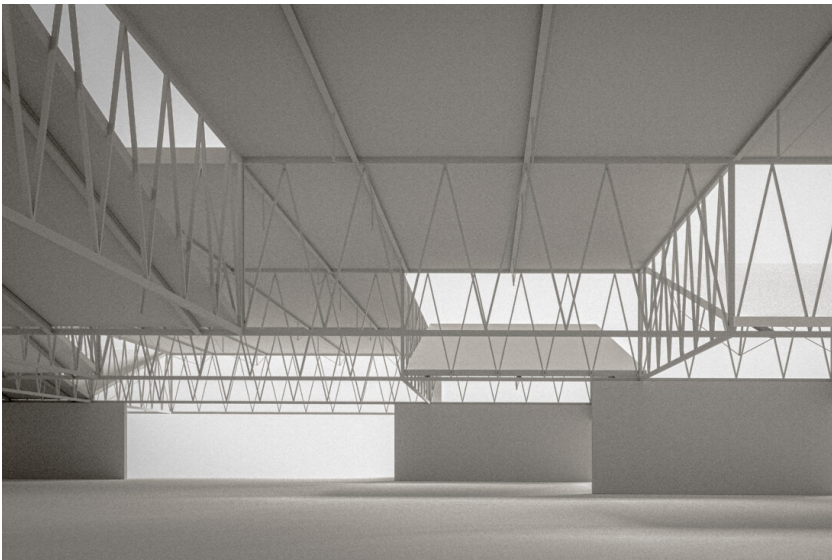


As found detail of 'gravity point' in picture and model , Transport van Caudenberg, © Maxim Lannaux and Corentin Lefebvre

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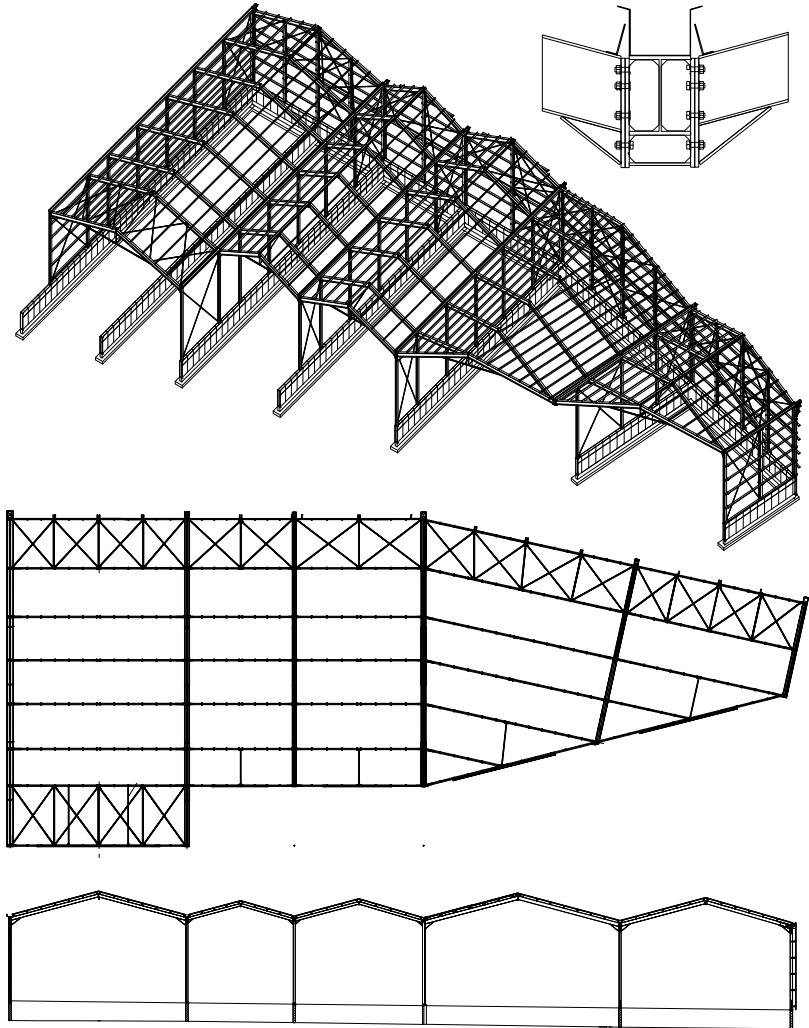
Sketches investigating the translation of the initial found idea into a system, Art frame factory, Maxim Lannaux and Corentin Lefebvre



Interior final model, Art frame factory, Maxim Lannaux and Corentin Lefebvre

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From the research on a granulates storage the idea of a concrete base with a light metal structure on top was adopted in the final design. Here a temporary stack of stones provides a play with transparency .



Storage for granulates, Wannes De Brouwer and Brecht De Roose

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Model of a fragment of the analyzed factory, Wannes De Brouwer and Brecht De Roose.



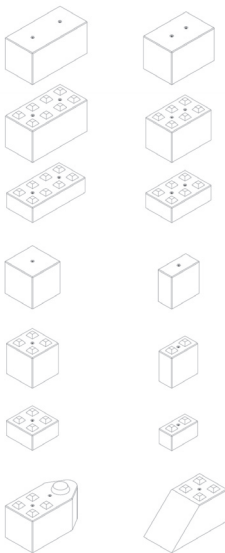
Image of final jury, Wannes De Brouwer and Brecht De Roose. The concrete base is used as a design element. The perforated corrugated metal of the example is translated into a temporary storage of stone fragments extending the play with transparency.

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A design for a new warehouse originated from the concrete block system found on site. This approach recalls practices such as Lacaton and Vassal with their appropriation of green house structures for housing.

The use of local material enforces the link with the place and yet it is rarely used within an industrial context.

The temporary stacking is used and inspired for the roof to follow the same logic. A solution was found to stack all the different layers in a way they could be dismantled at any given time. The circular aspect of the chosen material and the fact that this choice is continued in all following design decision elevates it from a mere aesthetic choice to an architectural defining decision. The steel joint elements fixing the roof beams are integrated using the weight of the concrete blocks.



As found picture of on site building material. And factory catalogue of building system, Pieter-Jan Van Steen and Evgeny Kupriyanov

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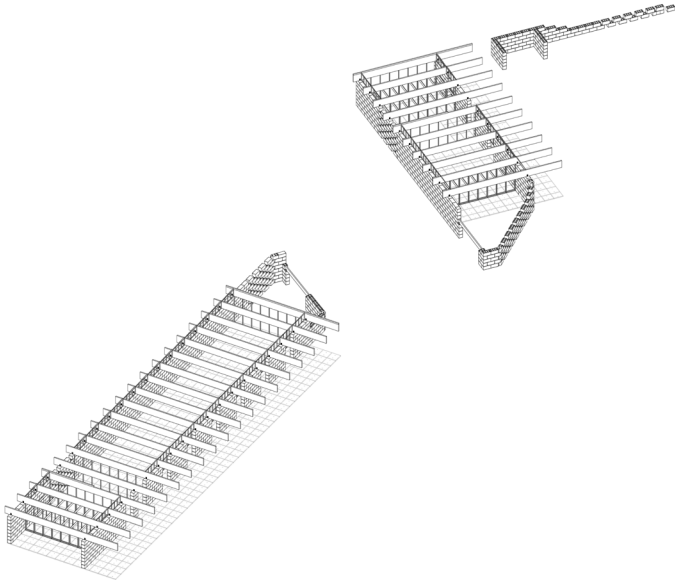


Image of final jury. Warehouse, Pieter-Jan Van Steen and Evgeny Kupriyanov

Both in practice and in teaching we try to find a way to make architecture with a low degree of personal signature. To, as Rossi puts it, 'forget the architecture' and achieve the anonymous quality we find in buildings encountered in everyday life. It is of course precisely this aspiration of creating a 'neutral' architecture that could result in its exact opposite. One can recognize a work of Grassi or Rossi from far away despite their aspirations of blending in the environment. This neutrality or 'degré zéro' in architecture, writing or photography is an illusion or as Roland Barthes writes it results in a style of its own. The method of the Bechers for example has transformed from an objective tool into a widely adopted stylistic academic method. And yet without this rhetoric or research aspirations the 'house without qualities' by Ungers would never exist. We have found that adopting this way of working and teaching helped us to open up a door into architecture.

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Rue des Palais 153 - 1030 Brussels
T. +32 (0)2 244 44 36
info@architectureinpractice.eu
www.architectureinpractice.eu/pirjournal



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