

RESEARCH BY DESIGN: THE ‘5X5 PROJECT FOR THE DUTCH CITY’

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ABSTRACT: The current dynamic of urbanisation requires constant attention for the implementation of efficient public transportation. Seen in this framework the discussion about the traffic flows offers interesting perspectives when dealing with the future of the city; designing an infrastructure is often an occasion to propose a project for the transformation of the city. Considering the railroads in particular, this debate is very much alive all around Europe, particularly if we look at the number of competitions and projects for the accommodation of high-speed railway lines.

Referring to this framework, the Faculty of Architecture - TU Delft organized in 2008 a ‘research by design’ driven design initiative with the title ‘5x5 Projects for the Dutch city’. As already suggested in the title, five design projects were made all focusing on sustainable urban development of five Dutch cities: Dordrecht, Leiden, Gouda, Delft and Haarlem. The assignments, prepared in advance by the research group of the chair Building Typology, were all concentrating on a number of problems connected with one important assumption of the project: accepting for all five cities the hypothesis of accommodating part of the railway underground. The aim of this paper is to give an insight of the project.

KEYWORDS: urban design, design strategies, public space, large urban projects, architectural interventions.

1 INTRODUCTION

Looking at the Faculty of Architecture research agenda of the last decade it is undoubtedly true that the question of whether design should be considered or not as a scientific activity is constantly seen as one of the crucial issues. Like Henk Engel observes in one of his recent article, published in *OverHolland 5*, the Faculty of Architecture of the Delft University of Technology is particularly specialized in training designers. This is the case not only for Architecture but also for other faculties inside the campus. Therefore the introduction of the term ‘research by design’ was needed in order to reflect on design as a scientific discipline¹. At this point some questions arise. How can be design considered as the result of a scientific process? And in which way should ‘research by design’ be evaluated?

In her article published in 1996 in *Delta*, Joyce Ouwerkerk² tackles the topic referring to Taeke de Jong book ‘*Kleine methodologie voor ontwerpen*’. In this book de Jong suggests that ‘research by design’ should be evaluated using other criteria than empirical and theoretical research. According to de Jong a design focuses on what’s logically possible, a theoretical research on what’s necessary while empirical research deals with the probable. He believes that ‘research by design’ should really lead to new solutions and that the value of this type of research should be demonstrable if compared with similar but existing designs.

For Henk Engel ‘research by design’ should accomplish the following three criteria. First of all a design should be the solution for a determined class of problems. Secondly, way of thinking and rules to apply during the design process should be established *a priori*. In the third place the design should put forward new knowledge and alternative skills or prove how acquired knowledge can be used to generate new and unique designs. Depending on the disciplinary framework, these criteria should be adequately specified following theoretical assumptions and testing methods applicable to the particular field in question.

In the case of the ‘5x5 projects for the Dutch City’ research by design had to be engaged while dealing with the station areas of five minor Dutch cities. All design teams were confronted with the same

¹ H. Engel, ‘5x5: Projecten voor de Hollandse stad’, article in *OverHolland 5*, 2007.

² J. Ouwerkerk, ‘Ontwerpend onderzoek vergt een andere beoordeling’, article in *Delta* nr. 14, April 1996.

initial issue: a substantial part of the existing railway had to be accommodated underground. In this respect, looking at the projects right now, I think it's legitimate to put forward the following additional questions: till which extend are these designs the product of a well established 'research by design' standpoints? Or are they the logic output of design processes in which the condition of relative freedom given by the academic framework favours opportunities for new approaches?

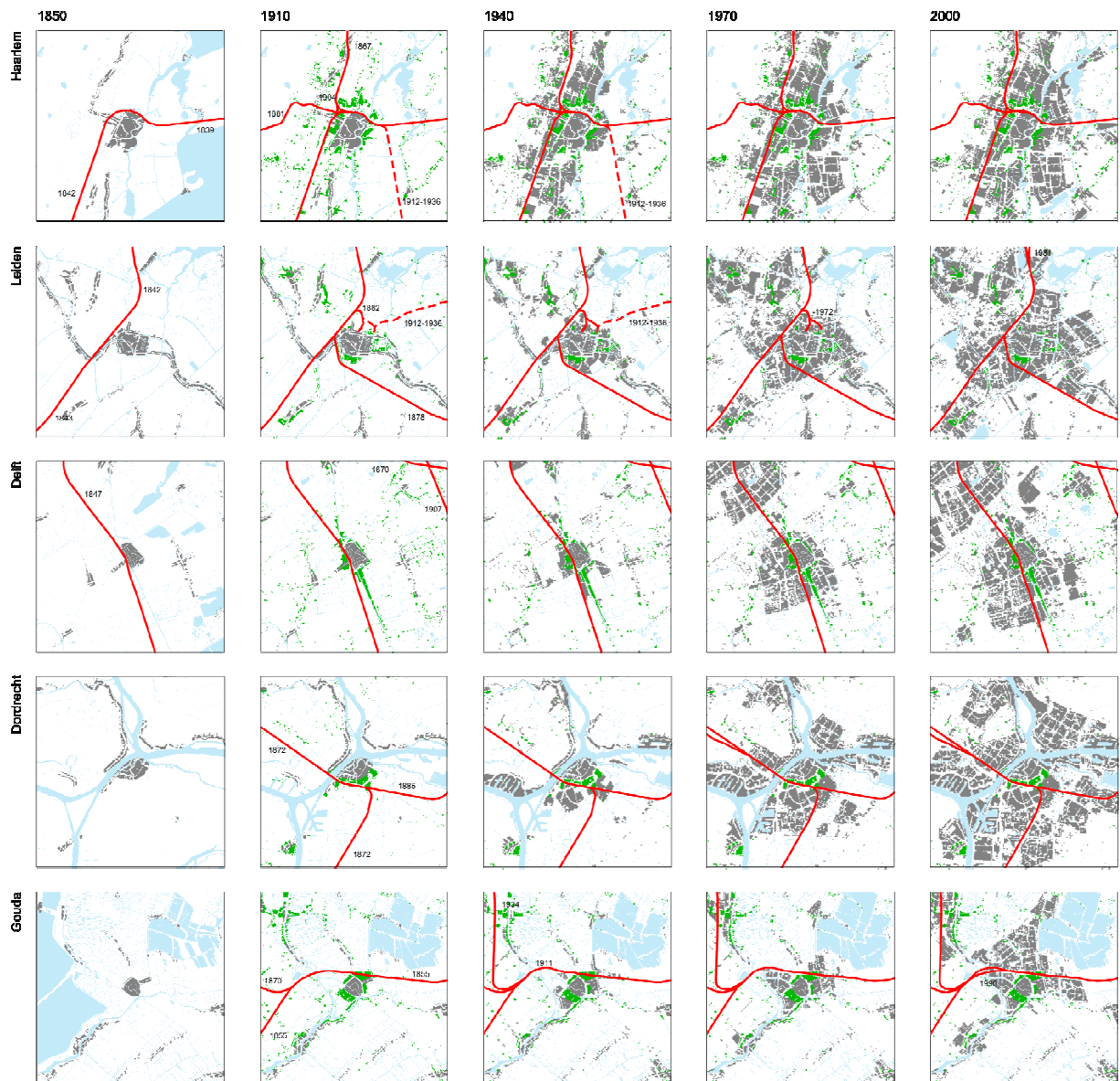


Figure 1 '5x5 Project for the Dutch City'; Haarlem, Leiden, Delft, Dordrecht, Gouda. The expansion of the built-up urban area with respect to the railway lines. Drawing by Olivier van der Bogt, Otto Diesfeldt and Iskandar Pané.

2 THE FRAMEWORK OF THE '5X5 PROJECTS FOR THE DUTCH CITY'

Railway and city have been coexisting for approximately one and half century. Analyzing their mutual relationship today, it's important to understand how railways, as physical elements in the city, are experienced in terms of space. When in the XIXth century the railway lines appeared they were clearly an

indispensable contribution to the development of the city. Miles of railways were quickly built without taking the future scene of the city into consideration. The result is that today the railway is entangled with the city like a spider net while its role has drastically changed. What in the early days contributed to the development of the city, is currently, although indispensable, often considered as an obstacle, a limitation for city planning.

In the XXth century the railway takes an essential position in the planning of the city. Despite the gradual but constant increase of car traffic, the railway keeps an important role as reliable means of public transportation. In the meanwhile railroads and metropolitan lines are enclosed by the ever expanding city and, whether well integrated or not, are part of the cityscape. Railway and marshalling yards occupy large and precious surfaces in the city, sometimes being an obstacle for further developments.

After the Second World War the reconstruction period offers the chance of reconsidering the planning of infrastructures in the city. Nevertheless infrastructures, and especially railways, are in this period mainly planned from the functional viewpoint of accessibility of the city. Main roads as well as railways are needed primarily to ensure an easy access from the outskirts of the city to its centre. Although stations are transforming into multimodal transport nodes, remaining an interesting theme of architecture, the building of new railroads or the refurbishment of existing ones did not turn automatically into an important architectural assignment even if located inside the city.

Nowadays, in the XXIth century, the dynamic of urbanisation requires the implementation of efficient public transportation systems and the transformation of existing ones. Like 150 years ago, the discussion about the traffic flows creates an interesting perspective when dealing with the future of the city. The railways as well as the streets are the ordering elements of the city, the elements ensuring the relationship between its parts and their mutual connections³. Designing an infrastructure is often an occasion to propose a project for the transformation of the city. When it comes to railroads, this debate is very much alive all around Europe, particularly if we look at the number of competitions and projects for the accommodation of high-speed railway lines. All the above-mentioned issues are also of present interest for The Netherlands. In addition, the construction of the new high-speed railway line (HSL) in the middle of the Randstad should be seen as starting point for a number of additional interventions involving all levels of infrastructures and, consequently, the way Dutch cities will develop in the coming years.

Unpredictable changes and complexity in idea, process and realization are unavoidable conditions nowadays; for these reasons the 5x5 research group stressed in his brief the necessity to reflect on urban renewal by investigating the connection between architectural interventions and urban transformations particularly for the railway areas of smaller historical cities.

As highlight of the international conference 'The Urban Project' in 2008⁴, in the exhibition '5x5 Projects for the Dutch city' were shown the results of this project. The five design teams were asked to formulate 'research by design' proposals, each one of them concerning the railway area of a minor Dutch city; common denominator for all five projects was housing part of the railway underground.

The chosen railway locations were given to the teams of BoB van Reeth (Delft), Michiel Riedijk (Leiden), Jo Coenen (Haarlem), Dick van Gameren (Gouda) and Henk Engel (Dordrecht). All projects as well as the accompanying essays were presented in the special edition of the bilingual book series *OverHolland* entitled '5x5 Projecten voor de Hollandse stad' ('5x5 Projects for the Dutch City').

3 THE DESIGN PROPOSALS

³ A. Monestiroli in 'L'arte di costruire la città', lecture hold at the DO.CO.MO.MO conference in Barcelona (1994), published in 'Progetto del territorio urbano' (by C. Macchi Cassia, Milan 1998), explains how important is the making of road and railway infrastructures in the modern city. Quoting Monestiroli: 'La strada e la ferrovia diventano l'elemento ordinatore della città nel territorio restituito alla natura. L'elemento che stabilisce le relazioni fra le parti e assicura le loro connessioni'. See also A. Monestiroli in 'L'arte di costruire la città' in 'La metopa e il triglifo' (2002), p 73.

⁴ The Faculty of Architecture of the Delft University of Technology in cooperation with the European Association for Architectural Education organized the international conference 'The Urban Project' from June 4th to June 7th, 2008.

The first Dutch city where part of the railway will actually be placed underground is Delft. For this city the proposal for a railway tunnel is already approved by the Ministry of Transport and Public Works. Therefore the team of Bob van Reeth had to deal with the existing plans of Busquets (master plan), Benthem & Crouwel (station) and Mecanoo's (city hall). Van Reeth decided to intervene in the empty areas bordering the historical centre, from the existing railway station up to the site of the DSM Anti-Infectives factories. Connecting the two locations with a thin line, the team van Reeth worked on the organizations of these parts of the city as fragments of the same ensemble.

Considering the importance of such project for the city of Delft, de former government architect of Belgium put forward cultural sustainability as the first priority of his proposal. He refuses any nostalgic view as possible solution and concentrates his efforts in finding the right architectural idea for the project. For van Reeth it is extremely difficult to describe the logical process behind the formulation of a concept, in other words when an architect is 'digging the assignment'. About the creation of forms in his proposal van Reeth mentions his constant use of forgotten architectural aspects. He adapts them to the specific situation always avoiding their literal use.

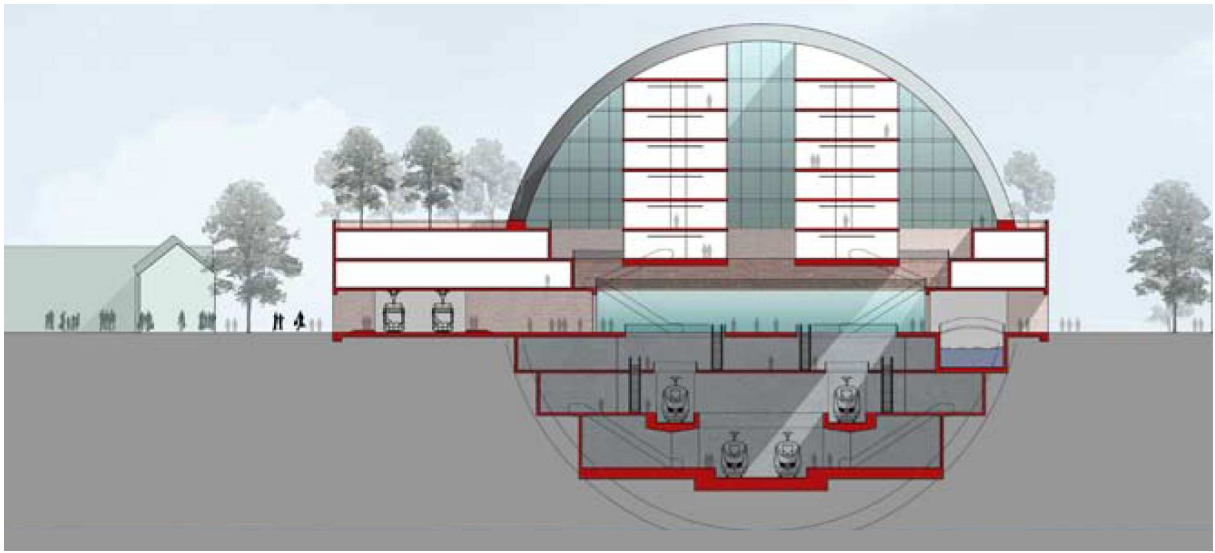


Figure 2 '5x5 Project for the Dutch City'. Project for the station area in Delft. Team Bob van Reeth-AWG Architecten.



Figure 3 '5x5 Project for the Dutch City', Delft. Model. Team Bob van Reeth-AWG Architecten.

Michiel Riedijk, together with Kersten Geers and Niklaas Deboutte, deliberately uses the opportunities provided by the academic framework of the 5x5 initiative involving the power of architecture

as an independent discipline. The project of architecture becomes a statement, a dream for a society where an almost poetic image is needed in order to give the right interpretation of the urban setting. Paraphrasing the current situation of Leiden's railway zone, this proposal could be read as the ultimate form of obstruction that, due to its recognisability, can turn in a joining element for the city. Recalling the expressive strength of some drawings of Superstudio, the project is primarily the representation of an object that embodies the continuous changes of the current social, economic and political situation

At same time the architects, repeatedly referring to the Mastaba⁵ as the possible prototype for their long building, did not forget the connection with the memory as an essential step in the project. And this last even justifies the choice for a building without visible openings.

Completely different is the approach of Jo Coenen for the city of Haarlem. Although he clearly admires the figment of imagination contained in Riedijk's proposal, during an interview about his project for Haarlem Coenen clearly stated the most important criteria for his architectural approach. The first one is the power of attraction of a plan's presentation. A plan's presentation has to immediately capture the viewers and involve them in the core of the project. This is a necessary and at the same time essential quality of a design. Moreover, he insists that the feasibility of a plan is fundamental. 'We must never forget the connection with the construction practice. I see it as one of my most important obligations. Of course, it is interesting to combine all the stimuli of the related artistic disciplines in a design. I also find that important. But in the end, a purely artistic approach does not lead to an executable plan'.⁶ The third point is the idea behind a plan. What I mean is what is hidden behind the drawings. No matter how intangible, the idea still has to be the essence of a plan.

In his plan for Haarlem Coenen combines these characteristics. The configuration of recognizable structures and urban spaces, typical in the tradition of the European city, is the base for Jo Coenen intervention. This plan is hierarchical composed by *parti* connected one another with a clear composition mainly played around a 'great axis', the new important east-west connection through the centre of the city. The proposal is further divided in specific function-oriented clusters. The location of the new station, in the Oosterpoort neighbourhood, gets a special treatment in the total composition of the project.



Figure 4 '5x5 Project for the Dutch City'. Project for the station area in Leiden. Team Michiel Riedijk.

⁵ The word 'mastaba' means 'bench' in Arabic as it has the silhouette of a bench of mud. The shape of the mastaba, an elongated, truncated pyramid was the inspiration for the stepped core dike in Leiden.

⁶ R. Cavallo, 'Interview with Jo Coenen', article in OverHolland 7, 2008.



Figure 5 '5x5 Project for the Dutch City', Leiden. Model. Team Michiel Riedijk.

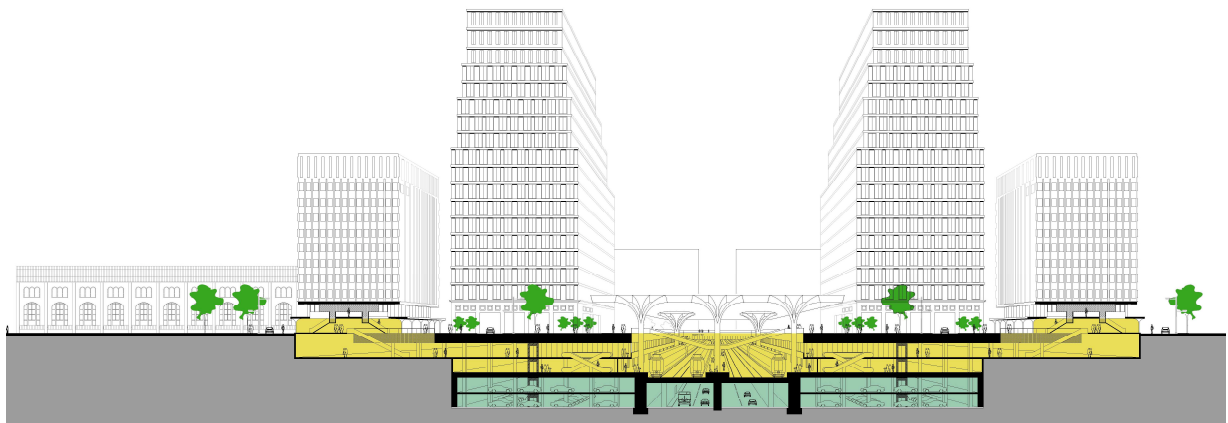


Figure 6 '5x5 Project for the Dutch City'. Project for the station area in Haarlem. Team Jo Coenen.



Figure 7 '5x5 Project for the Dutch City', Haarlem. Model. Team Jo Coenen.

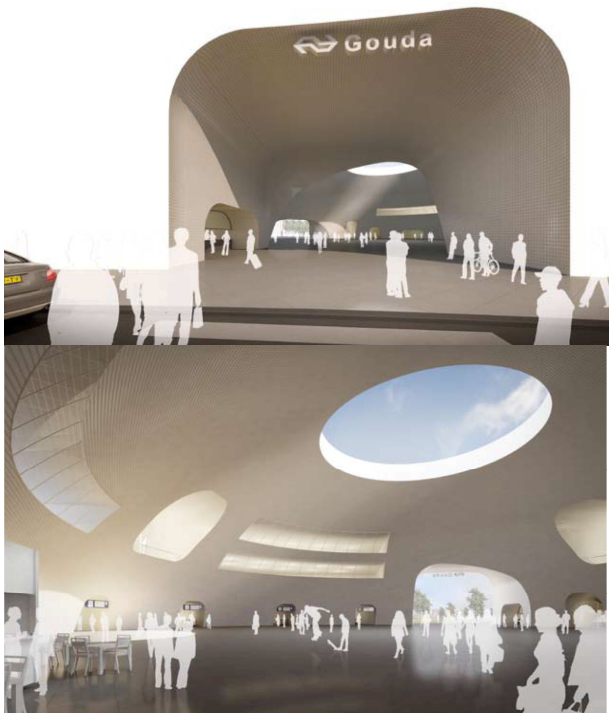


Figure 8 '5x5 Project for the Dutch City'. Project for the station area in Gouda. Team Dick van Gameren.



Figure 9 '5x5 Project for the Dutch City', Gouda. Model. Team Dick van Gameren.

The team of Dick van Gameren was confronted with the assignment of Gouda, the city where, if considering all five locations, the railway zone objectively forms the biggest barrier. Here is the city on both sides of the railway barely connected. Placing the train underground would be in this respect a great opportunity for Gouda. At the same time huge areas will be suddenly opening up and waiting for a suitable spatial solution. The strategy adopted by Dick van Gameren starts from an accurate analysis on the form of all undefined vacuums left over by the rails. These areas are then substituted by recognisable spaces characterized by a fluent form language in an almost expressionistic character.

Good connections among all spaces would ensure the coherence in this intervention, in which the implementations of the clusters came in a second stage. Stressing that the absence of programme is the biggest cause for the loss of identity in contemporary stations, van Gameren worked out the new station of Gouda as an empty space, a big shelter integrated with the urban fabric and recognizable via the NS logo above the entrance.

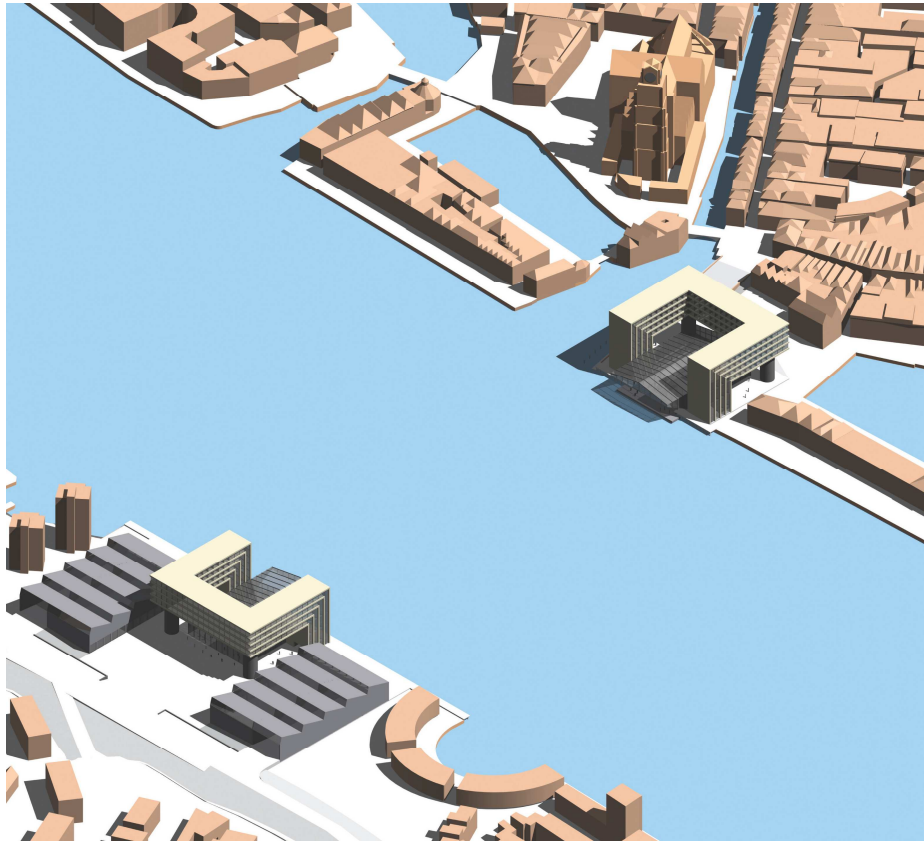


Figure 10 ‘5x5 Project for the Dutch City’. Project for the station area in Dordrecht. Team Henk Engel-De Nijl Architecten.



Figure 11 ‘5x5 Project for the Dutch City’, Dordrecht. Model. Team Henk Engel-De Nijl Architecten.

Mapping out the accessibility of the historical centre of Dordrecht, Henk Engel and his team created a design for the station as a tribute to Dordrecht. The project links with its location – two sides of the river – as well as with the profession. Referring to great precedents, like the Canaletto’s drawing for the Rialto

Bridge in Venice, Engel confronts the virtual reality of an architectural project with the truth of a location, in this case the one chosen in Dordrecht.

Studying the further organization of the traffic after the railway is gone, the project team grabs the occasion of proposing a new symmetrical building as possibly the new icon of the city once the bridge has lost his leading role. Without making any statement for the areas freed by the railway, Henk Engel concentrates his efforts on the imaginary picture of a monumental structure juxtaposed to the historical harbour front of Dordrecht.

4 CONCLUSION

A close look to the five proposals does not immediately give an insight on how ‘research by design’ has something to do with the architectural solutions characterizing the projects. From the plans and their accompanying explanations as well as the interviews with the participating architects, we can reconstruct the differences and similarities in their design projects and possibly understand what exactly they meant to research through their designs.

Although very different in approach, content and presentation, all five projects had to deal with the railway positioned underground. This fact has given the possibility to work at the scale of the city on the ‘freed’ railway yard areas. Compared on this level are the proposals very different; some are trying to reconnect the divided urban tissue by carefully working on the morphological structure of the city (Coenen, van Reeth and van Gameren). But the scar in the urban tissue left by the track can become an architectural theme on itself (Riedijk); last but not least, the project becomes an imaginary as well as a monumental picture connecting to an image of the city that hasn’t been there (Engel).

In all proposals is the classical station transformed into an underground container connected with a protruding tube from both sides. Everybody agreed that the building above the ground only needs to contain ticket offices or machines, a shelter for the waiting passengers and stairways and lifts connecting the city with the underground world. But the station is still a gate towards the city and it can be filled with all kinds of functions, exploiting the large transient flow for commercial intents. This last has been translated in different architectural approaches; nevertheless is the theme of the station a valuable parameter to compare the projects. Having lost its program (content) the station does not need to fit in recognizable typologies and can become something else. From a very long ‘Mastaba’ (Riedijk) to a covered ‘left over’ urban space (van Gameren), the contemporary station is transformed into a heterogeneous element witnessing the many sidedness of the current urban situation. There are no particular arguments making one of the approaches less convincing than another one. The particular framework created by the academic setting has contributed in a positive way to the results of this experience. The 5x5 projects are providing valuable guidelines for new design proposals and new solutions to contemporary urban issues.