Introduction

The Heritage & Architecture section from the faculty of Architecture / Delft University of Technology trains students to design with built heritage. Heritage is interpreted in a broad sense and is separate from a particular object’s or ensemble’s monument status. In all design projects in an existing context, the past will play a more or less important role. The Heritage & Architecture section will focus first of all on those design projects in which the past will strongly determine the further development. In other words: the section focuses on the highest divisions of the built heritage. Graduates from Heritage & Architecture are part of the Master of Science (MSc) track of Architecture.

The education program we developed to teach our students in Heritage & Architecture is based on a research based design approach. To deal with heritage like monumental buildings as an architect it is necessary to understand the site, the object, the history of place, technology, the changes over time and the impact of culture values during the design process. We as teachers provide our students with a research based design method. This has led to some successful projects from our graduates. Three of them have been selected recently for the Archiprix exhibition of best graduates in Architecture in the Netherlands. I will explain the methodology we provided them with, how they evolved this in their own approach and I will reflect on this and evaluate the solutions also. So the projects of: Oriana Kraemer, Katerina Krommyda and Maarten van Kesteren will be discussed.

Heritage & Architecture triangle

The basis for the structure of the department of Heritage & Architecture is a triangle with the knowledge domains: Design + Cultural Value + Technology. Three full professors are appointed related to this domains and the section employs almost thirty people. Cultural aspects and technology are strongly focused on the design. Those two disciplines, partly based on scientific research give direction to the design. They carry the framework, with the approach to find solutions, for the designer. In the design, the scientific insights are finally given form.

Triangle structure of the department Heritage & Architecture. It is also the framework for education.
Before the design starts you need to investigate the assignment in its context. Beside cultural values you need to take a position before starting a design in relation to values like: age and rarity, architectural, artistic, associative, economic, educational, emotional, historic, landscape, local distinctiveness, political, public, spiritual, scientific, social, symbolic, townscape and technical values. In this way a value based approach like Orbaşli describes can be worked out.\(^1\) Students will not be able to judge all values in the same way. They need to make choices and work out their individual interpretation of a value assessment. From a more technical point of view trying to find out what the possibilities are and what the resilience of the of existing building is technology is a starting point in the investigation too. A clear set of definitions about the impact of interventions is provide by the description in the Refurbishment Manual from Giebler cs for the students.\(^2\) They need to define if a more preservation, restoration approach or a refurbishment way of treating the building is suitable. This approach is immediately related to the set of values they interpreted themselves before. Different interrelations between cultural values and technological opportunities will result in a personal way to formulate a transformation framework before they start with the actual design. It is possible to convert this methodology in a personal research method like the three students whose projects will be discussed did. One started with a situational and social research, the second with a situational and a much more detailed cultural value assessment and the third with a situational research in combination with a theoretical based research.

**Research based design methodology**

In general students need to research the site, context, existing building(s), materials used and technical aspect of the site and buildings. A method on building level they use is the elaborated method developed after my PhD thesis: the ABCD in time research method.\(^3\) Time is an import issue in this method like Kevin Lynch illustrates in his theory too were change is always the issue in the built environment.\(^4\) The past, present and future on all aspect need to be observed and analysed. The way buildings change over time and the way they are able to incorporate the changes makes buildings resistance, unique and even more interesting over time like Stewart Brand likes to tell.\(^5\) The way you deal with time aspects concerning appreciation, design approach and experience depends on a personal opinion like Lowenthal describes.\(^6\) Those theoretical frameworks need to be studied by the students. Different assignments on different locations applied to the research based design methodology of Heritage & Architecture should result in different ways to incorporate new programs in existing buildings. When those buildings are designated as heritage it even becomes more interesting. Different views, some guidelines in observation and valuation methods leads to personalized research based design approaches. At first students need to define a research question for themselves to investigate and research a specific topic based on a problem statement. Then teachers provide the students with instructions and lectures about the theory and methodology. Finally the students work out their individual research method documented in a research report and an illustrated transformation framework based on the personalized value assignment, analyses of the site, building and technical possibilities from the past till the future and a theoretical framework. The report, the final design and a reflection on applied method, process and societal and social relevance completes the project.
Three projects
I will present three graduation projects by three different students to illustrate three ways of a research based design approach and on individually adopted method that resulted in three great projects. All have been selected as best graduation projects in the Netherlands in that year. I will describe the projects illustrated with the students own drawings and I will evaluate the following projects:

First Oriana Kraemer with a project to refurbish social housing blocks in Moerwijk The Hague based on situational and societal research based on site visits and interviews, second Katerina Krommyda with the renovation of the Delft Armanetarium based on an elaborated analyses of the location and cultural values and third Maarten van Kesteren with a situational and theoretical research to find reasoning for the implementation of the Shoah Museum in the Hollandsche Schouwburg Amsterdam.

1. Moerwijk Courtyards in The Hague by Oriana Kraemer, introduced by the student:
'The proposed architectural intervention presents a strategic approach on how to deal with social housing of the fifties. The principles of my design promise an improvement in privacy zoning on an architectural scale, namely on family-, block- and street level, by directly improving the liveability of the building and its proximate surroundings. To achieve an impact of and intervention like this for the whole district of Moerwijk, the number of interventions has to be increased and spread out over the whole district. If this happens, these “Moerwijk Hofjes” can then act as a recognizable feature of the district that Moerwijk could even become famous for. The multiplication of interventions could therefore greatly improve the image thus the popularity of Moerwijk.’

Research based design: During first site visits a number of problems became evident: A lack of identification and participation due to a high fluctuation of tenants had over time lead to physical and social decay of the collective gardens and its enclosing housing blocks. On the one hand the generally small apartments had failed to adapt to demographic changes and new living standards. On the other hand a lack of privacy zoning, unclear borders of ownership and poor accessibility of the collective green spaces had compromised the dwellings’ potential during the past decades. In order to understand the definitions of public and private space in Moerwijk Oriana looked at its relationship on an urban scale first. In depth research on the makers of Moerwijk gave her hints about their intentions and ideas of how the neighborhood was planned to function. She studied their plans in archives and conducted interviews with the municipality, tenants and neighborhood organizations. The result was an overview over Moerwijk’s development as a whole from the very beginning until today. The housing block was analyzed regarding scale, accessibility and social aspects, all on an urban, architectural and material level. To revitalize the abandoned collective green space and to increase the livability for the adjoining flats, the design followed four simple steps as a result of the analysis and research:
1) restoring the direct access to the garden that had been nullified over time
2) extending the living space of each unit with a lively function towards the garden, thus creating a buffer zone between private and semi-private
3) closing the open housing blocks with a spatial element that provides enough privacy while maintaining insights into the green
4) connecting the opposing blocks with a spatial element, a communal area, that divides the long
stretched garden into more intimate zones and restores the architectural coherence between the two blocks that had been lost over time.

Evaluation: The final result of Oriana shows a project built up in different stages and will be applicable on more similar occasions. In the final research report it was hard to present the results of the situational research as positive because it deals with ordinary building stock: a huge number of housing blocks from the 1950’s. Social aspects are very important and the bottom up approach is the future in Western Europe real estate management. In the end the negative sounding conclusions of the research turned into a positive impact on the site that can be applied step by step on a large number of familiar locations.

Illustrations from the report and final design presentation of Oriana Kraemer:

Research scheme and Conclusion scheme on missing elements in the courtyards

Interviews
Gardens and building typology

Technical investigation of the housing blocks
design recommendations in steps, based on research conclusions and old and new floorplans

Different impression from extensions for added social functions in the courtyard

Implementation of the design steps

Statistic impact
2. Armamentarium Delft by Katerina Krommyda, introduced by the student:
‘The specific theme of the studio investigates the potentials for the reuse of the Armamentarium
Complex in Delft, constituting a currently empty shell and searching for its new function in the future.
Research and recording of the existing structure form the basis for the redesign process following
subsequently. Investigation applied on all different scales of analysis (Urban, Architectural, Technical)
pursues to construct a clear perception and understanding of the existing structure, concerning not
only the current state of the observed object, but also a thorough tracing of the past. Fundamental
springboard of the re-design approach has been the principle that every building or site of historical
and social importance draws its sustenance from the qualities and substance of the surrounding life of
the context area. By composing old and new under a well-bonded, interwoven fabric, the new design
aims to activate the reciprocal offering process of the introvert enclave and the city around it, engaging
maybe for the first time a synergetic relationship between the two poles. By re-instating the interaction
between the intimate soul of the buildings and the public space, the sustainable, perpetual existence
of the composition, as an indispensable component of the urban life can be substantially
materialized.’

Research based design: The subtitle of the project is: "Re-Constructing the borders of Introversion".
The former arsenal building became a laboratory for art, crafts and science: from an isolated enclave
to an intimate place rich in social life, creativity, history and innovation. Within the aforementioned
framework defined by the studio supervisors, the objective of the current assignment seeks for an
intervention strategy concerning the future life of the Armamentarium Complex, commissioned within
the years 1601-1603, to host the function of a warehouse of military equipment for the State of Holland
and West Friesland. The methodology, defined within the notion of research based design consists of
two phases. The first part includes the research on urban, architectural and technical dimensions
of the structure, while fertile interrelations with the wider field of architectural history, theory and
practice are alongside being investigated. The following and last objective of the process, concerns
the formulation of the specific intervention strategy, involving a synthesis of disparate but interrelated
aspects with architectural, technical but also cultural, social and financial contiguity.

The surroundings of the Arsenal shows traces of the original entrance to the city. The building itself
has gradually adapted to the nature of the context, such as the crossroads, and the meeting of old and
new and of history and innovation. At the same time, the Arsenal sets the conditions for a dialectic
between two opposing worlds. Behind the walls of the building ensemble, a deep-rooted intimacy and
introversion gradually reveals itself to the visitor’s senses. It is a situation that calls for decisive action
so as to encapsulate the vitality inherent to the new function in the existing spatial structure and
character. Besides assuring continuity of memories of the existing structure, the objective was to
relieve the isolation of the interior by eliminating the boundaries between public and private zones. Out
of respect for the invisible “soul” of the building, the intervention strategy was directed at finding means
to reinvigorate its shell. The plan of Katerina aims to establish a new sense of place through a tight-
knit combination of old and new qualities, reaching the essence of the urban matrix by activation of a
dynamic, ideological, social and cultural incubator. It is also an extremely well-illustrated plan.
Evaluation: The main question for Katerina was: How could the intervention approach define the new balance, achieved between the existing introvert identity of the composition and the potential demand for a more extrovert impression in the future? The research had a strong situational focus so an extended investigation and interpretation of values took place. The research question guided the analyzes and all steps in the research are illustrated by drawings. Some reference projects (Le Murate by Renzo Piano in Florence and the Castello Vecchio by Carlo Scarpa in Verona) were analyzed to position herself as an architect confronted with this kind of assignment. Research themes were: introvert, extrovert, identity, setting, façade and typology. This resulted in a transformation framework:

- Consider the crucial location
- Bring back the memory of the north-south axis
- Enhance the continuity of space
- Preserve geometry
- Relate the two focus points
- Preserve the timber construction
- Respect the contrasting identities
- Reveal and expose the layers of history

The research and design was illustrated by (hand) drawings through the whole process so the existing and new situation could be imagined very well. The situational analyses were elaborated and provided Katerina with the information needed to state her starting points for the design. The final design was elaborated from site till building construction details but the final solution with the large bridge seems to be a rather (to) big intervention at this place in the historical center of Delft.

Illustrations from the report and final design presentation by Katerina Krommyda:
Research approach

Site and routing between the two focus points
Some impressions
3. Shoah Museum in the Hollandsche Schouwburg in Amsterdam by Maarten van Kesteren,
introduced by the student: 'From 1941 on the Hollandsche Schouwburg became the centre of the
systematic plan to annihilate the large Jewish population of Amsterdam and its surroundings. Since
then the fate of the once popular Jewish originated theatre on the lush Plantage Middenlaan has been
bound to the horrific scenes that took place here. In 1962 a memorial and small museum were built in
the theatre’s remains. The Joods Historisch Museum now has plans to renew the memorial and
transform to museum to a fully-fledged Shoah (holocaust) museum in which the Dutch story of the
prosecution of Jews is told. I was asked by my tutor, Hielkje Zijlstra, to make a study-design for the
transformation, in dialogue with the Joods Historisch Museum. “There is no point in exaggerating
that which is already horrific”, the author W.G. Sebald says, “perhaps in order to get the full measure of the
horrific, one needs to remind the reader of beatific moments of life.” The horror of the Shoah
(Holocaust) may work like the head of Medusa: one is petrified by a direct confrontation. Instead of
shocking visitors with spectacular forms, the architectural aim is to create a dignified mood of
contemplation.’

Research based design: From the Hollandsche Schouwburg tens of thousands Jews were deported
from Amsterdam. At this moment a memorial and small museum dwell within the remains. The Joods
Historisch Museum has real plans to renew both. The graduation project of Maarten is a proposal for
the transformation, made in dialogue with the people involved. It is about life, the personal aspect of
memory and the place itself. The program of requirements was too extensive to fit on the site. Room
may be provided by sharpening the program, using run-down spaces and demolishing several existing
elements after a thorough analysis. The proposal is to also use a second location: the vacant
Hervormde Kweekschool. Situated diagonally across the street, the school served as an escape route
for Jewish children during the German occupation. The tram stop in between, which was then used for
deportations, is now proposed as a public exhibition and connecting element.

The research based designed focussed on five subthemes elaborated by an extensive literature study
as Maarten described himself:

1. Mokum. Mokum comes from the Hebrew word for place: makom. Amsterdam was the place for
Jews, a safe haven. This drastically changed during the Shoah. The city is now charged with
contrasting memories. To create a monument which is about- and resonates with the place itself, the
notion that Amsterdam is fundamentally an a-monumental city is significant. I propose intimate spaces
that prevent memories from rigidifying in monumental forms that dwarf visitors. Comparable to the
historical beacon of Jewish life in Amsterdam, the Portugese Synagoge, the proposed architecture is
sober while forming a clear presence in the city.

2. A quiet space of reflection. A majority of people has an image of the Shoah that is cast by
spectacular films. In the U.S. Holocaust Memorial Museum perfumes, such as that of leather shoes,
are sprayed into spaces to remind of the clothes left behind in Auschwitz. I distance myself from this
‘Disneyfication’ and the spectacular. Instead the proposed architecture is about simple things and
creating a dignified mood of contemplation. This is a museum to keep your coat on in winter. Spaces
are only heated where and when necessary.

3. Resonance. Memory involves the whole body. The proposed architecture is simple of form but is
enriched by texture, transition, smell, sound and sunlight filtered by the membrane and recycled glass. Materials are chosen to absorb new traces of life such as weathering, scratches and footsteps clearly but gracefully, adding new layers of memory. The larch is treated with a glossy oil, the thermally modified ash with a matte oil. Slowly oxidizing copper eaves protect the timber from rain. Underneath the newly planted elms and planes local grasses, sage and jacobsladder grow. A threshold marks the entrance of the cabinet.

4. Memory. Jews have long been a wandering people. The means of conveying memory have been adapted to this wandering life. Ritual and the telling of stories lead to a constant re-animation of- and identification with the past. These means of conveying memory may be used to keep the memory of the Shoah vivid. Exhibition spaces hold gleaming massive timber rooms filled with southern light. Black pigmented cement is mixed with crunched basalt of the former monument and is used to craft 1,5 meter high polished pedestals placed in a staccato rhythm alongside a connecting route. The timber walls and concrete pedestals are the only new elements that are heavy. They bear personal artefacts, but also the load of the buildings.

5. Light. The cyclical passing of time holds a central position in Jewish tradition. Gardens, slowly changing materials, the temperature of spaces, but most of all: the changing sunlight, are markers of the place, but also a measure of the cyclical passing of hours and seasons. On the position of the former stage I propose the ‘chapelle ardente’. Here one may join the movement of the sun following the cyclical wall of names. 1040 suspended stainless steel threads, 100 recycled glass beads on every thread, 1 name on every bead. Every person of the 104.000 Jewish victims from the Netherlands has his or her individual artefact’.

Evaluation: The main question for Maarten was: is it possible to create a place of memory and a museum in Mokum that is linked in an intrinsic way with both some of the most beautiful and some of the most horrible moments of Jewish life in the Netherlands? Maarten exposed a strong situational focus regarding the essence of place and history of Mokum (Jewish for Amsterdam) and The Plantage neighborhood and worked out an elaborated theoretical research based on a great amount of literature and excursions regarding memory, place and Jewish life. He documented the overall process and decisions in a elaborated and detailed Log. The final design was strongly driven by the results of the research structured by the five themes from the meaning of it till the smallest details. But it was very hard to present the essence of the sensitivity of the design in all its aspects clearly.

Illustrations from the report and final design presentation by Maarten van Kesteren:
Site and floorplan

Research lay-out and front facades
Some impressions
Final conclusions

The three students whose work is presented started all three with the same principles and basics from the Heritage & Design research based design methodology. But they were able to work out their design based on their individually worked out research method. More or less they guided themselves. The teachers provided them with the described methodology anchored in the Heritage & Architecture triangle: Cultural Value + Technology + Design.

I thank Oriana, Katerina and Maarten for their ambition, dedication and discipline to create their research based designs both individually and as a team of graduates of the department Heritage & Architecture from the Delft University of Technology. In fact they were able to practice the theory in their project very successfully. It illustrates the way I want to teach and facilitate young people to excel.

With my special thanks to:

Oriana Kraemer                         Katarina Krommyda                                 Maarten van Kesteren

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