MASTER

A school for the new reality
Texel as a testing ground for education

Jansen, B.

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A SCHOOL FOR THE NEW REALITY
Texel as a Testing Ground for Education

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<table>
<thead>
<tr>
<th>Page</th>
<th>Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-17</td>
<td>1. Introduction</td>
</tr>
<tr>
<td>3</td>
<td>1.1 Texel Metabolized</td>
</tr>
<tr>
<td>6</td>
<td>1.2 Texillian Education</td>
</tr>
<tr>
<td>12</td>
<td>1.3 Relevance</td>
</tr>
<tr>
<td>16</td>
<td>1.4 Research Questions</td>
</tr>
<tr>
<td>19-55</td>
<td>2. Theory and Design</td>
</tr>
<tr>
<td>21</td>
<td>2.1 Theory and Design</td>
</tr>
<tr>
<td>22</td>
<td>2.2 Location</td>
</tr>
<tr>
<td>32</td>
<td>2.3 Terminology</td>
</tr>
<tr>
<td>34</td>
<td>2.4 The Educational Paradigm</td>
</tr>
<tr>
<td>38</td>
<td>2.5 Polyvalence</td>
</tr>
<tr>
<td>42</td>
<td>2.5.1 Spatial Relations and the In-Between</td>
</tr>
<tr>
<td>52</td>
<td>2.5.2 Inside - Outside</td>
</tr>
<tr>
<td>54</td>
<td>2.5.3 Tectonics</td>
</tr>
<tr>
<td>57-60</td>
<td>3. Conclusion</td>
</tr>
<tr>
<td>59</td>
<td>3.1 Evaluation with Eva Mondeel</td>
</tr>
<tr>
<td>60</td>
<td>3.2 Conclusion</td>
</tr>
<tr>
<td>63</td>
<td>4. Documentation</td>
</tr>
<tr>
<td>65</td>
<td>5. Summary</td>
</tr>
</tbody>
</table>
1. INTRODUCTION
1.1 TEXEL METABOLIZED

“Urban by Nature is the central theme of the International Architecture Biennale Rotterdam (IABR) 2014, curated by Dirk Sijmons. One of the case studies involved concentrated on Texel, searching for new perspectives on a sustainable future of the island. Texel’s reason for existence not only depends on its well developed touristic profile. Increasingly, efforts are made on the island to transform it into a laboratory for new techniques of energy supply, and the adaptation of new ecological circulation processes in agriculture, both practiced on land and sea. The outcome of the IABR case study has created a fertile soil for a continuous research project, which is the Planet Texel Academy.”

As a result of the involvement of the Eindhoven University of Technology in the Planet Texel Academy the graduation studio Texel Metabolized came to be. A mixed group 19 of Dutch and international students applied for the studio and started the studio on the 29th of September 2014 with a weeklong workshop on location. By staying on location, meeting locals, attending lectures and gathering information the group became acquainted with Texel in the broadest perspective possible in an early stage of the project. This week, in dialogue with tutors Bernard Colenbrander, Barbara Kuit & Juliette Bekkering, an agenda was made for the first semester of the project that was going to last two semesters.
1. Current Situation
1.1. Landscape (Scale of Texel)
   . 1.1.1. typology
   . 1.1.2. climate (temperature, wind, rainfall...)
   . 1.1.3. water (sweet/salt, canal...)
   . 1.1.4. sea & coast
   . 1.1.5. dune
   . 1.1.6. forest, my, slufter...
   . 1.1.7. towns/dorps
1.2. Infrastructure and Facilities (scale of Texel)
   . 1.2.1. transport (car/bicycle lanes, bus, ferry, harbor, parking regular/for caravan...)
   . 1.2.2. houses (permanent/non permanent...)
   . 1.2.3. farm
   . 1.2.4. shop, restaurant, supermarket...
   . 1.2.5. public service (post office, school, hospital, elderly house, military/police...)
   . 1.2.6. recreation facilities

2. Dynamic Process
2.1. Metabolism (various in scale)
   . 2.1.1. society (community, demography as age, gender, religion, occupation, education, background...)
   . 2.1.2. energy
   . 2.1.3. natural environment
   . 2.1.4. economy
   . 2.1.5. material (what has Texel got to offer?)
   . 2.1.6. agriculture (fishing)
   . 2.1.7. activities (consumption vs production)
2.2. Identity (scale of Texel)
   . 2.2.1. history, origin & culture
   . 2.2.2. folks & stories
   . 2.2.3. postcard imagery/picturesque view
   . 2.2.4. transformation of [farming] to [tourism] to [?]
   . 2.2.5. attitude, necessity for changes

3. Settlement
3.1. Settlement (scale of De Koog)
   . 3.1.1. recognizing the family of the type of the village
   . 3.1.2. comparative profile section, similarities & differences
   . 3.1.3. how the village fits in the landscape
   . 3.1.4. connection and interaction with other villages
3.2. Architecture (focus on De Koog, other villages as reference)
   . 3.2.1. typology (evolution, formal/informal, monuments...)
   . 3.2.2. functions
   . 3.2.3. language & style

Image XX: The research agenda as formulated on the 27th of October

The first few weeks, a Lonely Planet-style guide would be made for Texel - later dubbed 360 Degrees of Texel. Parallel to the work on the guide, deeper research into the Island and its metabolism would be done, for which a research agenda was proposed. The goal of this research would be to make an Atlas on Texel, focussing on the metabolism of the island.

During the process of researching Texel, some subjects were deemed irrelevant and some were changed because of new information available. In the first drafts of the atlas the revised research agenda became the table of contents of the atlas.

In later drafts the order of the content was changed and improved. In its current state the atlas has been edited; maps of different topics have been combined to show relations that are not evident otherwise. If chapters are still needed, and in which order (if needed), remains undecided at the moment.
Image 1: 360 Degrees of Texel

Image 2: Scrapbook of the atlas in its current state
In an early stage of the research into Texel, when the 360 Degrees of Texel guidebook was being made, I worked on a chapter about education. Even though this short piece cannot be seen as a complete and in depth analysis of the Texillian Education, as it is concise and based mainly on impressions, stories from a limited amount of spoken to people, and a few written sources, it can function, as it did to me, as an introduction, a first impression to Texillian education. The first part of this first impression consists of a brief history of education on Texel:
“Primary Schools

The first school on Texel a gift from count Albrecht of Beieren to one of his minions in 1398, located in what is now Den Burg. Documents ranging from 1619 to 1666 show that there already were schools in Den Hoorn, De Koog, De Waal, and De Westen. Later, several new schools were opened in the other villages. Until 1795 schools were the property of the church, afterwards they gradually became the local government’s property. The progressive government of 1807 built a new, bigger school in Den Burg that was to register 200 students, replacing three smaller schools, one of 80 and two of 55 students. The school in Den Hoorn contained 135 children at that time, Oost and Oosterend had 45, De Waal 25 and de Koog 45.

Nowadays there are 8 primary schools on Texel, 4 of which are in Den Burg. The other 4 are in Oudeschild, Oosterend, de Cocksdorp & de Koog. The average number of students per primary school here is close to half of the nation wide average, so like a lot of other things on the island, it is a bit more intimate. Two primary schools recently closed down (Den Hoorn’s and Oosterend’s).

Secondary School

In the late 19th century mayor D.C. Loman set out to improve the education on the island. This resulted in the opening of the first secondary school on the island, of which Jac. P. Thijsse became the headmaster in 1981. Though he was only in function for a year and a half, his presence meant a lot for the island as a whole. He stood up for a rich flora and fauna on the island and their preservation. One of the most well-known products of this was the ‘Verkade’ photo album - 50 000 copies were issued and sold. In 1953, plans were made for the first higher secondary school and it opened in 1957. Later, the lower and higher secondary schools were combined to what is now OSG De Hoge Berg, the only secondary school that is currently on Texel.”

It is ironic in a way that the name of Jac P. Thijsse, an icon to Texel and its education, is also related to the first conversations I had with someone involved in the education system of Texel. Eva Mondeel was at the time I first spoke to her a teacher at the Jac P. Thijsse school, a primary school in Den Burg. The Jac P. Thijsse school is one of four (out of eight) primary schools on Texel that is under surveillance by the educational inspectorate, and is the only one that has been rated as ‘very weak’. She spoke to me about the shortcomings of the educational system on Texel and especially how she would like to see it improve.

<table>
<thead>
<tr>
<th>School</th>
<th>Location</th>
<th>Number of students</th>
<th>Average CITO Score 2012</th>
<th>Average CITO Score 2013</th>
<th>Average CITO Score 2014</th>
<th>Average CITO Score 2015</th>
<th>Educational Inspectorate Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBS Durgerhok</td>
<td>De Cocksdorp</td>
<td>65</td>
<td>526.7</td>
<td>531</td>
<td>533</td>
<td>533</td>
<td>Weak</td>
</tr>
<tr>
<td>ABBs Luberti</td>
<td>De Koog</td>
<td>70</td>
<td>532.5</td>
<td>532.4</td>
<td>525.7</td>
<td>525.7</td>
<td>Weak</td>
</tr>
<tr>
<td>OBS dr. Jac P. Thijsse</td>
<td>Den Burg</td>
<td>200</td>
<td>530.8</td>
<td>533.1</td>
<td>526.6</td>
<td>526.6</td>
<td>Very Weak</td>
</tr>
<tr>
<td>OBS Brunvis</td>
<td>Oudeschild</td>
<td>117</td>
<td>530.5</td>
<td>529.5</td>
<td>527.2</td>
<td>527.2</td>
<td>Weak</td>
</tr>
<tr>
<td>National Average</td>
<td>-</td>
<td>222</td>
<td>535.5</td>
<td>535.0</td>
<td>534.8</td>
<td>534.8</td>
<td>-</td>
</tr>
</tbody>
</table>

Image 4: Schools that are under supervision and their recent CITO scores. CITO scores range from a minimum of 500 and a maximum of 550 and are a measurement tool of the level of a student.
What will follow is a reconstruction of the conversations Eva and I had in relation to education in the months of December 2014, January, February and March of 2015. Eva will be referred to as E and I will be referred to as B.

B: I have noticed that the people I speak to on Texel about education are not particularly thrilled about its quality. What is your view on this?

E: The education on Texel has quite a few problems. I have been stumbling upon a lot of these problems on the daily basis in my work as a teacher and that make it hard for me to get enthusiastic about the way it is going.

B: What are these problems that you have noticed in your work?

E: Well, for me, first of all, I work at a school that is under strict supervision from the educational Inspectorate. This makes it harder for everyone to work at school, because when being under supervision, it is hard not to feel the pressure, and this seems to affect the quality of the teaching even further, so it is hard to get out of the negative spiral for a school. Secondly, I noticed that the current system does not allow for improvement of the education, especially in terms of technological progress. Thirdly, there are some practical problems like the distance parents and children have to travel sometimes. Plus there is the fact that most of Texel’s population has their income out of tourism, which peaks in the summer holidays. So when their workload peaks, their children are also on school holiday.

B: Is this why you have started ‘Operatie Onderwijs Texel’?

E: Yes, with Operatie Onderwijs Texel, I wanted to move past the problems and look for positive input on how education in general could be improved and try to form a platform to implement it on Texel.
B: Can you tell me about the improvements you see fit for Texel?

E: There are quite a few experiments that seem to have proven that the way we think about teaching, in the sense of relation between teacher and student, is completely outdated. Like the hole in the wall experiment by Dr. Sugata Mitra. This shows that the teacher is not necessary in general to make children learn something, and that their own capabilities of learning (and teaching) are far greater than we seem to want to admit.

The ‘Hole in the Wall’ experiments by Dr. Sugata Mitra were a series of experiments to study the phenomenon of unsupervised learning in relation to computers. The experiments were comprised of two elements: 1. A wall, 2. A computer in the wall that was accessible to anyone (the hole in the wall). This wall and hole were then located in an Indian slum village. The hypothesis of this experiment was the following:

“The acquisition of basic computing skills by any set of children can be achieved through incidental learning provided the learners are given access to a suitable computing facility, with entertaining and motivating content and some minimal (human) guidance.”

After experiments in three different slums, the conclusion was made that the hypothesis was right. The children figured out how the computer worked and even started to show other how it worked, without needing any teaching from a supervisor.

B: The way this shows how children could learn in a more independent way reminds me of the Montessori method.

The Montessori method, developed in the first decennia of the 20th century by Maria Montessori is an educational method that focusses on the development of a child’s own initiative and natural abilities, mostly characterized by practical play.

In the Montessori method, teachers mainly tried to help enable the child; a common motto was ‘help me do it myself’. Furthermore, the Montessori Method acknowledged a phase called the ‘sensitive period’: a period of special sensitivity to certain stimuli, enabling the child to pick up certain skills faster. Many schools worldwide have adopted the Montessori Method and still function more or less according to it. Renown architect Herman Hertzberger’s fame as a designer of schools came about because of his materialization of the Montessori Method in concrete blocks.
B: Are there any examples of school that are (still) currently functioning - like the Montessori Schools, in which you recognize potential?

E: There are quite a few examples of school that are diverging from the normal paradigm of education. Laterna Magica on IJburg for example, that calls itself an ‘integral child center’, cares for and educates children in the age group of 0 - 13, combining a daycare with an elementary school while monitoring and coaching each child individually with the help of a well-functioning ICT system. The second and third example were recently featured on VPRO’s show ‘Tegenlight’ in an episode about educational renewal called ‘de onderwijzer aan de macht’:

Niekeé in Roermond, a secondary school founded by Sjef Drummen and ‘De School’ in Zandvoort, a primary school founded by Marjolein Ploegman. According to Drummen, no student is unmotivated in general, but the predetermined curriculum only accommodates to a small amount. They therefore search for a way to optimize (and therefore customize) the learning process for every student at Niekeé in terms of different learning styles.

The foundation of what Ploegman calls ‘the adaptive school’ lie in the social organisation of the Sociocracy: a form organisation in which the so called ‘consent principle’ (a form of agreement in which every objection, provided that it is based on solid and weighty argumentation, is decisive, and therefor
decisions are only made when consent arises) forms the base of every decision, and in which there is no hierarchy whatsoever. The aim of this organisational structure is for the school to be able to adapt to the needs of the students, the parents, the teachers, society and even the industry. Furthermore, ‘the School’ is open 50 weeks a year, 5 days a week, from 08:00 until 18:00, in order to allow free planning of school weeks and holidays for every child (and parent). These personal schedules are made every 10 weeks in dialogue between child, teacher and parent(s). Furthermore, every 10 weeks all the teaching at the school is applied to a certain theme. Within these themes every subject as formulated in the national requirements (kerndoelenboekje) is taught. The surprising aspect of the School is the fact that although the paradigm of year-classes is only rejected in the concept of the school. In practice, however, a distinction between age groups is still made in the form of ‘onderbouw’, ‘middenbouw’ and ‘bovenbouw’.

**B:** If you would have the opportunity to start a school on Texel in the very near future, what would it look like?

**E:** To be honest, I am a great fan of the model as proposed by Marjolein Ploegman. The idea of customization of the learning process, which is a huge theme in educational renewal, even in terms of customization of the learning times is incorporated with the help of a well-functioning ICT system, enabling monitoring and guidance in an optimal way and the basis upon which the organizational structure is built is one in which the possibility for change is built in.
It has to be stated here, that the application of this project to Texel is foremost caused by the fact that during the research into Texel, it became clear that Texel had prominent problems in terms of education. However, this does not mean that this project limits itself in applicability to the context of Texel. Therefore, the fact that this project is envisioned to take place on Texel, means that Texel becomes what it attempts to be in general: a testing ground; Texel as a testing ground for education.

In order to put the information gained from Eva Mondeel into perspective, a broader frame of reference needs to be constructed. In relation to this project, it is not so much my task to renew education, but rather to study the current educational renewers and then to select some of the examples that are exemplary for the educational debate - now and before - and that are relevant to the case of Texel and the case of architecture in relation to educational renewal in general. Therefore, in this chapter the state of the art in terms of educational renewal will be further examined and a further disquisition of some selected schools and educational systems will be presented.

THE EDUCATIONAL DEBATE

The educational paradigm as formulated by Maria Montessori seems to have become, although never mentioned as such, a foundation for most of the beliefs of present day educational renewers. Traces of values such as self development as a starting point and moving towards a more customized way of educating can be found throughout the complete range of current-day educational renewal, making it a tendency that has been extant in the vocabulary of educational renewal for over a century.

One of the first schools to be studied is Kindergemeenschap de Werkplaats, founded by educational renewer Kees Boeke in 1926. A school that came to be because Boeke, who did not pay taxes out of idealism, would now have to pay the school through taxes and therefore decided to take his children away from the Montessori school and home-teach them, out of which the school grew. At his school, which preferred not to be called school, but ‘werkplaats’, children were called ‘werkers’ and teachers ‘medewerkers’. At first there were no grades, and in the first period not even exams.

This school nowadays utilizes a system in which every child - or worker, as they call it - has their own schedule. Workers follow courses at their own level, which is evaluated each year. Classes are combined in sets of two (1/2, 3/4, 5/6, 7/8), not
Image 8: Images from ‘Cosmic View’ by Kees Boeke. A book that inspired Charles & Ray Eames amongst others.
because of sheer lack of students (in fact, counting over 500 workers, it is a rather large primary school) but because of the implementation of ‘own-level’ teaching. In between the schedule of ‘own-level’ instructions, students self-teach and work on their assignments.

Marjolein Ploegman, a current day educational renewer, founded a school, called ‘de School’, in Zandvoort that takes it a step further. In this school, the classroom teaching paradigm that earlier educational renewers could never completely divorce from is rejected to a further state. It has to be stated here that this is off course not the only school that has made this transformation happen, however, it is one of the most interesting ones, since the new system implied seems to be promising for some of the direct problems in the educational system in Texel. The foundation of what Ploegman calls ‘the adaptive school’ lie in the social organisation of the Sociocracy: a form organisation in which the so called ‘consent principle’ (a form of agreement in which every objection, provided that it is based on solid and weighty argumentation, is decisive, and therefor decisions are only made when consent arrises) forms the base of every decision, and in which there is no hierarchy whatsoever. The aim of this organisational structure is for the school to be able to adapt to the needs of the students, the parents, the teachers, society and even the industry. Furthermore, ‘the School’ is open 50 weeks a year, 5 days a week, from 08:00 until 18:00, in order to allow free planning of school weeks and holidays for every child (and parent). These personal schedules are made every 10 weeks in dialogue between child, teacher and parent(s). Furthermore, every 10 weeks all the teaching at the school is applied to a certain theme. Within these themes every subject as formulated in
the national requirements (kerndoelenboekje) is taught. The surprising aspect of the School is the fact that although the paradigm of year-classes is only rejected in the concept of the school. In practice, however, a distinction between age groups is still made in the form of 'onderbouw', 'middenbouw' and 'bovenbouw'.

‘Custom education’, ‘Adaptive Education’, ‘The New Learning’, all based upon the idea of enabling and guiding in stead of instructing ‘the Learner’. As Jan Masschelein & Maarten Simons formulate it:

“The learner is some-one who understands him or herself as someone who, based on his or her individual needs, makes calculated and sometimes risky choices with regard to investments (of time, money, activity) which can represent an added value (for example acquiring competencies) and therefore realise a growth in his or her own human capital. The learner is someone who adopts a rational economic, that is an entrepreneurial, attitude. Education then becomes a service, with learners as clients; the pedagogical relationship becomes a calculated, contractual service relationship, constantly evaluated as to its added value (quality).”

Although the idea of Masschelein & Simons seems to be based on the secondary school student, the ideology applies to every learner. A shift happens from “a progressive teacher with a clear (historical) mission and calling” to a “facilitating and stimulating, competent and proactive learning coach providing powerful learning environments as a professional service.”

Masschelein & Simons further explain the terminology of the ‘learning environment’ as follows:

“We wish to emphasise that these new words, and especially the word ‘environment’, which are part of contemporary (pedagogical) parlance, are not simply a fashionable phenomenon, but an expression of a new organisation and experience of time and space centred on the ‘here and now’: an environment sets here-and-now demands, offers here-and-now opportunities and resources. To conceive oneself in relation to an environment (learning or otherwise) and not to an institution (social or otherwise) means that there are merely fleeting, permanently changing circumstances, which call upon our capacity to respond and adapt, and not upon our capacity to follow principles or norms or to orient ourselves toward a future destination. In relation to a (network) environment, moreover, there is no experience of comprehensiveness, there are no clear boundaries. In a learning environment we are no longer localised (in a succession of classes); instead there is a permanent positioning in terms of profiles and connections in trajectories, in student tracking systems, and so forth. This is not a topical experience, but an experience of positioning as permanent motion.”

This concept of the learning environment can be recognized in all the before mentioned studied educational renewers, apart from the fact that in practice, the succession of the year-based groups is never completely rejected.
1.4 RESEARCH QUESTIONS

In the first stages of this project, research questions were formulated in an order that seemed apparent. However, in later stages it became clear that the answers to these questions did not come in the same order, if they could be separated at all. Some questions seemed to merge, while others became somewhat obsolete. Therefore, the formulated research questions will be placed in this chapter, but will not be answered in succession in the chapters to follow. The answers to these questions however, is intrinsically extant in this text and design.

In order to design a school it is evident that choices in terms of education and organization need to be made. Therefore the first question arises:

I. WHAT IS THE CURRICULUM AND HOW IS THE SCHOOL ORGANIZED?

The first research question in concerned with the educational paradigm on which the project will be based. Answering this question is the first step in the process of this project. This paradigm, as well as its spatial implications, needs to be placed in the broader context of the educational and architectural debate. This poses the second research question:

II. WHICH ROLE DOES THE SCHOOL, IN BOTH THE MEANING OF AN ORGANIZATION AND OF A BUILDING, HAVE IN THE LOCAL AND NATIONAL COMMUNITY?

Mark Dudek repeatedly gives examples in his book Architecture of Schools to underpin his statement that "there is no doubt that the psychical environment in general and in specific ways is deemed to have an effect on the success of the children both academically and socially." However, in his search for the discussion on school buildings throughout the last two ages, called ‘Van onderwijzen naar leren - studiehuis en schoolgebouw in discussie’, Jan Wagemakers found that although there has been a passionate and extensive discussion on the innovation of educational systems, there is little known about the reflection these systems have on the school building. This leads to the following question:

III. WHAT ARE THE SPATIAL IMPLICATIONS OF THE TRANSFORMATION OF THE SCHOOL BUILDING INTO A LEARNING ENVIRONMENT?
In order for schools to deviate from the national laws and guidelines in terms of curriculum, vacations, duration and distribution of school attendance etcetera, the school has to be labeled as conducting an experiment. The time granted for experimenting on educational systems is never unlimited. This raises the fourth challenge.

IV. A, OR MULTIPLE SCENARIOS HAVE TO BE CONSTITUTED, THAT ARE COMPRISED OF THE LIFECYCLE OF THE BUILDING; HOW LONG DOES THE EXPERIMENT TAKE AND WHAT HAPPENS AFTERWARDS (THE BUILDING’S CONTINUATION AS A SCHOOL, ITS REUSE, OR ITS DEATH).

V. SOLVING THE FOUR BEFORE MENTIONED PROBLEMS, SHOULD EVENTUALLY LEAD TO A THE BASE OF A ‘GOOD’ SCHOOL FOR TEXEL. THE CONTEXT OF THE ISLAND OF TEXEL AND ITS AMBITIONS, IDENTITY AND LIMITATIONS WILL BE TAKEN INTO ACCOUNT.

The main goal of this graduation plan can be formulated as following:

DESIGNING THE RIGHT BUILDING TO HOUSE A RENEWAL IN EDUCATION, TO BE APPLIED IN THE CONTEXT OF TEXEL.
2. THEORY AND DESIGN
2.1 THEORY AND DESIGN

In this chapter the design of the building for a new school and the theory that accompanies this building will be elaborated. Since architectural theory and architectural design are completely interwoven in the process of this project, it is nothing but logical to explain them simultaneously: the theory will explain the architecture and vice versa. The starting point for the theory and design will be the educational paradigm, by which the most suitable theory and design has been chosen.

In order to be able to design the building in the context of Texel, a location is needed; this will be discussed in chapter 2.2. To prevent indistinctness of terms chapter 2.3 will be dedicated to terminology and the way I use terms.
2.2 LOCATION

This project is a search for the optimal building to match a renewing educational system in the context of Texel. The most important part of this research/design project is finding a successful symbiosis of educational system and architecture. This project can be seen as an exploration of architectural form to match an educational paradigm. In this research/design there is no budget and there are no laws that limit it. For this reason, the choice of location can be viewed as somewhat unrealistic; for example the location is too big for a ‘normal’ school budget.

Being said that the choice of location is not the number one priority in this project, selecting a location that is somewhat realistic and does meet some important demands of a school (of this type) is momentous. Therefor, some demands have to be made for the location.

In a book called ‘Scholen voor het Noorderland - Strategieën voor krimpende dorpen en lege scholen’, a book by BNA in collaboration with Stichting Scholenbouwmeester Noord Nederland, a book about strategies for schools in the north of the Netherlands where there is a decline in population - something that Texel has to deal with as well - , some of these demands become apparent. It is stated that parents do not like to travel and prefer a school nearby. Furthermore, the school staff prefers to be able to talk to parents before the start of the classes, in stead of them sending their children by bus. Hence it is logical to locate the new school in a place that is nearby a large portion of the habitants of the island.

Taking into consideration that some of the schools that are under supervision might close in the near future, the location of these schools in combination with the unwillingness of the parents to move become an important factor in the search for a new location. Despite the preference not to send children by bus, I will also be taking the public transport into account. Then there is also the proximity of facilities for sports nearby that can become a factor.
Image 10: Texel with an overlay of commuting, schools under supervision and public transport. 1:100 000
The first decision is to locate the school in, or near Den Burg, as it is the most densely populated area of the island and has by far the most inhabitants, increasing the likelihood of parents registering their children at the new school.

Furthermore, the Jac P. Thijsseschool, the school that is the largest of those under supervision, plus the only school under strict supervision, is located in Den Burg and has 200 students registered. The second decision is based on the junctions of commuting streams and public transport. The intersection of the Pontweg and the Emmalaan has a high concentration of commuters and the highest amount of busses passing by. The proximity of the secondary school, the sports hall and the sports fields make building plots nearby highly suitable.

The old location of the secondary school, which has now been demolished, open up a great possibility for a new school to be built. Next to the sports hall, on the edge of the village, facilities are nearby and so are the options for transport.
Image 11: Part of Texel 1:50 000
Image 13: Satellite image of the area around the Emmalaan, with the old secondary school building still in place.
Image 14: Satellite image of Emmalaan 55.
The chosen building plot
2.3 TERMINOLOGY

Learning environment

Introduced by Masschelein & Simons:

A learning environment is an expressive term for all the surroundings both physical and non-physical, that one can be placed in. The expression of this term relates to being changeable instead of static (as are the ‘normal’ schools).

Masschelein & Simons:

“To conceive oneself in relation to an environment (learning or otherwise) and not to an institution (social or otherwise) means that there are merely fleeting, permanently changing circumstances, which call upon our capacity to respond and adapt, and not upon our capacity to follow principles or norms or to orient ourselves toward a future destination.”


Polyvalence
Introduced by Aldo van Eyck, Herman Hertzberger & Young-Ju Kim;

A term, when used in architecture, to indicate multi-interpretablility. If a space is polyvalent, it can have two different meanings (at the same time) for different individuals. A polyvalent space can take on different roles but the interpretation of these roles is guided through implicit provocations; its properties. A polyvalent space can be more suitable for some activities (in general) than for others.

See image XX

Aldo van Eyck:

“It is equally clear that neither neutrality, which is the inevitable result of flexibility (tolerable for all, just right for no-one), nor specificity which is the consequence of too much expression (just right - but for whom?), can yield an adequate solution. It is not somewhere between these two extremes of the lack commitment and too much self-assurance that the possibility of a solution lies, but quite aside from them: namely in a standpoint that everyone can relate to in his or her own way, a standpoint therefore that can take on a different - and hence divergent - meaning for each individual.

In order to be able to have different meanings each form must be interpretable in the sense that it must be capable of taking on different roles. And it can only take on those different roles if the different meanings are contained in the essence of the form, so that they are an implicit provocation rather that an explicit suggestion.

A form divested of meanings that are attached to it, while possessing plurality because each meaning can be derived from it, is reduced to its primary purpose. If we want to respond to the multiplicity in which society manifests itself we must liberate form from the shackles of coagulated meanings. We must continuously search for archetypical forms which, because they can be associated with multiple meanings, can not only absorb programme, but can also generate one. Form and program evoke one another.”

Herman Hertzberger:

“The only constructive approach to a situation that is subject to change is a form that starts out from this changefulness as a permanent - that is, essentially a static - given factor: a form which is polyvalent. In other words a form that can be put to different uses without having to undergo changes itself, so that minimal flexibility can still produce an optimal solution.”

Young-Ju Kim:

“flexibility by polyvalent form relies only on the vague anticipation of an architect with hoping user’s broad interpretations, which might be considered as no flexible space in a technical sense.”

A

B

Image 15: Polyvalence vs. Monofunctionality.

A: A place that has implicit properties that make it suitable for working with a view, but some might find it suitable for throwing a paper plane out of the window.

B: A place that suggests explicitly in form (and word in this case) that it is a place for working with a view.

A is a place that can be interpreted in different ways, however, it is more suitable for some activities than for other to most people. This is the example of polyvalence.

B is a place that contains explicit provocations for working with a view. It is mono-functional.
2.4 THE EDUCATIONAL PARADIGM

As a base for the renewed education for a new school on Texel the year-based classroom teaching paradigm, which still forms the standard, will be completely rejected. Therefore a clean slate from which to judge what might be right for education on Texel and in general is formed. From this point, derivatives of the educational systems studied will be adopted to form the new organizational structure and curriculum.

The first adaptation to be made is that students (or learners) are individuals that each have their own way of learning, as this is a theory that is fundamental throughout the spectrum of educational renewal. Therefore a customized curriculum per student could be considered optimal. A learner’s progress can no longer be tested in relation to a same-age group, but can only be tested in relation to the learners own goals; the school, when it adopts a classroom teaching paradigm can be seen as an institute, now takes a step to becoming a learning environment according to the definition of Masschelein & Simons.

“To experience oneself as moving within an environment means that individual learning needs (and non-standardised curricula) become normative. The individual is expected to take responsibility for meeting his or her own needs and to manage his or her own learning process. The learner is someone who understands him or herself as someone who, based on his or her individual needs, makes calculated and sometimes risky choices with regard to investments (of time, money, activity) which can represent an added value (for example acquiring competencies) and therefore realise a growth in his or her own human capital. The learner is someone who adopts a rational economic, that is an entrepreneurial, attitude. Education then becomes a service, with learners as clients; the pedagogical relationship becomes a calculated, contractual service relationship, constantly evaluated as to its added value (quality).”

Their call for a learner that manages his own learning process and makes calculated choices in relation to it might be somewhat optimistic when considering primary school students. In the example of De School in Zandvoort, Ploegman utilized a system in which student, parent and teacher made decisions on the learning process in consent. In a so called learning plan, which courses to take and at which level the upcoming ten weeks is determined. The progress of the student can then be monitored through an ICT system that gives “instant and permanent information about his or her position”. Providing the possibility for the learning, the parent and the teacher to respond appropriately “in their quest for resources and added value.”
Image 16: As the classroom teaching paradigm is rejected, a new organizational and spatial structure can be constituted.
Another adaptation of Ploegman is the ten-week-themes. Every ten week period is dedicated to one theme out of 20. All the courses and skills as stated in the ‘Kerndoelenboekje’ by the government, to formulate the goals to be reached for a primary school, are taught in relation to these themes. The themes will be as following:

- Art
- Middle Ages
- Humans
- Transport & Traffic
- Modern History
- Europe Clothing
- Golden Age
- Environment & Cycles
- Communication
- Building
- Afrika & Asia
- The Netherlands
- Prehistoric, Greek & Roman Ages
- Animals
- Plants
- Energy
- Texel
- Food
- America & Oceania

The school will be open 50 weeks per year, like Ploegman’s De School, offering students and parents the opportunity to plan their own holidays and even weeks. Apart from the two weeks the school is closed, students can plan their own schedule: they can choose to have no holiday at all during these 50 weeks and have less intensive weeks, or they can choose to have a three week holiday in April.

Since there now no longer is a hierarchy of classes, with teachers as their leaders, a new organizational structure needs to be constituted. All students are to be seen as equal individuals, as are the staff of the school, each carrying their own responsibilities. Decision-making on the scale of a learning plan for students is done, as mentioned, in consent between student, parent and teacher. For decision making on the larger scale, an adaptation of the sociocratic model used by Ploegman is adopted: a model in which every decision is made on the basis of consent, and only well-underpinned arguments are valid. If an argument is valid, and cannot be opposed, it should, in theory, be acted upon. This model contains no hierarchy and tries to ensure the possibility of participation for every member of the school - whether student, staff or parent.

For organisational purposes, like sociocratic meeting, groups have to be formed - a meeting consisting of 200 students plus the staff is impossible. Therefore heterogenic students groups
will be formed with a size of around 10 students, guided by one mentor. These groups send a representative to the student council. A parents council and a staff council is formed as well. These three councils each send two representatives to the school council, where the final decisions are made on any matter concerning the school an its future. Therefor trying to solve the problem of a the school as a static institute and gives it the possibility to adapt to changing circumstances.
As the paradigm of the school shifts more towards that of a learning environment, the spatial consequences immediately become apparent. By rejecting the classroom teaching paradigm in the educational sense, the spatial consequences - 8 classrooms ascending by age - are immediately rejected as well. Once again, a clean slate from which to form space that is optimal for the (ever changing) system it accommodates is the starting point. Masschelein & Simons stated that “a learning environment that no longer has classrooms, but learning places or learning bases – inside and outside the school building.” This statement poses the question what these learning places/bases look like and how they relate to other learning places/bases.

They go on to formulate spatial consequences:

“It is based on an enterprising (economic) self-understanding that many of the current expectations with regard to school architecture can be understood. Today, the ‘Nieuwste School’ (‘newest school’) in the Netherlands, the ‘School of the Future’ in Britain, as well as many school concepts in Belgium, aim primarily to be functional, to promote circulation, to be flexible (adaptable and movable). This is precisely how they are meant to be durable (usable for different kinds of users now and in the future): ‘the school in motion’. Schools and school buildings are meant to function as ‘clearinghouses’ that guarantee that every learner can get the basic resources necessary to develop and manage his or her human capital. Or they must become ‘broad schools’, a network of facilities and services based on local needs and circumstances, consequently existing not in one form but in many (‘learning school buildings’, the very durability of which lies in their permanent adaptability or change-ability).”

However, adaptability in Architecture carries within itself a contradiction because of the predictive nature of designing flexible architecture: what is seen as flexible now, may not be flexible tomorrow. And in fact, this is a contradiction that is apparent in all architecture. Most designs are out-dated when realized, since what we envision as being tomorrow, never becomes tomorrow.

Therefore, the focus in the design problem should not so much lie in elongating the lifespan of the building through flexibility, but rather accommodating the here and now and designing in a way that does not necessarily focus on the lifespan of the building, but rather on creating implicit qualities.

“The most important characteristic of a city is, perhaps, the continuous change inherent in an urban environment, which we experience as normal, everyday situation. The city is subject to constant change, the city has never complied and still does not comply with the rules of organic growth and functional evolution, according to which man has tried to give it form. Every day, every season, and in the long term, temporary and lasting, incidental and regular changes take place: people move from one house to another and buildings are altered, with the result that shifts occur in the foci of the web of relationships which in turn give rise to
other shifts in intensity. Thus each intervention in fact brings about change in the
significance of the other built forms to a greater or lesser extent.
In order that every citizen and everything of the city retain its identity at all times,
it is necessary for the situation to be complete in itself at every moment in time.
The process of change must constantly appear to us as a permanent situation,
that is why the changeability itself must come first and foremost as a constant
factor, which contributes to the significance of each individual form. In order to
withstand changes built forms must be made in such a way that they can both
absorb and exude multiple meanings, without, however, losing their identity in the
process.

Any uniform dwellings, therefore, must be in the same period of time, like any
places in the city in different periods of time, be capable of accommodating
alternate meanings.
This analogy makes it clear that place and time can be eliminated and substituted
by a single, focal point of departure, i.e. that meanings are capable of changing
their abode.
It is equally clear that neither neutrality, which is the inevitable result of flexibility
(tolerable for all, just right for no-one), nor specificity which is the consequence
of too much expression (just right - but for whom?), can yield an adequate
solution. It is not somewhere between these two extremes of the lack commitment
and too much self-assurance that the possibility of a solution lies, but quite aside
from them: namely in a standpoint that everyone can relate to in his or her own
way, a standpoint therefore that can take on a different - and hence divergent -
meaning for each individual.
In order to be able to have different meanings each form must be interpretable
in the sense that it must be capable of taking on different roles. And it can only
take on those different roles if the different meanings are contained in the essence
of the form, so that they are an implicit provocation rather than an explicit
suggestion.

A form divested of meanings that are attached to it, while possessing plurality
because each meaning can be derived from it, is reduced to its primary purpose.
If we want to respond to the multiplicity in which society manifests itself we must
liberate form from the shackles of coagulated meanings. We must continuously
search for archetypical forms which, because they can be associated with multiple
meanings, can not only absorb programme, but can also generate one.
Form and program evoke one another.”

Aldo van Eyck writes about polyvalence; in stead of designing
a space that is given a meaning that should apply to all, a
polyvalent space contains properties, such as its shape, its
relation to other spaces, its tectonics, that provoke different
individuals to interpret the space in the way they seem fit and
therefor give their own meaning to it. These properties and
how they eventually, in combination with accommodating new
education, form a suitable building and evoke a program, is the
subject of the next chapters.
Image 18: some of the spaces needed for the school

- **Office**
  - Small space with one window
- **Office**
  - Small space with one large window
- **Library**
  - Space with an open corner
- **Meeting/Instruction room**
  - Space with stairs and open corner
- **Meeting/Instruction room**
  - Space with a foldable wall
- **Playing/dancing room**
  - Space with large windows
- **Instruction/meeting room**
  - Large directional space
The consequence for the architect when designing a building, is that it is no longer possible to design ‘an office’ or ‘a classroom’, without at the same time excepting that people do not necessarily have to interpret these spaces as such. Nevertheless, it is rather impossible to design a building without having an idea of the activities that have to take place in it. Therefor, the approach for the start of the design is that an idea of which activities that have to take place in the building should be formed first, after which, this idea should fade somewhat to the background and spaces that accommodate the full spectrum of space that would be necessary to accommodate every possible meaning necessary for every student should be combined into a suitable building.
In the previous chapter, it is stated in a quote by van Eyck that form and program can evoke one another. I would like to add, that it is not only form can program that evoke one another, but spatial relations can also evoke a program (as well as many other properties of a space).

The involvement of Aldo van Eyck with the Great Gang made that he came to identify himself with the new consciousness, which was grounded on one fundamental idea: the idea of relativity.

"Relativity implies that the world cannot be regarded as having an inherent hierarchical structure, subjected to a privileged, absolute frame of reference or an intrinsic centre. All viewpoints are equivalent; every place is entitled to be regarded as a centre. But far from being a chaos of unrelated fragments this polycentric reality has a complex coherence in which things, though autonomous are linked through purely reciprocal relations: a coherence in which these relations are as important as the things themselves. Van Eyck would summarize this view using a telling statement by Mondriaan: 'The culture of the particular for is approaching its end. The culture of determined relations has begun.'"

In my design, there is no privileged, absolute frame of reference or an intrinsic center. In fact, the shapes are linked together by their reciprocal relations. There is a dependance between the form of the shape, and thus its intrinsic provocation, and the size of the relation, of the in-between, and therefor its intrinsic provocation. The connection between the shapes is more important than the shapes themselves; it is how the spaces (both the created and the space left) affect each other, enhance each other, that forms the core of the design.

As a result of the educational paradigm that is adopted to form the base of this design, individual students that have their own set of demands in terms of space need to be accommodated. For this reason, approximately the full spectrum of possibilities in terms of types of space needs to be provided.

Therefor, a composition of spatial relationships, that by the process of making and leaving space - in which the left space has an equal value as the created space, has to create the full spectrum of different types of space needed. The spectrum as used above contains different properties of spaces i.e.: seclusion, level of noise, relation to the outside, routing, floor level in relation to ground level, and so on.
Image 19: Most western part of the school building, Plan 1:100
The most western part of the building is as a whole 900mm under ground level. This part is the most secluded part of the building and contains the smallest spaces. A space with an area of 50 m² (Space A), parallel to the east-west axis and opening up to the north-west and a space of 65 m² (Space B) parallel to the north-south axis are positioned in a way that in between a small space, orientated westwards, but shaded by the wall to the south, is defined, or ‘left’ (Space I). The doors of the larger spaces are positioned in a way that shapes the character of this in-between space. The door to the 65m²-space is located away from this in-between space, and the door to the 50m²-space is located in a way that causes a path to separate this in-between space from the others.
Not only the orientation and relative sizes of determine the spatial relations. Routing plays a role of importance as well. The manner in which space B is reached affects the space in between space B and space D (space II); a reciprocal relationship is formed through movement. Space I is secluded through movement, Space II can only be reached by walking around the toilets and passing the entrance to space B, Space III is located adjacent to the routing and Space IV is visually related to space II, but no direct movement between the two is possible.
Image 20: Part of the school building; Plan 1:100
Image 21: Part of the school building; Axonometric 1:100
Difference in height of space and height of floors is utilized to enhance the effect of the spatial relations. Through a height difference between space II and IV, while retaining a visual relationship, a new kind of relation is formed. Through raising the floor level of space V, its relation to the routing and to the other spaces is altered. Both space D and space VI have been lowered to seclude them from the main routing. Furthermore, a sliding wall connects space D and VI in their possibility to be joined, creating yet another different kind of spatial relation and therefore a different possibility for interpretation.
Space VII, which is the entrance space to the building is lowered to enhance the experience of entering. One has to climb up some steps in order to take the next step into the building and therefore becomes more aware of entering. This also creates the possibility of interpreting the lower part as a space in which an audience can be located, while one of the sides that is higher can become a podium.
Image 22: Part of the school building; Plan 1:100
2.5.2 INSIDE - OUTSIDE

It is not only the reciprocal relations between spaces on the inside of the building that have been created, the relations of inside and outside space play a significant role in the realization of different qualities in different spaces. These relations, like the relations on the inside of the building are visual, routing, orientation and so on. How the school as a composition folds itself into the landscape of the plot is determined by the needs of the different types of spaces and the foreseen activities.

The schoolyard, designed on the same principle as the inside spaces, relates its activities to the inside spaces in the same that the inside spaces relate to one another. The bicycle storage sets out the lines that connect to the building, inside which the schoolyard lies.
Image 23: Solar orientation of different types of activities to be found in the school.
In determining the relations between spaces, both inside and outside, tectonics become decisive. To strengthen division and emphasize openings, a solid, rammed earth wall divides, while glazing in wooden frames connects spaces. The roof construction, built out of crossed beams provide a different distance between beams per space, together with the direction of the flooring adding to the intrinsic provocations of the space. Since the exterior walls are built out of rammed earth as well, an overhanging roof is needed to guard it from (most of) the rain. Furthermore, the outside walls contain a strip of ceramic tiles in the outer layer that emphasizes the horizontality of the school building, that can by its constant distance for a reference for height for the growing children as well.
Image 22: Partial axonometric drawing of the building including the roof beams 1:100
3. CONCLUSION
3.1 EVALUATION WITH EVA MONDEEL

In order to evaluate the design for a school for the new reality, the opinion of educational professionals, this that could use this space, might be the most important. Therefore, I returned to Texel and explained the design and theory to Eva Mondeel. What follows is a reproduction of the conversation that followed and in it, the evaluation.

B: If you were to evaluate this design and the theory used, what would be your judgement?

E: First of all, I think it is very interesting how the spatial relations are so important and how this plays a role in facilitating the learners. When I heard you talk about this, I immediately had to think of a project I have been working in recently, in which we, when looking for a way to deal with space, stumbled upon the written work of Aldo van Eyck as well and found it to be very fitting.

B: That is a very interesting coincidence, if it even is one.

E: I think, like you do, that the way we have been looking at education might be the cause of thinking about themes that he writes about. So in that way, I completely agree that the theory you used fits the educational paradigm.

B: So you agree with the theory, but how about the effect it has had on the design of the building?

E: I really like the look and feel of the design. I like the fact that there are differences in floor levels, that there is a large kitchen, a workshop-type space, that the in-between space is equally important and I like the schoolyard too. It makes me enthusiastic about continuing to think about space for new education. There are however some practicalities that I think lack somewhere. For instance: how are disabled people going to move around in this building?

B: You are completely right to ask that question. In fact, it is the rule that they should be able to that I have neglected during this design, in order to get closer to a theoretical optimum, an example or first exploration maybe, and accommodating this very specific special need could not overrule other factors that, for this project as an experiment, seemed more important.

E: Then there is the question of costs as well.

B: I have to say that you are very right again. This would most probably be a very expensive building. To be honest, during our studies we never really are confronted with costs of the buildings we design, something that in practice might become very important, so I actually wonder why we don’t have to think about these things as a standard.

E: Apart from those two factors, however, I am extremely enthusiastic about the design. I would even be interested in involving you in this way in the project we are working on.

B: That is great news, I am glad to hear so.
This project has tried to make one of the first steps towards rethinking the building needed for new education in general. It is therefore adding to the state of the art as a first, experimental step. This has meant that some practicalities, rules, have been overlooked. This is not a building that can, in this state be built. It lacks in some details and will most probably be too expensive, as well as the fact that it does not follow certain set rules. However, it is an exploration from which further research/design can learn.

Another, quite interesting conclusion, is the fact that the theory of Aldo van Eyck, now seems, through the interview with Eva Mondeel, a rather logical choice to adapt when rethinking architecture for schools.
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All other images are own production.
The graduation studio Texel Metabolized forms the base for this project. In the first stages of the research, a conclusion was made that Texel was dealing with serious problems in terms of educational quality. Together with a local teacher and educational renewer named Eva Mondeel, a curriculum and organizational structure for a new school for Texel was determined. This new formed educational paradigm focusses on the individual instead of the group; education is customized, classroom teaching no longer exists. Furthermore, the school, which before was a static institute, now transforms, through ever changing demands, into a more fleeting, changeable learning environment.

The spatial consequences to the rejection of the classroom teaching paradigm are that now, the classroom no longer forms the standard building block of a design for a school. A building for this new education needs to accommodate a full range of different preferences for learning for different individuals, while being able to be usable without having to adapt itself. This can be done through polyvalence: in stead of designing a space that is given a meaning that should apply to all, a polyvalent space contains properties, such as its shape, its relation to other spaces, its tectonics, that provoke different individuals to interpret the space in the way they seem fit and therefor give their own meaning to it.

As a result, space is made and left, creating reciprocal relations between these spaces, which determine the character, and therefor the way these spaces can be given meaning by the individuals using them. These relations are enhanced through different properties of space: the shapes, orientation, the routing, the inside-outside relation, the tectonics and so on.

After the completion of the design and evaluation by Eva Mondeel was done. This evaluation was positive in general, but it was stated that there are practicalities that are not fully dealt with in this design. Therefor, it can be concluded that this project is a step in experimenting with new designs for new education from which can be learned, but is not directly applicable.