Play-scapes in Karlskrona City

- Guidelines for better playground design and playing experience

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Abstract

Designing a playground that attracts the child for a long time can be challenging. Studies have found that the best way is to encounter nature with the playing equipment. Natural playgrounds are not only more interesting for the child, but they are also more beneficial for their well-being alongside with incorporating the eco-system in a positive way. Design guidelines were developed based on a study of literature reviews and theoretical work, as well as doing a case study in the city of Karlskrona and a site analysis for the chosen site. Many documents from the municipality were studied and analyzed. The results indicates that there are several techniques and guidelines which have to be implemented in order to achieve the main goal of the paper and to be able to turn the disadvantages into advantages, which should be implemented more carefully by the municipality. Children's preferences are discussed as a way of making a better understanding and a better planning for the future playgrounds.
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Author

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Outdoor play and engagement with nature and the environment is of great importance to the child’s wellbeing on all of the aspects. The child is the builder, doctor, teacher and worker of tomorrow. They must gain enough confidence, imagination, creativity and strength to be able to become a producer not just a consumer. The child must develop the ability to think and act, to evaluate and decide, and to certainly be able to take a risk after measuring the consequences, whether in the current times or when they grow up. This should be apparent in the design of the play spaces that the child experience. Playgrounds and nature should be brought together in harmony in a way to form some sort of a connection that the child can feel of and sense. The playground should utilize the five senses of a child; it should make them think, feel, wonder, touch, smell, and hear. And because the child will be bored and dispatched if not interested, playground should also be able to draw the child into visiting it more often than not, and that can only happen if the playground is continuously interesting. And while this sound natural and positively enthusiastic, there has been a noticeably declination in playgrounds, and people are becoming more risk attentive, which can be the reason of being afraid of, or as it is called the “culture of fear” which is a term that means that the families and parents in particular have grown a fear for their children over years. This fear includes fear of dangerous play and fear of strangers which includes within it fear of abduction and/or murder. Yet, ironically, children are today safer than ever (Tovey, 2007).
**Research Question**

The purpose of this paper is to develop an understanding of the effect of outdoor playing experience on children, in an attempt to answer the following question:

- How to design an interesting playground that encounters the nature?

It is of a great importance to understand the influence of a quality time spent in the outdoors whether playing or learning from the nature on the children, and also the interaction with other children of similar ages outside the school or kindergarten boundaries. But it is also essential to escape the old traditional image of playground that consists mainly of the playing equipment such as the swings and the slides.

The literature review shows various concerns and studies done in this field, however it didn't show enough of a link between theory and practice. Since this issue falls under many disciplines, such as social science, psychology and urban planning, there is a disconnection between the design of the playgrounds and actual preferences and needs of the children.

The thesis paper consists mainly of two parts; the first part is the literature review and theoretical work, the second part is the case study, site analysis and the design proposal.

First of all, the Literature review is very much the stepping stone that is going to set some criteria that helps with the case study. It will provide an insight on how the design of playground should look like theoretically, and how to make the playground interesting for children. It will also help explore the different ways to make a natural playground a possibility. The literature review is more of a look on the theory of designing an interesting playground that is going to be translated into practicality when dealing with the case study and site analysis. Secondly, the literature review combined with the case study of Hoglands park and playground, will be used to analyze the chosen site for proposing a development and a design, they will also help with defining the positive aspects of the site, the negative aspects and the problems of the site. Finally, the results from the analysis of the site will develop guidelines that will be transformed into a design proposal for the chosen site. The guidelines will attempt to ensure that the design proposal meets the requirements of the thesis paper.
Motivation for the research


Attachment to the environment is not new, it has been known since the ancient times. Especially among children whom playing and discovering is a part of their nature. For example, in the countryside or villages, or the less fortunate children, of some whom technology is not a huge part of their lives yet, it is noticeable that their tendency to engage with the outdoors is more likely to happen. Engaging with the outdoor environment does not only happen with designed areas, it happens in the streets and roads, in those old rock racks and that pile of sand. In my early childhood, playing outdoors with the environment was a major part of my daily routine; it had a big influence on developing my social and cognitive abilities and in forming my personality.

Playgrounds form an important piece in the puzzle of the outdoor playing experience, as well as in the society and the healthy development of a child (Muñoz, 2009). However, there seem to be a missing link between this fact and the sole-existence of high quality playgrounds. This paper is therefore an attempt to work on a problematic site in Tullparken, in Karlskrona municipality, to propose a development and a plan of a new playground that gives a distinguished identity to the almost abandoned site and brings it to life by designing a playground that involves nature.

Aims and goals

The main goal of this paper is that through literature review and case study, the following can be achieved:

- Develop design guidelines that ensure an interesting playing experience for children.

Other goals of the theory and literature review:

- Understanding the safety standards versus risk taking opportunity.
- Understanding the health and social benefits of outdoor playing experience alongside with the benefits on the eco-system.
- Understanding the reason behind the declination of playgrounds in Sweden.
Limitations:

Due to the limited time conducted for this paper, there was only limited data to rely on. There was no enough time to interview and/or observe children while they are in the playgrounds in Karlskrona for intensive and long period of times. Hence, the most of this paper has relied on the literature studies and existing research papers done in this field, as well as documents provided by the experts from Karlskrona Municipality.

Another limitation was that most of the documents related to the Swedish context were in the Swedish language, one that the author does not have the enough knowledge for.
2 Strategies and Methods

In the following is an explanation of the strategies and used methods in this paper in order to respond to the main issue discussed by it. It mainly consists of a set of criteria derived from the literature review, as well as a case study for a site in the city being studied.

At the beginning, a literature review takes place; it will set the way in order to study the Hoglands Park and its playground case by developing a set of criteria to help with this mission.

Afterwards, a site analysis for the selected site will occur. The analysis of the selected site is based on observation as a method. It will touch the naturally occurring setting in Tullparken and will study how further improvements can be done in the site as well as attempting to answer the main research question to reach a satisfactory playground design that benefits from the nature, this can be done by carrying out a comprehensive case study of an existing and a popular park and playground in Karlskrona city, which is Hoglands park and its Oakleaf playground. The analysis of the selected site will involve a site observation alongside with a set of criteria that are derived from the study of the existing playground. The Hoglands park will be studied and possibly criticized where relevant in the purpose of gaining the most interesting elements that affect the design of the new playground. The two sites will be studied subsequently starting with Hoglands park.

The results of the analysis will be presented in the form of a design proposal that contains the elements answering the main question of this paper as well as interpreting the guidelines that are developed throughout the paper starting from the literature review and continuing through the case study. The main source of data is the naturally occurring actions and interactions between people and the setting, which is in this case the park and playground.

The method that is close enough to cover the largest part of the qualitative approach is the document analysis. (Denscombe, 2010). The method is used to analyze the documents provided by Karlskrona municipality inventory and personal connections regarding the selected site, and to gain enough information about different matters regarding for example the soil condition, water\sea level and the rain collection problems.
Case Study

The strong element in case study approach, is that it utilizes more than one method and a variety of resources in order to achieve a more in-depth understanding in less time which makes it more efficient than other approaches in terms of time verses efficiency. It corporates observations from the site or case being studied alongside with a study of multiple documents collected from different sources such as formal or official gatherings, informal meetings with people in charge or involved, and municipal work. The case study approach uses whatever needed to obtain the maximum of the investigation being done. The case study approach is in line with qualitative approach more than quantitative one. The case study is in most of it benefiting from the literature review. One of the most important factors for choosing case study is that it gives a very good idea of what happens in a real life situation, in easier words, it gives the opportunity to study relationships and processes in a certain specific setting. (Denscombe, 2010).

The site chosen for conducting this paper is Karlskrona city. The reason behind choosing a playground specifically in the locality of Karlskrona; because it is one of the cities in Sweden that is growing in number of population estimated by 35,212 inhabitants in 2010 (city population), especially from the growing numbers of immigrants. This by default means increasing in the number of children that might use the outdoor open spaces. On one hand, there are a lot of potential outdoor activities that can be found in Karlskrona, but on the other hand, they can be developed and enhanced furthermore to meet the actual needs and preferences of children.

Another major reason for choosing Karlskrona city, is that it is the home town for the university of which this paper is written for. It is more reasonable in terms of the limited time given for this work to be done as well as to make it easier and more convenient for the observation made.

The paper particularly treats the issue of a natural playground design in a problematic site as discussed in the Tullparken part. Using the guidelines derived from both the literature review and the case study that helps highly in understanding how playgrounds are treated in the city of Karlskrona by studying a relatively new and modern playground.

Location and boundaries of the case study is based on certain factors, which are the age and the design of the playground. It also has to be an existing playground in order to be able to understand how the municipality plans and executes playgrounds in the city of Karlskrona. Another major factor is the condition of the
site. The playground has to be in a challenging or problematic site to be able to realize to what extent the playground was integrated in the natural challenging surrounding (Denscombe, 2010).

Location and boundaries of the site chosen to propose a design for was based on the study of the work done by Karlskrona Kommun in order to define the areas in the city that are qualified and in need for developments and possibly new playgrounds (Denscombe, 2010).

The case study of Hoglands park is based on known attributes, the park is chosen specifically from different other parks as it has a distinctive identity that is believed to be very important in the process of understanding and designing a new playground in Karlskrona, and to derive certain guidelines based on the findings. It combines between a discovery led approach and a theory led approach. While it relies on the literature review to investigate the key terms, it also explores the main issues affecting the site being studied. The case study generally calls the researcher to pick what they think most suitable for their work from what might be hundreds or thousands of setting for the sole purpose of studying the situation being handled. (Denscombe, 2010).

**Observation and site analysis**

Observation as a method gives the opportunity for the researcher to not only listens to what people say they do or act, but to actually observe them while they do it. Observation method divides into two kinds. One is the systematic observation that is related to quantitative approach. The other is participant observation that is related to qualitative approach where the researcher does a more cultural observation than just collecting data. In this paper, the observation took place in a natural setting where whether or not the observer is in place, the situation takes place anyhow. In this study, people in the setting are not aware of the observer observing and the situation was occurring without interruption. However, the observer is taking place, sometimes even participating in the study being done. The participation is in the normal setting to avoid any ethical problems. The observation schedule and checklist are mainly based on the literature review. And the methods of recording are by taking notes along with voice records of notes and pictures of the site while avoiding taking pictures of people without their permission. This method is found to be the most suitable for both the case study strategy and the site analysis and results (Denscombe, 2010).
In the following chapter, some headings related to the main topic are being discussed. The headings were chosen based on the need of the research paper. The literature review is the first step for a better understanding of different social and design-related matters that influence the design guidelines and proposal of a new playground, which answers the research question. It has a direct influence on the case study, site selection and the site analysis. The majority of the criteria for the case study are developed based on the findings from the literature review.

**The term ‘play’ and ‘outdoor play’**

Since the ancient times, it was found that playing is a major part in every child’s life; hence, many philosophies were concerned in the childhood education (Hestenes, 2009). Play is to escape reality as Hoflin (1998) argues; it is to be able to dive in a world that only the child knows about it. Play has no limits, and it certainly does not contain a list of dos and don’ts at least not for a child, Play is a zone where no serious harm should be able to occur (Apter, 1991). However, as the child grows, admission in preschool and then primary school in most cases means that the life of this child is being increasingly under control by a second party, in this case the adult. The child’s leisure time is being filled with what is describes as a ‘controlled play’ which is a play that is under close supervision by an adult. Such as in sport clubs, after-school activities or other forms of just extra burdens. Not to mention the irony that happens in many parts of the world, that a ‘chicken’ has to be exposed to nature and at least 4sq meter of green space necessary for its wellbeing, while a child might not see the green or the natural light for most of his or her life! (Tovey, 2007).

Bartlett (1999) argues that children prefer to be free, they enjoy spontaneous play, and they enjoy it especially in places such as the streets and the hidden alleyways. Children perceive the world differently from the adults, they see opportunities to play wherever possible and in places where they can escape the direct control of the adults. However, playing opportunities such as streets and buildings sides shouldn’t be attended by children without their parents or school staff, as there might be some dangers. And there came the need for more organized playing experience that can give the same amount of entertainment for children without risking any serious injuries or dangers.
Playgrounds as form of outdoor play.
The most recent form of outdoor establishment is the playgrounds; they are the contemporary face of bordered playing environment. Sometimes seen in housing complexes of several apartment buildings or villas, surrounded in a certain way a form of courtyard that contains a small playground. They can also be found in kindergartens and preschools. They are very important in the continuous try to merge children and connect them with the environment (Solomon, 2005). Tovey (2007) has argued in her book that play is not just restricted to playgrounds, play can also happen in the residential streets, where a child can discover secret allies. But this kind of play has to a certain extent disappeared from the urban establishment nowadays because those activities are not classified as safe for young people and specifically children for daily play use, as they are rarely seen in the residential streets, that’s where some initiatives come from, such as the one of ‘home zones’ that aims to design residential streets accessible to every member of the society including children.

Playgrounds are often categorized under three main headings, the traditional, the contemporary and the adventure playgrounds. The traditional ones are mainly the playgrounds that solely consist of playing equipment such as swings, slides, climbing rods or frames). The contemporary playground is the playground that has more though in the material and the design. The adventure playground is the one that gives the opportunity to the child to create his or her own play space (Jansson, 2010).

Merging Nature with Playgrounds
According to a study done by Dyment and Bell (2008), playing becomes more homogenous when the playing experience is cooperative rather than competitive. This can be achieved by incorporating the nature in the design of the playgrounds. In one hand, this can be done by simply adding vegetation in the playing area, or even having the children plant their own set of vegetation if possible. On the other hand, there will be diversity in the playing opportunity, offering activities that is suitable for different ages, physical abilities and skills. The diversity in the natural environment, when brought to the playgrounds can create endless playing possibilities and opportunities. Diversity occurs very much alongside with nature. The playing equipment does not offer all the wilderness and creativity that a child needs, and only nature can do so (Dyment & Bell, 2008).
Stephan Kellert, Professor of Social Ecology and Co-Director of the Hixon Center for Urban Ecology at the Yale University School of Forestry and Environmental Studies. Wrote in his book about the human-nature connection that the human being’s wellbeing is directly influenced by the amount and quality time spent interacting and connecting with nature and natural processes. One that is affected and tensed by the contemporary urban atmosphere. In his chapter “Nature and childhood development”, he attempts to answer certain questions in order to understand the unique relationship and the influence of nature on the children behaviors. Kellert (2005, 65) explains that “Children's experience of nature involves three kinds of contact: direct, indirect, and vicarious (or symbolic) experience.” Direct contact means the physical experience of the natural processes, which can happen anywhere as long as there is no human interference of that place. It can be as big as a forest or as small as a backyard. Such interaction happens when a child tries to climb a tree or rocks racks or even gets wet in a fresh rain pot or mud. By contrast, the indirect contact with nature that a child experiences can be in places such as zoos, parks or botanical gardens. This contact happens when there is a highly structured area that adapts the natural features within. This kind of establishment gives the opportunity to the child to feel the “wildness” of nature in a more controlled organized and planned manner. The vicarious or symbolic way of contact with nature is simply using the symbols of nature without actually dealing with any natural and living organisms. It can be featured in the teddy bears, Micky Mouse and Winnie the Pooh. The electronic media such as television and video games is a consequence of the vicarious experience (Kellert, 2005).

In his book, Kellert (2005) also links the previous forms of contact with nature to three childhood development types. The cognitive, the emotional and the moral development are his three main categories in which he tries to explain the influence on each one of them in an experimental way as he proposes stages for that experience. To conclude his study and experience it is safe to say that the findings are in the favor of the nature and the natural interaction. Kellert concludes that encountering nature during childhood has many benefits on the child development such as giving them, the opportunity to learn how to engender curiosity and passion, as well as facing stimulating opportunities to embrace essential abilities such as imagination, wonder and joy. Contacting with nature also gives them a deep emotional experience and enduring significance.
In conclusion, encountering and interacting with nature and natural elements is of great importance in many aspects in a child’s development. This is one of the reasons that make merging nature with playgrounds highly essential to be able to make the playing experience beneficial in all the physical, mental, emotional and social aspects.

**Resilience in urban ecosystems**

Connecting with nature does not only occur for the benefit of the human beings themselves, it can also take place for the benefit of the environment as well. The elasticity and resilience in the natural environment is phenomenal and it has to be taken into consideration when designing, whether a huge building or just a small playground. In the urban areas and throughout the rapid land use transformation, habitat degradation, fragmentation and loss can be observed subsequently with the loss of the ecosystem services (Colding, 2007). A city is rich with the values that contribute to the ecosystem services and has to be acknowledged. In the urban green spaces, it can be found that land uses such as public and private gardens, brown fields, cemeteries and others, can be of a big use for the urban landscape that provides the ecosystem services.

The human activities alongside with the ecological processes interact in a complex manner that generates the biodiversity and the ecological systems. And as a human being and a planner, thinking about the nature should be a priority when designing a park or a playground. The nature’s tendency for going back to its original shape can contribute significantly in utilizing a negative aspect into a positive one (Colding et al, 2014).

Over the years, there have been many studies on how to make use of the rainwater as a form of preserving the ecosystem, and several rainwater harvesting techniques were created. Such techniques when implementing on a site can transform a negative point to a positive one that is both useful for the user and the environment in a sustainable way. In the book “Designing Rainwater Harvesting Systems: Integrating Rainwater into Building Systems” by Novak et al (2014), they explain the importance of rainwater as considered on the top of the water sources cycle. The book investigates the importance of rainwater collection and harvesting in many ecosystems such as botanical gardens and national monuments that aims to make use of all the water. It also illustrates examples from around the world how this system is being used and utilized and the benefits of it. The major part of the book, however, talks about integrating the harvesting system in the
buildings, which is much harder than integrating it in an open land as the book states. Rainwater harvesting has many positive qualities, it can be used as a way to reduce storm-water runoff by implementing the rainwater gardens, it can be also used for cooling\heating systems and as a water resource in general. From another perspective, the harvesting system can be used if designed well an aesthetically pleasant experience for a certain place.

Another key aspect to take into consideration is the expected rise in the sea level. While there has been a lot of attention and studies to this matter, only very few studies have discussed ways to integrate the rise in the sea level in the urban planning and the everyday life. Natural fluctuation in the sea level has a significant impact on the low lands, for example the wetlands. (Karamperidou et al, 2013). In this field of study, several books can be found to help understand, adapt and design in respect to this occurring issue. In Karlskrona for example, according to the Karlskrona Kommun (2008), a rise of 2 meters is expected to happen, that will cause in the flood of many lands especially the ones closer to the sea. For that matter, severe measures have to be taken into consideration to adapt to this issue that is a natural consequence for the climate change.
**Health and Activity level**

A good outdoor experience leads to a good health. While children nowadays spend large portion of their leisure time in the virtual world, leading to less physical activities and in most of the cases less cognitive and mental activities as well, because the interaction is of a one side only, like spending a lot of time watching television or playing video games. While, it might give them an opportunity to investigate endlessly the virtual world, it gives them the very least of the real world. Technology is a two-dimensional experience, lacking other types of sense using such as the smell and the taste. Relatively, obesity has become one of the most common diseases especially among kids, as showed by a statistic held by the Department of Health points that around 30 per cent of children from age two to ten were found as obese in 2006. While obesity has different factors and causes, it can be concluded that lack of outdoor play is definitely one of those causes.

High activity level and moving around is one of the most important factors in the child’s wellbeing, and while some try to convey that exercise session in nurseries can be of a help, they are forgetting the most important fact, that children also do need fresh air from time to time (Tovey, 2007). According to Robert Wood Johnson Foundation, that the lack of activity highly influences the health of the children and contributes to the occurrence of obesity among them. Children who live in neighborhoods with walk-able distances for some if not most of the facilities, and have parks or playgrounds, tend to be in better physical shape.

Similarly, outdoor play can be used as a therapy or a treatment for children that suffer from some sorts of traumas or family issues; it helps generally with children that have high stress problems. Bartlet (1999) suggests that some outdoor places can form possibilities for this play therapy theory.

**Social and Multicultural Interaction**

Karlskrona is a city of an intercultural society that has a wide range of ethnicities and religions. And from that point, a discussion and controversy arise creating different emotions that in sometimes can be subjective, in which an intercultural dialogue is needed to understand the needs of the others, in order to help communicating, cooperating and building a better structure for a better society (Brie et al, 2013). Urban diversity is becoming more and more controversial; it is not only about rights and models of living.
On one hand, urban diversity is essential in terms of providing more opportunities for a better understanding, communication and creativity. But on the other hand, some people see that it affects the cohesion of the city by causing fear and danger to the society (Koutrolikou, 2011). The urban diversity emerges in the biggest part from the migration phenomena, and to be able to handle this diversity a form of respect has to be implemented. The term respect is directly connected to actions that are promoted in the liberal society related to migrants (Moulin-Doos, 2013). In the public spaces, such term as urban diversity and multiculturism can be vividly seen and recognized. The public spaces are spatial locations where people from different colors, religions and ethnicities can meet in a daily pace. They interact and encounter each other, and hopefully they can learn about each other’s cultures, while adapting to each other and feeling the belonging to one space and land (Galanakis, 2013). Similarly, people often accompany their children to the public parks or playgrounds, and while some might play with their children, the others feel the need to occupy their times with different activities. In a city like Karlskrona, it will not be that hard to run into a person that is completely different yet they live in the same place and breathe the same air. Children meet other children from other cultures in playgrounds and so do adults when they decide to leave technology such as mobile phones and Social Medias aside and enjoy a small talk with another adult in the same park or playground. And within multiculturism that is found on the very place such as a playground, people will start to understand, respect and be conducive of the differences of the others (Galanakis, 2013).

In conclusions, public playgrounds as a form of public spaces has a definite influence on people’s behaviors from all different ages whether the children or the adults. It gives the opportunity for a person to get to know other people from other cultures that might and in many cases live with them. It opens the door for a wider dialogue about respecting the different other that forms a part of the society despite their significant difference. This adds another importance for the establishment of a well-designed and a safe playground that gives such opportunity for parents and adults to stop worrying about their children and start having fun of their own in such play spaces.
Safety challenges and risk taking

For the children’s physical, emotional, social and cognitive development, outdoor play is a very important factor (Clements, 2004). It is also important for the sake of giving the opportunity to the children to learn how to evaluate a certain risk, take it or leave it, and decide upon that. However, despite the acknowledgment that outdoor play and risk taking and management is important, there has been a noticeable declination in opportunities and facilities of free play over the years (Waller, 2006). Parental safety concerns can be one of the reasons to why this reduction is ongoing, as it has generated bigger restrictions on the independency of children activities and growing of the adult controlled and managed play spaces (Waller, 2006). From this point on, it is believed that risk taking is opposite to safety, and that risk and safe cannot co-exist. However, it is also believed that risk taking and management is an important part of the playing experience, there has to be a defined fine line between risk and danger. And so is to provide a play space or a playground with the opportunity to make healthy risk decision without facing actual dangers.

A research study done by Sandseter (2009) in Norwegian pre-schools. She conducted an observation on a group of children age 3 to 5 years old, and she found that risky play can be subdivided into six categories which are: height, speed, and rough play, dangerous equipment that can result in injuries, possibility of falling by misusing dangerous physical elements, and the possibility of child disappearing or getting lost. It was obvious that children seek thrill and excitement, although it might mean danger and fear of getting injured (Sandseter, 2007). In many cases, children show the full awareness of their own abilities. They prefer areas where they can use their bikes, or play swings, or other equipment that give them the feeling of being ‘out of control’ (Stephenson, 2003). Stephenson (2003) also claims that risk taking is a part of children’s natural instincts, and a very influential skill of life, as it enables them to handle risks more effectively and develop their confidence and self-esteem. The studies done in this matter and their findings are globally observed, but risky play is still argued upon from a social perspective to whether it is acceptable or not (Tovey, 2007).

Some standards were set to increase real safety of play as early as 1976 by the Consumer Product Safety Commission (CPSC) under the report Proposed Safety Standards for playground Equipment. Later on revised and corrected
by the National Bureau of Standards, in which afterwards published as Handbook for playground Safety in 1981 (Minor, 1991). However, the more restrictions were put on the children’s perceiving of play, the riskier it became, because of the children trying to escape by their nature from the grasp of adult. As a result, a new standard was introduced, which is increasing the playability among children that might decrease the risk of danger in the play spaces (Striniste & Moore, 1989). Other key features to increase safety can be in providing: careful supervision, well defined zoning and boundaries, as well as secured access to the play areas.

Interestingly, Bartlet (1999) argues that dangers on the children not only occur because of the faulty engineering of the equipment, they also occur because the children make use of whatever comes on their minds and whatever tools they can reach to. In other words, children want to play, and they do so almost everywhere possible, in places to their understanding might be more interesting than a boring playground, such as streets, abandoned lots and corners.

The Royal Society for the Prevention of Accidents (RoSPA), the well-known and biggest association that concerns about safety measures, follows what is known to be ‘as safe as necessary NOT as safe as possible’ (RoSPA, nd). This means that it is not to eliminate the accidents as it is nearly impossible to do that, but it is to reduce the injuries rates and avoid any dangers from occurring by the well considerate designs of the play spaces.

The European Committee for Standardization has set rules and standards for the playing equipment to prevent any possible major injuries caused by faulty engineering. The rules are based on many research studies done in this matter over the years. They try to maintain the fun while reducing the danger. And while it might sound like it will restrict the possibilities for a challenging play, they claim that it will only challenge the designers in producing exciting playground equipment, fun and enticing but without the dangers. The standards cover almost everything from the falling distance (the height of the equipment) through the chains of the tools and to the very foundations of the playground.

Risk within safety issues is being recognized and discussed even within the Committee, as it perceives risk as a fundamental aspect of the playing experience, yet in the Committee they try to reduce serious accidents to the minimum, in the version of 2008, they say "some degree of risk may be of
benefit because it satisfies a basic human need and gives children the chance to learn about risk and consequences in a controlled environment.” (European Committee for Standardization, 2008). They also focus on the idea that learning might require some of sort of minor accidents such as bumps and bruises, but the aim of the standards is to eliminate any disabling or fatal accidents.

**Swedish planning of playgrounds**

The standard thinking in the Swedish context and the playground planning process have the characteristics of being rational and of a large scale approach. Standards that formed what can be named as ‘a national strategy for playing provision’. During the time when the “million homes programme” in the 1960s and 1970s, the numbers of houses increased noticeably. The standards that were implemented had an influence on these housing areas alongside with other public spaces (Jansson, 2009). The Swedish standards of playgrounds highly influenced the planning, in terms of size, locations, context and content. Some of the earlier studies done in the Swedish context showed a number of favorable rules or standards, in which the distance for example was specified, for different ages as well as different type of playground. For example, for the 100-200sqm playground for the younger children, distance should be no more than 50m, while for bigger playgrounds it can be up to 150m. Many playgrounds in Sweden can still be defined as ‘big or small’ (Jansson & Persson, 2010). In this sense, it is safe to say that the standards are regulated because it is believed that first of all, children need places to express themselves in order to have more confidence and self-development, and also to prevent them from some other less preferred places and that’s when playgrounds were initiated. However, the child or the parents have had very low to non-existent influence on the regulations and standards. Standard might need renovations and re-evaluations; they must be more attentive to the need of the user (Jansson & Persson, 2010). It can be expected that over the years and currently, there is a declination in the child’s freedom, independency and mobility (Tovey, 2007).

In the past years, and due to the low budget spent on play spaces, alongside with the huge number of equipment safety regulations and almost very little Swedish planning standards has led to the obvious reduction in the number of new playgrounds, leaving the old playgrounds highly demanded hence less useful due to the wear and tear of the equipment (Jansson & Ramberg, 2012). Delshammar (2005) argues that on one hand a high percentage of
playgrounds maintenance is the responsibility of the neighborhood inhabitants or more specifically the parents, which is a consequence of the low budget spent, while on the other hand the low in budget had the playgrounds being placed in areas with certain numbers of people to serve this issue. However, there has been a development in the strategic documents of playgrounds in many cities and municipalities all around Sweden, the new strategies are claimed to be more open for the user’s needs and preferences. Those strategies might be the way to introduce new play spaces and enhance the provision of playgrounds (Jansson & Ramberg, 2012).

In a study done by Marit Jansson (2010) on two Swedish towns Glumslov and Degeberga, in a comparative design in an attempt to understand the role of attractiveness of a playground in the visiting patterns and user interest and preference. In both selected cities, playgrounds were municipal and of the traditional type without staff or workers. Glumslov has 12 playgrounds of which five them are relatively big in size and one of the medium size. Most of the playground did not have much of playing equipment. Degeberga on the other hand has ten playgrounds of which eight of them can be described as medium sized playgrounds with old and rust equipment. Jansson has conducted interviews and questionnaires on the children of the two cities schools. The interviews and questionnaires were to relate the visiting patterns to the user interest and preferences, her findings are very interesting. She found that the most visited playgrounds and the most interesting are actually different from each other. The responses for the most interesting playgrounds from the children were more appreciative for the playgrounds’ content of equipment. The most interesting playgrounds in both cities were the playgrounds where there are features that do not exist in other playgrounds. However, the most visited playgrounds seemed to have the equipment content as an aspect of less importance, where actually the distance was the main reason as the geographical context being near to housing or schools was in the most favor of their success. Marit concludes that if new criteria are derived based on the analysis of the most visited and the most interesting, and implemented in such a way that ensures conditions more unique and child friendly, there will be less need for checklists of play spaces qualities.
The conclusion

The literature review gives a wide idea on different aspects related to the theme and scope of the paper. It helps to understand the importance of outdoor playing experience for the children, especially to get closer to the nature and for the health and well-being of the children. It also helps to explore the different types and versions of outdoor playing spaces and decide on what fits better for the conducted research alongside with the resilience of the eco-system which is essential in exploring and understanding how to benefit the nature not only the children. It discusses many other aspects such as safety challenges and risk taking alongside with social and multicultural interaction. It also looks upon the reason behind the declination of the number of playgrounds in the Swedish context.

At the end of the literature review, some points can be summarized that will be used later to form criteria for the case study and site analysis.

- Children perceive the world differently; what is interesting for the adults is not necessarily interesting for the children.
- Children enjoy freedom, spontaneous play and nature.
- Natural elements are a key aspect in an interesting design of a playground.
- Natural play helps developing the child in many different ways; cognitive, emotional and moral development.
- Playing experience increases the activity levels of the children; and that improves the life style and the health scheme of them.
- Taking the urban ecosystem into consideration is important in the design of an interesting playground.
- Challenges of the site add to the value of the design proposal, they have to be resolved rather than left neglected.
- Playgrounds and public spaces have a major influence of the behavior of children and adults. It provides the opportunity to meet new and possibly different people and races.
- Safety is important in the design of playing equipment, but so is risk. Safety and risk taking can and should co-exist in the playing experience. This can be achieved through natural playgrounds.
• Playgrounds in some cities of Sweden are decreasing in number. This can be the result of the poor financing for this matter.
• New strategies must be implemented in the Swedish context of playground designing in order to ensure an interesting and pleasant playing experience for the children.
Criteria of the Case study

Based on the theoretical work and the literature review, it can be concluded that there is a huge importance and a big influence of outdoor playing environment on the child’s health, well-being and other skills and abilities. And to be able to observe on a smaller scale, the focus was on the playgrounds as a form of outdoor playing space. Playgrounds can vary in context and content, from a dull playground that has only few pieces of equipment, to a very rich playing experience that utilizes all the senses and abilities of a child. The later form of playground does not necessarily mean that it has to be a big and fancy amusement park; it just means that a playground involves the nature and the natural elements in the best interest and preference of a child. The case study will provide the opportunity to look at one of the current and most visited playgrounds in Karlskrona city. It will also help analyzing the selected site later and set guidelines for the design proposal.

The following is the check-list that helped study and criticize the playground in Hoglands park. They helped define what is positive about the site and the playground and what is negative. They also shed the light at what to look for in an interesting playground.

- Location of the site\park and playground in relation to the city access.
- Services on-site; such as: public bathrooms, seating areas and benches, etc.
- The intensity of the traffic around the playground and accessibility.
- Safety standards of the playing equipment verse the risk taking opportunities.
- The integration of the playground in the surrounding space.
- The amount of natural elements used in the design of the playground.
- The attractions in the playing equipment.
- The shade and sun-protection provided for both the seating areas and the playing equipment.
- The trees and vegetation on-site.
- How well is the design of the playground contribute to the nature.
- Bike parking availability.
- The condition of the soil and ground.
Work done by Karlskrona Kommun

Karlskrona, a town and a port, well know archipelago in the South of Sweden, the capital of Blekinge, on the Baltic Sea. It was founded in 1680 by Charles XI, and it stands as a model for the fine Swedish urban planning from the Renaissance era. Karlskrona grew in a very rapid pace, in the 18h century it become one of the largest cities in Sweden. But due to misfortunate circumstance it declined and never gained its place once more. It has one of the most famous harbors in Sweden, and the university campus of Blekinge Institute of Technology has a place there (Britannica 2016).

A study done by the Karlskrona Kommun by doing tours in order to investigate and perceive how the green spaces are utilized in the city, the study took place between 16 and 17 of June 2015. In total, four tours took place, two of them were on foot and two were on bikes. A questionnaire also occurred to define how much percentage is spent in a certain activity in the green spaces, and to get an idea about the participants” perception about the access to the open spaces. The highest percentage was that 96% staying more in the forestry and natural areas such as Dragsö, Western land, Bryggareberget and woods around Gullberna park. 44% of them preferred the more “cultured” parks such as Hoglands Park, Amiralitetsparken, and Tullparken. Many areas in the city can contain future development to include more play spaces for children, for example, a grass field in Vedepy that is currently contaminated has the opportunity of including a playground or amusement park for the children. Another place is the Quarter Park at Victoria Street, Ekholmen, this place already has a playground for the children and other places for activities such as barbeque, but it needs more development in the sense of planting new trees and adding seating areas and benches. Another important park is the Tullparken, impressions from the users of the park tell that today it is less impressive and significant than it was in the past. It is said that it used to be more beautiful, an actual park with flowers and tulips. Another green area with a football field is the Sagavägen/Frejavägen. It was used for football in the past more than in the present times. It is also very important for the children as they use the groove. It has many development opportunities as well, and planting new trees is one of them.

Another park, the park that is going to be the focus of this study of which it has a newly developed playground is the Hoglands Park. The responses from users about this park are that it is a nice oasis in the craziness of the city.
That it also has nice trees and flowers, and with the addition of the playground, it has become one of the most visited places and more of a public place for gathering while having the children enjoying their time.

Figure 1 Ortho-photo of Hoglands park. Source: maps.google.com

Figure 1 shows the location of Hoglands part in the City of Karlskrona, the park is in the center of the city, which gives a great importance to the existing playground, not only for being a new playground, but also because of its strategic location that makes it reachable and favorable to most of the people in Karlskrona.
Case Study of Hoglands Park

Summary
Hoglands Park is a park located in central Karlskrona on the Trosso the island, was created in the 1800s. It is located close to the train station and adjacent to several bus lines. It is considered as a gateway to the city center from the North. The park is considered to be one of the very important gathering squares in Karlskrona city as every year there are several events that takes place there. The park is elongated north-south and is surrounded by two parallel lines of trees forming pedestrian routs. Alongside with different vegetation, several statues and a playground. Hoglands Park together with the whole central Karlskrona is included in the UNESCO World Heritage List for heritage protection. On one hand, the municipality wants to renew and renovate the park and make it more appealing for people who live in Karlskrona, and those who visit it. However, on the other hand they strive to preserve the value of the park both historically and socially.

![Oakleaf Playground](image.png)

**Figure 2 Oakleaf Playground**

The Figure displays a picture taken from the playground. It clearly shows the amount of work put in the design and execution of the playground.
Previous design proposals

It is clear that the park has had a great attention upon it from the Kommun, in their website Karlskrona.se a full design proposal can be found in Swedish language. The proposal was provided by Ulf Nordfjell, Stockholm based Landscape Architect and a winner of a golden award in the 2007 for his garden “A tribute to Linnaeus” at Chelsea Flower Show in London, was summoned by Kalrksona Kommun to propose a design for conservation, reconstruction and development of Hogland Park. According to Nordfjell, the park is a treasure of the Baroque style and one of the first baroque parks in Sweden that until today is able to maintain its identity and original character. Although, he thinks that it needs a facelift and a new modern sense that can be achieved by examinations on the trees, the flowers, the shrubs and the decorations. His proposal and a full detailed report can be accessed as a document on the website of the Kommun.

His proposal can be summarized in main important points for this research paper. First of all, most if not all of his changes were inspired by the surrounding nature. He proposed a detailed vision for how the park will look like in terms of the plants and the trees, as well as the park decorations such as the seats and benches. He also included the design of light and lighting as a major part of the proposal. His vision was to enhance the historical heritage of the park through preserving, reconstructing and renewing. Similarly, he thinks that playground should be integrated in the landscape design. To the east side of the park, he proposes a playground equipment designed by Thomas mas Nordström and Annika Oskarsson, two recognized skilled artists as they work with many different materials and techniques. The choice of materials and technology is essential for the expression and features that he wants to create. To the west side of the park, he has thought of having a hard surface with digital controlled water play in the form of water jets that differs and varies in widths and heights. He also wants to include a place for playing in the sun in the warm seasons of the year that enhances the park usability and character in a modern way. This place can also be an ice skating rink during winter times; alternatively, it can be equipped with an ice rink made of synthetic material.
Summary of the playground

Lekplatsen Eklövet in Swedish or the oak leaf playground in English is one of the newest playgrounds in Karlskrona. It was inaugurated in the summer of 2015. It has this name according to the shape of oak leaves and leaf of rubber in the asphalt. The playground is more of a public gathering square as most if not all the children were acquainted by adults. On the playground there is a sand box, high sliding equipment, a swing, a trampoline and several climbing rods. The full executed design proposal for the playground received from an expert in the municipality and studied to be able to draw certain projections from both the design of the playground and the actual playing experience, in order to get an overview on the modern design of playgrounds in Karlskrona city and to be able to define the weaknesses of it. The strong elements and the weak elements in the design will be important in providing certain guidelines for the design of the other playgrounds in general and Tullparken playground specifically.

Positive projection:
The design of the playground with various heights of equipment gives the opportunity for more risk-taking actions decided by the children according to their judgment of their abilities. The design of the playground is also suitable for a range of ages. From a general observation of the playground, most of the younger children were helped by their company to perform some harder activities or activities that the children thought to be harder. Some kids were especially interested in jumping on the trampoline; this can be the result of stimulating the sense of thriller and vertigo. The ground is covered with shock absorbent to reduce the injuries from falling off the equipment which is something might happen in many cases. However, accidents rate was low, only minor accidents happened. The existence of a sand pot gives the opportunity for more manipulation and imagination. By looking at the design proposal, it can be seen that the name of it follows the shape which is an oak leaf, and the execution of it is successful to deliver what is supposed to look like.
**Negative projection:**
Although the playground is in the middle of a very nice park, it gives the impression of being quite isolated. The ground surrounding the playground is covered with sand, where the rest of the park is covered with grass except for the pedestrian routes. As well, while the park has trees, flowers, and other greenery, the playground is completely prefabricated and manmade. There are no rocks, no shrubs, almost not even insects anywhere near; this deprives the children from the benefit of interacting with nature as a part of their playing time. It is also noticeable that the sand pot is often untouchable, this can be the result of the “no touching” policy that is followed by many adults and parents; the children rarely ever touch anything other than the playing equipment. Some older children use the equipment in other ways that are not designed to; it can be that they try to add more adventure and danger to them. Moreover, the playground looked more of an island in the edge of a park. It needs to be merged in a better way in the surrounding greenery and nature to give the opportunity to children to benefit from it.

**Advantages of the site:**
- Public services such as public bathrooms.
- Available seating areas and benches.
- Bike parking adjacent to the site.
- Accessible and walk-able.
- Public transportation close-by.
- Preservation of adjacent historical features.
- Away from traffic lanes.
- Clean area and soil.

**Disadvantages:**
- Playground and playing equipment are not shaded in some cases.
- Adjacent greenery and nature is not utilized.
- Playground is isolated from the surrounding site.
- No comfortable car parking lots.
The picture shows a variety of playing equipment. It also displays the ground cover which is a shock absorbent that imitates the green from the natural surroundings.

The picture shows clearly that the playground is surrounded by sand from all sides. It gives the impression of isolation from the nature surrounding it. Especially that the playground is in the middle of a park. It also shows that the playground needs more shading hence more trees as it gets very sunny in the summer in Karlskrona. As well, the picture displays the rods that cannot be played with and more of decorative items than of any use.
Possible improvements and considerations:

- The playground should be merged in the natural context surrounding it.
- Trees for shading have to be planted near the benches and the playing equipment.
- There is opportunity for more expansion of the playground in the future. The expansion has to bring the playground more usability and free of natural play.
- The playground has to help the child form a connection; this can be achieved by providing material that can be collected such as “insects” for example.
- The playground has to intrigue the imagination in the child. While some children have it in them, some others need motivations, this can be achieved by adding elements such as dens and bushes.

Conclusion

Hoglands park is a park well known in Karlskrona city and has many great potentials in becoming of the most beautiful parks in whole Sweden. The site has many advantages alongside with its historical and social importance. And while it has the opportunity of having a wonderful playground that becomes remarkable not only in Karlskrona alone but in the surrounding cities as well, it is noticed that the existing playground does not serve that purpose whatsoever. It is relatively small; it does not use the full potential of the surrounding site. It feels detached and isolated as if it is a separate island in a big green sea. In other words, the playground doesn’t belong in the context of the park. Although the shape of it designed in an attempt to simulate the oak trees that is planted there, but it still fails to form a connection with the rest of the park. And despite the variety of the equipment placed there, they still fall short on providing activities other than what they are designed for. The children do use the equipment, but they either use them properly for a short period of time, or they misuse them in an attempt to do more activities than possible and this as mentioned before in the literature study, is a reason why playgrounds become dangerous sometimes. In order to achieve better playing experience for the children there has to be some improvements of the playground. However, and because of the restricted baroque style of the park, the theme of this paper cannot be implemented on Hoglands Park playground. If such theme is to be implemented, there has to be a lot of changes to the park itself which can be problematic in the sense of preserving the original identity of the park. The case study of the park has helped identifying the current way of designing the modern playgrounds in the Swedish context. Certain guidelines can be set in order to meet the positive points of the
Oakleaf playground and to avoid the criticism. From that point on, the case study will help in understanding the site of the proposal and how to design a new playground that while benefits from some points in the existing playground of Hoglands park, but also avoid the criticism of the playground. To be able to provide guidelines and possible improvement advice, the site must be studied carefully in the possible amount of time, afterwards, analyze it according to the theory and literature review, figure out the weakness points and the strength points, only then a conclusion can be drawn and suggestions can be made.
For the sake of providing guidelines and design proposal that fits to the main theme and topic of this paper, another park has been investigated and analyzed. The site has been chosen based on the fact that it has a natural environment that can be used and utilized not only for the benefits of the children playing in, but also for the environment itself. To be able to merge the environment in a useful way, and to make a sustainably positive use of nature’s problems. The park that is being used as the selected and potential site for the design guidelines and proposal is the Tullpark. The site is chosen for the analysis and the proposal based on the location of the park, which is a very strong element that was derived from the previously done case study of Hoglands park. Tullparken also proposes a very challenging situation regarding its natural setting that requires extra effort to provide a design suitable for the need of the site while it answers the main question of the research paper. The site was found very suitable for the proposal because it a currently abandoned park and playground by the municipality and the paper is a corner stone for future improvement onsite.

The criteria for the case study of Hoglands park slightly differs from the one for the design proposal site of Tullparken. On one hand, for the site analysis of Tullparken, certain observation of the site takes place and is marked down in an urban context. The observation that takes place on Tullparken helps to understand more carefully how people interact with it. Observation will show how much the site is used in different times of different days. As well, the type of activities that it is used for. All that will help reinforce the kind of activities that are preferred by the people in this area alongside with the design of the playground. Observations will be of the movement in and out of the site, also the usability and activities done on the site, third will be the natural value of the site; it will also discuss the traffic and pedestrian\bicycle routes. On the other hand, analysis for the playground itself is going to take a place, the analysis will consist of the design, the equipment, the material, the possible activities, the user preferences, as well the possible improvements. The main goal is to merge the playground to the surrounding park and green area, to also benefit from the nature in providing a better playing experience for the children while maintaining the safety of them.
The criteria for the site analysis are as follows:

- Location of the site\park and playground in relation to the city access.
- Services on-site; such as: public bathrooms, seating areas and benches, etc.
- The intensity of the traffic around the playground and accessibility.
- The shape and condition of the current playground.
- The possibility to integrate the new playground in the surrounding space.
- The amount of natural elements found on-site that can be used in the design of the playground.
- The possible activities that can occur if a better design of the playground and park is proposed.
- The shape and amount of trees and vegetation on-site.
- Bike parking availability.
- The condition of the soil and ground.
- The challenges of the site and ways to resolve them.
Figure 6 Karlskrona city in the mid 1800s. Source: Wikipedia.se

Mid 1800s maps showing that a landfill took a place in order to join the two main islands of Karlskrona which led to creating Pantarholmen.
Analysis of the site

Summary
Tullparken or the Custom Park as it translates to English is a park located in a district and a former island named “Pantarholmen”. Pantarholmen derives its name from the farmers who used to sell their goods in Karlskrona and had to pay mortgages (Tull\Customs) in Pantarholmen. Pantarholmen links between the main land and Trosso through different routes, of one that is Landsvägsgatan which is known for being a street where you have to pedal downhill when cycling, because of the constant wind. But also there is Sunnanvägen and the train that links between the city center and Bergasa. Despite its relatively small area (compared to Trosso), Pantarholmen has a school, a park, a super market the Willy's and many different shops and facilities, which makes it a potential site for future developments. The site existed after joining the small island of Pantarholmen with the rest of Karlskrona, as a mid-1800 map of Karlskrona shows. Nowadays in Tullparken, the trees are flooding and dying from the excess water in winter due to the poor collection of rainwater, it is also not suitable for children to play or enjoy in any season that has a lot of rain or water, which is problematic because as some users say ‘children need to play in any time of the year’. There are several opportunities for development, first of all the rainwater needs to be take care of and utilized in order to save the trees and provide playing opportunities for children. There has to plant new trees where possible and around the street to make the park cozier. Other activities can be as well added to make a better use of the park.
The Figure shows an ortho-photo from Google maps of Tullparken and its location in Karlskrona city. It displays the importance of Tullparken in connecting the two major parts of the city. This importance leads to the importance of providing an attractive park and more interesting playground.
Tullparken site observation

The observation takes place in three continuous days, Saturday, Sunday and Monday. Two of them are weekend days and one is a weekday. The observation occurred in two different times, 15 minutes for each time. The two different times are approximately morning and evening. The three days were mostly sunny, and they formed very good days for socializing and going out, this can be seen by the people that decided to go on a picnic in Tullparken while disregarding the bad condition of the ground cover and the vegetation on site. Children used the playground during the observation, but it almost only the swing that was being used. While some other adults played football on the park. People whom were part of the observation were not aware of the observer. However, the observer participated in the natural occurrence of the setting without interfering. Pictures of people were not taken to avoid any misunderstanding that may occur for the observer. The observer mainly observes and records the general usage of the site. When the site is being used and how it is used. It also important to mention that during the observation time, number of cars passing by or through the park were not counted, but they were taken into consideration to realize the car traffic pattern in the two surrounding roads. Results of the observation are divided as general results, positive projection and negative projection. Also the advantages and disadvantages of the site are pointed out to be taken into consideration when designing the playground.

<table>
<thead>
<tr>
<th>Day</th>
<th>Saturday 4\6\2016</th>
<th>Sunday 5\6\2016</th>
<th>Monday 6\6\2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Times (30 Minutes Total)</td>
<td>9:30</td>
<td>11:00</td>
<td>11:00</td>
</tr>
<tr>
<td>Temperature</td>
<td>20°C</td>
<td>25°C</td>
<td>16°C</td>
</tr>
<tr>
<td>Activity</td>
<td>1 with a pet</td>
<td>3 people &amp; 2 children in a picnic</td>
<td>5 with pets. 1 child</td>
</tr>
</tbody>
</table>

Table 1 Observation

The above table displays the different times and temperature conditions along with the number of people at each time and the type of activity if possible. The observation is directed towards understanding the pattern of using the park and most specifically the usage of the playground in Tullparken. From the numbers shown in the table, most of the children that used the playground were school children. The number was very low.
Tullparken is a neighborhood park that meets only very few quality requirements and standards. It lacks sustainable and natural values (Leo, 2012). The park is not utilized and used very well despite its close location to the central parts of Karlskrona (Karlskrona Municipality, 2008). In spite of the existence of the park, the surrounding buildings lack the value of greenery (Leo, 2012). The park is located close to the center of the city stretches from the west towards the inner city of Karlskrona. A lot of traffic goes to and from Lango and Pantarholmen through Polhemsgatan, which is a busy road that passes through Tullparken passing by the BTH University, the Tullskolan and the other schools and kindergartens. Meanwhile, there can be a better situation and suggestion that can be mentioned later in the suggestions category. The park has few other problematic aspects such as the water flooding issue that makes it impossible in winter and the rainy seasons to make use of. Not mentioning the possibility for increasing the sea level as expected by the municipality studies that expects a rise of about 2 meters above the current level which might cause in flooding parts of Pantarholmen and Tullparken. General observations of the site were done in order to understand both the geographical and the social aspects of it. The park had quite a few pedestrian pathways that run through the whole park, they seemed well-used in a way that suggests that people frequently pass by the park to reach to their destinations. There is high car traffic in the area eastern and western sides. The car parked in Polhemsgatan creates the general landscape. To the west there is the larger part of the cars passing by, however to the east there is a higher car speed road and a railway which both form a barrier and a border on the eastern side of the park. The bike pathways on the east and west seem to be frequently used, although at the time of the observation there were not many passersby. The western side is more frequently used than the eastern, this can be due to it being more pleasant to use, and also that it reaches to the Tullskolan which then can be used by the school children. The park is close to the sea from the Western side as well. Despite the strategic place of the park, that it is a connection between two major parts of the city, and a potential for a very good investment, but today it looks very abandoned by both the users and the government. People do not seem to use it quite often; they only stop to wait for the bus, to look for their children in the small playground or to have a quick talk with someone. Other activities can be summed up in taking a pet out for a walk.
There is a clear difference in the level of the land. The center of the park is very low in comparison to the adjacent street.

The playground is very much lacking. It lacks good equipment, care and even children. The equipment are very bad in shape and they are hardly of any use or interest.

Polhemsgatan divides the park into two large pieces of land. Its main use as a parking. It can be replaced by another road in front of the school to connect the two pieces of the parks together and keep it only for pedestrians and bikes.

The park is capable of hosting many activities such as football playing, barbeque, small picnics and socializing. It, however needs improvements to be attractive enough.

The park is adjacent to a school from the northern side.
In the following are the positive and negative projections summed up from the observation that takes place on site. The projections are based on the criteria that were mentioned earlier in this chapter.

**Positive projection:**
The site of Tullparken is a very strategic location. It is surrounded by different services and facilities and within a walking distance from accommodations and housing facilities as well as a school. It also links the two major parts of the Karlskrona city and is passed by users almost in a daily basis. In the site there are opportunities to take a walk, to walk a pet, and other exercising activities. The park has a potential to become one of the most remarkable parks in the city and plays an important role in connecting the green structure if it gets enough attention from the municipality and the planners. The park also has a view to the sea which can be as an added value to the people of Karlskrona who are famous for their love of the sea and water.

**Negative Projection:**
On one hand the biggest negative projection of the site is that it is not quite flat surfaced, having a hill from one direction and a very low land from the other which causes several problems such as water and waste collection that turns into a muddy land after a rainy day. And while it can be an advantage that the park is close to the sea, but it can also be a disadvantage as if the level of the sea rises by 2 meters as expected, the low land will almost be flooded with water. On the other hand, there is an obvious lack in the natural values. There are very few trees and shrubs distributed in an arbitrary and non-organized manner and flowers are almost non-existing. In relation to Hoglands Park and the new playground, Tullparken seems quite empty in both the park and the playground. The playground has the minimum of the equipment, it has few old swings, a sand pot and another equipment that is hard to describe which suggests that the choice of equipment was arbitrary and did not encounter any thought at all. The playground is on sand with no trees or shrubs close by at all, this will make it very hard to play with in the summer time for when the sun is at its highest. It is not designed, so it cannot be expected to have any natural value or form any connection with the child. It also is not in its best shape, there are wastes and trash thrown on the grass of the park, while the grass itself is uncomfortable to step on due to the differences in the length of the grass itself. The playground has to either be
completely removed and a new one built in another place more convenient, or that it is completely renovated and new well designed equipment be placed there.

Problems of the site
Based on the qualitative analysis of the text, maps and notes from the experts working at the Karlskrona municipality and experts handling playgrounds in Sweden and specifically regarding Tullparken, some issues arise. Those issues can be divided into three main categories, the soil condition, the water/sea level condition and the rain-water condition. They have a direct influence on the design of the new playground within the park. The main goal of the design is to encounter nature and involve it directly in the use of the playground and playground equipment. In order to do so, the site challenging situation has to be taken into consideration to be able to propose a design that aims to satisfy both the main question of the research and the situation of the site. The three main problems of the site can be summarized in the following, describing briefly each problem and the way to deal with that problem in order to be able to draw a suggestion to improve the site and propose a design solution that deals with this specific problem.

Soil Condition
The first and one the most problematic aspect in the site is the condition of the soil. The soil is mostly covered with peats. Some of the surrounding parts are covered with primary rock. As well, the majority of the area is covered with moraine. The trees are not in a good shape and they are expected not to live for too long, that’s both for the bad condition of the soil and the excess water from either the sea-level or the rain-water increasing. Because of the rain-water and the considerably high sea-level, the soil is considered wet most of the year in this area, it therefore gives low opportunity to trees and vegetation to live as they need oxygen in order to live, but the wet-soil provides very little oxygen for the plants.
The Figure shows that a large part is a landfill that was previously a part of the sea. Tullparken soil condition is described as covered with peat, and some distributed primary rock. This map is based on a map provided by the municipality of Kalrksrona (sgu.se) showing the case of the soil for all Karlskrona city. It is modified to suit the specific need of the paper.
Rain-water

Based on the literature review, the urban ecosystem is a very important aspect of a site to look at and think of. That lead to questioning the reason behind the bad condition of the soil in Tullparken especially that it floods easily and stays covered in water for a long time after the rain has stopped. This opposes a point that needs to be taken into consideration. An expert in the municipality has pointed out that in the seasons where there is a lot of rain water, the site almost floods and becomes muddy due to the insufficient capacity of the pipes that work to suck the water from the land into the sea, this is both because of the capacity of the pipes but also because of the comparatively high sea level. The rain-water problem, -she suggests- should have a more open solution than putting more load on the pipes and disregarding the water. The solution can be utilizing the rain-water in a playground by redirecting the runoff of the water using techniques are either rainwater harvesting system or a swale which then can be used as small water canals to use as a playing equipment. This problem highly syncs with the water\sea level issue. As they both lead to the flooding of the soil due to the thin layer of land that is in the site which leads by default to the first problem mentioned.

![Cross Section of the site](image)

Figure 15 Cross Section of the site

The cross-section above displays the situation of rain water on site. The very thin layer of soil does not allow for the site to act as a rain garden since the ground layer is very close to the sea level underneath which is already expected to increase. It also not very easy for the rain water to find its way out through the pipes, because of the heavy load on the pipes themselves. The only possible solution for the short term is to find a way to keep the rain water on the ground for some time until it can find its way out. This can be done by utilizing the excess water in the playground and possibly use it as playing equipment.
**Sea-level**

Similarly, and while studying the maps and documents provided by the municipality experts regarding the sea-level rise expectance. The site of Tullparken is comparatively very low. Nowadays, it is only around 70cm over the sea-level, it is expected that in the year 2100 the sea-level will rise in average of 1 meter. In the conditions of tide, the rise can reach up to 2 meters. In this sense, not only the land today is too close to the sea-level, but also that it is expected to be completely under sea-level after 50 to 100 years in the future. The problem of the sea-level requires a more long-term solution than the problem of rain-water as it is not quite as obvious for the time-being. However, as mentioned previously, those two problems lead to the first challenge. In the study of the section of the site it shows that land might as well needs a landfill as soon as possible to avoid any more problems occurring from the closeness to the sea-level. But the need for the landfill might not be very urgent today, but it definitely should be within the plans of Karlskrona Municipality for Tullparken.

![Figure 16 Sea-level](image)

The Figure shows the effect of the rising in sea level by 1 meter in average, on some areas of Karlskrona City. Parts of Pantarholmen will be covered in water.
Advantages of the site:

- Strategic location, links between the two major parts of the city.
- Close to many services and facilities such as a school, a super market and a post office.
- Close to many bus lines and bus stops.
- Possible new accommodations can take place nearby.

Disadvantages of the site:

- Lowland that causes miss-collection in water and waste.
- Rain-water and sea-level problems.
- No vegetation that is being taken care of.
- Trees are expected to no longer live.
- No suitable and well-designed playground or play space.
- No proper seating areas, the existing ones are situated arbitrary.
Conclusion and Discussion

A park such as Tullperken, that has a great potential for being well-designed and used both for its social and geographical importance, is the government and the municipality’s responsibility. The municipality has to think of ways and techniques to overcome the disadvantages of the site and transform it to one of the most attractive places in Karlskrona city. However, today that is not happening just yet. The park is left behind while the rest of the city is seemingly developing. Clear and strict guidelines have to be set and followed; as well a careful analysis for the water collection problem has to be conducted alongside with thorough survey about the soil and how to handle them to reach to better investment in order to change the negative aspect to positive one. In their documents (Karlskrona municipality, 2010) the municipality shows ongoing expansion of different areas surrounding Tullparken, this expansion has to be comprehensive in a way that incorporate not only the land around the park but the park itself. Nowadays, the soil is in bad condition, and the trees are expected to seize to exist, this requires a fast response from the municipality, they can work to find types of trees and vegetation that can live in such wet-soil while thinking of long-term approaches to enhance it. The other thing to take into consideration is the rain-water harvesting techniques, those techniques might be not very easy to implement and probably expensive too, but they will do great good for the site and for the people. All these factors are essential when planning for a playground on this specific and problematic site. A playground that encounters nature, that is also new, attractive and interesting is not spread widely in Karlskrona. In the matter of fact, there are only very few playgrounds that are design thoughtfully in the city, one of them is Hoglands park playground as discussed previously.
Design Guidelines

Based on a careful study of the literature review and theoretical work, the work done by the Karlskrona municipality, the Case study of Hoglands Park and playground, and the site analysis of Tullparken; some guidelines can be derived and suggested to design a better playground in Tullparken that brings together the lessons learned from the design of the playground in Hoglands park and the main theme which is encountering nature with the playing experience, that does not only benefit the users in this case the children and the parents but also has a positive impact of the nature itself. The guideline can be summarized in the following points.

- Utilizing the disadvantage to make it an advantage: The collection of water in the site can be used in a way to create a pond or a play space with water by using rainwater harvesting technique and invest it in supporting the environment.

- Stimulating the imagination: it gives the opportunity for the children to create their own worlds. While some children have the ability to do that in their heads, some need stimulus such as pirate ships, dens and etc. This gives the opportunity to the child to explore his or her own inner world and enjoy it.

- Adventurous and breath taking: it has to be wild and risky without actual danger. The equipment can be various in abilities and opportunities suit ing different age groups. They also have to be breathtaking in the sense of making the child feeling very excited and vertigo.

- Memorable: making the playing experience something to think of, look forward to, and remember. This can be done by various ways; one of them is collecting things from the site, for example sea shells or insects depending on the area and the context.

- Connection to Nature: whether it is a natural play environment, or designed playground, the connection to nature gives the child a lot to enjoy with his\her all senses. Trees to climb, rocks to hide\climb, flowers to smell and collect and etc. it can be also achieved through interacting with the living species whether animals, insects or plants.
• Introducing new activities to the area surrounding the playground. This will help attract not only the children, but also the teenagers and the adults. The site can contain a football field alongside with areas for barbeque and small social gatherings.

• Playing controlled and led by children: It is also very important to think of making the time of play for children, a time when they can think, decide and act without the interfering of adults, only in few cases where danger is suspected. This will lead the child to have better confidence in oneself and better judgment on their own physical abilities, as most of the children are cleverer than what we the adults think of. However, unfortunately parents and adults have their own minds set on certain rules that they force on their children, one these famous rules in the “No touch” rule. It is either because they think that the nature is fragile and can be easily damaged if touched or that they think it is for the best of their children not to touch things that might or might not be harmful or dangerous for them. In this sense, the children will lose their control on the playing time and in their heads will be restricted by such rules, hence have less of the benefits that they can actually gain through their playtime.
Design Proposal

The design of Tullparken new playground focuses mainly on two aspects. The first and foremost is designing a natural playground, which is a playground that uses and encounters features from the surrounding nature. The second aspect is designing it in cooperation with the eco-system, in other words, not only benefiting the children themselves, but also the nature by making use of the disadvantages of the site.

Figure 18 Utilizing natural elements as playing equipment. Source: Lubbockonline.com

The figure shows a way of using rocks and difference in land level as a playing equipment from the nature and with the nature. This can be related to the site of Tullparken as it has a difference in the land level.
Short-term design considerations

In the short-term there can be some minor changes on the site to provide better playing environment. On one hand, new playing equipment are needed as the old ones are not so attractive anymore. On the other hand, the trees and he existing greenery might not be able to survive in the current soil situation, hence, new trees, shrubs and perhaps flowers are needed. The types of trees and vegetation that have to be taken into consideration are those types that sustain in the wet soil such as in Tullparken. There can be very few of these plants, but they exist nevertheless, such as red and silver maple, common hackberry and other trees and shrubs. Moreover, a rain-water harvesting technique is effective in collecting water during the rainy seasons and re-uses it on site in the shape of playing ponds for children. This can also help to reduce the moist in the soil.

![Figure 19 Playing equipment from the nature. Source: worldlandscapearchitect.com](image)

The rods can be used by the children as climbing equipment rather than being only decorative. Unlike the ones in Oakleaf playground, these can actually be climbed and used.
Long-term design consideration
There is almost a confirmative fear of rising in the sea-level in the coming 50 to 100 years, and since Tullparken is almost less than 1 meter above sea-level land-fill in this situation is very much needed otherwise the site might completely be under water. The site has then to be refurbished and cleaned; better design of the playground and the park in general has to be taken into consideration. What is a disadvantage of the site today can be the attractive aspect of the site in the future. People will want to go there with their children to have fun in the natural playground and the water ponds.
Vision for the site and playground

The Tullparken playground is to be one of the most interesting and visited playgrounds in the city of Karlskrona. The playground will no-longer be divided into two sides by Polhemsgatan. Polhemsgatan will no-longer be a car road, instead it will be only for pedestrian and bikes. As seen in number (5) on the plan. And to replace Polhemsgatan, new car road in the North of Tullparken right in front of the Tullskolan will be introduced no. (6). The new car road no. (6) will link between Landsvagsgatan and Sunnavagen. The new pedestrian\bikes route no. (5) will pass through a water pond by a wooden bridge. The park will mainly consist of two major parts, a playground and a small football field no. (4). No. (1) is the new water pond, very shallow pond to be used by children for playing will link the two sides of the playground together, each side no.(2) has different playing equipment. Equipments are varied in shapes and uses; they are mostly related to nature such as the ones shown in the illustrations and sketches. The trees and vegetation no. (3) are kinds that can sustain wet site as mentioned previously are to be implemented on the new park and playground. The trees can also be used as shading techniques for the seating areas. The water pond no. (1) is water collected through a rain-water harvesting technique that has to be studied carefully by the municipality to provide an open solution for the current problem.

Figure 22 New distribution of function
In conclusion, many techniques are available to make use of the site in a better way. It has to be rehabilitated and merged with the surrounding area in order to provide a place for children to enjoy and have fun. The site is suitable for a natural playground to be implemented. The new playground has to have natural elements preferably found on-site or near-by such as rocks, trees, flower beds, and water.
During the research period, some fundamental challenges took place. They are mostly related to social aspects and social-science but it has a direct effect on the urban planning and the planning of a new playground. Those challenges require more attention and more future research. The challenges and consideration can be summarized in the following.

- Multiculturism: While studying the literature, there were some points that were untouched when dealing with the design of playscapes. The social attribute was one of these matters. There was almost no direct literature discussing how the multi-culturism affects the design of playscapes. In Sweden for instance, there is a very big number of immigrants, those who come from different backgrounds and cultures, who have different ideas and concepts, and who might take a time to adapt to the new surroundings, and in most of the cases have children of their own. And while many literature discuss this matter from a social point of view, almost none of them implemented it practically. This point needs further discussion and study in future research papers.

- Gender preferences: Also, there was no enough data about the gender specifications, what is more preferred for boys over girls and vice versa. Especially in the Swedish context, it was hard to find any specifications regarding such matter.

- Culture of fear: There was a notable tendency to be “afraid of”, whether this fear is from the parents or the children themselves. The parents are usually afraid of letting their children out alone, they would be afraid of letting their children do some activities that they “the parents” think are dangerous for their children. This reflects negatively on the children, it might vary from lowering their self-esteem and their confidence to being socially enclosed and afraid from involving with the society. This can be notable when studying different groups of children, those who go to kindergartens and preschools, and those who do not. The children of the first group will be more open to initiate new friendships and be more of extraverts. However, the second group will be more shy and more of introverts.

- Parent’s lack of motivation: children’s access to the outdoor areas is often dependent on the parent’s approval, and in many cases parents lack the motivation to let their children out or to accompany them to the playing
areas. And while the outdoors and outdoor playing environment is very important and essential for the well-being of the children, parents have their own criteria to how they choose the outdoor environment for their children whether it was a park or just a simple neighborhood playground. Further studies on how to motivate the parents to accompany their children and actually have fun with them can be very interesting to investigate. There can also be playgrounds for the parents themselves, or it can be called an outdoor gym. It might give enough encouragement for the parents not only to accompany their children, but also to fill their times with some beneficial activities that distract their careful and close attention to their children, this can give more freedom for the child and more sense of independency and confidence.
Children need their own spaces to explore and invade. They enjoy taking risks and challenge themselves. They prefer to escape the close supervision of their parents or acquainting adults. What is interesting or convenient for the adults is not necessarily the same for the children. They deserve playing spaces that entices their abilities and imagination. The guidelines derived from the research and the design proposal is to introduce a playing space in a site that is currently neglected and not being taken care of due to its challenging situation. They are to ensure turning what seems to be a problem into a way for the children to have even more fun as most of the human-beings enjoy water in all its shapes as long as it is clean water, there comes the necessity for a technique that makes sure the water used is clean and clear to be utilized in the playground in the selected site of Tullparken.

The field being studied and researched in this paper is quite wide and deep and needs more than few months to take the time it deserves. The aim of the paper is to explore ways to design better and more attractive natural playgrounds in the city of Karlskrona, taking Hoglands park and its existing playground as an example to look at and study, alongside with designing a new playground on a different site that might safely be considered an equally important site as Hoglands park, which is Tullparken. The design proposal focused mainly on the distribution of the functions and the connection between the surrounding nature and the proposed playground, while keeping in mind the guidelines that were derived from both the literature review and the case study. The design also aimed higher at investigating the situation of the site and dealing with it in order to reach to a comprehensive thinking of not only providing an interesting playground for the children but also a useful one for the nature itself.
Note: All pictures and Illustrations in the paper are prepared by the author unless mentioned otherwise.

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