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Playgrounds in kindergartens schools and residential areas



There is an increasing awareness in Norway and in Scandinavia of children's and youth's need and use for qualitative areas for outside play and for contact with nature as both a play and a learning environment. Children in elementary school have one day a week dedicated to being outdoors. Some kindergartens and schools put a lot of emphasis on staying outdoors most of the day.

Throughout the country the future kindergartens in Norway are widely discussed.

In the northernmost areas the challenge is to plan outdoor play areas with focus on our wintery conditions.

How do we create well functioning play areas, how do we arrange car free access to unspoilt landscapes and how do we plan our education and day care buildings so that they can embrace children who are out in all kinds of weather. Also what do we do in order to ensure play areas for the youngest children and their particular needs.

With the questions above in mind I will now provide examples of qualitative locations for schools and kindergartens.

The outdoor area

The everyday playground determines to a high extent the way children play, and a good design of the outdoor playground is in that respect of great value for the children's motory development and concentration skills.

The outdoor play area must satisfy the children's need for a good development. Playgrounds left in their natural state are often the best.

The nature does not give obvious answers to the range of application; it can be used in various ways, and it stimulates children's basic needs for physical activity, experimentation, exploration and managing.

The nature and climatic conditions varies greatly from the south to the north of Norway, and also from the inland to the coast. It is important to attend to the nature given characteristics that exist in the different parts of the country in a positive and creative way.

When planning a playground, it is important to start by looking beyond the limitations of the lot, and review the possibilities that exist in the nearby areas.

Suitable places for play and recreation

One should use as a basis, and make the children acquainted with, what is actually available at each location; the resources of the area. Either close to the city, the ocean, the mountains, the forest, areas with a lot of rain or areas that are covered in snow for long periods of the year.

Is there a "green corridor", an access to nature that is free of cars? We need to map out what else is in walking distance, or driving distance of the lot. Do you have the "hundred acre forest"? A park? Or maybe a recreational area? Is there water, rock, seashore, beach, sledding hill, skiing areas, skating ranges or any such, and can these areas be used by the kindergarten? Is it possible to make arrangements with the local government, the private property owners or others about using the area?



This mapping will guide the planning and design of the nearby outdoor area, the lot, and for the use of the day within or outside the lot.

Room for all kinds of child's play

Guidelines from the government, (Rammeplanen and Stortingsmelding) nr. 40 (1992-93)) emphasize that child's play is an important element because it is a part of the children's culture, and is important for the children's development and growth. Through playing the children acquire a greater understanding of themselves and the society they grow up in. This form of intellectual, social and cultural learning can not be substituted by other forms of learning. Playing stimulates the children to versatile physical activity, and they gain confidence in and understanding for their own physical abilities and possibilities. The child's play is dependent on surroundings where children themselves have the responsibilities and share and take part in all the properties of the game.

Climate and outdoors child's play in all kinds of weather

The best climatic effort is to choose well situated lots and to place the kindergarten and school building in a serviceable way on the lot in relation to the topography, wind direction and sun and snow conditions. Avoid building in areas where wind and shade is prevalent.

The design and placement of the building must be based on the qualities of the lot to ensure that the possibility to establish an exciting and varied outdoor space is not disrupted.

Great consideration should be taken in designing the outdoor recreational areas, to ensure that these are facing the sun and are sheltered from the wind.

Factors that are the most limiting on children's play outside include:

- The combination of wind and snowfall
- The combination of wind and cold conditions
- Extreme cold
- Darkness / the polar night
- Rain

When we are exposed to wind, the sensed temperature will always be lower than the measured temperature. If we are able to find shelter, the sensed temperature will be the same as the measured temperature.

Sun and wind are the most vital limiting factors to create good outdoor areas. A warm summer day, a faint wind feels nice because it has a cooling effect. And that is the point: the wind is always cooling. The greatest cooling effect by the wind is at low temperatures, and the cooling effect drastically increases at decreasing temperature. The temperature you feel is in other words not solely dependent on the measured temperature, the wind contributes to lowering the physiological (sensed) temperature.

Light winds such as moderate breeze causes the sensed temperature to be 10-20°C lower than the measured temperature. At a fresh breeze the risk of frostbite is considerable at moderate temperatures (approximately -10°C).

Vegetation, trees and climate

Some lots for kindergartens and schools have nice trees and bushes as a natural part of the resources of the lot, or the lot borders on a forested area.

The forest is a good environment for children. In the forest, the wind is diminished. Wind influences the growth conditions for trees and bushes, as well as the possibilities for outdoor activities for people.

If we manage to reduce the wind velocity, the temperature of air and soil will increase. Anything that may reduce the velocity of the wind will help in establishing new vegetation where this lacks, trees, bushes and shrubs, which can contribute to providing shelter and diversity to the playground. A three meter high planting can for instance reduce a near gale to a moderate breeze from the windshield (the planting) and to a distance of 60 meters, at the same time as the measured temperature will increase with 1-5°C.

Some places the wind load will be so strong that the establishment of shielding planting is difficult. In that case a windbreak, windshield, mound, wall or something of the sort is a possible solution.

If you are to establish new vegetation, using local vegetation may be sensible. Trees of a certain height may be moved and is given good growth conditions on either side of a shield. Bushes and shrubs can provide intriguing opportunities for child's play.

Evergreen conifers provide good shielding for the wind also in the winter when the deciduous trees are defoliated. These deciduous trees allow the sunlight to be admitted in the winter. Choosing type of trees and other plants must be considered in every case, as must the placement within the playground area.

Summer schedule and winter schedule

Since the seasons influence the outdoor activities to a high degree, it is important to work out a summer and winter schedule for the playground. The plan for the winter should among other factors show snow-clearing possibilities, snow deposit areas and run-off from melting snow. The winter plan should attend to winter activities, and these need to be planned in details to the same degree as the summer activities, to ensure that the possibilities of conflicts are minimized.

Where the snow is scarce and drift away with the wind, a windscreen might gather the snow so that it is available to play in. The snow should not be gathered on parts of the lot where you want the snow to melt early.

It is important to do a climatic analysis of the lot before designing and placing the building, and before the playground area is planned.

- What are the sun conditions like in the opening hours of the kindergarten? Or in the schoolyard?
- Be aware of the low path of the sun in the north, with long shadows
- From what direction does the cold wind or draught come from on a sunny day in the summer and in the winter? In large areas of Norway, the wind directions are different in the summer than in the winter.
- What are the predominant wind directions when it rains, snows, or the sun shines? Is the drainage good enough? Where does the water from the melting snow go?

From this kind of analysis the planning on where to place the building and the other functions can be initialized.

Design

Adaptation must be made based on different needs, different age groups, different handicaps and different seasons.

The area closest to the entrances to the different sections should be arranged with particular focus on the youngest children who have the shortest action radius, and on children with different physical handicaps.

IMPORTANT FUNCTIONS Within or without the lot	DESCRIPTIONS
Need to experience mysteries and adventure, stimulate the fantasy, the unpredictable	"wild" nature woods and thickets water, big rocks, rugged terrain, winding paths
Role-play, interaction, social needs	Places that may be altered, sturdy varied nature. Hard-wearing vegetation. Bushes to hide in, rocks to hide behind. Small play houses or huts.
Possibilities to experience and investigate the living things in nature	Trees, flowers, insects, birds. Possibility to pick flowers and berries, fishing.
Activity: movement, climbing, running, sledding, skiing, riding bikes.	Small ball-fields, asphalt areas, winding paths with pavement or gravel, hills, dirt mounds, trees, ropes.
Meeting places Outdoor dining areas	The sunny wall The bonfire area The tent or lavvo (saami tent, equivalent to a teepee)
Construction games	Water and sand Building in snow or tree and stone

In case the building is shaped with the purpose of being a part of the climatic shielding of the outdoor space, the areas nearest to the entrances can also be the ones with the most sun and most protection from the cold wind, and consequently be the most suitable ones for those who move the least.

A dry, covered wooden platform in the sunny wall will be a good play area or recreational area in the spring, when the melting snow renders the rest of the outdoor area damp and cold. A covered area near the entrances will also be good areas to stay in when it is raining or snowing.

The playground shall inspire to playing, curiosity, and making your own experiences.



A dry, covered wooden platform in the sunny wall.

Main features and principals for the outdoor area

Preparing for creativity, social managing, learning and motory development.

The performance ability of the outdoor area can be concretized, but the concrete design of the area can not be controlled in detail – this must be adapted to each kindergarten or school with the conditions given by nature or other development. Choosing the solutions is the main challenge of each kindergarten and school.

Nature and play tools, equipment etc.

If the nature given conditions are not diverse enough for the purpose, they can be changed by planning measures based in the local resources and the climatic conditions. A dirt mound, or several, on a flat lot, may be easy measures. Big rocks can be used to climb on or hide behind.

Vegetation may be introduced to the lot. It may take some time to establish it, it will need to be protected for a long time and will lay claims on parts of the playground area until the vegetation can be used. The size of the lot must be taken into consideration in every single case, in view of the location, the access to other nearby areas and also the need to protect the vegetation, which is very vulnerable if the areas are too small and the use too intense.

Also in the middle of cities, the will to establish natural vegetation is great. Most of the worn-down prefabricated playgrounds can be replaced by rock, logs, plants, water and terrain adaptation.

There should be lots of different options for crawling and passing under and over, climbing, dangling and sliding, hanging, jumping, running and balancing, places to play hide and seek, places to be alone and places to be with others. Remember to be focused on the totality of the outdoor area of the lot and possible additional areas outside the lot.

Conscious planning of the crowded areas between different zones to avoid that the children disturb activities they pass, will reduce the irritation between the different activities. The outdoor area must be shaped in such a way that the different age groups are not separated, so that it is possible for them to interact. The oldest can show a care that they do not show in the company of children of the same age. Separation of the children occurs naturally through choosing activities based on age and maturation. The size of the area is of importance to the amount of bullying in the playground. Areas with great density of children, where the children have to compete to utilize few installations, and where the children easily end up getting in the way of each other, promotes aggressive behavior.

PHYSICAL CONDITIONS	PERFORMANCE REQUIREMENTS
TRAFFIC Access	Delivery areas for cars Secure walking access Securing during slippery conditions Traffic safe delivery of goods and collection of waste (not traversing the playground area)
SECURITY Playground surface	Approved sand, bark, gravel or similar Snow often makes a soft surface
Physical barriers	Fence or other obstacle between the playground and traffic and parking Gate in the fence towards nature areas
Other	Outdoor lighting, especially important during the polar night
PLAY Nature area	"The hundred acre forest" with varied terrain, hills, mounds, rocks, pits, shrubs and trees. Hiding places. Places to climb, ropes from large branches. Brooks and small ponds.
Sand	Large play area with intriguing delimitation. Sunny and shielded from the wind.
Water	Water is a natural part when playing with sand. Preserve surface water, brooklets and melting water from the snow.
Asphalt – pavement	Accessibility for the physically handicapped. Bare ground activities on the sunny side of the building. Hopscotch, bike riding, rope skipping, drawing and painting. The dark asphalt areas are rapidly heated by the sun, and can be favorable in climatically challenged areas.
Ball fields	Can be small, often a circular area with one goal, can be frozen over in the winter.
Grass	Area that is suitable for recreation when the ground is bare, used for

	sledging in the winter.
Construction games	Buildings with different materials. Wood or snow, depending on the season.
Snow	Hills which are suitable for sledging. Gentle courses for skiing and ski play. Snow deposits with the possibility for varied winter play. Climbing, sliding, snow caves. Shaping the snow.
SOCIAL INTERACTION AREAS Organized gathering areas	Shielded seating area in the sunny wall Plantings and windshields makes natural gathering areas Roof shelters Lavvo (saami tents) and tents Turf huts Boat house Bonfire area
Biological diversity	Berry bushes Bird table Aviary A tree that the wind has brought down can be kept for playing and investigation
Play tools – apparatuses	Swings Play apparatuses that attend to possibilities of climbing, hanging, dangling and so forth Small play cottages or houses

Social needs

The children develop social relations in the role-play. They learn to negotiate, compromise, rules, to show care and to cope with conflicts. The role-play is often coupled to other activities, for instance when constructing things or playing in the sandbox.

The role-play seem to develop best of all in outdoor areas where the function is not predetermined, but gives room for the children to draw back and rest and also room for the children to interact, and areas where the games can go on undisturbed for days.

Security, excitement and design

In the wake of a new security regulation concerning playground equipment, a debate about whether it was necessary to secure the children's at the playground arose. The debate escalated to a discussion on whether suitable sand as a gentle playground surface was available. The challenge is to balance the contents of the regulation. The obvious risk factors in the children's play environment must be removed, but at the same time the elements that stimulate to challenge and activity and gives the children the possibility to learn and accomplish, must be preserved.

Passivity is a greater health risk than dangerous play tools.

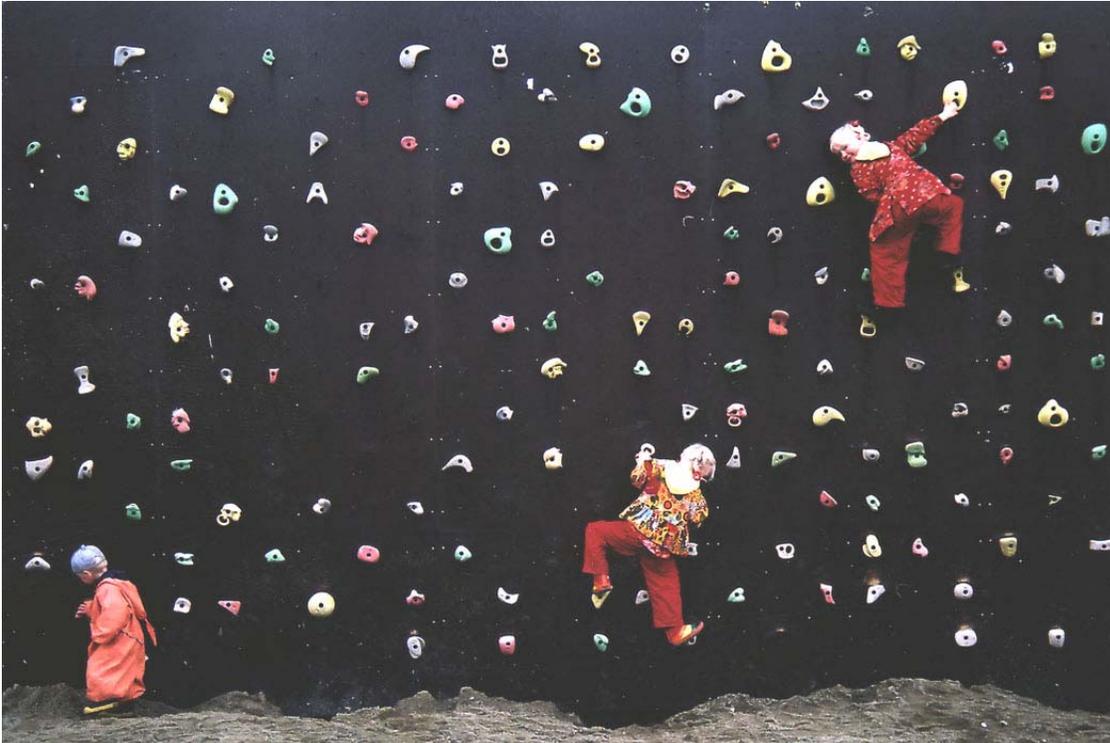
The children's health includes many different aspects that must be considered. According to the Norwegian Council of repetitive strain injuries ("Nasjonalforeningen Rådet for belastningslidelser"), the greatest health risk for children is not dangerous play tools. A much greater health risk is that children are afraid to use their bodies actively. The greatest threat to children's physical health is, according to the Council, the lacking arrangements for physical development in kindergartens, schools and living environment.

Learning occurs on the borderline between what you know you can manage and what you almost dare not try.

How do we shape our playground areas to ensure that they stimulate to activity and give the children the possibility to learn, without compromising with the security? There lies a great challenge in this: Often, choices must be made that in different respects look after the various interests. Unfortunately, far too often decisions are made more based in fear, for instance fear that an apparatus is dangerous, than on actual risk and overall evaluations.

Children need to learn how to assess danger.

Playing in nature does not fall in under the security regulation, and it is important to look into the fact that the regulation only applies to playground equipment, and not nature. In the nature, the children must employ their own judgments and skills, for instance to climb a tree. In a play apparatus even the smallest children can climb the stairs and reach heights they never would on their own in natural environments. Because of that, the responsibility of establishing organized playgrounds can not be neglected. Several surveys made both in Norway and Sweden show that children that play in nature achieve better coordination, balance, sense of direction and strength. Enough recreational areas – groves and play fields – should be reserved for our children.



The transition area between outside, inside and storage for play tools

When the goal is for the children to be outside playing in all kinds of weather, this makes great demands of the transition areas between outside and inside, and to the storage areas for the play tools and equipment.

The storage for the outside play tools can be a separate building, but should be easily accessible from the entrance zones of the kindergarten building. The storage should have two rooms; one where the seasonal toys are stored off season, and one where the toys are easily accessible. That way, it will be easier for the children to go and get toys, and to put them back at the end of the day.

Whether or not the storage should be large enough to accommodate snow clearing equipment or not also need to be considered. It may further be necessary to have storage capacity for a lavvo (saami tent) or a tent, wood for the bonfire, an inflatable pool or other extraordinary equipment for use in the outdoor area or on a field trip.

A covered area should be established near the entrances, preferably a dry wooden step that may also function as a recreational area, or a place to eat in the sunny wall when the ground is wet and muddy, or covered in melting snow.

Shed for bad weather, climatically protected playroom or growth room

When the kindergartens are made to include many children under the age of three, climatically protected playrooms may be considered in connection with the outdoor – indoor transition area. Especially the youngest children and children with physical handicaps may use the area as an opportunity of “outside” play without mittens and excessive clothing when the conditions outside limit the freedom of movement due to large amounts of snow, icy terrain, wind combined with low temperatures or other factors. Such a climatically protected playroom needs a good access from outside, and a wardrobe. The building materials must tolerate a damp climate, and provide for playing with natural materials such as stone, sand, water, plants and so on. Indoor sand must always be combined with water; otherwise the sand will easily get too dry, and may cause a problem with dust.

The climatically protected playroom will reach ultimate usability if it is built with lots of glass in lofty walls, or with glass in both the walls and roof.

The room will then:

- Preserve the daylight and passive heating by the sun, and the twilight of the polar night.
- Be able to provide an early spring in the room where the heating by the sun and the light may give rise to the growth of greenery, such as evergreens and fruit trees (flowering trees); trees that otherwise will need “winter” to blossom and bear fruit. It is also possible to seed for planting, cultivate tomatoes or cucumbers.
- Enable good contact between the outdoor and the indoor areas, between older and younger children, and with the climate outside.
- Function as an open lean-to in rain and wind and sleet in the summer, and as a closed, climatically protected playroom in the winter.

Enough ventilating opportunities must exist to avoid excessive heating during sunny periods of the summer. Windows with “greenhouse” automatic controls may be used.



A popular playground during the snow free months.

Creating good playgrounds for youngsters is a great challenge.