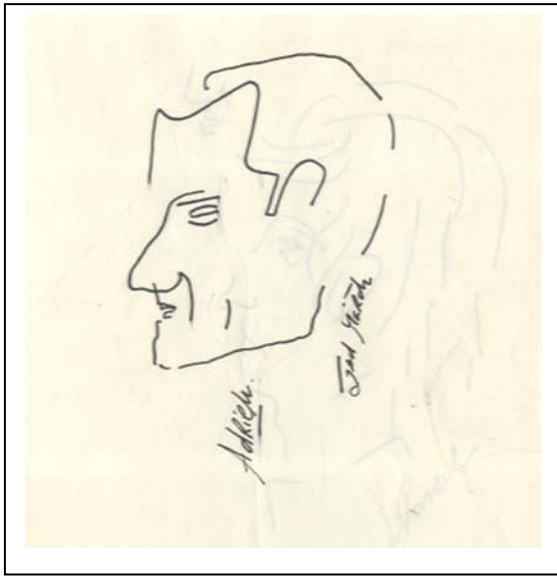


# The essential need of appropriate playgrounds for children

Understanding the impact of playing on child development  
and how to improve the possibilities for children to thrive



*Adrien Aras,  
Exchange student in 4<sup>th</sup> year of Architecture  
studies, from the School of Architecture of  
La Villette in Paris, France.*

# Contents

## **Introduction**

- 1.Impact of playing on child development
- 2.Current situation: the wrong side
- 3.Consideration of children needs: Examples and Studies
- 4.The Role of Architects
- 5.Criteria for design of sustainable and adapted play space for children

## **Conclusion**

## **References**

# Introduction

« *A society's most important « natural resource » is undoubtedly its children, since children will make up the next generation of adults and will guarantee the continued existence of that society.* » (Gronvall 1984)

« *Many thinkers claim that the health and civilization of a society can be measured by the way its children and young people are treated and the freedoms they enjoy* » ( Lacey 2007)

Indeed, the children will be without fail the future of the society. So what does this society offer to its future adults generation ? What does the society provide to the children in order to make them grow in the best conditions ? In order to thrive the children need « *social supports and services – the love and protection of their families, the friendship of their peers, the dear guidance of social norms and value, the health services and education provided within their communities. But children also need supportive physical environments to contribute to their optimal development.* » (Bartlett ????) And playing is a critical issue in children growth, not only physically but also on a social point of view.

## 1. Impact of playing on child development

Through the activity of playing, children are in interaction with the outer world, either with the nature or with other people. By moving around they start to use their bodies and develop their motor skills (dexterity, speed, balance...). They get to know their own body. Outside their senses are awakened, they touch different materials – earth, steel, wood, every kind of objects – they grasp them, throw them away, they start to have the conscious of their weight, their smell. From time to time probably their taste, since we know children put everything in their mouth, but that makes them know the limits, like when they get hurt, they learn what not to do. They hear every kind of noise, cars, other children, animals like birds, and so on. In other words they realize the world, in a first time their neighbourhood. By playing they also interact with other children, they learn about social relationships, exchange ideas, share the same space, and create rules together. They explore their creativity. They get to know about

feelings, called emotional skills. Thus we understand the importance for the children themselves to play, for their own growth. But there is at least another point that could be highlighted.

When children are playing together, adults can be involved indirectly, by the simple fact that they supervise their kids. This way the places where children's play take place can be an opportunity for a part of the community to meet, and we know how important it is for a society that its population can exchange and meet. The gains are for both the children and the whole community.

## 2.Current situation: the wrong side

### **In developed countries**

*« The number of children playing in the streets and areas around their homes has decreased over the past thirty years. A study of children's outdoor play in 1973 found that 75 per cent of the children observed played near to their homes, mainly on roads and pavements (Department of the Environment, 1973). Data collected for the National Travel Survey 2005 (Department for Transport 2006), suggests that only 15 per cent of children aged 5 to 15 played outside on the streets. This is the result of a number of barriers to children's outdoor play on the streets. » (Lacey 2007).*

Actually we don't see kids playing in the streets. The main reason could be the fear of the traffic. The cars are everywhere in the city, and the hazards are too many present by the road. As far as the parents don't have time, because of the work, to take their kids away for leisure time, the children should stay at home. It seems that they can't even go to the playgrounds if they are too far away from their house and suppose that they have to go there on their own. Sometimes children are also seen as a source of nuisance and are told off by adults. (Stockdale et al. , 2003). That leads young people to get more sedentary.

Both Norwegian studies and viewpoints of expert children researchers around the globe claim that the new generation spends much more time at home, being inactive. In such a way they

are not socializing, and stay confined in their own world instead of opening their mind to the outside. Most of the time, the only means of entertainment for those kids are: TV, computer or electronic games. In Norway young people spend around three hours a day on those pastimes (MMI 1995). In Japan it comes to an average of six hours a day, a level that Terumoto Kiyokawa (researcher at the NHK Broadcasting Culture Research Institute and director of the non-profit organization Children and the Media) describes as « media saturation ». The outdoor games, involving movements, interactions, exchanges and all the contributions mentioned before, are nowadays turned into motionless activities in front of a screen. Children are cut from their environment, and no longer have the possibility to interact with the world. No long to understand all the hazards that occur in those cases. All the developments (physical, social, emotional...) underpinned by a good range of activities are cancelled. On a social aspect, even the social life within the family can be affected by those media exposure. Parents in Japan are facing daily problems in their relationship with their children (Shimauchi, Y. 1999). On a physical aspect comes the problem of the obesity in early childhood (combined with the junk food), besides the possible lack of dexterity and motricity. « *Motor problem in children are reported in several Scandinavian Studies (Due et al., 1991; Hertberg, 1985; Gilbert and Rasmussen, 1982; Kjos, 1992; Ropeid, 1997)* » (Fjørtoft, 2001). Some diseases are already recognized as direct effects of too much exposure to video games, we also know the effect on the behaviour.

Going back to playgrounds, let's see two examples.

Firstly, on the report written by Karin Grönvall is mentioned the construction of high-rise rental apartments in Sweden during the 1960s and 1970s, in order to quickly reduce the shortage of housing. In this time, a lot of other similar buildings have been constructed in many other countries. This was also done in order to respond to the development of the car. This way the nature vanished into the landscape, being replaced by parking lots and uninspiring play equipment. (Grönvall, 1984). Most of those constructions remain today. However, the problem is that those equipments are limited in the range of possibilities for children to play, especially to develop their creativity. “[...] *playgrounds usually provide a limited range of possibilities, and even the most elaborately equipped formal playground will not meet children’s needs if they are accompanied by their caregivers.*” (Bartlett, 2001). (This is confirmed by the next study). Furthermore, in this kind of context, young people are not in contact with the nature. We will see now other lacks with this kind of playground, through a study in Japan.

In his paper Fatemeh Afsharlahoori analyzed 40 playgrounds in Chiba city (Japan). (According to the pictures, those playgrounds look like the one we find in Europe, composed of tube slides, swings, suspension bridges, climbing parts...). He defined different categories. For example: whether the equipment allows to play together or not, or if the equipment requires several kids to be able to play. He also classified according to the muscle skills needed for certain activities (climbing, sliding, swinging...). The results pointed that those kinds of equipments have a lack in term of providing all the possibilities for the body to develop fully, and those that can encourage children to play in groups are not available. The second part of the study is very relevant to the limitation of playgrounds. The report mentions that when children are accompanied by their parents no unexpected behaviours have been seen, whereas when playing free from caregivers they use the equipment in new ways (climbing from bottom to top of an inside slide, jumping from the suspension bridge, climbing on the infrastructure...). Those behaviours show at the same time the limited possibilities given by the equipment, as well as the need for creation and change. They are always creating something new, exploring and challenging the environment by their creativity. What could be improved to offer the young people all they need to thrive in better conditions? Now let's see how it appears in less developed countries.

### **In Developing countries**

We saw that the situation for play activities in developed countries went down those past 30 years. We could expect that in developing countries, with fewer resources, the situation could be worst. This part will refer to a study trip in Philippines, and will mention what has been seen and analyzed.

In this country the playgrounds are almost inexistent. We hardly find the equipment we find for example in our countries. Actually, specific areas where little kids could play cannot be found. The only equipments are those basketball courts, which are most of the time a simple wooden board and a ring fixed on a wall. Otherwise children are playing in the streets, where hazards due to the traffic are high. From the interviews, fear of the behaviour of drivers is often noticed. Nevertheless, despite this lack of infrastructure, because those young people do not beneficiate of all the technologies found in developed countries and due to the lack of

space within their house, they are always seen playing outdoor activities, in contact with their neighbourhood and people living there. They are in touch with other children and adults. Unlike children in developed countries, they don't confine themselves; they keep on exchanging with their peers. Their social skills can be developed, they are fully conscious of the human need to share with the others to be able to evolve and progress. It might be one of the reasons for which the sense of community is so developed in those countries.

In the streets, children are running, jumping, carrying each other and a lot of other activities which require their motor skills. However, the optimal conditions are not reached simply because of the insecurity.

After this little review of what doesn't work in a general way, we will see now the establishment of a commune conscious toward a creation of place dedicate to children activities, or the improvement of possibilities in areas for children to play, completed by two analysis on the relation between nature and child development.

### 3.Consideration of children needs: Examples and Studies

In places where play activities are not planned, like the streets, we could think that stepping back is too hard. In fact solutions already exist for many years, especially with this notion of "home zones":

*"Home zones were pioneered in the 1970s in the Netherlands, and come from the concept 'woonerf' meaning 'residential yard'. In short the idea is to attempt to create a balance between vehicular traffic and others using the street. Consultant Tim Gill describes home zones as a group of residential streets designed so that street space is available for social use such as children's play (Gill, 2006). Home zones gained prominence in the UK in the 1990s with a campaign led by the Children's Play Council and Transport 2000."* (Lacey, 2007).

In the cities, cars are placed at the top. The idea is to give back the outdoor spaces to the people, in order to let them make the streets become their own place. Free those spaces from hazards would make them more secure, in a way recovering attractiveness and possibilities

for children to play like in the past. Possibilities vanished in fact for thirty years. The government in the Netherlands and in the United Kingdom gets involved in the process of transforming those spaces. Many answers can be found in regard to this issue. To slow down the traffic, panels with limitation speed are erected, the design of the street can be disturbed in order to force the driver to be more aware and careful, or speed bumps can be created. “Car free play street” can be found, the idea is to avoid the traffic in some areas on Sunday for example, so children can practice outdoor games safely. Inhabitants are often included in the process of redesigning their neighbourhood, as community groups working with the authorities taking in account their needs. In the Netherlands, legal requirements regarding the design of home zones exist, whereas in England, the power has been given to the local authorities to designate home zones under the 2000 Transport Act. *“However, there are signs, if not dedicated resources, of official support for home zones. The recently published Manual for Streets by the Department of Transport, and Communities and Local Government (2007), has outlined the benefits that home zones can have to the community.”* ( Lacey, 2007). Writer and consultant, Tim Gill worked on an evaluation, by collecting data and interviews, of the changes brought by those implementations. The findings show that those changes had a big impact on the possibilities for children to play outdoors. The streets became safer according to the parents, and kids were more present. It was also an opportunity for the neighbours to meet and interact. A new community spirit came up in the society. The same results are found in a video, which took place during a “car free play street”. (the link is in the references). Children can be seen playing together, running, playing the ball, drawing with chalk on the road. Here comes to mind the picture of these streets during the week, with those colourful drawings, made by children, what a lovely idea. The streets lose their dreariness, and in a way also remind the drivers that children can be around. Interviewed people were blissed to see young and old children playing together, they realized how many kids were living around, and met people they had never seen before.

Then fixed infrastructures do not seem to be a duty for child development, but the simple fact of turning forbidden spaces into accessible areas changes everything in the landscape, not only on children thrive by allowing them to grow within the society, but also within the whole community. Finally, it is a bit like what has been seen in the developing countries (by necessity because of the lack of funds and equipments) that fails in developed countries. Giving the new generation safe and enjoyable space within the city is a big improvement.



However, nowadays the question of sustainability became inevitable in our societies and the idea to bring back the nature into the cities is growing. What is the place of the nature in the child's development? Could that nature be part of it? Could nature become an essential item in this reflection? Let's focus on two studies carried out on the notion of "playscape" related to the child growth, held in Norway and in Malaysia, to continue our globe tour, keeping the balance between developed and developing countries. First of all here are definitions of two important concepts:

Playscape, definition :

*"For a playground to be considered a "playscape" the space should be as natural as possible, with as little man made components as possible. Using native plants, rolling hills, lots of trees; playscapes represent a natural place such as a forest. Playscapes are designed with the intent of bringing children and people back to nature. Playscapes offer a wide range of open-ended play options that allow children to be creative and use their imagination. Playscapes offer a wide range of developmental benefits to children, rehabilitation programs and all people in general.[...] They are also used in horticultural therapy for rehabilitation of mental and/or physical ailment. They increase participation rates and decrease absenteeism, decrease bullying, decrease injury rates, increase focus and attention span and help with social skills in schools (Fjortoft 2000, Wells, 2000 and Malone, 2003)" (Wikipedia).*

Affordance, definition:

*" Gibson (1979) developed the concept "affordance" to describe an awareness of the environment and their functional significance, or their functional meaning. For example if a rock is big enough to fit the hand, it might be perceived as an object to grasp or to throw; it affords grasping or throwing.[...] The central concept guiding children's examination of their environment is that of affordance" (Fjortoft, 2001)*

We already see that fixed playgrounds are limited with the affordances they offer. What does the nature provide ?

A study led in Norway is reported in Ingunn Fjortoft's text. The aim was to find out how the activity of playing in a natural environment acts on the children and their development, studying the affordances provide by the nature, as well as the direct impact involved on the motor, social and mental skills. The method consisted in an experimental study of two groups composed of five to seven-year-olds. Both groups were tested in the beginning of the year

with the EUROFIT: European Test of Physical Fitness, the Motor Fitness Test (Adam et al., 1998). The test is made of several exercises in order to measure the capacity of movement (dexterity, speed...) of children. The experimental group had the opportunity to play in a forest for 1 to 2 hours a day, while the other group used the traditional exterior games, for 1 to 2 hours a day, and had the possibility to play in nature occasionally. The same tests were made again at the end of the year. Here is the table with the results.

**Table I.** Pre- and posttest. Mean results (SE) within the groups SPSS T-test for paired samples

TESTS	EXPERIMENTAL GROUP		REFERENCE GROUP	
	PRE-TEST	POST-TEST	PRE-TEST	POST-TEST
FLAMINGO (no. of instabilities in 30 sec.)	4.7 (0.8)	1.5 (0.3)***	4.0 (0.6)	3.3 (0.7)
PLATE TAPPING (Time in sec. of 50 taps)	35.0 (1.9)	28.1 (1.2)***	29.9 (1.1)	27.4 (2.6)
SIT AND REACH (cm)	24.9 (0.8)	24.4 (0.8)	25.3 (1.0)	25.5 (0.9)
STANDING BROAD JUMP (cm)	102.8 (2.9)	113.1 (3.6)***	103.1 (4.3)	111.3 (3.8)**
SIT-UPS (reps. in 30 sec.)	5.3 (0.6)	6.5 (0.6)**	5.9 (0.8)	7.0 (1.1)
BENT ARM HANG (sec.)	2.6 (0.4)	7.0 (1.0)***	2.6 (0.6)	5.4 (1.1)***
BEAM WALKING (sec.)	11.4 (1.4)	7.5 (0.7)**	7.7 (0.8)	7.2 (1.1)
INDIAN SKIP (reps. in 30 sec.)	21.8 (2.2)	43.6 (1.9)***	27.8 (2.4)	37.2 (1.8)***
SHUTTLE RUN (sec.)	31.9 (0.7)	29.7 (0.5)**	30.7 (0.8)	30.3 (0.7)

\*\* =  $p < .01$ , \*\*\* =  $p < .001$ .

The results are eloquent. The diversity of the nature offers a large range of affordances for the children, and therefore has a huge effect on the development of children's skills. «As maintained by Moore and Wong (1997) the physical diversity increases the opportunities for learning and development » (Fjortoft, 2001).

Let's now have a look at a study led by Mohd Suhaizan Bin Shamsuddin, in Malaysia. Eighteen children of an orphanage, aged five to twelve, were brought in a virgin forest and a composite of orchards located on a sloping site. The aim was to explore the affordance of the nature in this place. The results were significant. The forest and orchard proposed 61 positive affordances ( examples for the stream: searching shrimps, splashing water, resting on bolder...) compare to four negatives ones (fear of leeches, fear of thorny rattan, tired to proceed hiking the forest hill and tired after climbing down the slope). What a negative affordance, isn't it? Another study lead by Ismail Bin Said en 2008 confirms the number of affordances provided by a natural landscape (87 counted by Ismail). It should be noticed that children in contact with the nature while playing, by using this one, learn at the same time about the elements which composed it, as well as the plants and the animals. They get to

know about fauna and flora around them, they learn to love them, then to respect them. Here is a part of the conclusion of this study:

*“Most of the play activities involved performatory and exploratory performances including climbing and sliding down slippery slopes, picking fallen fruits, plucking leaves from trees, collecting pebbles from stream bed and throwing the pebbles of stream surface, and many more. [...] In sum, experiencing in natural environment allowed children to express their cognitive, physical and social skills.”* (Shamsuddin 2008).

From all those examples and studies, both led in developed and developing countries, we agree that good answers already exist. This means improvements are possible and hope is allowed for the future development of the next generation. Furthermore, with this concept of playscape, money doesn't seem to be a critical issue. So far, the only worry is about letting a place free from man made construction, in other words, let a piece of nature when planning a new area. Concerning preexisting constructions on site, when planning entirely a new entity is not possible, things can be vastly improved just by the concern and the involvement of both the community and the government. In this perspective of improvement of child play, how can the architect step in and interact in this implementation?

## 4. The Role of Architects

Today's society is led by the “think sustainable”, if we don't want to see our life conditions and our environment waste away. In terms of construction and urban design, a holistic approach is primordial. That means we should start with an approach and a reflection taking into account all the elements involved such as humans, economy and materials. We recognized in the introduction the importance of children in our society. Their possibility to grow in the best conditions as possible is one of the most essential human factor to pay attention to (including the possibility to play in an adapted place design for them).

The architects, considered as people of knowledge, in the middle of the process of conception should be aware of this reflection on children play space. Placed in a vast system composed by many participants, he has to make people aware of the importance of this global approach. Make the future beneficiaries of a project be part of the process, being free to expose their

desires, including their thoughts about the spaces dedicated to their children. Sometimes the communities are aware about this importance. Here is an example:

*“A squatter settlement in Kathmandu, Nepal, has an area of open land, surrounded by scrubby growth, which the community has intentionally protected from settlement, saving it as play space for their children.”* (Bartlett, 20??)

The architect has to explain to the authorities that sometimes if the design process is limited it can be relayed by laws or other means that could be established by competent authorities.

“Car free play street” or speed limitation are two examples.

Finally, the architect has to think, since the beginning of the design process, to take into consideration the space for children to play.

## 5.Criteria for design of sustainable and adapted play space for children

By the end of this paper, it seems that the criteria that should be established, in the aim of an improvement and a consideration of appropriate answers in the designing process for children play spaces, are the same for developed and developing countries. Here are the most important:

- When designing a new area, think about saving as much as possible the preexisting vegetation, and how to use those spots in order to allow children to play within those spaces.
- Involve beneficiaries in the designing process.
- When upgrading an area, take into account the possibilities for play.
- Think about safety. Traffic could be eliminated, partially interrupted or the speed could be limited (by panels or infrastructure).
- This answer can be given when redesigning a neighbourhood, when preexisting buildings are there.
- Think about the affordances provide by those play areas.
- Think about the possibilities for children to interact with the others within those play activities.
- Do not restrict the possibilities for children to use their creativity.

- Finally, feel free to create and add new opportunities to improve child development.

## Conclusion

To conclude on the subject here is a last quote, just to be sure the message is passed:

*“The solution to adult problems tomorrow depends on large measure upon how our children grow up today”* (Margaret Mead)

## References:

Grönvall, Karin

Aug 1984 *The physical and Psychological Environment of Children in Sweden.*

Current Sweden, n323

Bartlett, Sheridan

20?? *Urban Children and the Physical Environment*

City University of New York and the International Institute for Environment and Development, London.

Lacey, Lauren

2007 *Street Play, A literature review*

Playday 2007 our streets too. United Kingdom

(<http://www.playday.org.uk/default.aspx>)

Bin Shamsuddin, Mohd Suhaizan

2008 *Affordances of orchard and forest as playscape for young children in Malaysia*

Universiti Teknologi Malaysia, Skudai, Johor, Malaysia.

Fjørtoft, Ingunn

Winter 2001 *The Natural Environment as a Playground for Children: The Impact of Outdoor Play Activities in Pre-Primary School Children*

Early Childhood Education Journal

ISSN-1082-3301

Afsharlahoori, Fatemeh

20 ?? *Study on Outdoor Playground Equipment and Children's Social and Physical Development*

International Association of Societies of Design Research, The Hong Kong Polytechnic University

## Websites:

<http://www.ecoplan.org/children/general/tranter.htm>

<http://www.streetsblog.org/2010/12/17/video-car-free-play-streets-in-the-uk/>

[http://findarticles.com/p/articles/mi\\_m1145/is\\_n4\\_v31/ai\\_18238601/?tag=mantle\\_skin;content](http://findarticles.com/p/articles/mi_m1145/is_n4_v31/ai_18238601/?tag=mantle_skin;content)

<http://en.wikipedia.org/wiki/Playscape>