

Amphitheater Stairs as Socialization Space in Schools

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ABSTRACT In modern school design atrium stairs are places that support students to socialized in addition to providing spatial connection. The main objective of this study is to find out scientific datas for designing amphitheater stairs that allow socializing in schools. In the first phase spatial organization and theoretical knowledge about socialization size of circulation circulation have been given. These results showed that the amphitheater stairs are very important elements in socialization. In the second phase school samples were analyzed in different countries which act to socialize with amphitheater stairs and in literature after 2000 designed. Analysis was carried out under the relationship with other areas of the amphitheater stairs, form features, materials and colors, the lighting and circulation type of school heads. In the third stage the findings obtained and evaluations were made. Some design decisions revealed which will be data in the field of training and practice from the results of the analyzes.

INTRODUCTION

The physical environment in schools has a direct impact upon the behaviours of students and teachers. For this reason, the physical environment within schools needs to respond to teachers' and students' physical, psychological and social needs and to be appropriate to teaching activities (Moore and Lackney 1994; Brubaker 1998; Perkins and Bordwell 2010; Woolner 2015).

Schools are complex buildings where many activities are undertaken. Even in the classrooms which are basic to these buildings, where students undertake most of their educational activities, circulation areas matter in the context of socializing as necessity of dealing subject. Circulation areas are not only places that provide routes from one place to another. They also must be places where students play games together, get relax and places where educational activities can be in there by supporting flexibility and socializing. Because schools are the first public spaces the students began to socialize and these areas must also support the social and cultural development of students addition to educational activities.

According to results of literature survey about socializing in schools and schools of different designers in various countries, it is seen that amphitheater stairs is very effective elements in socializing size and designers seem to pay attention to these areas. Under this context, the study aims to reveal amphitheater stairs design features.

For this purpose circulation areas design and socializing size are discussed in school buildings. In this context, it is primarily addressed to the spatial organization of the school and provide information about circulation areas. The next step amphitheater stairs which is prominent in the context of socialization in the circulation areas are analyzed through examples of different schools.

Problem Statement

What is the design criterias of Amphitheater Stairs in schools?

Objective of the Research

The objective of this paper is to try to generate some design criterias for amphitheater stairs that allow socializing in schools.

Spatial Organization and Circulation Areas in Schools

Schools are complex buildings with different functions, where places related to each other are connected. A subsidiary of this building group which holding function more than one are categorized diversely. Different writers has made different categorization about this (Kol 2003; Karabey 2004; Terzioglu 2005; Perkins and Bordwell 2010). In terms of such categorizations, classrooms are viewed as the most critical and the most functional factor when it comes to

school buildings. Almost all education activities are conducted in classrooms. In this context classrooms are the first point in a system that determines an application framework of the education system (Karabey 2004). As an educational environment, classrooms are places where children make real in large part of their daily activities and where they are included in as time. Classrooms are not only the places where education is conducted but are also the places where students are in close contact with each other.

Another important unit in school planning is the circulation areas. Ching (1979) describes the concept of circulation as the main components of the circulatory system of the building and the elements that influence the perception of spaces. And this spaces are discussed under five heading format as approach, entrance, shaping the way, way – space relations and circulation areas shape. Circulation is mobility that provides a link between spaces in order to reach spaces in the building. This mobility that enables connection in building consist of two types. These are horizontal and vertical circulation. Horizontal circulation is elements enables relationship such as halls, corridors, entrance, sofas and landings. Vertical circulation is elements that used to climb building floors and different height such as stairs, ramps, escalators and elevators. These construction elements are important for the well-planned design.

Circulation areas are decisive for all building types in planning and many are the basis of planning. Karabey (2004) classifies the articulation types of classrooms in schools due to circulation as expanding the plan on the grid, organic plan, regulations on the corridor serving two directions, one side of the corridor regulations, medium halls plan layout, quad, octal clustered classrooms and support units and different use in open plan layout. Perkins and Bordwell's (2010) mass planning is bases of circulation types in schools.

Hertzberger, who has done alot of work on theory and applications in school design states that a school should be thought of as housing in a neighbourhood, and classes in school should be thought as the home in this housing, and, as such, states they are highly important (Hertzberger 2009). According to Hertzbergers rhetoric, if we think of the school as a neighbourhood and the class as housing, it is possi-

ble to describe the areas that provide connection and communication between the housing, roads, bridges, etc. as circulation areas.

Circulation areas are linking the different functional areas of the areas. This is not only the circulation areas, they are also the places where students spend a lot of time looking outside of the classroom. Dudek (2007) represents this circulation areas will often be described as 'break-out spaces,' or 'covered streets' and poorly designed circulation can make movement around the building difficult and even facilitate bullying. According to Dudek, well-designed circulation will promote a positive ethos and create a socializing. So it is a real spatial quality.

Well-designed social spaces are likely to increase students' motivation and may even have an impact on their ability to learn. High-quality space for informal learning will also enhance the profile of the school. For these reasons, social spaces are given a high priority in new designs (Designing Spaces For Effective Learning A Guide To 21st Century Learning Space Design 2006: 28).

In contemporary school building, circulation areas provides orientation and spatial connection addition to the realization of formal and informal learning activities and this areas seems to be multipurpose and highlighted areas for socializing. With design of these spaces correct form, this areas can be used maximum level and to socialize, to social interaction.

Socialization Dimension of Circulation Areas

“Learning is a remarkably social process. In truth, it occurs not as a response to teaching, but rather as a result of a social framework that fosters learning” (from Brown, Schader 2008: 405).

Besides the decisive influence in spatial planning in schools, circulation areas has important implications for the socialization size. It is necessary designers to relate architecture with learning. Contemporary school design depending on the current educational system, has to provide the environment that support socialize of students.

Hertzberger states that a designer affects the basic form of social communion in a building deliberately or accidentally. According to him, social communion is a sufficient reason for gathering everyone on an equal basis, even depending on environmental factors within a lim-

ited scope. Blocking the architecture's potential, which has influence over the user's socializing, is described as an approach that limits the user's independence. According to Hertzberger, the situation in which an architect is alienated from this subject, who cannot provide this, is a situation that cannot be understood in terms of sociological and psychological factors. We are surrounded by failures from the past due to the formation of useless concepts (never used), other romantic notions and utopias (places for social interaction) on the part of architects who do not believe in considering people's behaviour within buildings (Hertzberger 2009).

Psychologic and social harmony has never been the primary need in architecture. Carefully calculated measurement, true articulation and true void ratio have become the starting point to distract design against "liveable places". There is no social architecture, but this situation does not have a meaning and we will never see how people can influence each other in different situations (Hertzberger 2009).

Hertzberger who evaluates design as a sociological perspective, says "The architecture I aspire to is one that is able to encompass the poetry of society and of living together; in other words, it must provide the right spatial conditions for social life" (Hertzberger 2002). Hertzberger refers to himself as a "social architect" sarcastically and aims to raise humane building (Swaan 2009). In all structures designed by him and all books written by him, Hertzberger claimed that promote socialization, today is spreading day by day in the contemporary school design.

Hertzberger emphasizes the main subject in the schools he designed as the spatial relationship of public and private space. Hertzberger says "all classes in a school are special places against open public area. These public area being in order are special against outside street" (Swaan 2009). Hertzberger avoided designing places in his schools where children are forced to go outside. He designed places and corridors between classes and little niches. He designed circulation areas open to socializing, where students can study and do homework alone, or at the same time study in little groups. At the same time, special areas belonging to the children themselves in the classroom are given a place in these schools.

With emphasis on the impact of school in the circulation areas to socialize, there are many

writers. Perkins (1957), tells "The corridor is the school's throughfare. But should not it be a pleasant avenue, not a forbidding tunnel? Physically, the corridor is a space for people moving from room to room. Psychologically, it can be a place for refreshment of the mind, for unwinding and relaxation and for pleasant socializing" (Perkins and Bordwell 2010: 91). Perkins' in this phrase represents the circulation areas are directly related to the socialization in schools.

Dudek 'also underlines the effect of socialization in the context of the circulation areas. In addition to specialised learning environments, there is a need for group gathering spaces that are flexible and allow for many different types of configurations. According to Dudek, these are the kinds of places that can equalise, that should allow for every student to find their specific area of interest. These are the places for invention, places for reflection, also places to just blow off steam. Locating these transitional zones throughout a school provides equal accessibility to all, while also connecting both the more public areas of a school and the front doors to the classroom environment (Dudek 2007: 24).

More emphasis on relations with the socialization of the circulation areas of the two authors are Moore and Lackney. They express circulation areas as escape places and places to socialize outside of the classrooms. According to them, supervisable circulation areas should be designed and so that chaos must be avoided. With supervisable circulation areas, effective environments should be designed for communication of students. This areas has duties as symbol in relation with school and community. Wide spaces as Brubaker's expression, provide large groups gathering (visual communication is very important in schools) together. This design principle consists of lobby and hallways are wide enough to enable the students social communication, internal streets, shopping units and atriums (Moore and Lackney 1994).

As a result of the literature analysis carried out on the subject, the most prominent elements in schools giving importance to socialize seems to be amphitheater stairs. Amphitheater stairs are most feeding areas for socializing schools. The general principle of circulation areas design will be created in schools is to serve all users of the structure and the central focal point of building

These areas are areas where both students and teachers as well as administrators come together. These stairs have been stated not only

as sacred spaces but also as temporary panels devoted for show before the society. Hertzberger's amphitheatres are similar to theatres that have been restored studiously from ancient times to the present day. In these places people sit on benches, make little speeches, drink and eat something, and while doing these they learn and become socialized. Hertzberger thinks that the reason why students prefer stairs, seems because they are less comfortable with benches in schools instead of tables because they require too much of them. He implements stairs as transit areas because they are places where they are not obliged to any be formal. On the other hand, sitting on benches is uncomfortable for students in that they may be obliged to greet each other, have a dialogue and talk to the person next to them (Swaan 2009). Students are more social and free here.

In amphitheater stairs in schools considered as a city, public space, learning, teaching, study, eat, rest, play, talk shows and so on. By allowing for such functions, the gathering place of that city, squares that are the socializing area. This is co important and so determining amphitheater stairs design criteria is the subject of the study. Thus spaces can be designed that students love and support academic development of every kind is intended.

METHODOLOGY

Analysis Related to Design of Amphitheatre Stairs in Schools

Today, given the importance of the education system to socialization, it is seen that educational places designed to support to socialize consequently. The results of the study in terms of educational and socializing spatial emphasis in schools, it is seen that the commonly used amphitheater of the stairs. Within this context, the study aimed to determine the school's decision to put forward the design private stairs in the amphitheater. For this purpose five schools identified with amphitheater stairs, these schools were analyzed in accordance with the specified title. Due to limitations on the size of the article under study, five schools have been selected to perform in-depth analysis of the school project, which is exemplary in terms of socialization. These are De Opmaat, TED Eskişehir, De Schatkamer Park Brow Community ve Bratejordet

School. Attention was paid to select schools be powerful approach socialization, place in the literature, quality, accessible and current examples and to be designed by different designers in different countries.

This study aims to investigate the design approach of amphitheater stairs and find out some design decisions. For these reason some titles are identified.

- ♦ The relationship between amphitheatre stairs and other spaces: In this title the relationship between amphitheatre stairs, classrooms and entrance are analyzed in plan level.
- ♦ School circulation type: In this title circulation types are analyzed in plan level. according to Karabey's and Ching's studies.
- ♦ Form and sub-space use: This title includes the form of the amphitheater stairs, upper and lower purpose and railings analysis.
- ♦ Material and color properties: This title includes color and material analysis of the surface coating of the amphitheater stairs.
- ♦ Lighting: This title includes analysis of natural light in the amphitheater in section level.
- ♦ Images: This title includes visuals of amphitheater stairs

Analysis

In this section selected schools are analyzed and machined into the Tables 1-5.

OBSERVATIONS AND DISCUSSION

Through literature and acquired knowledge from the observing of selected schools, some design criteria was generated for amphitheatre stairs in school buildings. In this section research findings which were obtained from the observing of selected schools were presented.

The Findings Obtained from the Relationship between Amphitheatre Stairs and Other Spaces

According to analyses about relationship between amphitheater stairs and classrooms and entry, it is seen that the amphitheater stairs is located in the center of the school. In four of the

Table 1: De Opmaat Extended School

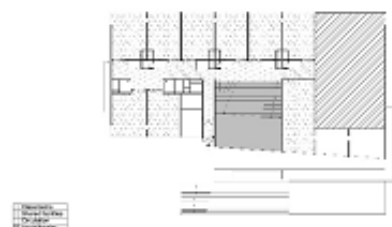
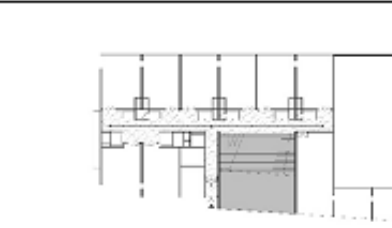
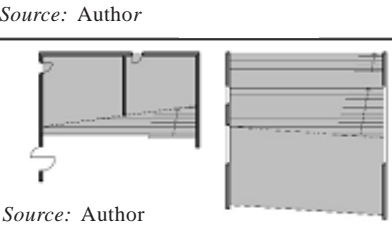
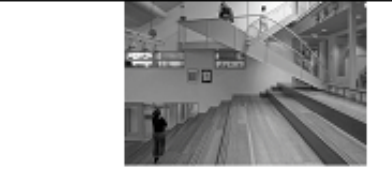
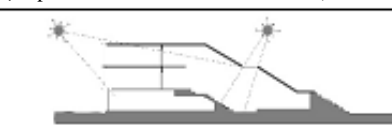

	<i>Schematic representation</i>	<i>Description</i>
<i>The relationship between amphitheatre stairs and the other spaces</i>	 <p>Source: Author</p>	<p>The stairs is located between the ground floor and 1st floor. From the entrance it is perceived directly. It is a central area. Providing visual communication between the entry and all the other floors.</p> <p>It is used in relation to classroom. Through the sliding doors it can be used if necessary combined.</p>
<i>School circulation type</i>	 <p>Source: Author</p>	<p>School planning is the type of medium holla plan. It is directly associated with the circulation area of the amphitheater.</p>
<i>Form and sub-space use</i>	 <p>Source: Author</p>	<p>Smooth rectangular geometric form. Providing unilateral steps vertical circulation is located within the boundaries of the amphitheater stairs. These steps are implemented in a manner converging moving up. Both sides of the stairs are adjacent to the wall. There is also a railing. Closing the bottom of the ladder it is used as a closed space. Volume has been profitably.</p>
<i>Material and color properties</i>	 <p>(http://www.ahh.nl/index_en.html(Retrieved February 1, 2015))</p>	<p>Wood covering is used. Wall surfaces are in light colors.</p>
<i>Lighting</i>	 <p>Source: Author</p>	<p>Skylights is located in roof. In addition, natural lighting and ventilation is provided by using the glass sliding doors in classrooms and atrium connection point.</p>
<i>Images</i>	 <p>Source: (http://www.ahh.nl/index_en.html(Retrieved February 1,2015))</p>	

Table 2: TED Eskişehir College



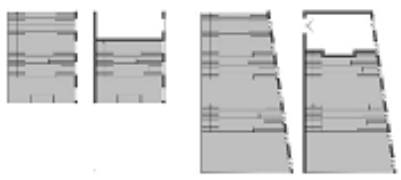



	<i>Schematic representation</i>	<i>Description</i>
<i>The relationship between amphitheatre stairs and the other spaces</i>	 <p>Source: Author</p>	<p>There is two amphitheatre stairs located secondary and primary school. Each of which is located in the center of their school.</p> <p>The stairs I is located between the ground floor and 1st floor. From the entrance it is perceived directly. Providing visual communication between the entry and all the other floors.</p> <p>It is surrounded by opening the circulation areas of the classrooms. It can be seen directly from this area, but does not allow for common use.</p>
<i>School circulation type</i>	 <p>Source: Author</p>	<p>School planning is medium circulation type holler plan. Amphitheatre is directly associated with the circulation area</p>
<i>Form and sub-space use</i>		<p>Amphitheater stairs located in the elementary school is trapezoid shape. Sub-space of this stairs is used closed. The stairs in the middle school is rectangular in shape under this stairs constitute a part of shelter. There is double-sided stairs that enables vertical circulation. One of these steps is properly, the steps on the other side is expanded and contracted using a more active form. Both sides of the stairs are adjacent to the wall.</p>
<i>Material and color properties</i>	 <p>Source: http://www.arkitera.com/gallery/browser/fieldname/image_id/operation/select-photo/album_id/55485/page/1/ (Retrieved January 28,2015)</p>	<p>The stairs are covered orange and white. The wall surface is covered brick.</p>
<i>Lighting</i>	 <p>Source: Author</p>	<p>Skylights is located in roof. Also entrance facade is designed as glass provides natural lighting and ventilation of the area.</p>
<i>Images</i>	 <p>Source: http://www.arkitera.com/gallery/browser/fieldname/image_id/operation/select-photo/album_id/55485/page/1/ (Retrieved January 28,2015)</p>	

Table 3: De Schatkamer Primary School

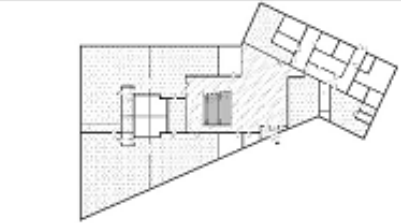
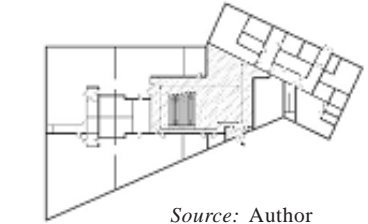
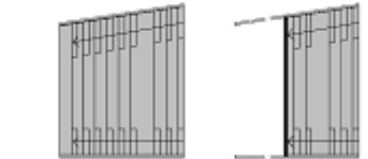



	<i>Schematic representation</i>	<i>Description</i>
<i>The relationship between amphitheatre stairs and the other spaces</i>	 <p>Source: Author</p>	<p>It is located in the center of the school.</p> <p>The stairs is located between the ground floor and 1st floor. From the entrance it is perceived directly. Providing visual communication between the entry and all the other floors.</p> <p>It is surrounded by opening the circulation areas of the classroom. This can be seen directly from the field, but is not open to the common use.</p>
<i>School circulation type</i>	 <p>Source: Author</p>	<p>School planning is medium circulation type holler plan. Amphitheatre is directly associated with the circulation area</p>
<i>Form and sub-space use</i>	 <p>Source: Author</p>	<p>Amphitheater stairs is in trapezoid form. The sub-space of the staircase is left open and is included in the circulation. There is double-sided stairs that enables vertical circulation. Both of these stairs are used properly following form. Stairs are located on either side of the railing.</p>
<i>Material and color properties</i>	 <p>Source: http://www.bekkeringadams.nl/projects/37/primary-school#(Retrieved January 27,2015)</p>	<p>White coating material is used. Wall surfaces are in light colors.</p>
<i>Lighting</i>	 <p>Source: Author</p>	<p>Skylights is located in roof. Also entrance facade is designed as glass provides natural lighting and ventilation of the area. Most of the surface are transparent.</p>
<i>Images</i>	 <p>Source: http://www.bekkeringadams.nl/projects/37/primary-school#(Retrieved January 27, 2015)</p>	

Table 4: Park Brow Community Primary School

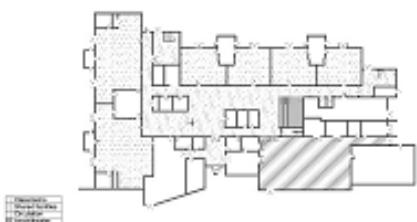

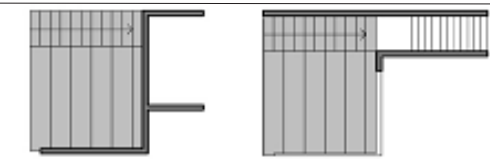

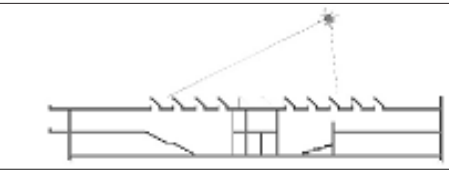



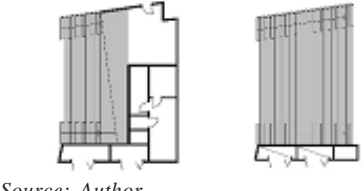

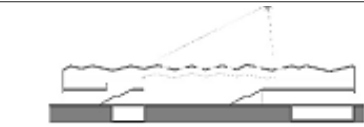
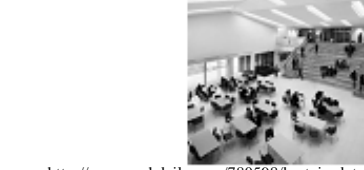
	<i>Schematic representation</i>	<i>Description</i>
<i>The relationship between amphitheatre stairs and the other spaces</i>	 <p>Source: Author</p>	<p>It is located in the center of the school.</p> <p>The stairs is located between the ground floor and 1st floor. It can not be directly detected from the entrance but it is in a close relationship.</p> <p>It is surrounded by opening the circulation areas of the classroom. This can be seen directly from the field, but is not open to the public.</p>
<i>School circulation type</i>	 <p>Source: Author</p>	<p>School planning is medium circulation type holler plan. Amphitheatre is directly associated with the circulation area</p>
<i>Form and sub-space use</i>	 <p>Source: Author</p>	<p>Amphitheater stairs is located in rectangular form. The level of up stairs is not allow sub-space uses. The upper part is used as a library. Providing uni-lateral steps vertical circulation is located within the boundaries of the amphitheater stairs. These steps are used properly following form. One side of the stair railing is located on the other side wall.</p>
<i>Material and color properties</i>	 <p>Source: http://www.archdaily.com/205579/park-brow-community-primary-school-2020-liverpool(Retrieved January 31,2015)</p>	<p>Wood covering is used. Wall surfaces are in light colors.</p>
<i>Lighting</i>	 <p>Source: Author</p>	<p>Skylights is located in roof. Also entrance facade is designed as glass provides natural lighting and ventilation of the area.</p>
<i>Images</i>	 <p>Source: http://www.archdaily.com/205579/park-brow-community-primary-school-2020-liverpool(Retrieved January 31,2015)</p>	

Table 5: Bratejordet School

	Schematic representation	Description
The relationship between amphitheatre stairs and the other spaces	 <p>Source: Author</p>	<p>It is located in the center of the school.</p> <p>The stairs is located between the ground floor and 1st floor. From the entrance it is perceived directly. Providing visual communication between the input and all the other floors.</p> <p>It is surrounded by opening the circulation areas of the classroom. This can be seen directly from the field, but is not open to the public.</p>
School circulation ty,	 <p>Source: Author</p>	<p>School planning is medium circulation type holler plan. Amphitheatre is directly associated with the circulation area</p>
Form and sub-space use	 <p>Source: Author</p>	<p>Amphitheatre stairs is in trapezoid form. The bottom of the ladder is used as a wet area and enables two-sided step ladder vertical circulation within the boundaries the amphitheatre is located. Both of these places are used properly following form. Stairs are located on either side of the railing.</p>
Material and color properties	 <p>Source: http://www.archdaily.com/780598/bratejordet-skole-white-arkitekter/569e2001e58ecea00000f0-bratejordet-skole-white-arkitekter-photo(Retrieved February 1,2015)</p>	<p>Wood covering is used. Wall surfaces are in light colors.</p>
Lighting	 <p>Source: Author</p>	<p>Skylights is located in roof. Also entrance facade is designed as glass provides natural lighting and ventilation of the area.</p>
Images	 <p>Source: http://www.archdaily.com/780598/bratejordet-skole-white-arkitekter/569e2001e58ecea00000f0-bratejordet-skole-white-arkitekter-photo(Retrieved February 1,2015)</p>	

schools amphitheater stairs is directly related to the entry and one of the schools it is seen that an indirect relationship to entry. Amphitheater stairs can be seen from all floors of the school. Thus, activities made in these areas can be seen, so that is intended to collect there. These areas are most prominent in the school are areas called the heart of the school.

The Findings Obtained from the Circulation Type of the School

According to analyses about circulation type of the school, it is seen that there is circulation areas of the halls in the middle school type plan. This plan type is the best plan type for designing amphitheater stairs. Thanks to the wide central hall, circulation areas can be used in conjunction with classrooms and other spaces and Through this relationship circulation areas is perceived as directly from the entry.

The Findings Obtained from the Form and Sub-space Use

According to analyses about form and sub-space use, it is seen that rectangular and trapezoidal form is used. Step width of the stairs is twice as vertical circulation of the stairs. adjacent to the amphitheater stairs in single or double-sided vertical circulation elements applied to them are located adjacent to the stairs. Consisting of double sided ladder is related to the width of the amphitheater stairs. In the wide amphitheater stairs there is also located on staircase on both sides. In three of the examined schools double, in two of examined single-sided stairs werw seen. Some of the stairs widths is going through constant order, some of them is going shrinking or expanding form. The relationship between the amphitheatres and walls influences lack of railings on the stairs.

The Findings Obtained from the Material and Color Properties

The wood-like material is being used in most of the examined schools. Wood material is preferred in terms of being hot material. Other stairs are in white and orange. Sound –absorbing, non-slip and safe materials usega is draws attention. The warm hues of colors, more attention amphitheater of stairs, to emphasize the feeling of the collection in these areas and are preferred in

terms of being more detectable. The warm hues of colors are preferred in terms of being more perceived, more attention and feeling of collection in that spaces.

The Findings Obtained from the Lighting

According to analyses about lightning, skylights are remarkable on the amphitheater stairs. These areas is lightning with artificial light beside natural light. This situation it is important for students' physical and mental development. Moreover, thanks to the largely composed of transparent school entrance and facade lighting towards the amphitheater stairs are provided at the optimum level in these areas. In this areas solar control must be provided and in winter maximum benefit from the sun must be ensured.

The findings related to te findinga are summarized in Table 6.

In all of the examined school amphitheater stairs used as a multipurpose area emerges. These areas are places where realization of planned or unplanned event. Socialization, games, theater, work, recreation, meeting and multi-purpose meeting space is used as a strong visual communication is provided amphitheater stairs, providing the perception of all schools of these areas.

RECOMMENDATIONS

In modern school buildings it is important to have places where social and cultural activities can be performed in addition to educational activities, in terms of lifelong education and which have a mission as a centre for the community. People can set up social networking are considered succesfull design. Amphitheatres are designed where learn by experience, observation and activities can take place for socializing addition to the educational activities in this schools. Thus, these stairs are to contribute to the socialization size.

Amphitheater stairs located at the intersection of the classification made on the circulation areas. They serves both horizontal and vertical circulation. Depend on these, amphitheater stairs are places where informal activities can be performed. These areas are important for the students to realize themselves and each other. These areas collector, engaging area. The right place and properly design of amphitheater is important for socialization of children.

Under investigation as a result of analyses some design desicions are revealed. Thus, out-

Table 6: The findings related to analysis

	<i>De Opmaat Extended School</i>	<i>TED Eskişehir College</i>	<i>De Schatkamer Primary School</i>	<i>Park Brow Community Primary School</i>	<i>Bratejordet School</i>
<i>The relationship between amphitheatre stairs and the other spaces</i>	A central area Between first and the ground floor Directly related to the entry Directly associated with classrooms	A central area Between first and the ground floor Directly related to the entry In relation to visual classrooms	A central area Between first and the ground floor Directly related to the entry In relation to visual classrooms	A central area Between first and the ground floor Directly related to the entry In relation to visual classrooms	A central area Between first and the ground floor Directly related to the entry In relation to visual classrooms
<i>School circulation type</i>	Central holler plan Directly related to the circulation areas	Central holler plan Directly related to the circulation areas	Central holler plan Directly related to the circulation areas	Central holler plan Directly related to the circulation areas	Central holler plan Directly related to the circulation areas
<i>Form and sub-space use</i>	Rectangular form Vertical circulation steps in increasingly narrow width on one side Adjacent wall no balustrades Under covered usage	Rectangular and trapezoidal forms Double-sided stair treads. One side does not change, the other steps that expand and narrowed. Adjacent wall, railing Under covered usage	Trapezoid form Double-sided width of fixed vertical circulation steps. Double-sided railing Under open usage	Rectangular form One side of the width of the constant vertical circulation steps A side wall adjacent to the other side railings Under covered usage	Trapezoid form Double-sided width of fixed vertical circulation steps. Double-sided railing Under covered usage
<i>Material and color properties</i>	Wood siding	Orange and white coating	White coating	Wood siding	Wood siding
<i>Lighting</i>	Skylights Transparent surfaces	Skylights Transparent surfaces	Skylights Transparent surfaces	Skylights Transparent surfaces	Skylights Transparent surfaces

puts that will contribute students in more communication has been revealed to socializing size in circulation areas. Circulation areas, will provide psychological benefits with successful design in physical size. In terms of this approach educational efficiency and personal development is expected to contribute.

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