DESIGNING EDUCATIONAL COMPLEX IN THE CITY OF QOM IN ISLAMIC PERSPECTIVE

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Abstract
Today, due to large challenges existing in Islamic architecture, various and in part contradictory views and attitudes grounded on this topic of interest can be seen. Some people know Islamic architecture as form mimic manner *and* applying the elements of the past architecture in today's architecture. Others know today's architecture embedded in meanings, and others found in drawing attention to the general form of the architecture, seemed that designing educational complex in Islamic perspective required today, and taking steps further required for this purpose. In this regards, this study intends to find a response to this question "what are the architectural characteristics and/or principles to design educational complexes in Islamic perspective?" sought to find a response to designing an Islamic educational complex across Qom city. Iran is a Muslim country in which the Islamic perspectives used to see all areas of life including school environment. According to Islamic practices, human breeding, as one component of creation, takes place in conjunction with other components over time. Hence, architects as designers at educational complexes play a major role in breeding humans in next generation, causing the present study addresses designing educational complex from Islamic perspective regarding the new practices issued by Ministry of Education. This complex consists of primary, secondary and high school courses for Boy students in a land with area of 9000 m^4. It should be noted that this project is executive, and can be a little step to improve educational complexes regarding new educational practices issued by education ministry besides drawing attention to Islamic architecture around educational complexes. In this study, data are analyzed using logical reasoning, and applied in a case study. Hence, followed by designing issues on education system and Pathology of the status quo, proposed patterns in deigning educational complexes are defined, and theoretical foundation aiming at access to principles of designing educational complex in Islamic perspective is proposed. In this study, identity and architecture of educational complexes, geometry and symbols in educational complexes and role of environmental psychology at educational complexes followed by proposing topic, are proposed. In the end, strategic principles for designing educational complexes in Islamic perspective are extracted, thereof addressing standards.
Key words- Islamic architecture, Islamic school, design school, educational complex, Qom city

Introduction and problem statement

Problems exposed to procedure at constructing educational centers complexes in recent years indicate neglecting comprehensive concept of architecture as a cultural and perfectionist phenomenon, and merely states attention to construction as a quantitative affair. Defect in such complexes weakens

facilities of them and only mentions it a place for reunion with poor educational function, further interrupts the process to go forward deriving from culture-rich architecture, This doubles when education and breeding concepts taken in educational complexes.

Access to an efficient Islamic community can be sought in thoughts of human force, and access to it regardless of investing in education for human forces and research is impossible. Hence, education and research institutions including education ministry and Ministry of Science, Technology Higher Education as the most important social institutions by providing necessary notifications and upbringing efficient human force can donate the best capital to next generations(Yakh Shaki, 2011, p. 3). Undoubtedly, the leading strategy that can be effective in access to this aim is the very involvement by students in a space designed with Islamic perspective. Currently, most of schools throughout Iran are all classrooms formed around a corridor. In other forms, this pattern has been implemented in more creative forms, yet what not considered in schools is Islam's view in designing educational spaces. Principle of avoidance of waste, principle of efficient, dynamic and constructive interaction, principle of balance and evolution are of principles that have to be used in a scheme in a way that the area to realize the aims to be provided in students' thoughts. In addition to what said above, drawing attention to the interactions between school and neighborhood as an area for education besides regarding the topic of identity at educational spaces that has not been considered in most schemes, gives a new orientation to designing educational spaces. Hence, this scheme intends to give a response to concerns over designing a proper space for education, and take a step to improve educational spaces and train manpower. Further, due to recent changes in educational practices by education ministry, and new approach by Renovation Organization, develop and equip schools with designing educational complexes on one hand, and issues related to architecture of Islamic schools on the other hand have all taken into account. This causes this study addresses designing Educational Complex regarding new practices by education ministry in Islamic perspective. This complex consists of primary, secondary and high school courses for Boy students in a land with area of 9000 m^4. It should be noted that this project is executive, and can be a little step to improve educational complexes regarding new educational practices issued by education ministry besides drawing attention to Islamic architecture around educational complexes.

Research importance

Looking at designing education spaces is of importance in Islamic view, because Iran is a Muslim country in which the Islamic perspectives used to see all areas of life including school environment. According to what exists in Islamic teachings, any building including different educational and non-educational spaces have to meet users' needs. In this context, large efforts have been made in Iran's architecture. Schools like Sadr school, Syed School and martyr motahari high school are those with traditional architecture. History of architecture in Iran indicates that spaces have been designed and built using Islamic-Iranian inspirations that always came effective at any point. Train Pious and outstanding people (on a meaningful convergence between all elements affecting education) are examples of it. Hence, in conditions going on, using valuable patterns at architecture of schools in Islamic age with an emphasis on necessity to use them in current and upcoming practices, required changes in current status so as to get outcomes fitted to Iranian's national and religious culture in form of academic and educational aims.

Aims of research

1- Achieve Islamic improvement pattern in educational spaces.

2- Recognize criteria and measures of quality at schools' architecture so as to achieve Iranian-Islamic improvement pattern in educational spaces.

3- Examine concept of identity, efficiency and differentiate them with functioning of spaces for better understanding and attempt to improve qualitative level of educational complexes.

4- Access a comprehensive pattern in designing Islamic-Iranian schools.

5- Improve culture in Islamic perspective.

Questions or hypotheses

1-can the schools to be designed in a way to meet students' needs regarding Islamic view, and realize aim of education system?

2-what are the indicators of quality in schools' architecture?

3-how can characteristics of quality at schools' architecture to be used so as to access Islamic-Iranian pattern?

Literature review

An overview on historical process went on constructing schools across Iran, three periods or Turning Points at architecture and educational system can be defined:

-The first period of the schools until the fourth century.

-the fourth century (Nizamiyya schools) to establish the Academy

- Academy to present modernist schools

Each these three periods are turning points in which changes in education system as well as architecture spaces can be seen, so that, it can state that changes emerged at these systems are origin for macro changes in the country. The preliminary studies show that schools at the second one in fourth century to establishment of academy enjoyed social functioning, That Most of these schools located next to the mosque and bazaars can be of social functioning here. Masjed-e Agha Bozorg Mosque is the most outstanding sample in Iranian schools' architecture, in which applications have been integrated in a way that not just bring about intervention, but also enhancement comes to realize, yet this faded gradually by inclusion of Western modernism schools. Studies have shown that to what extent the plan of a school can cause increasing or inhibiting learning, that this topic has been allotted with large body of studies in different areas including environmental psychology area in educational spaces, believed that new educational models require teamwork by students, obviously such models would influence schools' spaces. Till the 1970s, views on designing educational areas especially focused on spaces and quality of design. Most schools and classrooms changed from integrative education towards personal educations and small groups of students, thus needing to schools with open plans was felt more. In recent years, social needs and interaction between school and social area have been taken into account. John Dewey - *Father of* Pragmatism believed that a huge effort required to be made to teach our children how to take control of them, and personal independence comes to realize. He believed that school first of all is a social entity, because education system is all a life. Michel Foucault further believed that order imposed on modernistic schools finally is provided for complicated structure of power. In such a situation most communities found out that schools' involvement in space can be compared with other organizations. In some cases schools centered at community, and large efforts to get close to job services in schools in relation to the community made, that this engage students with different sciences, jobs, environmental issues and etc. of foreign cases, Sharon Hans school can be remembered, believed that the most important responsibility by education is person's involvement in society through increasing personal feeling of responsibility. This facet of education cannot be taken independent. This facet almost mentioned gradual forming of awareness that lets the person acquires correct contact with collective life and political community. Sharon Hans schools are like small cities, because proper identity was given to each part.

Research method

How to collect data

In this study, library studies in the context of architecture of Islamic schools, literature reviews in the area of qualitative characteristics required in schools in Islamic perspective, as well as a study on characteristics and facilities of Qom city through academic sources, and also field studies taken into account to provide foundation of data. Hence, due to extensive topics and quality and quantity of data, using logical reasoning to analyze qualitative and quantitative data has been considered.

Data analysis method

In this study, data was analyzed using logical reasoning method applied in a case study.

Theoretical framework of research

Islamic architecture

Aims in Islam's view are chosen based on Islamic principles and foundations. Hence, Islamic architecture emerged from Islamic aims and foundations. In this regards, architect as the leading agent has to take control of all the aims. This topic is one of the aims in present paper. According to religious teachings, organizing spaces can be acquired(Noghrehkar, 2009, p. 159). Some authors believe that characteristics of Iran's Islamic architecture includes structural targeting, Having a Life Story, Deployment proportional with space, Perfectionism, Modeling, Observe the size and proportions of consistency, observe preferences and continuity with nature(Tahbaz, 2004, pp. 103-124).

Architecture of educational buildings in Islamic perspective

Allah says in Surah Hijr: They are those who do the best after hearing the word of God, and God guides them, and They are wise. God does not change any ethnicity unless they cause change on their own, and in this regards education system is one of the most fundamental pillars of community in Islamic community. Hence, due to fundamental changes felt in Systems of thought and identity mentioned in previous part indirectly, the education system requires to be grounded on Islamic society, word of God and Imams(Moradi, 2006). Hence, western thinkers' views cannot be grounded on Islamic education. Ben Ibr to access self-culture as the fundamental aim of education has to seek to human perfection through divine wisdom(Motahari, 2010). What required in designing Islamic school to be taken as foundation is taking measures through which Classes are illuminated only by natural light and Artificial Lighting are applied in specific times.

Further, students' security at education centers, type of materials used in education centers, features of area and deprivation might influence dimensions of openings. According to the studies, approximate value used for window surface at education centers can be taken roughly one to third –one to fifth of the class area. North direction due to indirect lighting enjoys better light(Fazeli, 2012, pp. 57-58).

In end, with respect to theoretical studies as well as an overview on previous studies in the area of history of architecture of schools, principles and foundations of Islamic schools' architecture have been extracted. Results of studies show that 14 principles can be taken into account to design architecture of Islamic schools, refer to following(Fazeli, 2012, pp. 600-618).

Principle of justice

Before stating other principles, it should be noted that the basic principle in Islamic architecture is the principle of justice. Hence, anything has to be applied in its place and proportional to it regarding Islamic view.

principle of passing from plurality to unity and from unity to multiplicity

Descriptions to reflect the metaphysical world in Islamic architecture takes place through passing from unity to multiplicity. In architecture of schools, to define concept, it should be noted that unity does not mean the more classes integrated, the more united they are. In Guenon's view, real unity cannot not be separated, Components used and Islamic education center are various and unity governs all, so that generality of building is addressed, and Unitarianism has to be seen in building's landscape(Guenon,). Unity originates from spatial structure, and governs physical structure. Hence, order and geometry in forming this principle found with high place. The factors below have been addressed in form of analytic table.

Space-centered Principle

This principle focuses on points that include: determine axis based on Qibla direction and the center of site, focusing on symmetry and spatial and physical axis, nature of the whole space of axes at building, locating turning points along with the main axis of building, locating secondary spaces in direction of secondary axes of building.

Principle of centralization

Centralization in architecture o schools can be evaluated from two facets including plan and landscape.

Centralization in plan

With respect to plan, spatial centers followed by classes are accounted as the most fundamental spaces for students' activities. According to climate of Qom city, Centralization in plan as a spatial pattern can be accepted. In addition, leading turning point in building has to be considered as the functional center of building at plan.

Centralization in landscape

Spatial symmetry in landscape with direction at open, closed, and semi-open spaces emerges. This comes to realize based on nature of spaces. Divisions of landscapes are provided considering each person's place, and a spatial element is at the center. Spatial element can be an opening and/or an entry or any other thing not showing a closed physical element.

Hierarchy principle of Space

Hierarchy principle of Space in architecture of educational spaces focuses points below: Hierarchy of Space from outward to inward, Hierarchy of Space from collective spaces to centralized educational spaces, Hierarchy of Space among service spaces on one hand and other spaces on the other hand, Hierarchy of physical components in spaces in proportional to function and space scale, Hierarchy of Space on structure components and the whole building.

Principle of spatial independence

According to Islamic view regarding spatial hierarchy principle, another principle has been also taken into account in regarding the education center, that is, Principle of spatial independence sustaining on unity and constructive interaction among them. In this regards, functional independence is proposed in spaces like classes to avoid intervention in functions. Yet, in addition to drawing attention to spatial independence, mix of functions among education centers regarding new practices by education centers has to be taken into account. Hence, boundaries on spaces defined and clarified by means of physical elements, Intermediate spaces like corridor or open spaces and/or audio controllers to be used so as to build spatial independence, drawing attention to qualitative characteristics of spaces and provide a solution to combine or separate spaces.

Fluidity uncertainty principle

In Iranian architecture, there does not an absolute limit for any space(Diba, 1999, p. 103); this point is considered in Iranian architecture and increases spatial diversity. In designing schools, this point has to be taken into account. This characteristic in designing classes, collective spaces and personal performances can be taken into account.

Introversion priority principle

Attention to the architecture of Islamic schools across Qom city originates from different factors:

Climate: city is hot and dry and this leads the structure of building being with introversion approach; this does not mean direct use of yard in building, but can have structure of building using introversion approach, yet the yard not to be in center. This topic in designing school faced with challenges that need exploration into different elements.

Divine worldview: Muslim is in relationship with the God. School as an environment that aims to improve self-consciousness, given the nature can cause this feeling achieved.

Security: the space inside increases students' security feeling and parents tend to send their children to such schools.

Principle of passing from Appearance to Conscience

According to worldview, addressees at Islamic school have to provide educational environment data to students, and conduct students' thoughts in a way that spatial and physical elements and actions come to realize so as to recognize nature and reality. Hence, upbringing students as the most fundamental design strategies has to be taken into account at all stages of design. This is a qualitative issue, unless spaces with negative inspirations cause destruction passing from appearance to nature in students' thoughts.

Abstraction-oriented principle

Islam is based on monotheism and since unity cannot be depicted with no diagram in Plurality world, and the building has to be considered with the principle of unity, then unity can be come to realize as abstraction. Islam does not prescribe specific image and styles. Hence, different arts and styles can be used and take step to access unity. For instance, geometrical projects that come from geometric thinking as Burkhard believed, can be taken as abstraction concept.

Principles of Symbolism

Symbols at schools' architecture emerge as follows:

Conventional symbolism e.g. colored signs indicating the level of students at the classroom.

Simulative Symbolism: like what can be seen in decoration of the school.

Formal and image symbolism: like architecture signs in Bauhaus school of architecture at the Architecture School of Pooladesh in Isfahan and/or physical forms that are reminiscent of educational buildings.

Content Symbolism: according to Muslim's perspectives each person indicates involvement by creator. In this way the deep connection with nature and taking space into account planting plants can positively affect students' relationship with God.

In addition, some forms are accounted as content symbols that previously studies, including form of cube(attention to balance), pyramid(Symbol of Satanism) and curve(flexibility and tranquility).

Principle of body superiority to space

According to Islamic view, physics of each building have to be far from hypocrisy having consistent form, but not have to know form superior to space and activity. In other words, firstly study on spaces and the relationship between them have to be addressed and then forming the building given concept and function of space has to be addressed.

The principle to organize vision

Transparency or organizing vision is of important principles in harmony with diversity at Islamic architecture spaces, whereby integration, lightness and lightening come to realize.

The principle of interaction with nature

Interaction with nature can be studied in two facets. This principle is studied in complete in this study.
-spatial and physical interaction with nature meant the interaction with dwelling
- Spatial and physical interaction with nature meant the interaction with nature surrounding building

Pardisan town

1000-acre Pardisan town has been located in the southwestern city of Qom. The main communication with center of Qom through Neizar Road (at West Land) takes place. Mahdieh town has been located in northern part of these lands, and the distance between this town and Pardisan lands has been located at low-height hills ended in lands. Qom river passes in line with Neizar road passing western lands. Such lands regarding article 5 of commission added to service area provided for Qom city and currently has been seen with crowded population.

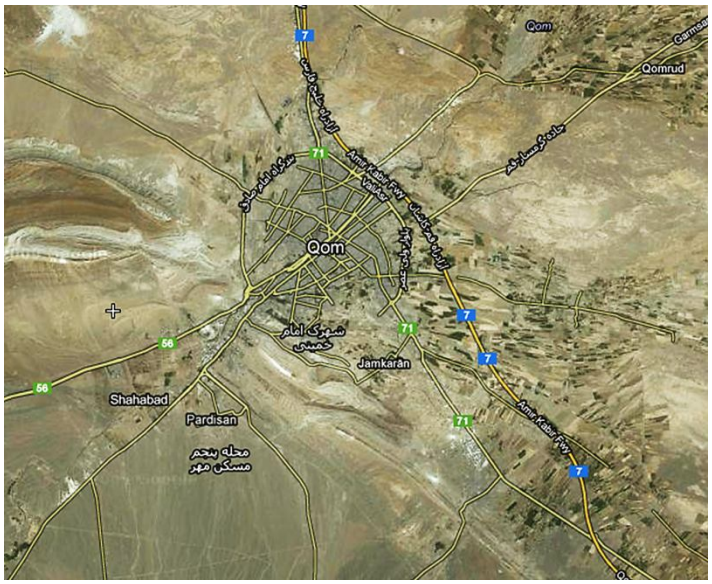

Image 1. Local influence of site adjacent to the city of Qom(www.wikimapia.com)

Area for Local influence of site

According to the fact that Pardisan town is a new-established town, modern approaches are taken into account in building it, thus boy educational complex was chosen in one of these lands that allotted for

this use in this town. This complex is one of the first educational complexes supposed to be established in Qom. Hence, establish educational complex including pre-school, primary, secondary and high school taken into account in a land shown in image as follow.

Image 2. Area for Local influence of site at Pardisan town

According to future use of complex in which four groups engaged in their activities, many students and teachers and staffs refer to this complex in a certain time, and exit at specific times. These high populations come and go to this complex in different ways.

On foot , bicycle, school service, parents' and teachers' own cars include transport vehicles. Population in morning and noon in addition to direction outcomes coming for working at this complex, residents are further influenced of negative effects. Hence, one of the fundamental measures before design is recognizing access hierarchy to complex and controlling it.

Assessment of site at area of design

Access to educational complex

Area for design is a land with area about 11102m^4. The possibility to access complex reported from Northern, eastern and western sides. In addition, southern side of complex belongs to a land for others. Western side interacts with a complex space at neighborhood, and can be a proper entry to complex. Hence, access from western area, main access, and access from northern and eastern sides are the other choices.

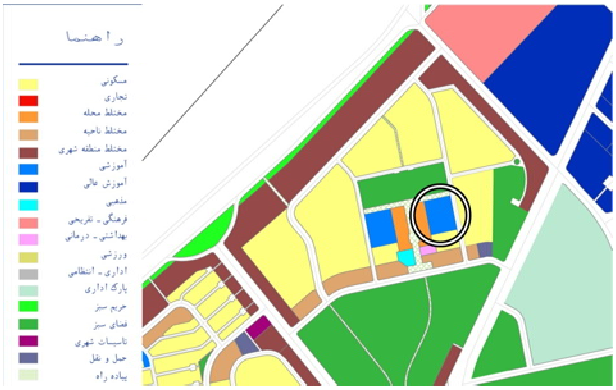

Image 3. Around design site and crossroads around it at detailed design maps

Adjacent elements

As shown in image above, this educational complex at neighborhood scale has been located in an area full of residential uses. A crossroad is available at western side in which religious, health, medical and educational uses are seen. This neighborhood can increase richness of activities in educational complex. In detailed scheme of Pardisan, all the use at lands has been suggested. As shown above, a land allotted for this affair has been specified with blue color. Southern side of land including large area and upcoming use have been allotted to green spaces with entertaining function, that this area can meet different needs at complex.

Sunshine on the site

There is not a high element at the adjacent site and considering how around the site grows, it does not seem a disturbing factor in the site develops. Natural elements such as gradients or trees adjacent to the site are not seen. Hence, regarding sun overshadowed Qom to utilize environmental facilities, it can move towards right side of building, because at this area through which sun rises, radiation and direction and intensity of wind blow goes towards southern side.

Views adjacent to the site and off-site

Currently, just buildings with proper view to school site, are residential buildings located at western area at site. This visual influence might lead to disturbs for both uses. This issue on one hand orients with improper light in west and on the other hand is in conjunction with proper wind blowing from western and southwestern sides to the site. Hence, this has not to be considered in localization and direction of building and openings, yet view to east and southeastern side and even south and north area around site is not in conjunction with a special issue. However, mountains far at eastern side of site provide proper possibility for students' view.

Grouping functions

As examined, generality of elements can be reported in this way that primary sector at southwestern side, secondary t eastern side, high school at north side, and collective spaces and middle spaces that are in conjunction, all centered at complex. Five different groups can be considered for educational spaces. Group 1 includes classes, workshops, labrotrarties, group 2 library, health and education rooms, group 3 administrative spaces across school, group 4 service spaces including health services, warehouses and etc, and group 5 includes sports and communities spaces.

Structure of plan

Structure of plan based on standard of renovation, development and equips schools

Structure of plan addresses two topics: first Per capita for Different spaces is defined, and then suggestions to use complex spaces based on structure of plan are addressed:

Table 1. table indicating Per capita for Different spaces required in primary school with 12 classes across education complexes

Definitions	Neighborhood		Regional		Space	row
	Area	No	Area	No		
Neighborhood classes with area of 35m^4 by dimensions 7*5, and regional classes with area of 42-45 m^4 by dimension 6*7	420	12	528	12	Theoretical classes	1

	75	1	75	1	Experimental class	2
	12	1	12	1	Assistant Room	3
	30	1	30	1	Teacher break room	4
A toilet by area of 6.3 m^4 per class	43	12	43	12	Students toilet	5
Drinking Fountain by area of 1 m^4 per class	12	12	12	12	*Drinking* Fountain	6
	7	2	7	2	Staffs toilet	7
	4	1	4	1	Storage of cleaning supplies and showers	8
	6	1	6	1	butlers pantry	9
	10	1	10	1	Buffet	10
	619		727		The total net area	
	155	25%	182	25%	Communication spaces	
	62	10%	73	10%	Infrastructure Spaces	
	836		982		Close space area	
	144	0.4	168	0.4	green space *per* capita	
	576	1.6	672	1.6	Per capita collective queue and play	
Predict space for sports at open space	828	2.3	966	2.3	Open space *per* capita	
	80	1	80	1	Parking lot area	

Table 2. table indicating Per capita for Different spaces required in secondary and high school with 12 classes across education complexes

Definitions	Neighborhood		Regional			
	Area	No	Area	No	Space	Row
Neighborhood classes with area of 35m^4 by dimensions 7*5, and regional classes with area of 48-50 m^4 by dimension 6*8	420	12	588	12	Theoretical classes	1
	12	1	12	1	Experimental class	2
	30	1	30	1	Assistant Room	3

A toilet by area of 6.3 m^4 per class	43	12	43	12	Teacher break room	4
Drinking Fountain by area of 1 m^4 per class	12	12	12	12	Students toilet	5
	7	2	7	2	*Drinking* Fountain	6
	4	1	4	1	Staffs toilet	7
	6	1	6	1	Storage of cleaning supplies and showers	8
	10	1	10	1	butlers pantry	9
					Buffet	
	544		712			
	136	25%	178	25%	The total net area	
	54	10%	71	10%	Communication spaces	
	734		961		Infrastructure Spaces	
					Close space area	
	144	0.4	168	0.4	green space *per* capita	
	720	2	840	2	Per capita collective queue and play	
Predict space for sports at open space	1080	3	1260	3	Open space *per* capita	
	80	1	80	1	Parking lot area	

Table 3. table indicating Per capita for Different spaces required across education complexes

Definitions		Space	
Area	No		Row
35-30	1	Audiovisual room	1
90-80	1	Science Laboratory	2
90-80	1	Chemistry Lab	3
90-80	1	Physics Laboratory	4
90-80	1	Environmental Laboratory	5
90-80	1	Laboratory of Chemical Biology	6
90-80	1	Science and Physics Laboratory	7
90-80	1	Vocational and technical workshop	8
151	1	Library	9
36	1	Office of the Director	10

	20-16	1	Rearing room	11
	45	1	Administrative office	12
	18	1	Administrative Office Depot	13
	12	1	Health Room	14
	14	1	Room academic adviser	15
	60	1	Janitorial	16
	4	1	Sentry	17
	525	1	Chapel	18
	20	1	Chapel of staffs	19
	6	1	Pantry	20
	7	2	Bathrooms	21
	4	1	Storage of cleaning supplies and showers	22
			Room of air conditioner	23
			Motor Room	24
	1568		Net area sum	
	392	%25	communications Space	
	157	%10	Infrastructure space	
	2117		Close space area	

Table 4. table indicating Per capita for sport spaces required across education complexes

Definition	Area	No	Space	Row
	792	1	Net saloon area	1
	2	2	Drinking fountain	2
	7	2	Shower	3
	7	2	Bathrooms	4
	12	1	Office of Sports instructor	5
	36	2	Student's locker room	6
	6	1	Sports equipment Depot	7
	6	1	Pantry	8
	20	1	Engine room facilities	9
	31	1	Zent Rooms	10

	953		Net area sum
	67	7%	communications Space
	48	5%	Infrastructure space
	1068		Close space area

To teach some lessons, limited hours required during the week, and specific spaces remained useless during the week. Hence, to use these spaces utmost, Repetition coefficient for education level at complexes has been predicted, and these spaces would be with high efficiency regarding that these centers can be used by schools at this area. For instance, to propose some lessons like Basics of Computer Application due to time constraint at Curriculum, 4 hours have been predicted in a week, yet today due to large application of this system in education, complexes and local centers can plan more Extracurricular classes for students, and/or use these workshops to teach some courses whereby space of these workshops would be completed in a week.

Localization of plan components

Today, education complexes as one of the components in contemporary cities are considered. In this regards, education complex in this plan regarding development plan for new town of Pardisan has been viewed as an executive project.

This education complex including primary and high school together with collective spaces with different uses centered at neighborhood. The most fundamental problems considered include division of functions and regulation of collective functions.

Separation of Functions

According to the studies conducted, it seems that primary school is better to be located at Western North side, and by taking center of neighborhood as a space with flexibility, and further as a space in which families engaged more, and their ability to control dominates, the school can be used by users. On the other hand, high school students required to be in contact with primary schools.

Regulate specific functions

Specific functions like Shared interaction spaces between primary and secondary courses, multi-functional primary space, multi-functional secondary space, and high school are the leading turning point and localization applied on these parts. In this part, form and geometry have not formed yet.

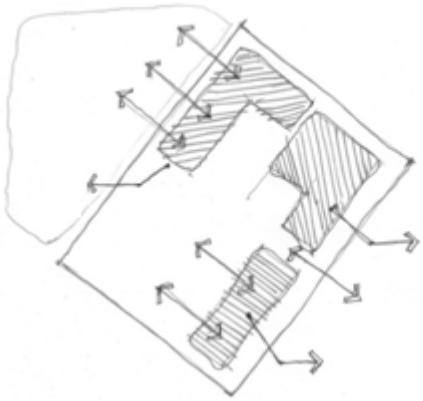

Image 4. High school classes at main school and primary classes at center of neighborhood

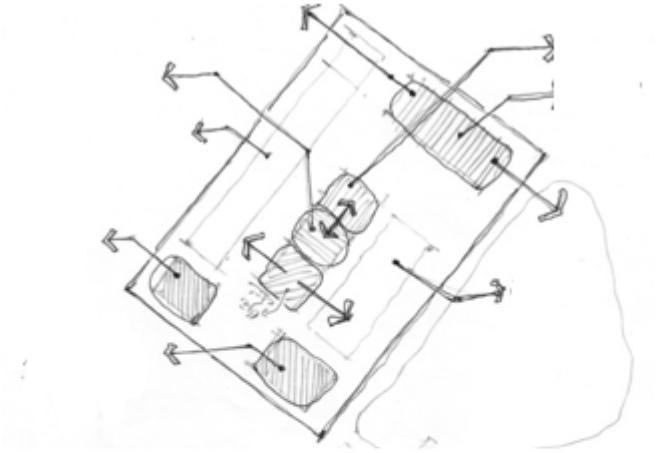

Image 4. Localization of specific functions at education complex

Formation and organization of Plan

Form and orientation of structure

Given what conducted on environmental studies in this study, yard orientation rotating about 45 degree to Southwest is a proper side. Hence, rotating about 45 degree is considered the base, that such orientation is relative.

Apply Climatic design principles

Light in day

According to Islamic teaching, school classes have to be applied with light in a day. Hence, classes have to be close to walls as much as possible. Further, corridors and other school spaces have to be applied with this possibility.

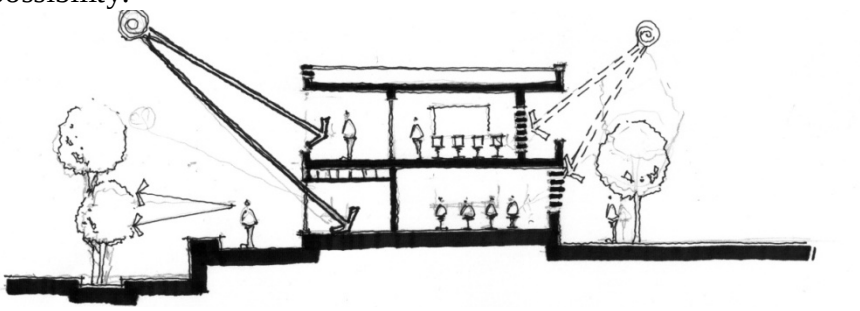

Image 6. Lighting classes based on light in a day

Orientation and rotation of building

Orientation and rotation of building have to be in a way that wind blowing in town from west side comes inside the building ; thus it seems that in some parts of building rotating to west side can come effective to deviate main orientation of building that is from Northeast to southwest, and main axes of building to be protected and promoted besides maintaining axes. Further, as known, the best orientation to use sunlight is the Orientation to northeast – southwest. Thereafter, The east-west Orientation can be a proper orientation for this. In this regards, the image below can be shown.

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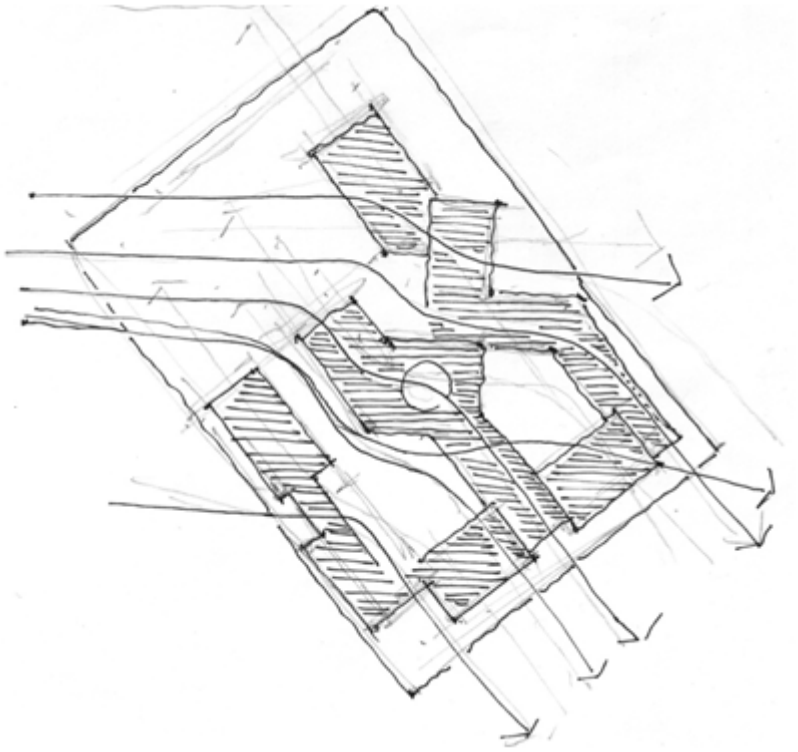

Image 7. Orientation and rotation of building to conduct wind and use sunlight

Geometry and main axes of building

Using axes and main lines at site in building architecture are accounted as principles of Islamic design. To achieve this aim, axes were found in site by which proper usage can be provided.

Hierarchy of access

Hierarchy of access to different parts of building at this school is provided from three main parts and three secondary parts. main parts include access to primary, high school and gym, and secondary accesses include access to the center of neighborhood to yard, emergency access to secondary street and gym access to center of neighborhood. To access high school, Hierarchy of access is before entry to semi-open lobby and then to collective spaces with access to yard, and then to corridors for access to classes.

Fluidity

- Joint space between the primary and secondary sections of the school is considered to be a pilot space.
- Along the main street adjacent to the school, visual tie with center of neighborhood from the middle of building components set that focuses on visual fluidity.
-in the early part, rest stop for parents places in an area that parents can monitor their children's activities in different open space parts.

Visions considered in design

Different green spaces inside different spaces and in combination with plan have been considered. Green line has been seen along all physical elements, and this characteristic has been considered in all the project and even rest stop inside open space.


نمای شمال غربی (مقیاس ۱:۲۰۰)


نمای جنوب غربی (مقیاس ۱:۲۰۰)


نمای شمال شرقی (مقیاس ۱:۲۰۰)

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