Palestine Polytechnic University

Faculty of Engineering

Architectural and Civil Engineering

Architecture department

Introduction to graduation project

Al Doha Socio-Cultural Center

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Dedication

To the Almighty God, for all the guidance and inspiration,

To my mother, for her kindness, devotion, and endless love,

To my father, for being the greatest source of strength and protection,

To my brothers, for their continuous advice and encouragement,

To my dear friends, for their indispensable support,

To my precious country,

Palestine

Acknowledgement

I would like to express my sincere gratitude to my graduation project supervisor, Dr. Bader Atawneh. I am highly indebted to his great effort and constant advice through this project.

I would like to thank my professors at Palestine Polytechnic University, especially members of the Architectural engineering department, who provided their help and support through all these years.

Moreover, thanks to Al Doha municipality in Bethlehem for providing the needed information and data to conduct this research and design proposal.

I am thankful to everyone who have willingly helped and made the completion of this graduation project possible.

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Abstract

Culture reveals the human evolution. A human being cannot exist in an uncultured environment. Culture is considered as a way of life in which people rely on tradition and creatively utilize the present reality with new achievements and new values that promote the lives and rights of humans in society.

A Socio-Cultural center enhances the interaction between humans. Its structure is based on broad spaces where different cultural manifestations enrich and liven up the cultural life of the local population. It also has a huge influence on the promotion of the cultural identity. Thus, this research aims to present a theoretical study to disclose the importance of cultural centers as a venue of continuous education of the community members to be able to participate, conserve, and grow.

The research methodology is based on gathering information from different resources and analyzing the criteria of designing cultural centers. In addition to analyzing international case studies in detail.

As a result, Al Doha Socio-Cultural center will be designed in the city of Bethlehem based on fully understanding the aspects and requirements of this project. The research concludes the great importance of cultural centers in developing social intellectuality of individuals, organizing their leisure, and providing opportunities for self-expression, initiatives, cultural education, and identity.

مستخلص البحث

الثقافة هي مرآة التطور الإنساني ، فلا يمكن لأي حضارة إنسانية النهوض و الرقي دون ثقافة شعوبها ، حيث تعتبر الثقافة نمط حياة يجسد قيم المعرفة ، ويساهم في بناء شخصية الفرد ، وينمي جوانبه الروحية والأخلاقية ، و يهيئ لواقعنا المعاصر ابتكار إنجازات وقيماً جديدة ترقى بحياة وحقوق الإنسان في المجتمع.

يعزز المركز الاجتماعي الثقافي التواصل والتفاعل ما بين الأفراد في المجتمع ، حيث تعتمد بنية المركز على مساحات واسعة تحدث فيها فعاليات ثقافية مختلفة تثري الحياة الثقافية للمجتمع المحلي ، كما ولها أثر بالغ على تعزيز الهوية الثقافية و إحيائها. وبذلك ، يهدف هذا البحث إلى تقديم دراسة نظرية تكشف النقاب عن أهمية المراكز الثقافية كمصدر دائم للمعرفة ، لكي يكون المجتمع في المقابل قادراً على التواصل مابين أفراده ، وبالتالي يحافظ على قيمه الأساسية ، وينمو في مختلف مجالات الحياة.

تعتمد منهجية البحث على جمع المعلومات من عدة مصادر كالكتب المختصة والأوراق العلمية و المواقع الكترونية ، لدراسة المعايير التخطيطية والتصميمة للمراكز الثقافية ، بالإضافة إلى تحليل الحالات الدراسية المشابهة.

نتيجة لذلك ، سيتم تصميم مركز الدوحة الاجتماعي الثقافي في مدينة بيت لحم بعد إدراك كافة المتطلبات التصميمية لهذا المشروع ، ويخلُص البحث إلى الأهمية الكبرى للمراكز الثقافية في تنمية الفكر الاجتماعي للأفراد ، وتنظيم أوقات فراغهم ، وتوفير فرص للتعبير عن الذات، وإقامة المبادرات التعليمية الثقافية، وبالتالي الحفاظ على الهوية.

Introduction

1. Preface

2. Problem Statement

3. Research objectives

4. Project description

5. Research methodology

6. Research structure

7. Research limitations

1. Preface

In modern theoretical approaches, the culture is treated as a value connected to the quality of living. The cultural forms have been and are still used for accomplishment of wider aims, especially in civic education. To enrich the culture, raise the quality of life, and provide economic and spiritual reproduction, we should invest in our culture, in its development and revitalization. Using the culture as a resource for development does not only refer to the artistic values, but also refers to the social values, like the human social relations and their relationship with the surrounding nature.

Community spaces play an important role in the success of the city and its inhabitants. These spaces become the foundation to which those living and visiting in the area come together and communicate. Cultural centers offer various opportunities to embrace the traditions and culture. They bring the community closer by strengthening their bonds and relations through different events formed by their common interests.

Cultural centers enrich our society by promoting the arts, the history, the vitality of local community, and the heritage of culture. It is important to conserve and develop cultural values through research, technology application, training, literary, cultural exchange, artistic criticism, and memorial forums. Municipalities, and universities invest in this enrichment by building performing arts centers, museums, heritage centers and libraries. Thus, the goal of any cultural center is to work with its clients to find aesthetic, functional solutions that lead to an unforgettable experience for the visitors of the center. Regional and national visitors will collaborate, exhibit, communicate and produce work with the goal of promotion and intervention of culture in a public space.

2. Problem Statement

Bethlehem – A hub of Palestinian culture.

Bethlehem is one of the most important cultural cities in Palestine, as it has many attractions that make it a hub of cultural events and activities. It has evolved into a cultural mosaic that represents tremendous potential for Palestine's past, present and future to stand strong against the Israeli occupation. However, the lack of cultural centers in the country could get to a greater extent that might affect the promotion and encouragement of future generations to conserve their cultural heritage and national identity. Thus, this idea stems from the need of having a cultural center in the city of Bethlehem according to Al Doha municipality, to develop an area which can accommodate new facilities, targeting all social classes.

3. Research objectives

This research aims to prepare a theoretical study that mainly focuses on understanding the design principles of cultural centers, the needed standards, and characteristics, and eventually function well to encourage the creation and fostering of cultural goods.

The project's main objectives are:

- Encouraging creativity and promoting youth talents (supporting research and finding new ways of expression, and dissemination of cultural content and values of young people).
- Raise the awareness of the citizens so they can culturally up stand, develop their views towards the world, expand their knowledge and skills, and be able to function as an active, informed, and successful community.
- Foster a sense of community belonging, identity and resilience through cultural activities, events, festivals, and celebrations.
- Strengthen groups and networks and build the capacity and resilience through active participation and involvement. Thus, providing a safe and suitable atmosphere for people to communicate regarding the difference of social class.
- Promote lifelong learning by using the cultural center as a venue for educational activities, conferences, seminars, presentations, community forums, and meetings.

4. Project description

The proposed project is a Socio-Cultural Center that promotes culture and arts in the form of visual and performing arts, and provides intellectual services through seminars, workshops, meetings, debates, and discussions. It also provides community services and social activities through catering facilities where people meet and mingle together. The three main aspects looked upon for designing an extensive experience for the visitors are:

- Interior space design: Core exhibit areas reflecting direct cultural knowledge.
- Exterior space design: Manifests indirect cultural aspects.
- Ease of transition between both interior and exterior spaces.

This cultural center is a proposed project by Al Doha Municipality in Bethlehem, Palestine.

5. Research methodology

This research relied on the descriptive-analytical method by:

1. Theoretical approach:

- Collection of information from different resources like books, websites, research papers and articles related to the topic of the research, to choose the best possible approach for answering the research problem statement.
- Analyzing international case studies that are similar to the proposed project to help in understanding the design principles and standards of cultural centers.

2. Practical approach:

- Site visit - Analyzing the proposed site of the project (Location, approach, urban scale, topography, climate analysis, swot analysis, etc...).

6. Research structure

This research consists of:

- Introduction to provide background information and set the context about the proposed project, explaining the problem statement, importance, and approach.
- Chapter one: Studying and Analyzing two case studies related to the proposed project using relevant theoretical concepts, to be able to identify the key issues of each case. Therefore, strengthening the design and avoiding any threatening weaknesses.
- Chapter two: Proposed Site Analysis; in detail.
- Chapter three: Program formulation: Identification of spaces, their functional relations, and areas, based on the collected design standards and characteristics.
- Chapter four: Main concept, and preliminary design proposal.

7. Research limitations

Regarding the current situation of Covid-19 during the time of this research, it was difficult to make interviews to involve the local community and the municipality members in charge of this proposal in the process of activities selection considering their demands and needs.

Chapter 1.

Case studies

1.1 Preface

1.2. 1st case study: WuliEpoch Culture Center by Atelier Alter Architects

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1.4 Summary

1.1. Preface

This chapter discusses the analysis of two case studies related to the proposed Socio-Cultural center design. Therefore, provide background information about the design standards, the developed programs, the functional relations, the development of the concept, and the formulation of the final composition.

1.2. (1st case study): WuliEpoch Culture Center by Atelier Alter Architects.

This project was selected based on its relevance to the proposed design, as it can be beneficial in dealing with the topography of the proposed site, the circulation solutions (interior, exterior and roof circulation), in addition to the functional relations.

1.2.1. Location

The WuliEpoch Culture is Sited in Shijingshan, the fringe of Beijing, near the scared Western Hills in China. (Archdaily website, accessed on 2/7/2020)

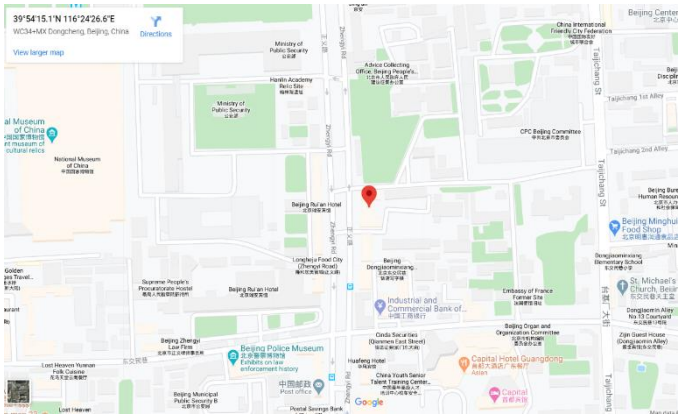


Figure 1. 2: Beijing, China

(google maps, Jul.2020)

Figure 1. 1: Site

(The author based on Archdaily website, Jul.2020)

1.2.2. Description

Architects: Atelier Alter Architects - Gross built area: 2880 m² - Year: 2018

WuliEpoch Culture Center attempts to create a triptych for architecture, landscape, and interior design in the project. The distance landscape is introduced to the project in a dynamic rather than a static way. A continuous path wrapped around from exterior to interior. The first nature of landscape and the second nature of the interior space join seamlessly through the path. The ambience along the path is circumferential and religious to some extent, as a way to worship nature. The material used for the project is carefully proportioned masonry wall, and it is used throughout landscape,

architecture, and interior design. The project encompasses a 1500sm space for community activities, and a 400sm skating rink, as a way to response to the 2022 Winter Olympics in Beijing. (Archdaily website, accessed on 2/7/2020)

Figure 1. 3: Exterior shot 1 (Archdaily website, Jul.2020)

Figure 1. 4: Exterior shot 2

1.2.3. Concept

The concept mainly considered the typography of the site and reflecting the surrounding nature in the interior space design. The project draws upon the religious ambience and develops a revolving circulation to connect the programs together. As the site is triangulated, the project responses to the site, by stacking layers of curved walls, in a crisscrossing fashion to create layers of courtyards, seeking a dialogue with the courtyard house in Beijing**,** as well as the Great Wall scenery nearby. (Archdaily website, accessed on 2/7/2020)

The project interprets nature in three ways:

1- The interior space depicts nature in a digital fashion. Creating an image of "an inverted autumn foliage in Western Hills" using a curving array of glittering wooden laminated aluminum panels in the ceiling which change color from warm yellow to white, suggesting the transition from entrance to skating ring.

2- First nature and second nature are joined simultaneously. Recycled concrete blocks are cut into thin pieces and put together to form curving nature surfaces. The hills and waterfalls, created by thin masonry and lighting, show the solidification and abstraction of nature. The contrast between the mortal and immortal nature gives people space to think critically about nature.

3- Distance landscape is introduced into the interior in a dynamic way. Landscape becomes a living space. (Archdaily website, accessed on 2/7/2020)

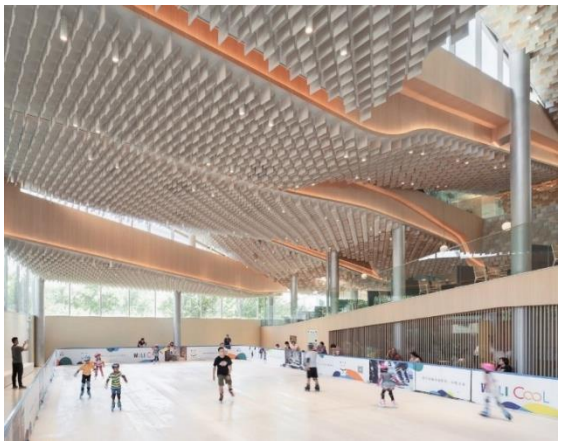


Figure 1. 5: 1st case study: Interior shot 1

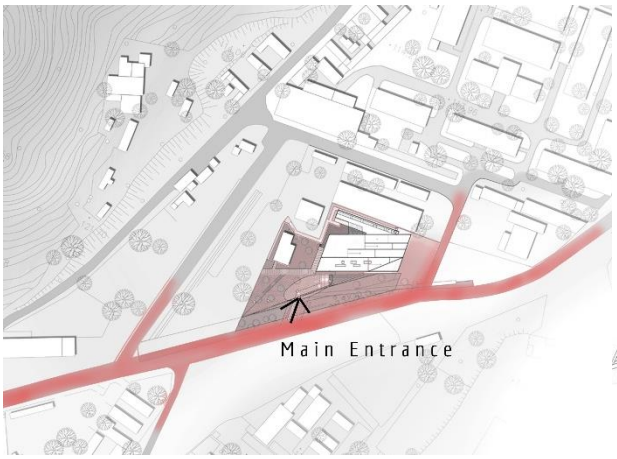
(Archdaily website, Jul.2020)

Figure 1. 6: 1st case study: Interior shot 2

1.2.4. Analysis

- Site analysis

Two axes are placed on the site. They divide up the street front of the site. Thus, various scales of landscape areas and courtyard spaces are formed. (Archdaily website, accessed on 2/7/2020)



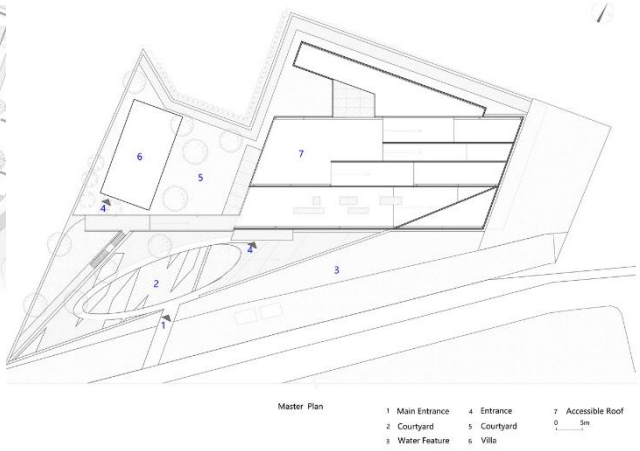


Figure 1. 7: 1st case study: Site plan

(The author based on Archdaily website, Jul.2020)

Figure 1. 8: 1st case study: Site - Function

- Functional analysis

The center includes model exhibition areas, skating rink, sample rooms, seating areas, a bar and catering, a VIP lounge, staff offices, etc. Along the path of circulation, a ramp connects programs of urban exhibition area, tea bar, bar, kid's area, and skating rink together. The ramp continues to spiral up to the VIP room and the Mock-up exhibition area on the second floor. From the VIP room, the path goes on hovering on the rooftop terrace, where spectacular views of the scared

Western Hills await. The spiral-ramped roof lifts from the exterior wall and brings enormous nature light into the dynamic space beneath. The use of artificial lighting is thus greatly reduced, as well as its energy consumption. The non-divided spiral organization of interior space makes space permeable and penetrable. (Archdaily website, accessed on 2/7/2020)

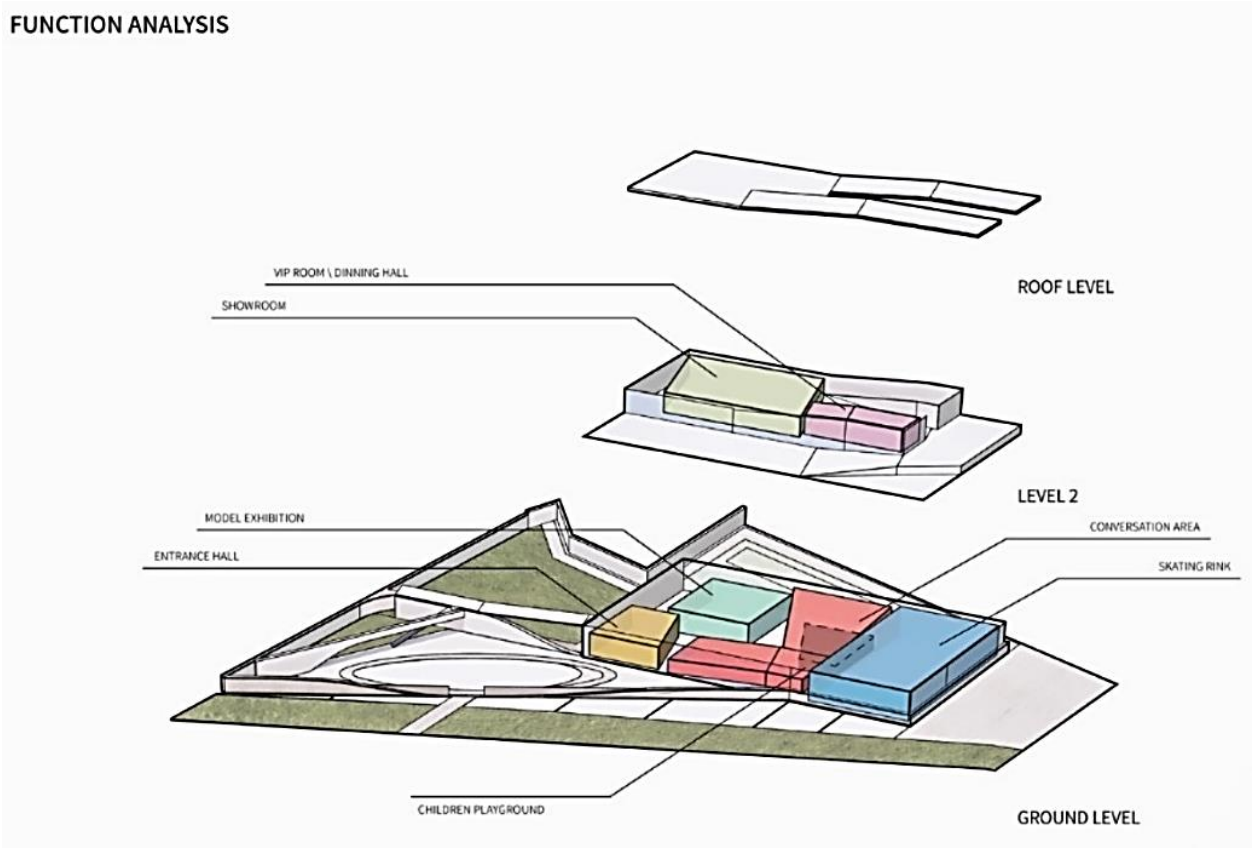


Figure 1. 9: 1st case study: Function analysis

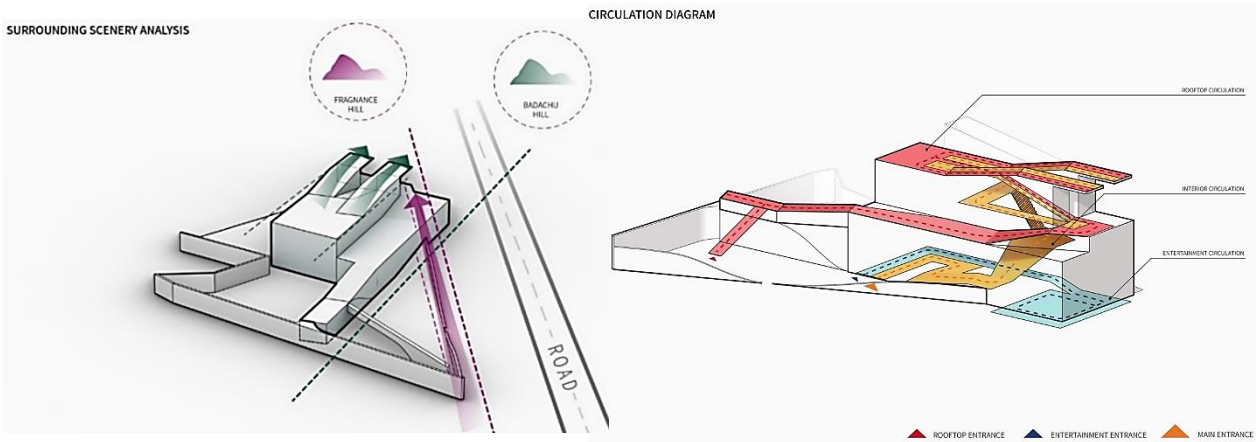


Figure 1. 10: 1st case study: Circulation analysis

Figure 1. 11: 1st case study: Surroundings analysis

(Archdaily website, Jul.2020

- Project's Plans

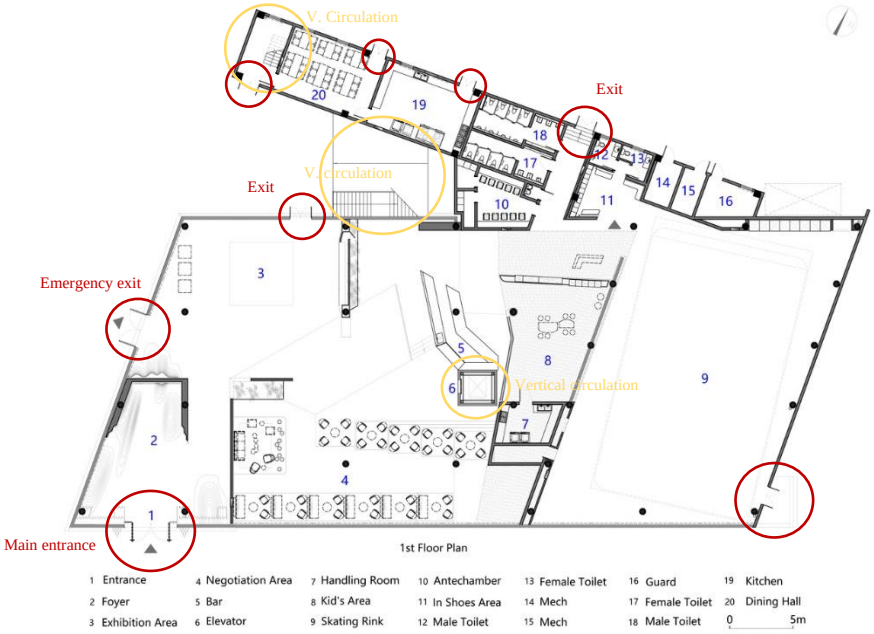


Figure 1. 12: 1st case study: 1st floor plan

(The author based on Archdaily website, Jul.2020)

Figure 1. 13: 1st case study: 1st floor interlayer plan

(The author based on Archdaily website, Jul.2020)

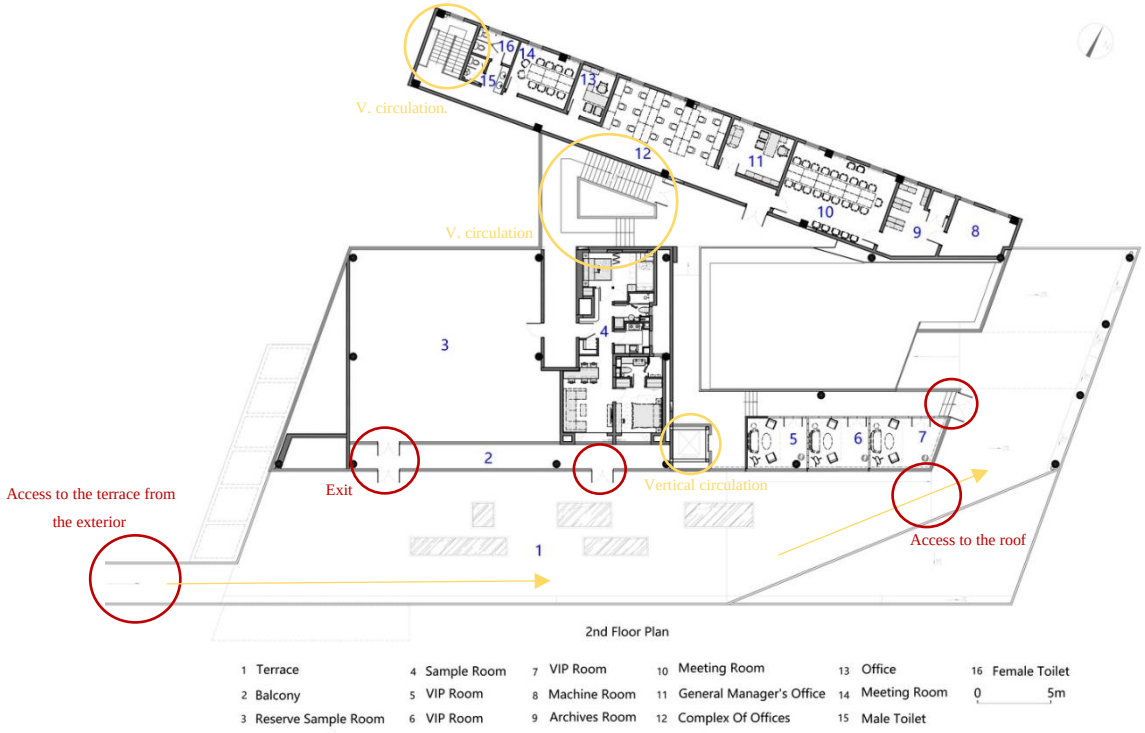


Figure 1. 14: 1st case study: 2nd floor plan

(The author based on Archdaily website, Jul.2020)

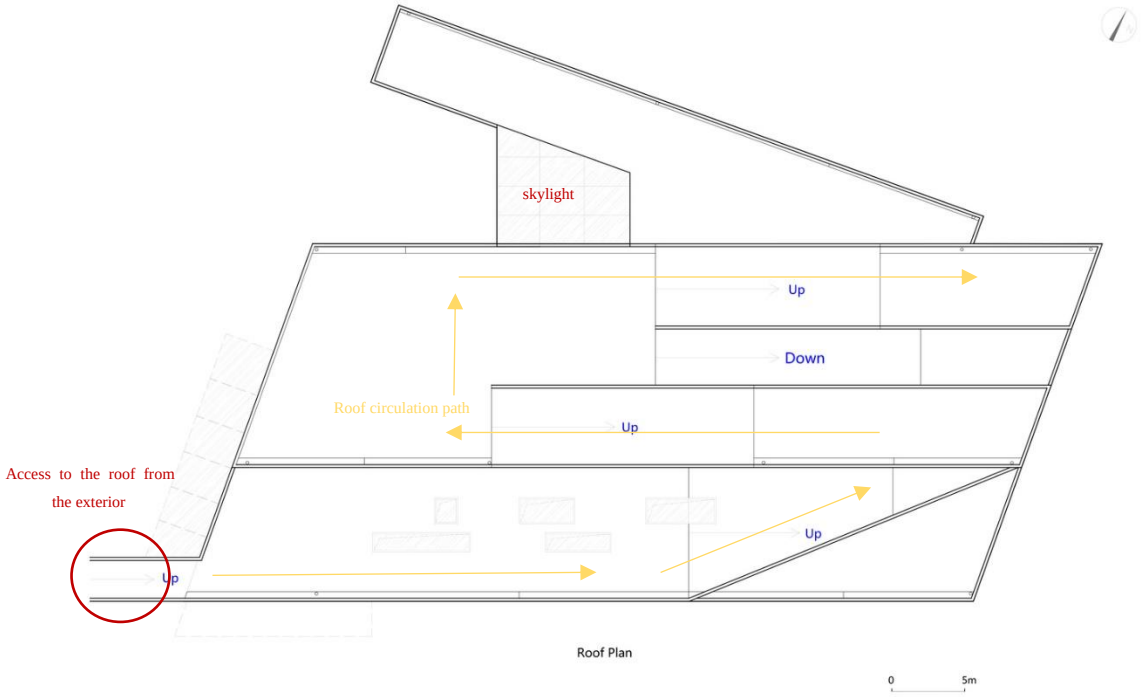


Figure 1. 15: 1st case study: roof plan

(The author based on Archdaily website, Jul.2020)

- Used materials

1. Wood veneer - Interior Finishing.
2. Hibito board - Ceiling panels
3. Cement - Flooring and wall finish - Wuxi Concrete (Archdaily website, accessed on 2/7/2020)

- Section map

The section shows the functional relations, and the vertical and horizontal circulation using ramps in the interior and the exterior. It also shows the interlayer of the first floor which includes the negotiation area and offices.

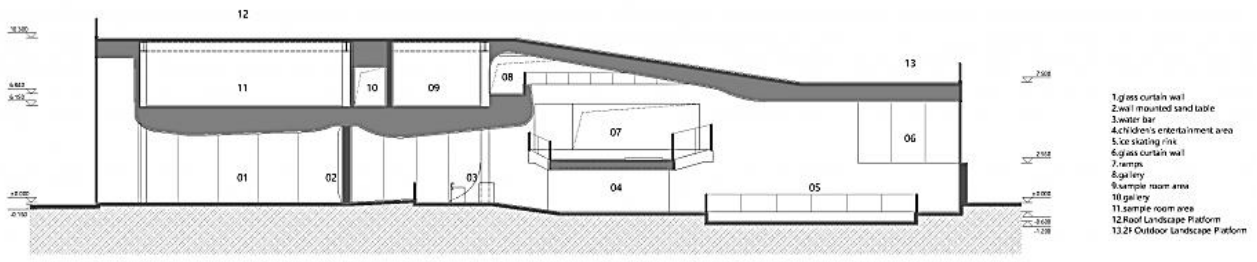


Figure 1. 16: 1st case study: Section map

1.2.5. Highlights

Advantages:

- Taking advantage of the roof space by making it accessible to visitors and creating a walkway to the top from the exterior landscape.
- Considering the topography of the site and the surrounding views in design.
- The site is easily approached and connected to the main street.
- Reduced energy consumption due to the natural lighting, using skylight and outdoor terraces.
- providing entertainment facilities like the skating rink as an attraction to visitors of different ages, as well as considering the privacy of some offices.

Disadvantages:

- The cultural center is limited to certain cultural activities due to its limited area.
- No car parking space for the employees and visitors.

1.3.(2nd case study): Chongqing Taoyuanju Community Center by Vector architects

This project was selected due to its significance to the proposed design, as it is merged into the mountains and blends into the natural environment. The relationship of in and out of architecture spaces and the connection of three major programs is well explained to create a well-designed center that serves all community classes.

1.3.1. Location

The community center is located in the mountains of Taoyuan Park in Chongqing, China.

Figure 1. 17: 2nd case study: Site

(Archdaily website, Jul.2020)

1.3.2. Description

Architects: Vector Architects - Area: 10000 m² - Year: 2015

The project consists of a cultural center, an athletic center, and a public health center. A continuous roof connects the three independent buildings into one unified volume. It slopes up and down responding to the hilly site. At the same time, it frames out two courtyards: a sloped garden, and a green plaza where community activities take place. Multiple paths connect two courtyards and perimeter of the building. They relate the inside and outside close in both visual association and physical connection by large openings and spans. In the manner of skylights, the rectangular and circular openings in the concrete are pierced by trees, further blurring the limits between interior and exterior. (Archdaily website, accessed on 4/7/2020)

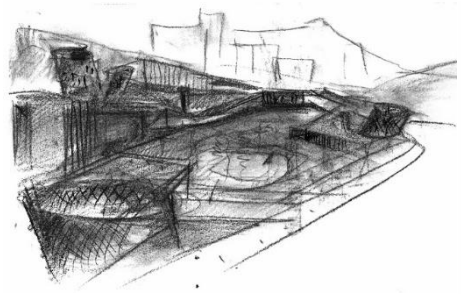
(Archdaily website, Jul.2020)

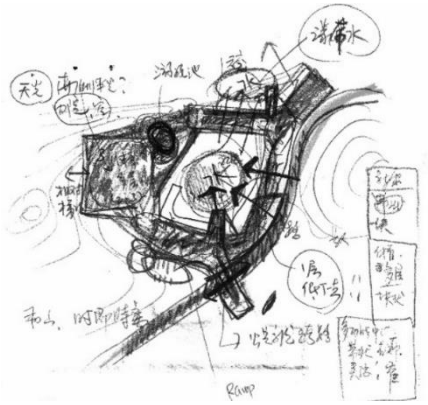
Figure 1. 18: 2nd case study - Shot 1

Figure 1. 19: 2nd case study - shot 2

1.3.3. Concept

The concept was to merge a new building outline with the existing wavy topography. Instead of building an "object" in the field, to create an imagery of fusing architectural form and hilly landscape together, with the assistance of Green roofs that blend the volume into its natural environment and enhance the thermal co-efficiency of building envelope. This idea is further emphasized using green walls that imitate the checkered agrarian hillsides. Glass walls lined with vertical wooden louvers open views to the exterior and filter the direct sunlight to the inside. (Archdaily website, accessed on 4/7/2020)





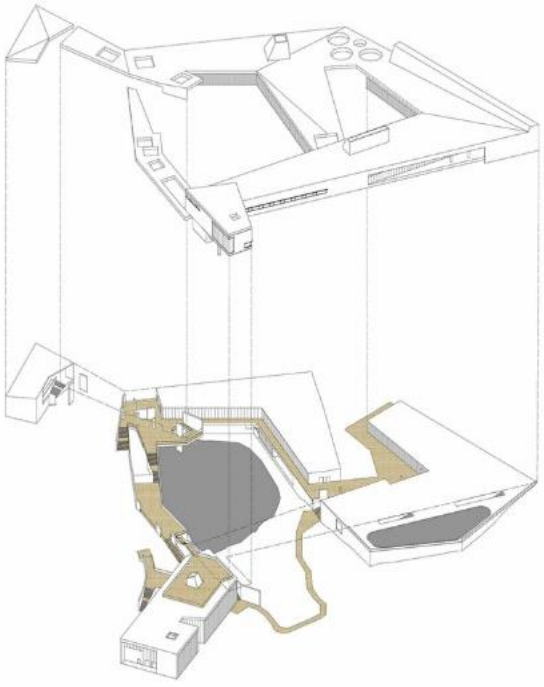


Figure 1. 20: 2nd case study: conceptual sketch 1

Figure 1. 21: 2nd case study: exploded 3D view

Figure 1. 22: 2nd case study: conceptual sketch 2

(Archdaily website, Jul.2020)

1.3.4. Analysis

- Site analysis

The complex is hidden in the slope of a mountain which comprises three constructions, each one independently housing one part of the tripartite program: athletic center, cultural center, public health center. Thus, the center has multiple entrances. The publicity of the community center brings various types of people including regular citizens, residents of neighborhood, and the users and staff of the community center. Therefore, the design considers their stay, penetration, and interaction. (Archdaily website, accessed on 4/7/2020)

Figure 1. 24: 2nd case study: Site plan

(The author based on Archdaily website, Jul.2020)

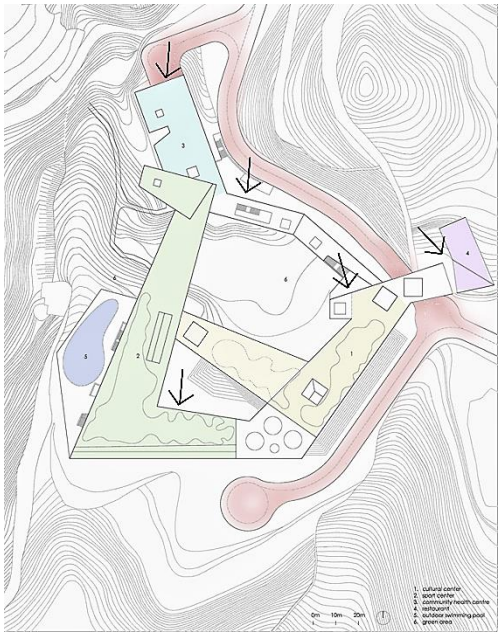


Figure 1. 23: 2nd case study: site - function

- Used materials

1. Vertical wooden louvers.
2. Glass walls.
3. Concrete walls and roofs.

- Functional analysis

Visitors have different behavioral patterns in the center such as strolling, gathering, performing, reading, tutoring, training, exercising, health consulting, etc., so that people can actively interact with each other in an open and fluid space. Merging the whole space together with nature can eventually create a lively co-existing relationship of artificial structure and natural landscape. (Archdaily website, accessed on 4/7/2020)

Figure 1. 26: 2nd case study: landscape

(Archdaily website, Jul.2020)

Figure 1. 25: 2nd case study: courtyard

- Project plans

The centers were connected together through continuous green roofs which created interactive outdoor spaces and coutyards, the functional relations and verical and horizontal circulation are clear. The three major buildings have their own atrium where large skylight introduces natural light into the deep space. (Archdaily website, accessed on 2/7/2020)

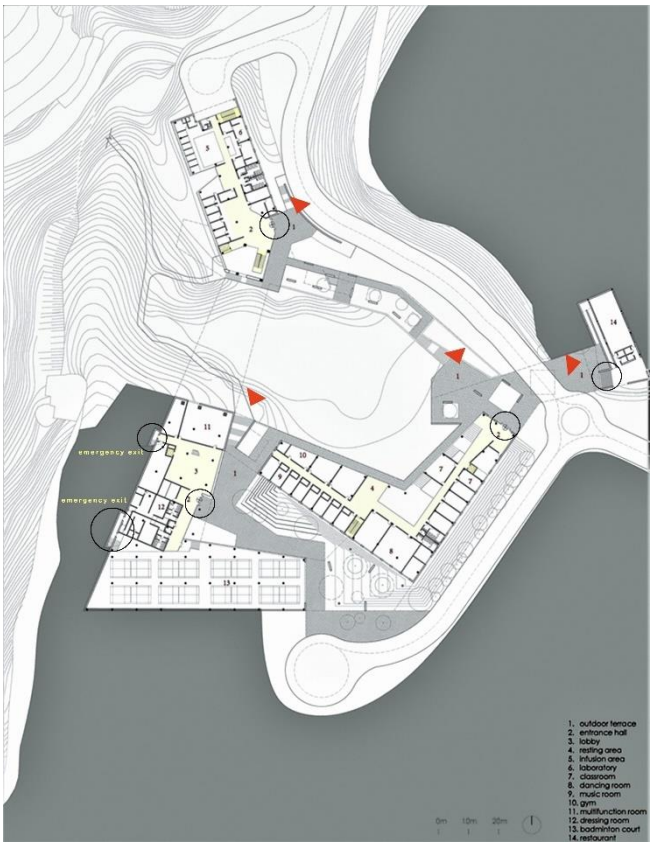
First floor functions: Public health care spaces & cultural spaces.

1. Playground
2. Children's medical center
3. Examination room
4. Waiting area
5. Operating room
6. Meeting room
7. Lobby
8. Reading area
9. Bookstore
10. Meeting room
11. Classroom
12. Resting area

Figure 1. 27: 2nd case study: 1st floor plan

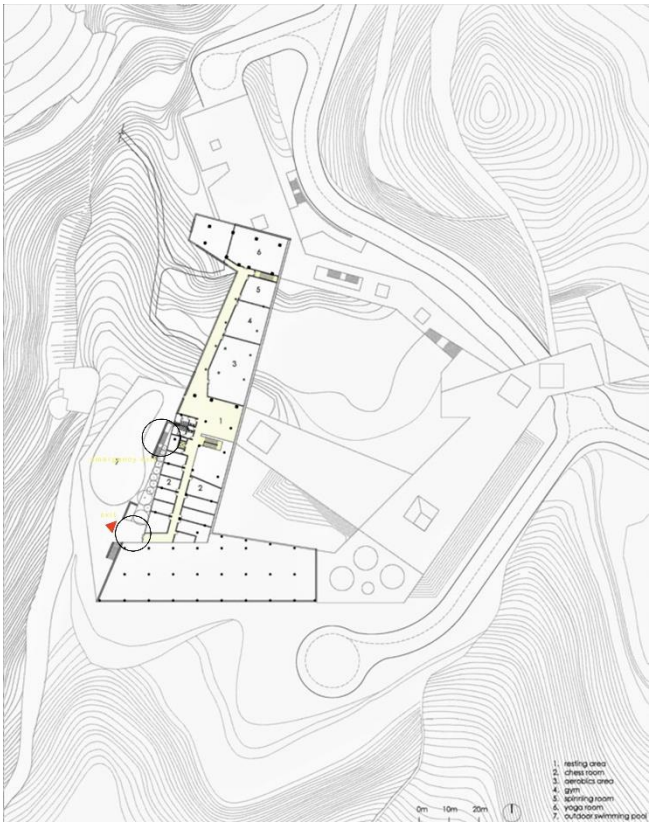
(The author based on Archdaily website, Jul.2020)

Second floor functions: Laboratory, athletic center spaces, restaurant & cultural spaces.



1. Outdoor terrace
2. Entrance hall
3. Lobby
4. Resting area
5. Infusion area
6. Laboratory
7. Classroom
8. Dancing room
9. Music room
10. Gym
11. Multifunction room
12. Dressing room
13. Badminton court
14. Restaurant

Figure 1. 28: 2nd case study: 2nd floor plan



Third floor functions: Athletic center spaces.

1. Resting area
2. Chess room
3. Aerobics area
4. Gym
5. Spinning room
6. Yoga room
7. Outdoor swimming pool

Figure 1. 29: 2nd case study: 3rd floor plan

(The author based on Archdaily website, Jul.2020)

- Elevations and sections

The project's Openings, windows, cantilevers, and corridors blur the boundary between the interior and exterior of architecture. (Archdaily website, accessed on 4/7/2020)

Figure 1. 30: 2nd case study: Sections

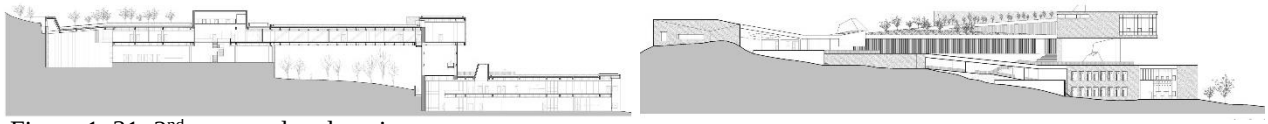


Figure 1. 31: 2nd case study: elevations

(Archdaily website, Jul.2020)

1.3.5. Highlights

Advantages:

- Merging the design with the site, considering the slope of the mountain to give an image of nature.
- The diversity of activities enhances social interaction and the complex perceives as a facility available for the whole community classes.
- Each room enjoys views of a green exterior and there is direct access from activity rooms to outdoor green areas.
- Large skylights illuminate the central atriums providing natural lighting.
- Multiple entrances, Separate entry/exit points for several facilities.
- Flexible sizes of rooms, offices, and open spaces, which are proportional to the estimated number of visitors.
- Book store and reading area have a separate entrance away from noise.

Disadvantages:

- No car parking for employees and visitors, or no clear location of parking.

1.4 Summary

The advantage of analyzing the previous case studies is that the smaller sized case study focuses on the basic details that are essential for the process of design, while the insight of the bigger one helps frame the requirements that need to be included in the design later on. There are several benefits of analyzing the case studies, the most important of which is the clarity of circulation and movement in these types of centers and creating the right connection between different functions in a way that guaranties social interaction, in addition to the In-Out relation and exploiting the roofs.

Chapter 2.

Site Analysis

2.1. Preface

2.2. Location

2.3. Macro scale analysis

2.3.1. Site features

2.3.2. Approach

2.3.3. Land use

2.3.4. Main locations in Al Doha

2.3.5. Surrounding streets and buildings

2.4. Micro scale analysis

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2.5. Environmental analysis

2.5.1. Average Temperatures and precipitation

2.5.2. Cloudy, sunny, and precipitation days

2.5.3. Average Humidity

2.5.4. Wind speed, rose, and direction

2.5.5. Sun path and sun angles

2.6. Summary

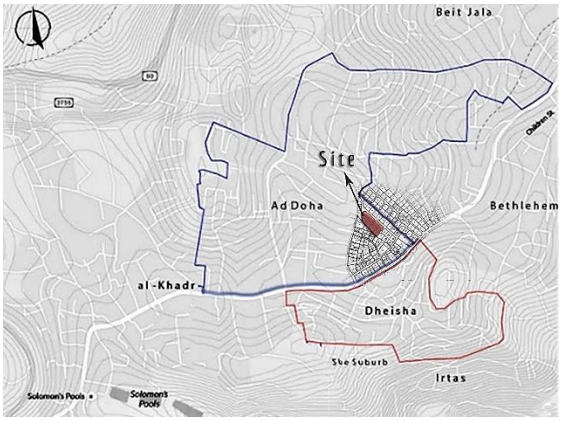
2.1. Preface

The key reason of site analysis is that it presents many clues which can help determine the design's opportunities and challenges to develop an architectural design solution. It gives a peek into the underlying "personality" of the suggested design and gives a collective perception by analyzing the surroundings. Site analysis initially helps determine the building's placement, orientation, form, and materiality, providing a crucial starting point for the proposed project.

2.2. Location

The site of the project is proposed by Al Doha Municipality, which is allocated in Al-Doha, Bethlehem. Bethlehem is one of the major cities in Palestine. It lies at 10 kms (6 miles) to the south of the Capital, Jerusalem. From the east, the city of Bethlehem is bounded by the town of Beit Sahour and from the west by the towns of Beit Jala and Al-Doha. The proposed site has a total area of approximately 7600 m^2.

Figure 2. 1: Bethlehem, Palestine



(Author based on google search engine, Jul.2020)

Figure 2. 2: Al Doha, Bethlehem map - Site location

2.3. Macro scale analysis

This section includes urban scale analysis concerning the site features, site approach, streets classification, surrounding buildings classification, and views.

2.3.1. Site features

- The site is a place with a less central position, a less fatigue from the noise and traffic, and an atmosphere with less dust and gases.
- The site is close to schools, universities, and residential areas.
- The site is accessible to the public, and to all social classes.
- The site is flexible to cater for diverse programs.
- The typography of the proposed site helps in imposing the design's appearance and makes it visible from several angles.

2.3.2. Approach

Al Doha is located near Beit Jala, two kilometers southwest of the city of Bethlehem. It is connected to the main street of Bethlehem (Jerusalem-Hebron St.). The site is accessible to all Bethlehem residents. It can be reached through the main street of Bethlehem or the secondary street in Al Doha. The site is also accessible by public transportation.

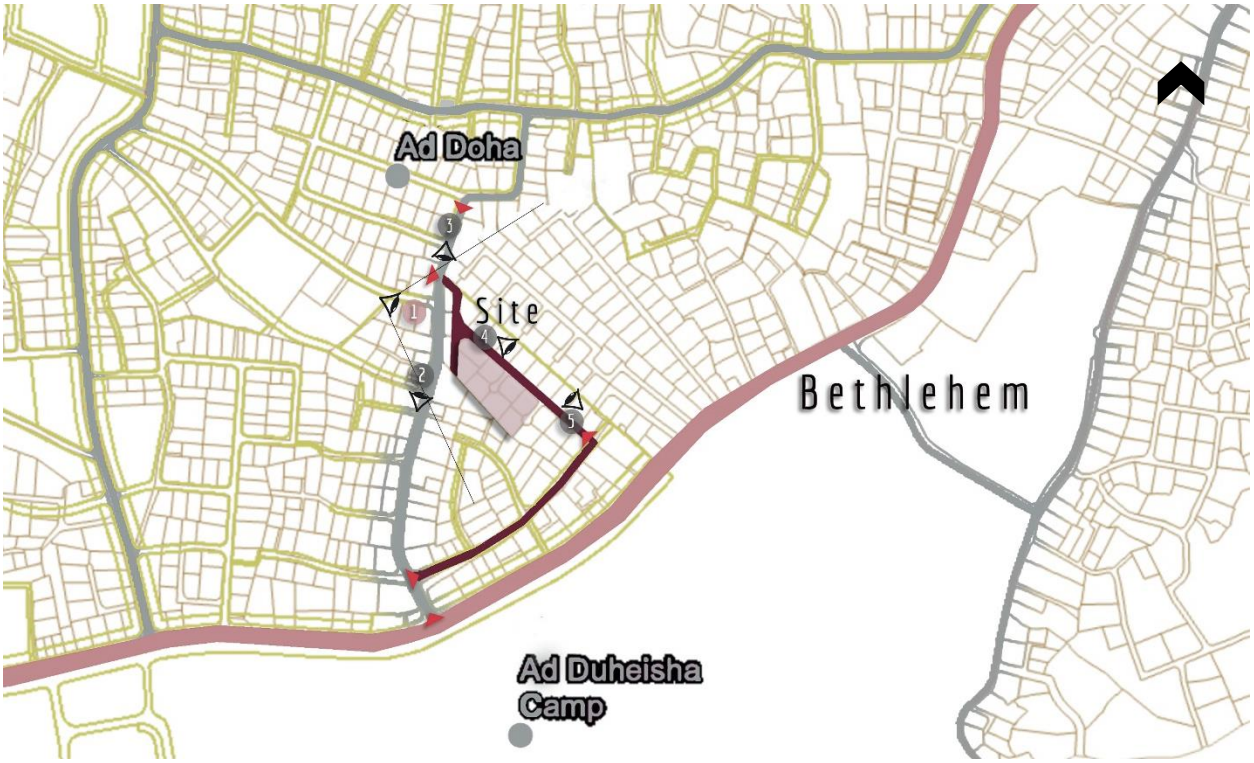


Figure 2. 3: Site approach, Al Doha

(the author based on Geomolg website, Jul.2020)

- Surrounding views legend

figure 2. 4: 1- Panoramic view – Site

This panoramic photo was taken from the street used to approach the site where the urban image of Bethlehem can be clearly seen, while enjoying the horizon view of the city.

figure 2. 5: 2- northern east view from main street (Google maps, Jul.2020)

figure 2. 6: 3- southern west view from main street

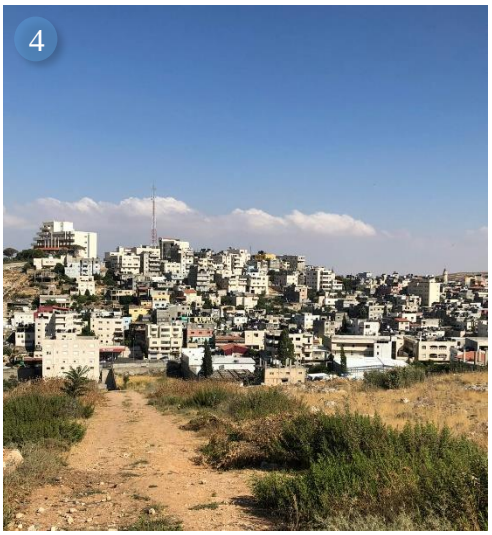


Figure 2. 7: 4- Opposite view – Duheishah camp – southern east view

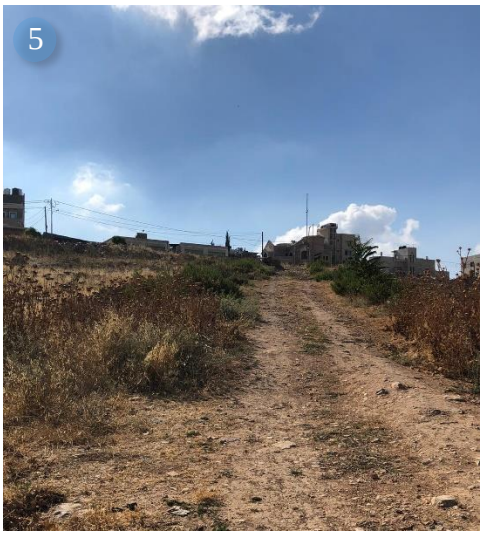
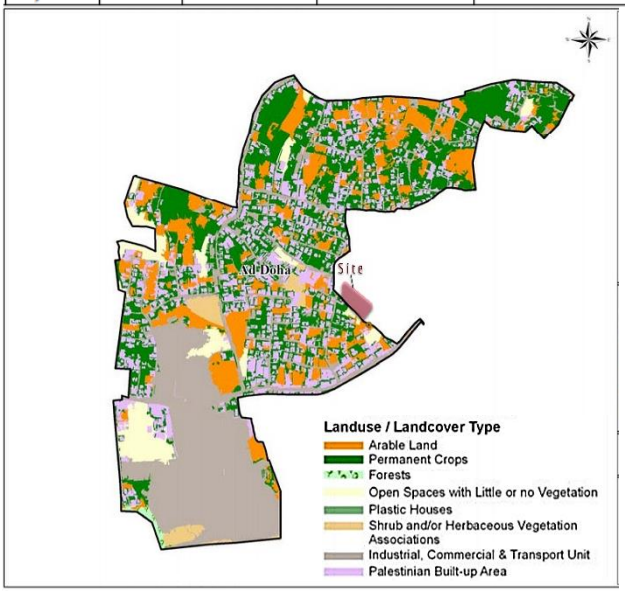


Figure 2. 8: 5- Northern west view, Site street

2.3.3. Land use

Land Use in Ad Doha city (dunum)								
Total Area	Built up Area	Arable Land (911)					Area of Industrial, Commercial & Transport Unit	Area of Settlements and Military Bases
		Seasonal Crops	Permanent Crops	Greenhouses	Forests	Open Spaces and Rangelands		
1,750	333	279	496	0	7	129	506	0

figure 2. 9: Land use



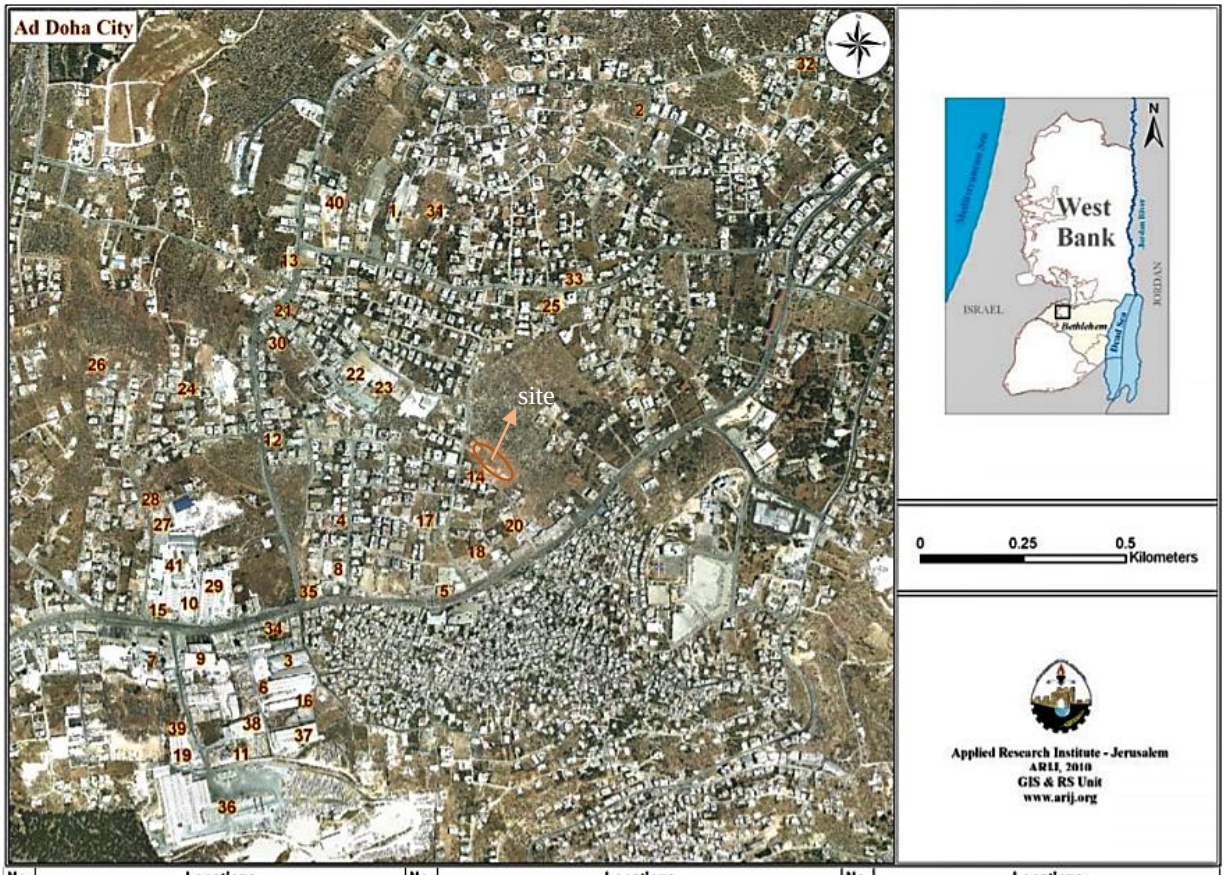
The proposed site is close to several schools, universities, kindergartens, and mosques.

The surrounding area of the site is mostly residential.

figure 2. 10: Land use – Al Doha, Bethlehem

(The author based on the applied research institute of Jerusalem – Jul.2020)

2.3.4. Main locations in Al Doha



No.	Locations	No.	Locations	No.	Locations
1	Khulafa' Ar Rashideen Schools Complex for Boys & Girls	15	Nassar Investment Co.	29	A H H Co. for Marble
2	Water Pump	16	Al 'Alamiya Co. for Marble	30	Verona Co. for Marble
3	Al Watanlya Co. for Marble	17	Al Firdaws Kindergarten	31	Ad Doha Municipality Garden
4	As Sanabil School	18	Ar Ru'ah TV	32	Women's Development Center
5	Ad Doha Municipality	19	Suheil & As Sahib Co. for Granite	33	Ad Doha Sport Club & Noor Al Mustakbal Association
6	Al Halaika Co. for Marble	20	The Traffic Department	34	Ash Shumu' Al Mudi'a Association
7	Al Ettihad Co. for Concrete	21	The Cultural Women Forum	35	Union of Agriculture Society
8	Al Jadeed Co. for Stone & Marble	22	Al Jirashi Co. for Concrete	36	Nassar Investment Co.
9	Al Jundi Co. for Granite	23	Al Jirashi Gas Co.	37	An Naser Investment Co.
10	Atlas Co. for Marble	24	Zaid Ben Thabet Mosque	38	Az Za'faran Co. for Marble
11	'Od Factory for Concrete	25	Al Khulafa' Ar Rashideen Mosque & Ad Doha Girls High School	39	Al 'Ahlam Co. for Marble
12	Dynamo Line	26	Ad Doha Water Tank	40	Maskat Girls High School
13	Ad Doha Center for Physical Therapy	27	Ash Shuweiki Co. for Concrete	41	Stone Quarries Complex
14	Al Amal Kindergarten	28	Ad Doha Mixed Elementary School		

figure 2. 11: main locations in Al Doha (The author based on the applied research institute of Jerusalem – Jul.2020)

Ad Doha has several local institutions and associations that provide services to various segments of society: children, youth, and women. The services are in the areas of culture, sports, and others, like Noor Al Bara Center for Vocal, Linguistic and Auditory Rehabilitation, Woman Development Center, and youth sports club.

2.3.5. Surrounding streets and buildings

The land is classified as area A, located in district no.3 in Al Doha. It is mostly surrounded by residential buildings so the noise level is low. The height range of buildings is (1-6) floors.

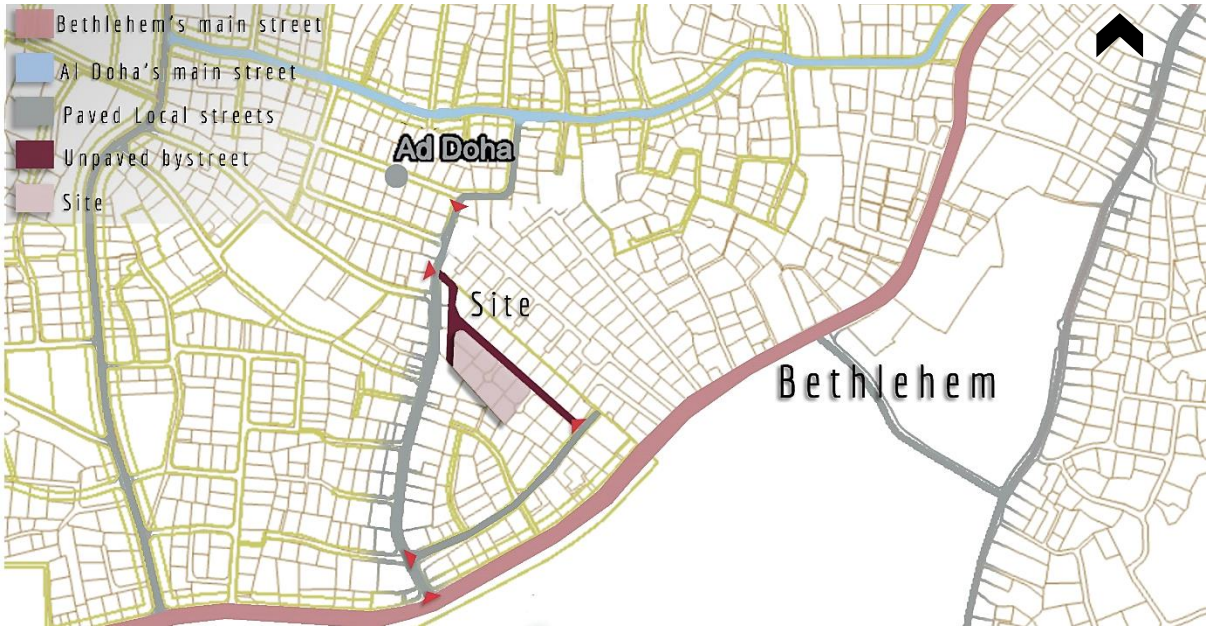


figure 2. 13: Streets classification (the author based on Geomolg website, Jul.2020)

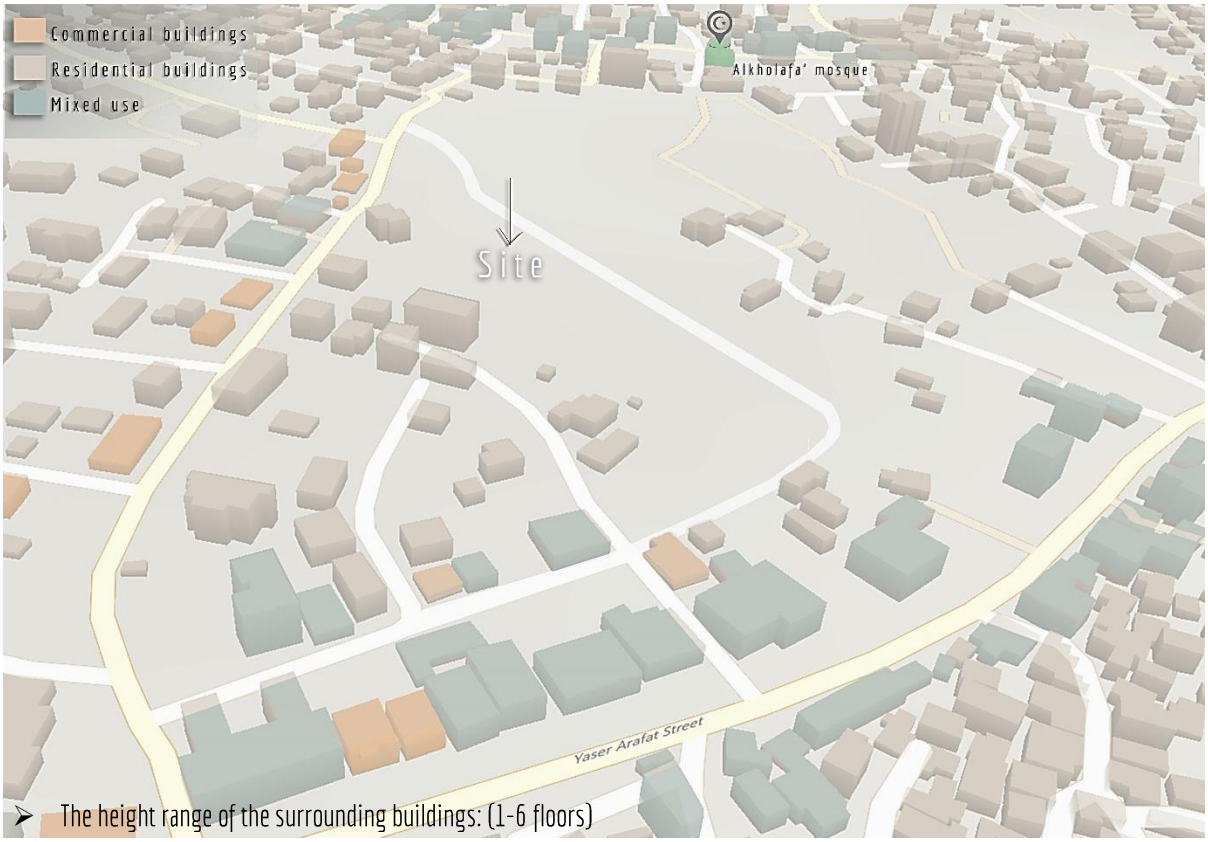


figure 2. 12: Surrounding buildings classification (The author based on Microsoft maps, 2020)

2.4. Micro scale analysis

This section includes the analysis concerning the site's topography and the relation of the site with the surrounding views.

2.4.1. Surrounding views

figure 2. 14: Southern west view

figure 2. 15: northern west view – entrance from street

figure 2. 16: Eastern view – Bethlehem city

figure 2. 17: southern east view – Duheishah camp

These pictures were taken from the site to show the surrouding views. Al Duheishah camp can be seen very clearly from the southern-west direction which creates a strong visual connection. It is a palestinian refugee camp that was established in 1949 and is located along the main street of Bethlehem. It was built to serve 3,000 refugees. Today, the number of residents in Dheisheh has reached roughly 15,000. It is a representation of the hard conditions and struggles that palestinians face everyday. However, It is considered as a symbol of palestinian resilience and social-political integration.

2.4.2. Topography

The site has a slope of 18%, it is rocky and steep. The difference between the highest level and lowest level in the site is 26 meters. The contour interval is 1 meter.

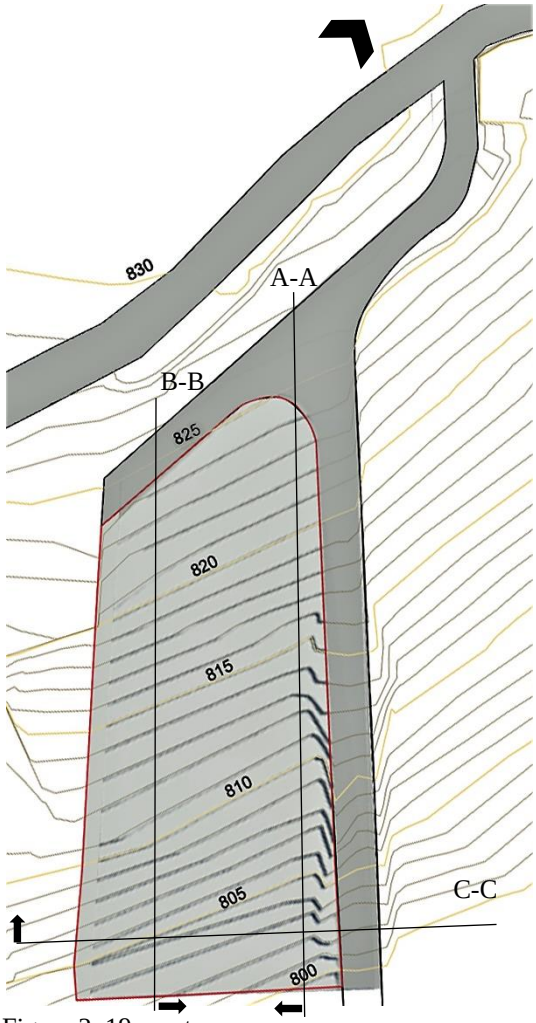


Figure 2. 19: contour map

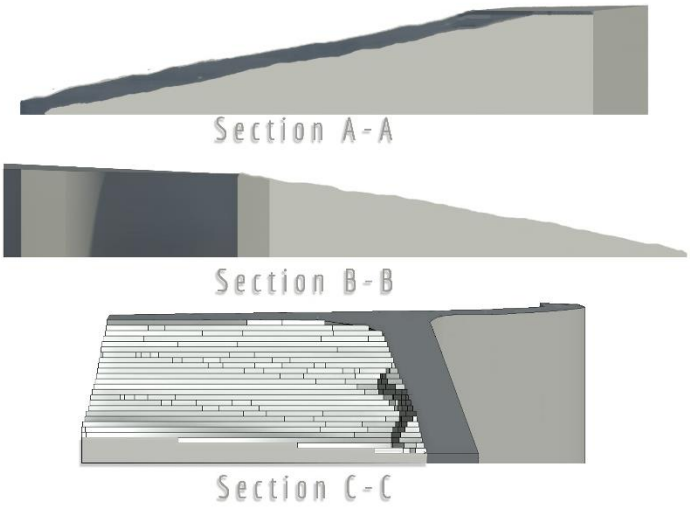
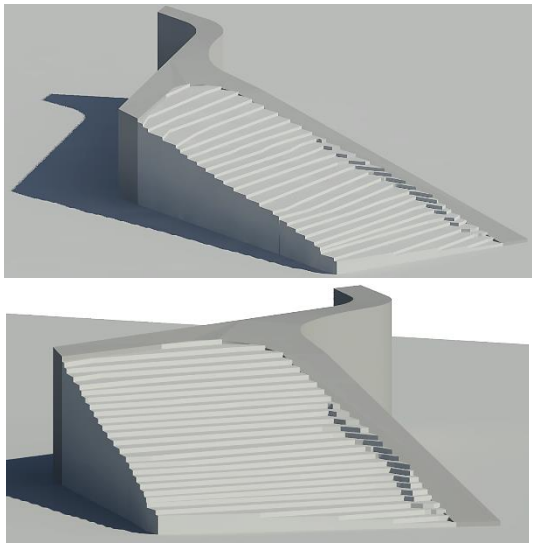


Figure 2. 18: Site sections



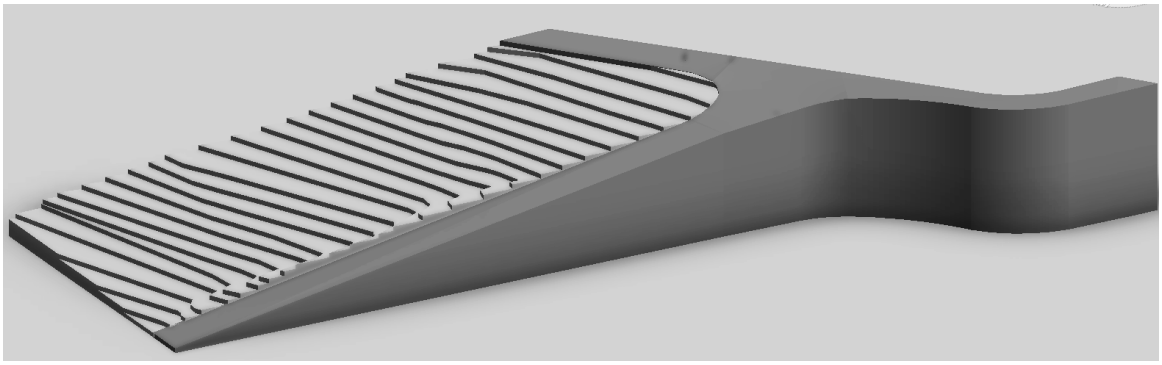


Figure 2. 20: Site topography - 3D views

2.5. Environmental analysis

In General, the city of Doha is 850 meters above sea level. The annual rainfall is about 613 mm. The average temperature is 16 ° C and the relative humidity is about 60.6%. In Bethlehem, the summers are long, warm, and clear. The winters are cold and mostly clear. Over the course of the year, the temperature typically varies from *5°C* to *30°C* and is rarely below *1°C* or above *33°C*.

2.5.1. Average Temperatures and precipitation

The max. average temperature in summer is 30 C, while in winter the average is about 15 C, While the minimum in summer is 11 C, and 3 C in winter. Hot days in summer could reach 36 C, while cold nights in winter could drop to -3 C. The highest precipitation is December and January (about 28-33 mm per month).

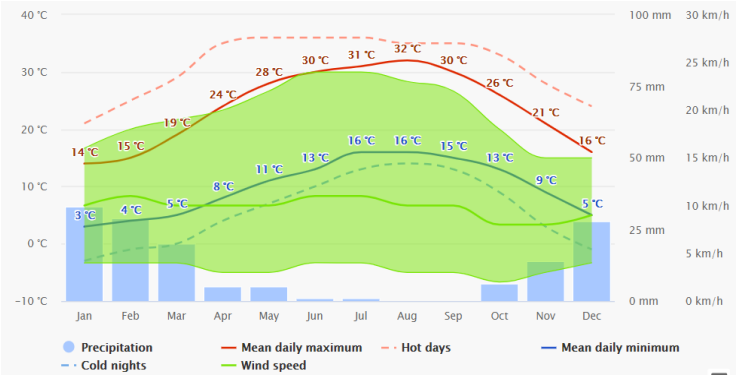


Figure 2. 21: average temperature and precipitation – Bethlehem
(Meteoblue website, Jul. 2020)

2.5.2. Cloudy, sunny, and Precipitation days

There is a good number of sunny days each month. Winter months have the highest precipitation amounts, with an average of 25 mm. Bethlehem has dry periods in May, June, July, August, September, and October. On average, January is the wettest month. August is the driest month.

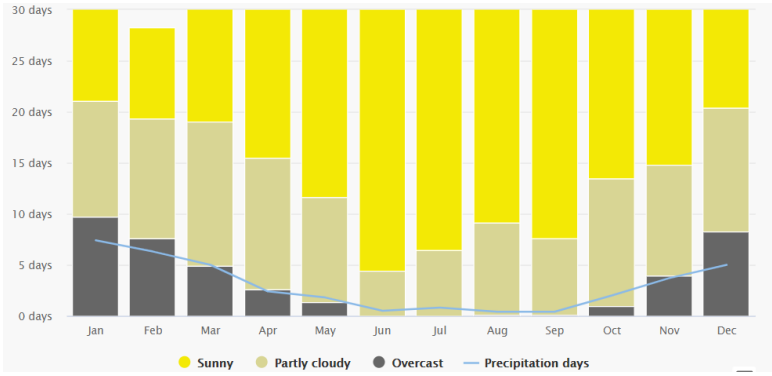


figure 2. 22: cloudy, sunny, and precipitation days - Bethlehem
(Meteoblue website, Jul. 2020)

2.5.3. Average Humidity

On average, January is the most humid month and May is the least humid.

The average annual percentage of humidity is: 53.0%.

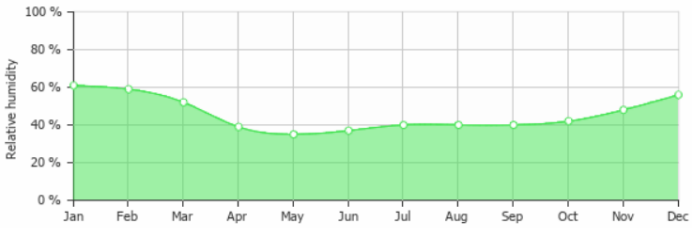


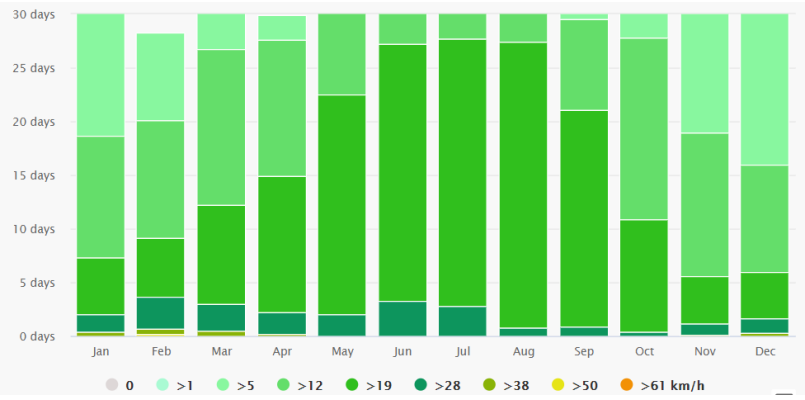
Figure 2. 23: Average humidity – Bethlehem
(Weather-and-climate website, Jul.2020)

2.5.4. Wind speed, rose, and direction

Winter wind: Maximum: 18 km/h - Minimum: 4 km/h - Average: 10 km/h

Summer wind: Maximum: 24 km/h - Minimum: 4 Km/h - Average: 11 km

On average, the most wind is seen in August, and the least wind is seen in October.



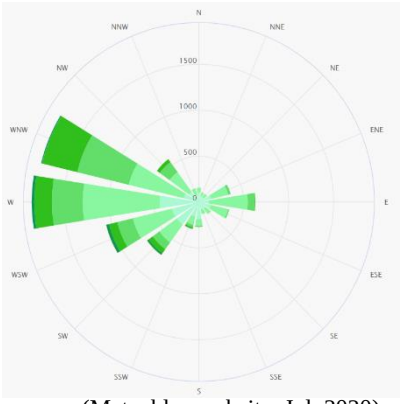


Figure 2. 24: wind speed and rose – Bethlehem (Meteoblue website, Jul. 2020)

The prevailing wind direction is from southern west to northern west from November 28 to September 6. The northern wind is most often from September 6 to November 8. The eastern wind is most often from the east from November 8 to November 28. (Weather spark website accessed on 14/7/2020).

2.5.5. Sun path and sun angles

The sun path and sun angles help indicate the orientation of the center, and how to get most of the natural light, and how to avoid the uncomfortable sunlight and excess heat.

- Winter sun:

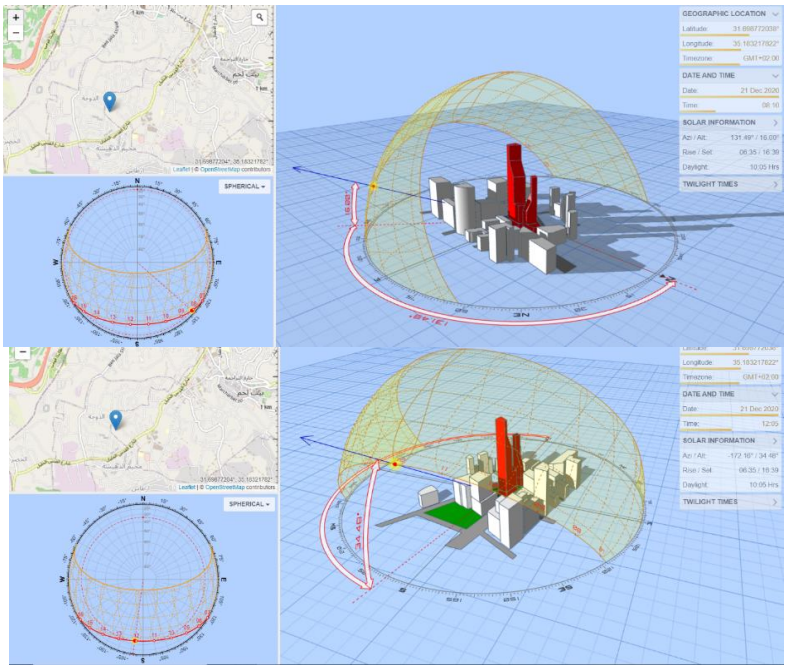


Figure 2. 25: Sun path, Dec 21st am

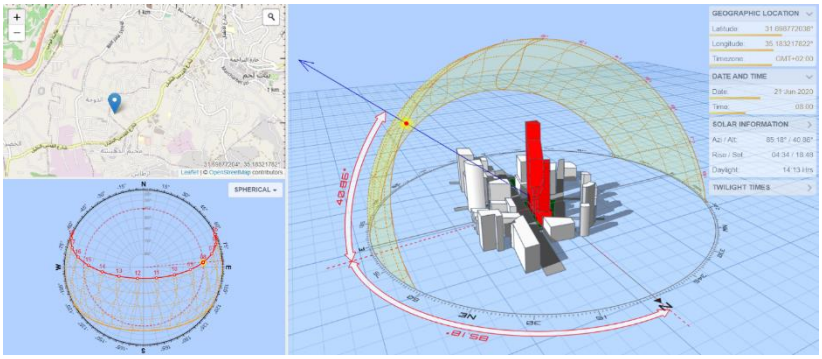
On December 21st, the sun angle is 16° in the morning (8:00 am).

The sun angle at midday is 34.5° (12:00pm).

Figure 2. 26: Sun path, Dec 21st pm

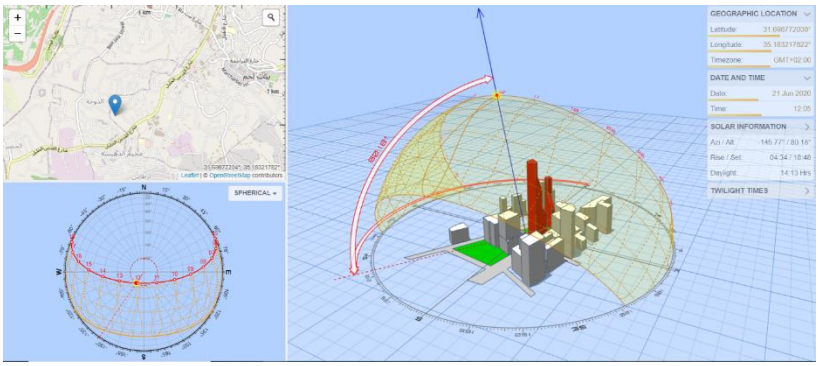
(Andrew Marsh website, Jul.2020)

- Summer sun:



The sun angle at midday is 80° (12:00pm).

figure 2. 27: Sun path: Jun. 21st am



On June 21st, the sun angle is 40.8° in the morning (8:00 am).

Figure 2. 28: Sun path: Jun 21st pm

(Andrew Marsh website, Jul.2020)

2.6. Summary

The previous information and analysis are the preliminary phase in the design process. The result is used as a starting point for the development of environment-related strategies during the design. The site features consider the standards and guidelines of cultural centers site selection criteria. It is in an accessible area that helps in expanding its service to the local community. The site is in a hillside land, the steep slopes and surrounding views should receive careful consideration. The neighborhood context helps in defining the activities held in the center among people and their relationships to these activities.

Chapter 3.

Project's activities program

3.1. Preface

3.2. Activities framework

3.3. Program formulation and areas

3.3.1. Educational spaces

3.3.2. Social interaction spaces and Leisure public spaces

3.3.3. Exhibition spaces

3.3.4. Administrative spaces

3.3.5. Services and other facilities

3.3.6. Total area of interior spaces

3.3.7. Total area of exterior spaces

3.4. Main functional relations

3.1. Preface

The proposed site has an area of 7600 m^2. Al Doha Socio-Cultural center includes various activities. It is characterized by its multifunctionality and productivity. The center carries public supporting facilities, reviving the Palestinian culture and encouraging innovation. The areas of spaces are approximately defined based on the expected audience, permitted construction percentage, and design standards.

3.2. Activities framework

The cultural activities that fulfill the objectives of this project were considered in a way to promote social interaction, to be a welcoming public space where memories are created, ideas are exchanged, and new things lie ahead.

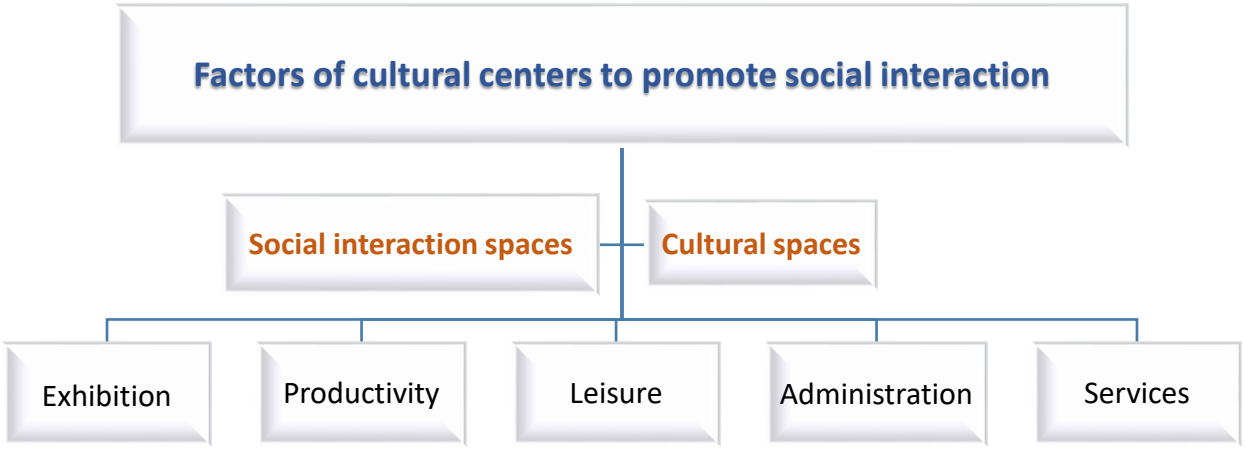


Figure 3. 1: Activities Framework

3.3. Program formulation and areas

The program incorporates the needed social values with cultural activities, creating a rich and varied public supporting facilities that lead to the gathering of people, guide the participation of citizens, and provide a good cultural exchange and atmosphere. The program is divided into 5 categories of spaces:

- Educational spaces – Social interaction spaces/leisure public spaces – Exhibition spaces – Administrative spaces – Services and other facilities.

3.3.1. Educational spaces: 1. Library

Space	No. of spaces	Area m^2/space	Total area m^2
Traditional library	1	120	120
Digital library/Lab.	1	80	80
Panoramic monitor showroom (Audiovisuals)	1	60	60
Reading room for people with special needs	1	40	40
Book store	1	50	50
VR room	2	40	80
Reading room (groups)	1	40	40
W.C	6	3.6	21.6
Circulation	15% of total area	-	73.8
Total			**565.4**

Table 3. 2: Library spaces

2. Studios and workshops

Table 3. 1: Studios and workshops

Space	No. of spaces	Area m^2/space	Total area m^2
Rehearsal studio (Dabkeh, drama, poetry…)	1	100	100
Art studio (Arabic Calligraphy, Mosaic art, sculpture, visual arts…)	1	100	100
Handicrafts workshop (Palestinian embroidery, crafts, souvenirs…)	1	100	100
Lounge	3	20	60
W.C/changing room	8	3.6	28.8
Circulation	15% of total area	-	58.3
Total			**447.1**

3.3.2. Social interaction and leisure public spaces

Space	No. of spaces	Area m^2/space	Total area m^2
Club (chess, backgammon, competitions…)	1	70	70
Kids physical interaction zone (trampoline park)	1	100	100
Traditional cafe & Restaurant	1	150	150
Urban living room (outdoor)	1	200	200
Multifunctional hall	1	150	150
Botanic Garden (outdoor)	1	150	150
W.C	8	3.6	28.8
Circulation	15% of total area	-	74.8
Total			**573.6**

Table 3. 3: Social interaction and leisure spaces

3.3.3. Exhibition spaces

Space	No. of spaces	Area m^2/space	Total area m^2
Permanent exhibition	1	150	150
Temporary exhibition	1	120	120
Souvenir shop	2	40	80
Extended gallery walkway (outdoor)	1	100	100
W.C	6	3.6	21.6
Amphitheatre (outdoor)	1	300	300
Circulation	15% of total area	-	55.7
Total			**427.3**

Table 3. 4: Exhibition spaces

3.3.4. Administration spaces

Table 3. 6: Administration spaces

Space	No. of spaces	Area m^2/space	Total area m^2
Manager's office	1	24	24
Secretary's office	1	12	12
Registration	1	20	20
Archive room	1	10	10
Meeting room	1	40	40
Staff's open office	1	50	50
W.C	3	3.6	10.8
Circulation	15% of total area	-	25
Total			**191.8**

3.3.5. Services and other facilities

Table 3. 5: Services

Space	No. of spaces	Area m^2/space	Total area m^2
Lobby	1	150	150
Reception	1	16	16
Storage	4	35	140
Prayer hall	2	15	30
Electrical room	1	30	30
Mechanical room	1	30	30
Maintenance room	1	30	30
Locker room	1	30	30
Security	1	16	16
Kitchenette	1	10	10
Car Parking	70	18.75	1312.5
Bus parking	1	25	25
Circulation	15% of total area	-	72.3
Total			**554.3**

3.3.6. Total area of interior spaces

Type	Total area m^2
Educational spaces: Library	565.4
Educational spaces: studios &workshops	447.1
Social interaction and leisure public spaces	573.6
Exhibition spaces	554.3
Administrative spaces	191.8
Services and other facilities	554.3
Total	**2886.5**

Table 3. 7: Total area of interior spaces

3.3.7. Total area of exterior spaces

Type	Total area m^2
Urban living room	200
Botanic Garden	200
Extended gallery walkway	100
Amphitheatre	300
Green areas	2000
Parking area	1337.5
Total	**4137.5**

Table 3. 8: Total area of interior spaces.

3.4. Summary

According to Al Doha municipality building guidelines in Bethlehem, the permitted construction percentage for cultural centers is 36%, and the number of permitted floors is 5. The site has a total area of 7600 m^2, which is suitable for the proposed program regarding the calculated total area. Moreover, to discuss possible phasing of the project, a zone can be considered to address future expansion on the chosen site.

Conclusion

This research is the foundation of studies and standards in cultural centers design, to state an idea or a starting point for the graduation project design. The expected vision is to create a cultural hub that incorporates spaces for activity and social gathering. The case studies analysis concludes some potentials that should be considered in the design process, such as creating a community meeting place that builds a public space around culture in recognition to the nature of the site. Both case studies have shown the great importance of relating the design to the site and surrounding views. The site analysis concludes the necessity of considering the strengths and weaknesses whether caused by the climate or the site surroundings and turn them into potential advantages. There is a strong visual connection between the site, Bethlehem, and Al Duheishah camp, which is an example of Palestinian resilience. To achieve resilience, we should seek sustainable development based on the local treasures and resources that respect and respond to the context. Thus, Al Doha socio-cultural center represents a revival of a treasured part of the Palestinian cultural activities and heritage. For future work, the process of planning and design of this cultural center will start, which should reflect the suggested programs, activities and services envisaged, according to the gathered information and data.

Recommendations

According to the research studies and analysis, the recommendations related to the main objectives of the project and addressed to Al Doha municipality are:

- In case of considering another design proposal, I recommend focusing on the suggested activities program, which were selected to insure productivity and cultural value.
- Recognition of the topography of the site and the surrounding views, to engage the visitors with natural landscape and city horizon.
- Addressing community needs and involving the community with the process of planning, design, and delivery, to contribute to the residents' wellbeing and quality of life to promote their social outcomes.
- Consideration of symbolism that communicates Palestinian history, identity, and future aspirations of residents.
- Public awareness concerning the development of cultural spaces.

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Appendix

Appendix A.

Summary of design guidelines and requirements:

- Site selection criteria: (timesaver standards for building types)

  The site is preferred to be a place with a less central position, a less fatigue from the noise and traffic, an atmosphere with less dust and gases, accessible from all parts of town by public transportation, and close to schools, universities and residences (Easily approached, connected to main streets, and in search of instructive recreation).
- Space for future expansion is advised. (timesaver standards for building types)
- Consider symbolism that communicates history, community values and future aspirations, expressed through public art and architectural elements. Also Contribute to the public domain and sense of place. (Website: www.landcom.com – Jul.2020)
- Be designed so that different functional areas can enhance social interaction, but also minimize potential conflict associated with privacy and noise impacts. (Website: www.landcom.com – Jul.2020)
- A cultural center should be imposing in appearance, solemn, and monumental (Visible from several angles). (timesaver standards for building types)
- A belt of trees surrounding the site is advised to serve as a filter, also providing green spaces and natural elements. (timesaver standards for building types)
- The area should be proportional to the expected audience regarding their classes and ages.
- Neutral colors selection in exhibitions, as they have a visual impact on the space design and volume. (timesaver standards for building types)
- Natural lighting & ventilation, in addition to artificial lighting fixtures that can creatively be used to display. It is advised to use transparent glass windows to view the surrounding nature to visitors. (timesaver standards for building types)
- Entrances and exits: A minimum of 2 entrances (main & service entrances) and one emergency exit. It should have the potential for separate entry/exit points for facilities, such as youth activities room. (Website: www.landcom.com – Jul.2020)

- Good connection between different activities in the cultural center using clear vertical circulation, and wide corridors for horizontal circulation. Horizontal and vertical circulation should be defined in accordance with the best possible use and possibilities to use of space. (timesaver standards for building types)
- Exhibition spaces require 1.2-2 meters for each person. Open spaces are preferred for ease of transition, to serve as public interactive spaces. (timesaver standards for building types)
- Library location should insure maximum accessibility, ease of supervision by staff, and enough space for group meetings. (timesaver standards for building types)
- Providing a variety and flexible sizes of meeting rooms, seminar rooms, and open offices. (Website: www.landcom.com – Jul.2020)
- A mix of activities help to ensure that a cultural center is not labelled as a 'type' of facility or available only for a particular target group, and that it is perceived as a facility available for the whole community. (Website: www.landcom.com – Jul.2020)
- The theater accommodating the audience during the performance includes the lobby, coat check, ticket counters, and restroom. The amount of space required for the auditorium: (timesaver standards for building types)

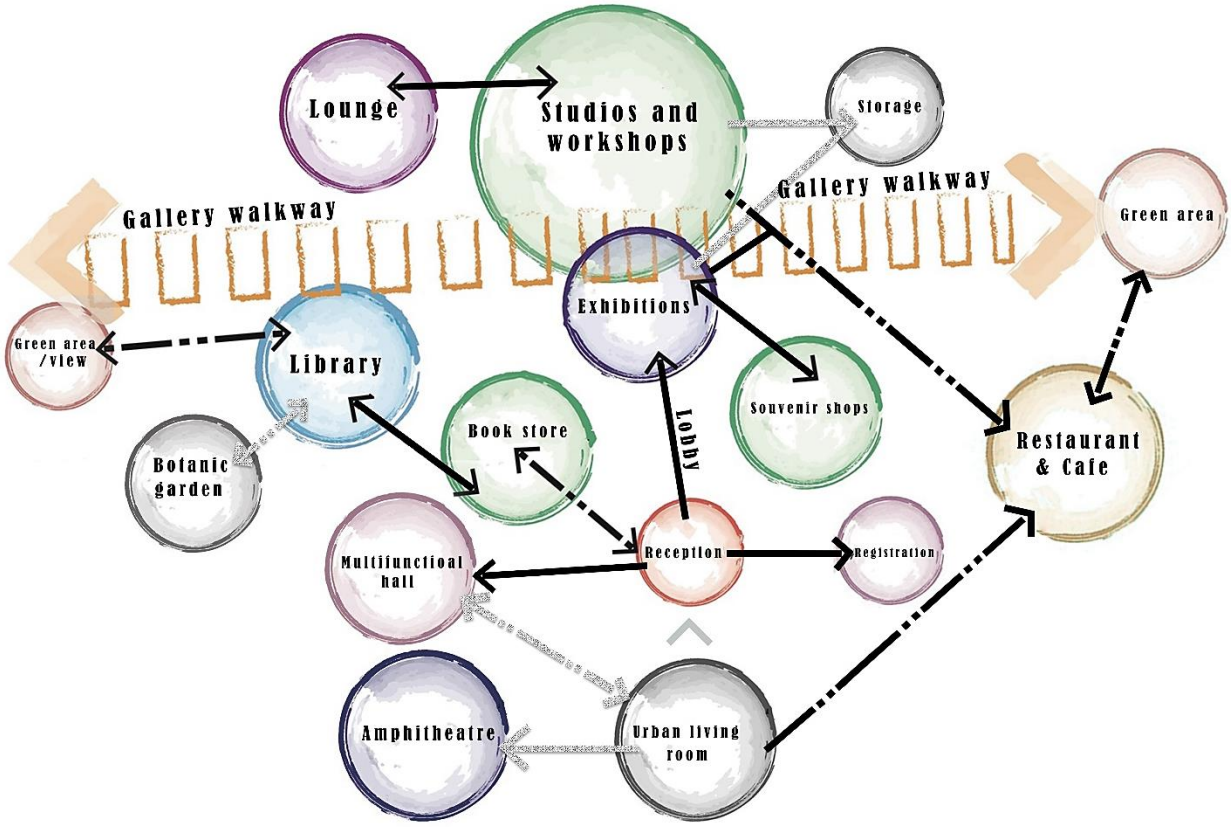
  200 seats: 270m²
  150 seats: 190m²
  75 seats: 125 m²
- Internal sound insulation, services and equipment noise control and acoustics design should be considered. (timesaver standards for building types)
- Include an adequate space for storage of equipment to be secured when not in use. (Website: www.landcom.com – Jul.2020)
- Have an adequate car parking, including parking for a community bus and bicycles, within safe walking distance and which is well lit at night.
- Provide direct access from activity rooms to adjoining outdoor areas for children's play areas and social events. (Website: www.landcom.com – Jul.2020)

Sources:

Timesaver Standards for Building Types:
https://archive.org/details/TimeSaverStandardsForBuildingTypes/page/n395/mode/2up?q=cultural
Community center guidelines:
https://www.landcom.com.au/assets/Publications/Statement-of-Corporate-Intent/95cff2c1fe/community-centre-guidelines.pdf

Appendix B.

Main functional relations



Appendix B. 1: Functional relations bubble diagram