



UNIVERSITY OF BAHRAIN

College of Engineering

Department of Architecture & Interior Designer

IT'S HELP. IT'S REHABILITATION. IT FEELS GOOD.

2018-2019

Student names & ID: Juwaireya Jamal 20145764, Ghada Al attar 20141256
Supervisor: Dr. Haifa Al Khalifa



University of Bahrain
College of Engineering
Department of Architecture and Interior Design

DECLARATION

I hereby declare that all material in this Graduation Project-Report titled as:

“ _____ Hope Centre _____ & _____ Chance for Change Centre _____ ”

is my own work except where there is clear acknowledgment or reference to the work of others and I have complied with the University rules and regulations related to Plagiarism and Academic Integrity.

Date:

Names and IDs of the students:

Signature of the students:

1. Juwaireya Jamal 20145764
2. Ghada Al attar 20141256



“I hope you realize that every day is a fresh start for you. That every sunrise is a new chapter in your life waiting to be written.”

— Juansen Dizon, *Confessions of a Wallflower*



“Every new day is another chance to change your life.”

— Siddhartha Gautama, Founder of Buddhism

Abstract

It is a chance to hope and restoring life to our society by give a special opportunity for everyone to change for the better. However, this is achieved through the rehabilitation of individuals who need help in order to reach a bright future with a conscious and strong generation.

The both graduation projects are a rehabilitation center that provides care for youth in a specific field. However, the first project is the Hope Center that would provide rehabilitation programs and workshops to help EX-Convict over than eighteen years of age. On the other hand, the Second project is the Chance for Change Center that would provide an integrated medical care along with many activities for youth over than eighteen years who suffer from obesity.

Hope Center aims to rehabilitate former prisoners as well as help them to rely on themselves and independence financially through a series of activities and events to help them engage in the community. On the other hand, Chance for Change Center aims to give opportunity for change and open the way for conscious youth face the obesity and challenge themselves to get a healthy life free of diseases.



Dedication

We dedicate this book to our families and especially our instructor Dr. Haifa Al-Khalifa who always support us...

And to you, our dear reader...

Acknowledgment

This project is very complicated and takes a lot of effort and time. However, it wouldn't have been completed without God wills then the support of many people.

First of all, my deepest gratitude goes to our instructor Dr. Haifa Al-Khalifa for all the help, support and guidance she provided through the course. Moreover, we are extremely grateful to her assistance that she kept providing no matter how long it took.

We would like to thank our parents, who always providing us constant support and encouragement, we would have not reached where we are today without them.

Special thanks to

Fatima Sayed Abdulla, our dearest friend and Role Model...

Fatima Jasim Habib, our dearest friend and inspiration...

Ali Mandlawi, our dearest friend and inspiration...

Dr. Nora Al-Shamlan, assistant professor of criminal law...

Usha Jagdish, VLCC Centre Head...

Table of contents

Chapter 01 (Problem Statement)	13
1.1 Introduction	15
1.2 Importance of the project / Justification for selection	16
1.3 Project goals / objectives	16
1.4 Scope of the project	17
1.5 Limitations of The Project	18
1.6 Research methodology	18
1.7 Conclusion	19
Chapter 02 (Data Collection and Discussion of Theoretical Issues)	21
2.1 Introduction	22
2.2 Literature Review	23
2.3 Technical Specification	32
2.4 Survey	35
2.5 Interview	41
2.6 Observation	42
2.7 conclusion	43
Chapter 03 (Case Studies)	45
3A. Live case study (Sphinx Centre)	46
3A.1 Basic Information	46
3A.2 project study	46
3A.3 Design Philosophy	57
3A.4 Study of interior finishes and furniture	57
3A.5 Study of building services	59
3A.6 Conclusion	59
3B. literature Case study (Proyecto Hombre association)	50
3B.1 Basic Information	50
3B.2 project study	50
3B.3 design philosophy	51
3B.4 Study of Interior Finishes and Furniture	52
3B.5 Study of Building Services	54
3B.6 Conclusion	54
3C. Literature case study (Crunch Centre)	55
3C.1 Basic Information	55
3C.2 Project Study	56
3C.3 Design Philosophy	58
3C.4 Study of interior finishes and furniture	58
3C.5 Study of building services	60
3C.6 Conclusion	60
3D Comparative Analysis of Case Studies	61
Chapter 04 (Design Programming)	63
4.1 Functional Study	64
4A Major Components	64
4A.1 Common major components	64
4A.2 Hope Centre	65
4A.3 Chance for Change Centre	66
4B Minor components	67

4B.1 Common minor components.....	67
4B.2 Hope Centre.....	68
4B.3 Chance for Change Center.....	69
4C. Services.....	69
4.2 User study.....	70
4.2.1 Common users for both Centres.....	70
4.2.2 Hope Centre Users.....	70
4.2.3 Chance for Change Centre Users.....	70
4.3 Analysis of User Activities.....	71
4.3.1 User Flow Chart.....	78
4.4 Organizational Chart Study.....	75
4.5 Functional relationship study.....	76
4.5.1 Functional relationship among the components.....	76
4.6 criteria study.....	77
4.6.1 Criteria matrix.....	77
4.6.2 Operating Hours.....	78
4.7 human factor study.....	80
4.7.1 Anthropometrics (data collection and analysis)	80
4.7.2 Ergonomics (data collection and analysis)	81
4.8 area calculation study.....	84
4.8.1 Functional programming.....	84
4.8.2 Total Area calculation.....	85
4.9 Spread Sheet.....	86
Chapter 05 (BUILDING AND SPACE ANALYSIS)	87
5.1 Introduction.....	89
5.1.1 Reasons of selecting the site.....	89
5.2 Site analysis for both centre.....	89
5.2.1 Graphical Site Analysis.....	89
5.2.2 Location.....	92
5.2.3 Orientation and Climate.....	92
5.3 Building Analysis.....	92
5.3.1 Shape and size.....	92
5.3.2 Type of structure.....	93
5.3.3 Style of Architecture.....	94
5.3.4 Entry / Exit Points.....	94
5.4 Interior space analysis.....	96
5.4.1 Architectural Analysis: Detail dimensions and area calculations.....	96
5.4.2 Existing doors, windows and steps into the Site include.....	96
5.5 Program Analysis (Zoning)	97
5.5.1 The Hope Centre.....	97
5.5.2 Chance for Change Centre.....	98
5.6 Conclusion.....	99
5.5.1 Positive critics.....	99
5.5.2 Negative critics.....	99

List of figures

Chapter 02 (Data Collection and Discussion of Theoretical Issues)	21
Figure 2.1 All needs for the ex-prisoners.....	23
Figure 2.2 book cover for “the Psychological Impact of Incarceration”	24
Figure 2.3 Show lighting distribution in treatment room.....	32
Figure 2.4 Day light in treatment room.....	33
Figure 2.5 Used blinds in Spaulding Rehabilitation Centre interior.....	33
Figure 2.6 Used lighting in Rehabilitation Centre lobby.....	33
Figure 2.7 Dr. Nora Al-Shamlan.....	41
Figure 2.8 Ms.Usha Jagdish, VLCC Centre Head.....	42
Chapter 03 (Case Studies)	45
Figure 3.1 sphinx logo.....	46
Figure 3.2 Sphinx center facade.....	46
Figure 3.3 Sphinx ladies entrance.....	46
Figure 3.4 Sphinx structure plan & zoning.....	46
Figure 3.5 Sphinx structure plan, circulation and fire exit.....	46
Figure 3.6 Sphinx zoning.....	47
Figure 3.7 Small Spa.....	47
Figure 3.8 Strength Zone.....	47
Figure 3.9 Steam Zone.....	47
Figure 3.10 Cardio Zone.....	47
Figure 3.11 Gym Equipment.....	48
Figure 3.12 Treatment Room.....	48
Figure 3.13 Aerobic class.....	48
Figure 3.14 Aerobic class.....	48
Figure 3.15 Spinning Class.....	48
Figure 3.16 Lockers Zone.....	48
Figure 3.17 Gym Equipment.....	49
Figure 3.18 Treatment room.....	49
Figure 3.19 Aerobic class.....	49
Figure 3.20 Aerobic class.....	49
Figure 3.21 gym zone.....	49
Figure 3.22 Spinning class.....	49
Figure 3.23 gym zone.....	49
Figure 3.24 Proyecto Hombre association location map with the sun path.....	50
Figure 3.25 Proyecto Hombre association external with the sun path.....	50
Figure 3.26 Proyecto Hombre association structure plan.....	50
Figure 3.27 Bubble diagram for the Proyecto Hombre association.....	51
Figure 3.28 Proyecto Hombre association circulation.....	51
Figure 3.29 Proyecto Hombre association plan show the fire exits.....	51
Figure 3.30 Reception.....	51
Figure 3.31 The corridor.....	51
Figure 3.32 Office.....	51
Figure 3.33 Toilet.....	51
Figure 3.34 Proyecto Hombre association structure plan.....	52
Figure 3.35 Proyecto Hombre association elevation.....	52
Figure 3.36 pictures for the exterior of the building.....	52

Figure 3.37 Pictures for the reception.....	52
Figure 3.38 Pictures for the auditorium room.....	52
Figure 3.39 Proyecto Hombre association structure plan.....	53
Figure 3.40 Pictures for the corridors.....	53
Figure 3.41 Dining Room.....	53
Figure 3.42 Class.....	53
Figure 3.43 Other facilities.....	53
Figure 3.44 Pictures for the offices.....	53
Figure 3.45 Pictures for the bedrooms.....	54
Figure 3.46 The gym from outside.....	54
Figure 3.47 locker area.....	54
Figure 3.48 Gym before furnished.....	54
Figure 3.49 Toilet.....	54
Figure 3.50 Crunch Centre logo.....	55
Figure 3.51 Crunch Fitness Centre Facade.....	55
Figure 3.52 Gym Zone.....	55
Figure 3.53 Location Map of Crunch Fitness Centre.....	55
Figure 3.54 Crunch Fitness Centre ground floor plan.....	56
Figure 3.55 Crunch Fitness Centre upper floor plan.....	56
Figure 3.56 Crunch Fitness Centre ground floor zoning.....	56
Figure 3.57 Crunch Fitness Centre upper floor zoning.....	56
Figure 3.58 Crunch Fitness Centre ground floor circulation.....	57
Figure 3.59 Crunch Fitness Centre upper floor circulation.....	57
Figure 3.60 Crunch Fitness Centre Bubble Diagram.....	57
Figure 3.61 The Centre Amenities.....	57
Figure 3.62 Cardio Zone.....	58
Figure 3.63 Strength Zone.....	58
Figure 3.64 Weight Zone.....	58
Figure 3.65 The Centre equipment.....	58
Figure 3.66 Spa Zone.....	59
Figure 3.67 Reception.....	59
Figure 3.68 Gym coffered ceiling.....	59
Figure 3.69 Strength Zone.....	59
Figure 3.70 Waiting Area.....	59
Figure 3.71 Lobby ceiling fixtures.....	59
Figure 3.72 Massage .Room.....	59
Figure 3.73 Cardio Zone.....	60
Figure 3.74 Spinning Room.....	60
Figure 3.75 Treatment Zone.....	60
Figure 7.76 Weight Zone.....	60
Figure 7.77 Lobby.....	60
Figure 3.78 Weight Zone.....	60
Chapter 04 (Design Programming)	63
Figure 4.1 Private office example.....	64
Figure 4.2 Open office example.....	64
Figure 4.3 living room example.....	64
Figure 4.4 laundry room example.....	64
Figure 4.5 Bedroom example.....	64

Figure 4.6 Bathroom example.....	64
Figure 4.7 Clinic office example.....	65
Figure 4.8 Dental room example.....	65
Figure 4.9 X-Ray room example.....	65
Figure 4.10 Auditorium example.....	65
Figure 4.11 Exhibition area example.....	65
Figure 4.12 Carpentry Workshop example.....	66
Figure 4.13 Blacksmith Workshop example.....	66
Figure 4.14 Sculptor Workshop example.....	66
Figure 4.15 Gym example.....	66
Figure 4.16 Gym example.....	66
Figure 4.17 live cooking example.....	66
Figure 4.18 live cooking example.....	66
Figure 4.19 reception and waiting area example.....	67
Figure 4.20 Café example.....	67
Figure 4.21 Café example.....	67
Figure 4.22 Café example.....	67
Figure 4.23 library example.....	67
Figure 4.24 library example.....	67
Figure 4.25 library example.....	67
Figure 4.26 Pool example.....	68
Figure 4.27 pool example.....	68
Figure 4.28 Visiting area example.....	68
Figure 4.29 Visiting area example.....	68
Figure 4.30 Multipurpose playground example.....	68
Figure 4.31 Multipurpose playground example.....	68
Figure 4.32 Cinema example.....	68
Figure 4.33 Cinema example.....	68
Figure 4.34 Gym example.....	68
Figure 4.35 Service kitchen example.....	68
Figure 4.36 Auditorium room example.....	69
Figure 4.37 Aerobics Studio example.....	69
Figure 4.38 Aerobics Studio example.....	69
Figure 4.39 karate studio example.....	69
Figure 4.40 karate studio example.....	69
Figure 4.41 security room example.....	69
Figure 4.42 laundry example.....	69
Figure 4.43 storage example.....	69
Figure 4.44 main kitchen example.....	69
Figure 4.45 Mechanical & Electrical Room example.....	69
Figure 4.46 Bathroom example.....	69
Figure 4.47 W.C example.....	69
Figure 4.48 Hope Centre functional relationship.....	76
Figure 4.49 Chance for Change Center functional relationship.....	77
Figure 4.50 Human Body dimensions.....	80
Figure 4.51 Space requirements of various body postures.....	80
Figure 4.52Space requirements of various body postures.....	80
Figure 4.53 Human Body dimensions for women and man.....	80

Figure 4.54 Space requirements of various body postures.....	80
Figure 4.55 Office standard.....	81
Figure 4.56 Standard pieces of furniture.....	81
Figure 4.57 laboratory standard.....	81
Figure 4.58 kitchen standard.....	81
Figure 4.59 Auditorium standard.....	81
Figure 4.60 Auditorium standard.....	81
Figure 4.61 Café & kitchen standard.....	81
Figure 4.62 Workshop standard.....	82
Figure 4.63 Work station for the workshop standard.....	82
Figure 4.64 workbench for the workshop standard.....	82
Figure 4.65 Dental Room standard.....	82
Figure 4.66 Pull chair standard.....	83
Figure 4.67 Chest press standard.....	83
Figure 4.68 Cardio Machine standard.....	83
Chapter 05 (BUILDING AND SPACE ANALYSIS)	88
Figure 5.1 Site Analysis.....	89
Figure 5.2 Site Analysis.....	90
Figure 5.3 Site Analysis.....	91
Figure 5.4 Site Analysis, parking.....	91
Figure 5.5 Site Analysis for the hope center, the locate of outdoor activates.....	91
Figure 5.6 North Elevation.....	93
Figure 5.7 South Elevation.....	93
Figure 5.8 Existing Entry and Access Point, ground floor plan.....	94
Figure 5.9 Existing Entry and Access Point, first floor plan.....	95
Figure 5.10 Existing Entry and Access Point, second floor plan.....	95
Figure 5.11 Existing doors, windows and steps, ground floor plan.....	96
Figure 5.12 Existing doors, windows and steps, first floor plan.....	97
Figure 5.13 Existing doors, windows and steps, second floor plan.....	97
Figure 5.14 zoning for the hope center, ground floor plan.....	97
Figure 5.15 zoning for the hope center, first floor plan.....	98
Figure 5.16 zoning for the hope center, second floor plan.....	98
Figure 5.17 Zoning of chance for change, ground floor plan.....	98
Figure 5.18 Zoning of Chance for Change Centre, first floor plan.....	99
Figure 5.19 Zoning of Chance for Change Centre, second floor plan.....	99

List of tables

Chapter 03 (Case Studies)	45
Table 3.1 Crunch Fitness Centre components.....	56
Chapter 04 (Design Programming)	63
Table 4.1 List of Component.....	64
Table 4.2 Analysis of user activities.....	71
Table 4.3 Criteria Matrix.....	77
Table 4.4 Operating Hours for the Hope Centre.....	78
Table 4.5 Operating Hours of Chance for Change Centre.....	79
Table 4.6 Summary of Spatial Component with Space Requirement.....	84
Table 4.7 Total Project Area.....	85

Table 4.8 Spread Sheet.....	86
Chapter 05 (BUILDING AND SPACE ANALYSIS)	87
Table 5.1 Detail dimensions and area calculations.....	96
List of charts	
Chapter 04 (Design Programming)	63
Chart 4.1 Common staff flow chart.....	73
Chart 4.2 EX-Convict flow chart for Hope Centre.....	74
Chart 4.3 Visitors flow chart for Hope Centre.....	74
Chart 4.4 Obese people flow chart for the Chance for Change Centre.....	75
Chart 4.5 Organizational Chart for Hope Centre.....	75
Chart 4.6 Organizational Chart of Chance for Change Centre.....	76
LIST OF APPENDICES	
Appendix A (Interview with Dr. Nora Al-Shamlan)	102
Appendix B (Interview with VLCC Centre Head)	104



Problem Statement

1.1 Introduction

1.2 Importance of the project: Justification
for Selecting the Project

1.3 Project Goals/ Objectives

1.4 Scope of the Project

1.5 Limitations of the Project

1.6 Research Methodology

1.7 Conclusion

“YOU NEVER FAIL UNTIL YOU STOP TRYING”

-Albert Einstein

1.1 Introduction

To build a promising future we must rehabilitate society and reform members of the society who needs the rehabilitation center services. So, the graduation projects are rehabilitation centers that will provide care for young adult. However, these projects will highlight two important problems affecting our society:

A. Hope centre, for ex-convicts who are ostracized from society and not allowed to make up for their mistakes.

With the passage of time, the crimes and causes are increasing. Some jailed for a month and some for a year and some for dozens of years. Then they released, depressed by their experience beside that the society faces them with exclusion, frustration and blame. No work or society that accepts them for fear of spreading the crime among them. And This may affect them negatively and return to prison for the same or more serious crime.

Hope Center helps former prisoners to engage in the community and provides rehab programs and workshops to helps them in rely on themselves. In addition, sell their products from the workshops, where the profits of the center's products will go to the Ministry of Interior in Bahrain and contribute to raising Bahrain's economy. Furthermore, released will receive a monthly salary and gets a place to shelter them if they need. Eventually, they will be able to rely on themselves and distance from their crime and become best contributors to community building. And provide an opportunity to rejoin the community. However, if they have committed, and they repent, God will forgive them, so why doesn't the community excuse them and give them a chance?

B. Chance for Change Centre, for conscious youth to do it now and face the obesity by challenge themselves in one place.

The rapid changes in the Gulf social states after the mid-21st century have accompanied the emergence of many young people tend to non-traditional food, fast food, as well as lack of movement and activity, according to several experts, who conducted research and specialized studies.

Furthermore, Most of the Bahraini youth either male or female follow a wrong lifestyle caused by the lack of eating healthy and organic food along with avoid doing few exercises or any kind of sports. Besides that, most of youth time wasted in mobility between social media applications, which leads to less activity and focus in the way of life. Moreover, overweight problems caused by genetic factors as well.

A healthy life, for who recognizes that is the most important responsibilities to give it a suitable time and effort.

Based on the principle making the Bahraini future more active and prosperous, the project aims to give chance for change and open the way for conscious youth to face the obesity.

1.2 Importance of the project / Justification for selection

A. Hope Centre

- **Locally:** Hope Center will help to minimize the spread of crimes in Bahrain committed by ex-convicts and to change the society's perception of them as invalid citizens, while they are regret and want to reform and re-engage with society. Also, improve their circumstances by legitimate means. This is lacking in Bahrain, there is no center for the post released people that help them to improve their living conditions and behavior to become benevolent citizens instead of being a burden on it.
- **Nationally:** Nowadays, Bahrain is growing so fast to become a competitive country. The Hope Center will contribute to making Bahrain a special country loving its people and confirmed the spirit of forgiveness characterized as the King. Also, the Hope center outputs will raise Bahrain's economy and production.
- **Globally:** When the Hope Center provides rehab programs for the released people, this will recognize the Kingdom of Bahrain the global level. In addition, proves to all the countries of the world that the leaders in Bahraini believe in human value, and the importance of tolerance in society to achieve a promising future.

B. Chance for Change Centre

- **locally:** Many youths believe that obesity is simple, and some may think it is just an unacceptable sight or distortion beauty of the bodies, and a little may know about the health risks associated with obesity. So, what if there is a place to lose the weight safely and provide all the services required under one roof?
- **Nationally:** Chance for Change Center ideal to help youth lose weight under medical supervision which support the government's efforts to fight the obesity as national health issue.
- **Globally:** Establishment of the Center reinforces role of the Bahrain kingdom in the elimination of obesity that young people suffer at the global level. However, the center might be one of the known global centers in the world to lose weight and maintain healthy lifestyle.

1.3 Project goals / objectives

A. For the Hope Centre

- **Client goals:** Ministry of Interior (MOI) is the government authority to run the detention facilities in Bahrain, so the Hope center will be a post-prison place because it cares about the released people. Hope center is the first center in this direction. It will be the main factor to decrease the number of returned to prison by providing the rehab programs and workshops, this would reflect positively on the society.
- **Users goals:** The released people will get a care from the hope center, and an opportunity to rely on themselves which will help them to engage in society. Also, they will get a place where they can work and exploit their energies in practical way.

- **Designer goals:** Design an integrated place that suits users' needs and encourages them to interact with the components and provides the requirements and objectives of the client according to the users.

B. The Chance for Change Centre

The Chance for Change Center seeks to following objectives and achieve the vision and mission:

- **Client:** Support the Ministry of Health vision in many aspects as follows:
 - Community Partnership Against Obesity.
 - Reduce the rate of obesity by combating risk factors.
 - Improving the health services provided to obese patients based on modern clinical evidence followed by the staff and issuing a uniform guide for quality and adherence to it.
- **User:** Empower youth who suffers from obesity to contribute to control of obesity and its complications and participation in the services provided and quality control.
- **Designer:** Designing an attractive building depending on the cultural thinking way of the people around the area and of the city, use dynamic design to encourage activity and vitality besides psychological interior effect on users.

1.4 Scope of the project

A. Common components for both centres:

- **Major components**
 - **Administration:** Will be under a strong management seeks to organizational goals through individuals and other resources. Management also accomplishes the objectives by performing basic administrative functions (registration, organization, recruitment, guidance, oversight). Based on the above, the staff will compose of registration and accounting.
 - **Accommodation:** Provide safe and comfortable accommodation places for resident youth to ensure the best possible health care for their specific period.
 - **Clinics and therapeutic.**
- **Minor components**
 - **Reception and waiting area.**
 - **Café.**
 - **Activity area:** Users should spend their time in a useful and amusing way. Providing different activity areas, such as kitchens, library and Pool.
 - **Services:** Which includes Security, WC's and Storages.

B. For the Hope Centre components

- **Major components**
 - **Workshops and classes:** Will help the progress of rehabilitation.
 - **Auditorium:** is a room for instruction allows the users attend lectures.
 - **Exhibition:** Where the visitors are welcomed to see what released people are producing, support them and buy from them.
 - **Health caring area:** when the prisoners release that they should rehabilitate both mentally and physically.

- **Minor components**
 - **Activity area:** In addition to the previous components, will provide such as gym and gaming.
 - **Audio visual room:** is a room where the lecturers from out of the Centre can be invited to give different lectures for the center users.
 - **Entertainment area:** outdoor multipurpose playground.
 - **Service kitchen:** a small service kitchen that serving the accommodation zone and for residents where they can prepare their own meals.

C. The Chance for change centre components

- **Major components**
 - **Administration:** There will be doctors and coaches will responsible for the center's activity while the control staff will monitor the performance of the organization and determine whether it achieved its objectives or not.
 - **Clinics:** Diagnosis the youth health through nutrition clinics that will provide advice and instructions to start their challenge in the face of obesity.
 - **Service kitchen:** where users can watch live cooking for their daily healthy meals.
 - **Gym:** includes many different equipment for practicing physical fitness for youth to enjoy the vitality and activity during the exercise.

1.5 Limitations of The Project

This part will discuss and highlight the faced limitations during the study phase of the project.

A. For the hope centre

- Difficult to have a live case study because the absence of rehabilitation centers for the released people in Bahrain.
- Maybe some limitations during the research due to security and privacy reasons.
- Some parts of the project will be only zoned according to the university regulations and limitations of the project area (3000 sqm).
- Difficult to interview with the released people for specific reasons.

B. For the chance for change centre

The project is a new and rare idea. However, it is not a resort or hospital, but the Centre keeps the users away from the temptations of food, whether in their home or workplace. Moreover, it provides a place to live with integrated health care. So, no similar project in Bahrain available to study and to gather enough information about design these kinds of places.

1.6 Research methodology

Use different methods and resources to collect data that will help us in our project, such as:

- **Case studies:** This will understand the zones, how to divide it and observation the behavior of users around the spaces.
- **survey:** Help to know the opinions and reactions of the society about the projects in Bahrain.
- **Literature survey:** Cover all the information which related to the projects.
- **Make Interviews** with health center users suffering from obesity to exchange information and ideas that help in the design.

1.7 Conclusion

A. The Hope Centre aims to spread the idea of tolerance and give opportunities to correct mistakes and provide an integrated center needs in terms of cognitive and practical, to create a conscious youth and a contributor to society.

B. The Chance for Change Centre will create a safe and comfortable environment for youth as well as help them to face obesity by practicing many different activities in one place. However, this project aims to push youth who suffer from obesity let them residence for a specific period under the supervision of several nutrition experts and fitness trainers to guide them.

In conclusion, as the Kingdom of Bahrain is constantly evolving at the regional level and aspiring to globalization, the establishment of unique rehabilitation centers that do not exist in all Gulf countries is a great thing and Bahrain can reach the global level because of it.

“PAIN IS REAL BUT SO IS HOPE”

-Jimmy Dooley



Data Collection and Discussion of Theoretical Issues

2.1 Introduction

2.2 Literature Review

2.3 Technical Specification

2.4 Survey

2.5 Interview

2.6 Observation

2.7 conclusion

2.1 Introduction

Gutenbrunner and Ward (2007, p.8) “Rehabilitation is a set of measures that assist individuals who experience, or are likely to experience, disability to achieve and maintain optimal functioning in interaction with their environments at enabling them to become more independent and to enjoy the highest possible quality of life in physical, psychological, social, professional and in terms.”

Therefore, the rehabilitation process aims to assist the person whose physical or occupational functioning has been impaired. So, rehabilitation can be carried out for obese people because they are not only exposed to overweight and increased body fat, but the risk of obesity is in the negative and adverse effects of human health.

Sylvia Brand (2016, p.3) “Of the cohort of individuals released from prison in 2008, 51% committed and were convicted of a recorded offense within three years of their release from prison. Almost two-thirds (64.6%) of those offenses were committed within the first six months of official release from custody (Irish Prison Service and Central Statistics Office, 2013).”

And response to this, more than half of the released prisoners returning to prison after brief periods, indicating that there are some failures.

Sylvia Brand (2016, p.3) “failure of the individual to live up to society’s expectations or failure of society to provide for the individual; a consequent failure of the individual to stay out of trouble; failure of the individual, as an offender, to escape arrest and conviction”

As mentioned, that these and other failures are the reason why so many of the released prisoners have returned to prison, all point indicate the need for the role of rehabilitation in improving the performance of the released.

Seida, Sharma, Johnson, Forhan (2018, p.10) “A recently published study outlines a template for weight reduction based upon a combination of behavioural weight loss counselling and an approach to exercise that maximized exercise-related caloric expenditure. This approach to exercise optimally includes walking as the primary exercise modality and eventually requires almost daily longer distance exercise to maximize caloric expenditure. Additionally, lifestyle exercise such as stair climbing, and avoidance of energy-saving devices should be incorporated into the daily routine.”

In the light of the foregoing, rehabilitation programs developed for obese patients are based on determining what patients need for example diet, exercise and health care that accelerate weight loss without leaving any negative effects or side effects on human body.

Kochersberger, Hielema, Westlund (2004 I p.12) “Rehabilitation is a continuous process and includes:

- assessing physical and cognitive abilities and any perceived impairment
- support for independent living, including physical changes to the environment and aids to daily living
- psychological support and counselling”

Therefore, the aim of rehabilitation is to restore the person's functional abilities and transfer maximum independence. Rehabilitation treatment is for disabilities people with limitations because of injury or illness and starts as far as possible after the event.

2.2 Literature Review

A. For the Hope Centre:

- **Needs of Ex-Convict**

Author: Prison Fellowship Non-profit organization

Source: Needs of Ex-Prisoners Article

Prison fellowship organization set in their site the types of support an ex-prisoner might need when they return to home, where they described return after prison as a very difficult challenge for most newly released prisoners, as well as their families and communities.



Figure 2.1 All needs for the ex-prisoners

In order for the released prisoners not to return to prison, all needs must be taken into consideration in all areas of the returning citizen's life, such as social, intellectual, spiritual, emotional, environmental, and physical.

These needs are divided into immediate needs of ex-prisoners and ongoing needs of ex-prisoners.

Immediate needs of ex-prisoners represented in safe housing, adequate food, clothing, and personal care items, transportation, relationship with the god, emotional and spiritual support, proper identification, access to a phone, medical and dental care; psychiatric care, alcohol or substance-abuse treatment and rehabilitation.

While ongoing needs of ex-prisoners represented in life-skills training and preparation, employment, income to cover ongoing expenses, further educational and/or vocational training, professional services (attorney, accountant, counsellor, etc.), mentoring and spiritual guidance/support, counselling for family and marital problems.

Released prisoners often return to prison because of the interruption of treatment after release, so the recovery and rehabilitation of former prisoners are most effective.

- **Returning Home Study: Understanding the Challenges of Prisoner Re-entry**

The Urban Institute's longitudinal conducted a study on Understanding the Challenges of Prisoner Re-entry explored the pathways of prisoner reintegration.

They mentioned in the study the five dimensions' challenges of prisoner re-entry which are classified into individual, family, peer, community, and state.

The main findings of this study:

Attitudes: returning prisoner have a wide criminal history, but are optimistic and intend to reform themselves, which will facilitate the reintegration process.

Prison programs: most prisoners participate in prison programs, but there is always unavailable interest in the programs.

Substance use: few returning prisoners participate in substance-abuse treatment during incarceration.

Health: some returning prisoners having chronic or infectious diseases, depression, or other mental illnesses.

Employment: almost half of the returning prisoners lack a high school degree or equivalent, more than half have been previously evicted from their job, and some of whom have relied on illegal income prior to incarceration.

Most prisoners are indebted when released and do not get jobs easily, so some of them participate in job training when they are in custody, earned a GED during the prison, or participate in employment programs after release.

Family: families are the biggest emotional and tangible support after release. If the former prisoners were married or have children, they are less likely to return to prison or take drugs and alcohol. And more likely to get a job after release.

Communities: most of the released are lives in small neighbourhoods that suffer from high levels of social and economic deprivation.

Nearly half of the released people change their residence after release either to avoid trouble or because their families have moved.

Recidivism: prisoners who are worked before the prison and find a job soon after released are less likely to return to prison, as well as those who are stayed in state correctional facilities during the first year of their release.

Post-release supervision: parole released under supervision helps former prisoners to get a job and reduce the likelihood of drug use after release, but in self-reported crimes or rearrests after release, parole supervision has almost no impact and may increase the likelihood of relapse due to technical violations.

The aim of this study is to collect information about the lives of prisoners before, during, and one year after their release, and the impact of the state correctional facilities and the employment programs on them.

- **The Psychological Impact of Incarceration**

Psychologist Craig Haney discussed in his book "the Psychological Impact of Incarceration" about the Implications for Post-Prison Adjustment.

Henry said that many prisoners suffer from many difficulties when they transition from prison to society, so they need a range of structural and programmatic to address these issues, such as social, psychological and preparation for release programs. These programs must be immediate, short and long-term to ensure the continuity of successful reform.

Prisoners suffer challenges in prison and after release; survive in prison and reintegrate into society after release.

Haney described the state of prisons, that punitive and stigmatizing aspects of most prisons are the main causes of further literal and psychological isolation of prisoners from the surrounding

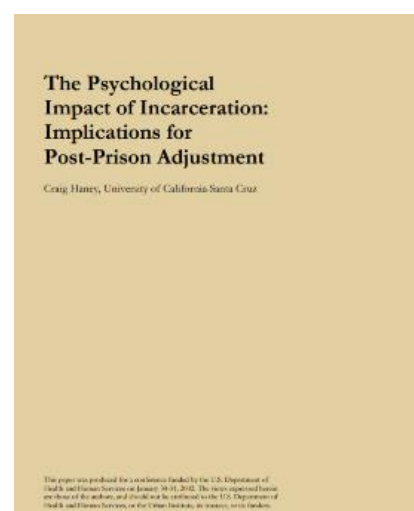


Figure 2.2 book cover for "the Psychological Impact of Incarceration"

society, while the visits programs contribute to maintaining the link between the prisoners, their families, and the outside world.

And about The Psychological Effects of Incarceration Haney said; adaptation to confinement is very difficult for most prisoners and the impact differs from prisoner to other; some has little or no permanent clinically-diagnosable psychological disorders as a result, while other suffer from significant consequences.

What most weakens the personality of released prisoners is the deprivation of their freedom, privacy and autonomy to make their own choices and decisions in the prison which will affect them negatively after release; they will be uncomfortable when they regain their previous freedom and autonomy and it will be difficult for them to start their own behaviour and make decisions for themselves or how to refrain from doing harmful and ultimately self-destructive things.

Prisoners are highly aggressive, hyper-vigilant and ever-alert for signs of threat or personal risk because the weak and neglected people in prisons are at risk from other prisoners, creating distrust and suspicion among them and they pretend violence to keep others away from them.

So, when prisoners are released they will have Social isolation and try to find safety by becoming as inconspicuous, unobtrusively disconnected with others as possible and do not trust anyone.

Detention is harsh and psychologically painful for some prisoners and it can cause a shock for them after release and their social histories may affect in increasing that trauma.

Haney mentioned in his book a range of problems and psychological challenges that must the released prisoners overcome. One of the most prominent of these problems is the increase in the proportion of the mentally and Developmentally Disabled Prisoners. The greatest proportion of these disabilities are cognitive and psychological disabilities. The lack of mental health care of prisoners is ultimately exacerbating the situation of many of them.

In addition, Solitary Confinement is one of the main problems which produces psychological pressures, an impaired sense of identity, hypersensitivity to stimuli, cognitive dysfunction (confusion, memory loss, ruminations), irritability, anger, aggression and violence, such as stabbings, attacks on staff, property destruction, and collective violence, lethargy, helplessness and hopelessness, chronic depression, self-mutilation, suicidal ideation, impulses, and behaviour, anxiety and panic attacks, emotional breakdowns, loss of control, hallucinations, psychosis, paranoia; overall deterioration of mental and physical health.

At the end of the book, Haney said the transitional services to prepare prisoners for community release are depending on the way prisoners are prepared to leave prison and re-enter the free world communities from which they came. So, the rehab centre is a complement to what prison provides to prisoners before release and compensates for deficiencies. And the Community-Based Services help to Facilitate in society and Maintain the Reintegration

The implications for the transition from prison to home as what Haney said, may include persistent effects of untreated or exacerbated mental illness, resume their role with their family and children, high level of psychological trauma, distrust, socially withdraw and social invisibility.

- **Conclusion**

The most important point to be drawn:

- In term of Prison programs, must provide programs within their scope of interest to encourage them in participating.
- In terms of health, because the released prisoners suffer from chronic or infectious, depression or other mental illnesses so must provide health clinics commensurate with their needs.
- In terms of study and Employment, former prisoners should be encouraged and supported to complete their studies and provide employment program for them.
- In terms of family and society, ex-prisoners should be helped to improve their relationship with their families and help them to prove themselves and support them until they able to confront society.
- A safe environment must be maintained to eliminate the need for hypervigilance and pervasive distrust must be maintained, ones where former prisoners can be comfort and learn cooperative trust.
- Former prisoners must be integrated into society by increasing visitations and supportive contact with the outside world to discourage social withdrawal.
- Cultural and useful programs should be provided that encourage them to participate and to have the opportunity to engage in meaningful activities, to work and seeking change.
- Adequate treatment and rehabilitation should be provided to meet the needs of former prisoners with mental illness and those with developmental disabilities.
- Must provide effective decompression programs in which to help them in re-acclimated to the nature and norms of the free world.
- Former prisoners should be discussed about the changes that have occurred to them while in prison and given some understanding of the ways and tools to reform changes and adapt to the free world.
- Former prisoners should be given training according to their needs; some of them need occupational and vocational and assistance in finding gainful employment, and some of them need parenting classes to maintaining ties with their families and children.

B. Chance for Change Centre:

- **Introduction**

To strengthen the project and give it a more realistic there is some books and articles dealing with the subject Obesity and its relationship with youth. However, through these articles will deal with many topics related to obesity, its effect on children and therefore youth and whether obesity affects the psychological side of people who suffer from it. Moreover, all these data will support the project in different aspects.

In the beginning, the articles discuss obesity and its extent spread in the Kingdom of Bahrain and its causes.

Al Jawaldeh (2014, p.2) “The Bahrain Ministry of Health urges citizens to change their lifestyle through nutrition clinics spread throughout the Kingdom. Besides, nutrition clinics have become central to tackling obesity in Bahrain. In 2007, the country had one of the highest rates of overweight and obesity in who Eastern Mediterranean Region, with 33% of adults aged over 20 classified as overweight, of whom 36% are obese. This was significantly higher than the global average for obesity, which in 2008 stood at 12%. “

Through this article we conclude that obesity is a big issue in Bahrain, which prompted the Ministry of Health to establish nutrition clinics to guide citizens to get rid of obesity, which is a good step to build the Bahraini generation.

Baker (2014, Al-wasat Newspaper) “These statistics prompted the Ministry of Health to take action. In 2008, a national task force was established, made up of specialists from the Ministry’s Nutrition and Primary & Secondary Health Care departments. They produced a series of national Obesity Clinical Guidelines—based on WHO guidelines for classifying BMI and other technical advice—emphasising that if people are to lose weight and sustain that weight loss, they must change their lifestyles.”

According with the above, Ministry of Health seeks to provide a department of nutrition specialists in each health centre to diagnose the diseases caused by obesity for both children and adults. So, what is the best form of treatment for obesity? Some go for the traditional methods of dieting and working out while others opt for surgery. However, research studies have shown that both ways have been successful in weight loss and the main difference between the two is time.

Ali (2016, Al-wasat Newspaper) “The surgery consultant at the Salmaniya Hospital Khalifa bin Dinah said that 40% of the causes of obesity are hereditary. He pointed out that the percentage of Bahrain in the rate of obesity is the highest in the Gulf countries and prevalence among children is about 33% due to the spread of unhealthy lifestyles.

Bin Dina said that one of the most important causes of obesity is increasing the intake of foods saturated with fats, calories, soft drinks, sweets, lack of movement and lack of exercise and psychological crises that lead to increased eating and genetic causes.”

Based on the above, one of the most important causes of obesity in Bahrain are heredity as well as the lack of society awareness of the obesity dangers on their children, which made a large proportion of them infected with obesity due to their unhealthy dietary habits.

So, what are the ways to protect society from the obesity dangers? And what is the best way to treat obesity? To contribute prosperity of the next generation.

Hall (2013, Portland Press Herald Newspaper) “U.S. Agriculture Secretary Tom Vilsack on Thursday said improving childhood nutrition and preventing obesity is a critical issue to helping young people thrive in their personal health, educational attainment and economic achievement.

Vilsack spoke at Maine Medical Centre on the Agriculture Department’s efforts to raise awareness in promoting proper diet and exercise for young people.

Vilsack said the national discussion of food, nutrition and exercise is going to require time, adding that “it has to become ingrained in the way people live and the way people do business “. In addition to proper nutrition affecting health, education and economic issues, Vilsack said food and fitness was also a national security issue.”

Additional findings in this article, that the cause of obesity in any society starts from ignorance in how to live in a healthy lifestyle and less awareness of the serious diseases caused by obesity. However, improving childhood nutrition begins at the stage of childhood, which is reflected on the next generation of conscious youth who recognizes the maintaining health for a better future.

Hall (2013, Portland Press Herald Newspaper) "Proper nutrition stems from making good choices, having access to healthy foods and awareness about what healthy foods are, Vilsack said.

Vilsack said it will require a generational shift to change habits, tastes, and perceptions about food. As a result, the USDA (United States Department of Agriculture) is starting to target young children to educate them about food choices and give public assistance programs for children access to healthier foods."

Collect information through this article leads to the healthy lifestyle is a concept of change. However, the essential change should start since childhood and continued until maturity. Besides, the State should support society by give public assistance programs and guidance on health as well as inclusion of more awareness programs in the media to educate society about obesity and its complications.

The below article summarizes data on the role of mediating and moderating variables associated with obesity and depression among adolescents. This literature review also examines the thoughts and experiences of obese adolescents that facilitate the development of depressive symptoms.

Nemiary, Shim, Mattox, and Holden (2012, p.305) "Obesity and depression are two major public health problems among adolescents. Both obesity and depression are very prevalent and associated with numerous health complications, including hypertensive, coronary heart disease, and increased mortality. Because they both carry a risk for cardiovascular disease, a possible association between depression and obesity has been assumed and studied.

The risk for depression increases in adolescents, with the prevalence of major depressive disorder (MDD) estimated to be 2% in children compared with 4% to 8% in adolescents.¹⁴ The cumulative incidence of MDD during adolescence ranges from 15% to 20%, a rate which is comparable to the lifetime prevalence of MDD in adults."

Therefore, obesity also affects people who suffer from it in psychological way. However, being overweight can include lowered self-esteem and anxiety, and more serious disorders such as depression. That happens by using eating as a ready source of emotional comfort when they are feeling stressed out. Besides that, weight gain leads many people to feel worse about themselves. So, what is the seriousness extent of these negative feelings especially on youth category.

Nemiary, Shim, Mattox, and Holden (2012, p.306) "A reasonable conclusion is that obesity should predict depression, but the findings are not clear. Depression criteria include depressed mood, anhedonia, fatigue, feelings of guilt or worthlessness, thoughts of death, changes in sleep and appetite or psychomotor activity. Problems with sleep, appetite, or psychomotor activity can occur in either direction (i.e., a person may experience insomnia or hypersomnia; anorexia or increased appetite; psychomotor retardation or agitation)."

According to the studies reviewed in this article, Obesity might not directly cause depression in adolescents, but other pathways and experiences may lead to depression indirectly. The importance of recognizing these pathways and factors are to know obese adolescents needs whether if it is physical or moral needs.

Obesity has physical hazards as well as psychological risks. However, those who are obese may consider several options to lose weight and achieve the healthy lifestyle they desire diet and

exercise alone, or weight loss surgery if they qualify. So, which is better for long-term health and to get a healthy lifestyle?

Dr.Reges (2018, p.13) “In this retrospective cohort study of 8385 patients who underwent bariatric surgery and 25 155 matched patients who received usual care, the mortality rate over approximately 4.5 years was 1.3% among surgical patients compared with 2.3% among nonsurgical patients, a significant difference. Meaning Bariatric surgery was associated with reduced all-cause mortality.”

Many doctors suggest weight loss surgeries to reduce obesity related problems. But many others refer to non-surgical methods to get rid of the same problem because of the risks associated with bariatric surgeries. It is said that people undergone a weight loss surgery suffer from severe complications, later even death in some cases. This can never be the case for dieting or lifestyle changes. Furthermore, even after the surgery the patient must continue a strict diet.

Dr.Naim (2017, p.2) “Weight loss surgery patients do have to plan for recovery time, which could mean missing a few days of work or not being able to return to a normal activity level for at least a couple days. Also, there are pre-op diet restrictions as well as post-ops diet restrictions. However, Surgery can make anyone nervous by receiving anaesthesia and being operated on can cause uneasiness or stress.”

In concordance with previous research, even patients who undergo weight loss surgery must be willing to make changes to their lifestyle to be better than previous and should take rehabilitation period to get rid of negative feelings that they had previously encountered.

Dr. Sood (2011, p.21) “It's also possible to not lose enough weight or to regain weight after any type of weight-loss surgery, even if the procedure itself works correctly. This weight gain can happen if you don't follow the recommended lifestyle changes. To help avoid regaining weight, you must make permanent healthy changes in your diet and get regular physical activity and exercise. If you frequently snack on high-calorie foods, for instance, you may have inadequate weight loss.”

Consequently, nutritious diet and regular exercise should be an essential part of any healthy way of life, whether the person opt for weight loss surgery or not. Besides, reducing your risk of all the obesity related disease conditions. However, physical activity provides plenty of mental benefits, including elevated mood. As well as, weight loss surgery patients need to transition to healthier diet and exercise habits after surgery, so these practices are ideal to implement immediately anyway.

Obesity is a complex problem that requires a strong call for action, at many levels, for both adults as well as children. More efforts are needed, and new initiatives are helping to change communities into places that strongly support healthy eating and active living.

Abioye (2016, p.4) “With the daily crush of media coverage about obesity, weight, and health, it's easy for people to feel overwhelmed. But there are simple steps you can take to help keep weight in check and lower the risk of many chronic diseases: -

Eat Well: Calories matter for weight-and some foods make it easier for us to keep our calories in check. Healthy eating is a key to good health as well as maintaining a healthy weight. It's not only what and how much we eat but also, it seems, how we eat that's important.”

Depending on the needs of obesity people, it is possible to determine the type of environment appropriate for them to help them weight loss, which supporting the project (Chance for Change Centre) design idea. To start with, healthy eating is a main reason to get a healthy lifestyle. Therefore, healthy kitchen helps overweight patients through provide healthy and nutritious food alternatives.

Abioye (2016, p.4) “Stay Active: Besides eating a healthy diet, nothing is more important to keeping weight in check and staying healthy than regular activity. If there ever were a magic bullet for good health, physical activity would be it. In addition to staying active, it’s important for all age groups to minimize (sedentary time), especially time spent watching television. Physical Activity Recommendations for Adults: For good health: 2.5 hours a week of moderate activity (brisk walking, slow bike riding).”

Physical exercises and activities help overweight patients starts to live life more. Moreover, Gymnasium boosts the brainpower and enforces obese people weight loss as well as improve self-confidence. Gymnasium is a place, typically a private club, providing a range of facilities designed to improve and maintain physical fitness and health.

Abioye (2016, p.5) “Limit Screen Time: Watching television (TV) can be enjoyable and informative; unfortunately, it can also be double jeopardy when it comes to weight. It’s a completely sedentary activity that also seems to promote unhealthy eating though the ads, product placements, and other promotions that constantly pitch high-calorie, low-nutrient food and drinks. Keep television/screen media time to no more than two hours a day.”

Based on what mentioned above, this article explained the disadvantages of sitting on screens for a long time, which exposes the obese people to be more laziness and overeating. Certainly, all youth need fun and entertainment, so what if they burn their calories when practicing swimming!

Ayvaz (2015, p.57) “Swimming is the best cardio; pulmonary and skeletal exercise one can do. It gives you the best full body work out and it’s easy on the joints and more!

Combined with proper nutrition, swimming is an excellent exercise for people who cannot do weight bearing exercises like running or jogging. Swimming combines both upper and lower body work at the same time, while also using the resistance of the water...giving you that total body workout. Learning to swim the competitive strokes is also great.”

To sum up, swimming is probably the most fun, low impact and healthy way to exercise. Regardless of human size and experience, people of all ages can use water. However, swimming can help youth increase their fitness level and lose weight.

Abioye (2016, p.5) “Get Enough Sleep: There is more evidence that a good night’s sleep is important to good health-and may also help keep weight in check. How much a person needs can vary a great deal, but there is good evidence that a lot of children and adults don’t get enough.

Relax: Today’s world is full of daily stresses. This is a normal part of life, but when these stresses become too much, they can take a toll on health and contribute to weight gain by leading to unhealthy eating and other unhealthy activities. One of the best ways to control stress is also one of the best ways to combat weight gain: regular physical activity. Mind body approaches, such as breathing exercises, can also be beneficial.”

Based on the above, obese patient should be able to take enough sleep and rest in the evening at least 8 hours a day. So, to avoid overeating because the mind always considered little sleep and rest as a need for eating food.

Below researches will focus on another practical way to treat obesity. However, one of the methods obesity treatment is to stay in Healthy Hospitably- Resorts, where provided diet meals with daily exercise including Kettlebells, Yoga and Swimming. Besides, the duration of stay is between two weeks up to six months.

Smith and Puczkó (2014 | p.6) “The term 'wellness Resort' is not an entirely new concept, although there is still somewhere some confusion around what it is. More and more resorts these days are calling themselves wellness Resorts, as this concept is becoming increasingly popular among clients. Generally, a wellness resorts is a luxury hotel that offers wellness facilities, such as a spa or fitness centre. A health retreat, however, offers a purposefully designed program of therapies and activities, guided by leading health and fitness experts.”

Going to a healthy resort is one of the ways to get rid of overweight which is especially suitable for youth, where obese people can enjoy with hotel accommodation including providing healthy meals to them. However, they can also practice many activities in the gym under coach's supervision. Moreover, healthy resorts feature that distinguish it from other wellness centres, that it includes clinics provide a daily health care for patients and hotel accommodation as well as different sporting activities available to patients.

Smith and Puczkó (2014 | p.7) “A wellness resort is catering for a great number, providing as much all-round wellness as possible. Guided by wellness experts, the aim is to provide a healthy and happy experience to lots of customers with more generalised treatments. On a health retreat, a personalised diet will be tailored to your personal goals and body's needs, following professional consultations and evaluations. Ensuring that you are achieving the best result for your body, diet plans will vary, depending on your weight, stress-levels, emotional stability and so on. A wellness hotel will have multiple restaurants that serve a choice of meals from set dining menus, with small changes being made only for specific dietary requirements.”

As a result, visiting a healthy resort is opportunity to recharge and rejuvenate which help obese people turn their lifestyle. However, healthy resorts took care of the activities planning, physician care, weight loss counselling, arranging of diet meals and accommodations as well. So, it depends on motivating obese people to reduce their weight to attain their optimal health goals.

Johnston (2018 | p.15) “Accommodation providers play a crucial role in keeping residents healthy, by providing food that is nutritionally adequate to meet residents' needs.

On healthy resorts, the focus is your healing and renewal, and the accommodation will mirror that. Offering the most healing experience possible, will typically confine you to a luxurious encompassed hotel room.”

This ensures that the healthy resorts provide residential weight loss retreats that combine medical expertise to help obese people optimise their weight in the most relaxing setting possible. And that is where the Chance for Change project idea came from. Therefore, it provides many services to patients that include health care and control the food type provided to them under medical supervision and many activities all in one centre.

- **Conclusion**

To sum up, these books and articles will be utilized heavily in the development of Chance for Change Centre project by identifying the major components. Also, to define the type of activities and programs available for users need. Besides, these reviews helped to determine the project team members. However, they greatly helped to understand the centre users in practical way.

2.3 Technical Specification

Good design should be the norm, not the exception, facilities should thus:

- function well
- look attractive
- improve the locality
- aid rapid recovery
- motivate staff
- minimize running costs
- build the image of the national health services as modern and dependable
- consider the requirements of sustainable development and the environment

- **Specific design considerations:**

- **Natural and artificial lighting:** Sunlight enhances colour and shape and helps to make a room bright and cheerful. Wherever possible, spaces to be occupied by patients, visitors or staff should have natural daylight with an outside view. However, to the need for privacy.

The harmful effects of solar glare and heat gain can be dealt with by architectural detailing of window shape and depth of reveals, as well as by installing external and internal blinds and curtains.

Artificial lighting, as well as providing levels of illumination to suit activities, help to promote a high-quality image of the service being offered and a nonclinical, soft environment in as many spaces as possible.

Fixed luminaires should not be sited immediately above positions where people lie in bed or on a couch. This applies to residential areas and all spaces where patients are examined or treated.



Figure 2.3 Show lighting distribution in treatment room



Figure 2.4 Day light in treatment room



Figure 2.5 Used blinds in Spaulding Rehabilitation Centre interior



Figure 2.6 Used lighting in Rehabilitation Centre lobby

- **Noise and sound attenuation:** Any unwanted sound is a noise and may disturb patients and staff. Noise-sensitive areas should be located as remotely as possible from internal and external sources of unavoidable noise. Speech privacy is essential in spaces where personal and confidential discussions are held, such as patient bedrooms, interview rooms and consulting/examination/ treatment spaces; it should not be possible to overhear any discussions taking place in adjoining spaces when the conversation is at a normal volume.

Sound transmission can be reduced using sound-attenuating partitions and doors. The use of soft floor-coverings, provision of curtains, and acoustic treatment of walls and ceilings (where aesthetically and hygienically acceptable) will improve sound absorption in a space.

- **Colour:** Decor colours should be light and pleasant, with enough contrast. “Warm” colours are preferable. Some colours are relaxing and others stimulating, so clinical advice should be taken as to the appropriate use of colour.
- **Finishes:** The quality of finishes in all areas should be to a high standard and capable of being patch repaired in the event of damage.
- **Floors:** Floor-coverings and skirting should contribute to the provision of a non-clinical environment and be hardwearing.
- **Doors and frames:** Except in sanitary facilities there may be a requirement for all doors to areas occupied by patients to have vision panels. In the interests of privacy and safety, panels should be capable of being obscured. All patient area doors must be capable of being opened outwards in an emergency.
- **Windows:** The following aspects require consideration: natural lighting and ventilation; insulation against noise; user comfort; energy conservation; the prevention of glare; and the provision of a link with the outside world. Windows should have a pleasant outlook if possible.

The use of low window sills enables views from the window even when seated. Any windows that staff/patients/visitors can open should be designed such that this can be done easily, including from a seated position.

The design should ensure that it is possible for window cleaners to have easy access to the windows. The outside of windows should be cleaned from the outside whenever possible.

- **Maintenance and cleaning:** Materials and finishes should be selected to minimize maintenance and to be compatible with their intended function.
- **Fire safety:** Under no circumstances is it acceptable to lower fire standards. It is suggested that the centre should be fitted with emergency call facilities.

The need for structural fire precautions and means of escape from the whole accommodation must be considered at the earliest possible planning stage. Control of substances hazardous to health as well as the normal risk assessment of each potentially harmful substance.

- **Personal safety:** As well as operational policies, the design of the building will play an important role in reducing the risk of violence and security problems. Consideration should be given to the creation of a pleasant environment as well as the need to allow for good observation.
 - **Security:** Design processes should consideration be given to the provision of security systems, such as electronic locking devices, closed-circuit television and other items of hardware. Consideration needs to be given to how the security of the building will interact with the therapeutic atmosphere.
 - **Information management and technology:** The choice of systems, and matters such as the location of computer terminals, the functions to include on the system, and the levels of access to information.
 - **General planning issues:** Two space planning and functional issues require special mention: the flexibility of functional spaces, and accessibility for those people requiring rehabilitation.
 - **Flexibility:** It should be remembered that many general multi-purpose spaces may be suitable for providing rehabilitation functions with little or no modification. This approach meets requirements of sustainable construction, saves money from expensive redevelopments, and maintains service provision.
Flexibility can be increased by using:
 - ✓ “open-plan” construction systems
 - ✓ proprietary demountable partition systems
 - ✓ standard-sized consulting and examination rooms, interview and counselling rooms
 - **Economy:**
 - economy in initial provision, consistent with meeting functional requirements and maintaining clinical standards.
 - whole life-cycle costs to ensure that the most energy-efficient equipment is provided wherever possible – meeting the joint aims of reducing energy bills and harmful carbon emissions.
 - **Electrical services:** Electrical installation: The point of entry for the electrical supply should be a switch enclosure housing the main isolators, distribution and control equipment. This space will also accommodate the distribution centre for subsidiary electrical services.
- Light: Colour finishes and lighting should be coordinated throughout the section to create a calm and welcoming atmosphere.

Architects and engineers must cooperate to ensure that decorative finishes comply with the colour rendering characteristics of the lamp and that the spectral distribution of light sources is not adversely affected.

Electrical supplies: Switched socket-outlets should be provided in corridors and in individual rooms to enable domestic cleaning appliances with flexible leads (9 m long) to operate over the whole department.

Power system: socket-outlets and other power outlets for fixed and portable equipment.

Alarm systems: fire and security.

Other: Staff/staff and patient/staff call system and television and background music.

- **Plumbing:** The primary objective is to provide an internal drainage system which is easily maintained and which:
 - ✓ uses the minimum of pipework
 - ✓ remains water- and air-tight at joints and connectors
 - ✓ is sufficiently ventilated to retain the integrity of water seals
 - ✓ Hot and cold-water services: all cold-water pipework, valves and fittings should be insulated, and vapour sealed to protect against frost, surface condensation and heat gain.
- **Mechanical services:** Ventilation: natural ventilation is preferred unless there are internal spaces or clinical reasons that call for mechanical ventilation or comfort-cooling systems. Mechanical ventilation and comfort-cooling systems are expensive in terms of capital and running costs; planning solutions should be sought which take maximum advantage of natural ventilation. Mechanical ventilation costs can be minimized by ensuring that, wherever practical, core areas are reserved for rooms whose function requires mechanical ventilation irrespective of whether their location is internal or peripheral, for example sanitary facilities.

Cold water service: centrally supplied to service points including drinking water and hose reels. Storage tanks are not included.

Hot water service: supplied from a central storage system with thermostatic mixing valves at outlets.

2.4 Survey

An online survey has been done during the last weeks regarding the Hope Centre to help in data collection. A total response of 128 from different age group, 100 of the response will be presented. The survey consists of 9 questions which will be presented in vertical bars.

The Hope Center | مركز الأمل

⊕ PAGE TITLE

The Hope Center rehabilitate former prisoners who are ostracized from society and not allowed to make up of their mistakes.
يقوم مركز الأمل بإعادة تأهيل السجناء السابقين المنيوذين من المجتمع والذين لم يسمح لهم بالتعويض عن أخطائهم

At the beginning of the survey, we defined the hope centre for the respondents.

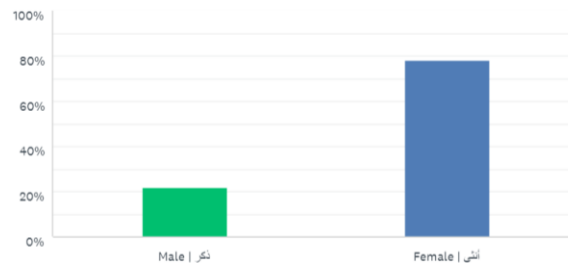
Q1

Customize

Save As ▼

What is your gender? الجنس؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES	
▼ Male ذكر	22.00%	22
▼ Female أنثى	78.00%	78
TOTAL		100

This question identifies the gender of people who responded to the survey. Females are the largest category who responded to the survey.

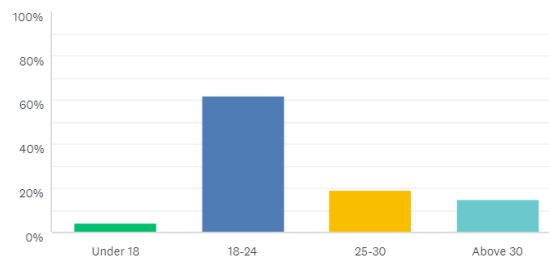
Q2

Customize

Save As ▼

Which group category you belong to? ما الفئة العمرية التي تنتمي إليها؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES	
▼ Under 18	4.00%	4
▼ 18-24	62.00%	62
▼ 25-30	19.00%	19
▼ Above 30	15.00%	15
TOTAL		100

This question identifies the age group of people who responded to the survey. People age 18 to 24 are the largest age group who responded.

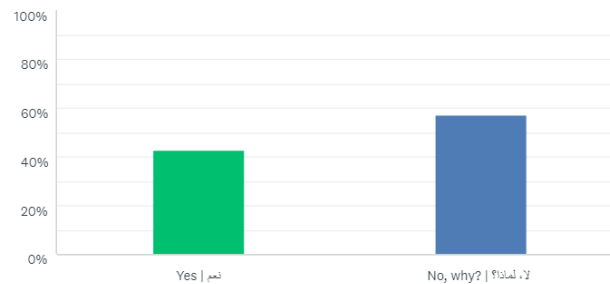
Q3

Customize

Save As

Would you feel uncomfortable if your coworker was a former prisoner? هل تشعر بعدم الراحة إذا كان زميلك في العمل سجيناً سابقاً؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES
Yes نعم	43.00% 43
No, why? لا، لماذا؟	57.00% 57
TOTAL	100

[Comments \(50\)](#)

This question shows that there is an unexpected proportion of people feel uncomfortable in dealing with the released prisoners and they justified their response in the comment that they are afraid and do not trust them because they are convinced that they have a criminal history, so they feel unsafe.

While who did not mind to dealing with them says, everyone deserves a second chance and no one should be judged for his past, and that what the hope centre believe on. In addition, there are some answers say depends on the crime.

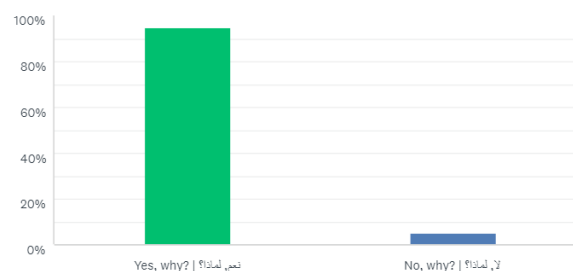
Q4

Customize

Save As

Do you agree to rehabilitate the released prisoners and give them another chance to get involved in society? هل توافق على إعادة تأهيل السجناء المفرج عنهم وإعطائهم فرصة أخرى للانخراط في المجتمع؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES
Yes, why? نعم، لماذا؟	95.00% 95
No, why? لا، لماذا؟	5.00% 5
TOTAL	100

[Comments \(50\)](#)

This question shows that accepts and believes of society in the idea of rehabilitation and the right to have another chance. And according to the comments:

- A good rehabilitation will give a good chance to live and join other society.

- Because prisoners are possible to be depressed in prison. So, it must come out into a new world other than.
- Prisoners need to be rehabilitated after release in order to stop the crime from them.
- Former prisoners must understand what the wrong they did, accept, non-resistance or denial and we are here to help them to start a new life, forget the past and keep away from bad friends.
- Maybe they are good persons, but the situations let them do the wrong.
- To improve the environment of their productive work and motivate them to live a better life
- All human beings can mistake, but they capable of change.
- To not repeat their mistake and rely on themselves.
- Their mistake happened in the past. So, we must give them confidence and help them to benefit themselves and society.
- Rehabilitation should be by their will, not mandatory.
- Prisoners have the right to rehabilitation because they suffered physical and psychological damage.

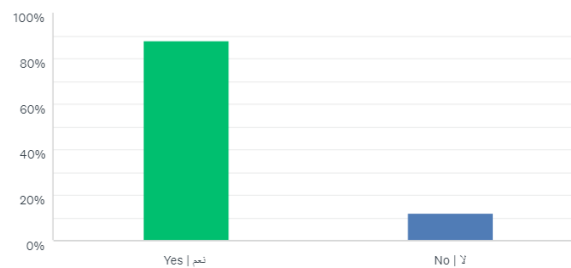
Q5

Customize

Save As ▼

هل تعتقد أن البحرين تحتاج مركز لإعادة تأهيل السجناء المفرج عنهم؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES	
Yes نعم	88.00%	88
No لا	12.00%	12
TOTAL		100

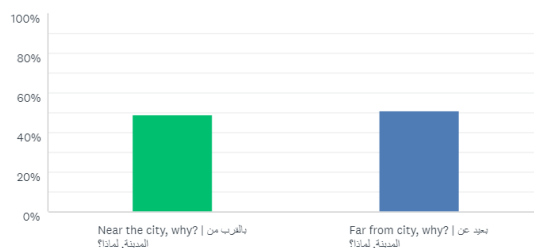
88% of the respondents believe that Bahrain needs a rehabilitation centre for the former prisoners

Q6

Customize Save As

Where would you prefer The Hope center to be located in Bahrain? أين تفضل أن يكون مركز الأمل في البحرين؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES
▼ Near the city, why? بالقرب من المدينة لماذا؟	49.00% 49
▼ Far from city, why? بعيد عن المدينة لماذا؟	51.00% 51
TOTAL	100

[Comments \(50\)](#)

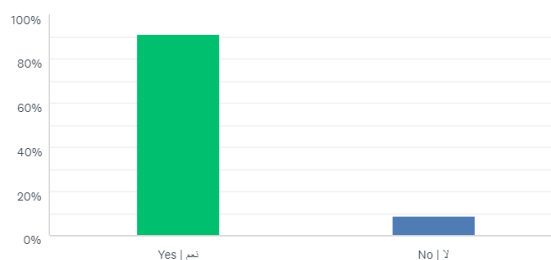
The ratios are similar while the opinions are different. Some of them prefer to be near the city to be easy to reach, give them a motive for life, part of the community, easy to engage in society, they will feel accepted with people being around and other people should understand that they have a chance to live and survive. The others prefer to be far from the city for security and privacy reasons and help them focus on themselves before pleasing the society. They need an open and quiet space plus close to nature in which they can get rid of negative energy, feel more comfortable and relax because of what they suffered in prison.

Q7

Customize Save As

In your personal opinion, will the society benefit from having The Hope center in Bahrain? من رأيك الشخصي، هل سيستفيد المجتمع من وجود مركز الأمل في البحرين؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES
▼ Yes نعم	91.00% 91
▼ No لا	9.00% 9
TOTAL	100

91% agreed that the community would benefit from having the hope centre in Bahrain.

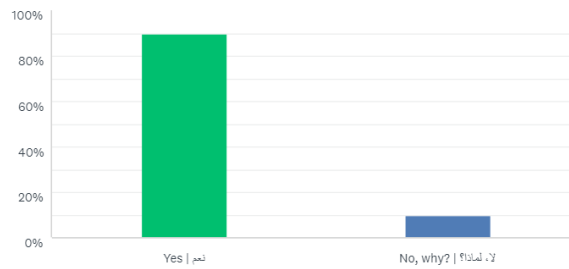
Q8

Customize

Save As ▼

If you having a business, do you accept to employ someone who has a record in the Hope Center?
إذا كنت تمتلك شركة، هل تقبل توظيف شخص لديه سجل في مركز الأمل؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES
▼ Yes نعم	90.00% 90
▼ No, why? لا، لماذا؟	10.00% 10
TOTAL	100

[Comments \(29\)](#)

The vast majority do not mind to giving new chance and hope to someone registered in the hope centre because everyone deserves a new chance and must not judge people by their past. And for someone, it depends on the type of crime.

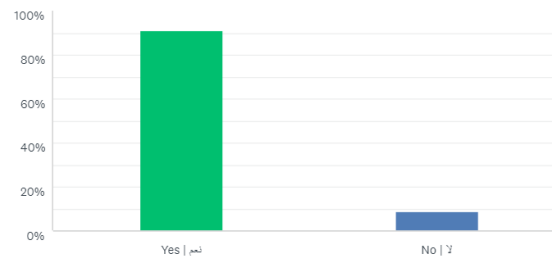
Q9

Customize

Save As ▼

If you have the chance, will you provide financial or moral support to people who have been rehabilitated at the Hope Center?
إذا كانت لديك الفرصة، فهل ستقدم الدعم المالي أو المعنوي للأشخاص الذين تم إصلاحهم في مركز الأمل؟

Answered: 100 Skipped: 28



ANSWER CHOICES	RESPONSES
▼ Yes نعم	91.00% 91
▼ No لا	9.00% 9
TOTAL	100

At the last question, the vast majority are ready and very welcome to support for the people who have been repaired in the hope centre.

2.5 Interview

A. For the hope centre:

In order to obtain information regarding the rehabilitation centres of former prisoners, we visited the college of law at the university of Bahrain where we met with Dr. Nora Al-Shamlan assistant professor of criminal law, graduate of the united states and doctor in judicial and criminal sciences. Through this interview we were able to collect very important information which will be served our graduation project.



Figure 2.7 Dr. Nora Al-Shamlan

According to Dr. Nora Al-Shamlan Bahrain is working on the rehabilitation and reform centres law issued in 2014-2015, which provides for punitive action imposed on all inmates under the age of 60, to carry out work aimed at first-degree rehabilitation to engage in the future to the society, to maintain the penal institution's security system and return to them with financial money.

Where the work varies in terms of types depending on the tendencies of the prisoners, for example, they give the imprisoned engineer an engineering work in order to practice something he likes, and they sell it when he finishes it. In addition, prisoners can complete their studies if they want to, and they have breaks plus do not work on holidays.

And after the prison and as Dr. Nora know, there is a lack of having any charitable centres or attempts to rehabilitate prisoners released in Bahrain.

The ease of integration of the released prisoners in the community depends on his acceptance. Any person who is sentenced will not be able to work in some places such as a prosecutor or a judge because of precedence but there is something called the response into account in accordance with the law, on the basis of which they can work even in the government and even can become a lawyer under the code of criminal procedure. The person must not be punished twice; punished once but cannot be punished for the rest of life, we must give him another chance in life to fix his things and can work.

Whereas the most common problems faced by prisoners after their release is the social problems if the person has not reconciled with himself, the inability to get the job he wishes and aspires to and the inability to rejoin society because they are out of society for a while, so they must be psychologically rehabilitated to re-engage in society.

The type of treatments is based on the classification of the case; the case must be studied and classified on this basis and determine whether they need primarily to psychiatric treatment or more in the employment where they are given skills or more in socially? Some of them will need more than one program while other will suffice with only one program.

A person may be not receptive psychologically and self-involved so in this case, he will need psychotherapy. While some may be psychologically unaffected. But they will need skills to help them develop themselves and get work. So, if the case is studied and the reasons for committing the crime is known, it will be easy to deal with and treat the former prisoners. And if prisoners are rehabilitated after their release in the right way, it will be enough for them because they got another chance to complete their life.

Finally, having a centre to rehabilitate the former prisoners in Bahrain is a good idea, but have to put in consideration the name of the centre should not show that they are former prisoners plus take into consideration the different crimes and cultures, the prisoners for crimes against people with prisoners of financial crimes should not be gathering. In addition to the facilities have that fit the interests of prisoners, such as a gym with swimming pool, games area etc.

B. Chance for Change Centre:

Interviews to obtain information which supports the idea of Chance for Change project. However, visit to the VLCC Centre was very helpful. VLCC Centre is widely recognized for its scientific weight loss solutions and its therapeutic approach to beauty treatments. With a staff strength over two-third of whom are experienced specialists including medical doctors, nutritionists, psychologists, cosmetologists and physiotherapists and having served over 100-60 customers per month, VLCC is the largest and most-preferred brand in the Wellness domain in Bahrain.



**Figure 2.8 Ms.Usha Jagdish,
VLCC Centre Head**

According to the head centre Usha Jagdish during the interview the obesity is a big issue in Bahrain, with a rate of 70% in the Arabian Gulf. However, the centre receives customers with different age groups 12-70 year. The centre provides many services such as detoxification, body firming, hair care all under professional advice and monitoring. Weight loss had a positively change on obese customers as they improved their relationships with their family and at their work as well. They also able to achieve their dream of challenging themselves. The centre's treatment plan is based on specific psychological and physical factors. So, treatment process done through advised customers to lose weight by a suitable diet with exercise program. Moreover, the centre avoids the crash diets, medicines and strenuous exercises.

On the other hand, all doctors, experts and coaches working as a one team to give customers psychological support, smiles and companionship. In addition, the head explained that 70% of the customers are depressed with low self-image. Therefore, psychological attention is one of the centre priorities.

Finally, the head vision is to open more branches to the centre in Bahrain with wider area that can accommodate various services provided by the centre. As a result, this interview provided very important information, that will be served Chance for Change project dramatically.

2.6 Observation

Depend on observing the customers behaviour in VLCC Centre, usually customers come in the morning or afternoon to evening. In the beginning, the client sits with the doctor and discusses his health problems. However, the doctor diagnoses his health statues and measures his weight to provide him several physiotherapy sessions. Then, client meets the nutritionist to get a healthy diet program and goes to practice various activities under the supervision of sports coach. Therefore, the customer follows own treatment steps according to the duration of his subscription.

2.7 conclusion

To sum up, these interviews and survey will be utilized heavily in the development of Chance for Change Centre project and Hope Centre. Besides, showed many basic elements and treatment methods with the proper activities that can be found in rehabilitation centres. To be efficient in terms of design and in terms of programs and activities. As well as to define accepts and believes of society in the idea of rehabilitation. However, these data greatly helped to understand the centre projects in practical way.

**“I CAN’T CHANGE THE DIRECTION OF THE
WIND, BUT I CAN ADJUST MY SAILS TO
ALWAYS REACH MY DESTINATION”**

-Jimmy Dean



Case Studies

3.1 Live case study

3.2 literature Case study

3.3 Comparative Analysis of Case Studies

3A. Live case study Sphinx center

3A.1 Basic Information

FCC started its very first GYM business in Hidd and opened SHOUSHA GYM, the first entry level GYM, it has more than 100 Machines, three years later 2014 and after the unbelievable success FCC opened Sphinx ladies with a total space of 2500 m², and more than 300 machines.

Sphinx Team

Titanium pride itself on employing the best and most skilled people in the business. However, it's team of trainers and nutritionists are well qualified to provide members with top quality health and fitness advice.

The widely acclaimed team of experts at Sphinx, armed with the latest in cutting edge technology, take pride in offering members targeted advice specific to their individual needs and requirements.

Building Type: Hospitality and Fitness Gym

Users: Ladies over the age of 14

Location: Riffa, Bahrain

Architects: SSH company

Year: 2014

Since 1961 and for more than 50 years, SSH has played a leading role in shaping the built environment and infrastructure of the modern Middle East. Currently, SSH employs over 1,300 people with offices in Abu Dhabi, Algeria, Bahrain and Kuwait.

SSH is one of the leading master planning, infrastructure, building design, construction supervision and project management firms in the Middle East, with a reputation for design integrity and a portfolio that includes some of the landmark projects in the region.

The importance of the center: Sphinx Health Club mission is to offer its members a safe and controlled environment in which they can enjoy a variety of health and fitness activities and services enabling them to achieve both mental and physical wellbeing.

All services are united under the Sphinx name by the common vision to become the leading brand in the health and wellbeing industry in Bahrain, the Middle East, and Eastern.



Figure 3.1 sphinx logo



Figure 3.2 Sphinx center facade



Figure 3.3 Sphinx ladies entrance

3A.2 project study

• **Components:**

- Fitness
- Group Classes
- Personal Training
- Nutrition / Dietitian
- Sport Wear Shop
- Supplement Shop
- SPA
- Beauty Products

• **Circulation and Fire exits**

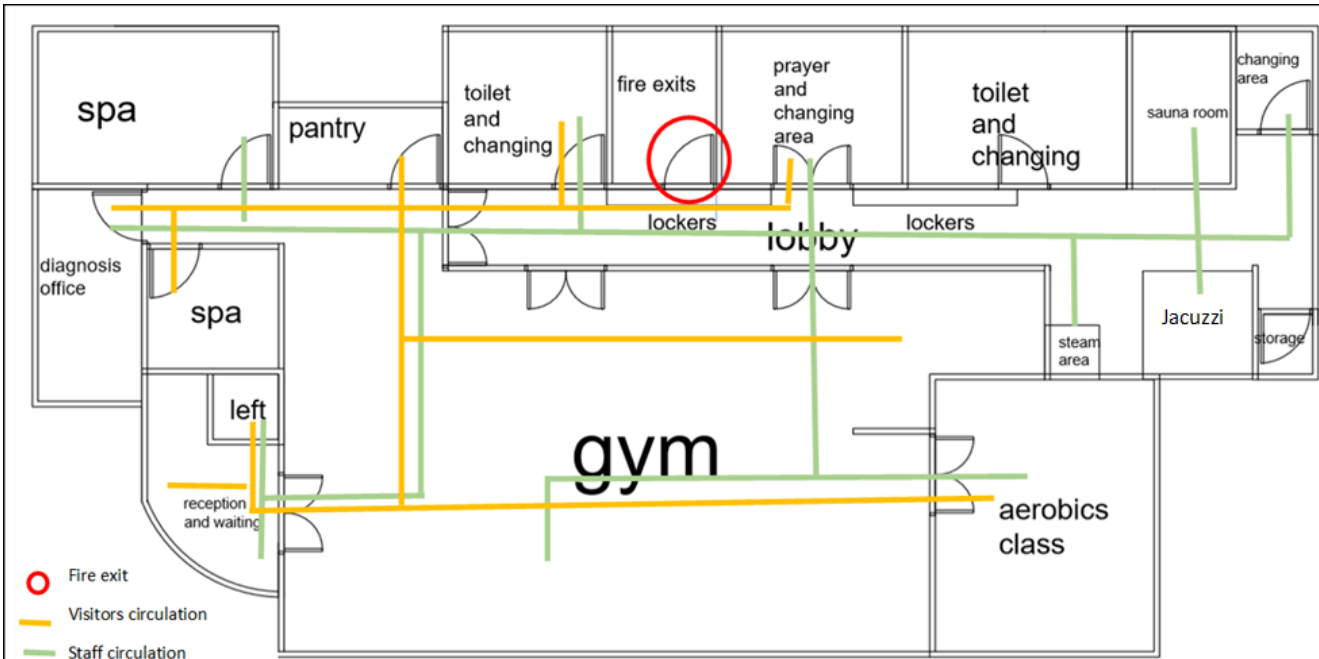


Figure 3.5 Sphinx structure plan, circulation and fire exit

- **Visitors circulation:** when visitors enter the floor they will encounter the reception and the waiting area, and then they can change their clothes in the changing rooms, and go to their aerobics class or the gym. There is a prayer room if the visitors want to pray. Visitors can go to the spa rooms to be relaxing and having facial or they can go either for a Jacuzzi, sauna or steam area before they change their cloth and leave the center.
- **Staff circulation:** when the staff enters the center, everyone goes to their place of work, whether at the reception, diagnosis or aerobics class and before that they can change their clothes in the changing room. They can take some coffee or juice from the pantry before they start their hard work or in their break. In addition, they are allowed to take a break for ten minutes to pray.
- **Fire exit:** there is only one fire exit and it is blocked by the lockers.

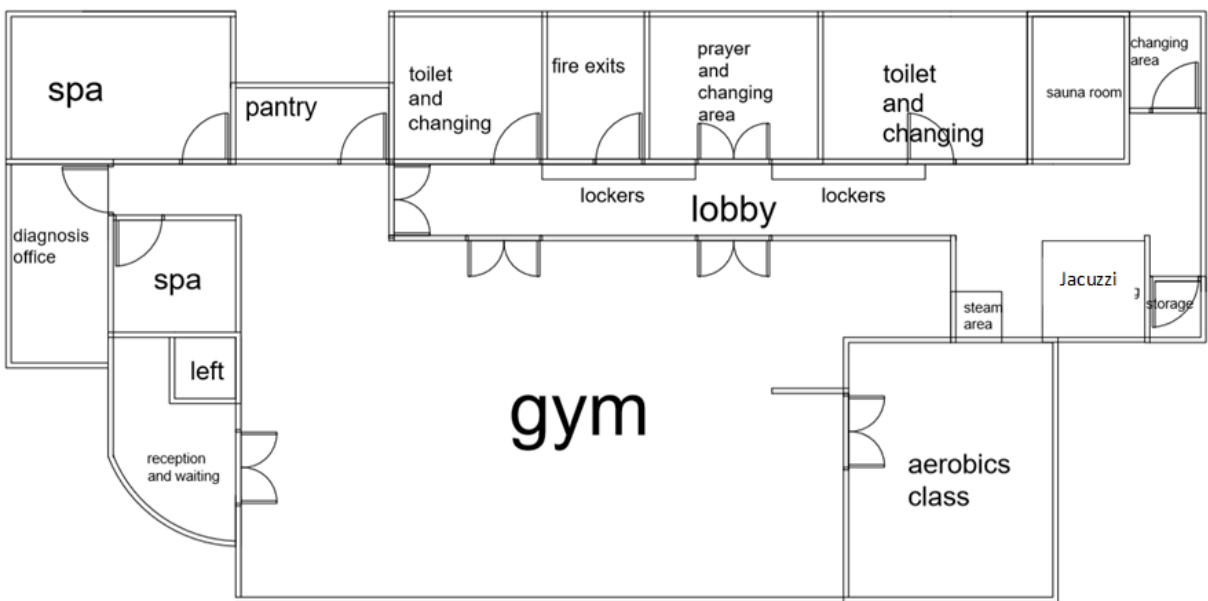
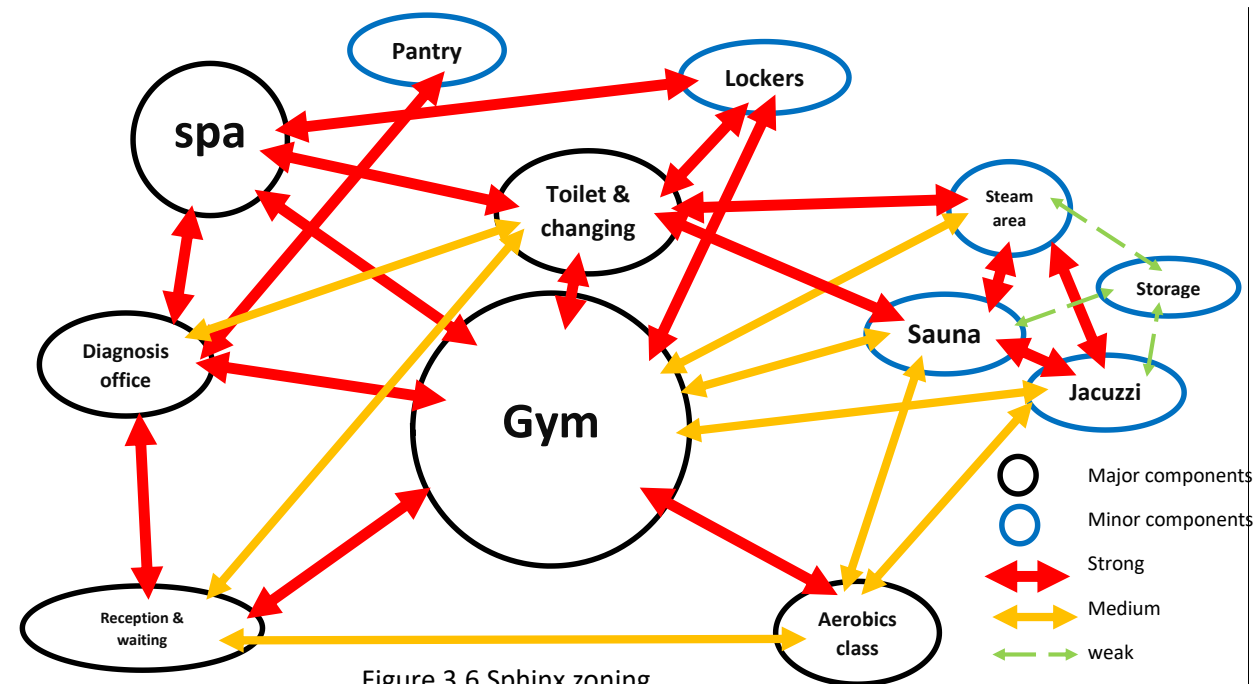


Figure 3.4 Sphinx structure plan & zoning



The gym is the main area and it has a strong relationship with most of components as well as the spa. The sauna, steam area and Jacuzzi are far away from other components, they have a good relationship with each other's and a middle relationship with the other components.

The major components are located near the entrance, such as Reception & waiting area, gym, aerobics class, diagnosis office, spa and toilet & changing room. Occupy the major components 70% from the center.

The minor components are located far from the entrance such as steam area, sauna, Jacuzzi and storage, while the pantry is located near the entrance. Occupy the major components 30% from the building.

3A.3 Design Philosophy

- The different areas should be carefully considered to make the user feel at ease and enjoy the space they're in. Quiet areas and relaxation spaces help people socialize and contribute to the wellness and comfort of all users. However, this is what SSH company aims to achieve.
- That will be depend on:
 - Wall coloring based on the atmosphere you want to create
 - Floor coloring and material
 - Color personalization in harmony with your fitness equipment
 - Visual communication tools for the equipped area in accordance with the Wellness philosophy
 - Multi-sensory and aesthetic developments applied to materials
 - Efficient subdivision of spaces
 - Interior development in the plan view

3A.4 Study of interior finishes and furniture

• The center design and finishes materials

➤ Daylight and Views

- ✓ Natural daylight greatly benefits the atmosphere and appearance of a gym space. Provided views in and out of the gym, particularly to the reception and spa.

➤ Flooring materials (Parquet, Ceramic tiles)

- ✓ The floor structure able to resist high dead loads imposed by the equipment, along with the potential for high live loads from users, point load impact (e.g. dropping of free weights) and dynamic effects (harmonic vibration from users on machines) as well.
- ✓ Used acoustic isolation material (e.g. parquet) to avoid the vibration transmitted from the gym into other areas.
- ✓ Used slip, stain and static resistant floor finishes for the gym environment.
- ✓ The floor finish is contrast in color to the equipment to ensure that equipment is less likely to be a trip hazard. In addition, different colored walls will greatly enhance legibility within the fitness gym for users.
- ✓ The floor finishes have sufficient friction to prevent the equipment from creeping during use.
- ✓ Used ceramic bath to provide pure relaxation by means of ceramic heat soft surfaces. However, the design of spa ceramic tiles reflects a bright mood to have comfortable area. Also, white ceramic flooring makes the space brighter.



Figure 3.7 Small Spa



Figure 3.8 Strength Zone



Figure 3.9 Steam Zone

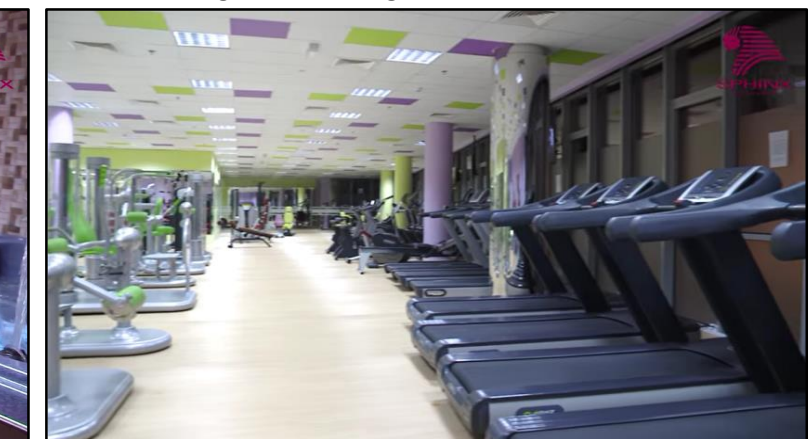


Figure 3.10 Cardio Zone

➤ Wall finishes materials (Glass partitions, painting)

- ✓ Used soft wall treatments without sharp edges because users may use walls during stretching exercises.
- ✓ The wall is safely support weight storage racks & mirrors.
- ✓ Used wood panels to provide effective sound attenuation to minimize the risk of sound transmission to surrounding areas adjacent to the gym.
- ✓ Mirrors serve to create the illusion of space and reflect natural light back into the space.
- ✓ Large continuous mirrors fixed onto a rigid plywood backing board to avoid distortion.
- ✓ Used green and purple wall painting to keeping the fitness center looking its best is important to members, which create a welcoming and inviting atmosphere where members want to be, and where they are inspired to make a positive change in their lives.
- ✓ Lime green and purple create visual energy that can help members power through any work out. These colors are great because they can make a space appear brighter and full of life. Bright colors are perfect for gyms that are primarily going to be used for weight lifting and intense training.

➤ Ceiling

- ✓ Acoustic ceiling panels and sound absorbing drop ceiling tiles provide effective noise control. Which is easy solution for improving the acoustical qualities of the center spaces. However, these soundproofing tiles manage noise control in the gym areas to keep acoustics in balance for user's comfort.
- ✓ Used Parabolic Louvers light to have high degree of controlled light distribution. This precise light control makes Parabolic Louver ideal for gym areas. However, Parabolic Louver creates a visual comfort and controlled reflection of vertical surfaces.
- ✓ The ceiling support hanging fixtures e.g. square ventilation grilles, wall ventilation grilles, Parabolic Louvers light, fire detections and sprinkles.

➤ Group Exercise Classes

Group Exercise classes provide participants with a structured, results-focused regimen in a group setting. However, participants can increase and/or decrease the intensity of the workout by utilizing the suggested modifications from our instructors. A variety of group exercise classes are held each week.



Figure 3.11 Gym Equipment



Figure 3.12 Treatment Room



Figure 3.13 Aerobic class

Sphinx center have experienced team of instructors' design and lead each class all classes start promptly at their scheduled time; all fitness equipment is provided.

COLOR SCHEME: Analogous Harmony color scheme (Green & Purple)

FEELING: Calm, attractive & comfortable

DESIGN PRINCIPLES: Harmony, repetition & variety

Spinning class generate substantial noise and activity disruptive to other users. Spinning should therefore be held in a separate studio.

Positive pointes:

- Simple and aesthetic design that stimulates motility.
- Providing several fitness services in one place.

Negative pointes:

- Small spa area and lack of sauna facilities
- Displacement of the emergency exit and exploit the lobby area to be lockers space.
- This case study will support Chance for Change project from several aspects:
- Learn more about the fitness center space planning and the distribution of gym equipment along the space.
- Learn more about the appropriate finishes materials to get a healthy environment.
- Add more health services to the project plan such as physiotherapy.



Figure 3.14 Aerobic class



Figure 3.15 Spinning Class



Figure 3.16 Lockers Zone

3A.5 Study of building services

- **Vertical Transition:** Lift is essential for providing vertical circulation, particularly in tall buildings, for wheelchair and other non-ambulant building users and for the vertical transportation of goods.
- **Ventilation:** Air circulation is important key factor, and the flow of air throughout the facility needs to be anticipated and factored into the design.
- **Artificial lighting:** Gym area has 200-300 lux which a good uniformity ratio. Used lighting to create mood. However, Indirect lighting schemes create a softer and warmer atmosphere.
- **Natural lighting:** Used blinds glass windows to filter light and provide privacy.
- **Facade engineering:** Glazing façade engineering refers to designing a high-quality façade that enhances the energy efficiency and long-term sustainability of the building.
- **Fire safety:**
 - Detection and protection forms include:
 - Ionization smoke alarms
 - Heat alarms
 - Sprinklers



Figure 3.17 Gym Equipment

3A.6 Conclusion

- Natural lighting is provided through the windows in the gym area.
- Making the most of the space: required special surfaces, impact-resistant walls, and mirrored walls.
- The interior durability of the space includes the finishes on the floors, walls, and other surfaces. These should all be durable and easy to maintain.
- Acoustical control in the form of sound baffles are common choice for reducing the impact of noise around weight rooms and certain exercise rooms.



Figure 3.18 Treatment room



Figure 3.19 Aerobic class



Figure 3.20 Aerobic class



Figure 3.21 gym zone



Figure 3.22 Spinning class

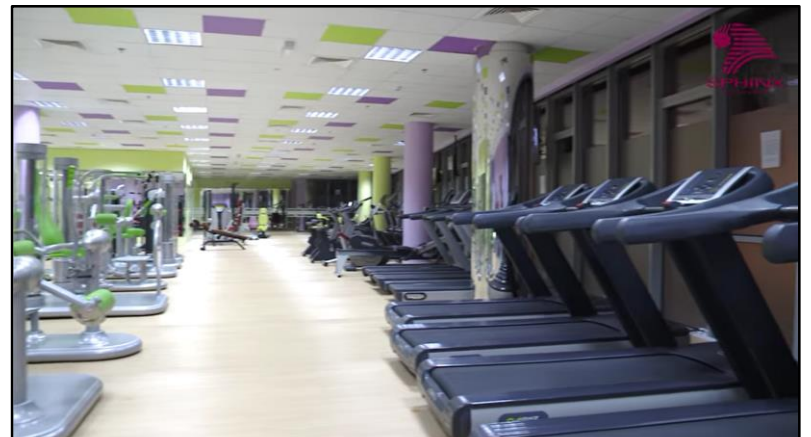


Figure 3.23 gym zone

3B. literature Case study (Proyecto Hombre association)

3B.1 Basic Information

Name of the project: Proyecto hombre association

Introduction: Proyecto hombre is a drug rehabilitation center that has two floors plus a basement, it follows the philosophy of therapeutic intervention model that includes a series of stages in rehabilitation and social re-entry. Proyecto hombre identifies social problems that lead to addiction and seeks to rehabilitate the individual to become an active member of society.

Building year: 2012

Area: 2996.0 m²

Architects: Elsa Urquijo Arquitectos

Location: Santiago de Compostela, A Coruña, Spain

Proyecto hombre association located in Santiago de Compostela, A Coruña, Spain, it is a crowded area where is the mall, fitness center, restaurant, pharmacy, petrol stations, hotel and green areas.

Climate: the climate in Santiago de Compostela is cool and moist. 5°C is the minimum temperature in winter, but some time it reaches 0°C in the night, while it is rising in summer to 24°C. The rains are abundant through the year while the Snow is very rare. The wind blows frequently, and it can be strong especially in winter.

Project users: the center serves all people who need to be rehabilitated such as adolescents, young people, ex-prisoners, juveniles, etc.

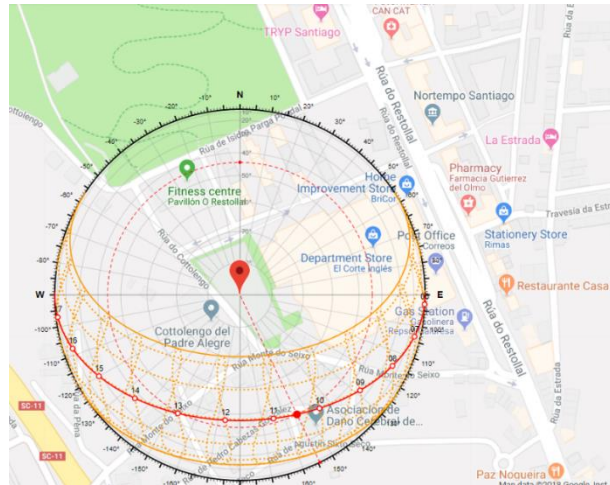


Figure 3.24 Proyecto Hombre association location map with the sun path



Figure 3.25 Proyecto Hombre association external with the sun path

3B.2 project study

The building consists of two floors plus a basement; the first floor has one main entrances and five fire exist, one of them leads to the front yard while the rest lead to the backyard. The corridor is a major axis that emphasizes the movement and connect between the facilities. This floor contains many activities such as; reception and waiting area, administration, outpatient therapy, workshop area, auditorium, dining room, kitchen facilities, laundry, toilet, other facilities, and for the first floor, therapy rooms, management, and residential area, while the basement; only sports areas.

• List of activities

The association provides a range of activities such as therapeutic, sports, residential, practical and lectures in the auditorium area. Proyecto hombre provides a range of services that help the individual to get rid of addiction and capable them to solve their own problems. To achieve this, it is important to work on both the therapeutic and educational aspects.

These services are summarized as follows:

- Rehabilitation for people with opioid addictions
- Rehabilitation and re-entry for consumers of psychotropic substances
- Rehabilitation and re-entry for alcoholic people.
- Methadone treatment
- Rehabilitation and re-entry for people with gambling addiction

Special programs:

- Proyecto joven: for adolescents and young people (risk situations, antisocial conducts, legal actions, etc.)
- Intervention with prisoners and ex-prisoners.

• Components

➤ Ground floor:

1. Reception & waiting area
2. Administration
3. Outpatient therapy: counseling offices, consultancy, information, etc.
4. Workshop area: classrooms, leisure time workshops, new technologies, etc.
5. Auditorium
6. Dining room
7. Kitchen facilities
8. Laundry
9. Toilet
10. Other facilities

➤ First floor:

- Therapy rooms
- Management
- Residential area

➤ Basement:

- Sports area

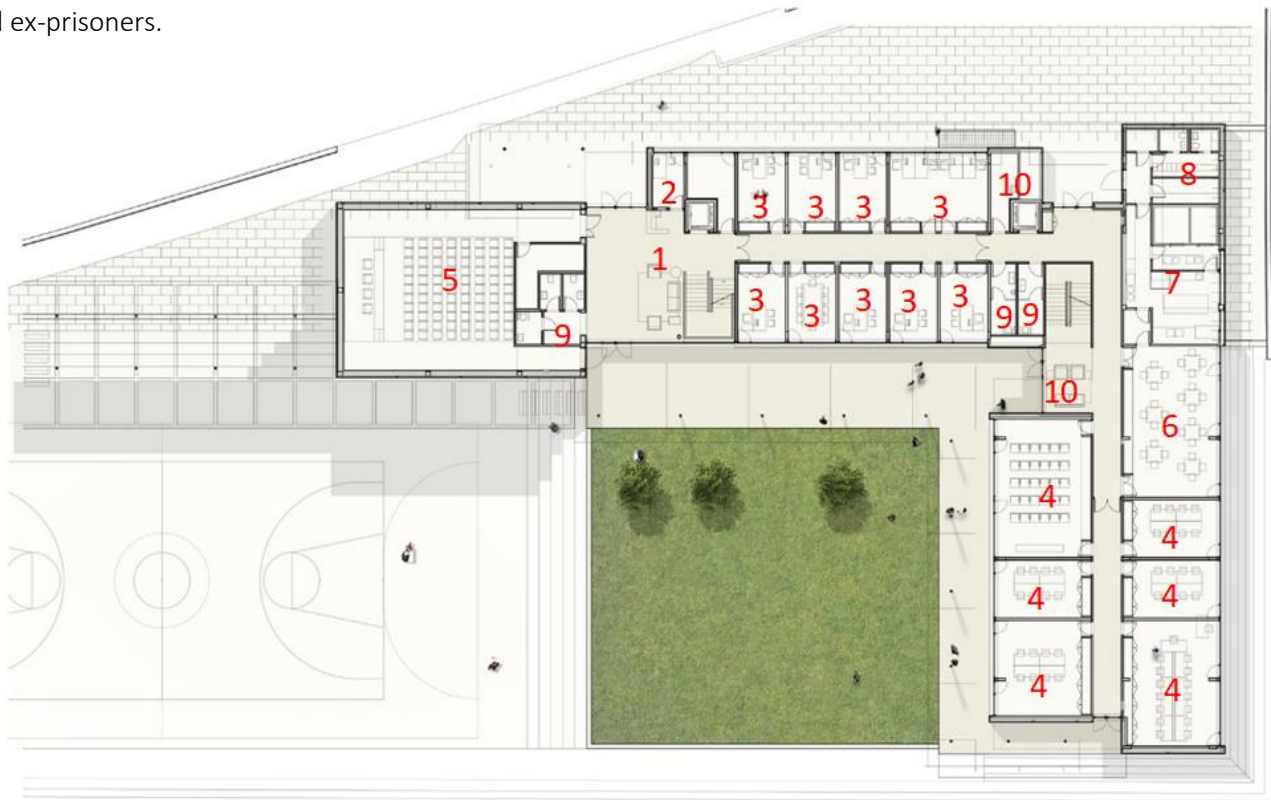


Figure 3.26 Proyecto Hombre association structure plan

- Functional relationship/bubble diagram

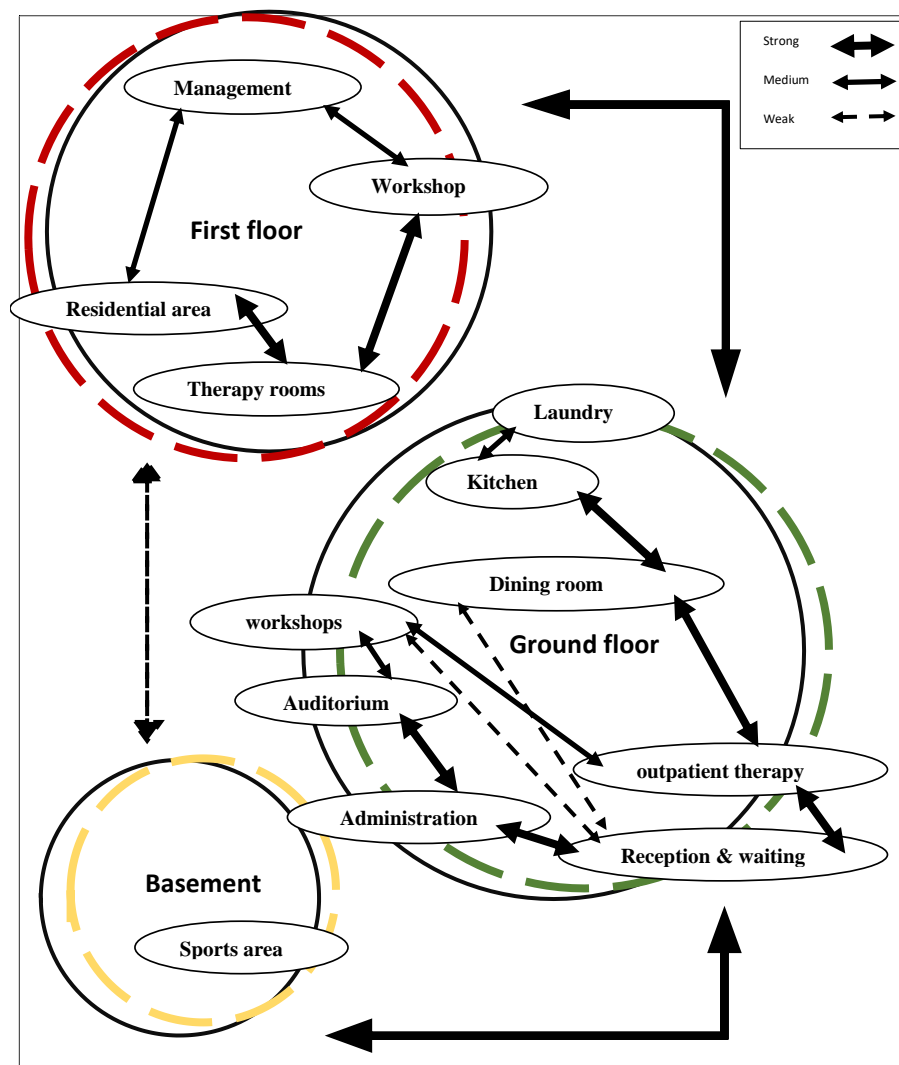


Figure 3.27 Bubble diagram for the Proyecto Hombre association

The relationship between the components within the floor mostly strong because of the corridor. The major floor is the ground, where the patient undergoes various treatments and consultations. The ground floor connected directly with the sports areas in the basement through the backyard. Privet areas such as therapy rooms, residential area, and management are located on the first floor.

- Circulation

- Staffs circulation
- patient circulation

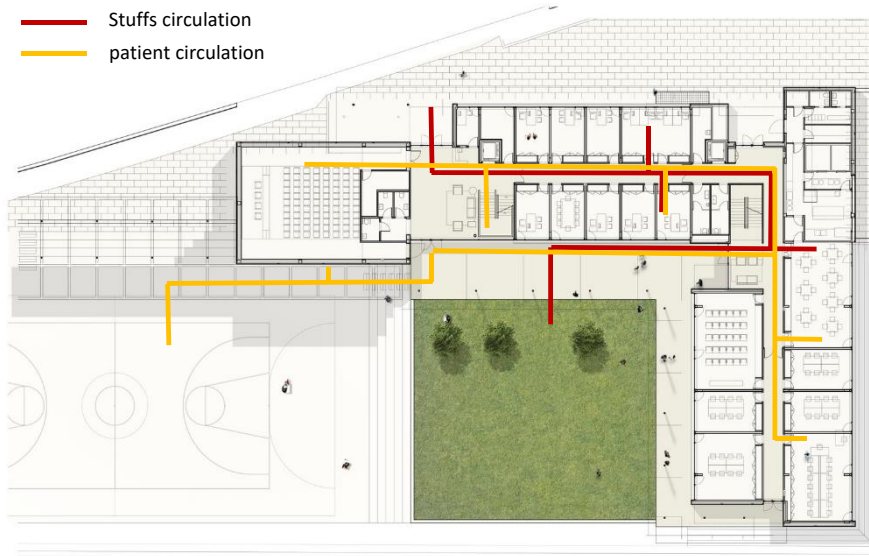


Figure 3.28 Proyecto Hombre association circulation

Staff circulation: The staff enters the association through the main entrance, and then every employee goes to his place of work, whether at the reception, workshops or offices. Staff can be having a break and go to eat in the dining room or enjoy in the backyard.

Patient circulation: when the patient wakeup; can start their day by having breakfast before they are starting their daily schedule either having class, consulting or others. They can have a break to enjoy the outdoors, going to the gym or playing basketball.

- Fire exits

The relationship between the components within the floor mostly strong because of the corridor. The major floor is the ground, where the patient undergoes various treatments and consultations. The ground floor connected directly with the sports areas in the basement through the backyard. Privet areas such as therapy rooms, residential area, and management are located on the first floor

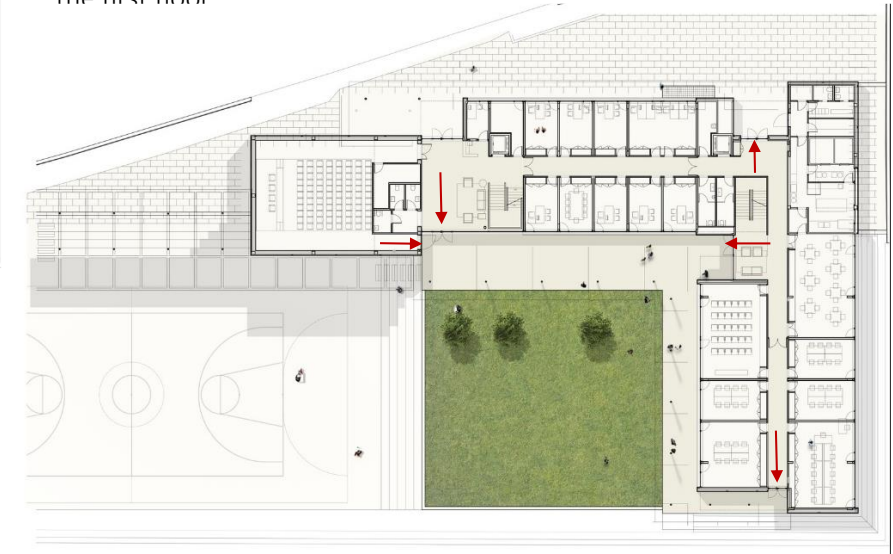


Figure 3.29 Proyecto Hombre association plan show the fire exits

3B.3 design philosophy

- Color scheme

The designer wants the building to be a shelter for the life that takes place in it, a serene space, unpretentious, with a strong presence and to endure.

So, he used natural colors scheme such as grey, black, light brown and white which is the predominant color; it is the color of purity, cleanliness, protection, encouragement and gives a feeling of peace, calm, comfort and hope; which is what the designer wants to reflect.



Figure 3.30 Reception



Figure 3.31 The corridor

- Material

In order to have a simple design, the designer used for the most of places the same finishes materials without any diversification. He put into consideration the utilization of some places and still used the same tones of colors.

- Furniture choice

Because the designer wants to achieve simplicity, so he used a few pieces of furniture that is not complicated; with simple lines and shapes.

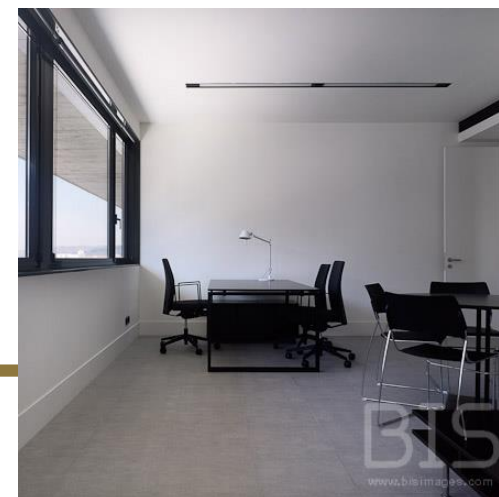


Figure 3.32 Office



Figure 3.33 Toilet

3B.4 Study of Interior Finishes and Furniture

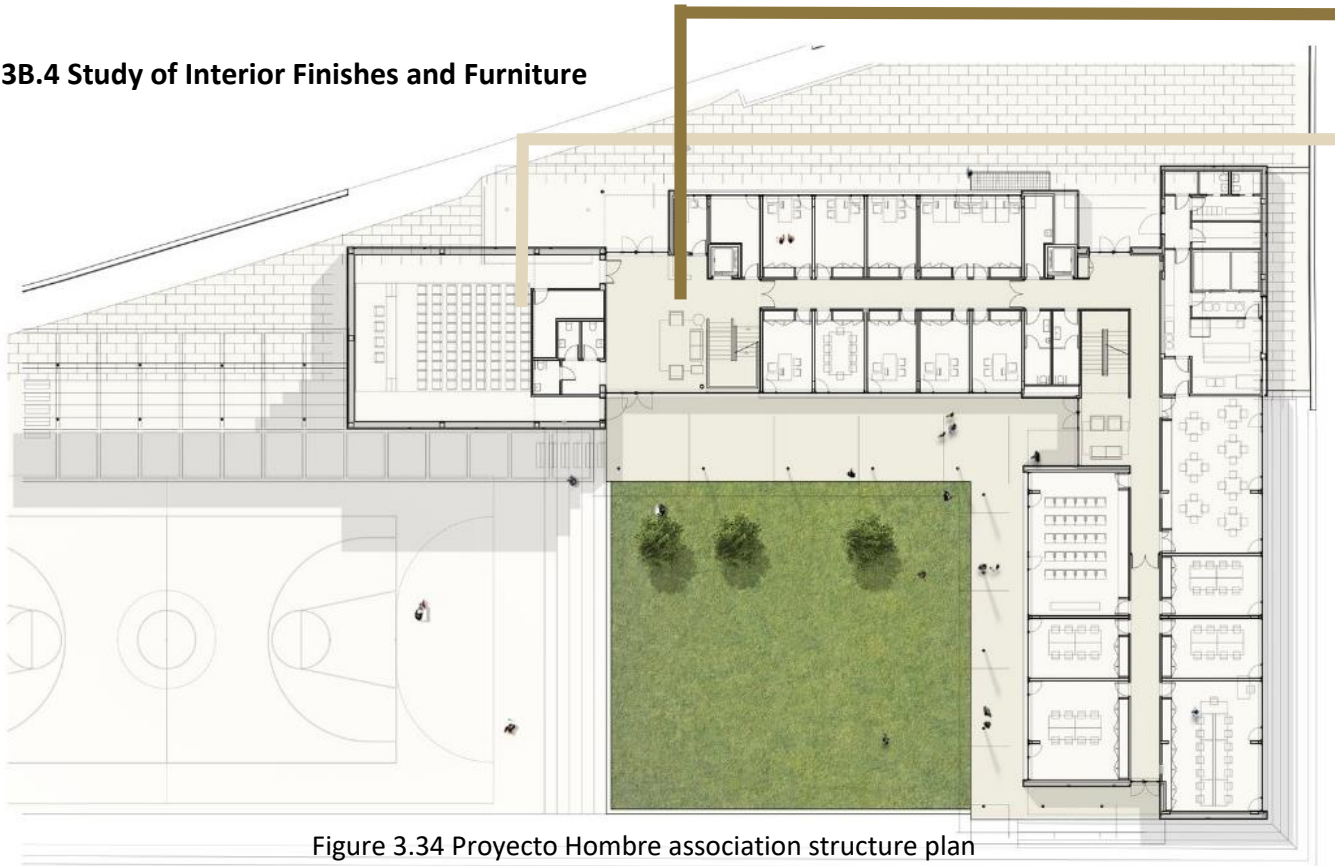


Figure 3.34 Projecto Hombre association structure plan



Figure 3.35 Projecto Hombre association elevation



Figure 3.36 pictures for the exterior of the building

- **The major** components located in the ground and first levels, such as Reception & waiting area, management, administration, outpatient therapy, workshop area, therapy rooms, toilet, and residential area. Occupy the major components 75% from the building.
- **The minor** components such as auditorium, dining room, kitchen facilities, laundry, sports area, and other facilities. Occupy the major components 25% from the building.

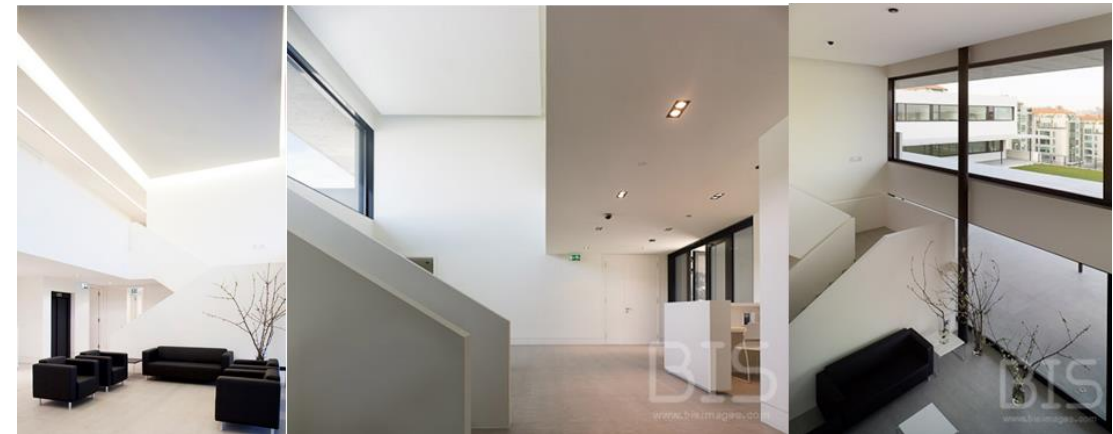


Figure 3.37 Pictures for the reception

- **Reception and waiting area:**
The reception is the interface of any building where the concept should be reflected correctly.

Finishing the wall with white paint gives a feel of breadth as well as having the whole area plus the corridor with one material such as porcelain tiles. In addition, having a huge window in the opposite wall to the entrance, it gave a visual extension of the place and allow the sunshine to enter the place in abundant quantities. The spotlight is a yellowish color and it is invisible. The used of hidden lights helps to light the place.

A reception desk is simple as well as the furniture, and the black sofa is attracting the eyes. The amount of light colors in the place gives a sense of purity.

The control systems such as the camera are present in the reception area and the air conditioning is hidden.



Figure 3.38 Pictures for the auditorium room

- **Auditorium area:**
Whoever sees this place will certainly feel the concept of the designer through the irradiated white color in the walls, ceiling, and furniture which gives the feel of purity, cleanliness, protection, encouragement, peace, calm, comfort and hope. And the white hidden light has contributed in these feels as well as the invisible white spotlight which is hidden in the gap and the porcelain tiles with white color. The light wood laminate in the stage floor help to attract people in listen to who is talking in the stage without distorting the concept because of light tone of it.

The control systems such as the camera are present in the auditorium area and the air conditioning is hidden.

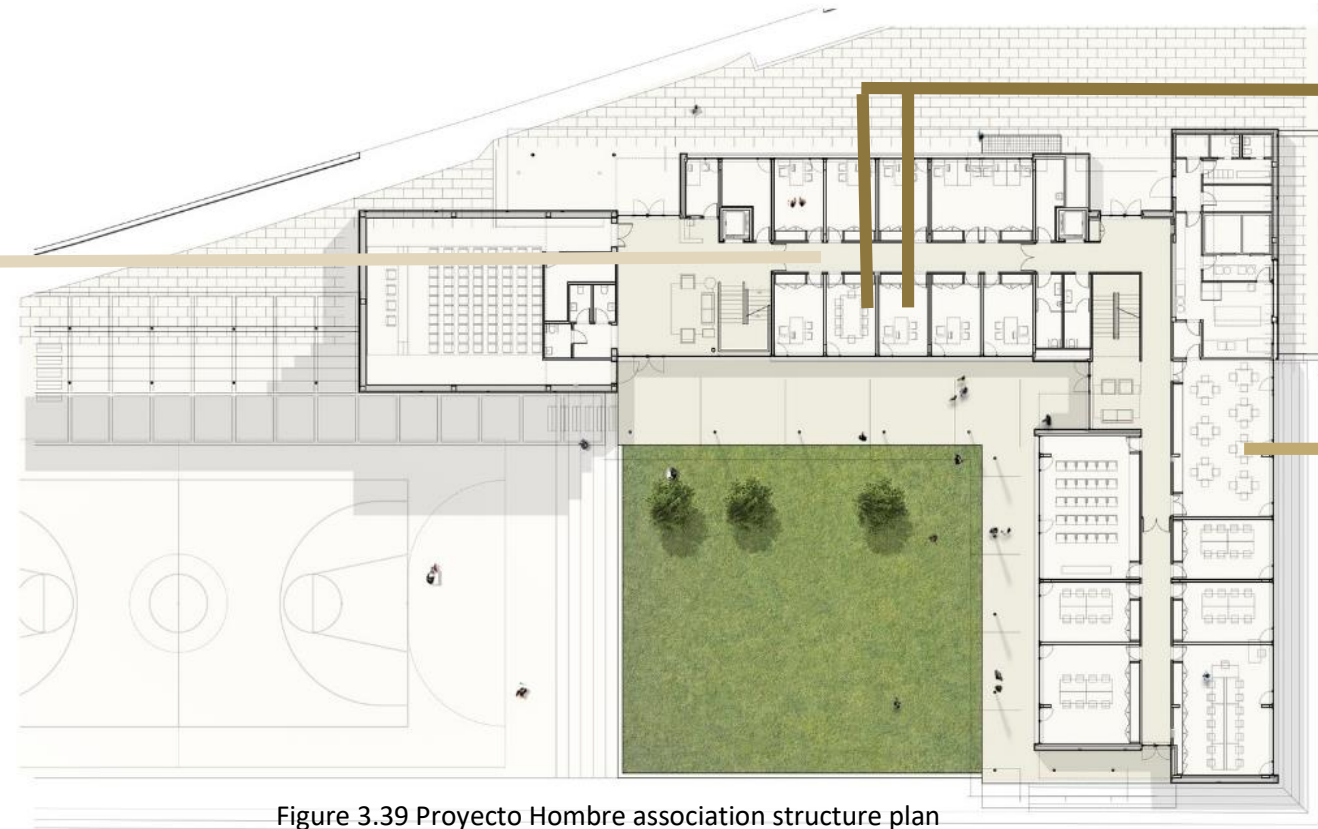


Figure 3.39 Proyecto Hombre association structure plan



Figure 3.42 Class



Figure 3.43 Other facilities



Figure 3.44 Pictures for the offices

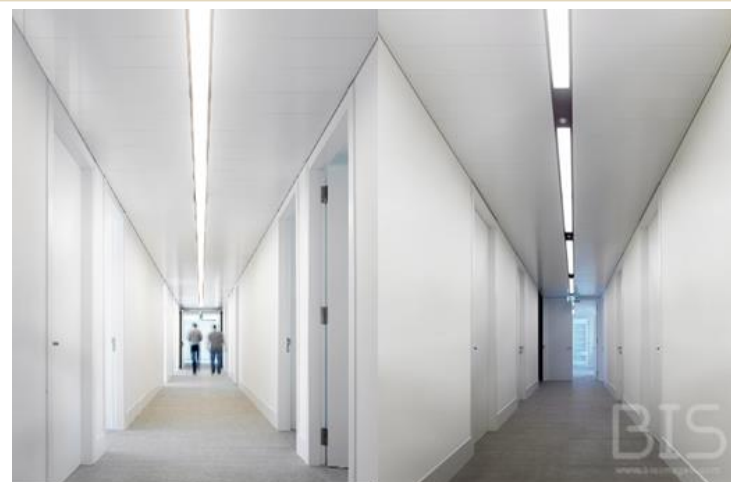


Figure 3.40 Pictures for the corridors

- **Corridors:**

The design of the corridors is similar to the rest of the building, white wall and ceiling give a sense of cleanness, calmness, and breadth. A grey porcelain tiles which are easy to clean. Led panel light is used along the corridor and the control systems such as the camera are also presented in the corridors and the air conditioning is hidden.

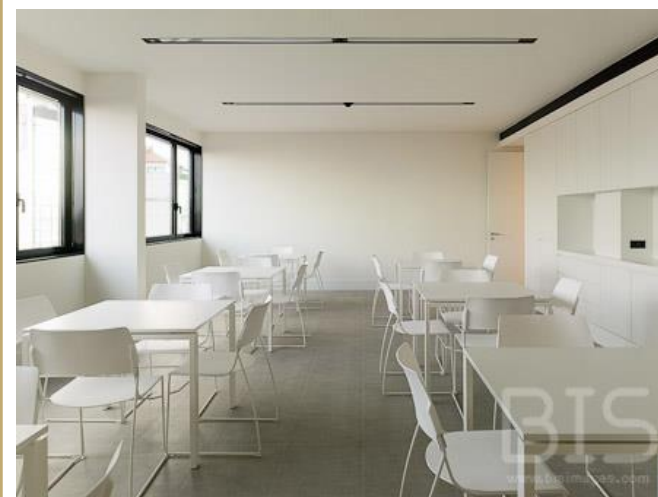


Figure 3.41 Dining Room

- **Dining room:**

Simple lines and shapes in the pantry and the furniture which achieve part of the concept and the light color for the finishes material gives a sense of calm and breadth. Windows along the wall which helps to illuminate the space. Used porcelain for the floor finish which is easy to clean. Led panel lights are used and air conditioning is hidden plus the control systems such as the camera are presented in

- **Offices and class:**

The offices and the class have the same design, white walls and ceiling, porcelain tiles for the floor and simple white or black furniture that made of polymers which is durability, tenacity and not easily damaged. The office's chairs are specially designed for offices to support flexibility in movement. Led panel light is used which is a good choice for study and workspace. The availability of windows in measurements commensurate with the need of light and nature. In addition of used the abjoura for the desk.

The control systems such as the camera are present in the class and the air conditioning is hidden in both; offices and the class.



Figure 3.45 Pictures for the bedrooms

• **Bedrooms:**

Continue to use white color to achieve the concept which gives a sense of relaxation and peace. Porcelain tiles are easy to clean and that is what the bedrooms need because it is where the patient spends their daily time. Simple furniture is used with light wood laminate which reflects the designer concept. A desk will encourage the patient to write. In addition, the closet where the patient can keep his clothes and certainly they will need the toilet in their bedrooms. Different types of light which help the patient to use whatever they want depending on their needs, such as using LED panel light for the general lighting, spotlight or abjoura beside the bed for the night or use the abjoura in the top of the desk for writing. Through the big window, the sunshine is entering with high frequency, plus help to have a natural ventilation to refresh the indoor air quality while the air conditioning is hidden.



Figure 3.46 The gym from outside



Figure 3.47 locker area

3B.5 Study of Building Services

- **Lighting:** the lighting for the whole building is similar, some used LED panel light, some used spotlight, and some used both of them, in addition to using the abjoura if the place requires it.
- **Air-conditioning:** they depend on the hidden air conditioning for the whole building.
- **Ventilation:** there are lots of windows around the building which is helpful in ventilating the building and refresh the indoor air quality.
- **Control systems:** use the camera in most areas of the building to monitor patient conditions and avoid using it in some places to maintain patient privacy.
- **Fire precautions:** they put into considering the needs of the building for the fire detectors and fire exits sign.

3B.6 Conclusion:

- They have lots of windows and this matched with their weather but in Bahrain, we have to limit the preparation of windows due to the hot weather.
- Used the same material for the whole building in order to reflect the concept, but these make the place look a bit dull.
- Maintain the security and safety by adding the fire detectors, fire exits, fire exit sign and cameras.
- Choosing the material carefully according to the function of the place is a good thing but better if they used carpet rather than porcelain to increase the privacy especially in the consultancy rooms.
- Having a good circulation; no one will lose.



Figure 3.49 Toilet

• **Toilet:**

Even if the finishes materials were different, the toilet keeps on the same theme by having the same color tones. Used ceramic tiles which are durable, slip resistance, dirt resistance, and water absorption. Used spotlight with hidden light to give brightness.



Figure 3.48 Gym before furnished

• **The gym:**

The floor finish is different than the other spaces because the function is changed. Vinyl sports flooring is used as a good choice for gym floor which brings together performance, comfort, and security for the patient reducing their injuries and increasing their sensations. White paint is also used in order to achieve the concept and give a sense of purity and encouragement. In addition, having a mirror in the whole will give a feel of breadth. Lockers are provided to save the users' own purposes.

LED panel lights are used to illuminate the place more, in addition to large windows that enter the sunshine through it and its contribution to the improvement of the indoor air quality. The control systems such as the camera are presented in the place, plus the fire detectors.

3C. Literature case study

3C.1 Basic Information

CRUNCH is a Lifestyle Fitness Facility offering state of the art Fitness Center, Slimming and Spa services with an objective of making the community health conscious and Fit for life. It is situated in one of the up-market shopping Malls. The objective was to create a high-end gym with all the latest facilities. However, Crunch Gym is 929.0304 m² Gym & Spa in Delhi, India. It won the award for the best interior design for Spa in I-Diva awards -2012. It has been featured among World's best Gyms.

It located in an active area, it is a small complex of market shopping malls, restaurants and cafés such as the little cafe, Domino's Pizza and Fun World Mall which gives great significance and distinctive care from the state.

Building Type: Hospitality and Sport Center

Users: All guests must be over the age of 18

Location: Rohini, New Delhi, India

Architects: ViVeA – Viveck Vermaa Architects

Year: 2011

Designed by VIVEA - Viveck Vermaa Architects in 2011. **Figure 3.50** Crunch Centre logo



VIVEA is one of the topmost architects & interior designers in Delhi. One of the best architects & interior designers for residential buildings, beauty salons, spas, gyms, fitness & health clubs. Vivea Mission is to create a positive difference in the lives of clients and make living a meaningful experience.

Company Overview: Vivea is a New Delhi based design office. The firm has completed projects of diverse scales and programs throughout India and Abroad. Together with associates VIVEA provides comprehensive architectural and interior design services for a distinct clientele including residential, hospitality, office, commercial and industrial projects. Through disciplined design and exceptional client service, VIVEA affirms their commitment to the success of each project.

A. The importance of the center: Provide a wide variety of exercise equipment to use a safe and comfortable workout environment. Additionally, qualified group fitness instructors and personal trainers will be on hand perform exercises safely and effectively. All in all, visiting Crunch fitness center should be an enjoyable and safe experience.

B. The Climate: Delhi is an overlap between monsoon-influenced humid subtropical and semi-arid with high variation between summer and winter temperatures and precipitation. However, summer starts in early April and peaks in May, with average temperatures near 32 °C. And winter starts in late November or early December and peaks in January, with average temperatures around 12-13 °C. While the climate of Bahrain is also an arid type and irregular.



Figure 3.51 Crunch Fitness Centre Facade



Figure 3.52 Gym Zone



Figure 3.53 Location Map of Crunch Fitness Centre

3C.2 Project Study

The building consists of two floors; the ground floor has one entrances accessed for the offices area. However, this floor contains many of activity such as; Weight section, Strength section, Cardio zone, Spinning studio and Treatment zone. While the upper floor contains only ladies and gents' spa.

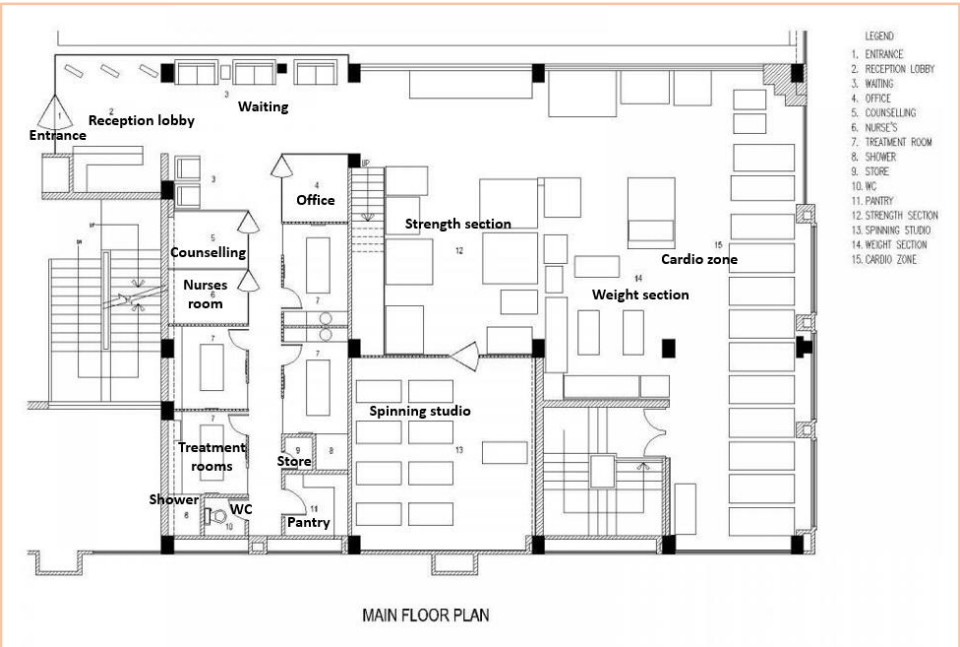


Figure 3.54 Crunch Fitness Centre ground floor plan

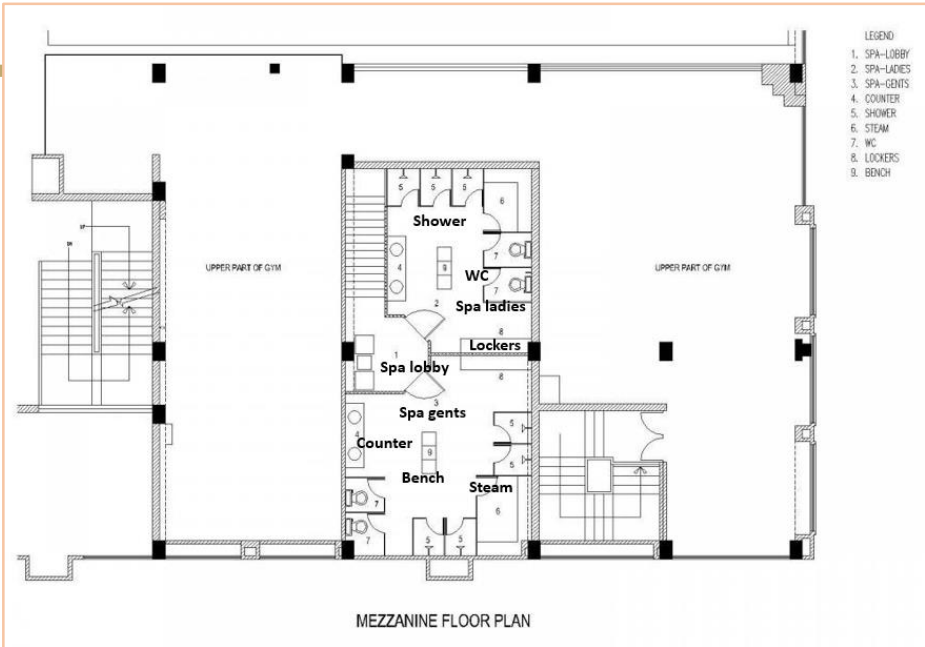


Figure 3.55 Crunch Fitness Centre upper floor plan

Major Components	Minor Components	Services
Reception & waiting Area Head office Counselling office Treatment rooms Spa Gym	Nurses room pantry	Restroom Shower Rooms Store

Table 3.1 Crunch Fitness Centre components

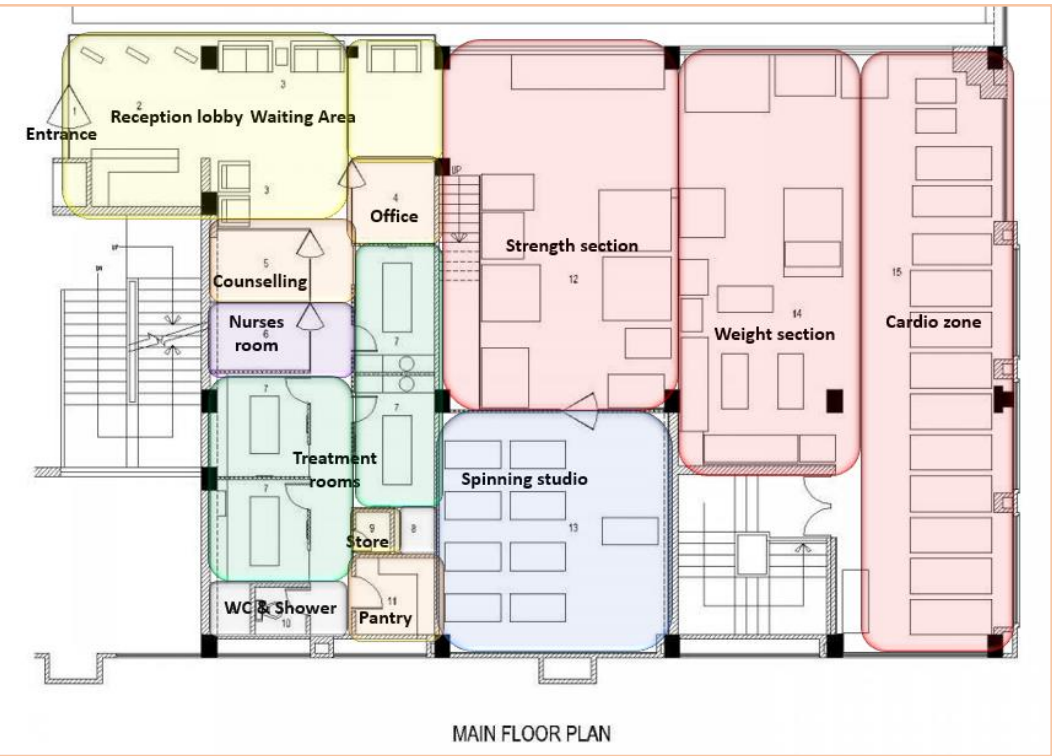


Figure 3.56 Crunch Fitness Centre ground floor zoning

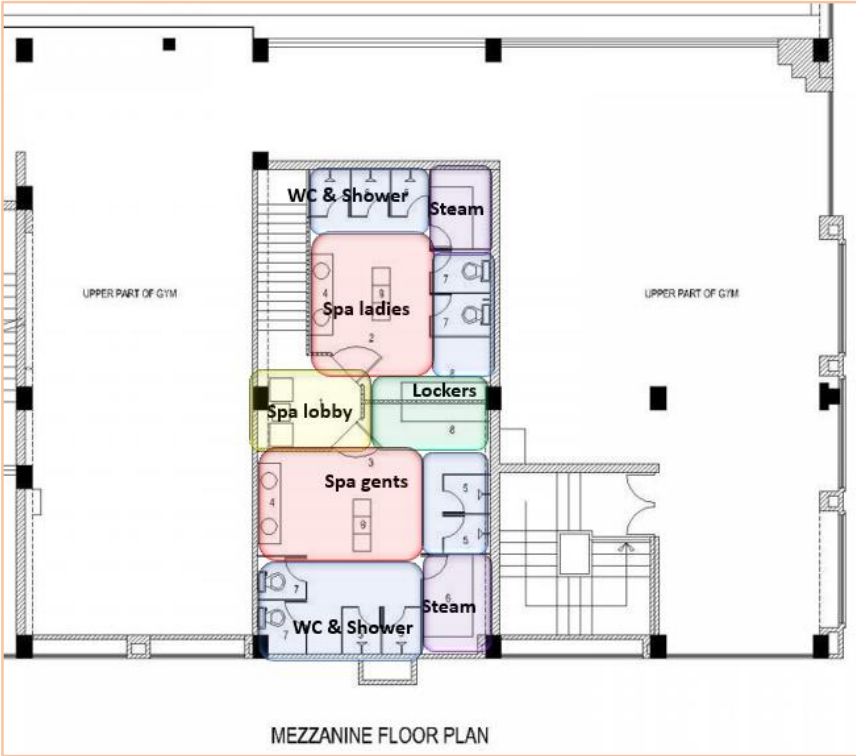
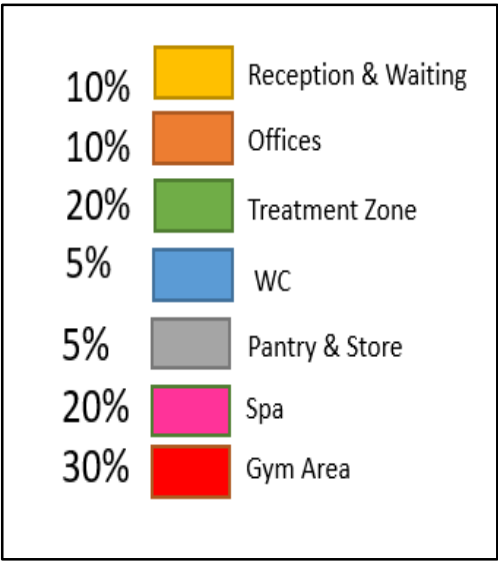


Figure 3.57 Crunch Fitness Centre upper floor zoning



Components

Ground floor:

1. Entrance
2. Reception Lobby
3. Waiting Area
4. Office
5. Counselling Room
6. Nurses Room
7. Treatment Room
8. Store
9. Pantry
10. Restroom
11. Shower Room
12. Strength Section
13. Spinning Studio
14. Cardio Zone
15. Weight Section

First floor:

16. Spa Lobby
17. Gents Spa
18. Steam Room
19. Ladies Spa
20. Lockers Area
21. Restroom
22. Shower Room

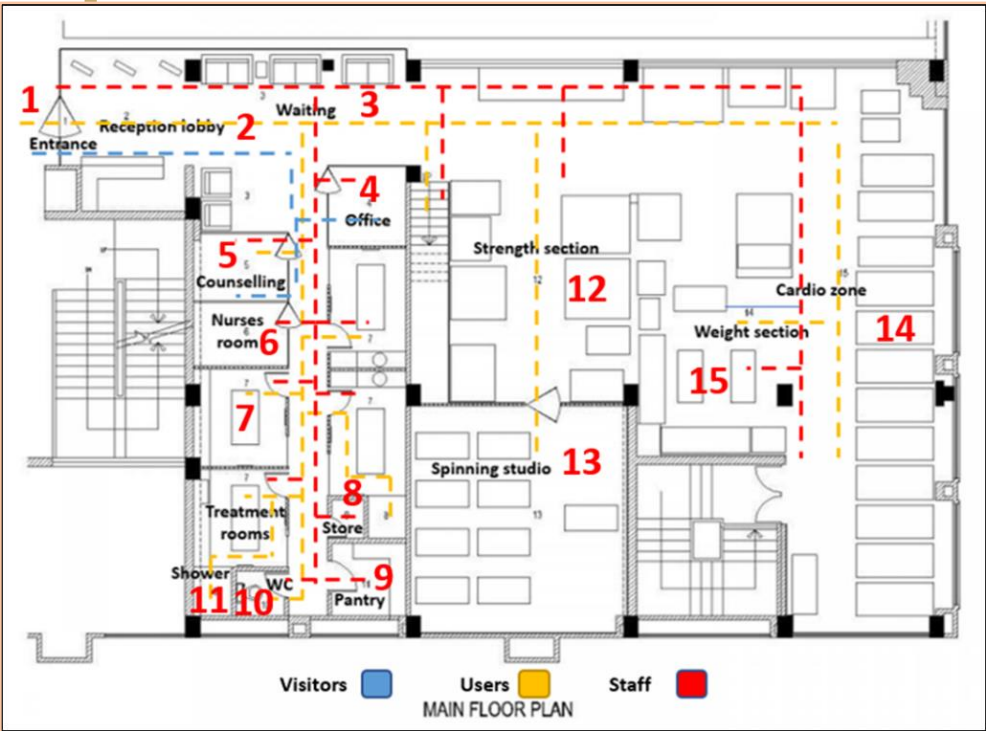


Figure 3.58 Crunch Fitness Centre ground floor circulation

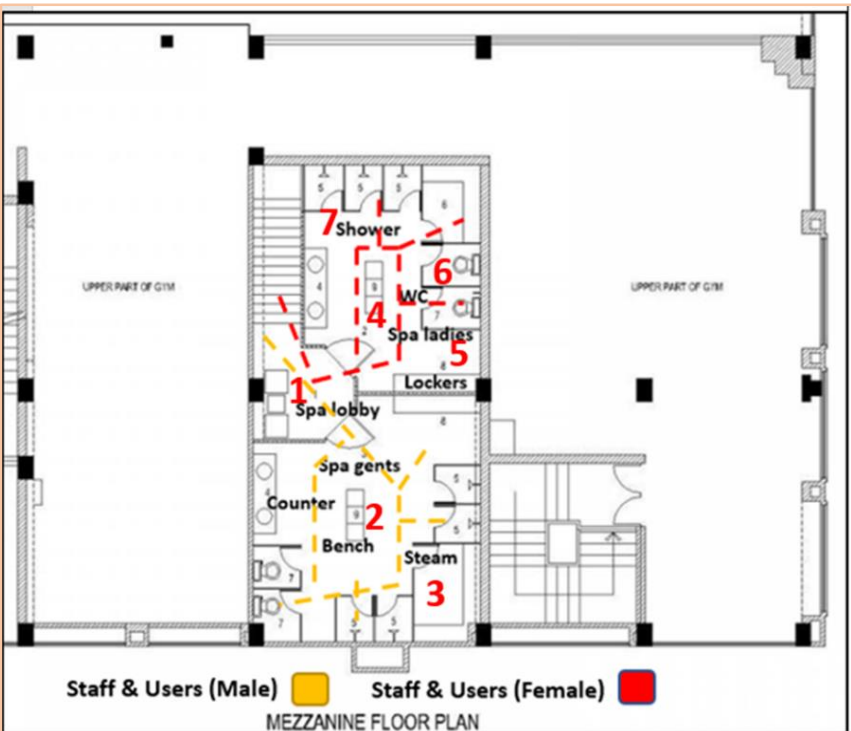


Figure 3.59 Crunch Fitness Centre upper floor circulation

A. Circulation

- **Staff circulation:** The staff enter the center through the main entrance, then every employee goes to his work space, whether at the reception, Counselling room or offices. Also, staff can go around the building without restrictions.
- **Users circulation:** They can walk around inside the building and enjoy the various activities offered by the center.
- **Visitor circulation:** Visitor can only meet the center head in his room and they cannot go around the building. However, who does not have a current fitness center membership considered as a guest.

Organized circulation, easily recognizable pedestrian. Besides, make pedestrian pathways leading to the fitness facility obvious, and consider linking the pathways to other fitness trails and health fields. Moreover, the center has a bright open design, clear and simple circulation. The center lobby allow views of the main amenities area which allowing users to orientate themselves as well as display the different facilities.

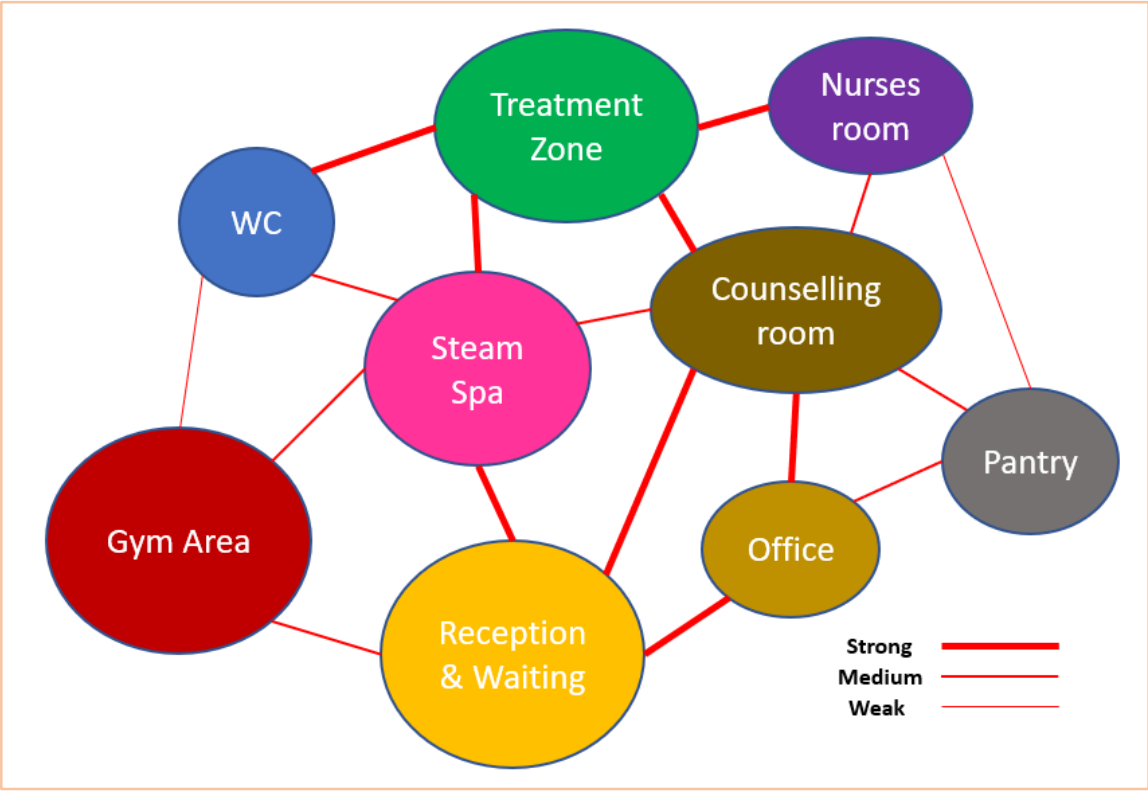


Figure 3.60 Crunch Fitness Centre Bubble Diagram

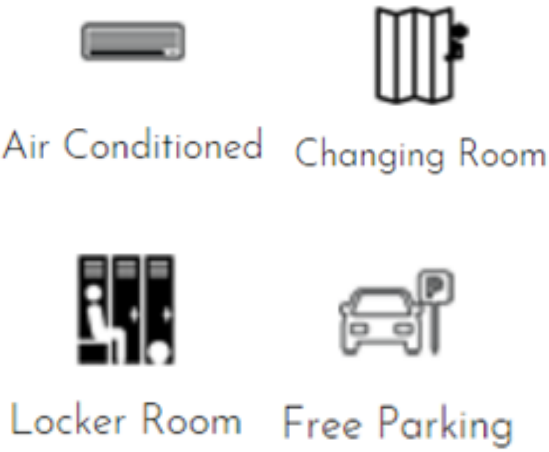


Figure 3.61 The Centre Amenities

3C.3 Design Philosophy

The basic philosophy of Crunch Centre is TOTAL INTEGRATED DESIGN. Design approach as a merger of various elements including physical and metaphysical ones into one contiguous whole. It constantly experimenting and exploring for solutions to client’s needs. Though the utilitarian aspects like affordability, durability and functionality are constantly being challenged, Crunch Centre search of creating tectonic perfection. In the end it is not the designs that ViVeA firm create, but the experience of the very people using them, having a dialogue with them, or just being in them.

ViVeA Architects endeavor is to create a positive difference in the lives of our clients and make living a meaningful experience. However, the center is a health, recreational, and social facility geared towards exercise, treatments, and other physical activities. It is an institutionally-supported center. It accommodates both the serious athlete and the casual recreational user. Moreover, the social component is an important secondary function of the Center and is represented by elements that support the fitness goals but also encourage social interaction. These include the group activities and saunas.

3C.4 Study of interior finishes and furniture

The center design and finishes materials

A. Daylight and Views

- Natural daylight greatly benefits the atmosphere and appearance of a gym space. Provided views in and out of the gym, particularly to the reception and spa.
- Giving balancing day lighting and views against the potential for solar glare or heat gain. Besides, locating glazing on facades less likely to receive excessive direct sun.

B. Flooring materials (Parquet, Carpet, Ceramic tiles)

- The floor structure able to resist high dead loads imposed by the equipment, along with the potential for high live loads from users, point load impact (e.g. dropping of free weights) and dynamic effects (harmonic vibration from users on machines) as well.
- Used acoustic isolation material (e.g. parquet & carpets) to avoid the vibration transmitted from the gym into other areas.
- Used slip, stain and static resistant floor finishes for the gym environment. They resist deformation through compression. The floor finish is contrast in color to the equipment to ensure that equipment is less likely to be a trip hazard. In addition, different colored walls will greatly enhance legibility within the fitness gym for users.
- Used floor finishes in the free weights area is resilient and able to absorb shocks safely to avoid the risk of dropped weights causing substantial damage to structure or finishes. So, wood and carpet flooring able to recover from impacts without permanent deformation.
- The floor finishes have sufficient friction to prevent the equipment from creeping during use.

C. Flooring materials (Parquet, Carpet, Ceramic tiles)

- Fitness Gym zones are often emphasized by changes in floor finish or color.
- Carpet flooring improve the gym’s acoustic performance, by reducing reverberation (echo) and impact sound transfer.
- Used ceramic tiles on the sauna floor is comfortable and safe cause of the low temperature inside it.

D. Wall finishes materials (Glass partitions, leather, wood panels, marble, stone, painting)

- Wall finishes are ease of cleaning and maintenance.
- Used soft wall treatments without sharp edges because users may use walls during stretching exercises.
- The wall is safely support weight storage racks & mirrors.
- Used wood panels to provide effective sound attenuation to minimize the risk of sound transmission to surrounding areas adjacent to the gym.



Figure 3.62 Cardio Zone



Figure 3.63 Strength Zone



Figure 3.64 Weight Zone



Figure 3.65 The Centre equipment

- **Mirrors** serve to create the illusion of space and reflect natural light back into the space.
 - Large continuous mirrors fixed onto a rigid plywood backing board to avoid distortion.
 - Used **stone wall** treatment as a symbol of strength, warmth and luxury.
 - **Marble** wall treatment is durability and creating a luxurious, elegant look for the massage room. Marble also features a smooth, glossy finish that reflects the light for a brightening effect.
 - Trying to make a good first impression with the place by hung paintings in tastefully way.
 - **Leather** is durable and long-lasting, requires little maintenance, flexible, come in many different forms, shapes, and colors, which makes them easy to incorporate into the design concept.
 - Leather is a holistic aesthetic experience because it combines traditional aesthetic and ancient techniques with contemporary innovations to meet the needs of today's interiors. Also, it is natural material that can bring a timeless beauty to any space.
- E. Ceiling**
- The ceiling support hanging fixtures e.g. music speakers, linear slim ventilation grilles, wall ventilation grilles, spot lights, fire detections and sprinkles.
 - Provide aesthetic ceiling design sympathetic to the space and use through using hidden lights.

CRUNCH is a Lifestyle Fitness Facility offering state of the art Fitness Center, Slimming and Spa services with an objective of making the community health conscious and Fit for life. The objective was to create a high-end gym with all the latest facilities.

COLOR SCHEME: Neutral colors

FEELING: Calm, cozy & comfortable

DESIGN PRINCIPLES: Harmony, repetition & variety

The most prominent feature of design is its Ambience. The theme chosen for the gym was cozy & monochromatic with beiges and browns. All the materials like flooring, wall papers, fabrics etc. were chosen around this theme, in addition to having their own practical utility.



Figure 3.70 Waiting Area



Figure 3.68 Gym coffered ceiling



Figure 3.71 Lobby ceiling fixtures



Figure 3.66 Spa Zone



Figure 3.67 Reception



Figure 3.69 Strength Zone

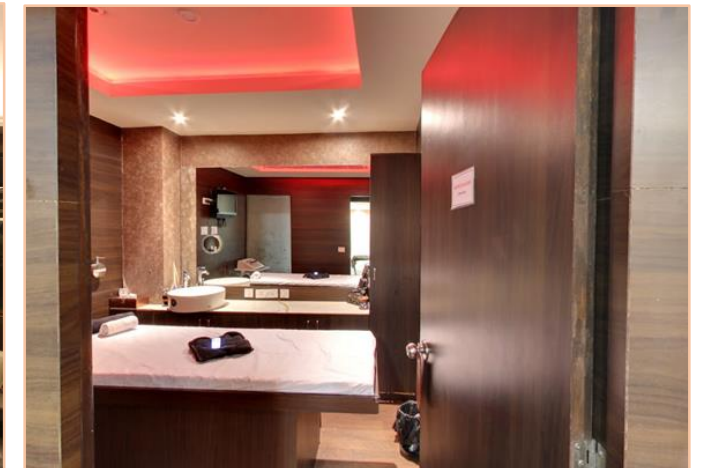


Figure 3.72 Massage Room

- As the site offered a twenty-two feet high ceiling, a mezzanine floor was created where separate spa facilities for ladies and gents have been accommodated.
- The cardio zone was created on the front periphery of the Mall and the whole opaque façade of the center was replaced by transparent curtain wall to create more visibility from the outside.
- All the treatment rooms in slimming area are soundproof with individual music and weather control. Two rooms have attached shower & steam rooms. All rooms have multiple lighting options for supporting multiple activities. The Gym is centrally air conditioned. It has CCTV & Bio Metric access & security systems at critical areas.
- Spinning class generate substantial noise and activity disruptive to other users. Spinning should therefore be held in a separate studio.



Figure 3.73 Cardio Zone

3C.5 Study of building services

A. Air temperature

- A rise in temperature may be acceptable in summer, however, comfort cooling will be essential in most cases as heat gain is likely to be significant and strict temperature control is needed. The controls are capable of wide variation and have the capacity to react swiftly.

B. Ventilation

- The system able to cope with heat loads, body odors and humidity.

C. Artificial lighting

- Gym area has 200-300 lux which a good uniformity ratio. Used lighting to create mood. However, Indirect lighting schemes create a softer and warmer atmosphere.

D. Natural lighting

- Used blinds glass windows to filter light and provide privacy.

E. Noise levels

- Noise rating of NR40 approximately and controlled noise transmission between the spaces by careful selection of forms of construction, materials and surface finishes.



Figure 3.78 Weight Zone

➤ Positive pointes:

- Simple practical and comfortable design environment with all the latest equipment.
- Suitable lighting distribution system.

➤ Negative pointes:

- Simple interior design and lack off any distinctive elements
- There is no left or care for people with special needs
- Use carpets in the gym area of which can be subjected to oil and grease leaking from exercise equipment or perspiration shed by gym users.

This case study will support Chance for Change project from several aspects:

- Learn more about the fitness center space planning and the distribution of gym equipment along the space.
- Learn more about the appropriate finishes materials to get a healthy environment.
- Add more health services to the project plan such as physiotherapy.



Figure 3.74 Spinning Room

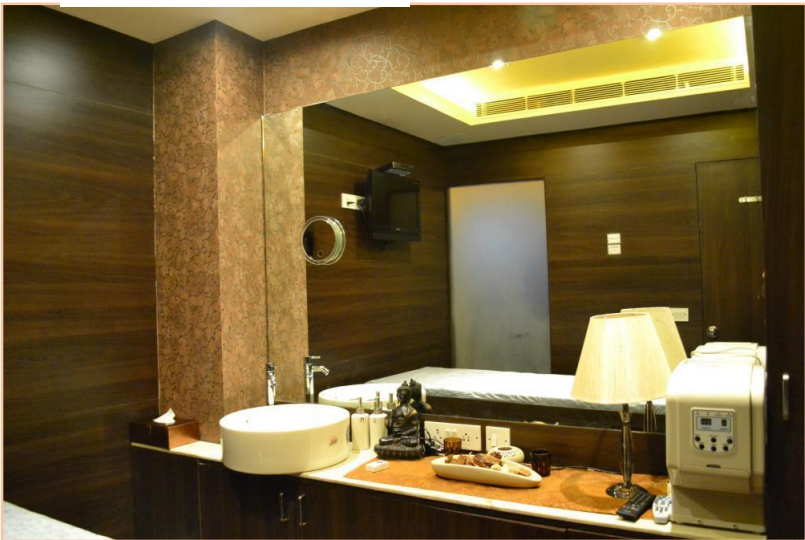


Figure 3.75 Treatment Zone



Figure 7.77 Lobby



Figure 7.76 Weight Zone

3C.6 Conclusion

- Equipment and Services: provide a wide mixture of fitness equipment to appeal to a wide customer base.
- Atmosphere: keep facilities pristine and play music lightly in the background to create a more social, relaxed atmosphere.
- High security system.
- Used safe and suitable finish materials in the building.
- Natural lighting is provided through the windows in the gym area.

3D. Comparative Analysis of Case Studies

Issue / elements in interior	Case study 1 Sphinx Health Club	Case study 2 Proyecto Hombre association	Case study 3 Crunch Fitness Centre
Total area (m ²)	2500 m ²	2996.0 m ²	929.0304 m ²
Major components	Reception & waiting area, Gym Group Classes Nutrition / Dietitian SPA	Reception & waiting area, management, administration, outpatient therapy, workshop area, therapy rooms, toilet, and residential area.	Reception & waiting Area- Head office- Counselling office- Treatment rooms- Spa- Gym
Per person area	50 m ²	34.0 m ²	30 m ²
Flooring	Parquet for gym areas Ceramic for spa area and lobby	Ceramic for the toilet vinyl sports flooring for the gym wood for the stage Porcelain for rest of the building	Parquet for gym and lobby Carpet for gym and waiting area Ceramic for sauna
Walls	Purple paint for gym areas Glass partitions for spinning area Ceramic for spa area	Ceramic for the toilet White paint for rest of the building	Glass partitions for spinning area Leather for reception area Wood panels and stone for gym White paint for lobby wallpaper for waiting area
Ceiling	Acoustical ceiling tiles	Simple ceiling Suspending ceiling polished with white paint	Suspending ceiling polished with white paint Hidden light
Furniture	Gym equipment and spa bath, clean lines	Simple, minimal, clean lines with light wood laminare	Traditional and classic
Space division	Components in one floor public & semi public end with private zones	Separated spaces according to privacy levels within the three floors: Ground: public & semi public First: private Basement: public	Separated spaces on two levels Ground floor include public zones while the upper floor includes the separated spas (male/female)
Major components	Reception & waiting area, Gym Group Classes Nutrition / Dietitian SPA	Reception & waiting area, management, administration, outpatient therapy, workshop area, therapy rooms, toilet, and residential area.	Reception & waiting Area- Head office- Counselling office- Treatment rooms- Spa- Gym

Table 3.2 Comparative analysis of case studies

“PROVE THEM WRONG”

-Anonymous



Design Programming

4.1 Functional Study

4.2 User study

4.3 Analysis of Users Activities

4.4 Organizational Chart Study

4.5 Functional relationship study

4.6 criteria study

4.7 human factor study

4.7 area calculation study

4.1 Functional Study

Common Components		
Major components	Minor components	Services
Administration Accommodation Clinics and therapeutic	Reception and waiting area Café Library Pool	Security Laundry Storage Bathroom Restroom
Hope Centre		Mechanical & electrical room Main kitchen
Auditorium Exhibition Educational activity: workshop (carpentry, blacksmith, sculptor, etc.).	Social activity: visiting area Entertainment: outdoor multipurpose playground, cinema and gym. Service kitchen	
Chance for Change Center		
gym and service kitchen	auditorium Aerobics studio Karate studio	

Table 4.1 List of Component

4A Major Components

4A.1 Common Major Components:

Administration: is a group of activities responsible for organizing and supervising of the Centre consisting of public manager and administrative with their secretary's, plus officers such as registrar, accountant, logistic, records officer, logistic officer, receptionist and security in addition of the laundry worker and cleaners. However, administration spaces should be planned to be as flexible as possible, open spaces can improve communication and facilitate multidisciplinary team working.



Figure 4.1 Private office example



Figure 4.2 Open office example

Accommodation: is a place that provides the comfort of the users and meets their basic needs. It includes living room; where the users meet for entertainment, service kitchen; where users can prepare their own meals, laundry; where users can do their clothes wash, bedrooms with its bathroom; which provide for users a space for rest, sleep, hygiene, reading and writing activities, and carries their personal belongings. Each room will have the main elements to make it practical and suitable, such as a bed, wardrobe, desk, chair and a large window allowing daylight with an exterior view and takes into consideration the privacy of the residents.



Figure 4.3 living room example



Figure 4.4 laundry room example



Figure 4.5 Bedroom example



Figure 4.6 Bathroom example

Clinics and therapeutic: is a group of clinics responsible for examining, diagnosing and discussing patients to solve their tangible and intangible problems. These clinics include diagnosis, medical, nursing, pharmacy services, psychiatry, etc.

- **Hope Centre:** Clinics for addiction treatment and dental.
- **Chance for Change Centre:** Nutrition clinics and x-ray room.

Clinical and therapeutic spaces will include sub-waiting space, consultation rooms, consultation rooms for procedures of a clinical nature, as well as for preadmission assessment clerking and examination of users on admission. In addition, users' changing facilities.



Figure 4.7 Clinic office example



Figure 4.8 Dental room example



Figure 4.9 X-Ray room example

4A.2 Hope Centre:

Auditorium: is a room for instruction with the pitched floor which allows the users to see the lecturers clearly and pay attention to them, unlike a traditional classroom. It is a room where the users get brief intensive educational programs and lectures that help them to rehab in various aspects, such as lectures on the dangers of addiction and drugs, self-esteem, self-development, etc. In addition, the auditorium can be used for official celebrations and public gatherings such as having stage shows.

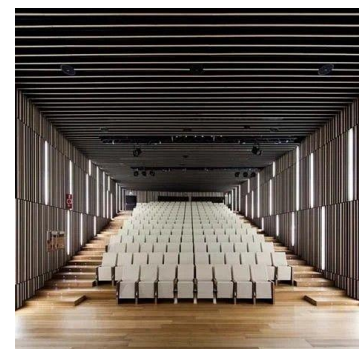


Figure 4.10 Auditorium example

Exhibition: is a place where the users' production (from the workshop) can be displayed to the visitors and they can notify the cashier if they want to buy something from it. In addition, the exhibition is a multi-purpose area which can be used for celebrating users' achievement and their personal activities.



Figure 4.11 Exhibition area example

Educational activity (workshop): it is a group of small establishments that emphasizes acquiring skills, application of techniques and exchange of ideas; where manufacturing or handicrafts are carried on. Workshops include different type of craft, such as carpentry, blacksmith, sculptor, etc.

the workshop will be designed to be flexible in order to make sure that can be used for a variety of purposes. Using robust floors with dirt-repelling surfaces in the workshop is very important, plus of having large tables with robust surfaces and the possibility of displaying works and sketches on walls. In addition, having different types of storage areas is important in order to achieve flexibility.



Figure 4.12 Carpentry Workshop example



Figure 4.13 Blacksmith Workshop example



Figure 4.14 Sculptor Workshop example

4A.3 Chance for Change Centre:

Gym: includes the health and safe criteria with many different equipment for practicing physical fitness for youth to enjoy the vitality and activity during the exercise.

Service kitchen: where users can watch live cooking for their daily healthy meals.

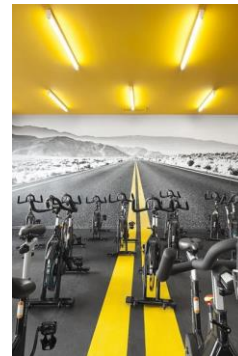


Figure 4.15 Gym example



Figure 4.16 Gym example



Figure 4.17 live cooking example



Figure 4.18 live cooking example

4B Minor components

4B.1 Common minor components:

Reception and waiting area: it is the interface of the Centre and the place where visitors are greeted either for registering or to visit someone who are residents in the Centre. The entrance may include a lobby with the waiting area for the use of visitors waiting. In addition, reception desk should be clear to visitors.

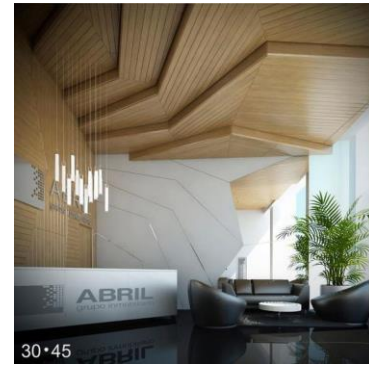


Figure 4.19 reception and waiting area example

café: a small cafe which has tables and chairs where users can meet to eat, drink and talk to each other; it serves refreshments and snacks.



Figure 4.20 Café example



Figure 4.21 Café example



Figure 4.22 Café example

Library: is a place where users can spend their time in something useful by gain knowledge from books and the internet.



Figure 4.23 library example



Figure 4.24 library example



Figure 4.25 library example

Pool: where users can enjoy a swim; it includes dressing and shower rooms in addition to the lockers and hair drying area.



Figure 4.26 Pool example



Figure 4.27 pool example

4B.2 Hope Centre:

Social activity (visiting area): is a place where the former prisoners can meet their parents, friends, and relatives.



Figure 4.28
Visiting area



Figure 4.29 Visiting area example

Entertainment: -

- A. **outdoor multipurpose playground:** it is an outdoor area that allowed users to play different sports such as football, basketball, running, etc. In addition, it can be used for celebrations or any other gatherings.



Figure 4.30 Multipurpose
playground example



Figure 4.31 Multipurpose
playground example

- B. **Cinema:** where users can enjoy watching films or can be used to present documentary films that help them in rehabilitation.



Figure 4.32 Cinema example

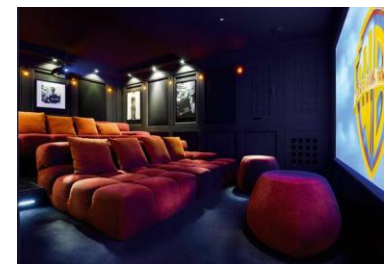


Figure 4.33 Cinema example

- C. **Gym:** is a place where users can do some exercise to keep fit and take care of their bodies. The gym will need lockers, dressing rooms, and showers.



Figure 4.35 Service
kitchen example



Figure 4.34 Gym example

Service kitchens: a small service kitchen that serving the accommodation zone which used for cooking and for household jobs such as washing dishes, residents can prepare their own meals and serves food by themselves.

4B.3 Chance for Change Center:

Auditorium: is a room where the lecturers from out of the centre can be invited to give different lectures for obese people such as awareness lectures on the risks of obesity or they can invite someone who was obese, to give them tips to get rid of obesity.

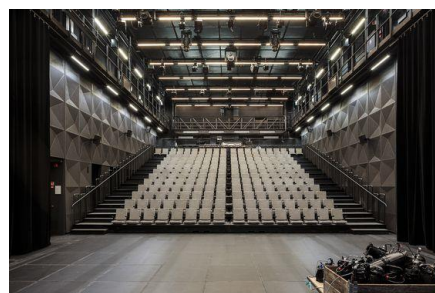


Figure 4.36 Auditorium room

Aerobics studio: additional space for the extended movement include mixing of exercises and dance.

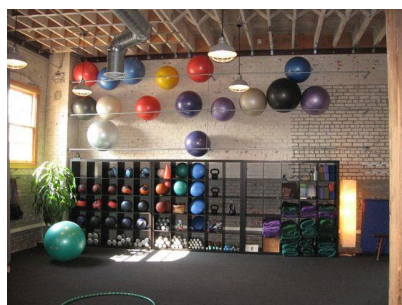


Figure 4.37 Aerobics Studio example

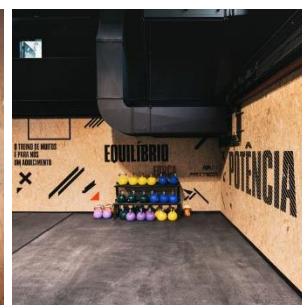


Figure 4.38 Aerobics Studio example

Karate studio: area for the open-hand techniques exercises.



Figure 4.39 karate studio example

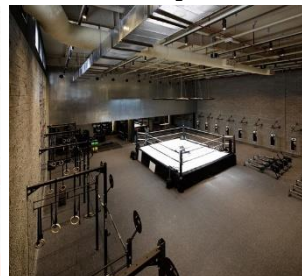


Figure 4.40 karate studio example

4C. Services

- Security room.
- Laundry.
- Storage.
- Mechanical & electrical room.
- Bathroom.
- W.C.
- Main kitchen.



Figure 4.41 security room example



Figure 4.42 laundry example



Figure 4.43 storage example



Figure 4.44 main kitchen example

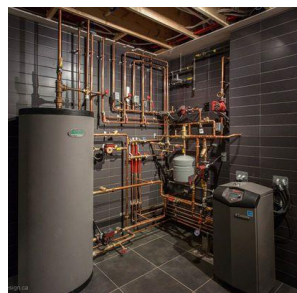


Figure 4.45 Mechanical & Electrical Room

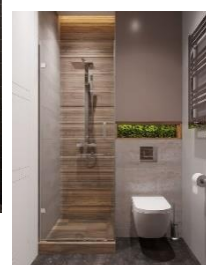


Figure 4.46 Bathroom example

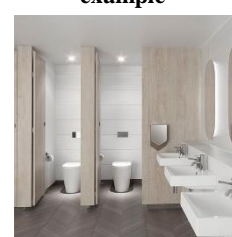


Figure 4.47 W.C example

4.2 User study

4.2.1 Common users for both Centres:

- **User I: Staff**

The staff in both centers includes (administrator, Employees of the accommodation, reception, secretary, security, chefs, police man/woman, psychologists, doctors, Nurses, coaches, workers, lecturers, teachers and cleaners. However, each employee occupies a specific place.

4.2.2 Hope Centre Users:

- **User I: Doctors and specialists**

Includes doctors to diagnose the state of health of users, psychological and behavioral specialists to treat depression, violence and addiction.

- **User II: EX-Convict (Former prisoner)**

EX-Convict (Former prisoner) is a person who was found guilty of a crime and sentenced by a court and served his sentence in prison. However, ex-convict usually has lifelong implications, such as social stigma and reduced opportunities for employment.

- **User III: Visitors**

Visitors to see what released people are producing, support them and buy from them in the exhibition of the center. Besides, parents can meet ex-convict in the visitation rooms.

4.2.3 Chance for Change Centre Users:

- **User I: Doctors and specialist**

Includes doctors to diagnose the health status of users, nutrition specialists to give diet programs as well as advice to guide them and psychological specialists.

- **User II: Obese people**

Overweight people with a BMI equal to or more than 25 is considered overweight. However, BMI is a crude population measure of obesity is the body mass index. Moreover, overweight and obesity are major risk factors for several chronic diseases, including diabetes and cardiovascular diseases.

- **User III: Visitors**

Lecturers to give lectures and lessons on obesity and health to increase center resident's awareness.

4.3 Analysis of user activities

Spaces		Users		Age	Gender	Social & cultural background	Activity
No.	Description	No.	Description				
Common users							
1	Administration	1	Manager	Over 40	Male	Practical experience	-Manage the center and the staff - Meet important visitors
		1	Administrative		Male	Practical experience	- Support to a company, include general office management, answering phones and assisting an employer
		2	Secretary	25-40	Female	Practical experience	- Perform Secretary work
		1	Registrar		Undefined		-Responsible for center membership
		2	Accountant			Practical experience	-Responsible for financial accounts
		3	Supervisor			Held responsible for the work with experience	-Has the power and authority to supervising the needs of residents -Give instructions to subordinates
		2	Records Officer			Practical experience	- To save user and employee records
		1	Logistic officer		- Serve and oversee the entire supply chain, from ordering and warehousing to delivering materials.		
2	Accommodation	50	Residents	Over 18	Male	Needs to be rehabilitated	- Use of different center activities and residence for a certain period
3	Medical and psychological clinic	5	General practitioner, psychological, addiction and dentist doctors	30-40	Undefined	Practical experience	-To diagnose the health and psychological condition of patients -Treatment of addicts -Specializes in dentistry, the diagnosis, prevention, and treatment of diseases of the oral.
4	Nurses room	5	Nurses	25-40	Female	Practical experience	-Doctor assistant
5	Worker room	5	Assistant worker		Undefined	Non-High Qualifications and Assistants	- A hospital services worker
6	Laboratory	1	Chemical laboratory technician			Practical experience	-Extracting the results of medical analysis
7	Pharmacy	1	Pharmacist	25-40	Undefined	Practical experience	- prepare and give out medicines in the center
8	Reception	1	Receptionist			Communication & technical skills	-Handle the users, visitors and staff inquiries

9	Security	1	Security officer		Male	Practical experience and communication skills	- Control and protection center 24 hours
10	Gym	2	Coaches		Undefined	Practical experience	-Motivate clients by providing feedback and accountability to clients. -Educate clients in many other aspects of wellness besides exercise, including general health and nutrition guidelines.
11	Café	2	Worker	25-40	Undefined	Non-High Qualifications and Practical experience	- serve people with snacks and drinks
12	Auditorium	1	Lecturer	Undefined		An academic expert who is hired to teach on a full- or part-time basis	-Give important and interesting lectures to help the center residents continue their journey
13	Laundry	2	Worker			Non-High Qualifications & Practical experience	-work in the laundry
14	Cleaners room	6	Worker				- Cleaning
15	Main kitchen	6	Chef			Practical experience	-Prepares healthy meals and suitable for the center users
		4	Waiter			Practical experience	- Deliver and serve the meals for users
For Hope Center							
1	Workshop	50	Residents	Over 18	Male	Needs to be rehabilitated	- Acquiring skills, application of techniques and exchange of ideas
		2	Teacher	25-40	Undefined	Practical experience	
2	Exhibition	2	Security	25-40		Practical experience and communication skills	- protection exhibited articles from theft and damage
		Undefined	Residents	Over 18	Male	Needs to be rehabilitated	- Display users production's for the visitors in order to support them
			Visitors	Undefined	Undefined	Undefined	
			Parents	Undefined	Undefined	Undefined	- Strengthen the relationship with parents and relatives
3	Visitation room		Residents	Over 18	Male	Needs to be rehabilitated	
4	Serve Kitchen	10	Residents	Over 18	Male	Needs to be rehabilitated	- serving the accommodation zone - residents can prepare their own meals
For Chance for Change Center							
1	X-ray room	1	Radiologic technologist	25-40	Undefined		-Specialize in the imaging of human anatomy for the diagnosis and treatment

2	Serve Kitchen	2	Chef			Practical experience and Tourism Bachelor	-Prepares healthy meals and suitable for the center users -Teaching residents how to prepare healthy meals or snacks to be suitable for their health status
3	Aerobics studio	2	Coaches				-To do mixing of exercises and aerobics dance.
		Undefined	Residents	Over 18	Male	Needs to be rehabilitated	
4	Karate studio	2	Coaches	25-40	Undefined		- Learn the martial art and open-hand techniques.
		Undefined	Residents	Over 18	Male	Practical experience	

Table 4.2 Analysis of user activities

• 4.3.1 User Flow Chart

A. Common users for both centers:

For the staff:

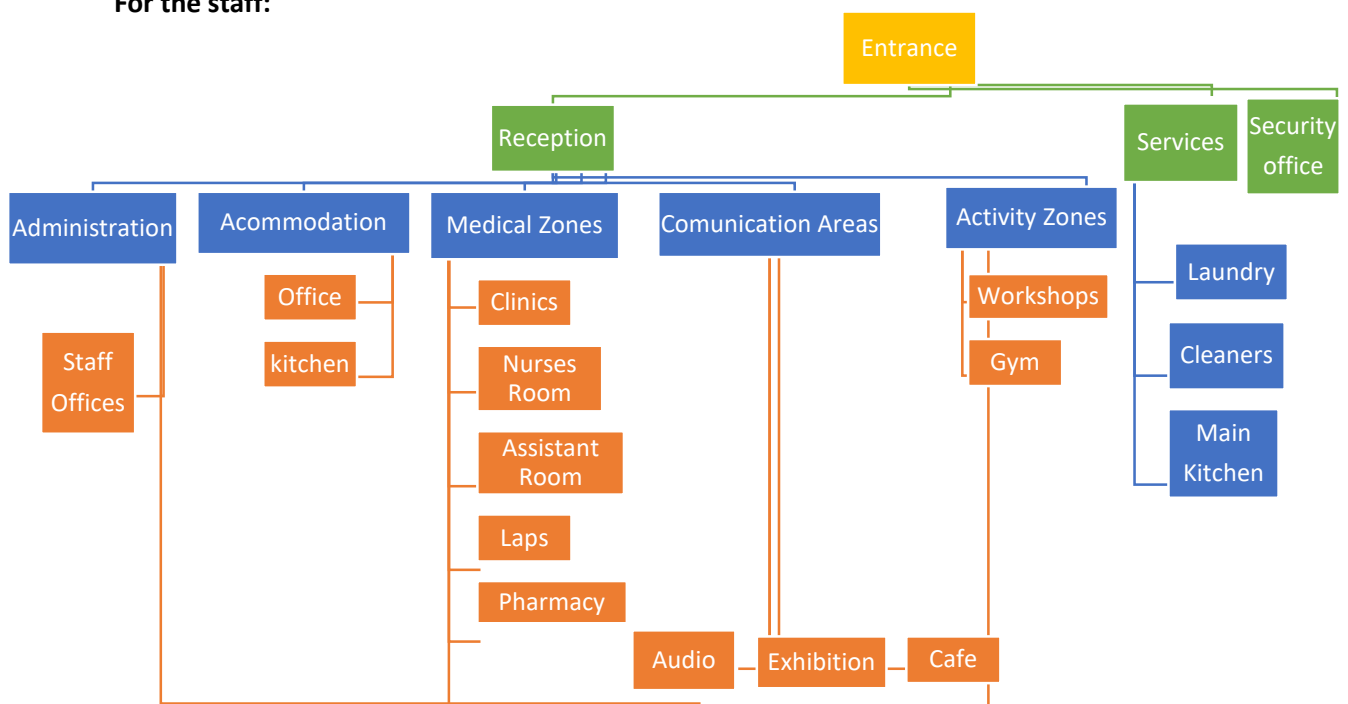


Chart 4.1 Common staff flow chart

**B. Hope Centre:
For the EX-Convict:**

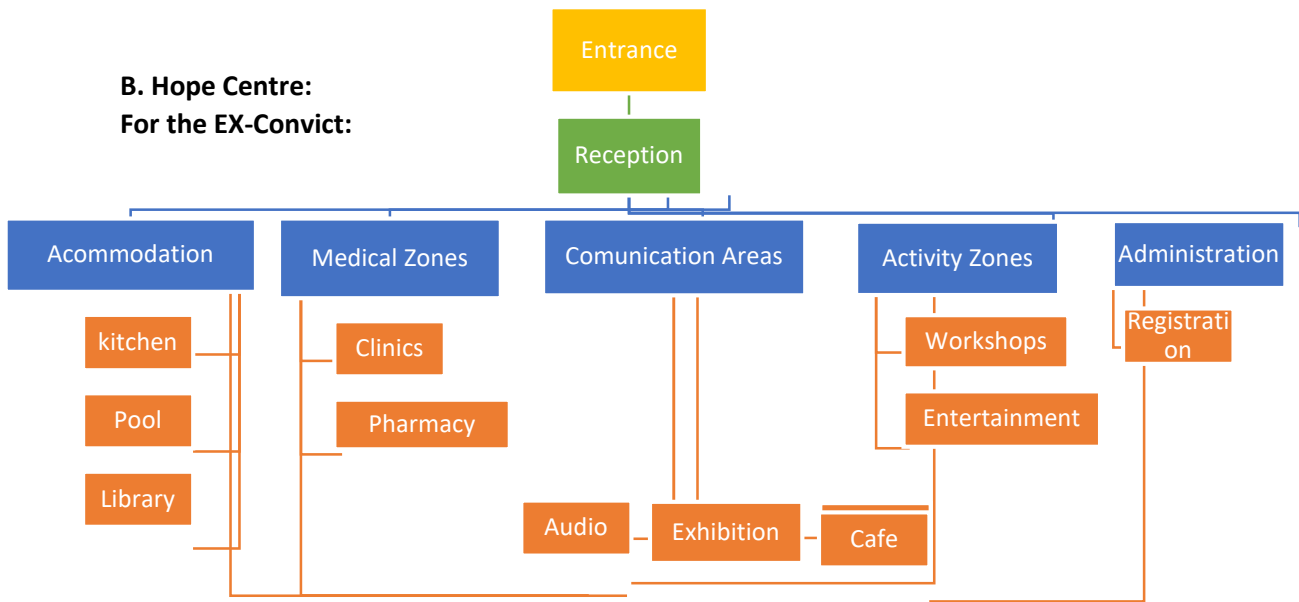


Chart 4.2 EX-Convict flow chart for Hope Centre

For the visitors:

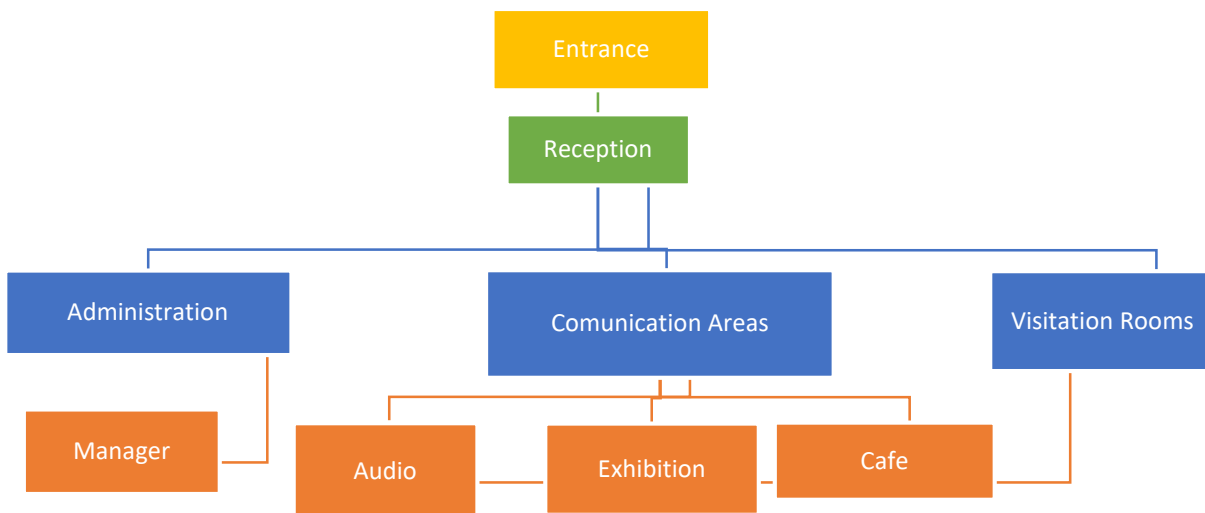


Chart 4.3 Visitors flow chart for Hope Centre

C. Chance for Change Centre:

For the obese people:

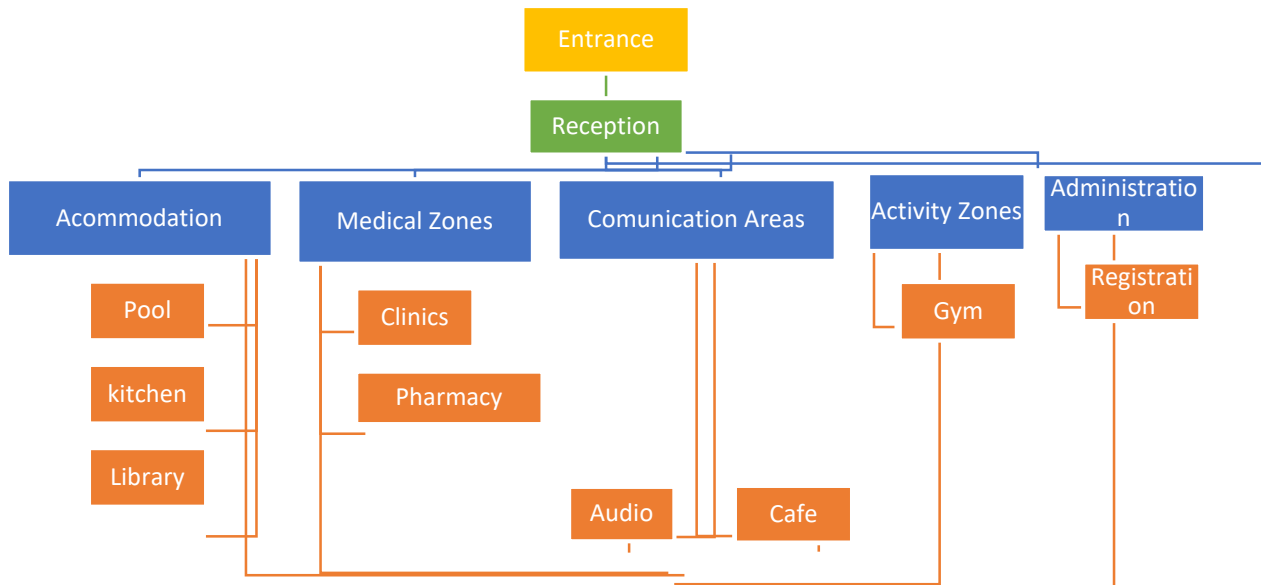


Chart 4.4 Obese people flow chart for the Chance for Change Centre

4.4 Organizational Chart Study

A. Hope Centre

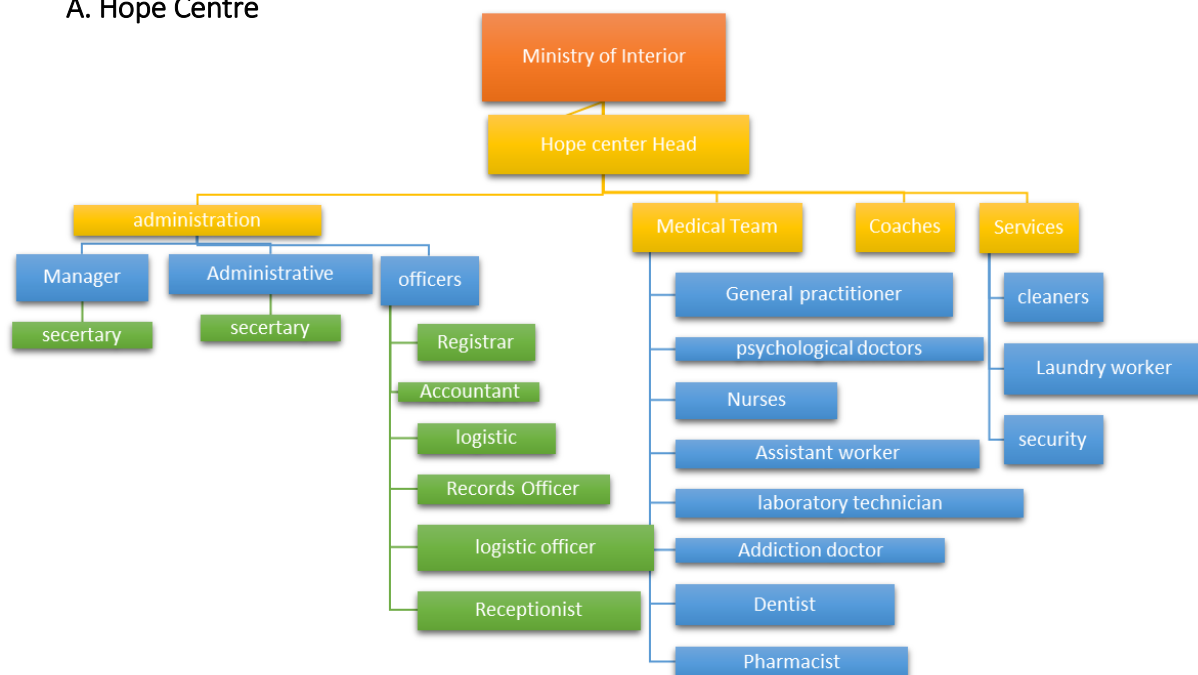


Chart 4.5 Organizational Chart for Hope Centre

B. Chance for Change Centre

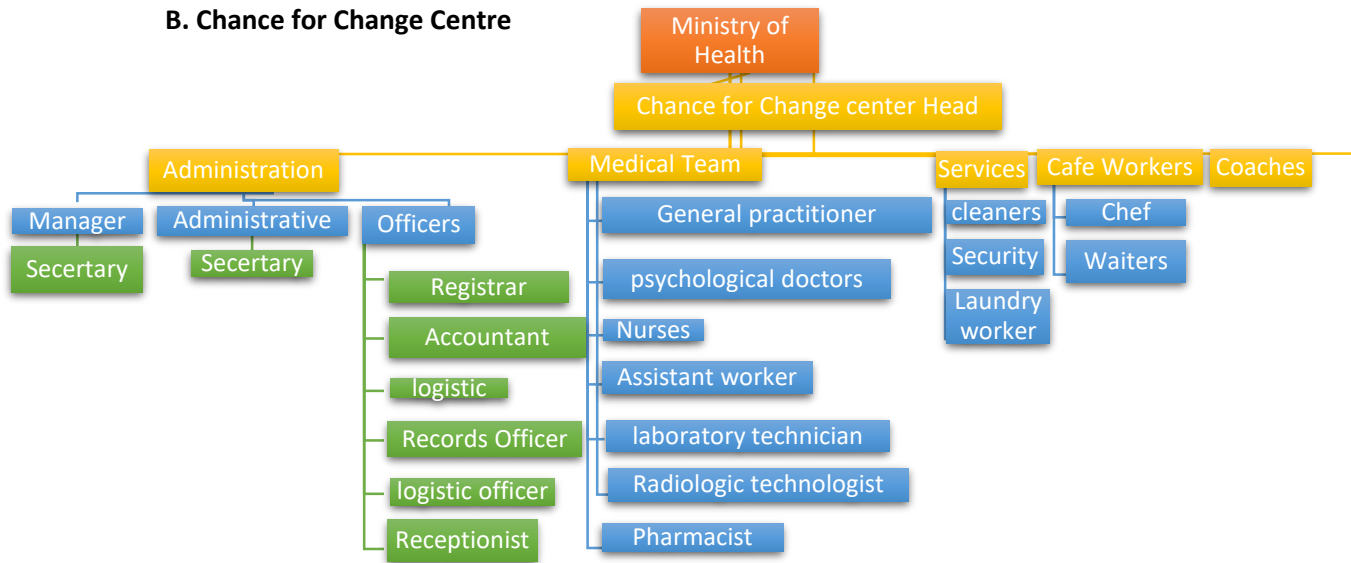


Chart 4.6 Organizational Chart of Chance for Change Centre

4.5 Functional relationship study

4.5.1 Functional relationship among the components

- Hope Centre:

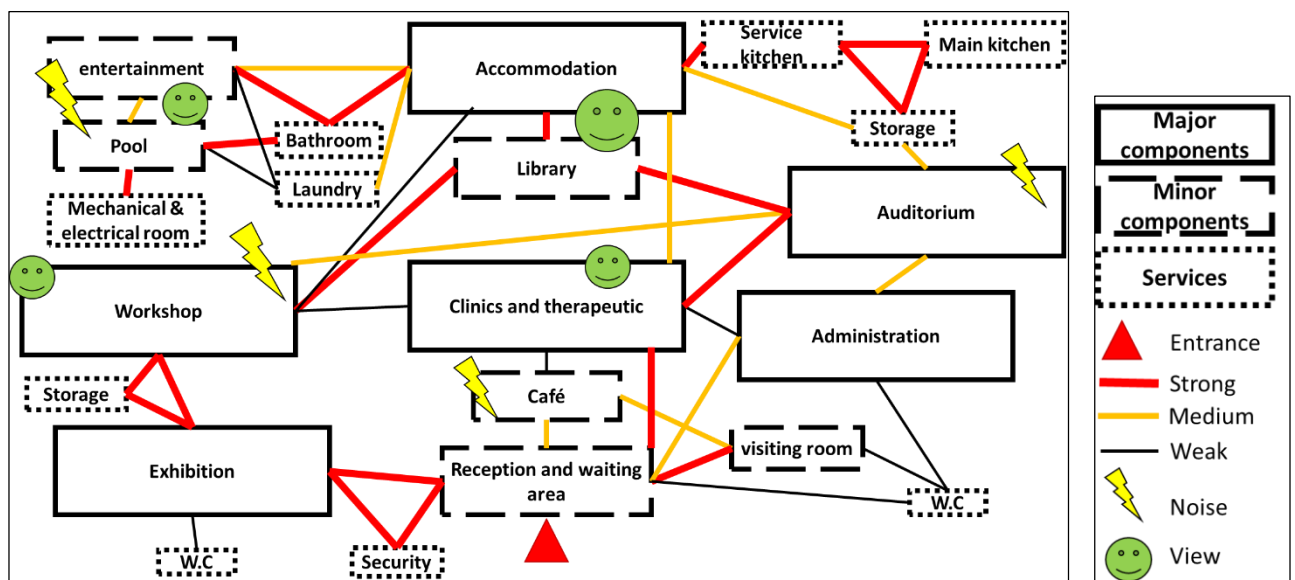


Figure 4.48 Hope Centre functional relationship

• **Chance for Change Centre:**

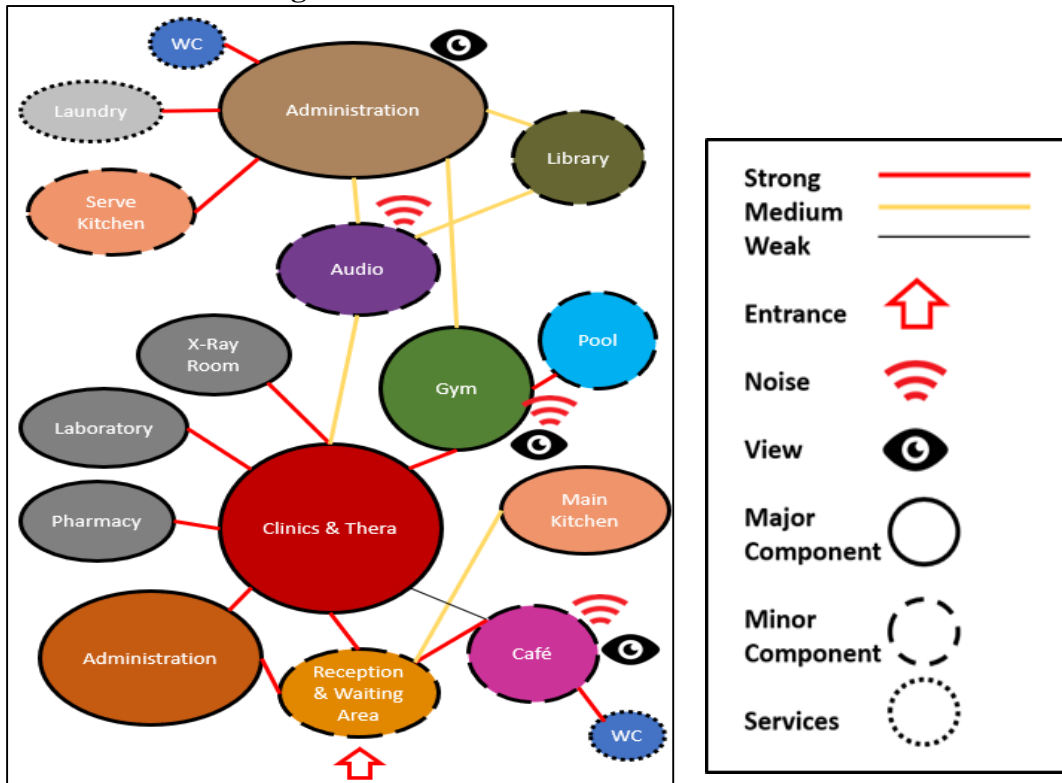


Figure 4.49 Chance for Change Center functional relationship

4.6 criteria study

4.6.1 Criteria matrix

Y: Yes N: No M: Maybe

	Criteria matrix	SQ meter needs	Adjacencies	Public access	Daylight and/or view	Privacy	Plumbing	Special equipment	Special consideration
Common									
1	Reception and waiting area	25	2/3/5/10/13/18/20	Y	N	N	N	N	-
2	Administration	97.5	1/3/4/5/7/11/13	M	Y	M	N	N	-
3	Clinics and therapeutic	266.4	1/2/4/5/11/13	M	Y	Y	Y	Y	-Includes the health and safety criteria
4	Accommodation	750	2/3/6/7/8/9/10/11/15/18/19/20/21/22	N	Y	Y	Y	N	-
5	Auditorium	33	1/2/3/6/7/10/12/13/17	Y	N	N	N	N	-
6	Library	125	4/5/7/17	Y	Y	M	N	N	-
7	Café	150	2/4/5/6/12/14/16/18	Y	M	N	Y	Y	-
8	Pool	160	4/10/11/13/19/21	M	Y	M	Y	Y	-
9	Security	30	1/4/16	N	N	Y	N	N	-
10	Storage	16.5	2/3/4/5/8/14/16/17/19/20/21/22	N	N	Y	N	N	-
11	Bathroom	175	4/8/15/19/21	N	N	Y	Y	N	-Inside the accommodation rooms

12	W.C	18	1/2/3/5/7/8/16/18/19/21	N	N	Y	Y	N	-
13	Mechanical & electrical room	12	5/8	N	N	Y	N	Y	-
14	Main kitchen	15	7/10/20/22	N	N	Y	Y	Y	-Serve the staff
15	Laundry	7.5	4/11/19/21	N	M	Y	Y	Y	-Serve the accommodation area
For the hope center:									
16	Exhibition	600	1/7/9/10/12/17	Y	N	N	N	N	-Includes safety and security standards
17	Workshops	247.5	5/6/10/16	Y	Y	N	M	Y	- Educational activity such as carpentry, blacksmith & sculptor -Includes first aid
18	Visiting area	50	1/4/7/12	Y	M	Y	N	N	-
19	Entertainment	342.5	4/8/15	Y	Y	N	Y	N	-
20	Service kitchen	15	4/10/14	N	N	Y	Y	Y	- serving the accommodation zone -Residents can prepare their own meals
For Chance for Change Center:									
21	Gym	528	4/8/10/11/15	Y	M	M	Y	Y	-Includes the health and safety criteria
22	Service kitchen	75	4/10/14	N	N	Y	Y	Y	- serving the accommodation zone -Residents can prepare their own meals

Table 4.3 Criteria Matrix

4.6.2 Operating Hours

A. Hope Centre:

																			Operating Hours					
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								

Accommodation Full Time
Administration & Main Kitchen Regular
Clinics Regular
Class
Exhibition Frequent
Workshops Frequent
Entertainment Regular

Table 4.4 Operating Hours for the Hope Centre

Chance for Change Centre:

	Operating Hours																							
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								

Accommodation & Gym Full Time

Administration & Main Kitchen Regular

Clinics Regular

Athletic Studios Frequent

Café Regular

Audio Frequent

Table 4.5 Operating Hours of Chance for Change Centre

4.7 human factor study

4.7.1 Anthropometrics (data collection and analysis):

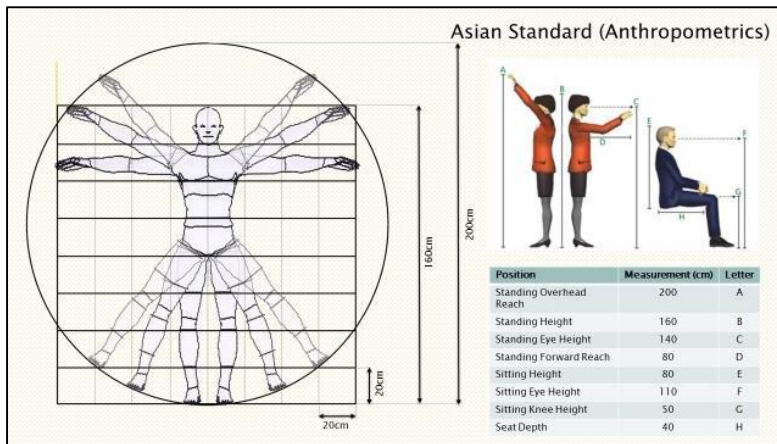


Figure 4.50 Human Body dimensions

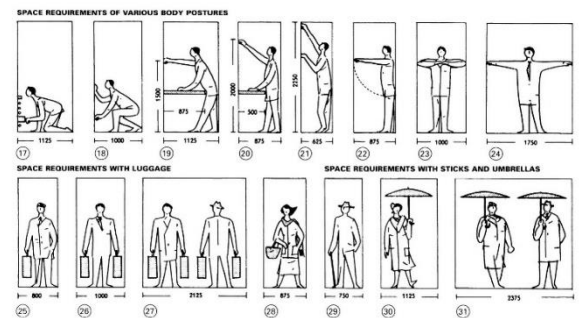


Figure 4.51 Space requirements of various body postures

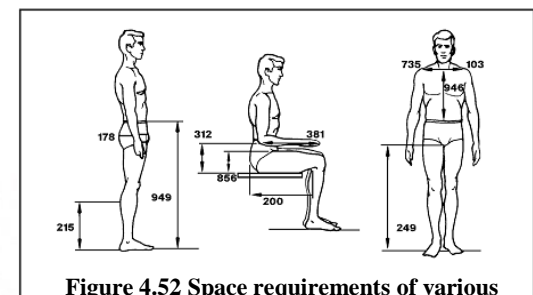


Figure 4.52 Space requirements of various body postures

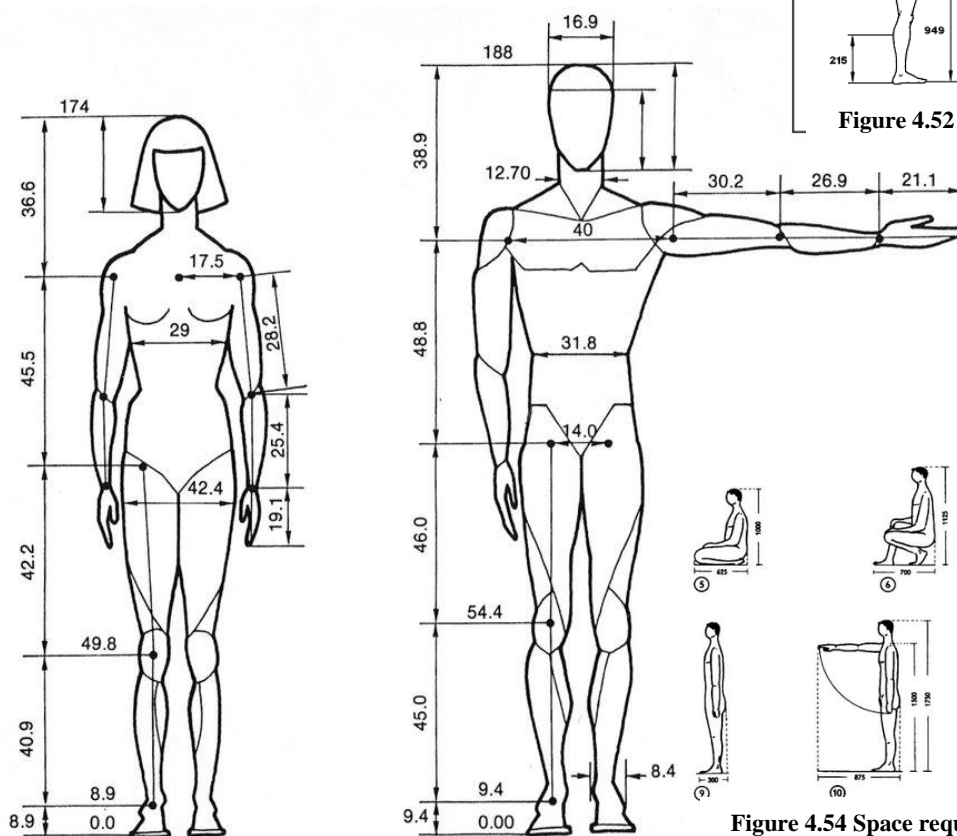
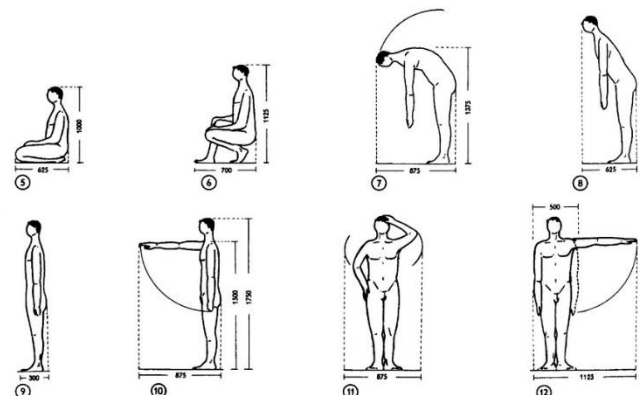


Figure 4.53 Human Body dimensions for women and man

Figure 4.54 Space requirements of various body postures



4.7.2 Ergonomics (data collection and analysis)

- Common standard:

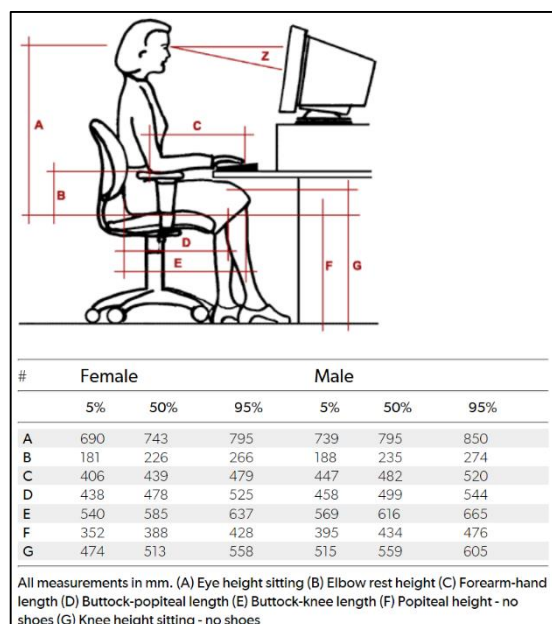


Figure 4.55 Office standard

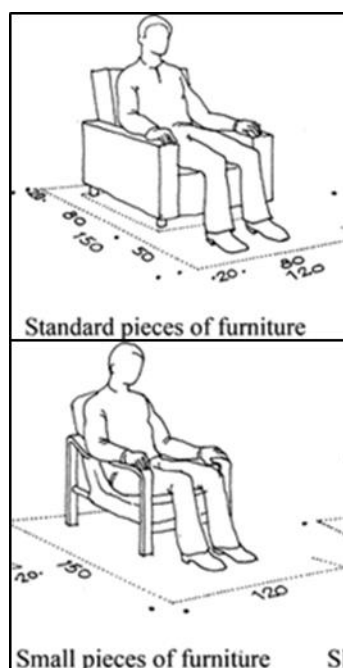


Figure 4.56 Standard pieces of furniture

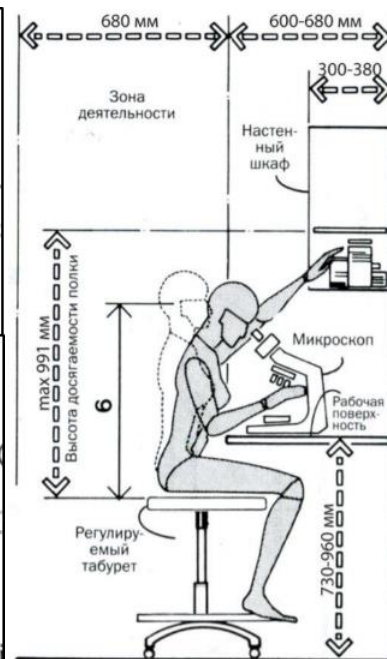


Figure 4.57 laboratory standard

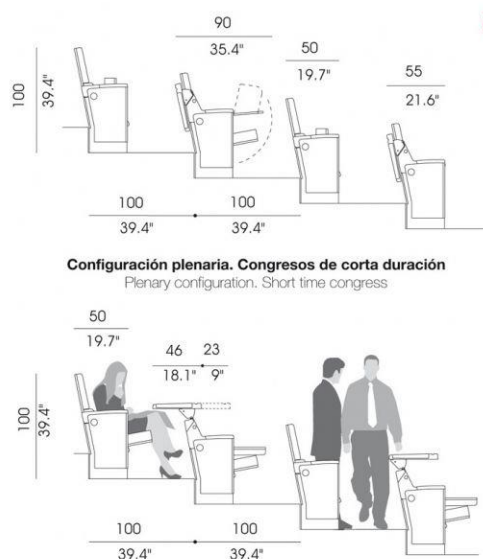
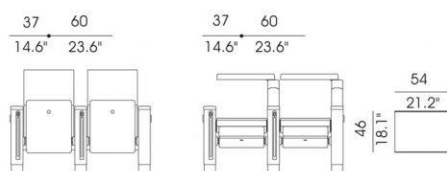
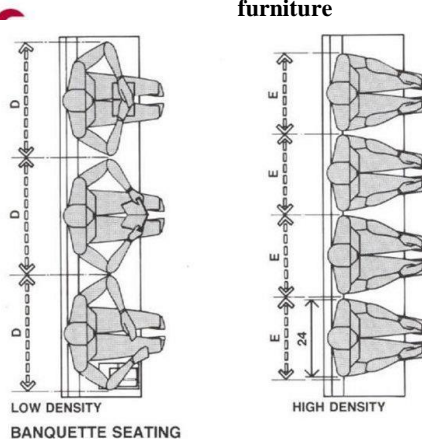
Configuración plenaria. Congresos de corta duración
Plenary configuration. Short time congressConfiguración parlamentaria. Congresos de larga duración
Parliament configuration. Long time congress

Figure 4.60 Auditorium standard

LOW DENSITY
BANQUETTE SEATING

	in	cm
A	18-24	45.7-61.0
B	15.5-16	39.4-40.6
C	16-17	40.6-43.2
D	30	76.2
E	24	61.0

Figure 4.59 Auditorium standard

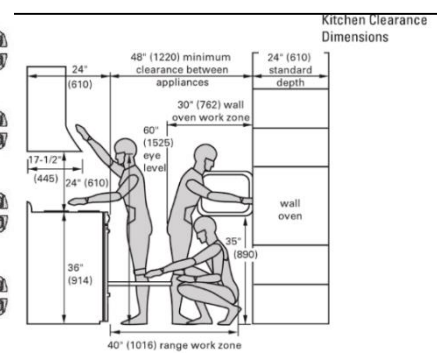


Figure 4.58 kitchen standard

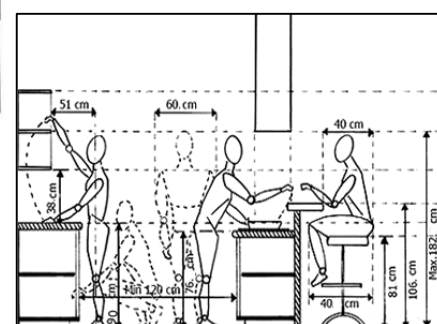


Figure 4.61 Café & kitchen

- Hope Centre Standards:

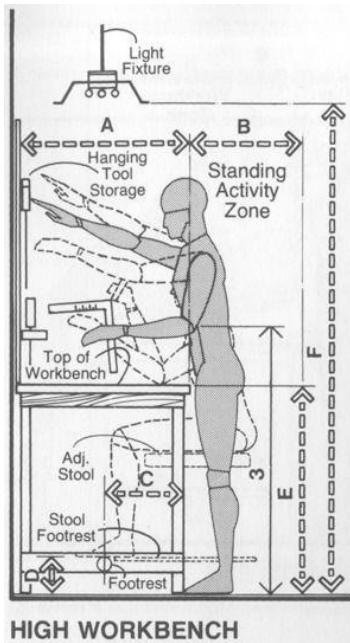


Figure 4.62 Workshop standard

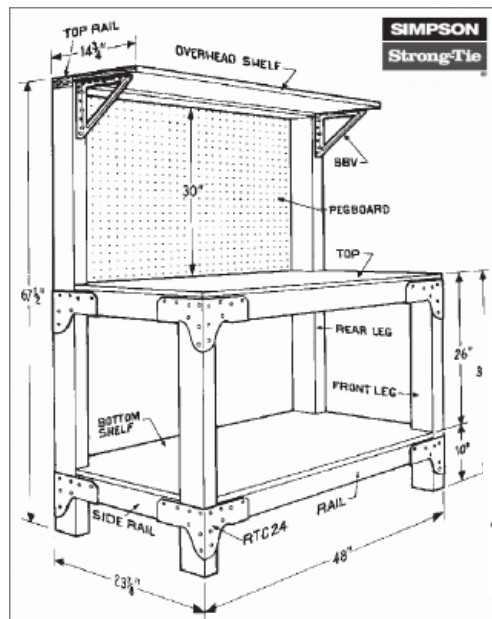


Figure 4.63 Work station for the workshop standard

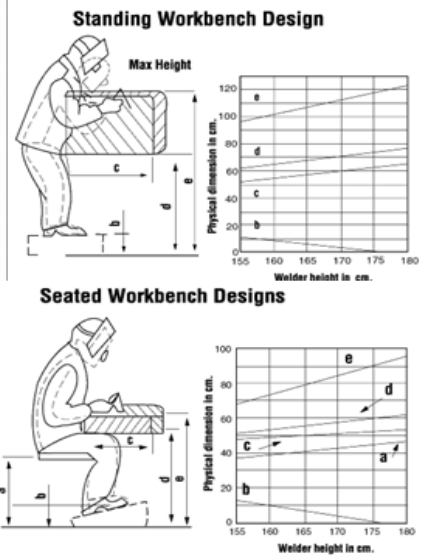


Figure 4.64 workbench for the workshop standard

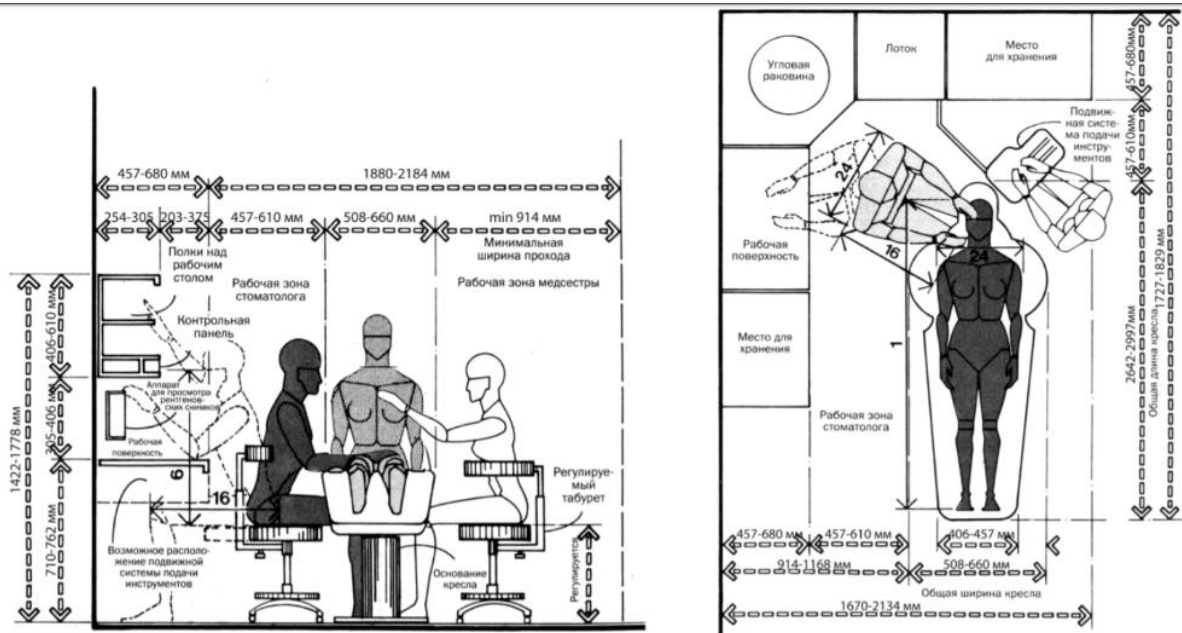


Figure 4.65 Dental Room standard

- **Chance for Change Centre Standard:**

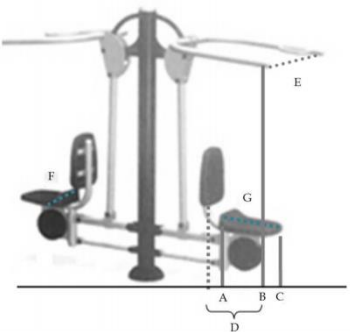
Pull Chairs		<p>A: Seat height (end) (52 cm) B: Handle height (168 cm) C: Seat height (tip) (45 cm) D: Horizontal backrest-handle distance (40 cm) E: Horizontal distance between handles (52 cm) F: Seat width G: Seat length</p>
-------------	---	---

Figure 4.66 Pull chair standard


Table 1: The dimensions of the chest press machine and the pull chairs		
Machine	Figure	Required Dimensions
Chest Press		<p>A: Height of the tip of the backrest (54 cm) B: Seat Height (47 cm) C: Handle height (95 cm) D: Mid handle height (100 cm) E: Horizontal backrest-handle distance (10 cm) F: Horizontal distance between handles (68.5 cm) G: Seat width H: Seat length (35 cm)</p>

Figure 4.67 Chest press standard

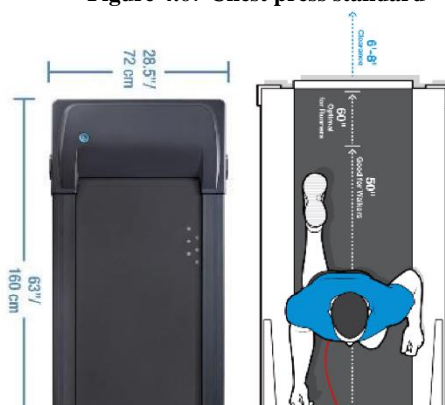


Figure 4.68 Cardio Machine standard

- **Human comfort:**

Youth tend to feel vital sense with attractive spaces. So, the users have the psychological, social and physical resources which related to wellbeing environment. In addition, the atmosphere should be comfort with around 20 to 22 °C temperatures to achieving good indoor climate. Besides, ventilation is necessary in buildings to remove stale air and replace it with fresh air, as well as to prevent overheating. Moreover, provision of natural light, external views give visual comfort for the users. As well as, it is necessary to treat the building with acoustics to avoid noise.

4.8 area calculation study

4.8.1 Functional programming

Spatial component	SRL	Name of component		No. of users	Area per person m2	Single area required m2	No. of spaces required	Total area m2	source of per person area calculation
common									
Major	1	Administration		1	7.5	7.5	13	97.5	Internet
	2	Accommodation	Living room	25	2.5	62.5	2	125	Calculation
			Bedroom	1	9	9	50	450	Internet
			Bathroom	1	3.5	3.5	50	175	Internet
	3	Clinics and therapeutic		2	7.4	14.8	18	266.4	Internet
	Total							1113.9	
Minor	1	Reception and waiting area		5-10	2.5	25	1	25	Calculation
	2	Café		40-50	3	150	1	150	Internet
	3	Library		20-25	5	125	1	125	Internet
	4	Pool		30-40	4	160	1	160	Internet
	Total							460	
Services	1	Security		2-3	5	15	2	30	Calculation
	2	Laundry		3-5	1.5	7.5	1	7.5	Calculation
	3	Storage		2-3	1.1	3.3	5	16.5	Calculation
	5	W.C		3-4	1.5	6	3	18	Calculation
	6	Mechanical & electrical room		1	6	6	2	12	Calculation
	6	Main kitchen		5-10	1.5	15	1	15	Calculation
	Total							99	
Total								1672.9	
Hope center:									
Major	1	Auditorium		50-55	0.6	33	1	33	Internet
	2	Exhibition		80-100	6	600	1	600	Internet
	3	workshops		50-55	4.5	247.5	1	247.5	Internet
	Total							880.5	
Minor	1	visiting area		15-20	2.5	50	1	50	Calculation
	2	Entertainment	playground	20-25	1.5	37.5	1	37.5	Internet
			Cinema		0.6	15	1	15	Internet
			Gym		9.6	290	1	290	Case study
	3	Service kitchen		5-10	1.5	15	1	15	Calculation
Total							407.5		
Total								1288	
Common total								1672.9	
Net area (major+minor+services)								2960.9	
Circulation area- 20% of Net Area								592.18	
Gross area (Net Area + Circulation)								3553.08	

Chance for Change Center:								
Major	1	gym	50-55	9.6	600	1	600	Case study
	2	service kitchen	40-50	1.5	75	1	75	Calculation
	Total						690	
Minor	1	auditorium	50-55	0.6	33	1	33	Internet
	1	Aerobics studio	Over30	20	255	1	255	Case study
	1	Karate studio	Over30	20	160	1	160	Case study
	Total						457	
Total							1147	
Common total							1672.9	
Net area (major+minor+services)							2819.9	
Circulation area- 20% of Net Area							563.98	
Gross area (Net Area + Circulation)							3383.88	

Table 4.6 Summary of Spatial Component with Space

4.8.2 Total Area calculation

Spatial Component	Area m2	Percentage
Hope center:		
Major Components	1994.4	56.1%
Minor Component	867.5	24.4%
Services	99	2.7%
Circulation	596.9	16.8%
Total Area	3553.08	100%
Chance for Change Center:		
Major Components	1803.9	53.3%
Minor Component	917	27%
Services	99	2.9%
Circulation	568.4	16.8%
Total Area	3383.88	100%
Total Building Area = 5100 m2		

Table 4.7 Total Project Area

4.9 Spread Sheet

Name of the activity	No. of Rooms	No. of Users	Area required Per room	Total Area	Occupancy activities, functions, usage	Acoustic	Atmosphere/ambience/ feeling	Colours	Electronic equipment	Finishes/ materials	Furniture	Fixtures/ Plumbing	Lighting	Privacy	Storage	Outdoor views	Technology
Reception and waiting area	1	10	25	25	- Reception and help visitors, visitors waiting	Medium	Work place	light	No	Hard	Hard	No	Bright	No	No	High	Yes
Administration	13	1	7.5	97.5	- Manage the center	Medium	Work place	light	No	Soft	Soft	Yes	Bright	No	No	Medium	Yes
Clinics and therapeutic	18	2	14.8	266.4	- Provide adequate health care for users	Low	Quiet place	light	Yes	Flexible	Hard	Yes	Bright	Medium	Yes	Low	Yes
Living room	2	25	62.5	125	- Users gathering	High	Relaxing area to gather during the day	Medium	No	Soft	Soft	No	Medium	Medium	No	Medium	No
Bedroom	50	1	9	450	- Users rest and sleep	Low	Calm space that allows the user to have quality time and relaxation mood	Medium	No	Soft	Soft	Yes	Medium	Yes	No	Medium	No
Auditorium	1	55	33	33	- Users attend lectures, lecturer give lectures	Medium	Studying place	Dark	No	Hard	Hard	No	Dark	No	No	Low	Yes
Library	1	25	125	125	- Users and staff Reading plus Web access	Low	Quiet place	Hue	No	Soft	Soft	No	Bright	Medium	No	Medium	Yes
Café	1	50	150	150	- For resting, chatting, having snacks and drink	High	Resting place	Light	Yes	Hard	Hard	Yes	Medium	No	Yes	High	Yes
Pool	1	40	160	160	-enable swimming or other leisure activities	High	Quite, attractive & comfortable	Hue	Yes	Soft	Soft	Yes	Medium	Medium	Yes	High	No
Security	2	3	15	30	- Protect the center	Low	Work place	Light	No	Soft	Soft	No	Medium	Yes	No	Low	Yes
Main kitchen	1	10	15	15	- Serve the staff	High	Work place Comfortable	Light	Yes	Hard	Hard	Yes	Bright	Medium	Yes	Low	No
Laundry	1	5	7.5	7.5	- Users cloth's washing	Low	Work place	Light	Yes	soft	soft	Yes	Bright	Yes	Yes	Low	No
For the hope center:																	
Exhibition	1	100	600	600	- Display users' production's Visitors can buy	Medium	attractive & comfortable place	Hue	No	Hard	Hard	Yes	Bright	No	Yes	High	Yes
Workshops	1	55	247.5	247.5	Acquiring skills, application of techniques and exchange of ideas	High	Active space with proactive environment	Light	Yes	Hard	Hard	Yes	Bright	No	Yes	Medium	Yes
Visiting area	1	20	50	50	Users Strengthen the relationship with parents and relatives	Medium	Quite	Hue	No	Soft	Soft	Yes	Medium	Yes	No	Medium	No
playground	1	25	37.5	37.5	Users playing different sports (outdoor area)	High	Attractive place that encourage activity level of individuals	Hue	No	Flexible	Soft	Yes	Bright	No	Yes	High	No
Cinema	1	25	15	15	Users watch films and documentary films	High	Quite	Dark	Yes	Hard	Hard	No	Dark	No	Yes	Low	Yes
Gym	1	25	290	290	- Users and staff exercising plus body building	High	Attractive place that encourage activity level of individual	Hue	No	Hard	Hard	Yes	Bright	No	Yes	High	Yes
Service kitchen	1	15	15	15	- Serving the accommodation zone. - residents can prepare their own meals	High	Cozy, attractive & comfortable place	Light	Yes	Hard	Hard	Yes	Bright	Medium	Yes	Low	No
For Chance for Change Center:																	
Gym	1	55	528	528	- Users and staff exercising plus body building	High	Attractive place that encourage activity level of individuals	Hue	No	Hard	Hard	Yes	Bright	No	Yes	High	Yes
Service kitchen	1	50	75	75	Prepares healthy meals and suitable for the center users -Teaching residents how to prepare healthy meals or snacks	High	Cozy, attractive & comfortable place	Light	Yes	Hard	Hard	Yes	Bright	Medium	Yes	Low	No
Aerobics studio	1	50-55	255	255	- for the extended movement include mixing of exercises and dance	Medium	healthy and safe zone	Hue	No	Flexible	Soft	No	Bright	Medium	No	Low	No
Karate studio0	1	50-55	160	160	- area for the open-hand techniques exercises	Medium	healthy and safe zone	Hue	No	Flexible	Soft	No	Bright	Medium	Yes	Low	No

Table 4.8 Spread Sheet



BUILDING AND SPACE ANALYSIS

5.1 Introduction

5.2 Site analysis

5.3 Building analysis

5.4 Interior space analysis

5.5 Program Analysis (Zoning)

5.5 Conclusion

**“IT'S A SLOW PROCESS, BUT QUITTING WON'T
SPEED IT UP”**

-Anonymous

5.1 Introduction

The selected plan is proposed to be a hospital and it is designed by Roland Carrillo in 2011 when he was a student at Universidad Central del Ecuador, located in Ecuador, south America. For our project, we will use the plan to be a rehabilitation centre and will be locate it in Al Zallaq near the Arabian Gulf.

5.1.1 Reasons of selecting the site:

Since it is a rehabilitation centres as well as contained an accommodation so, users of the both centres need a quite space that has a source of relaxing such as it is located near the sea.

A. Hope Centre:

- The building should be located far from the city for security and privacy reasons, in addition, it will help them to focus on themselves before pleasing the society.
- The centre should be easily accessible; So, visitors can access to the centre easily to visit the users and the exhibition.

B. Chance for Change Centre:

- It is best to have the location of the centre in a quiet area away from the cities noise. Besides, the building overlooks the sea, which makes this site suitable for the psychological condition of centre members.

5.2 Site analysis for both centre

5.2.1 Graphical Site Analysis

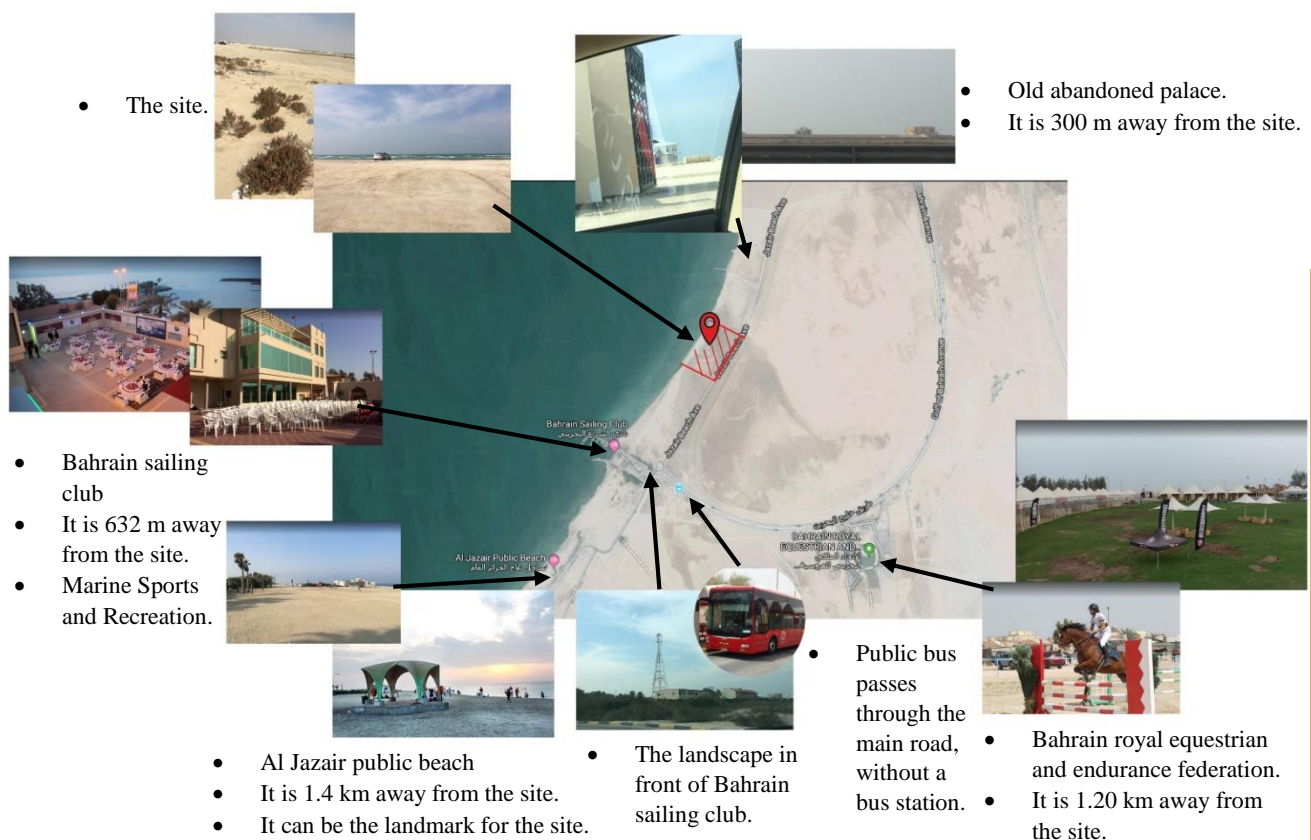


Figure 5.1 Site Analysis

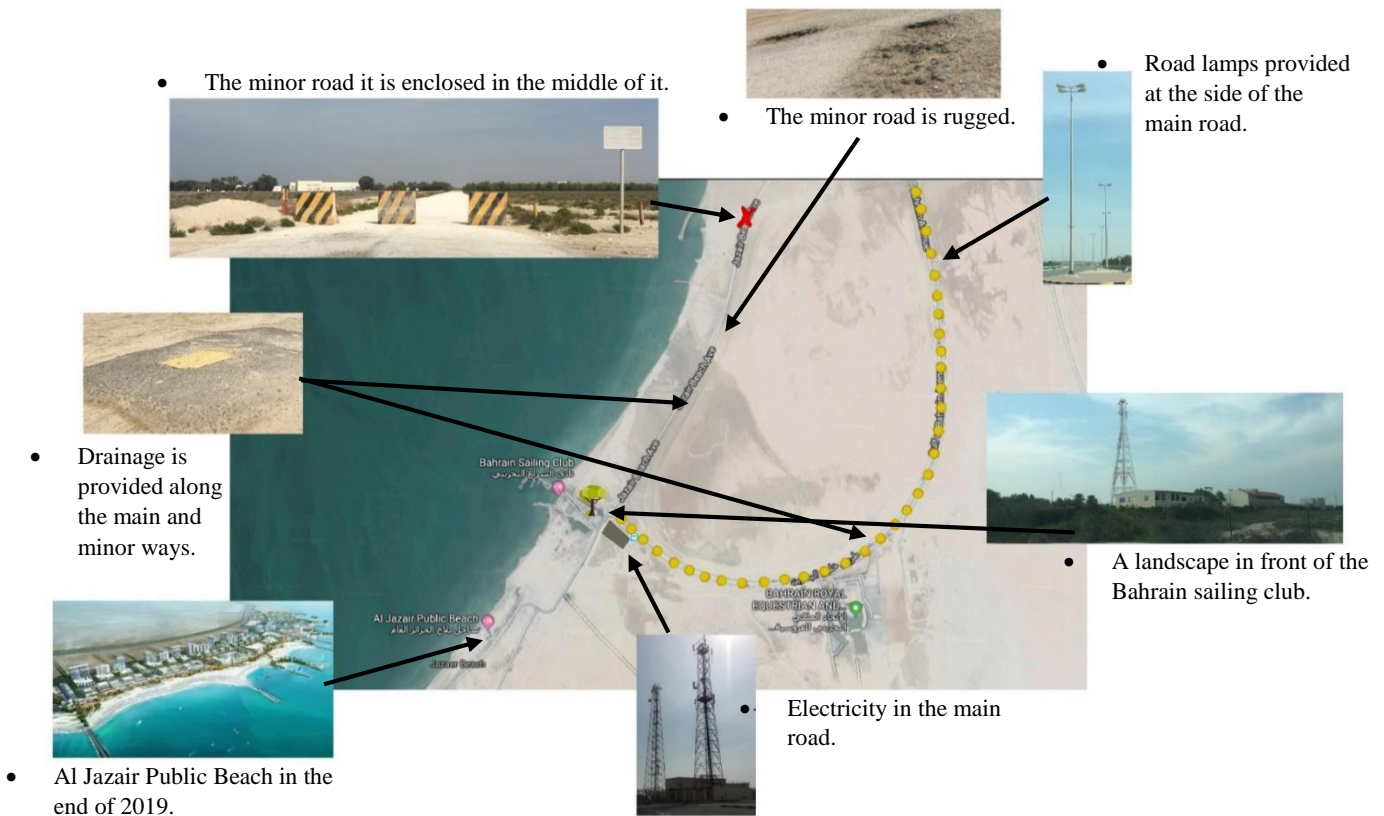


Figure 5.2 Site Analysis

A. Landscaping availability:

- The selected plan has a landscape surrounding the building.
- In the end of 2019, al-jazair public beach will be developed to have a landscape with certain of mall and restaurants as well as a beach park and playground, which will create an extra view for the centre.

B. Adjacent structures-their height, configuration etc.:

- Bahrain sailing club is contained of three levels, constructed with column and beam with a modern style.

C. Utilities, infrastructure-water, Sewer, electricity etc.:

- The site is accessible via the main road, while the minor road where the site is located on does not lead for anywhere and it is enclosed in the middle of it, while it supposed to lead for Zallaq area.
- The road lamps are provided at the side of the main road, while in the minor road where the site is located on, it lacked.
- The signage is enough provided in the both roads.
- There are no pedestrian lines near the site.
- The site is under development, so there are no additional things to mention.

D. Traffic type and Pattern-Pedestrian, access by car, public transport:

- Traffic at this site is very smooth because it is far from the city.
- The site can be easily accessed through the main road whether with the car or the public bus.

E. Noise, odor or any other non-visual qualities:

- It is a quiet area and far from the crowded cities.
- The site does not contain any unpleasant smells.

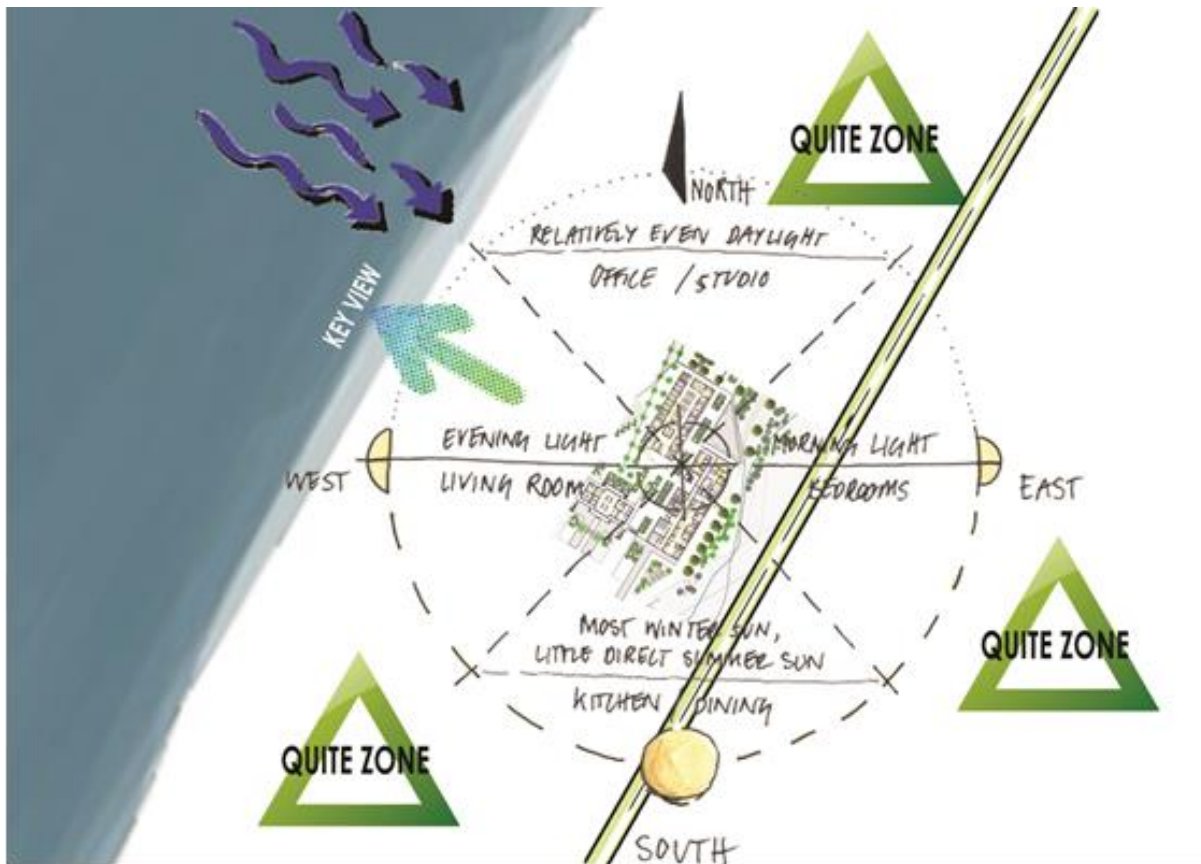


Figure 5.3 Site Analysis



Figure 5.4 Site Analysis, parking



Figure 5.5 Site Analysis for the hope center, the locate of outdoor activates

5.2.2 Location

The building will be located far from the city and closer to water because users need a quiet place to relax and convenience, that will help them in rehabilitation. Having the building near the sea will help in cooling the weather and this what the project needs due to the heat in Bahrain, especially if there are outdoor activities such as the outdoor activities for the hope centre.

The selected site is an empty land in front of the Arabian Gulf, between al zallaq area, al-jazair public beach and Bahrain sailing club. The site located in al-jazair beach avenue and it is easily accessible through the Gulf of Bahrain avenue which is a main road.

The main road is easily lead to many famous buildings such as Bahrain sailing club which is the closest area for the site, where is use it for marine Sports and Recreation. In addition, Bahrain Royal Equestrian and Endurance Federation, Al-Areen Wildlife Park & Reserve, The Lost Paradise of Dilmun Water Park, Gravity Indoor Skydiving, Bahrain International Circuit, and the University of Bahrain. Plus, al-fJazair Public Beach which can be considered as a landmark for the selected site.

5.2.3 Orientation and Climate

The climate of Bahrain is arid, and the rain is rare. The year can be divided into two major climate periods, the summer from June to September with an average daily high temperature above 35°C, and the winter from December to march with an average daily high temperature below 23°C, separated by two transitional periods, from April to May is spring and October to November is autumn.

The selected site is cooler and less dry than the other areas of Bahrain because it located near the sea and in an uncrowded area and the maximum daily wind speed in Al-Zallaq is expected to range between 25 Km/h and 33 Km/h which considered as a Strong breeze and this helps to cool the weather.

5.3 Building Analysis

5.3.1 Shape and size

The building structure consists of two floors with 3.7 meters' clear height for the ground floor and 3.4 meters' clear height for the other floors. However, ground floor is 900 square meters as well as the first floor is 1800 square meter and the second floor is 1000 square meter. So, the total area is 3700 square meters. Besides, the building form is based on its functions as well as its components which include:

- Bed-related inpatient functions.
- Outpatient-related functions.
- Diagnostic and treatment functions.
- Administrative functions.
- Service functions (food, supply).
- Research and teaching functions.

5.3.2 Type of structure

- Structure type: frame (columns and beams).
- Structural system: Shear walls.
- Application: Building.
- Form: Three-dimensional: Rectangular solid masses.
- Material: concrete, metal and glass.
- Elements: Foundation, Substructure, Superstructure and Roof.
- Overall building form: Low-rise.
- Exterior and interior style: contemporary.

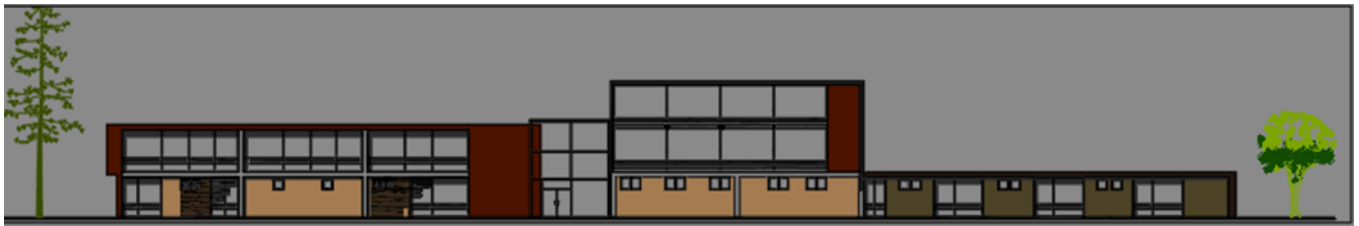


Figure 5.6 South Elevation

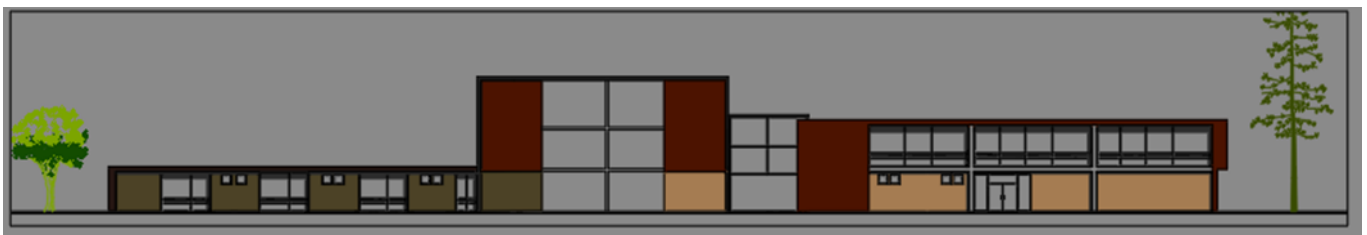


Figure 5.7 North Elevation

The hospital functional design promote skill, economy, conveniences, and comforts with several treatment rooms provides quality care. In addition, it is a complex building consists of many services and functional units. However, these include diagnostic and treatment functions, clinical laboratories, imaging, emergency rooms, and surgery beside the hospitality functions, such as food service and housekeeping and the fundamental inpatient care or bed-related function. Moreover, the building environment is healthy and safety and followed the hospital construction and regulations.

The building facade had different landscapes where it is visible for people who are entering the building. Beside that there are several landscapes within the building complex. On the other hand, hospitals considered as sustainable buildings for the

significant impact on the environment and economy of its surrounding community as well as its heavy users of energy and water which produce large amounts of waste. In addition, the building is very flexible. The frame structure is linear and very simple, so it helps on re-dividing the space as well as redesigning it again according to the project activities.

5.3.3 Style of Architecture

Contemporary design does not refer to a specific period. However, it is constantly changing to reflect the popular styles include modernism, minimalism, and other global styles without focusing on any one in particular. However, the design is a part of its surrounding environment and often used natural materials in that kind of design.

5.3.4 Entry / Exit points

A. Accessibility:

- All areas whether inside or outside the building is suitable for the disables people, there are ramps along with the staircases and the elevators also are available inside the building. However, the design allows different patients with temporary or permanent handicaps to move easily around the space. Also, the sidewalks and corridors are wide enough for easy movement.

B. Circulation:

- The building complex includes constant movement of people and goods circulation. However, the inside routes are simple and clearly defined as well as the main corridor has emergency exits on the both sides.

C. Existing Entry and Access Point into the Site include:

- Main Entrance.
- Five Side Entrances.
- Four Emergency Exits.

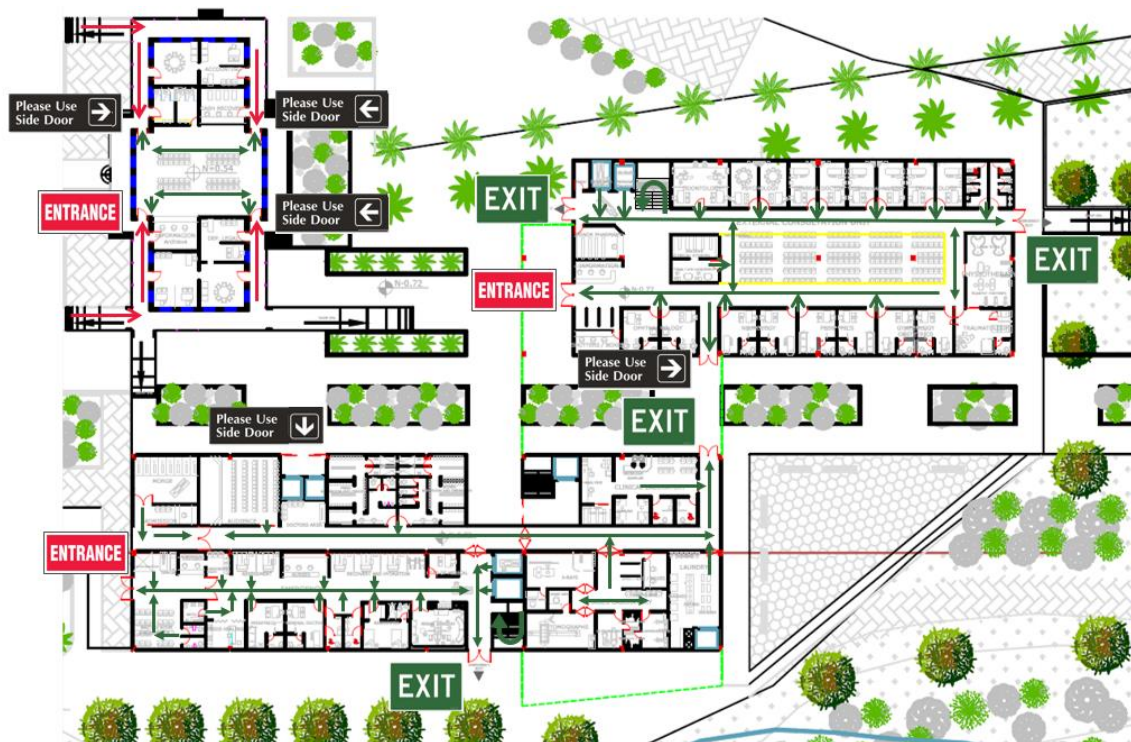


Figure 5.8 Existing Entry and Access Point, ground floor plan



Figure 5.9 Existing Entry and Access Point, first floor plan

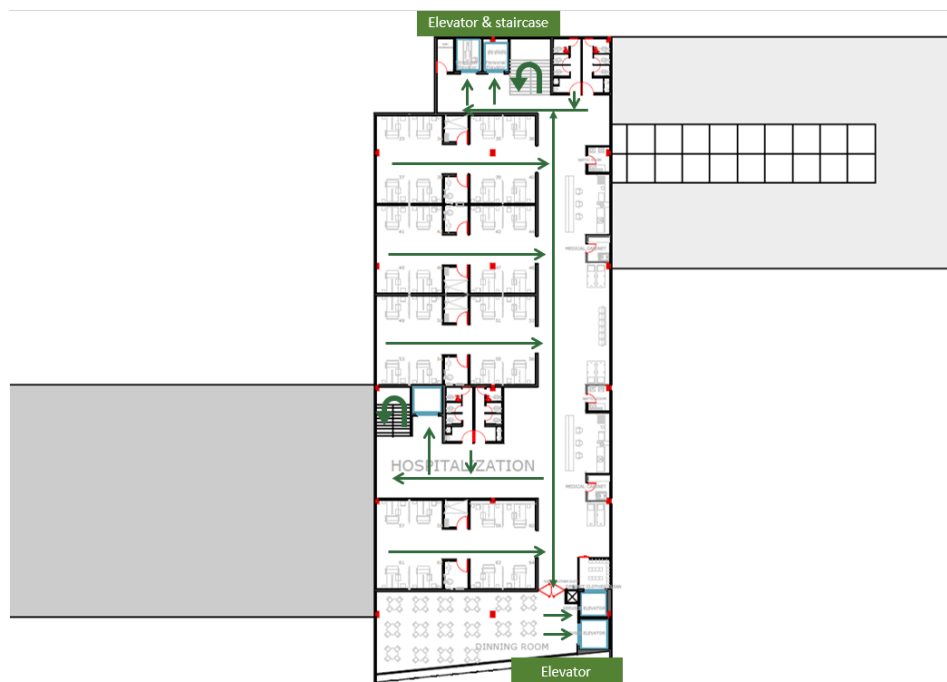


Figure 5.10 Existing Entry and Access Point, second floor plan

5.4 Interior space analysis

5.4.1 Architectural Analysis: Detail dimensions and area calculations

Spatial Components	Area sqm	Percentage
Major Components	3253.8	63.8%
Minor Components	746.77	14.6%
Services	78.8	1.6%
Circulation	1020	20%
Total Area	5100	100%

Table 5.1 Detail dimensions and area calculations

5.4.2 Existing doors, windows and steps into the Site include:

1. Doors (93 located in ground floor, 57 located in first floor & 31 located in second floor).
2. Windows (24 located in ground floor, first and second floor have glazing).
3. The building is raised up to 0.72 meters from the ground level with 6 steps and 5 ramps around the hospital complex.

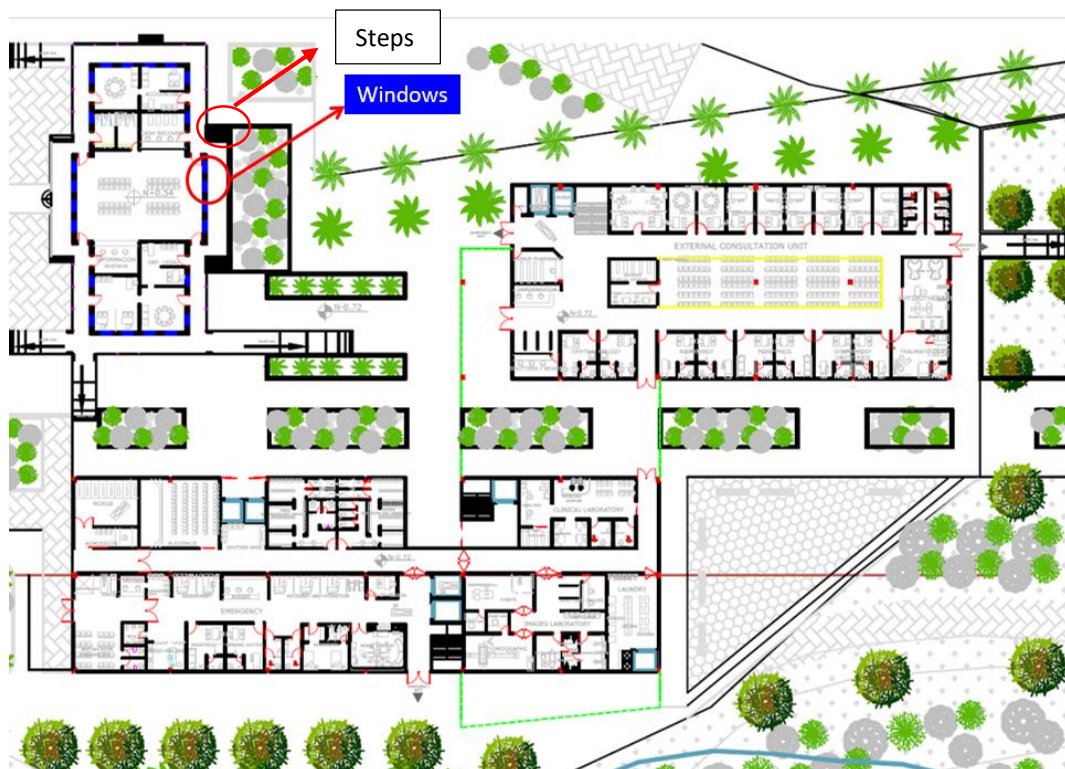


Figure 5.11 Existing doors, windows and steps, ground floor



Figure 5.12 Existing doors, windows and steps, first floor plan

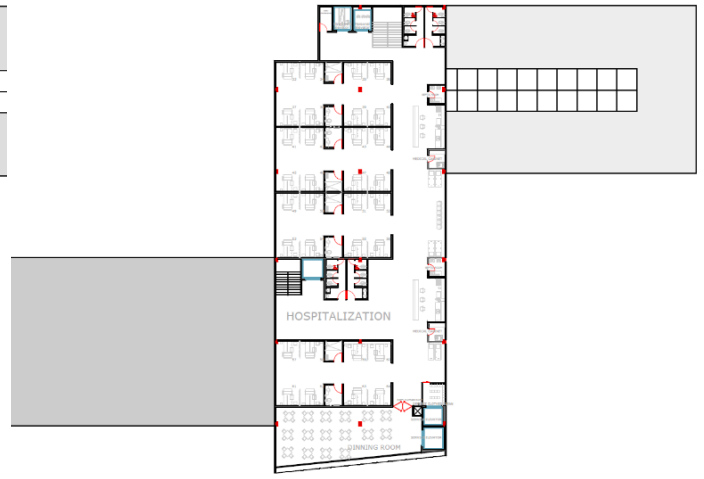


Figure 5.13 Existing doors, windows and steps, second floor plan

5.5 Program Analysis (Zoning)

5.5.1 The Hope Centre:

The zoning of the building function is done according to the orientation of the building, sun path, and wind direction, in addition to the relationship between the functions of the building. For example, the activities where people need to relax such as bedrooms are located according to the presences of the views, while the service kitchen is located near the bedrooms according to the strong relationship between them.



Ground floor:

Figure 5.14 zoning for the hope center, ground floor plan

1. Reception and waiting area
2. Administration
3. Exhibition
4. Workshops
5. Storage

6. Restaurant
7. Staff accommodation
8. Laundry
9. Prayer room
10. Supermarket

- Private area
- Semi private area
- Public area
- Out of scope area



Figure 5.15 zoning for the hope center, first floor plan

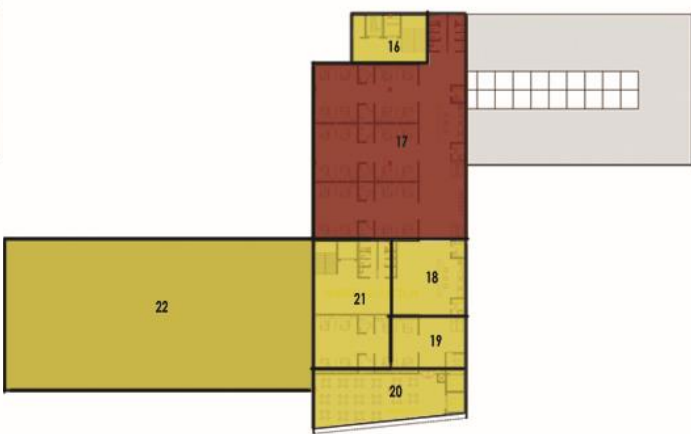


Figure 5.16 zoning for the hope center, second floor plan

First floor:

- 18. Visiting room
- 19. Café
- 20. Library
- 21. Class
- 22. Clinics and laboratories

- 11. Living room
- 12. Bedrooms
- 13. Service kitchen
- 14. Cinema
- 15. Gym
- 16. Living room
- 17. Roof garden and pool

- Private area
- Semi private area
- Public area
- Out of scope area

5.5.2 Chance for Change Centre:

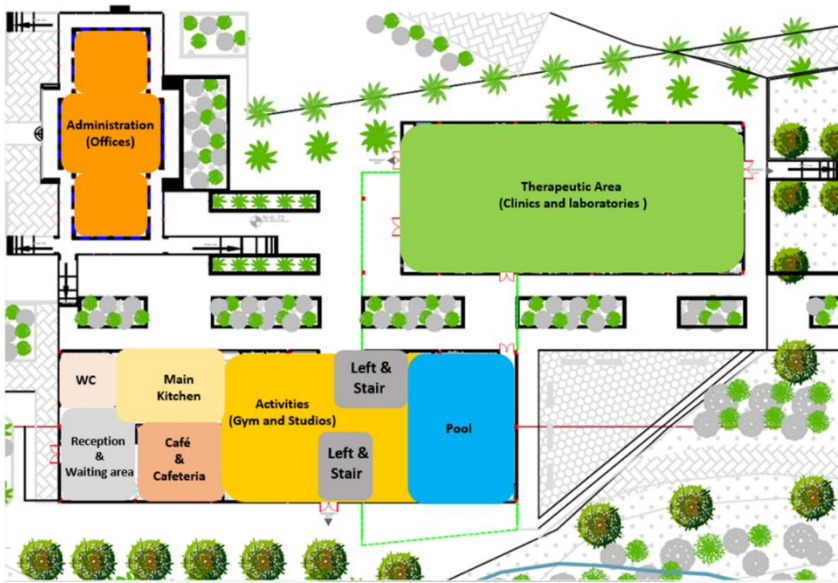


Figure 5.17 Zoning of chance for change, ground floor plan

- | | |
|--------------------------------------|-------------------|
| Administration (office) | Public area |
| Therapeutic (clinics & laboratories) | Semi private area |
| Restroom | Semi private area |
| Reception & Waiting area | Public area |
| Main Kitchen | Private area |
| Café & Cafeteria | Semi private area |
| Activities Zone (gym & studio) | Semi private area |
| Elevator & Staircase Zone | Semi private area |
| Swimming Pool | Semi private area |

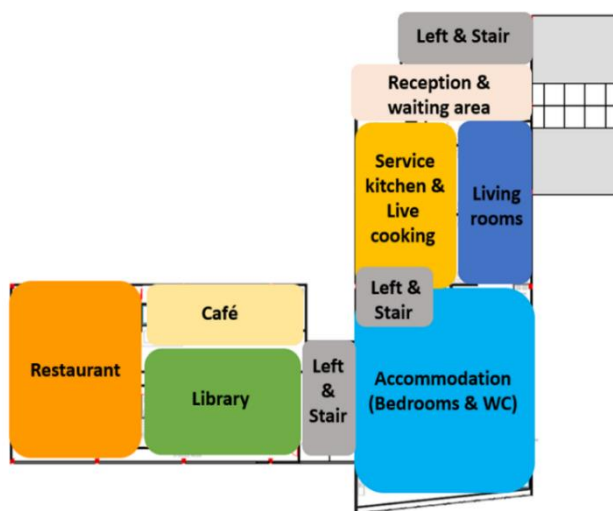


Figure 5.18 Zoning of Chance for Change Centre, first floor plan

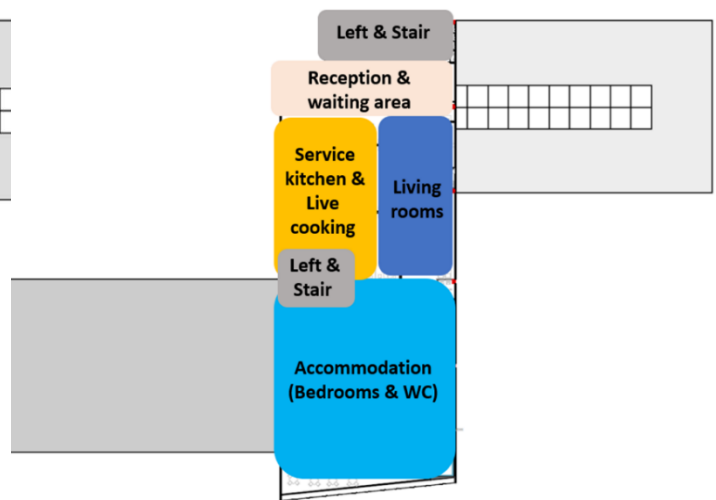
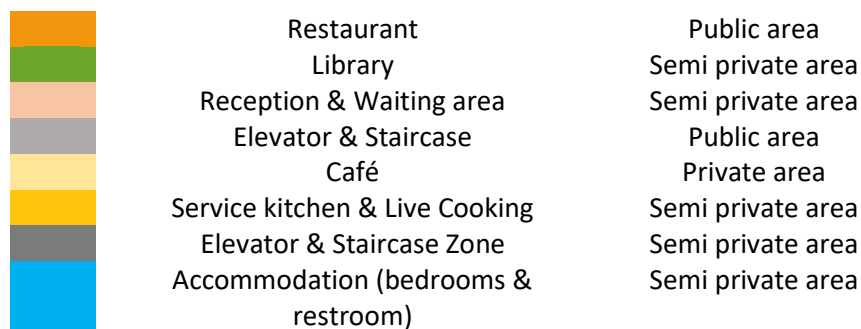


Figure 5.19 Zoning of Chance for Change, second floor plan



5.6 Conclusion

5.5.1 Positive critics

- The building location is suitable for the project function.
- The building site located in a quiet area and easily accessible.
- The building has a flexible frame structure which provides several options for the design stage.
- The building area is 5100 sq.m. which suitable to accommodate the centre components.
- The building site located near the sea which is good for users' status psyche.

5.5.2 Negative critics

- There is no information about the building interior as well as the materials used because the building is unbuilt.
- The services are far away from the building site which required to design more services inside the building complex.
- The building subway is bumpy because of the new road's constructions.

“IF YOU CAN DREAM IT, YOU CAN DO IT”

-Walt Disney

Appendix A (Interview with Dr. Nora Al-Shamlan)

In order to obtain information regarding the rehabilitation centers of former prisoners, we visited the college of law at the university of Bahrain where we met with Dr. Nora Al-Shamlan assistant professor of criminal law, graduate of the united states and doctor in judicial and criminal sciences. Through this interview we were able to collect very important information which will be served our graduation project.

Me: are there any programs within the prison for rehabilitation? If yes, what are these programs?

Dr. Nora: Bahrain is working on the rehabilitation and reform centers law issued in 2014-2015, which provides for punitive action imposed on all inmates under the age of 60, to carry out work aimed at first-degree rehabilitation to engage in the future to the society, to maintain the penal institution's security system and return to them with financial money.

Where the work varies in terms of types depending on the tendencies of the prisoners, for example, they give the imprisoned engineer an engineering work in order to practice something he likes, and they sell it when he finishes it. In addition, prisoners can complete their studies if they want to, and they have breaks plus do not work on holidays.

Me: are there any charitable centers or attempts to rehabilitate prisoners released in Bahrain?

Dr. Nora: as far as I know, there is no aid for them.

Me: is it easy for the released prisoners to become involved and integrate into society?

Dr. Nora: according to the prisoners and his acceptance. Any person who is sentenced will not be able to work in some places such as a prosecutor or a judge because of precedence but there is something called the response into account in accordance with the law, on the basis of which they can work even in the government and even can become a lawyer under the code of criminal procedure. The person must not be punished twice; punished once but cannot be punished for the rest of life, we must give him another chance in life to fix his things and can work

Me: what are the most common problems faced by prisoners after their release?

Dr. Nora: there are three major problems:

- The most common problem are the social problems if the person has not reconciled with himself.
- The second problem is the inability to get the job he wishes and aspires to.
- The third problem is the inability to rejoin society because they are out of society for a while, so they must be psychologically rehabilitated to re-engage in society.

Me: what are the most important treatments that should be available in the rehabilitation centers for released prisoners? Is it psychological or physical treatments? Or what exactly?

Dr. Nora: it based on the classification of the case, the case must be studied and classified on this basis and determine whether they need primarily to psychiatric treatment or more in the employment where they are given skills or more in socially?

Some will need more than one program while other will suffice with only one program.

A person may be not receptive psychologically and self-involved so in this case, he will need psychotherapy.

Some may be psychologically unaffected but they will need skills to help them develop themselves and get work.

Me: through my project, how can we complete the treatment of prisoners after being released from prison?

Dr. Nora: as we said the case study is very important in addition to knowing the reasons for committing the crime and you will be able to know how to deal with them.

Me: if prisoners are rehabilitated after their release, do you think this is enough to keep them out of prisons?

Dr. Nora: yes, it is enough if the rehabilitation is in the right way; because they got another chance in their lives and this is their second chance to do better, so if the rehabilitation is good; yes, they can complete their life.

Me: what you think about having a rehabilitation center for the former prisoners in Bahrain?

Dr. Nora: your idea of designing a space for them is very beautiful, but the name of the center should not show that they are former prisoners.

Me: it's named the hope center

Dr. Nora: yeah, something like that

Dr. Nora: you must take into consideration the different crimes and cultures, for example, you cannot gather prisoners for crimes against people with prisoners of financial crimes.

In addition to the facilities that fit the interests of prisoners, such as a gym with swimming pool, games area and something like that.

Appendix B (Interview with VLCC Centre Head)

Interviews to obtain information which supports the idea of Chance for Change project. However, visit to the VLCC Centre was very helpful. VLCC Centre is widely recognized for its scientific weight loss solutions and its therapeutic approach to beauty treatments.

Me: Does obesity a big issue in Bahrain?

Usha Jagdish: Of course, with a rate of 70% in the Arabian Gulf which the highest one.

Me: What are the Centre activities and services?

Usha Jagdish: We widely recognized for our scientific weight loss solutions and its therapeutic approach to beauty treatments. With a staff strength over two-third of whom are experienced specialists including medical doctors, nutritionists, psychologists, cosmetologists and physiotherapists.

Me: What is the users age group and how many they are?

Usha Jagdish: We served over 100-60 customers per month with different age groups 12-70 year.

Me: How is obesity treated in the center?

Usha Jagdish: First we give them smiles, psychological support, confidence and companionship because the obese people come with low self-image. So, our plan is based on specific psychological and physical factors. Also, treatment process done through advised customers to lose weight by a suitable diet with exercise program. **We also** avoid the crash diets, medicines and strenuous exercises.

Me: What is the impact of the Center's services on customers?

Usha Jagdish: Sure, Weight loss had a positively change on obese customers as they improved their relationships with their family and at their work as well. They also able to achieve their dream of challenging themselves.

Me: Is there any recovery cases of the center?

Usha Jagdish: Definitely, there are many customers who have changed their lives 180 degrees because they achieved what they aspire to and we are publishing their stories to encourage the center's pioneers.

Me: What is your future vision for the center and is there any suggestions for developing it?

Usha Jagdish: My vision is to open more branches to the Centre in Bahrain with wider area that can accommodate our various services.

As a result, this interview provided very important information, that will be served Chance for Change project dramatically.

References

• Chapter 2

Abioye, A. (2016). Obesity Prevention Source. Pp.4-5.

Al Jawaldeh, D. (2014). Nutrition clinics help tackle obesity in Bahrain. Pp.2.

Ali, A. (2016). Bahrain topped the Gulf in the rate of obesity. Alwasat newspaper.

Andrewmarsh.com. (2018). Sun-Path Map. [online] Available at:
<http://andrewmarsh.com/apps/releases/sunpath-on-map.html> [Accessed 4 Nov. 2018].

ArchDaily. (2018). Proyecto Hombre / Elsa Urquijo Arquitectos. [online] Available at:
<https://www.archdaily.com/550548/proyecto-hombre-elsa-urquijo-arquitectos> [Accessed 4 Nov. 2018].

Ayvaz G, (2015). Methods for Body Composition Analysis in Adults, pp.57.

Baker, m. (2018). البحرين في خطر مؤشر السمنة. Alwasat news.

Bisimages.es. (2018). Proyecto Hombre Santiago | BISimages. [online] Available at:
<http://www.bisimages.es/bis/?p=4236> [Accessed 4 Nov. 2018].

Brand, S. (2016). Lived Experiences of Reintegration: A Study of How Former Prisoners Experienced Reintegration in a Local Context. Dublin Institute of Technology.

Climatestotravel.com. (2018). Santiago De Compostela climate: average weather, temperature, precipitation, best time. [online] Available at:
<https://www.climatestotravel.com/climate/spain/santiago-de-compostela> [Accessed 4 Nov. 2018].

Donni Johnston, D. (2018). A toolkit for healthy eating in supported accommodation. 1st ed. Queensland Health, pp.22-66.

Empowered By Color. (2018). The Color White. [online] Available at: <https://www.empower-yourself-with-color-psychology.com/color-white.html> [Accessed 4 Nov. 2018].

Google Maps. (2018). Google Maps. [online] Available at:
https://www.google.com/maps/place/HOMBRE+GALICIA/@42.8621167,-8.5449663,3a,75y,9.07h,90t/data=!3m7!1e1!3m5!1sgPhau5yuiCpiLudmLSO0Gw!2e0!6s%2F%2Fgeo3.ggpht.com%2Fcbk%3Fpanoid%3DgPhau5yuiCpiLudmLSO0Gw%26output%3Dthumb%26cb_client%3Dsearch.TACTILE.gps%26thumb%3D2%26w%3D86%26h%3D86%26yaw%3D9.070721%26pitch%3D0%26thumbfov%3D100!7i13312!8i6656!4m8!1m2!2m1!1sProyecto+Hombre+!3m4!1s0x0:0x524e28b91f9949d5!8m2!3d42.8623449!4d-8.5449171 [Accessed 4 Nov. 2018].

Gutenbrunner, C. And Ward, A. (2007). White book on physical and rehabilitation medicine. 2nd ed. Basingstoke: Taylor & Francis, pp.8.

Hall, J. (2013). Vilsack: Good nutrition key to kids', nation's well-being. Portland Press Herald.

- Haney, C. (2002). The Psychological Impact of Incarceration: Implications for Post-Prison Adjustment. California-Santa.
- Johnston, j. (2017). A toolkit for healthy eating in supported accommodation. 1st ed. Queensland Health, p.15.
- Kochersberger, G., Hielema, F. And Westlund, R. (2004). Facilities for rehabilitation services. 1st ed. London: TSO, pp.12.
- Naim, D. (2017). Weight Loss Surgery vs Diet & Exercise.pp.2.
- Nemiary, D., Shim, R., Mattox, G. And Holden, K. (2012). The Relationship Between Obesity and Depression Among Adolescents. Psychiatric Annals, 42(8), pp.305-306.
- Prison Fellowship. (2018). Needs of Ex-Prisoners - Prison Fellowship - Reentry Ministry. [online] Available at: <https://www.prisonfellowship.org/resources/training-resources/reentry-ministry/ministry-basics/needs-of-ex-prisoners/> [Accessed 17 Oct. 2018].
- Proyecto Hombre. (2018). Proyecto Hombre International work. [online] Available at: <http://proyctohombre.es/international/> [Accessed 4 Nov. 2018].
- Reges, D. (2018). WORK WITH JAMA. 3rd ed.
- Seida JC1, Sharma AM2, Johnson JA3, Forhan M1. (2018). Hospital rehabilitation for patients with obesity. Europe, pp.10.
- Smith, M. And Puczkó, L. (2014). Health, tourism and hospitality. 2nd ed. London: Routledge, pp.6-7.
- Sood, A. (n.d.). The Mayo Clinic handbook for happiness.pp.21.
- Supreme Floors. (2018). Sportex, PVC sport vinyl floorings in rolls. [online] Available at: <http://www.floors-supreme.com/floors/sportex-sport-vinyl-floorings/> [Accessed 4 Nov. 2018]
- Urban Institute. (2018). Returning Home Study: Understanding the Challenges of Prisoner Reentry. [online] Available at: <https://www.urban.org/policy-centers/justice-policy-center/projects/returning-home-study-understanding-challenges-prisoner-reentry> [Accessed 17 Oct. 2018].
- **Chapter 3**
- Andrewmarsh.com. (2018). Sun-Path Map .[online] Available at: <http://andrewmarsh.com/apps/releases/sunpath-on-map.html>] Accessed 4 Nov. 2018].
- ArchDaily. (2018). Proyecto Hombre / Elsa Urquijo Arquitectos .[online] Available at: <https://www.archdaily.com//000041proyecto-hombre-elsa-urquijo-arquitectos>] Accessed 4 Nov. 2018].
- ArchShowcase. (2019). Crunch – GYM, SPA & Fitness Centre by ViVeA – Viveck Vermaa Architects. [online] Available at: <https://www10.aecafe.com/blogs/arch-showcase/2012/11/06/crunch-gym-spa-fitness-centre-by-vivea-viveck-vermaa-architects/> [Accessed 3 Jan. 2019].
- Bisimages.es. (2018). Proyecto Hombre Santiago | BISimages .[online] Available at: <http://www.bisimages.es/bis/?p=4236>] Accessed 4 Nov. 2018].

Bisimages.es. (2018). Proyecto Hombre Santiago | BISimages .[online] Available at: <http://www.bisimages.es/bis/?p=4236&page=2>]Accessed 4 Nov. 2018].

Climatestotravel.com. (2018). Santiago De Compostela climate: average weather, temperature, precipitation, best time .[online] Available at: <https://www.climatestotravel.com/climate/spain/santiago-de-compostela>]Accessed 4 Nov. 2018].

Empowered By Color. (2018). The Color White .[online] Available at: <https://www.empower-yourself-with-color-psychology.com/color-white.html>] Accessed 4 Nov. 2018].

Google Maps. (2018). Google Maps .[online] Available at: https://www.google.com/maps/place/HOMBRE+GALICIA/@42.8621167,8.5449171,75y,9.07h,90t/data=!3m7!1e1!3m5!1sgPhau5yuiCpiLudmLSO0Gw!2e0!1s%2F%2Fgeo3.ggpht.com%2Fcbk%3Fpanoid%3DgPhau5yuiCpiLudmLSO0Gw%3Foutput%3Dthumbnail%26cb_client%3Dsearch.TACTILE.gps%3Fthumb%3D2%26w%3D86%26h%3D86%3Fyaw%3D9.070721%26pitch%3D0%3Fthumbfov%3D100!7i13312!8i6656!4m8!1m2!2m1!1sProyecto+Hombre+!3m4!1s0x0:0x524e28b91f9949d5!8m2!3d42.8621167!3d8.5449171] Accessed 4 Nov. 2018].

Proyecto Hombre. (2018). Proyecto Hombre International work .[online] Available at: <http://proyctohombre.es/international/> [Accessed 4 Nov. 2018].

Supreme Floors. (2018). Sportex, PVC sport vinyl floorings in rolls .[online] Available at: <http://www.floors-supreme.com/floors/sportex-sport-vinyl-floorings/>] Accessed 4 Nov. 2018].

• Chapter 4

Anon, (2018). [online] Available at: <https://www.quora.com/What-is-the-average-size-of-a-living-room> [Accessed 21 Nov. 2018].

AQUILA Commercial. (2018). How Much Office Space Do I Need? (Calculator & Per Person Standards). [online] Available at: <https://aquilacommercial.com/learning-center/how-much-office-space-need-calculator-per-person/> [Accessed 21 Nov. 2018].

Engineeringtoolbox.com. (2018). Building Area per Person. [online] Available at: https://www.engineeringtoolbox.com/number-persons-buildings-d_118.html [Accessed 21 Nov. 2018].

House Plans Helper. (2018). Bathroom Dimensions. [online] Available at: <https://www.houseplanshelper.com/bathroom-dimensions.html> [Accessed 21 Nov. 2018].

House Plans Helper. (2018). Kitchen Dimensions. [online] Available at: <https://www.houseplanshelper.com/kitchen-dimensions.html> [Accessed 21 Nov. 2018].

House Plans Helper. (2018). Laundry Room Dimensions. [online] Available at: <https://www.houseplanshelper.com/laundry-room-dimensions.html> [Accessed 21 Nov. 2018].

Sintex-mebel.ru. (2018). [online] Available at: <http://www.sintex-mebel.ru/files/upload/med.pdf> [Accessed 21 Nov. 2018].

Sportengland.org. (2018). [online] Available at:
<https://www.sportengland.org/media/4203/fitness-and-exercise-spaces.pdf> [Accessed 21 Nov. 2018].

Www2.d125.org. (2018). [online] Available at:
http://www2.d125.org/im/ACAD/pdf/room_sizes.pdf [Accessed 21 Nov. 2018].

- **Chapter 5**

Bh.freemeteo.com. (2018). Weather Zallaq - Long term weather forecast |
bh.freemeteo.com. [online] Available at:
<https://bh.freemeteo.com/weather/Zallaq/longterm/monthly/?Gid=9035733&mn=3&language=english&country=bahrain> [Accessed 1 Dec. 2018].

Designs CAD. (2018). Hospital DWG Block for autocad • Designs CAD. [online] Available at:
<https://designscad.com/downloads/hospital-dwg-block-autocad-33/> [Accessed 30 Nov. 2018].

Wbdg.org. (2018). Hospital | WBDG Whole Building Design Guide. [online] Available at:
<https://www.wbdg.org/building-types/health-care-facilities/hospital> [Accessed 30 Nov. 2018].

“I CAN AND I WILL”

-JUWAIREYA & GHADA