

## BEYOND THE POWER COMPLEX

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### Abstract

The government of Saudi Arabia has set out to build a pre-military complex where young people can experience the feel of joining the army and serving the nation. Thus, to comprehend the vision of the government, this work presents the development of Beyond The Power Complex in Jeddah, Saudi Arabia. This work has examined four case studies that are related to military style complexes. For the analysed case studies, for the proposed Beyond The Power Complex, the estimated gross floor area is 25158 m<sup>2</sup>. In addition, the complex is comprised of few key zones, which are admin, academy, gallery/shops, catering, sports facilities, outdoor activities, and shooting range. Furthermore, in this work, two sites were proposed for developing the complex. Thus, both sites were subjected to site evaluation analysis. The results of site evaluation analysis showed that site 1, which is located Al Salamah district, Jeddah attained the highest score of 82, compared to site 2 with score of 66. Thus site 1 was selected as the proposed site. In terms of architectural design, the concept of the Beyond The Power Complex is based on the shape of a bow. Furthermore, the building is designed with sustainable features. The complex is expected to provide the necessary pre-military experience for younger generation of Saudi Arabia.

**Keywords--** military, shooting range, complex, youth, Saudi Arabia

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### INTRODUCTION

A military academy is an instructive organization that prepares the possibility for administration in the official army [1]. It regularly gives training in the military domain and its precise definition is based on the nation concerned [2]. In general, there are three types of military foundation, which are pre-university level organizations providing scholastic skills, college level establishments providing four-year certification level capabilities, and official cadets planning for charging to the government of the state [3].

The aim of the military academy is to pursue two objectives. First, to educate or strengthen military control [4]. Secondly, it is for the cadet to be educated of what the person in charge has to know in order to carry out an order or an arrangement of undertakings for any kind of situation under military regulations [4]. This practise is used in almost all the available military academy around the globe.

In Saudi Arabia, the initial move towards the structure of a standardized military force for Saudi Arabia began in the 1940s and a Ministry of Defense was established in 1944, where a military school was also established in Taif [5]. This paved the way for an improved and well-established military academy in Saudi Arabia over the years [6]. At present, the government of Saudi Arabia has now launched a vision for 2030, and one of the key elements is to further strengthen its military academies [7].

The government wants to welcome its local community, especially the younger generation, to serve in the army. However, not all of them are willing to join the army because of fear and uncertainty [8]. Thus, the government has set out to develop a pre-military complex where young people can volunteer and experience the feel of joining the army and serving the nation.

This complex will be open to the public and any Saudi citizen is welcome to participate in this programme. Thus, to fulfil the requirement of vision 2030, this work presents the development of Beyond The Power Complex in Jeddah, Saudi Arabia.

### CASE STUDIES

This work has analysed four case studies related to military style complexes. The information of each case studies is discussed as follow:

- Royal Dutch Military Police Complex,
- Turkish Military Academy Laboratory Center Building
- Lewisville Firing Range
- Point Blank Range Matthews

#### Royal Dutch Military Police Complex

Royal Dutch Military Police Complex is located at Amsterdam, The Netherlands (Figure 1). This complex was designed by architect ZviHecker. This complex has a build area of 33000 m<sup>2</sup>. The building has a zigzag type of structure with blue block scattered around. This building was developed to protect the Schiphol International Airport. The facilities of this complex include water course, football and tennis court, residential complex, school complex and a training center. Furthermore, the space distribution of the complex is comprised several key zones, which are administration and education (31.2%), dormitories (24%), sports facilities (22.2%), training school (10.8%), catering (3.8%), and services (8%).



Figure 1 . Royal Dutch Military Police Complex

**Turkish Military Academy Laboratory Center Building**

Turkish Military Academy Laboratory Center Building is located at Ankara, Turkey (Figure 2). This building has an area of 20000m<sup>2</sup>.The center was built for academic and study purposes on the campus of the National Defense University in Ankara. The atrium, which enables visual and tactile interaction, is a modern concept produced against the traditional setup of the normal working environments. The single-loaded hallway concept is used to permit the atrium room to be viewed inside the academic staff building. In addition, the building has incorporated vertical circulation for training zone and educational zone. The space distribution of the academy is comprised several key zones, which are educational zone (57.1%), training school (19.0%), social zone (14.3%) and services (9.5%).



Figure 2. Turkish Military Academy Laboratory Center Building

**Lewisville Firing Range**

Lewisville Firing Range is located at Texas, United States of America (Figure 3). This building was designed by Brinkley Sargent Architects. The building is designed as a single volume structure that is integrated with the surrounding nature.

The main function of this building is it acts as firing range. The facilities within the building includes weapon cleaning area, coffee area, firing line, services, control and janitor area, firing lanes, and armory space. The space distribution of the firing range is comprised of training zone (76.2%), social zone (14.3%) and services (9.5%).



Figure 3. Lewisville Firing Range

**Point Blank Range Matthews**

Point Blank Range Matthews is located at United States of America (Figure 4). This building has an area of 19 467 ft<sup>2</sup>. It contains 20 shooting range lanes which is operating 24 hours a day. The facilities of this building includes shooting range, break room, retail spaces, shipping and receiving area, conference room, training area, work room gun smith room, and a vault. The space distribution of the firing range is comprised of training

zone (53.3%), Retail (16.7%), social zone (6.7%) and services (23.3%).



Figure 4. Point Blank Range Matthews

**PROGRAM ASSUMPTION AND SPACE DETAILS**

Table 1 shows the space details for the Beyond The Power Complex. Based on Table 1, the estimated gross floor area is 25158 m<sup>2</sup>. Furthermore, the complex is comprised of few zones, such as admin, academy, gallery/shops, catering, sports facilities, outdoor activities, and shooting range.

Table 1. Space details

Zone	Gross Floor Area (m <sup>2</sup> )
Admin	382
Academy	1079
Gallery/shops	1084
Catering	955
Sports facility	3925
Outdoor activities	5237
Shooting range	12496
Total	25158

**PROPOSED SITE**

**Proposed site: Site 1**

For site 1 (Figure 5), this site is located at AlSalamah district, Jeddah. This site has an area of 28687m<sup>2</sup>

**Proposed site: Site 2**

For site 2 (Figure 6), this site is located at Al Mohammadiyah district, Jeddah. This site has an area of 24033m<sup>2</sup>



Figure 5. Site 1



Figure 6. Site 2

**SITE EVALUATION AND ANALYSIS**

This work has proposed two sites for developing the Beyond The Power Complex. Site evaluation analysis was performed on both sites to determine the most suitable site. Furthermore, weighting factors (WF) were used for evaluation, where 1 = not very important, 2 = somewhat important, 3 = important. Both sites were evaluated based on several criteria's, which are accessibility, safety, neighborhood compatibility, visibility, views, site area, noise level, and surrounding. Table 2 shows the site evaluation analysis result. Based on Table 2, the results have shown that site 1 exhibited the highest score of 82, compared to site 2 with score of 66. Thus site 1 was selected as the proposed development site.

**Table 2.** Site evaluation

Criteria	Weighting factors (WF)	Site 1	Site 2
Accessibility	3	27	15
Safety	2	18	14
Neighborhood compatibility	1	4.5	4
Visibility	1	8	9
Views	0.5	4	3
Site Area	1	9	9
Noise level	0.5	4.5	4
Surrounding	1	7	8
Total	-	82	66

The site can be reached by car through the Almadinah road and the Prince Sultan road. Visitors can easily access the site through Quraysh Street, which connects the most important roads. Also, people near the site can reach the complex by walking or cycling, which can also improve walking in this area. The orientation of the site and its interesting shape make it possible to benefit from the prevailing winds in the northwest. The path of the sun determines where the shading devices must be used. The existing curve of the site is the most powerful aspect of the site.

**PROJECT DESIGN**

Beyond the Power Complex is a complex to support weapons usage and educating self-defence, to spread awareness in society in a legal and organized manner. The proposed facilities include shooting ranges, classes, a gym including dojo fields and comprehensive landscaping improvements. It is based on international standards and local requirements; indoor and outdoor retail, archery, retail, local arms exhibitions are part of the public zone. The main aim of shooting range, archery, gyms is to provide guests with the greatest possible experience and

skills. The building is divided into three zones, which is shooting zone, sport facility zone and public zone. The building design concept is based on a bow shape. In terms of its architecture, the building is comprised of two skin façade walls. In addition, buttress shading element have been used in the exterior of the building. Likewise, the building has incorporated arcades that provides shades for the building and helps to reduce the heat. In addition, the building is fitted with grey water recycling system and energy efficient lighting to increase the sustainability features of the building. The facilities of this complex is comprised of archery shooting range, rifle shooting range, gun shooting range, swimming pool, gym, gallery, lounge, retail shop, administration, restaurant, simulation area, laboratory, classes, lecture halls, trainers offices, dojo arena, sports field, boxing arena and physical training arena. The design of the complex is shown in Figure 7 to Figure 9, respectively.



Figure 7. Top view of Beyond the Power Complex



Figure 8. Front overview of Beyond the Power Complex



Figure 9. Back overview of Beyond the Power Complex

**CONCLUSION**

In this work, the proposed development of Beyond the Power Complex was presented. For the complex, the estimated gross floor area is 25158 m<sup>2</sup>. In addition, the complex is comprised of few zones, such as admin, academy, gallery/shops, catering, sports facilities, outdoor activities, and shooting range. The Beyond the Power Complex is expected to provide the necessary experience for young people to learn about shooting, weapon use, physical training and self-defence. In addition, it could foster the interest among young people to join and serve the Saudi Arabian army and contribute to the nation.

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