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PROMOTIONAL CENTRE FOR INDIAN TRADITIONAL SPORTS

By MARIJALI R THAKUR

A REPORT Submitted in partial fulfillment of the requirements for the degree of  
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# PROMOTIONAL CENTRE FOR INDIAN TRADITIONAL SPORTS

By

MARIJALI R THAKUR

A REPORT

Submitted in partial fulfillment of the requirements for the degree of  
Bachelor of Architecture.

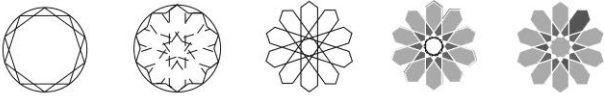


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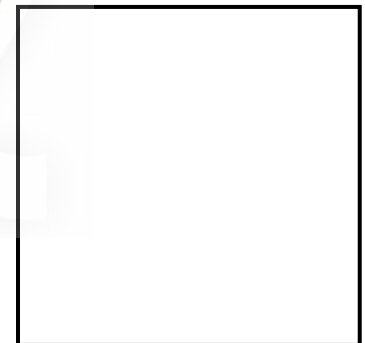
This is to certify that the Design Dissertation titled Promotional Centre for Indian Traditional Sports is the bonafide work of the student Marijali R Thakur from Final Year B. Arch of AIKTC School of Architecture and was carried out in college under my guidance.

Sign of the guide:

Name of the guide: Prof. Sandeepkumar Prajapati

Sign of the Dean: \_\_\_\_\_

Date:



## DECLARATION

I hereby declare that this written submission entitled

“Promotional Centre for Indian Traditional Sports”

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## ACKNOWLEDGEMENT

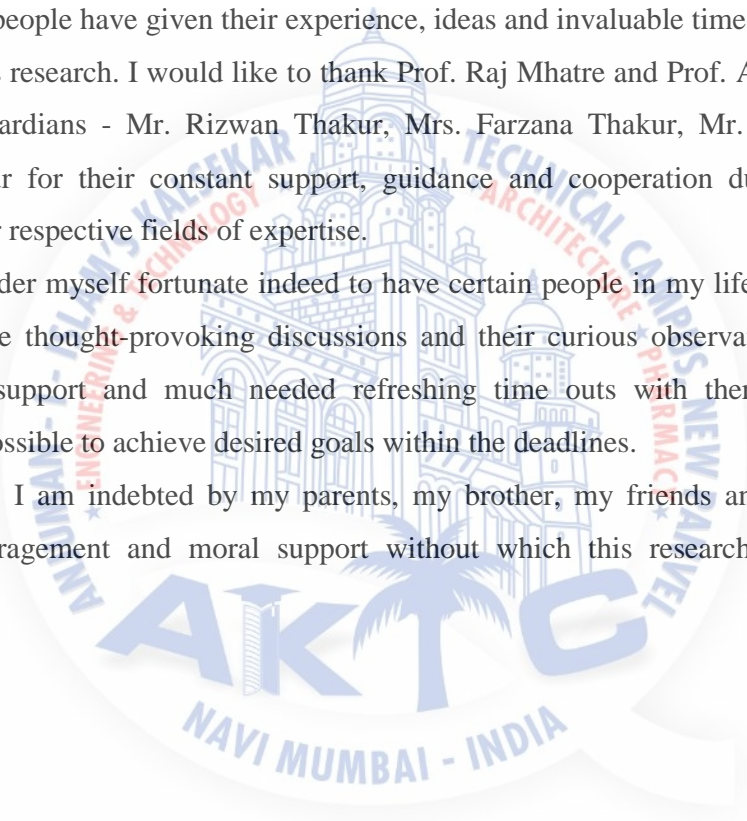
On the very outset of this dissertation, I would like to extend my sincere gratitude and heartfelt obligation towards all the individuals responsible for its successful completion.

I take this opportunity to express gratitude to my guide Prof. Sandeepkumar Prajapati for his exemplary guidance, monitoring and constant encouragement throughout the course of this thesis. The guidance, blessings and help conveyed by him shall undoubtedly carry me a long way from this point forth. It can be certainly said, without his supervision and support, this report would not stand where it does at present.

Many people have given their experience, ideas and invaluable time to condition me in order to complete this research. I would like to thank Prof. Raj Mhatre and Prof. Abhishek Kadam and my Parents and guardians - Mr. Rizwan Thakur, Mrs. Farzana Thakur, Mr. Irfan Thakur and Mrs. Shaheen Thakur for their constant support, guidance and cooperation during the period of my research in their respective fields of expertise.

I consider myself fortunate indeed to have certain people in my life like Abdoali, Saud and Deep for all the thought-provoking discussions and their curious observations about this project. Without their support and much needed refreshing time outs with them, it would have been practically impossible to achieve desired goals within the deadlines.

Lastly, I am indebted by my parents, my brother, my friends and the Almighty for the constant encouragement and moral support without which this research would not have been possible.



## 1. ABSTRACT

This research paper is an attempt to research on promotion of Indian traditional sports by identifying the relationship between the significance of body movement, social interaction and cultural identity facilitated by a space for sports. These identifications form the basis for articulating a design strategy concerning architectural quality in future space for upliftment of Indian traditional sports. The research paper focuses on strategies to revive and uplift traditional sports by means of architecture by designing a space exclusively for traditional sports.

*Can architecture help to revive the interest of people in the society for playing Indian traditional sports which are being forgotten day by day?*

This research paper focuses on two major objectives. First objective is that the study shall showcase the possible ways and opportunities that can help athletes associated with these underrated sports to excel and get fame and the other objective is to make the modern generation aware of their native traditional games and their importance in the society so as to shift their interest and attention from playing modern virtual reality games to Indian traditional games. This report consists of a theoretical study regarding future spaces for various sports and also talks about the scope and possible ways through which the Indian traditional sports can be given a limelight in the society which will have a subsidiary benefit of riving the cultural identity.

The main aim of this thesis proposal is to provide a platform for the promotion, display and development of Indian traditional sports in order to protect them from losing their identity from the society. The project strives to safeguard, preserve and promote the Indian traditional sports, in a very innovative and broad-minded approach combining research, probable solutions and design.

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## 2.1. INTRODUCTION:

The Youth signify the most vibrant and dynamic sector of the population of any country which involve in the field of sports. With about 65% of the population under 35 years of age, India is one of the youngest nations in the World. 27.5% of the population of India comprises of the youth between the age group of 15-29 years. It is estimated that the population of India would have a median age of 28 years by the year 2020. Both central and state governments need to channelize the energies of this large group and provide them with proper infrastructure of appropriate standards to excel in the field of sports at national and international levels.

Through a variety of traditional sports and games, many civilizations have developed its own indigenous modes of physical endeavor and healthy social interaction. These traditional sports form a significant factor of social and cultural life which are rooted in the Indian heritage, and can be found in the archaeological excavations of Harappa and Mohenjodaro, the Vedic literature, the Mahabharata and the Ramayana, the literary works of Dandin, Panini, Kalidasa and Kautilya as well as in Jain and Buddhist scriptures. Traditional sports and games had been seen as a very vital component of education and development of the human personality and behavior.

*“The diversity of physical education, physical activity and sport is a basic feature of their value and appeal. In their modern and evolving forms, indigenous and traditional games, dances and sports express the world’s rich cultural heritage and hence they should be protected and promoted.”*

*International Charter of Physical Education, Physical Activity and Sport, Art.1.5*

India is home to many traditional and indigenous games that have fostered multi-dimensional and all-round development of an individual and the society as a whole. Such sports across the world have cultural significance along with various subsidiary benefits that contribute to the wellbeing of an individual. Traditional sports and games are those games within the society that people have played for many generations, because participation in this kind of games and sports gives them a chance to practice something that has meaning within their society. Most of these games are linked with religion, festival celebrations, work, community living and interaction, family life, birth and death.

*“The celebration of traditional and indigenous forms of sports and games, which originate from the roots of many different communities, is a growing feature of contemporary culture.”*

World Sport Encyclopaedia, Koichiro Matsuura, UNESCO Director-General, 2003.

These traditional sports and games should be uplifted and safeguarded as sports practices and intangible cultural heritage for the future development of sports, individuals and societies. Due to the lack of proper platform to promote and develop this kind of sports, the traditional sports are losing their identity from the society.



### 2.1.1. AIM

The main aim of this thesis is to provide a platform for the promotion, display and development of Indian traditional sports in order to protect them from losing their identity from the society.

### 2.1.2. OBJECTIVES

- To create an awareness on the importance of Indian traditional sports and games is one of the major objectives of the project.
- To protect the identity and nurture the existing traditional sports which are not getting uplifted in the society due to lack of attention and publicity.
- The basic objective of the project is to make people play various kinds of traditional sports. Once this happens, it will lead to several benefits for the individual, the team and the society as a whole. And there would also be a spill over effect of people choosing sports as a career and winning competitions and tournaments at various levels.
- To provide a platform to revive the traditional sports that have lost their significance in the society due to lack of proper limelight.
- To help and give governments, communities and individuals the chance to express both cultural pride and richness.
- To reinforce youth empowerment, enhance intercultural dialogue and peace and to promote ethical sports practices to incorporate sportsmanship spirit among individuals.
- To establish infrastructure and an integrated framework for provision of training and grooming of talents at different levels of hierarchy, age and proficiency.
- To attract the attention of various corporate sector and investors to invest in the development of Indian traditional sports.

### 2.1.3. SCOPE

- The project will help to design a space which will also act as a museum displaying various traditional sports which have lost their importance from the society.
- Only some of the traditional sports will be given the training facilities and the rest smaller sports will be only provided for leisure.
- It will provide an interactive experience for sportspersons to break the monotony of built spaces.
- It will provide a platform for promoting traditional sports.

### 2.1.4. LIMITATIONS

- The traditional sports for which the project is to be designed is specific to Indian traditional sports.
- Some of the smaller traditional sports will be provided only for leisure and no training facility will be provided for them.
- Only a certain number of traditional sports will be focused on.

### 2.1.5. RESEARCH METHODOLOGY

- In-depth study of various Indian traditional sports and their importance and selecting the sports to be uplifted through the project.
- Conduct literature study to understand the impact of various traditional sports and physical education in one's life.
- To study the present conditions of various sports and collect data regarding the tournaments played for a particular traditional sport at local, state, national and international level.
- Collecting articles to prove the government's interest in promoting certain traditional sports.
- Identification of case studies of various prominent examples in India and abroad.
- Conducting live, net as well as book case studies.
- Comparative analysis for different case study.

### 2.1.6. HYPOTHESIS

Traditional sports are the games and movements that are traditional to our cultures. They form an important part of our history and they help to shape us and our culture, which directly impact our variety of values. But due to lack of proper attention and infrastructure facilities given to such types of sports, these sports are fading away from the society and there is a need to revive them.

*“Architecture pertaining to games, sports, body and movement is about much more than just putting a roof over some competitive activities. The architecture may potentially increase the joy of movement and inspire both children and adults to participate in sports, play and social interaction entirely new ways.”*

*[Dorte Mandrup, 2011]*

The project which involves creating something which concerns with ‘architecture’ and ‘sports’ and the ‘culture’ can help us to revive traditional sports in the society. More specifically, these subjects will be addressed in the project as concerning ‘space for sports’, ‘body movement’ and ‘cultural identity’ - all surrounding the subject of social interaction.



The proposed architectural intervention that promotes these Indian traditional sports will help to make modern generation aware of their importance. The project will help to make people play various kinds of traditional sports. This will lead to several benefits for the individual, the team and the society as a whole. And there would also be a subsidiary effect of people choosing sports as a career and winning competitions and tournaments at various levels. It will also provide a platform for existing talents to excel in this field at international level who are held back due to lack of proper infrastructural facilities and proper limelight given to their respective traditional sport.

## 2.2. LITERATURE REVIEW

*“Part of the universal heritage diversity”, TSG are “practices in an individual or collective manner, deriving from regional or local identity, based on accepted rules”. They “dispose of a popular character (...) and promote global health”*

*(Collective Consultation, Tehran, Islamic Republic of Iran, 2009).*

### 2.2.1. DEFINITIONS AND DESCRIPTIONS

1. **Arena** - an enclosed area for the presentation of sports events and spectacles.
2. **Athletic Centre**- is a group of sports facilities.
3. **Gymnasium**- a room or building equipped for gymnastics, games, and other physical exercise.
4. **Leisure** - freedom from the demands of work or duty.
5. **Ministry of Youth Affairs and Sports** - a branch of the Government of India, which administers Department of youth affairs and Department of Sports in India.
6. **Sports Authority of India (SAI)** - is the apex national sports body of India, established in 1984 by the Ministry of Youth Affairs and Sports of Government of India for the development of sport in India.
7. **Recreation** - activity done for enjoyment and leisure.
8. **Sports Complex** - is a group of sports facilities. For example, there are track and field stadiums, football stadiums, baseball stadiums, swimming pools, and gymnasiums.sports zone.
9. **Sports** - An activity involving physical exertion and skill that is governed by a set of rules.
10. **Stadium** - A large, usually open structure for sports events with tiered seating for spectators.

## 2.2.2. ARTICLES BY OTHER AUTHORS AND INTERVIEWS

Printed from  
**THE TIMES OF INDIA**

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### Traditional sports fading away: PM Modi

PTI | May 27, 2018, 02:28 PM IST



NEW DELHI: Stay fit, play games but do not forget the traditional sports, Prime Minister Narendra Modi said on Sunday, highlighting the role of physical and mental fitness for all-round development. In his monthly 'Mann ki Baat' radio broadcast, he said he was overwhelmed by the response to his 'fit India' campaign.

"For me, it's heartwarming that the captain of the Indian cricket team Virat Kohli has included me in his challenge... I too have accepted his challenge. I believe this is gainful and this kind of a challenge will inspire us to be fit alongwith others, as well," he said.

But at the same time he expressed concern over "fading away" of traditional sport such as 'kho khho', 'pitthu', 'lattu' and 'gulli-danda' "to the point of extinction". "It will be the loss of the childhood spirit," he said and recalled a poem which talked of end of childhood and the games and the fun associated with it.

"It is crucial that today schools, neighbourhoods and youth congregations come forward and promote these games. Through crowd sourcing, we can create a very large archive of our traditional games," Modi suggested.

He said the videos of these games can be shot, outlining the way to play them along with the mandatory rules and regulations. Animation films, he suggested, can also be made so that the young generations can see and play for themselves.

On the 'Fit India' campaign, the prime minister said, "The more we play, the more we inspire the country to come out and play."

He said people are sharing videos of 'fitness challenge' on social media and everybody is getting connected with the Fit India campaign.

"People from the film fraternity, from the world of sports, common citizens of the country, members of the armed forces, school teachers or even those toiling in fields are building up a crescendo 'Hum Fit toh India Fit'... 'If we are fit, India is fit'," he said.

He said games are not just games; they teach us values for life, such as, setting targets, building up determination, developing team spirit and fostering mutual co-operation.

"And then, there is no prescribed age limit for participating in them. From tiny tots to the elderly, when we all play these games together then the term 'generation gap' disappears," he said.

*Source: Times of India, May 27, 2018.*

The above article talks about the concern of our PM Narendra Modi over “fading away” of our Indian traditional sports and games to the point of extinction and probable solutions according to our PM which can help us to revive these sports which includes shooting videos while playing these games to educate people about how that particular game is played, creating animated videos to educate our young generations about our traditional games and their importance.

**Press Information Bureau  
Government of India  
Ministry of Youth Affairs and Sports**

01-August-2017 15:11 IST

**Promotion of traditional sports**

The Minister of State (I/C) for Youth Affairs and Sports Shri Vijay Goel said in the Rajya Sabha today that the Sports is a State subject and, therefore, it is primarily the responsibility of the State Government to promote and develop Sports in the country. The Central Government complements/supplements the efforts of the State Governments. Under the revamped Khelo India proposal, there is an exclusive component called “Promotion of Rural, Indigenous and Tribal Games” for promotion and development of traditional sports.

In a written reply he said, while implementing sports promotional schemes in various sports disciplines across the country, Sports Authority of India (SAI) also promotes Indigenous Games and Martial Arts (IGMA) in 09 disciplines under its National Sports Talent Contest (NSTC) scheme where talented children are selected in the age group of 8-14 years in 10 SAI adopted Centres.

In order to revive such games and promote them among the masses, SAI has adopted the following indigenous games disciplines for their promotion:

Kalaripayatu, Kerala  
Silambam, Tamilnadu  
Kabaddi, Telengana  
Archery, Jharkhand  
Malkhamb, Maharashtra  
Mukna, Imphal  
Thangta, Imphal  
Khomlainai, Assam  
Gatka, Punjab

The trainees and the schools adopted in the IGMA scheme are provided with the sports kit, accidental insurance including medical, stipend, annual grant to the school for purchase of equipment and for organizing competitions for scouting talent.

*Source: Press Information Bureau, Government of India-Ministry of Youth Affairs and Sports.*

The above article talks about scheme undertaken for upliftment of various Indigenous Games and Martial Arts (IGMA) under SAI Sports Promotional Scheme undertaken by the Central and State governments. There is an exclusive component called “Promotion of Rural, Indigenous and Tribal Games” for promotion and development of traditional sports under the revamped Khelo India proposal.



## Indian Origin Games on the verge of extinction

August 16, 2015  
by Charu Pant



This is the age where children choose electronic gadget and play stations over traditional games such as hide and seek or kite flying. Today's generation prefers technology and popular games rather than the old-fashioned ones. The reasons are many – lack of interest, lack of time and even sufficient place to play the traditional games such as kho-kho, spinning top, kabaddi, satoliya and many more. Rather than going out kids prefer watching television or using the internet. Game stations inside shopping malls in India have become a trend now and have replaced the ancient games that originated in India. Sadly, kids do not even know the names of those games that were played earlier. The Indian origin games have lost their worth and are almost on the verge of extinction.

It's not just the younger generation which is ignorant of the games played in the past; the older generation too when asked about sports or games in India do not hesitate to start a conversation on Cricket – the religion of India. Debates or discussions have no place for the traditional sports such as wrestling (Kushti), Gilli Danda, Kho-Kho etc. Ask a youngster about the Indian teams and their members in different disciplines of sports and they have very little to no information about it. But they are updated about the international teams and players!

India is a country rich in traditions and games have found a special place in our culture. Our scriptures, history and mythology are testimony to the game of dice, chariot racing, sword fighting, archery and other games. As the culture and time changed, so did the sports in India. Gone are the days when kids used to hurry back home from school so that they could go out and play their favourite kho-kho, stapu or satoliya.

The above Indian origin games are quite exciting but despondently have lost their importance with time and there is a need to revive them.

*Source: Sportskeeda.com, Blog by Charu pant.*

The above article, written by Charu Pant, a Sports Journalist, PR specialist and award-winning Sportswoman talks about the present young generation of our country who prefer modern popular games rather than our old-fashioned traditional games due to lack of information about their importance and due to lack of popularity of the same. The article also talks about certain traditional games which are on the verge of extinction if not given proper attention and limelight.

**THE ECONOMIC TIMES**  
Business News

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## Modi government to promote traditional sports

BY VASUDHA VENUGOPAL, ET BUREAU | UPDATED: MAY 19, 2017, 01:01 AM IST Post a Comment

Minister of Information and Broadcasting (I&B) Venkaiah Naidu apart from overseeing the Narendra Modi government's three-year celebrations will embark on a unique mission on May 28. He will spearhead the government's efforts to preserve and promote India's indigenous sports such as malkhamba, Kushti, kho kho and kabaddi in their respective traditional strongholds.

The idea is to reinvigorate the culture of sports in a country where more than 65% of the population falls under 35 years of age.

He will also be part of the government's efforts through its public broadcaster Doordarshan in reaching out to villages on the importance of encouraging children in sports through "How to be an Olympian" programmes. In this, the leading olympians of the country will share their first hand experiences on what it takes to excel at the highest level in sports.

Doordarshan DG Surpiya Sahu said DD sports Channel will telecast a series of panel discussions on May 28 beginning with a conclave of sports ministers and experts. Doordarshan will also telecast short biopics of sports personalities in the coming days to inspire youth.

"The aim of this programme is also to telecast shows to get youngsters interested in traditional forms of sports which are still popular but not seen as potentially important. DD sports is the only free to air sports channel in India.

As per the recent data released by BARC (the industry-led body to measure the TV viewership) DD Free Dish reaches 22 million homes in India. More significant is its presence in rural areas. "Through these programmes, we want youngsters to know that there is a future for sports talent," Supriya Sahu said.

Last year, Prime Minister Narendra Modi had announced that the government would set up a task force to prepare action plan for the next three Olympics Games after India won just two medals at the recent Rio Games. He has also repeatedly spoken about the need to link sports with the education system in the country. The members of the PM's task force constituted to oversee India's planning and preparation will also be joining one of the sessions to throw light on this specific aspect.

The channel has also lined up an interaction between Naidu and participants from Varanasi. A session with states' sports ministers will discuss a road map for sports and the how governments at varied level could be a facilitator in this.

"Every state has its rich heritage of traditional sports. We are looking at airing various programmes for reviving them by promoting their history and importance in our traditions," Sahu said. Varanasi, for its cultural importance, has been picked as one of the centres for this interaction.

Doordarshan will also show special programmes on life at P Gopichand's badminton academy, Tata sports Academy in Jamshedpur and present interviews with sports stars such as P V Sidhu, Dipa Karmakar and Vijender Singh among others.

"More importantly, we are looking forward to discussions with sports ministers from various States Andhra Pradesh has done extremely well in promoting Badminton and Haryana is known to provide a good ecosystem for wrestling. Is there a takeaway for other States " Sahu said. I & B MoS Rajyavardhan Rathore, an olympian himself is also likely to talk about government's initiatives in sports .



Modi will also be part of the government's efforts through its public broadcaster Doordarshan in reaching out to villages on the importance of encouraging children in sports through "How to be an Olympian" programmes.

Big Change:

The end of Five-Year Plans: All you need to know

Source: *The Economic Times*, May 19, 2017.

The above article talks about the steps that will be taken by Minister of Information and Broadcasting (I&B) Venkaiah Naidu to preserve and promote traditional sports of India such as kushti, kho kho, Kushti, malkhamba and kabaddi in their respective traditional strongholds by airing various tournaments related to these sports on Doordarshan which reaches about 22 million homes in India.

Printed from

THE TIMES OF INDIA

## Kabaddi has all ingredients to become Olympic sport: Rathore

PTI | Jun 22, 2018, 09:56 PM IST



DUBAI: Sports Minister Rajyavardhan Singh Rathore said indigenous sport kabaddi has got all the ingredients to become an Olympic sport. Unveiling the first edition of Kabaddi Masters Dubai, Rathore said: "Hopefully kabaddi will very soon become a global sport and we will see it emerge as a strong contender for an Olympic sport."

The nine-day six-nation meet has participation from football-crazy Latin American nation Argentina who are competing at the international level only second time after the 2016 World Cup in Ahmedabad.

Kenya are also making their international debut here.

"Kabaddi has got all the qualities to become an Olympic sport. It has got speed, agility, power and teamwork. Hopefully when kabaddi comes to Olympics we will clinch the first gold medal," the 2004 Olympic silver medallist said.

"The fact that Kabaddi has come to Dubai and crossed Indian borders, it's an extremely positive step. I'm sure many more countries will be joining," said Rathore.

As of now, 33 countries play Kabaddi.

Rathore is happy that courtesy Pro Kabaddi League, the players have become stars now.

"There's been a very positive shift. Now when kabaddi players walk into the airport, people want to take photos with the players," he said.

Asked whether kabaddi can become a national sport, Rathore said: "India has place for every sport. There was a time when people would think cricket is the only sport other sport can't grow.

"People would say cricket is like a banyan tree, other sport can't grow under it. Now see how Indians have embraced all the sport. Is it necessary that we should give position and official designation to every sport?" he asked.

Recently, Odisha chief minister Naveen Patnaik had written a letter to Prime Minister Narendra Modi, urging him to officially recognise hockey as the national sport of India.

"Tell Odisha Chief Minister that they did not embrace yoga which is over thousand years old, why speak about hockey now..."

Source: *The Times of India*, June 22, 2018.

The above article talks about the views of the sports minister of India, Mr. Rajyavardhan Singh Rathore on uplifting Indian traditional sports. According to him, many of the traditional sports of India like Kabaddi have the potential to become an Olympic sport if given proper limelight and attention.

**THE DIPLOMAT**  
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## India's Growing Sports Industry

Can investment in sports be the next big thing for India's economy?

By Sooraj Aurora  
July 27, 2016

The global sports sector is estimated to be worth **between \$480-620 billion**. However, in India, sport is yet to be recognized as an economic sector, mainly due to the fact there has been little or no comprehensive study done on the industry's size, potential, and on the available opportunities that are on offer.

The sports industry sector may include several different segments such as sports tourism, sporting goods (in manufacturing and retail), sporting garments, and the available opportunities in sporting management and sponsorship. It is seen across the globe that sports as a full-fledged industry can and may contribute about 1 to 5 percent of the country's GDP.

However, a lack of sporting culture has held back the growth of a similar industry in India in the past, despite the growing awareness and interest in various different sports besides cricket. Hence, due to a lack of industry status along with a lack of sporting culture, corporate investments in India's sports have traditionally been limited to only non-profit corporate social responsibility activities and initiatives, while the scope for exploring profit-related activities under the sports industry have not been explored in vast depth.

Sport is regarded as one of the largest industries worldwide in terms of generating employment and revenue. Sports is a multi-billion dollar global industry propelled by enormous consumer demand. **According to Vinit Karnik**, national director for sports and live events at GroupM ESP, in the past, sports was seen as loss-making affair. However, with the formation of newer leagues and successful franchises, "the sports industry has grown by up to 10 percent by the year 2014," Karnik says.

New initiatives such as the establishment of Indian Premier League (Cricket), Hockey India League, Indian Badminton League, Pro Kabaddi League, and Indian Super League (Football) are indeed changing the face and the identity of Indian sports. The sports industry has indeed grown extensively – from Rs. 43.7 billion in 2013 to Rs. 48 billion (\$713 million) in 2015 – mainly due to the emergence of new sporting leagues **according to CVL Srinivas**, CEO of GroupM South Asia. Srinivas further went on to state that India has moved forward from a single sport nation to a multi-sport country, and is witnessing a boom that will benefit the sports business in the years to come.

The establishment of a sports industry in India can reap rich dividends in different segments. Employment and the massive market opportunities which will open up within this industry will be enormous in the years to come. However, new sports initiatives require professional human capital to speed up growth, and the harsh reality is that there are very few quality professional sports managers available in the country. Government initiatives to make India a sporting superpower will not be realized without professional sports managers. Indian sports industry has an impressive growth prospect even though its fundamentals are not solid. This is where professional sports managers **can bring a solid foundation** to India's sports industry.

Sports in India have a tremendous potential for expansion in the existing huge market. With a high growth economy and an ever-growing middle class with disposable income and leisure time, together with rapid growth in TV-owning households and a strong passion for sports, there is high potential for growth. These conditions have fostered a rapid rise in advertising, as local and international companies target this lucrative underdeveloped



Image Credit: Flickr/ Brandon Weight

market through sports. Moreover, buying TV and marketing rights for the large sporting events that now regularly take place in India provides ample business opportunities and huge revenue for many companies. Besides cricket, recent years have clearly made it evident that other sports such as Formula One racing and the Hockey India League have some serious business propositions that can be explored. Moreover, with the coming of the Indian Super League, football is starting to achieve real traction with TV audiences, which are tuning in in ever greater numbers for international leagues and competitions.

The sporting goods and apparel industry in India has been in existence for more than a century and has managed to flourish due to a skilled workforce. For example, the towels produced every year for the prestigious Wimbledon Grand Slam tennis tournament are produced in a factory in Gujarat, while footballs used in many of the international football tournaments across the globe are manufactured in the city of Jalandhar. Being labor-intensive in nature, the industry **provides employment** to more than 500,000 people. The nucleus of this industry in India is in and around the states of Punjab and Uttar Pradesh; however there is tremendous potential for developing a sporting goods industry just waiting to be explored in other cities like Mumbai, Kolkata, and Chennai.

The sectors of sports tourism and sports medicine also have massive business potential in India. Mega sporting events in the past, such as the Hockey World Cup and the 19th Commonwealth Games (both held in New Delhi in 2010), along with the ICC Cricket World Cup held in 2011, brought a number of tourists and sports enthusiasts. Simultaneously, there has also been a marked rise in the number of tour operators and agents **specializing in servicing the requirements** of this particular tourist segment. Even mainstream tour operators have set up separate divisions to tap the potential of sports tourism. An alien concept in India about a decade ago, sports tourism has evolved rapidly over the past five years, though it remains a niche segment. Sports tourism is a well-organized sector and major revenue churning in several nations around the world like the U.K., Germany, Singapore, South Africa, and Malaysia, while in India it is slowly picking up speed. **According to industry experts**, the segment is expected to have a growth rate of 10-20 percent in the coming years.

In recent times, a lot of sporting activity – in the form professional hockey, kabaddi, badminton, tennis, football, and cricket leagues – has come up in India, which requires a proper medical support system. There is also the question of whether Indian sports medicine is prepared to handle such on and off the field incidents. Although the sports medicine segment in India remains in its infancy stage, it took a step forward with the recent development of the Sports Injury Center at Safdarjung Hospital, which not only boasts world-class facilities and doctors, it can even provide treatment to international athletes at a very competitive rate. This in turn is likely to increase and enhance the sports tourism sector of India.

*Source: The Diplomat, Blog by Suraj Aurora.*

In the above article Sooraj Aurora, an Executive Officer associated with the International Affairs Division talks about the sports industry in India which has great business potential in the fields of management/sponsorship, marketing, and sports medicine and tourism and exporting of sports goods. The sports industry in India has increased extensively by about \$713 million between the year 2013 to 2014. Sports is a multi-billion-dollar industry which can contribute to about 1 to 5 percent of the country's GDP. Focus given to promote traditional sports of India by initiatives to establish leagues like Pro Kabaddi League, Pro Wrestling League, etc. have helped to revive the identity of Indian sports. Giving some limelight to various Indian traditional sports can draw the attention of various business sectors to invest in the sport industry to promote these sports further. This will help to transform India from a single sport country to a multi-sport nation which will help the growth of sports business in the years to come.

## **INTERVIEWS**

An interview with Mr. Ramesh Gawde, former player and coach of kushti (wrestling) at Indira Gandhi Sports Arena was conducted by the researcher, to gain more knowledge about the topic and to know the problems faced by the athletes involved in traditional sports.

### **How can India excel in the field of sports?**

When we talk about sports in India, we look at them only as a form of leisure. We don't look at them as a career option. Only one out of ten people in India look at sports as a career option. India needs to change this mentality to excel in the field of sports.

### **Why should we promote traditional sports like kabaddi, Kho-kho, Kushti, Mallakhamba, etc.?**

These traditional games are the games of our own soil. They depict our culture, our way of life, our festivities and hence we should be proud to promote them and take them to international levels to flaunt them in the international market. They can also contribute to our country's GDP if they are promoted and developed properly.

### **Why does India fail to promote its traditional sports?**

One of the major reasons is funding and lack of Infrastructural facilities allocated for these sports. It is not that India lacks a proper sport budget, India does spend on sports, but these funds should be properly distributed for the development of various sports including the traditional ones. This will help to develop various infrastructure and training facilities which will help these traditional sports to progress.

### **Is poverty one of the reasons why India fails to provide proper infrastructure for these indigenous sports?**

According to me, it is not about the poverty, it is about the priority. According to the World bank, Jamaica is one of the slowest developing country in the world, but following its heavy investment in organized and informal infrastructures for Athletics, it now prides itself on being home to the world's fastest man and woman (Usain Bolt and Elaine Thomson). So, if a proper attention is given to our traditional games, they can be uplifted.

**What are the possible reasons why the country's children are not much involved in India's traditional games?**

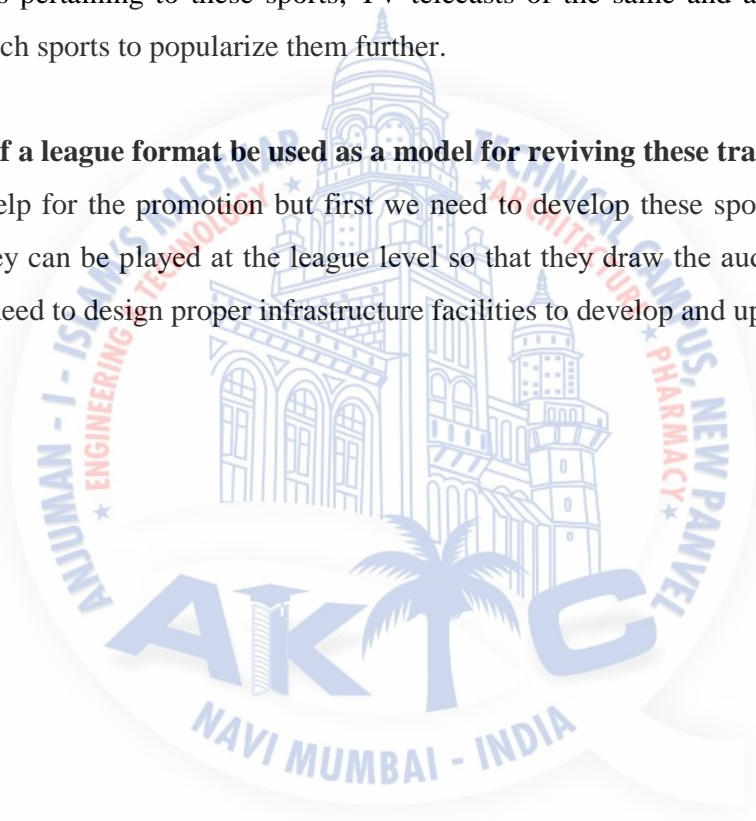
Majority of children from various metro cities like Mumbai, Delhi, etc. these days are involved in playing videogames due to lack of space to play our traditional sports. If there are proper spaces built to play these games, they will start playing it and further choose them as a career.

**According to you, how can we revive traditional sports and games our country?**

To revive and promote these games, we need to make the youths aware of their importance by starting leagues pertaining to these sports, TV telecasts of the same and also develop videogames dealing with such sports to popularize them further.

**Can starting of a league format be used as a model for reviving these traditional sports?**

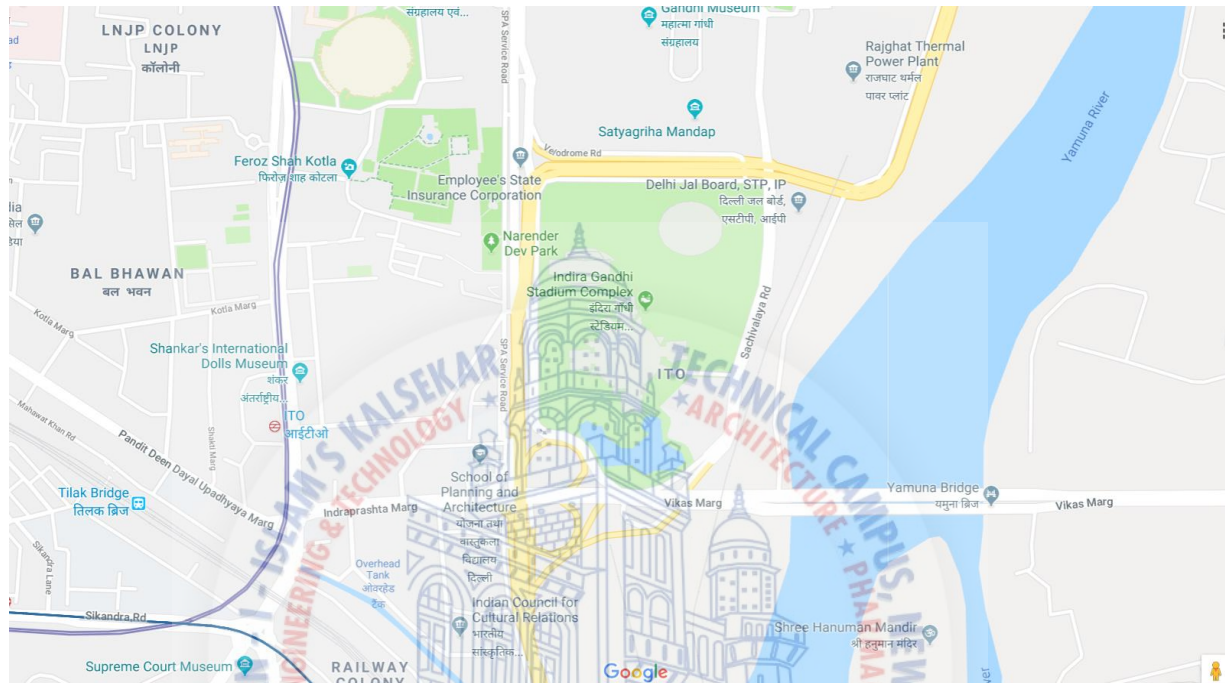
Leagues can help for the promotion but first we need to develop these sports to bring them to that level where they can be played at the league level so that they draw the audience's attention. So, to start with, we need to design proper infrastructure facilities to develop and uplift these sports.



## 2.2.3. CASE STUDIES

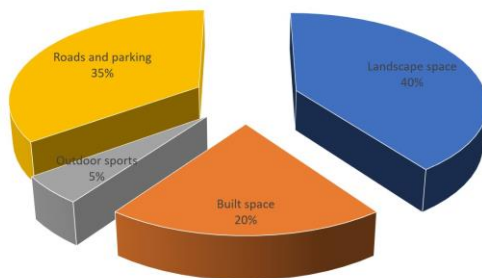
### 1.INDIRA GANDHI SPORTS ARENA, NEW DELHI

#### Introduction and Location



**Image 1.**Location map (Source-Google Maps)

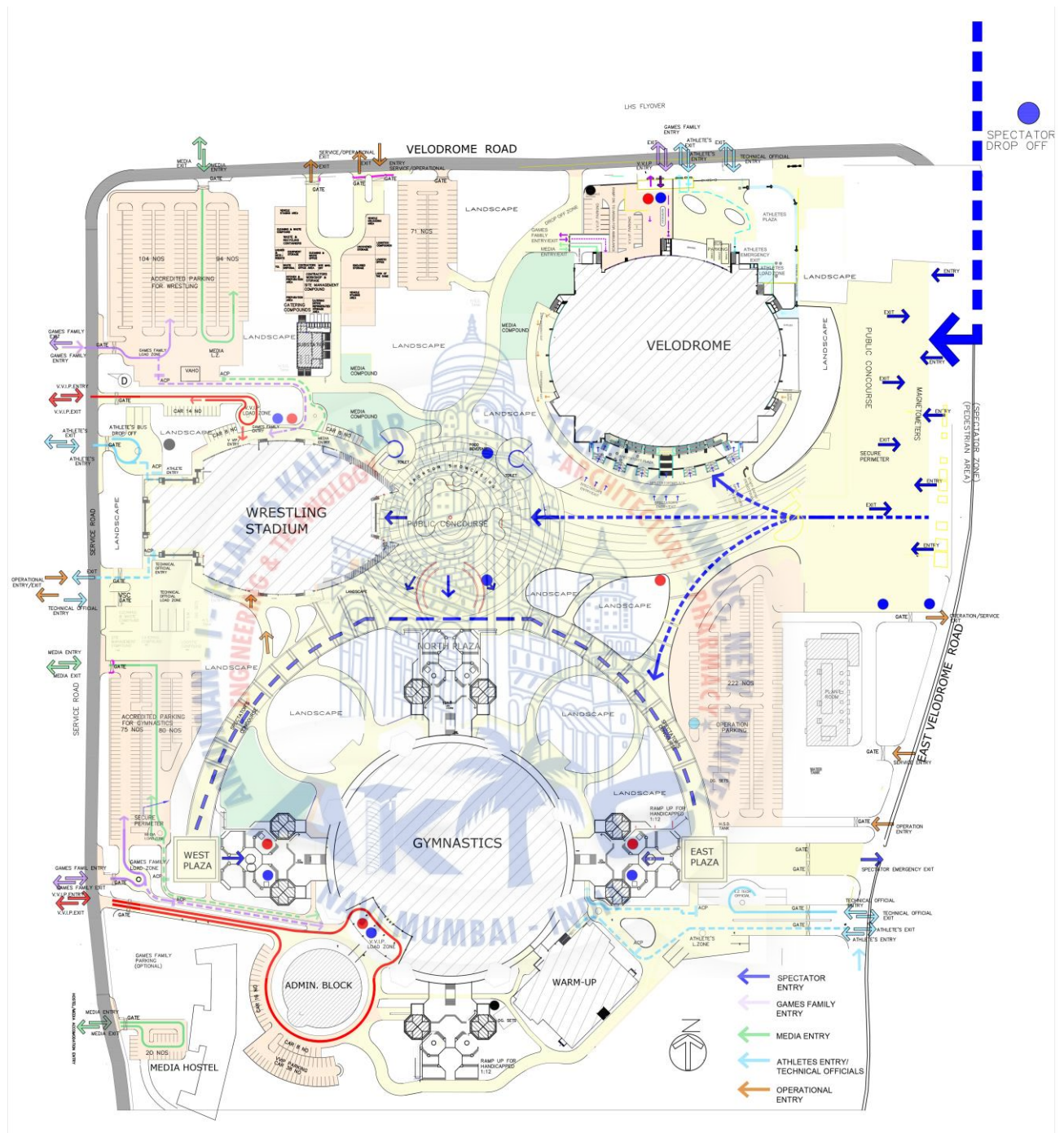
The Indira Gandhi Arena is located on the western bank of Yamuna River, in close proximity to the Delhi Secretariat (to its East) and the historical Ferozshah Kotla citadel (to its West). It is located at the Indraprastha Estate in the eastern region of New Delhi. It is the largest indoor sports arena in India and the third-largest in Asia. It is spread over an area of 102 acres.



**Figure 1.**Site area analysis



**Overall circulation, entry, exits, zoning and parking**



**Figure 2. Basic circulation and zoning**

Separate entry and exit provisions are made for spectators, media, athletes, service, operational, games families and vips. Parking is provided at different places as per requirement. Various open spaces are provided for athletes to warm up.

### Planning and other detail

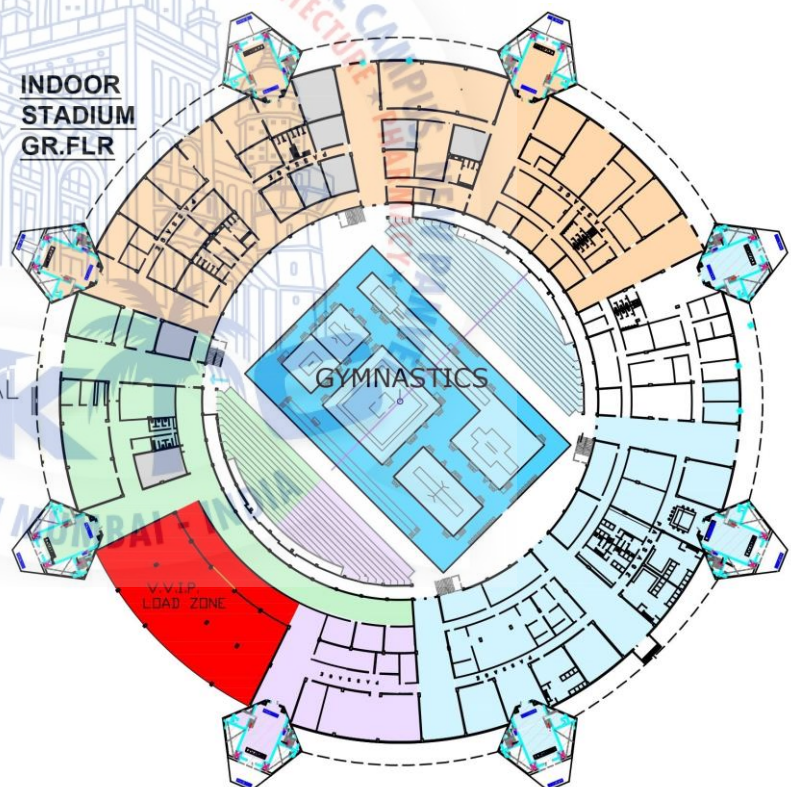
The overall sports complex has three major building blocks with admin building which are connected with each other by an interesting circulation pattern and relaxing landscapes.

#### Indoor stadium

Sports played include Volley Ball, Badminton, Boxing, Kabaddi, Basketball and Gymnastics. It has a capacity of 27000. It consists of a competition arena-one indoor stadium, two warm up halls. Stadium can be divided into 2 equal halves by a retractable sound-proof, fire-proof synthetic wall which enables to conduct 2 sports competitions simultaneously. Each half has the following 6 change rooms, 4 V.I.P areas, Media Room, Medical Room. Lighting for the arena is provided with metal halide lamps with the lighting of 1,600 lux-lumens. The wooden playing arena is of 4680.

#### LEGEND

	VVIP
	OPERATIONS
	FIELD OF PLAY
	ATHLETES/TECHNICAL OFFICIALS
	SPECTATOR
	MEDIA
	GAMES FAMILY
	BUILDING SERVICES



**Figure 3. Plan of Indoor stadium**



Image 2.Passive daylight

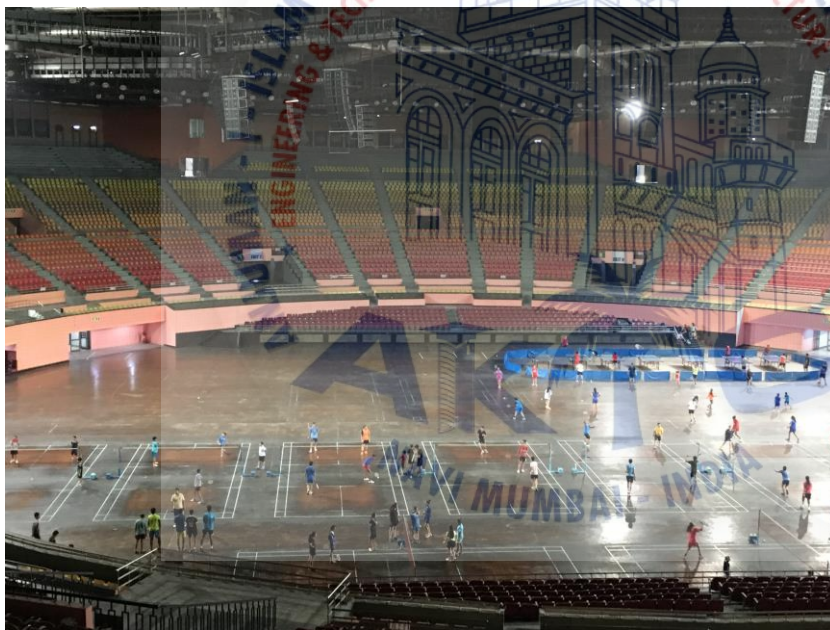


Image 3.Indoor arena

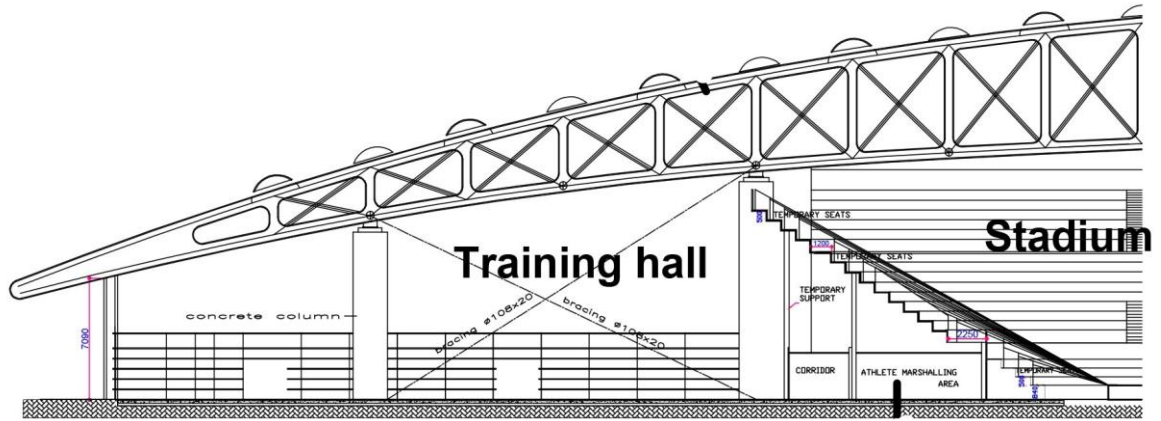


Figure 4. Section through Indoor stadium

Wrestling stadium

It has a seating capacity-6000. It consists of an indoor stadium with a warm up hall and a large Multipurpose hall (130m x 40m).

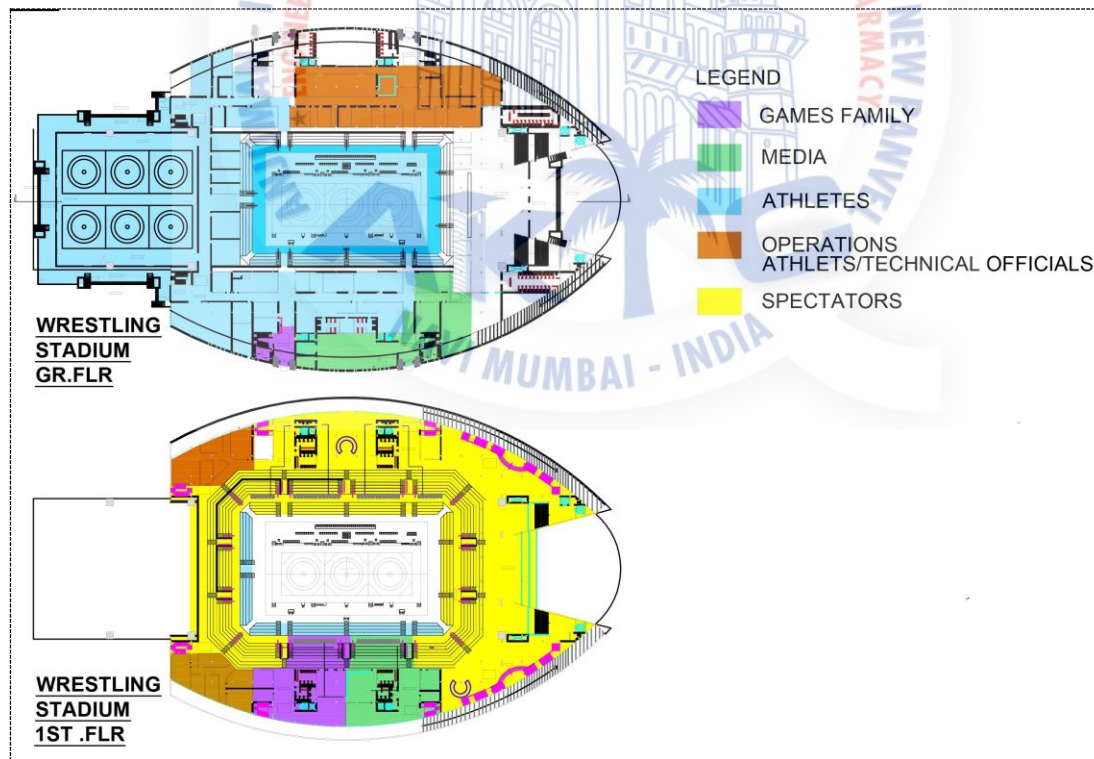


Figure 5. Plans of Wrestling Stadium



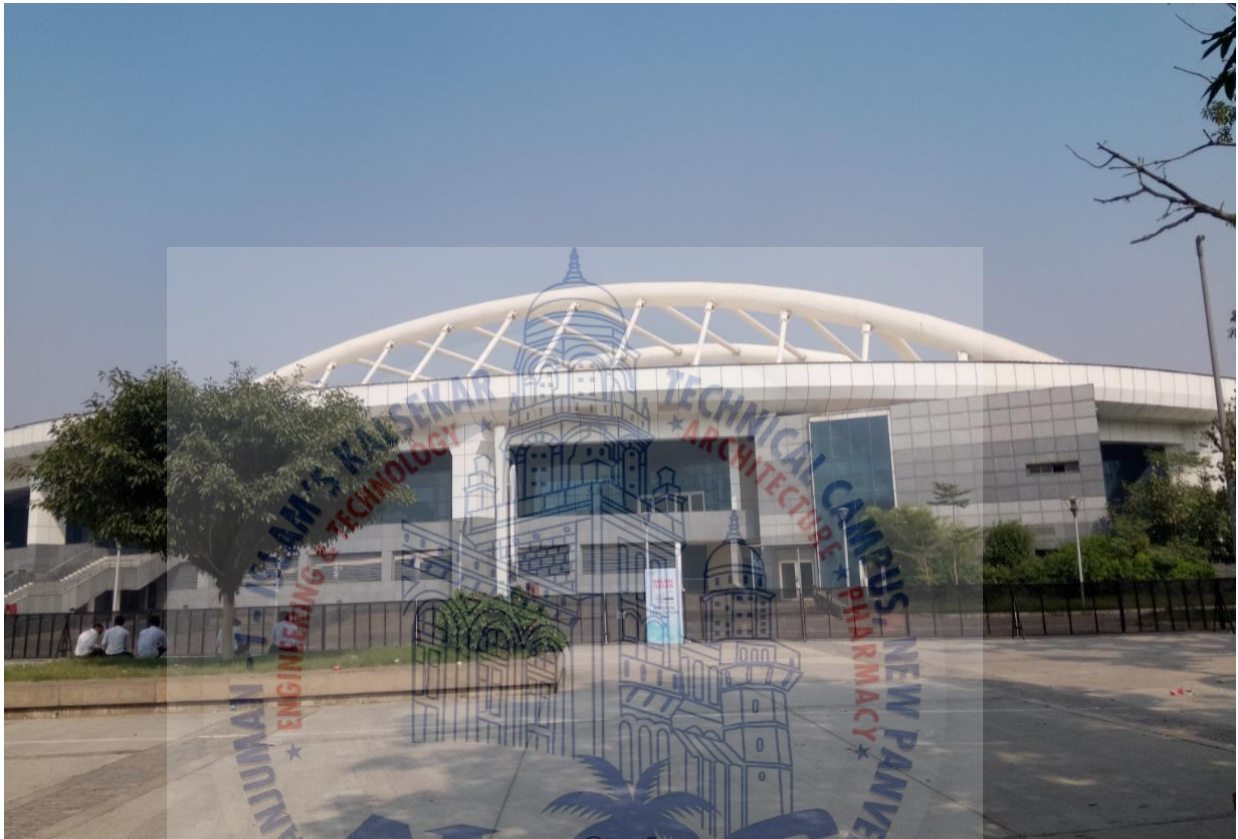
Image 4. Wrestling stadium



Image 5. Corridor spaces used as exhibition spaces

### Cycling Velodrome

It has a seating capacity of 3800. It is a steel structure with two large longitudinal arches of span 150m and crown height 33m. It has a 3,250 m timber track.



**Image 6.**Cycling velodrome.

### Significance of the case study

To understand the management and planning of indoor arenas, Circulation patterns etc. and study of various ancillary spaces required along with the playing areas in a sport complex.

## 2.SHREE SHIV CHHATRAPATI SPORTS COMPLEX, BALEWADI

### Introduction and location

Shri Shiv Chhatrapati Sports Complex is spread over a site of 63 acres. It is located at Balewadi on the outskirts of Pune, surrounded on east by new national highway, on the west by Mula river & on the south by the existing Sahyadri hills. It was built in 1994 and was renovated in 2008. It was the venue for the 3rd Commonwealth Youth Games, 2008.

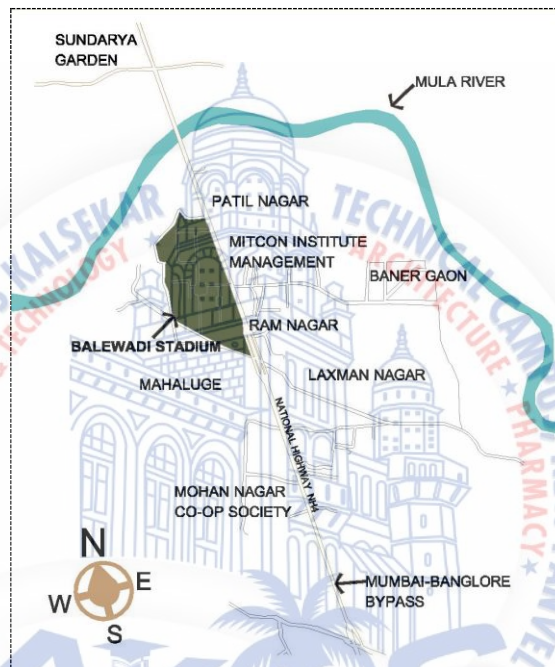


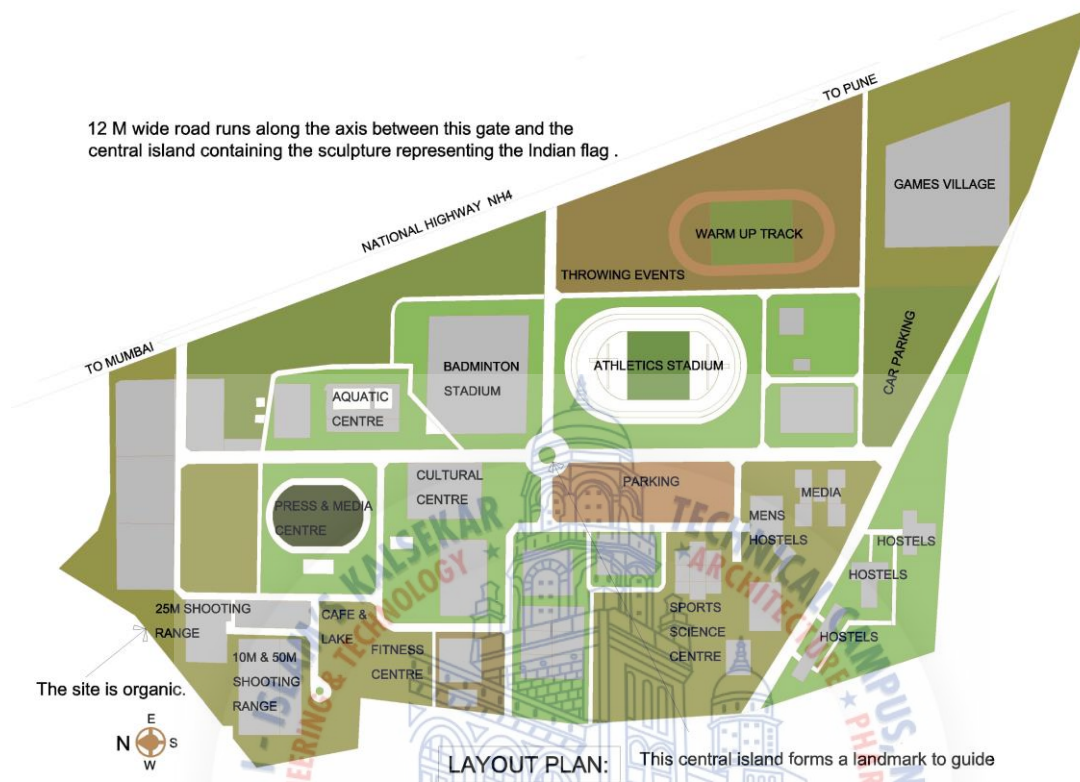
Image 7. Location map (Source-Google Maps)



Image 8. 3D view of the complex

(Source-<https://en.wikipedia.org/wiki/ShreeShivChhatrapatiSportsComplex>)

## Overall zoning and planning



**Figure 6. Layout plan**

The complex has four main entrances directly leading to the central arena from outside. There are 14 gates for public use for quick evacuation in case of emergency. Different zones or spaces are allocated for playing different types of sports with proper segregation. The swimming arena is closed from top only in the seating zone. The pools are open to sky. All grounds are orientated in N-S Direction. The main admin building is attached to the athletic stadium. Parking given as per NBC rule, which is 1 car for 260 seats in a stadium. Hostel block is placed in a separate zone far away from the sporting facility and is huge in number so that national athletes and staff can stay in the hostel during the selections.





Image 9.Badminton stadium



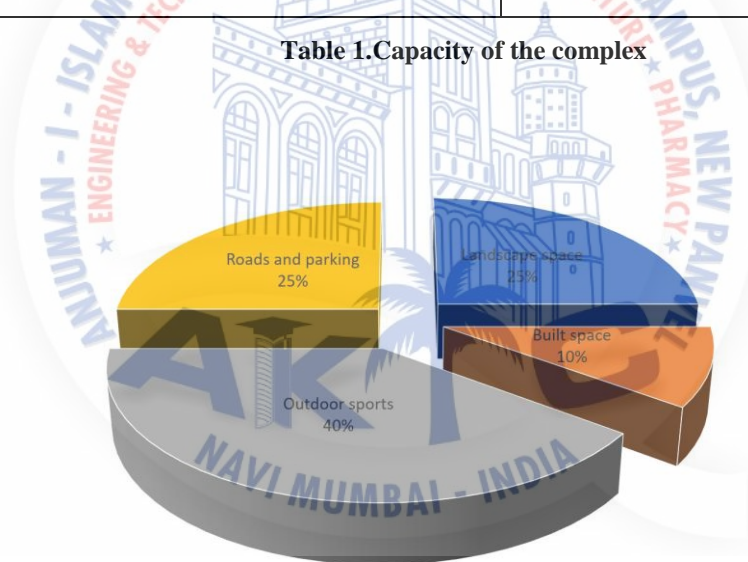
Image 10.View of Badminton stadium



Figure 7.Proximity chart

CAPACITY:	
MAIN STADIUM	20000 SPECTATORS
SWIMMING POOL	2500 SPECTATORS
INDOOR STADIUM	3000 SPECTATORS
KABADDI & KHO-KHO	1500 to 2500 SPECTATORS
VELODROME	3000 SPECTATORS
GYMNASTICS HALL	5000 SPECTATORS
LAWN TENNIS	3500 SPECTATORS
BASKETBALL & VOLLEYBALL	500 TO 1000 SPECTATORS
WRESTING	3000 SPECTATORS

**Table 1.Capacity of the complex**



**Figure 8.Site area analysis**

### **Working of the complex**

There are two batches for training in the campus which are from 6 am to 9 am in the morning & 3 pm to 6pm in the evening. This batch is scheduled as per needs of school students and working people timings so that they can do both things accordingly.

### Construction techniques used



**Image 11. Structural detail**

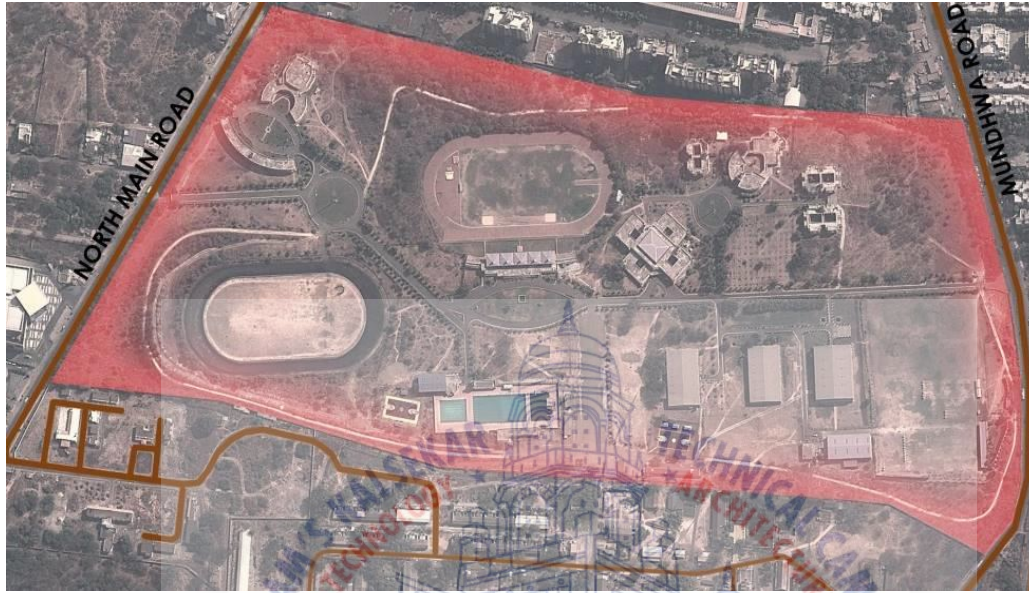
The Steel columns of the main stadium supports the light weight roof via the steel trusses. Such a system lets the load to get uniformly distributed and also provides column free space increasing flexibility as it can be easily extended and can lead to reduced structural weight. The material used for the roof covering is galvanized steel sheets which not only are light in weight but also durable in terms of weather conditions. Wooden flooring for the courts allows favorable running conditions for the players during the game allowing them not to skid or fall.

### Significance of case study

To understand segregation of spaces in terms of zoning of different types of sports and overall working of a sports complex and ancillary spaces required.

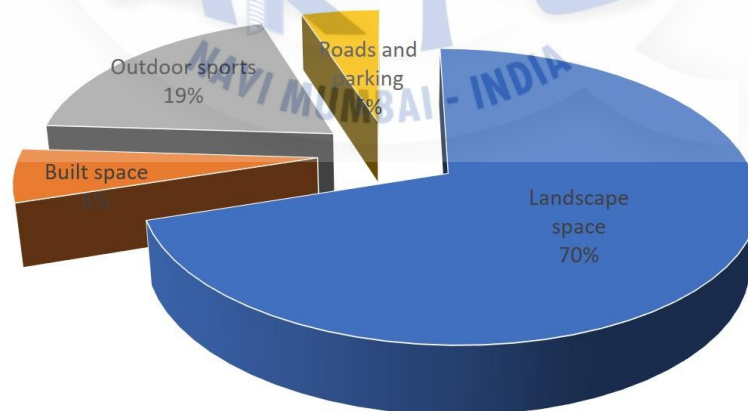
### 3.ARMY SPORTS INSTITUTE, PUNE

#### Introduction and location



**Image 12.**Location map (Source-Google Maps)

Army Sports Institute, Mundhwa is located Pune along North main road Koregaon park, District Pune, State Maharashtra. It is located around 8km from the Pune International Airport. The closest cities are Pune, Mumbai And Satara. It is the first Sports Academy in India to change the face of sporting culture in India which is located in heart of Pune.



**Figure 9.**Site area analysis

#### Overall zoning and planning



**Figure 10. Planning Layout**

The complex has three main entrances directly leading to the central arena from outside. Different zones or spaces are allocated for playing different types of sports with proper segregation. Hostel block is placed in a separate zone away from the sporting facility.



**Image 13.Overall site view** (Source-<http://www.armysportsinstitute.com>)

### **Academic working structure**

Talented sports person (Boys) can enter the programme on clearing the medical and skill test under following categories.

1. Cadet in Boys Sports Company.
  - Age – 10 to 16 years.
  - Education 6th to 10th standard.
  - Medically fit.
  - Medal winners in ASI sports discipline.
  - Outstanding motor qualities.
  
2. Outstanding Civilians Sport men.
  - Age – 16 to 24 years.
  - Education 10th pass.
  - Enrolled as – Direct Havildar / Naib Subedar.
  - Medal winners in ASI sports discipline.
  - Sport achievement – International representation.

### **Sports science cell**

Sports Science Faculty of ASI contributes to the development performance of sport persons and coaches through integration of the highest standards of applied Sports Science

- Human performance evaluation and performance.
- Commute of the full complement of equipment for acute and chronic injury management.
- Enhancement lab.
- Physiotherapy department.
- Psychology lab.
- Relaxation room.
- Hydrotherapy facility.
- Hypoxic chamber (First of its kind in country).
- Three-dimensional Motion Analyser cameras.
- 10 bed detention room.
- Sauna, stream and contrast both.
- Department of Nutrition and Dietetics.
- Rehabilitation gym.
- Psychological & bio-mechanical evaluation.
- Multimedia room, steam bath, ice machine, wall bar.

### **Significance of the case study**

To understand ways of incorporating sports activities in academic routine and to understand various ancillary spaces required which are associated with sports activities.

#### 4.AUSTRALIA SPORTS INSTITUTE, NEW SOUTH WALES.

##### Introduction and location

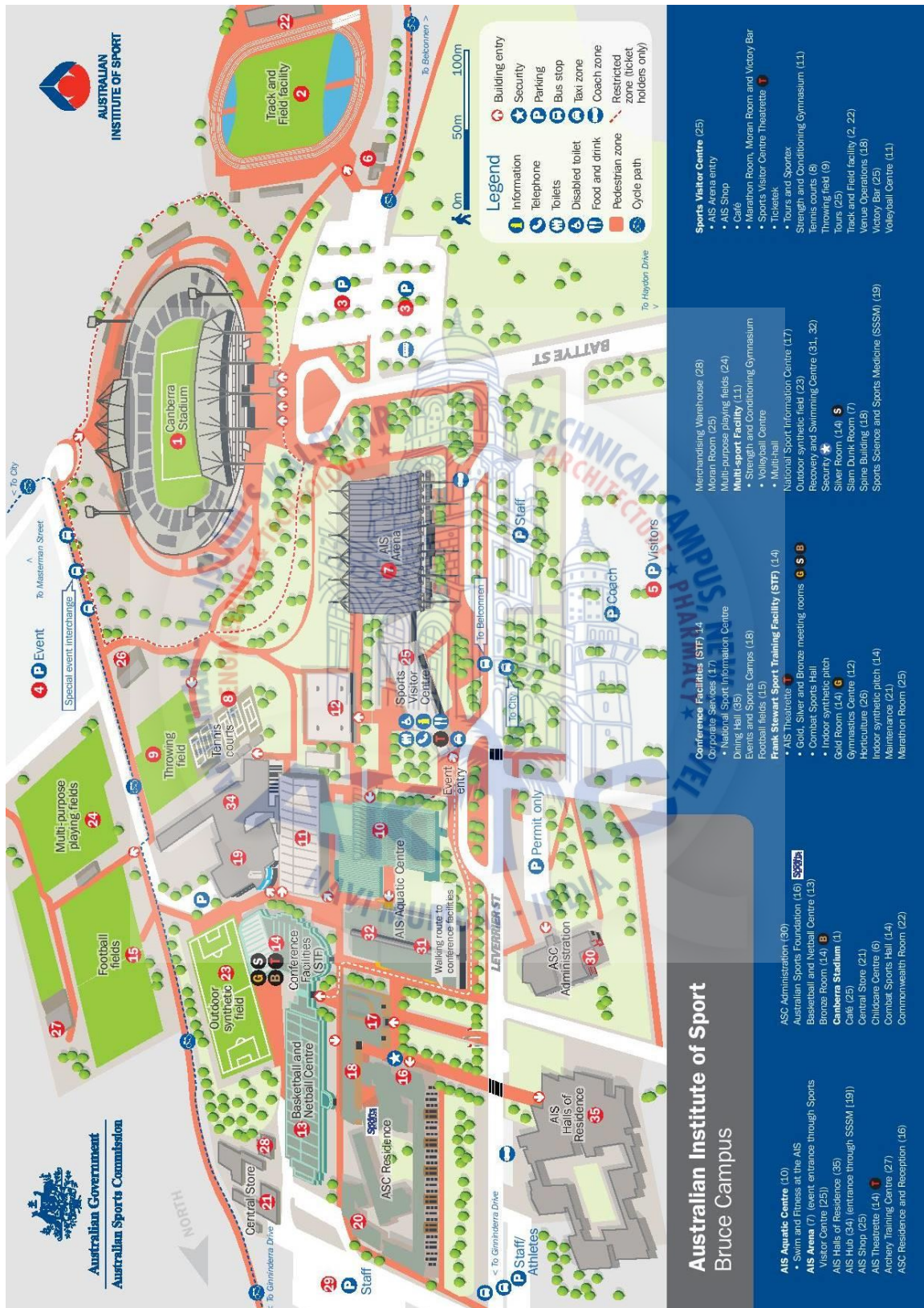


**Image 14.**Location map (Google Maps)

It is located in New South Wales, Canberra. The Australian Institute of Sport (AIS) is a sports training institution in Australia. The Institute's headquarters were opened in 1981 and are situated in Canberra (the capital city of Australia). The 163 acres (6,59,638 Sq.m) site campus is in the northern suburb of Bruce, but some of the institute's programs are located in other Australian cities. The AIS is a division of the Australian Sports Commission.



**Overall zoning and planning**



Different zones are allocated for various sports with a separate outdoor playfield for almost every sport. AIS arena Indoor stadium is the building used for playing various kinds of indoor sports. The complex also houses an aquatic centre along with the admin building and residential facility for athletes. Proper distinct areas are demarcated to enhance proper vehicular and pedestrian circulation throughout the campus with taxi and bus stops at various places inside the site. Parking is provided at various places as per need.

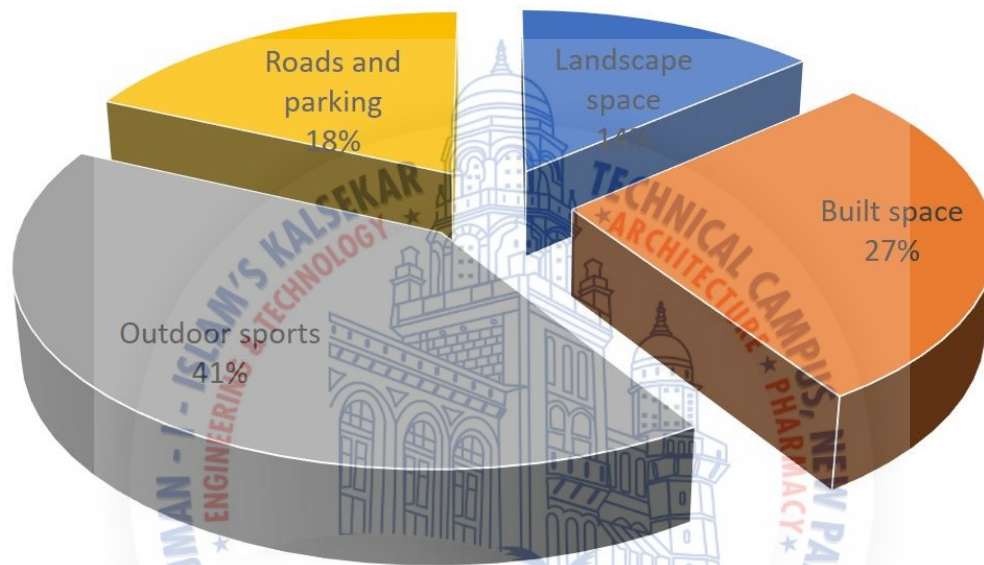


Figure 12.Site Area Analysis

### AIS Arena

Architectural features include a 1200 tonne suspended concrete panel roof supported by 12 steel masts and 36 mainstay cables. The roof has a span of 100.4 metres. The stadium is partly set into the ground to reduce its scale and to establish a visual connection between the landscape and the mast and cable structure of the roof.



**Image 15.**AIS Arena bird's eye view



**Image 16.**AIS Arena interior view 1



**Image 18.**AIS Arena interior view 2



**Image 17.**AIS Arena interior view 3

(Source-<https://www.sportaus.gov.au/ais>)

The AIS Arena is a 5,200-capacity indoor stadium which has been used for sports such as basketball, gymnastics and weightlifting as well as music concerts. It has a 1900sqm of floor space with 12.5m high ceiling. The area is used for various music concerts and other programmes as well. The arena seating number varies as per the stage size. In the round - 5200 reserved seating with centre stage as follows-

- End stage - 3450 full reserved seating with stage at one end.
- End stage general admission - 4400 with reserved seating using permanent and retractable seating plus general admission on floor.

### Sports visitor centre

It is located adjacent to the entrance of AIS Arena and is filled with sporting memorabilia and displays. It also has breakout and production rooms with internet access, an onsite box office, ATMs, cafe and shops.

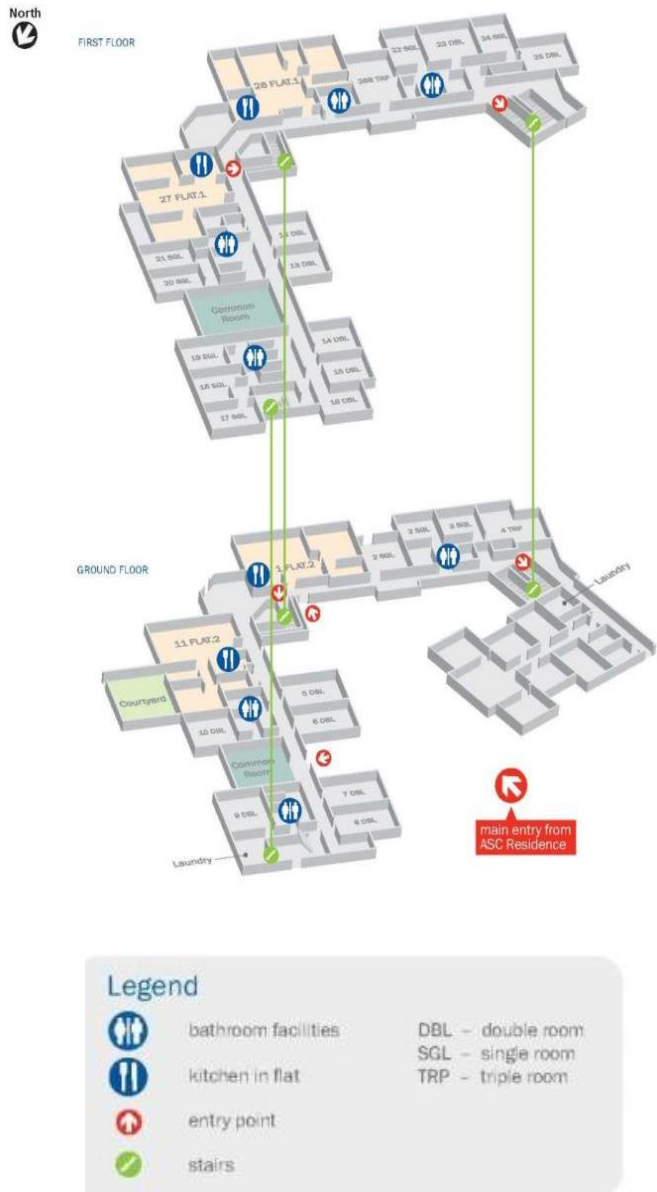


**Image 19.**AIS Sports visitor centre

*(Source-<https://www.sportaus.gov.au/ais>)*

### AIS Residence

A range of options is available to enable groups to be comfortably accommodated. These include: **twin share (bunk beds), four bed flats or single room accommodation.** Accommodation is provided in blocks of 12 single rooms each with shared bathroom facilities located in the AIS Residence. Rooms are supplied with king single bed, hotel quality mattress, study desk, bookshelf, lamp, wardrobe, sink with mirror, wall mounted fan, oil heater, small fridge and built-in wardrobe. Daily breakfast and dinner is provide in the Residences Dining Hall.



**Figure 13.Planning layout**

(Source-<https://www.sportaus.gov.au/ais>)

**Significance of the case study**

To understand segregation of spaces in terms of zoning and for better understanding of circulation by proper segregation of vehicular and pedestrian circulation. Also, to understand the residential facility planning aspect for athletes in a sports complex.



**Image 20.AIS Residence**



**Image 21.AIS Residence**



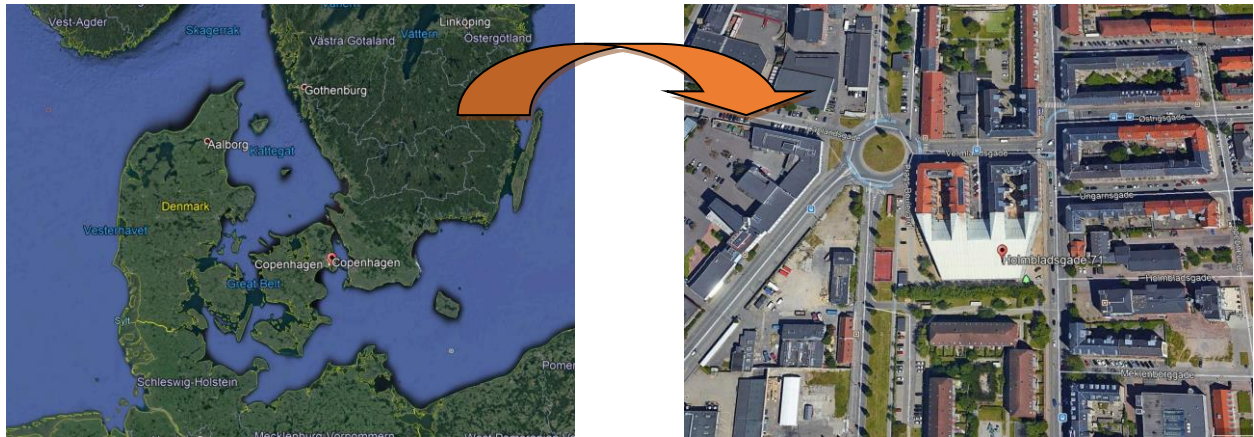
**Image 23.AIS Residence**



**Image 22.AIS Residence**

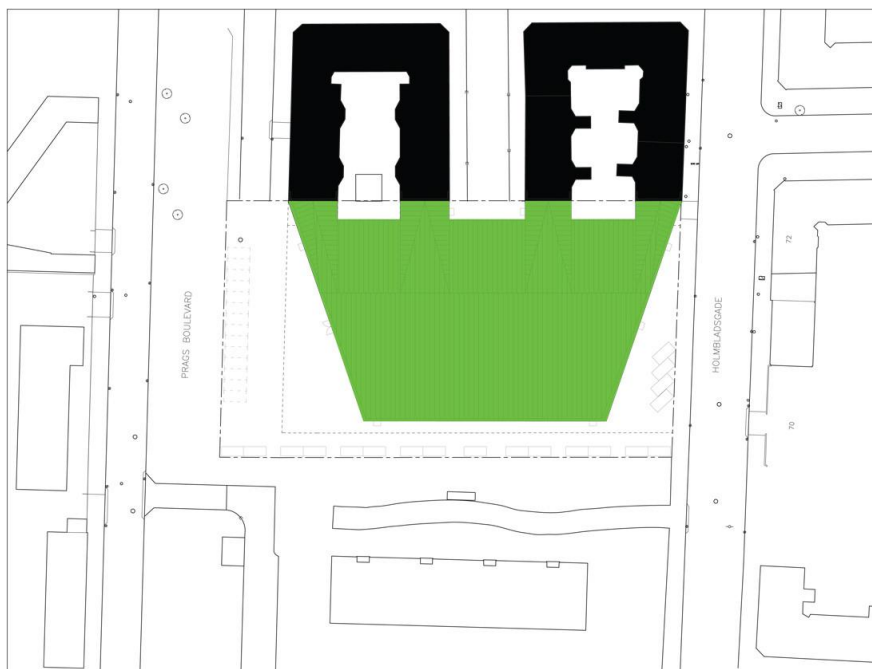
## 5.THE CRYSTAL-SPORTS AND CULTURE HOUSE, DENMARK.

### Introduction and Location



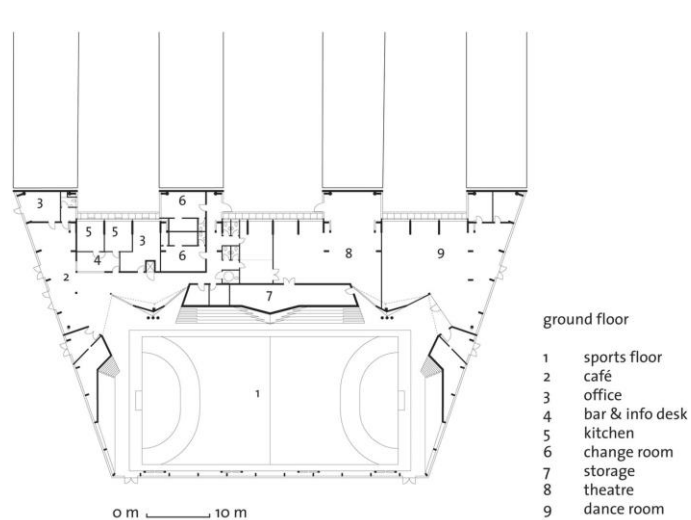
**Image 24.**Location map (Source-Google Earth)

It is located in Holmbladsgade, Copenhagen, Denmark. The Crystal - Sport and Culture House is located on a former parking lot, transforming a no man's land into an identity-creating and multifunctional inhabitant's place for sports and culture. The centre establishes a venue for the athletes of the neighbourhood to meet and get mutual inspiration as well as inspire new potential athletes to get started.

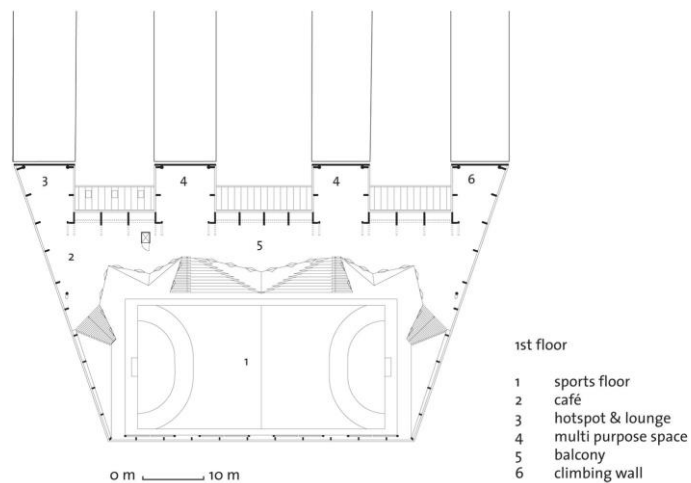


**Figure 14.**Site plan

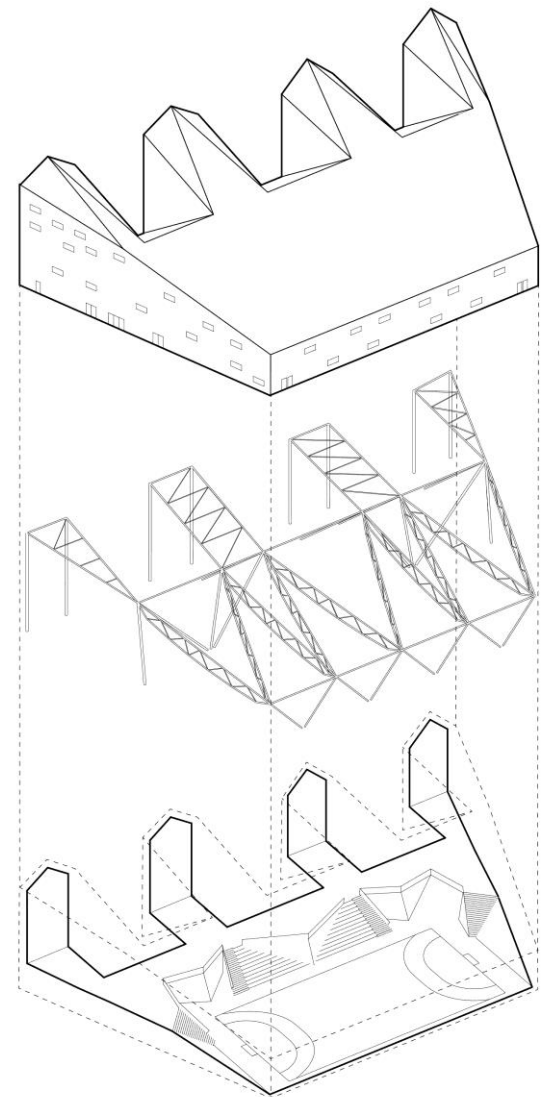
## Planning layout and spatial arrangements



**Figure 15. Ground floor plan**



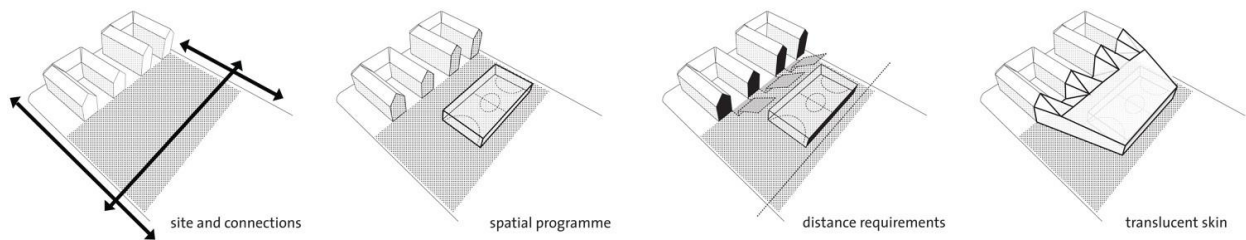
**Figure 17. First floor plan**



**Figure 16. Spatial Arrangement**

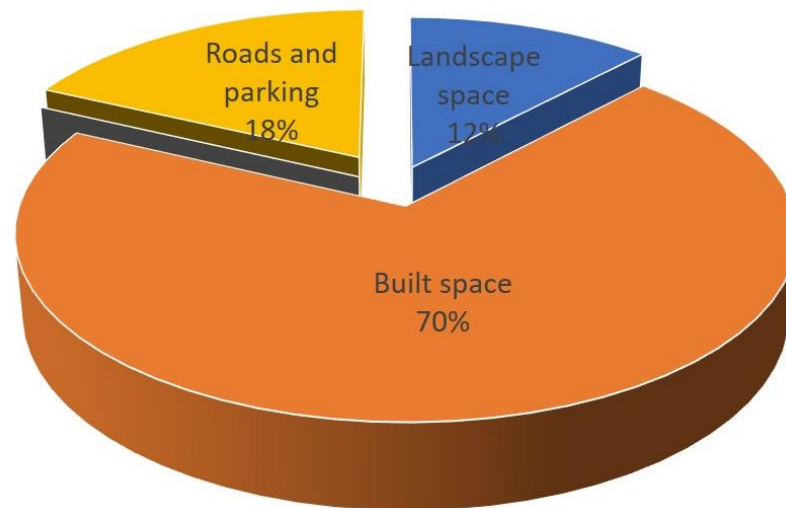
(Source-<https://www.archdaily.com/category/sports>)

The Crystal constitutes 3.400 m<sup>2</sup> with its main space being the arena, a big court for ball games (20 m x 40 m). Besides the arena there is a dance hall, culture hall, locker room, offices and a cafe at the entrance. These functions on the ground level connects to the upper level by the green cover that fills the whole arena and transforms into a slope with integrated seating for spectators and then into a balcony that connects to four minor spaces. The slope and balcony cover the spaces beneath.



**Figure 18. Form evolution**

(Source-<https://www.archdaily.com/category/sports>)

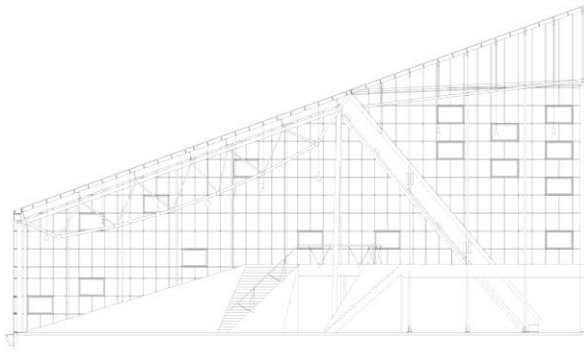


**Figure 19. Site Area Analysis**

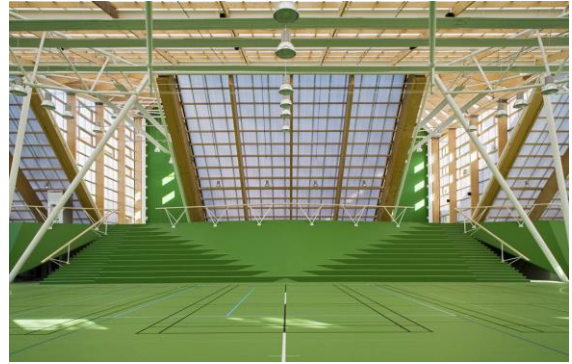
### **Materials and Construction**

Translucent polycarbonate is used for facade and roof material along with timber and steel framework. The facade material provides an incredible naturally well-lit interior, avoiding glare. The green soft mix-elastic sports floor, transforming into a slope and then balcony, provides an architectural element allowing for seating as well as inviting young and adults to play.





**Figure 20. Facade Elevation**



**Image 25. Elastic sports floor**



**Image 26. Timber and steel used as structural members**



**Image 27. Polycarbonate sheets used for facade**



**Image 28. Exterior view**



**Image 29. Interior view**

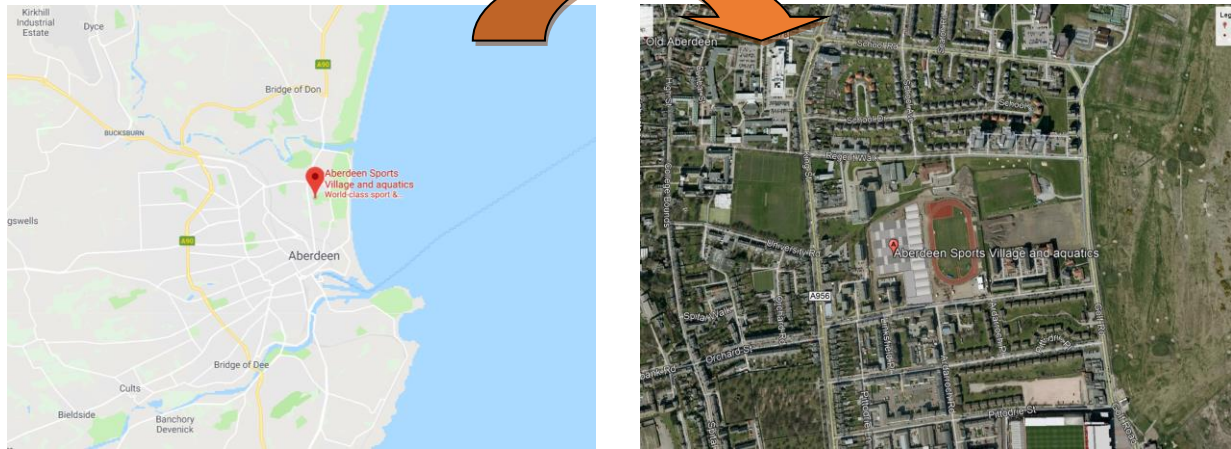
(Source-<https://www.archdaily.com/category/sports>)

### **Significance of the case study**

To understand ways of giving a futuristic approach to spaces for sports in order to enhance community living and cultural integrity.

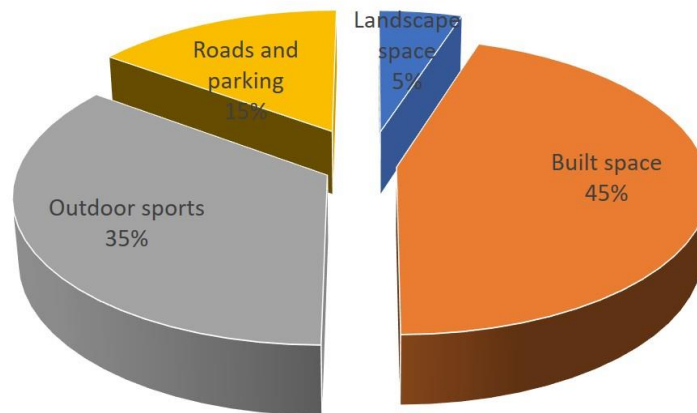
## 6.THE ABERDEEN SPORTS VILLAGE, SCOTLAND.

### Introduction and Location



**Image 30.Location map** (Source-Google images)

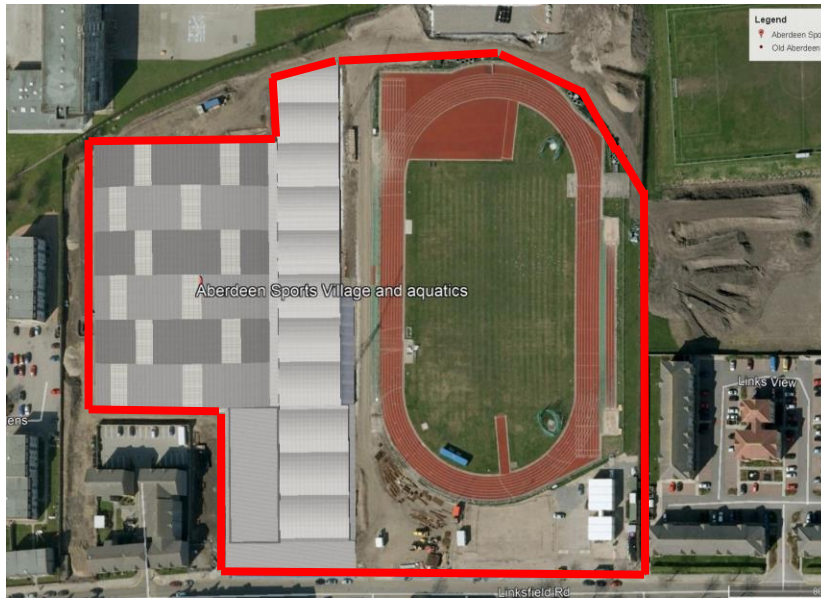
Aberdeen Sports Village is a sports facility in Aberdeen, Scotland. Aberdeen Sports Village is a major sports building sited to the north eastern coastal edge of the UK. It is built on a flat site which covers the area of about 21,000 sqm. The building is designed by Reiach and Hall Architects.



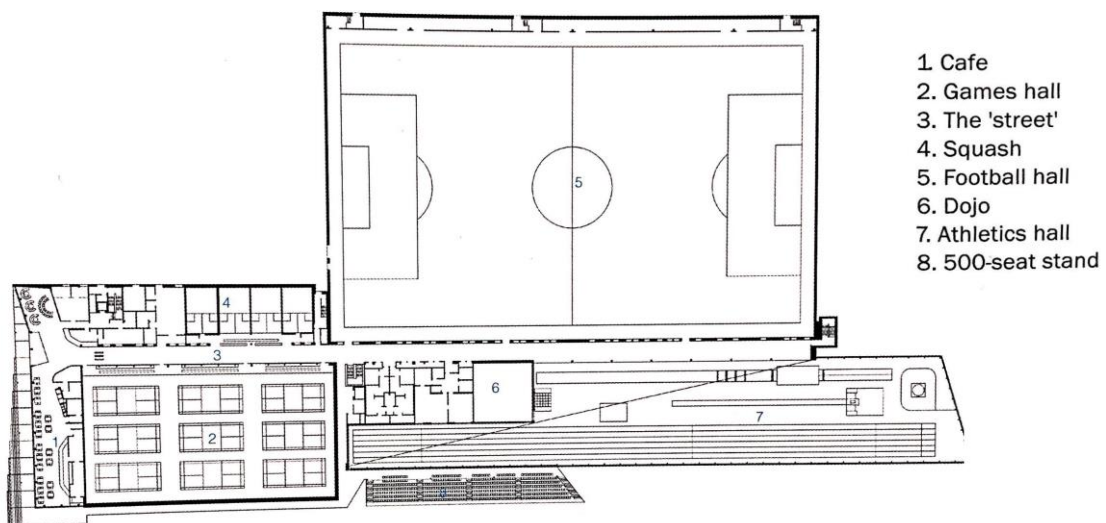
**Image 31.Site Area Analysis**

**Overall planning and design with respect to context**

Aberdeen Sports village consists of 210 metres long by up to 110 metres wide main building. It has an Internal street that stretches the length of the building with the major rooms placed on either side. These rooms include a nine-court games hall, an indoor athletics facility and a full-size indoor football pitch with "3G" turf, along with the squash courts, a commercial fitness suite, offices and changing rooms. There is a considerable degree of transparency between these various spaces so that the overall building is perceived as one whole rather than a series of parts.



**Image 32.**Site plan (Source-Google Maps)



**Figure 21.**planning layout

Reiach and Hall's concern for context is often given an abstract presentation. Here, where the east elevation is 210 metres long and highly visible from along the coast, they sought a "dramatic, but quiet" presence. Using a photograph of the sky above the site, they isolated a strip in a computer programme, extruded into bands of colour and then worked with Rodeca at their German factory, to match the colouring by adding minute proportions of pigment. The resultant ethereal blues, greys and whites work well in marking subtle variations for the repetitive facade - not only outside, but inside too, where the pale colours are revealed on the monochromatic and repeating structure. The chequer pattern on the grey steel cladding helps to dematerialize the bulk of the building in the granite context of Aberdeen.



**Image 33.View 1**



**Image 34.View**



**Image 35.View 3**



**Image 36.500 Seat stand**



**Image 37.Outdoor playfield**



**Image 38.Roadside view**

(Source- <https://www.archdaily.com/category/sports>)

The formations of world cup winning football teams inspired the arrangement of the viewing windows to the football hall. A large 104m long structural truss that holds up the floors of the fitness suite, dance studio and weight lifting area is a muscular gesture that represents strength, whilst the slender structural elements of the walls and roof aim to represent elegance and finesse. Colours relating to sports clothing and equipment have been carefully incorporated into the design to enliven circulation spaces and help people to orientate themselves throughout the building.



Image 39



Image 40



Image 41

(Source- <https://www.archdaily.com/category/sports>)

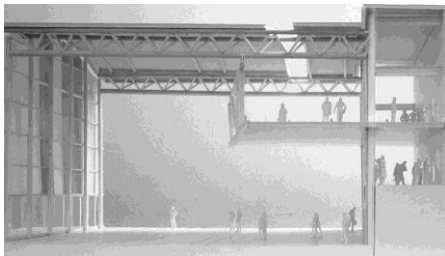


Image 42



Image 43

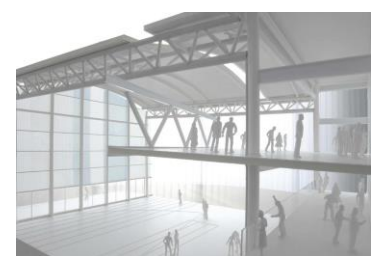


Image 44

(Source- <https://www.archdaily.com/category/sports>)

### **Significance of the case study**

It is rigorously planned, but also contains many gestures and elements relating to sport and play. The site context is given major importance. The chequer pattern on the grey steel cladding helps to dematerialize the bulk of the building in the granite context of Aberdeen. The east elevation is 210 metres long and highly visible from along the coast, so they sought a "dramatic, but quiet" presence by cladding the structure with polycarbonate panels and painting them with colours of the sky.

## 2.2.4. CASE STUDY INFERENCES

### 1.Indira Gandhi Sports Arena, New Delhi.

The overall sports complex has three major building blocks with admin building which are connected with each other by an interesting circulation pattern and relaxing landscapes. Separate entry and exit provisions are made for spectators, media, athletes, service, operational, games families and VIPs. Parking is provided at different places as per requirement. Various open spaces are provided for athletes to warm up. Long span of structures are achieved by advanced techniques.

### 2.Shree Shiv Chhatrapati Sports Complex, Balewadi.

The complex provides facilities for organisation of sporting events at national and international levels. The project site is located on Mumbai-Bangalore highway and is easily accessible from mega cities like Mumbai and Pune. Built with a futuristic intention to host international sports events, the Athletes Village in the complex can house 1800 athletes. Indoor and outdoor sports are placed separately. Landscaping is done at various places to make the space more relaxing and interesting.

### 3.Australia Sports Institute, New South Wales.

The arena has a well-organized boarding facility for the athletes. Various open spaces are provided for athletes to warm up. Long span of structures are achieved by advanced techniques. Proper planning of vehicular and pedestrian roads is done for easy circulation. Taxi and bus stops are provided at various places inside the site. Parking is provided at different places as per requirement.

### 4.Army Sports Institute, Pune.

The arena consists of both Outdoor as well as Indoor sports facilities. Sports science facilities like Relaxation rooms, hydrotherapy facility, hypoxic chambers, rehabilitation gym, steam rooms, etc. are provided to ensure the all-round development of the athletes.

### 5.The Crystal-Sports and Culture House, Copenhagen, Denmark.







The arena is a remarkable reinterpretation of what a sports hall could look like. The sports and culture are included as important parameters for boosting the social environment. The site context is given major importance by connecting the exterior of the structure with the four existing gables on the site, making it a natural but yet remarkable addition and contribution to the place. It feels like a

sheltered outdoor area covered in a way that adds a both poetic and industrial character. Site context is given a proper importance while designing.

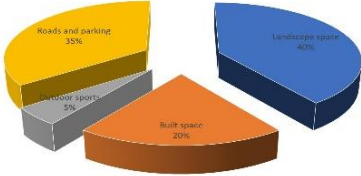

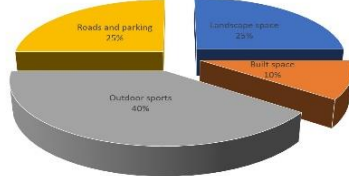

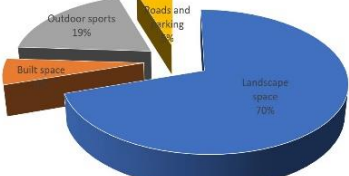

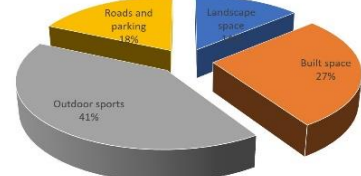
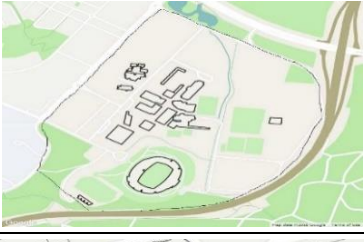
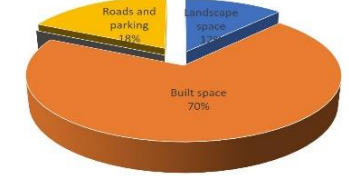

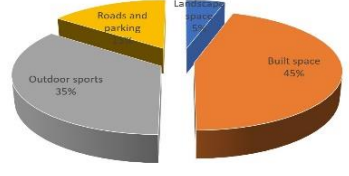

#### **6.Aberdeen Sports Village, Scotland.**



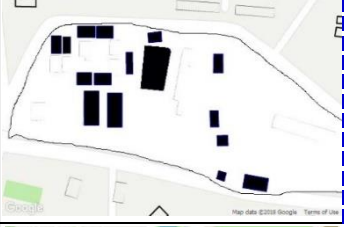

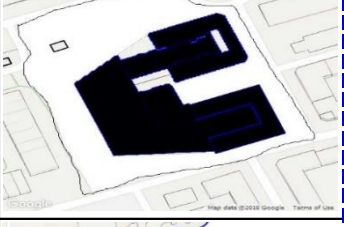
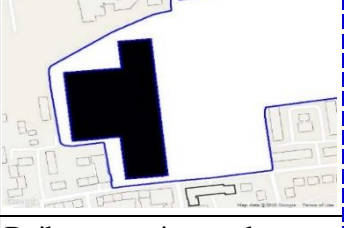
It is rigorously planned, but also contains many gestures and elements relating to sport and play. The site context is given major importance. The chequer pattern on the grey steel cladding helps to dematerialize the bulk of the building in the granite context of Aberdeen. The east elevation is 210 metres long and highly visible from along the coast, so they sought a "dramatic, but quiet" presence by cladding the structure with steel panels and painting them with colours of the sky.


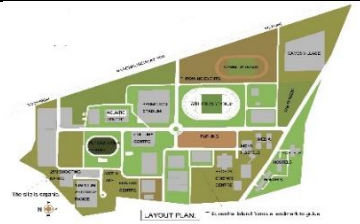


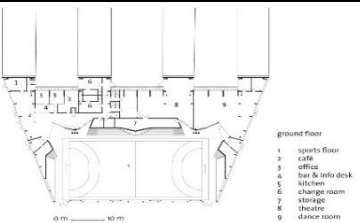
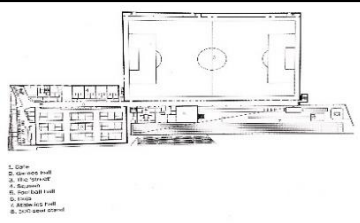
## 2.2.5. COMPARATIVE ANALYSIS OF CASE STUDIES

Comparative Analysis of Case Studies			
	Location	Satellite images for context	Significance of case study
<b>Case study 1 Indira Gandhi Arena.</b>	I.P. Estate, Near Raj Ghat, Grand Trunk Road, New Delhi, Delhi 110002,India		To understand the management and planning of indoor arenas, Circulation patterns etc. and study of various ancillary spaces required along with the playing areas in a sport complex
<b>Case study 2 Shree Shiv Chhatrapati Sports Complex</b>	Balewadi, Mahalunge, Pune, Maharashtra, India		To understand segregation of spaces and overall working of sports complex and ancillary spaces required.
<b>Case study 3 Army Sports Institute.</b>	Mundhwa Rd, Pingale Wasti, Koregaon Park Annexe, Ghorpuri, Pune, Maharashtra 411036, India		Understand ways of incorporating sports activities in academic routine.
<b>Case study 4 Australia Sports Institute.</b>	Northern suburb of Bruce, Canberra, Australia		Understanding overall planning and circulation patterns segregating pedestrian and vehicular circulation within the complex.
<b>Case study 5 The Crystal- Sports and culture house</b>	Copenhagen, Denmark		Understanding ways of giving a futuristic approach to spaces for sports by enhancing community living.
<b>Case study 6 Aberdeen Sports Village</b>	Linkfield Rd, Aberdeen AB24 5RU, UK		To understand the design of space with respect to site context.
<b>Inference</b>	Site should be located near to a city and should be easily accessible through various means of transport.	Site should be located in an area where there are various sporting activities taking place in the neighbourhood.	-----



Site Area	Site Area Analysis	Site Layout
102 Acres (4,12,779 Sq.m)		
63 Acres (2,54,952 Sq.m)		
65 Acres (2,63,046 Sq.m)		
163 Acres (6,59,638 Sq.m)		
5 Acres (20,234.3 Sq.m)		
5.18 Acres (21,000 Sq.m)		
<p>Site Area depends upon the scale and the scope of the project</p>	<p>Built up area is very less with respect to Site area as spaces have to be provided for outdoor sports, parking and landscape.</p>	<p>Rectangular site is preferable while designing a sports complex and the site should be oriented in N-S direction.</p>

Site entry/Access	Year of establishment	Capacity	Figure ground
18	1982	27,000	
6	1994	22,000	
4	2001	3000	
6	1981	20,000	
3	2006	600	
3	2009	1500	
provided for various types of users like VIPs, Spectators, Media persons, Athletes etc. for proper circulation.	-----	Capacity should be decided as per the popularity of a particular sport.	Built up area is very less with respect to Site area.

Parking	Topography	Planning layout	Hostel facilities
Separate parking for various users at various places according to need.	Flat site with minor contours.		Available
Parking provided at two places only.	Flat site.		Available
Parking provided along the roads in the campus	Flat site.		Available
Separate parking for various users at various places according to need.	Flat site with some contoured land reclaimed to make it flat.		Available
Parking provided along the site boundary.	Flat site.		Not available
All the Parking is provided at a single dedicated parking space.	Flat site.		Not available
Separate parking for various users at various places should be provided for proper functioning.	Flat site is more appropriate for design of a sports complex.	Circulation for various users like spectators, media persons, VIPs, Athletes etc. should be planned properly.	Hostel facilities should be provided if the athletes are from various areas which are not closer to the site.

## 2.3. RESEARCH DESIGN

### 2.3.1. STANDARDS AND DATA COLLECTION

#### KABADDI-

##### **History and introduction**

---

Kabaddi originated in Ancient India. Kabaddi is a contact team sport originating from the Indian subcontinent. The game is said to have had its inception in Ancient India where it was played all over in different forms. It became popular in Punjab as it was part of their martial traditions. It is popular in the Indian subcontinent and is the state game of the Indian states of Karnataka, Kerala, Andhra Pradesh, Uttar Pradesh, Bihar, Haryana, Tamil Nadu, Maharashtra, Punjab, and Telangana. Kabaddi received international exposure at the 1936 Berlin Olympics, demonstrated by India. The game was introduced in the Indian National Games at Calcutta in 1938. In 1950, the All India Kabaddi Federation (AIKF) came into existence and framed some official rules for the game, laying the foundations for the modern rules and regulations governing international competitions today.

##### **Gameplay**

---

In the international team version of kabaddi, two teams of seven members each occupy opposite halves. Each has three supplementary players held in reserve. The game is played with 20-minute halves, with a 5-minute halftime break during which the teams exchange sides. During each play, known as a "raid", a player from the attacking side—known as the "raider"—runs into the opposing team's side of the field and attempts to tag as many of the seven defending players as possible. For a raid to be eligible for points, the raider must cross the balk line in the defending team's territory, and return to their half of the field without being tackled. Whilst doing so, the raider must also loudly chant the word "kabaddi", confirming to referees that their raid is done on a single breath without inhaling. A 30-second shot clock is also enforced on each raid.

A point is scored for each defender tagged. If the raider steps beyond the bonus line marked in enemy territory, they earn an additional point. If the raider is successfully stopped, the opposing team earns a point instead. All players tagged are taken out of the game, but one is "revived" for each point a team scores from a subsequent tag or tackle (bonus points do not revive players). Players who step out of bounds are also out. A raid where no points are scored by the raider is referred to as an "empty raid". By contrast, a play where the raider scores three or more points is referred to as a "super raid". If a team gets all seven players on the opposing team out at once, an "All Out" is scored for two bonus points, and they are automatically revived.

## **International competitions and events**

---

The following competitions are played in standard format-

### **Kabaddi World Cup**

The standard style Kabaddi World Cup is an outdoor international kabaddi competition conducted by the International Kabaddi Federation (IKF), contested by men's and women's national teams. The competition has been previously contested in 2004, 2007 and 2016. All the tournaments have been won by India. India defeated Iran by 38-29 in the final of the championship game to clinch the title of 2016

### **Asian Games**

Kabaddi has been played at the Asian Games since 1990. The Indian team has won all seven Gold medals, with Bangladesh being second most successful at the game.

### **Pro Kabaddi League**

The Pro Kabaddi was established in 2014 ; the league modelled its business upon that of the Indian Premier League of Twenty20 cricket, with a large focus on marketing, the backing of local broadcaster Star Sports, and changes to the sport's rules and its presentation to make it more suitable for a television audience. The PKL quickly became a ratings success on Indian television; the 2014 season was watched by at least 435 million viewers over the course of the season, and the inaugural championship match was seen by 86.4 million viewers.

### **Super Kabaddi League**

The Super Kabaddi League is a professional standard style kabaddi league in Pakistan. It was established in 2018, with 10 clubs based on city franchise structure. SKL boasts as being the second biggest kabaddi league in the world. Its first season was a resounding success.

### **Women's Kabaddi Challenge**

Women's Kabaddi Challenge is a Kabaddi league in India started like Pro Kabaddi League for women. Three teams took part in the inaugural season in 2016 and the league was played across seven cities in India. The first season was played in 2016, from 28 June to 31 July and was broadcast by Star Sports in India. The final was scheduled along with men's version on 31 July. Final was conducted between Storm Queen and Fire Birds. Storm Queens produced a last-second turnaround to defeat Fire Birds 24-23 in the final.

## Asian Kabaddi Championship

Asian Kabaddi Championship was first played in Gorgan, Iran in 2017 in which India won gold by defeating Pakistan in the finals.

## Kabaddi Masters

The inaugural edition of the Kabaddi Masters was held in Dubai from 22nd to 30th June 2018. It was the first Kabaddi tournament to be held in the UAE. It featured 6 teams. India won the tournament by defeating Iran in the final with a shoreline of 44-26.

## Playing area and equipment

In the international team version of kabaddi, two teams of seven members each occupy opposite halves of a field of 10 by 13 metres (33 ft × 43 ft) in case of men and 8 by 12 metres (26 ft × 39 ft) in case of women.

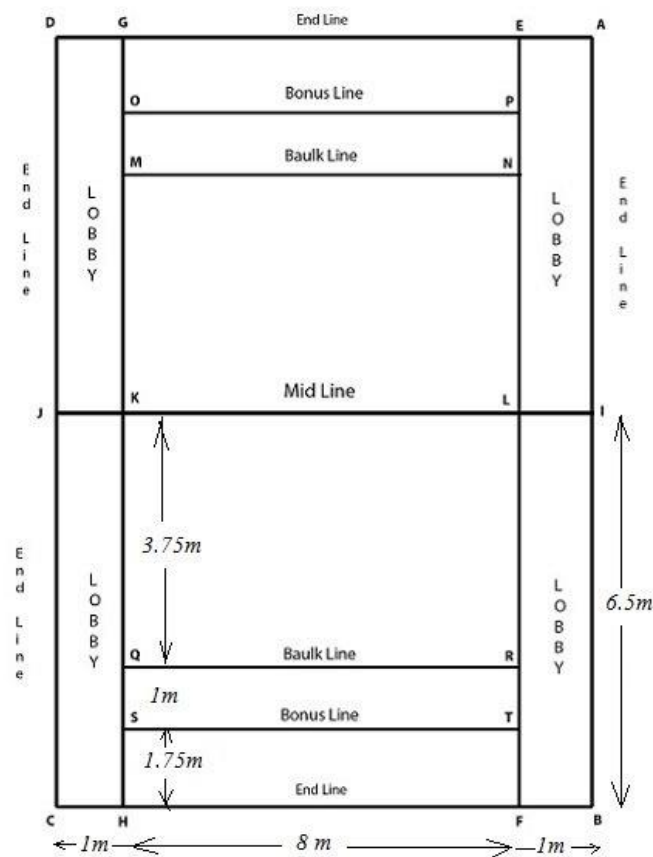


Figure 22. Kabaddi playground

## **KHO-KHO-**

### **History and introduction**

---

Kho-Kho ranks as one of the most popular traditional sports in India. The origin of Kho-Kho is difficult to trace, but many historians believe, that it is a modified form of 'Run Chase', which in its simplest form involves chasing and touching a person. With its origins in Maharashtra, Kho-Kho in ancient times, was played on 'raths' or chariots, and was known as RATHERA. In 1999, *The Asian Kho Kho Federation* was established during the 3rd edition of the South Asian Games. Member countries included India, Bangladesh, Pakistan, Sri Lanka, Nepal and Maldives. The 1st Asian Championship was held at Kolkata in 1996 and the second championship at Dhaka, Bangladesh. India, Sri Lanka, Pakistan, Nepal, Japan, Thailand and Bangladesh were participants of this championship.

### **Gameplay**

---

Each team consists of twelve players, but only nine players take the field. A match consists of two innings with each inning consisting of chasing and running turns of 9 minutes each. One team sits on their knees in the middle of the court, in a row, with adjacent 8 members facing opposite directions. The runners play in the field, three at a time and the team that takes the shortest time to touch all the opponents in the field, wins. There is a pole on each end and the runner can go between two players who are sitting in zig-zag manner, but the chaser is not allowed to turn back while running and go between the players. However, the chaser can go to the pole and touch it and can go back or towards the other side.

### **Competitions and events**

---

The following championships are organised for this game:

National Championships, Junior National, Sub Junior National Championship, School Championship, Mini School Championship, Primary Mini School Championship, National Women Championship, All India Inter University Championship and Federation Cup.

## Organisations involved

The primary sports body for this game is called the Kho-Kho Federation of India (K.K.F.I.). It has its branches in all the states and it has been conducting Mini, Junior and Open National Championships for both sexes, in many parts of India.

## Playing area and equipment

A Kho-kho playing field is rectangular. It is 36 by 18 metres (118 ft × 59 ft) in length and width. There are two rectangles at the end. The dimensions of each rectangle are 16 m × 2.75 m (52.5 ft × 9.0 ft). In the middle of these two rectangles, there are two wooden poles. The central lane's dimensions are 2,350 cm × 30 cm (925 in × 12 in). There are eight cross lanes which lie across the central lane, whose dimensions are 1,600 cm × 30 cm (630 in × 12 in). It makes the small rectangles and each of them are 16 m × 2.3 m (52.5 ft × 7.5 ft) (the two rectangles of nearby the wooden poles are 2.5 m (8 ft 2 in) wide), at right angles to the central lane and divided equally into two parts of 7.85 m (25.8 ft) each by the central lane. At the end of the central lane, the free zone tangent to the post-line, two smooth wooden posts are fixed, 120 cm (47 in) high from the ground, and their circumference is no less than 30 cm (12 in) and no more than 40 cm (16 in). The equipment used in Kho-kho are poles/post, strings, metallic measuring tape, lime powder, wire nails, two watches, types of rings having inner circumference of 30 cm (12 in) and 40 cm (16 in), score shots (like a whistle, for instance), and equipment to record the results.

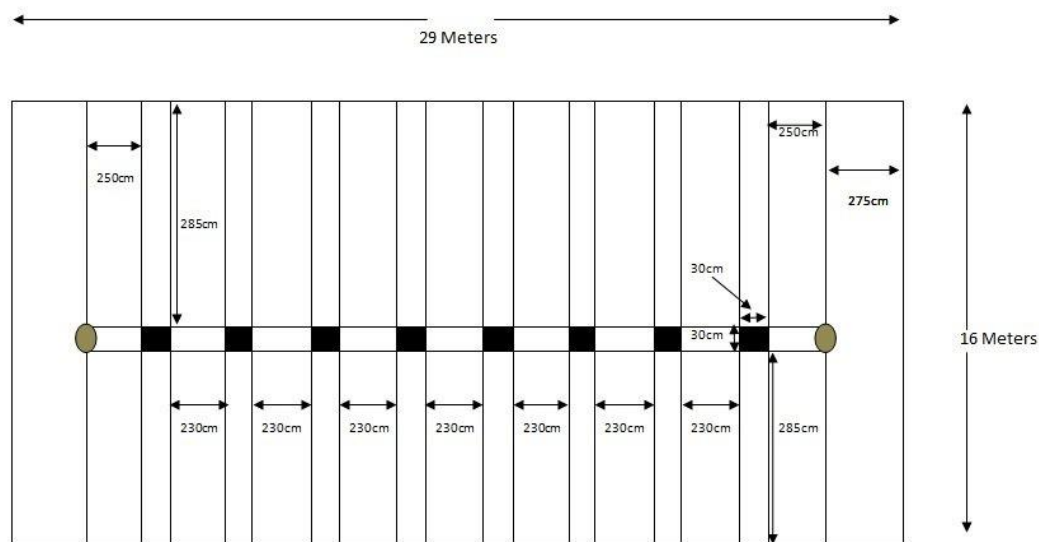


Figure 23. Kho-kho playfield



## **KUSHTI (MAT WRESTLING)-**

### **History and introduction**

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**Pehlwani** is a form of wrestling from the South Asia. It was developed in the Mughal Empire by combining native malla-yuddha with influences from Persian *varzesh-e bastani*. It is majorly popular in North India.

### **Gameplay**

---

The object of the sport of wrestling is to put your opponent on his back - to pin your opponent. A pin (or fall) is when you put your opponent on his/her back with any part of both shoulders or both shoulder blades of your opponent in contact with the mat for two seconds. When you pin your opponent, the match is over and you are the winner. If nobody gets pinned, the winner is the wrestler who has scored the most points during the match..

### **There are five ways to score points in a wrestling match:**

- 1) **Takedown** - (2 points) You score two points for taking your opponent down to the mat and controlling him/her.
- 2) **Escape** - (1 point) You score one point for getting away or getting to a neutral position when your opponent has you down on the mat.
- 3) **Reversal** - (2 points) You score two points when your opponent has you down on the mat and you come from underneath and gain control of your opponent.
- 4) **Near Fall (Back Points)** - (2 or 3 points) You get near fall points when you almost but not quite get your opponent pinned. A near fall (near pin) is when. If a near fall lasts for two seconds, you get 2 points. If a near fall lasts for 5 seconds, you get 3 points.
- 5) **Penalty Points** - (1 or 2 points) Your opponent is awarded points if you commit.

### **Competitions and events**

---

Various competitions at local, state, national and international levels.

### **Organisations involved**

Wrestling federation of India.

Various states wrestling association.

## **Playing area and equipment**

---

### **High School Mats**

The National Federation of State High School Associations rules state that a high school wrestling mat must be a minimum of 38 feet on each side. This will accommodate the 10-foot inner circle, the 28-foot wrestling area circle, as well as allow for the minimum 5-foot safety area surrounding the wrestling area. The 38-foot mat size is the minimum size required and Resilite Sports Products, one of the largest mat manufacturers, states that most high schools will order a mat that is 40 feet on each side, which will yield a 30-foot wrestling area.

### **College Mats**

The National Collegiate Athletics Association requires a larger wrestling area than is used by high school wrestlers, which leads to a slightly larger mat. College wrestlers must have a minimum of a 32-foot wrestling area, which requires a mat that is at least 42 feet on each side. Colleges may have up to a 42-foot wrestling area and there must be at least a 5-foot safety zone that surrounds the wrestling area.

### **International Mats**

International Federation of Associated Wrestling Styles used two distinct styles of mats. The first is the traditional square mat, which is required to be 12 meters, or 39.36 feet, on each side. This allows for a 7-meter wrestling area, which is just under 23 feet in diameter, as well as a 1.5-meter, or 4.92-foot, protection zone. FILA also uses an octagon-shaped mat and those mats should be 15 meters, or 49.21 feet, in diameter.

### **Practice Mats**

Due to the cost of regulation-sized mats and the space requirements, many people will buy smaller mats for home use or practice. The most common sized mats for home use are 10 or 12 feet per side.

## **MALLAKHAMB-**

### **History and introduction**

---

The earliest mentioned of Mallakhamb can be traced to 12th Century where it is mentioned in the 1135 AD Sanskrit classic Manasollasa written by Someshvara Chalukya, For about seven centuries after that, the art form remained dormant until it was given a new lease of life by Balambhattadada Deodhar, the renowned teacher of Peshwa Bajirao II during the first half of the 19th Lakshmibai, the Rani of Jhansi learned Mallakhamb with her childhood friends Nana Sahib and Tatyia Tope.

History says Mallakhamb was mainly for the combatant and wrestlers. People denote it as the Sport of Strength and power. On April 9, 2013, the Indian state of Madhya Pradesh declared Mallakhamb as the state sport. More than 20 states of India have notified Mallakhamb as the state sports.

### **Gameplay**

---

#### **Pole**

In this variation, a vertical wooden pole is fixed in the ground and the participant performs various acrobatic feats and poses while hanging on the pole. Wrestlers mount, dismount and utilize this pole for various complex calisthenics designed to develop their grip, stamina, and strength in the arms, legs and upper-body.

There are a number of pillars, although the most common is a free-standing upright pole, some eight to ten inches in diameter, planted into the ground. The pole used in competitions is a straight pole made of teak or sheesham wood, standing 2.6 metres (8.5 ft) in height with a circumference of 55 centimetres (22 in) at the base. It gradually tapers to a circumference of 35 centimetres (14 in) at the top.

#### **Hanging**

The hanging Mallakhamb is a wooden pole that is shorter in length than the standard pole and is hung from chain and hooks, leaving a gap between the ground and the bottom of the Mallakhamb.

#### **Rope**

In this variation, the participant performs exercises while hanging on a rope suspended from a support at the top. Typically, the rope is 5.5 m long, and approximately 1 to 2 cm in diameter. The Rope is caught by the performer in the gap between the big toe and the second toe, along with one or

both hands. The performer then ties the rope around himself or herself through a sequence of steps, after climbing upwards on the rope. The performer then reaches various positions called *Udi (to fly)*, some of which are imitations of standard Yoga Asana.

### **Competitions and events**

---

Various local, state and national competitions and events displaying mallakhamb are organised. Mallakhamb India has been working for 12 years to promote and teach the techniques of Mallakhamb for physical and mental advantage to people around the world. During the same time, the team has travelled to many countries to be part of various festivals, reality shows, musical theatre productions and many more.

### **Organisations involved**

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1. Vishwa Mallakhamb Federation, VMF
2. Asian Mallakhamb Federation, AMF
3. South Asian Mallakhamb Federation, SAMF
4. Mallakhamb Federation USA
5. Mallakhamb Deustchland
6. Mallakhamb Federation of India, MFI
7. Maharashtra Amateur Mallakhamb Association, MAMA

## Playing area and equipment

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### POLE MALLAKHAMB

. The Specifications of Pole Mallakhamb are as follows.

<b>All dimensions are in Millimetres (mm)</b>		
<b>Height</b>	<b>Senior Group</b>	<b>Sub- Junior Group</b>
Above the Ground	2600 to 2800	2400 to 2600
Under the Ground	800 to 900	700 to 800
Neck	180 to 200	180 to 200
Top	70	60
Total Length	3400 to 3700	3100 to 3400
<b>Circumference</b>		
Bottom	530 to 550	480 to 500
Below the Neck	300 to 350	300 to 350
Neck	180 to 200	180 to 200
Top	350	300

**Table 2.Specifications of pole Mallakhamb**

**HANGING MALLAKHAMB**

The specifications of Hanging Mallakhamb are as follows.

<b>All dimensions are in Millimetres (mm)</b>	
<b>Height</b>	1700 to 1900
Neck Height	180 to 200
Top Height	70
Distance between bottom & ground	650 to 700
Height of the Structure	4600 to 4800
<b>Circumference</b>	
Bottom	4500 to 5000
Neck	180 to 200
Below the Neck	250 to 300

**Table 3. Specifications of hanging Mallakhamb**

**ROPE MALLAKHAMB**

The specifications of Rope Mallakhamb are as follows

<b>All dimensions are in Millimetres (mm)</b>		
	<b>Senior Group</b>	<b>Sub- Junior Group</b>
Length	6000 to 6500	6000 to 6500
Thickness	18 to 20	12 to 13
Height of the Structure	5800 to 6000	5800 to 6000

**Table 4. Specifications of Rope Mallakhamb**

## DHOPKHEL-

### History and introduction

*Dhopkhel*, also transliterated *dhop khel* and *dhoop khel* (Assamese: ডোপখেলা), is a traditional ball game played in the Indian state of Assam.

### Gameplay

The game is played between two eleven-member teams on a 125 m × 80 m field bounded by four flags. The players take turns throwing the ball at the opponent to knock them out of the game, while seeking to catch the ball and evade other players. It is a test of speed, stamina, and acrobatic skills.

### Competitions and events

Matches of the game were traditionally made to observe the spring and New Year festival of Bihu. The game was once played to amuse Ahom royalty as a spectator sport.

### Organisations involved

No proper organization is currently involved for organising the tournaments for this sport.

### Playing area and equipment

It consists of a 125 m × 80 m field bounded by four flags.

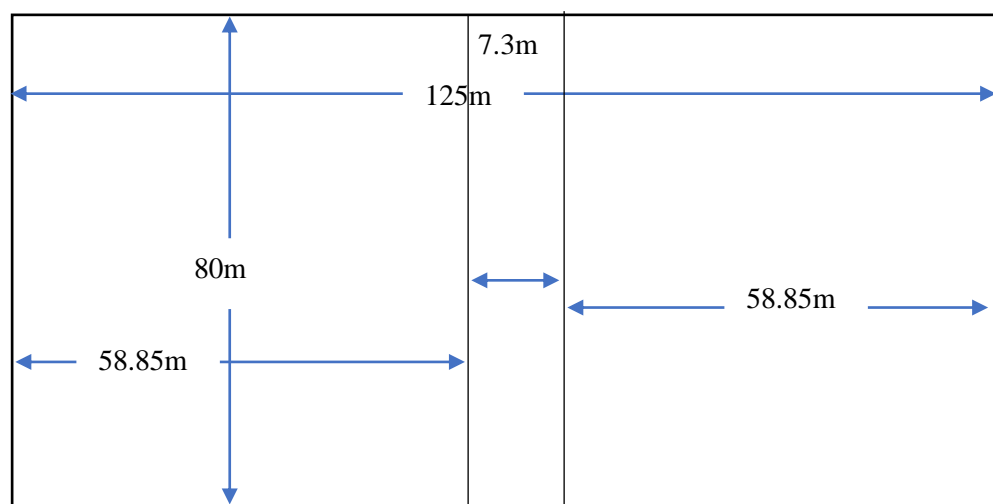


Figure 24. Dhopakhel playfield

## **INSUKNAWR-**

### **History and introduction**

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Insuknawr or rod - pushing is an indigenous game of Mizoram. Played only by the male population of Mizoram, Insuknawr became ' Mizo National Game ' after the Mizoram State Sports Council declared so.

### **Gameplay**

---

The game is played by two players, each player holding the rod under his arm, as in the game of tug of war. The end of the rod should protrude for at least two inches under the armpit, and the centre of the rod must align with the centre of the circle.

In this contest, each player tries to push his opponent out of the ring, through the back or the side of the circle. If a player falls to the ground, or he releases Suk, he is declared to be the loser. No player is to throw his opponent off balance by pulling the latter's rod. An expert player can skid or slide around within the circle, but the game or round is not won until a player is successfully pushed out. A round is considered as drawn if no player is pushed out of the circle. If all three rounds are drawn, a tie-breaker is declared, without any time limit, until a player is pushed out.

### **Competitions and events**

---

Various local competitions in Mizoram.

### **Organisations involved**

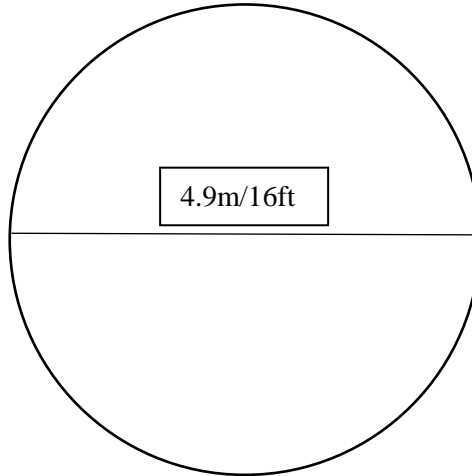
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1.Mizoram State Sports Council.



**Playing area and equipment**

A circle of 16 ft (4.9m) diameter with a straight Line across the circle at the center is drawn. Suk or a round wooden rod or bamboo rod shall be approximately 8 ft long and 2.5 - 3 inches in diameter.



**Figure 25. Insuknawr playfield**

## **YUBEE-LAKPI-**

### **History and introduction**

---

Yubee Lakpee is a popular outdoor game in Manipur, played only by men. It is akin to rugby, and requires a great deal of vigorous body play and stamina. *Yubee* in Manipuri means coconut, and *lakpee* means snatching

The game demands wrestling ability, speed, great reflexes and a sharp mind. Some scholars choose to view the game in a religious light, since it was played on the grounds of the Bijoy Govinda Temple on *pichakari* day, at the home of King Ananta Shayee, by persons acting as gods and demons. The game was celebrated annually on this day, re - enacting the scene from Hindu mythology involving the snatching of the pot of nectar, after the churning of the sea.

### **Gameplay**

---

This is a seven - a - side game and is played on a field that is 45.72 by 18.29m in area. To begin the game, a lubricated coconut is first selected and thrown into play. Players of both teams have to try and catch it and more importantly, hold on to it. This is where the above-mentioned desired attributes of players like power and liveliness are put to test. The coconut has to be held chest - high by the player who currently possesses it. There is no kicking of the coconut in the rules.

Players have to keep possession of the coconut and try to intrude into the opposition goal line, who will make constant efforts to stop them. To score a goal, a player has to enter in from the front carrying the coconut and not from the sides. At the goal line, the players will find the king to whom they are supposed to hand over the coconut. The team with more number of goals at the end of play wins.

### **Competitions and events**

---

Local tournaments in Manipur.

### **Organisations involved**

---

Local sports associations in Manipur.

### Playing area and equipment

---

It is played on a field that is 45.72 by 18.29m in area. A lubricated coconut is used to play it.

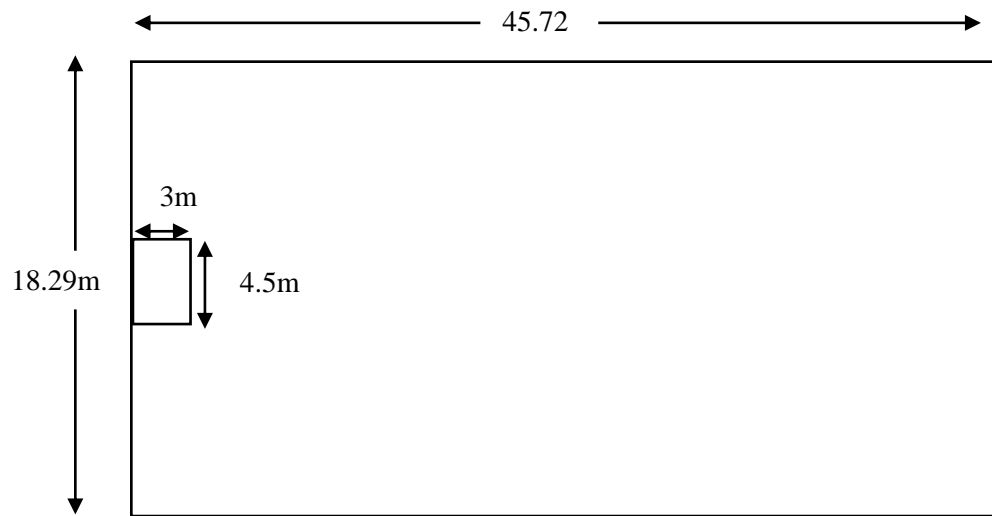


Figure 26. Yubee-Lakpi playfield

## **OTHER STANDARD DATA**

### **1. Open Spaces (Front, rear, side and back)**

The following regulations shall apply to buildings of all land uses except Industrial Land Use:

- The front, side and rear open spaces shall not be less than 3 M. in width where the height of building does not exceed 10 M.
- For height of building above 10 m and up to 24 m, in addition to the minimum width of the open spaces required for the height of 10 m, there should be an increase in the width of the minimum open spaces at the rate of 1 m per every 3 m or fraction thereof, for height above 10 m. For heights of buildings above 24 m and up to 30 m the minimum width of the open space shall be 10 M.

### **2. FSI Permissible for sports facility building = 1.00.**

**3. The total Area required for a sporting activity=2 X (Area of playfield) + Area for spectators + Necessary parking space + Necessary distance to the site boundary.**

### **4. Seating areas and other spaces**

- Total height of the seat=1200mm.
- Seat height=450mm.
- Seat width=450mm.
- Seat depth=450mm.
- Gap between two seats for circulation=450mm.
- Seating Area required for one person=0.4 sqm.
- Circulation Area required for one person=0.2 sqm.
- Total Area required for one spectator=0.6 sqm.
- Width of Aisles=0.9 m min.
- Rooms for training supervisors, umpires / Referee rooms, First Aid rooms=8 sqm. Min.

### **5. Toilet facilities Requirements**

- For spectators, 0.01 toilet facility per spectator has to be provided.
- For Athletes, 1 toilet for every 6 athletes has to be provided.

- Out of the total toilet facilities,40% toilet for women,20% toilet for men, and 40% for male urinals should be given.
- One special W.c in a set of toilet shall be provided for the use of handicapped with essential provision of wash basin near the entrance for the handicapped. The minimum size shall be 1500 x 1750 mm.

## **6. Catering Provisions**

- 1.5 sqm to 2.7 sqm of area has to be provided per person for a cafeteria of which, 1.0 sqm to 1.5 sqm is for visitors or guests and 0.5 sqm to 1.2 sqm is for Kitchen and Storage.
- 1m of service counter has to be provided per 50 visitors.

## **7.Parking Facilities**

- **As per DDA (Delhi Development Authority) Development Rules**, For Public and Semi Public-Facilities like sport complexes, 2 car parking space for every 100 sqm. Area has to provided.
- **As per NBC**, 1 parking space should be provided for every 260 spectators.

### 2.3.2. QUESTIONNAIRES, SURVEYS AND OTHER DATA

Statement indicating the central funding to NSFs and other organisations					
S. No	Name of the Federation	2014-15	2015-16	2016-17	Rs. In Lakhs
					2017-18
					Upto 31.12.2017
1.	Athletics Federation of India	83.55	1831.44	416.61	153.19
2.	Archery	448.59	1105.00	#337.09	#402.75
3.	All India Chess Federation	107.95	195.00	177.25	175.79
4.	National Rifle Association of India	1039.63	2212.00	988.73	756.22
5.	Tennis	48.52	47.00	#21.42	35.35
6.	Judo Federation of India	114.66	275.00	#8.61	#89.67
7.	Rowing Federation of India	40.69	308.98	62.73	100.06
8.	Table Tennis Federation of India	122.02	296.00	176.44	214.35
9.	Swimming Federation of India	7.22	177.25	107.67	86.36
10.	Squash Racket Federation of India	101.56	170.00	160.52	177.19
11.	Boxing	99.36	1215.00	290.34	392.83
12.	Hockey India	520.33	2038.26	1219.68	731.92
13.	Indian Weightlifting Federation	83.47	765.00	197.59	271.21
14.	Badminton Association of India	511.59	1380.00	543.69	451.53
15.	Equestrian Federation of India	12.43	16.00	6.05	0.00
16.	All India Football Federation	131.63	154.30	909.53	480.26
17.	Indian Golf Union	37.29	37.00	59.15	46.42
18.	Wrestling Federation of India	532.31	1510.00	549.02	479.05
19.	Yachting Association of India	116.91	161.98	78.72	183.58
20.	Indian Amateur Kabaddi Federation	18.00	113.00	17.89	4.08
21.	Volleyball Federation of India	125.92	309.83	22.59	15.88
22.	Gymnastics Federation of India	66.10	210.00	#113.67	#73.47
23.	Amateur Handball Federation	24.95	14.61	11.00	50.45
24.	Basketball Federation of India	52.63	9.83	26.03	23.14
25.	Fencing Association of India	0.00	0.00	119.80	56.92
26.	Indian Kayaking & Canoeing Association	59.94	132.67	38.14	116.33
27.	All India Sports Council of the Deaf	3.02	65.64	83.54	137.94
28.	Paralympic Committee of India	197.72	720.08	206.56	280.10
29.	Special Olympic Bharat	19.17	600.34	50.36	118.16
30.	All India Carrom Federation	5.83	0.00	0.00	0.00
31.	Amateur Baseball Federation of India	2.25	0.00	0.00	16.50
32.	Atya Patya Federation of India	1.25	0.50	0.00	0.00
33.	Cycle Polo Federation of India	2.85	0.75	0.00	0.00
34.	Indian Power lifting Federation	5.25	0.00	0.00	0.00

**Table 5. Statement indicating the allocation of funds for various sports**

35.	Kho-kho Federation of India	7.75	0.00	30.00	0.00
36.	Sepak Takraw Federation of India	10.53	104.00	89.81	55.10
37.	Shooting Ball Federation of India	0.00	0.00	0.00	0.00
38.	Softball Federation of India	0.00	0.00	8.75	18.25
39.	Taekwondo Federation of India	39.80	85.00	#74.65	#5.69
40.	Tenni-Koit Federation of India, Bangalore	3.00	0.50	0.00	3.75
41.	Tennis Ball Cricket Federation of India	0.00	0.00	0.00	0.00
42.	Tug of War Federation of India	3.00	0.00	0.00	0.00
43.	Wushu Association of India	68.55	241.00	168.47	75.77
44.	Billiards & Snooker Federation of India	76.25	75.00	85.46	51.49
45.	Cycling Federation of India	69.29	351.00	213.56	132.18
46.	Amateur Soft Tennis Federation of India	0.50	0.00	12.25	9.63
47.	Bridge Federation of India	0.00	16.00	8.66	17.17
48.	Ice Hockey (NSPO)	2.00	0.00	0.00	0.00
49.	School Games Federation of India	17.20	55.00	46.32	47.41
50.	Indian Olympic Association	1830.87	32.20	0.00	98.57
51.	Sports Authority of India, J.N. Stadium	0.00	0.00	0.00	0.00
52.	Association of Indian Universities (NSPO)	148.18	0.00	0.00	0.00
53.	Bowling Federation of India	10.44	0.00	0.00	29.60
54.	Ball Badminton Federation of India	1.00	0.00	0.00	16.50
55.	Roll Ball Federation of India	0.00	0.00	0.00	0.00
56.	Jump Rope Fed. Of India	3.00	0.00	0.00	0.00
57.	Mallakhamb Federation of India		0.00	10.00	7.50
58.	Winter Games Fed. Of India	7.23	0.00	0.00	0.00
59.	Subroto Mukherjee Educational Society	1.25	0.00	105.00	18.75
59.	Durand Cup	0.00	0.00	24.00	0.00
60.	Jawaharlal Nehru Hockey Tournament Society	2.25	0.00	0.00	0.00
61.	South Asian Games	0.00	6036.99	0.00	0.00
62.	U-17 FIFA World Cup-2017	0.00	0.00	408.99	0.00
63.	Preparation for Rio Olympics	0.00	0.00	2233.00	0.00
64.	Brics U-17 Football Tournament	0.00	0.00	1961.00	0.00
	<b>Total</b>	<b>7046.68</b>	<b>23069.15</b>	<b>12480.34</b>	<b>6708.06</b>
	Funds released to SAI for National Coaching camps & salary of foreign coaches	<b>7843.53</b>	<b>5652</b>	<b>14616</b>	<b>9544.00</b>

**Table 6.Statement indicating the allocation of funds for various sports**

(Source: Annual Report 2018 by Sports ministry of India )

From the above data, it is very clear, why the traditional sports are fading away from the Indian society due to lack of funds and infrastructure and so there is a need for the government to allocate more funds and infrastructural facilities to promote the traditional sports and games of India.



Source: PumaIndia.com

The above survey throws light on the lack of sporting activities practiced by the people due to lack of proper space and time. With about 65% of the population under 35 years of age, India is one of the youngest nations in the World. There is a need to channelize the energies of this large group and provide them with proper infrastructure of appropriate standards to provide space for them to play and excel in the field of sports at national and international levels.



## QUESTIONNAIRES AND SURVEY RESULTS

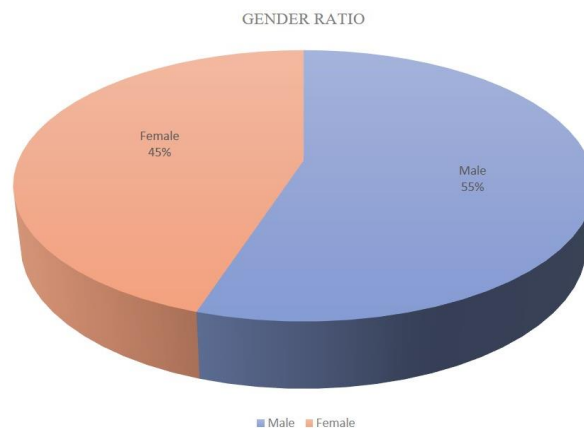
The respondents of this study are composed of random people that can be potential users of the structure type. A group of 100 people ranging from 12 years old and above were picked to answer the prepared survey made for this research.

### Gender

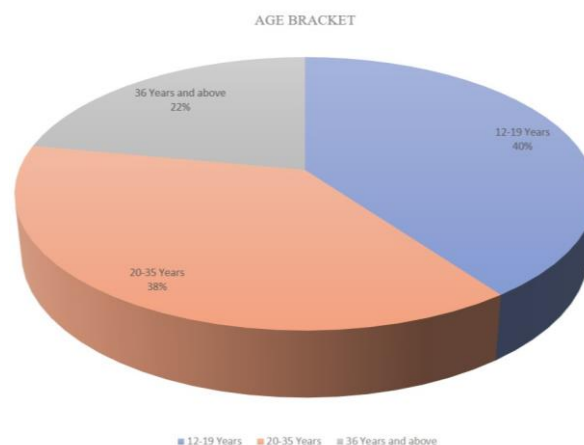
55% of the male and 45% of the female answered the survey having a total of 100 probable respondents.

### Age bracket

Ages varying from ages 12-19 with a percentage of 40% got the highest number of people answering the survey. 38% of people belonging to the age group of 19-35 years answered the survey. 22% of the respondents were of the age of 36 years and above.



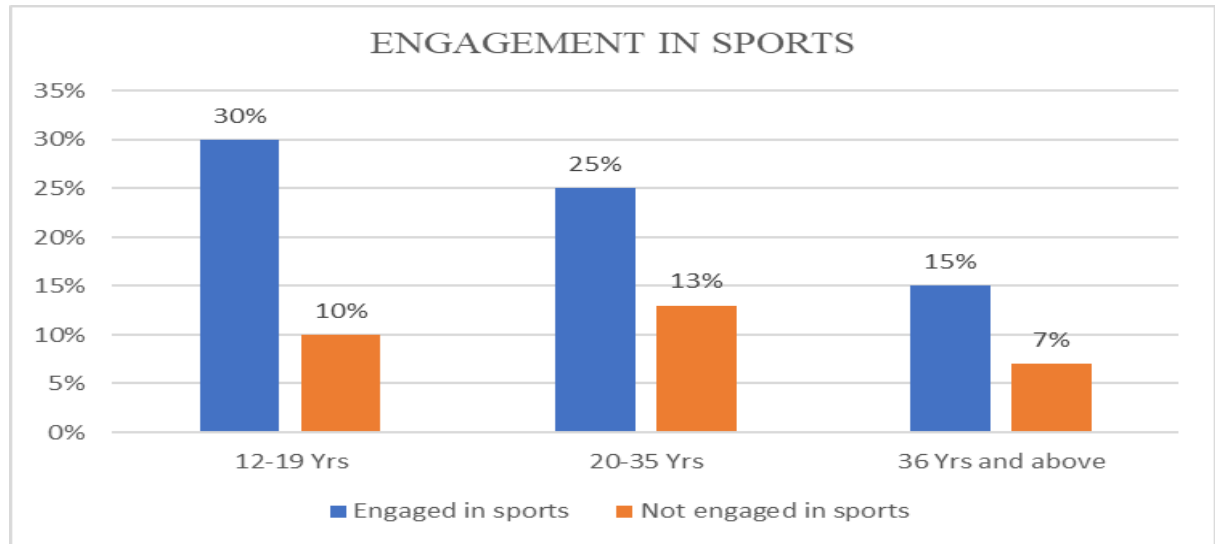
**Figure 27. Gender Ratio**



**Figure 28. Age bracket**

**Questionnaire and results**

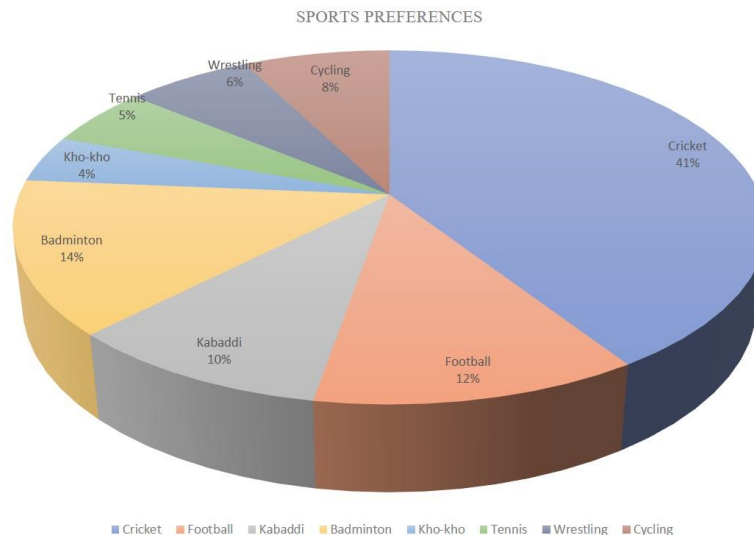
**1. Do you engage yourself in any type of sport activities?**



**Figure 29.Engagement in sports**

Out of the 100 respondents, 70% are engaged in sports activities in which 30% are from the age group of 12-19 years, 25% are from the age group of 20-35 years and 15% from the age group of 36 years and above.30% of the respondents are not involved in any kind of sporting activities.

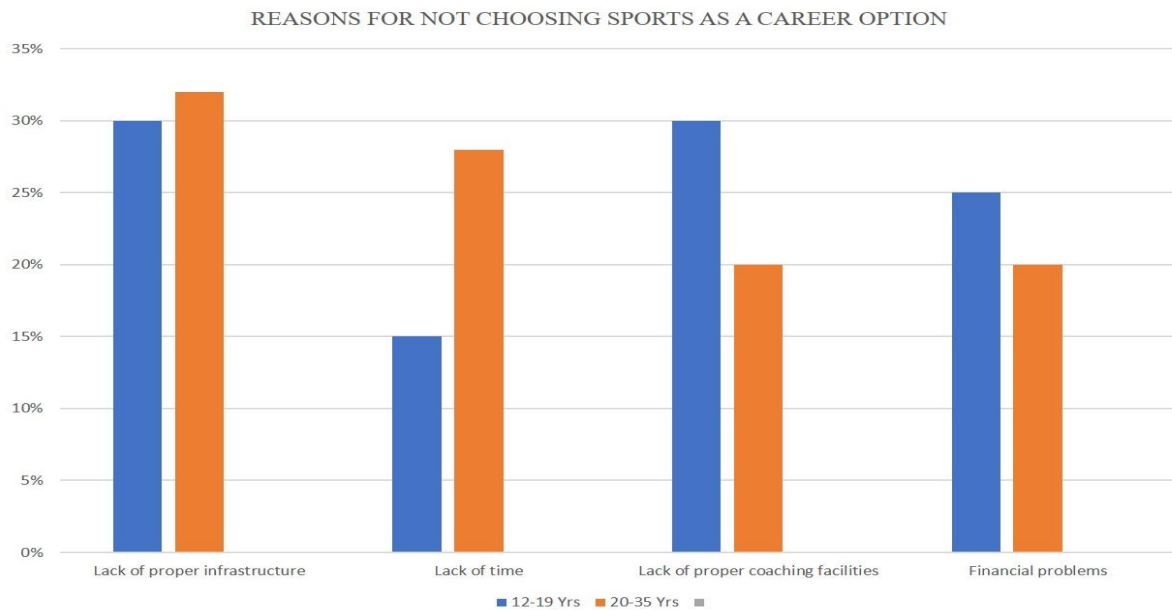
**2.Which specific sport do you prefer playing?**



**Figure 30.Sports preferences**

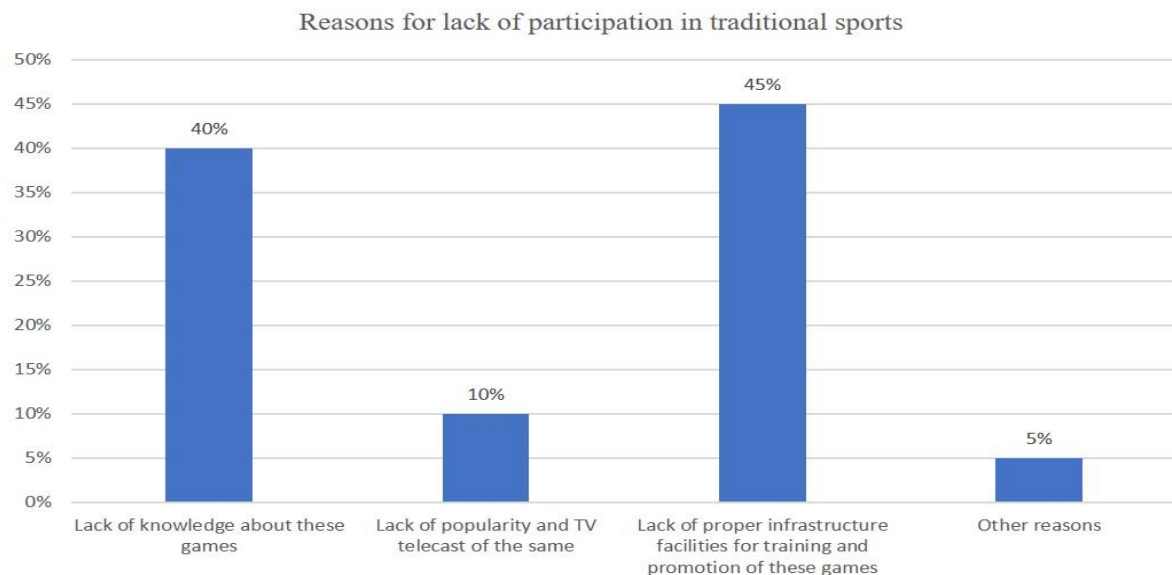
Majority of respondents who were engaged in sports preferred playing cricket (41%). Percentage of the respondents choosing to play traditional sports like kabaddi, kho-kho, kushti etc was less as compared to cricket and other sports.

**3. According to you, why do most of the people don't look at sports as a priority and as a career option?**



**Figure 31. Reasons for not choosing sports as a career option**

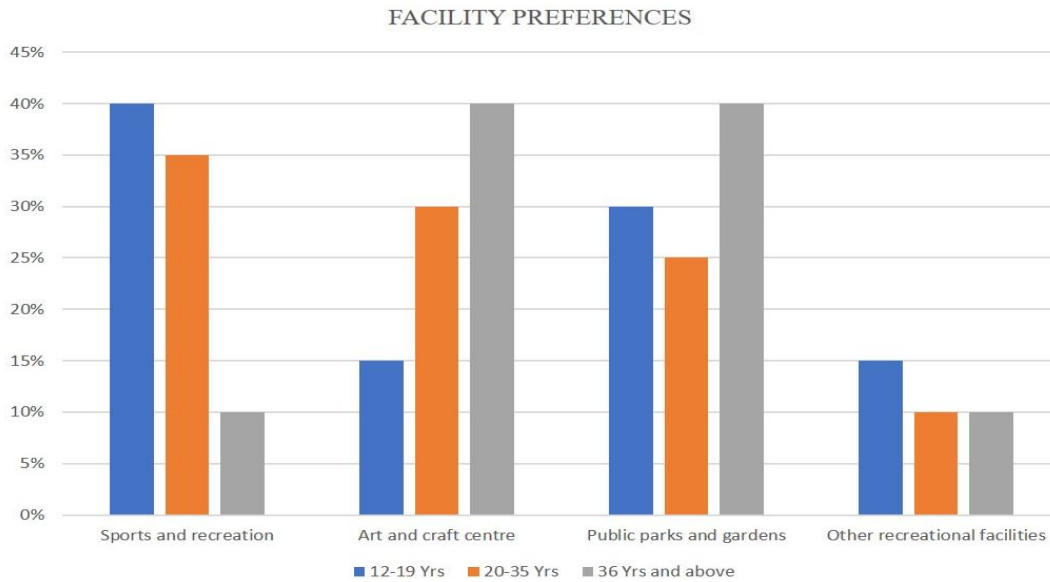
**4. Why are a majority of people not involved in playing Indian traditional sports?**



**Figure 32. Reasons for lack of participation in traditional sports**

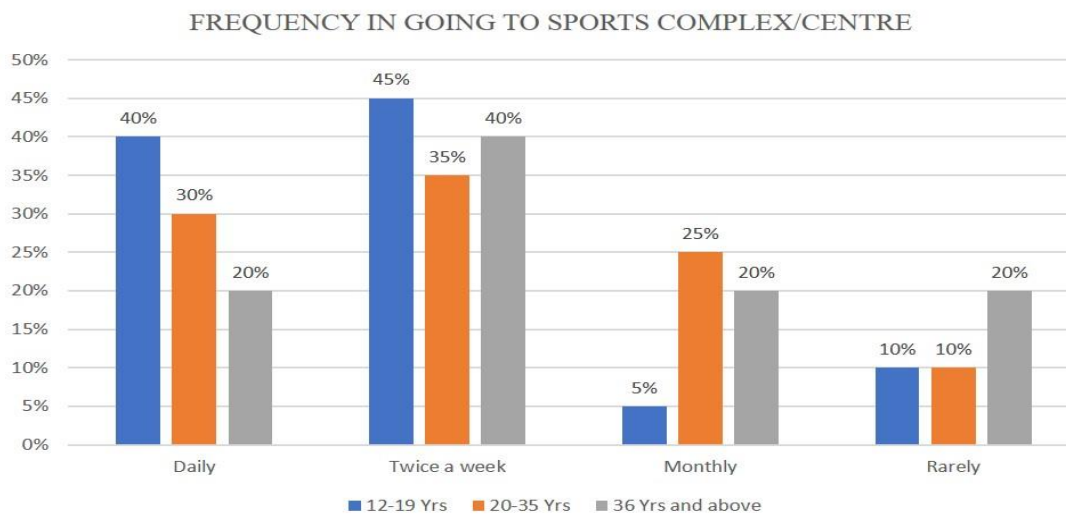
Majority of the respondents, about 45% wrote lack of proper infrastructure for training and promotion traditional sports and games as a major reason for lack of participation of people to take up these sports.40% of the respondents wrote lack of knowledge about these games and their importance as the reason for the lack of participation in these sports and games.10% of the respondents thought the lack of popularity and TV telecasts of these sports as a reason for less participation of people in these sports and games.

**5.What facility would you prefer to have in your neighbourhood?**



**Figure 33.Facility preferences**

**6.Given a chance, how often would you visit a sports complex which exclusively deals with traditional sports?**



**Figure 34.Frequency of users**

## Survey on sports.

The forms contain some questions regarding the involvement of people in various sport activities. The objective of the survey is to find out people's interest in various sports.

### Email address \*

Valid email address  
.....

This form is collecting email addresses. [Change settings](#)

### Name \*

Short-answer text  
.....

### Age \*

Short-answer text  
.....

### Gender \*

- Male
- Female
- Other...

### Occupation \*

Short-answer text  
.....

### 1. Do you engage yourself in any type of sport activities? \*

- Yes
- No

2. Which specific sport do you prefer playing? \*

- Cricket
- Football
- Kabaddi
- Badminton
- Kho-kho
- Tennis
- Wrestling
- Cycling
- Other...

3. According to you, why do most of the people don't look at sports as a priority and as a career option? \*

- Lack of proper infrastructures
- Lack of time
- Lack of proper coaching facilities
- Financial problems
- Other...

4. Why are a majority of people not involved in playing Indian traditional sports? \*

- Lack of knowledge about various traditional games and their importance
- Lack of popularity and TV telecasts of the same
- Lack of proper Infrastructural facilities for training and promotion of these sports
- Other...

5. What facility would you prefer to have in your neighbourhood? \*

- Sports and Recreation centre

- Art and craft centre
- Public Gardens and parks
- Other recreational facilities

6. Given a chance, how often would you visit a sports complex which exclusively deals with traditional sports? \*

- Daily
- Twice a week
- Monthly
- Rarely
- Other...

## 2.4. SITE SELECTION AND JUSTIFICATION

### ABOUT DWARKA

Dwarka is located in K-II Zone in South West Delhi district of National Capital Territory of Delhi in India. The Sub city is located extremely near to Indira Gandhi International Airport and serves as the administrative headquarters of South West Delhi, which is led by District Magistrate. Dwarka is being developed as a [smart city](#) under [Delhi Development Authority's](#) 'smart sub-city' project. Dwarka has a multi-mode transport system which consists of a hierarchy of road network supported with railway corridor.

### WHY DWARKA?

- Proximity to core Delhi.
- Fast developing area and availability of large chunk of land for development.
- An emerging sports hub where many sports complexes already exist and the region has potential users and sports culture which would help to promote traditional sports.
- Proximity to the proposed ISBT, Metro station and Indira Gandhi International Airport.

### LOCATION

The proposed site is located in Sector 23, Dwarka, New Delhi.

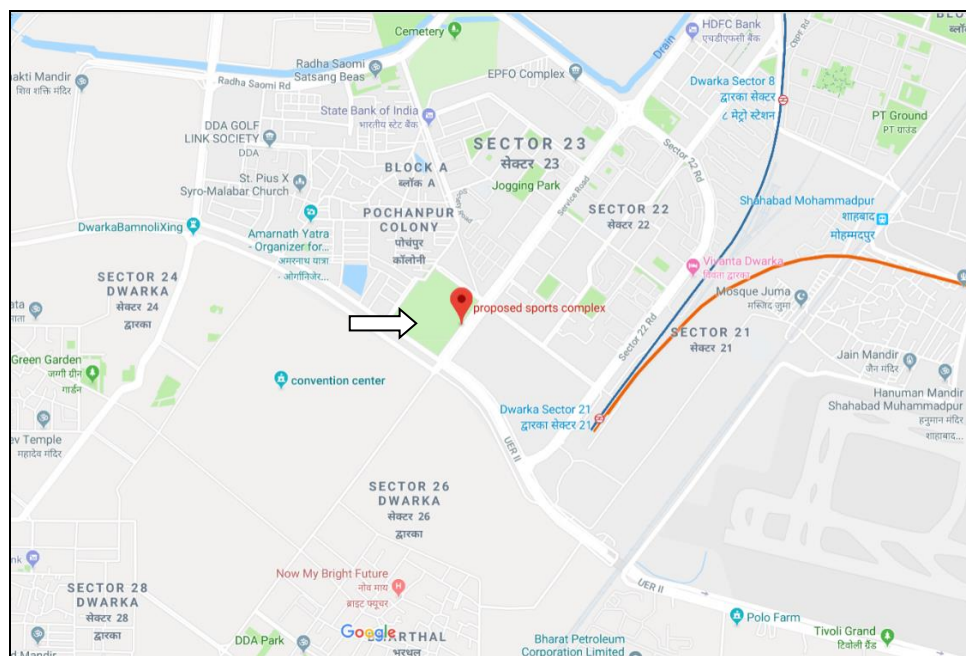
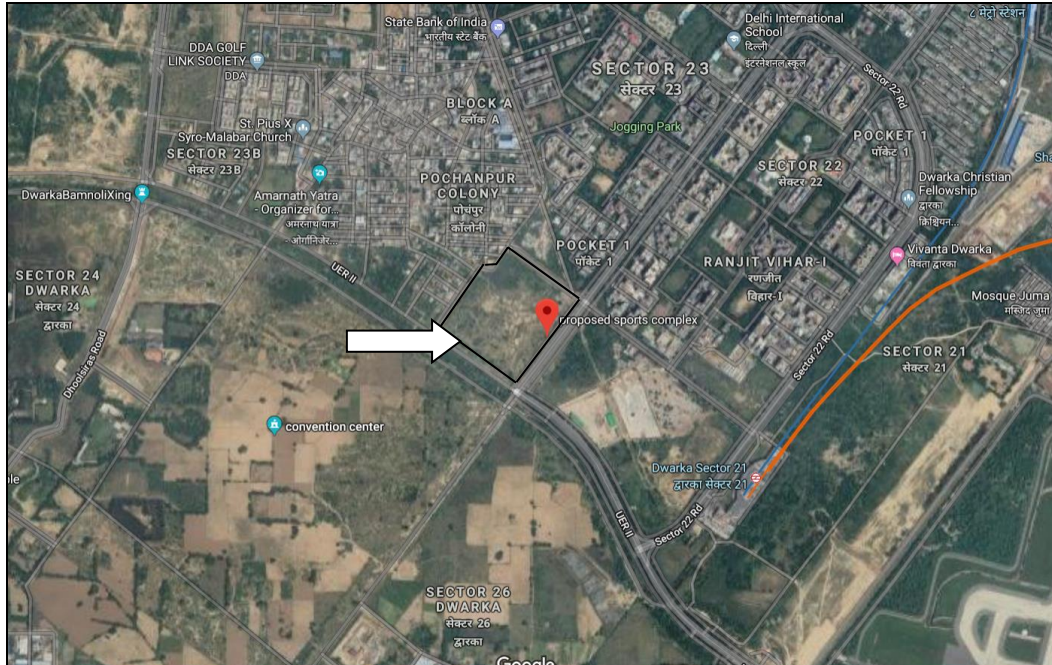


Image 45. Location Map (Source-Google Maps)





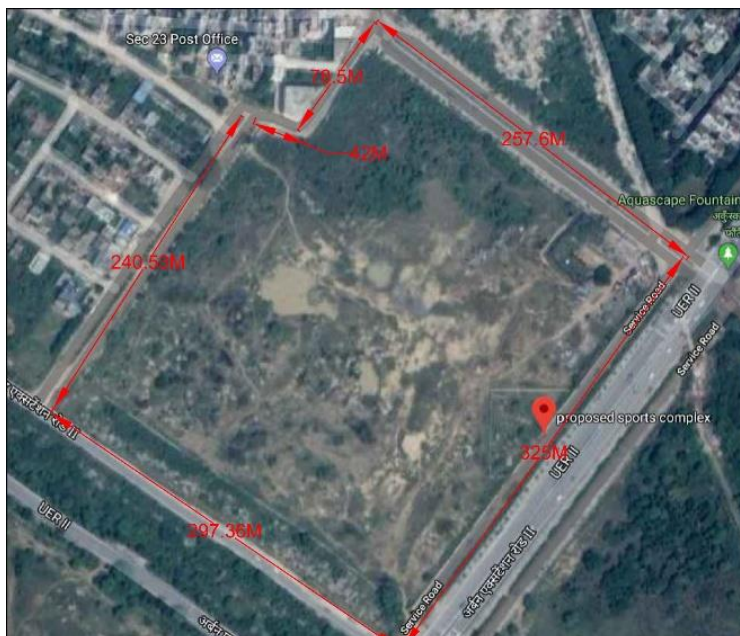
**Image 46.**Satellite view of the site (Source-Google Maps)

**SITE AREA**

20 Acres (81000SQ.M).

**CLIENT**

Delhi Development Authority.



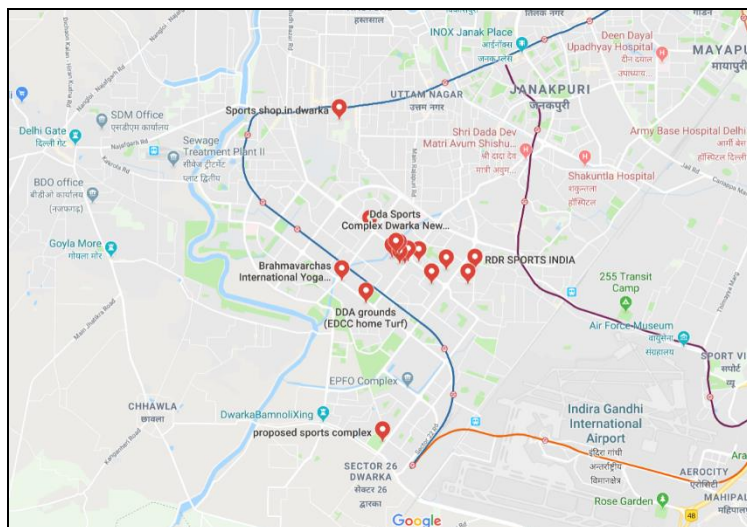
**Image 47.**Site Dimensions (Source-Google Earth)

## SITE JUSTIFICATION

### POTENTIALS OF THE SITE

Sports infrastructure is getting a great boost with the Delhi Development Authority planning the construction of six new sports complexes in areas like Rohini, Narela and Dwarka. Four out of the six complexes will be housed in Dwarka with plans for three of them having been approved by DDA's screening committee. These complexes will come up in Dwarka Sectors 8,17,19 and 23. Three of these, in Sector 8,17 and 19 have got the screening committee's nod and with the construction work being started will be ready within 2 years. There is already a sports complex in Dwarka sector 11.

So, from the above discussion, it is quite clear that Dwarka sub-city is emerging as a sports hub which will help to nurture different sports talent across the city and neighbouring states. So, it would be ideal for the project to locate a site at a place where the sporting culture already exists. One of the advantages for the researcher to choose a site in this region is that it would be easier to create awareness for traditional sports among youths in a region where the sporting culture already exists rather than starting it from the extreme bottom where there are no potential users available at all. Also, Delhi being the capital of the country and being at the centre and easily accessible for athletes from various states through various means of transport would help to promote these sports at international level.



**Image 48.**Dwarka as an emerging sports hub (Source-Google Maps)

## LOCATION AND ACCESSIBILITY

### 1.The hierarchy of road system adopted in Dwarka sub-city are as under:

- (i) Primary Arterial Roads -100 m ROW. & 80 m ROW
- (ii) Other Primary Arterial Roads – 60 m ROW & 45 m ROW
- (iii) Primary Sub-Arterial (Collector) – 30 mts.
- (iv) Secondary Sub-Arterial (Collector) - 18 mts.

The proposed site has a road access from all the four sides with a Primary Arterial road of 100 m width located on the South-West side of the site which connects the site to NH-8 and NH-10, sector 21 metro station and the Indira Gandhi International Airport. A 60 m wide road runs along the South-East side of the site. There is a service road of 10 m width which runs along the South-East side of the site along the 60 m wide road.30 m wide roads run along the North-West and North-East side of the site.

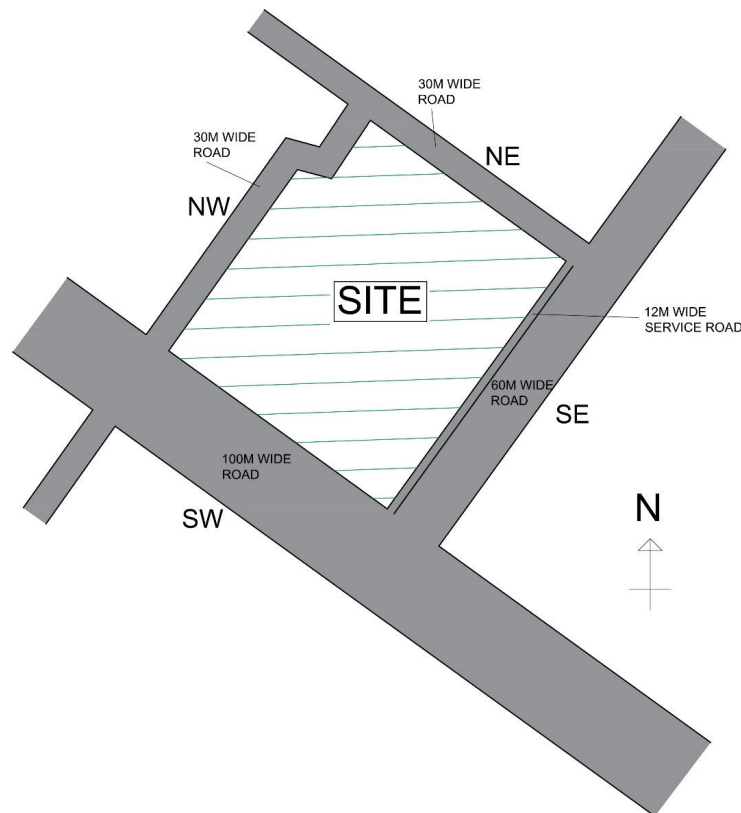


Figure 35.Access roads around the site and their widths

**2.Sector 21 Metro Station:**

The proposed site is located at a distance of about 2 km (travel time of about 5 minutes) from the Sector 21 Metro Station.

**3. I.S.B.T.:**

An Interstate Bus Terminal with an area of about 10 ha in sector 22 has been proposed adjacent to the proposed site, on the 100 m road connecting Dwarka with NH-8 and NH- 10.

**4.Airport:**

The K-II zone is connected to the Indira Gandhi International Airport by the 100 m link road connecting Dwarka with NH-8. The proposed is located at a distance of about 10 kms-Travel time less than 20 minutes.

**5.Integrated Metropolitan Passenger Terminal:**

An Integrated Metropolitan Passenger Terminal has been proposed in sector 21 with an area of about 140 ha. to be utilized by Northern Railway and DMRC as a Passenger Interchange Point.

**LANDUSE**

In the Master plan 2021 of MCD- Delhi Municipal Corporation, the chosen plot is demarcated under areas for sports facilities and infrastructure.



**Image 49. Development plan (Land use)**

(Source- <https://dda.org.in/ddanew/pdf/Planning>)

**SITE PHOTOGRAPHS**



**Site Image 1. Road junction adjoining the site**



**Site Image 2**



**Site Image 3**



**Site Image 4**



**Site Image 5**



**Site Image 6**



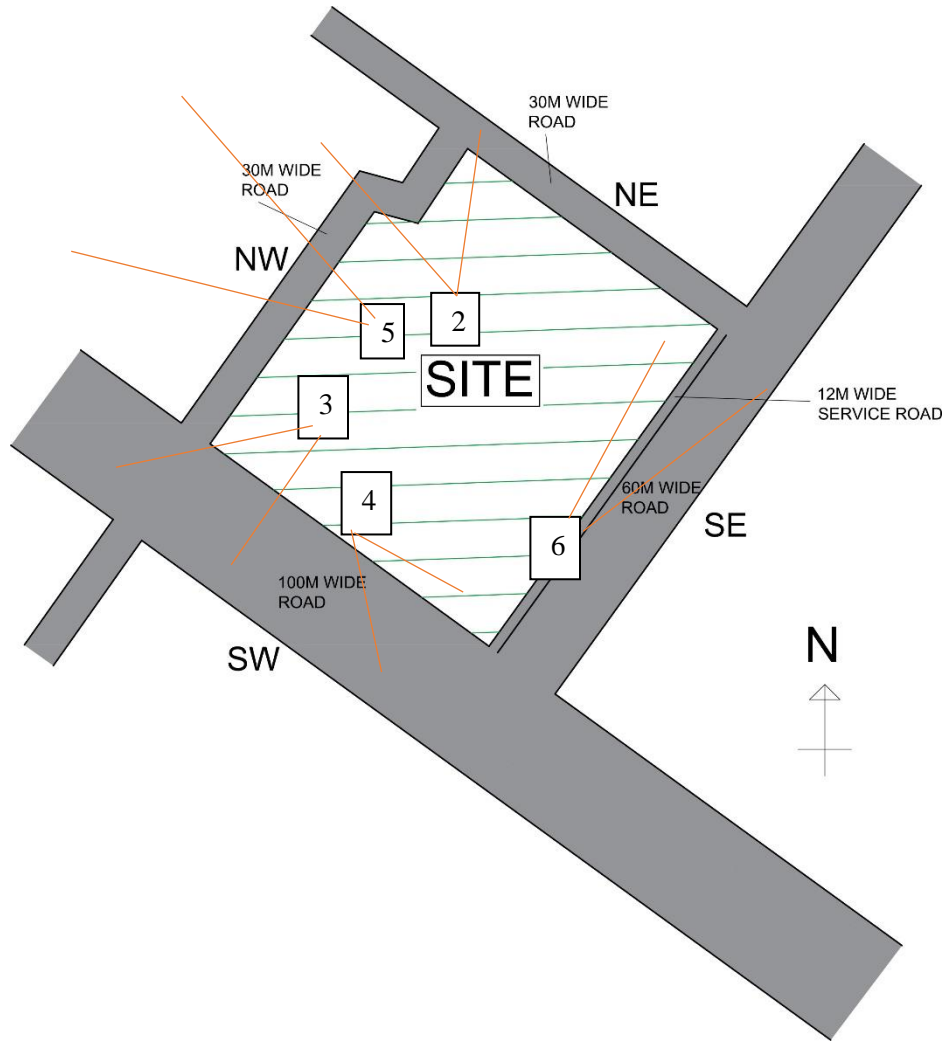


Figure 36. Key plan for photographs

### 3. DESIGN BRIEF

Traditional sports are the games and movements that are traditional to our cultures. They form an important part of our history and they help to shape us and our culture, which directly impact our variety of values. These traditional sports and games should be uplifted and safeguarded as sports practices and intangible cultural heritage for the future development of sports, individuals and societies. The celebration of traditional and indigenous forms of sports and games, which originate from the roots of many different communities, is a growing feature of contemporary culture. This brings upon us a great responsibility and opportunity to understand, uplift and cater to the needs and aspirations of different athletes playing such types of sports in our society.

Architecture pertaining to games, sports, body and movement is much more than just putting a roof over some competitive activities. The proposed project may potentially increase the joy of movement and inspire both children and adults to participate and play various types of Indian traditional sports and hence help them to interact socially in entirely new ways. The project which involves creating a promotional centre for traditional sports can help us to establish a link between ‘architecture’ and ‘sports’ and the ‘culture’ and thus can help us to revive our rich cultural heritage through the upliftment of Indian traditional sports in the society.

These ideas shall be executed and addressed to, by:

- *Designing social and community spaces for traditional sporting events, gatherings, etc.*
- *Designing training spaces for newer generation who wants to learn these games and sports and choose it as a career option.*
- *Pedestrian friendly environment.*
- *Environmentally and culturally sustainable design.*
- *Creating spaces for traditional sports and hence integrate culture and sports together.*
- *Providing a platform to various athletes playing these traditional sports to showcase their talents.*

## 4.TENTATIVE ARCHITECTURAL SPACE PROGRAMME

Site area=81,000 Sq.m						
Spaces	Single Field size	Number	Total Area	Types of Users	Quality of Space	
<b>Kabaddi</b>						
<b>Tournament Spaces-Indoor stadium and Training space</b>						
<b>Kabaddi indoor stadium (for 2000 spectators)</b>						
Kabaddi indoor play area	13 m X 10 m	1 play area	300 Sq.m (including ancillary spaces)	Athletes	Open/Semi open/Closed, Well ventilated, Well lit, min 6 m height.	
Seating Area (for 2000 spectators)			1200 Sq.m	Spectators, Media persons, Officials	Covered space, Well ventilated, Well lit	
Toilets and Washrooms for Public		20 min	100 Sq.m (50 Sq.m each for ladies and gents)	Public	Closed space, Well ventilated, Well lit	
Toilets for Athletes (20 Athletes approx.)		4	15 Sq.m	Athletes	Closed space, Well ventilated, Well lit	
Showers for Athletes		4	15 Sq.m	Athletes	Closed space, Well ventilated, Well lit	
Changing Room		2	25 Sq.m (12.5 Sq.m each)	Athletes	Closed space, Well ventilated, Well lit	
Referee Room		1	40 Sq.m	Officials	Closed space, Well ventilated, Well lit, Air conditioned	
Media Block		1	APD	Media persons	Semi Open/Closed space, Well ventilated, Well lit, Air conditioned	
Medical Room		1	40 Sq.m	Doctors, Athletes	Closed space, Well ventilated, Well lit, Air conditioned	
VIP Room		1	50 Sq.m	VIPS	Closed space, Well ventilated, Well lit, Air conditioned	
Ticket counter		1	20 Sq.m	Public	Semi Open/Closed space, Well ventilated, Well lit	
Entrance space and circulation passages, Staircases and lifts			APD	Public	APD	
Other facilities			APD	APD	APD	

<b>Kabaddi indoor training spaces (For 80 Athletes at a given time slot)</b>						
Training space	13 m X 10 m	4 Play areas	600 Sq.m	Athletes, Coaches	Open/Semi open/Closed, Well ventilated, Well lit, min 6 m height.	
Toilets for Athletes		14	80 Sq.m (40 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit	
Showers for Athletes		14	80 Sq.m (40 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit	
Changing Rooms		2	50 Sq.m (25 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit	
Coach Room (4 coaches)		1	50 Sq.m	Athletes, Coaches	Closed space, Well ventilated, Well lit, Air conditioned	
Entrance space and circulation passages, Staircases and lifts			APD	Athletes, Coaches	APD	
Other facilities			APD	APD	APD	
<b>Total Area=2665 Sq.m</b>						
<b>Kho-kho</b>						
<b>Tournament Spaces-Indoor stadium and Training space</b>						
<b>Kho-kho stadium (for 2000 spectators)</b>						
Kho-kho outdoor play area	29m X 16 m	1 play area	800 Sq.m (including ancillary spaces)	Athletes	Open/Semi open space, Well ventilated, Well lit, min 6 m height.	
Seating Area (for 2000 spectators)			1200 Sq.m	Spectators, Media persons, Officials	Covered space, Well ventilated, Well lit	
Toilets and Washrooms for Public		20 min	100 Sq.m (50 Sq.m each for ladies and gents)	Public	Closed space, Well ventilated, Well lit	
Toilets for Athletes (25 Athletes approx.)		4	15 Sq.m	Athletes	Closed space, Well ventilated, Well lit	
Showers for Athletes		4	15 Sq.m	Athletes	Closed space, Well ventilated, Well lit	
Changing Room		2	25 Sq.m (12.5 Sq.m each)	Athletes	Closed space, Well ventilated, Well lit	

Referee Room	1	40 Sq.m	Officials	Closed space, Well ventilated, Well lit, Air conditioned
Media Block	1	APD	Media persons	Semi Open/Closed space, Well ventilated, Well lit, Air conditioned
Medical Room	1	40 Sq.m	Doctors, Athletes	Closed space, Well ventilated, Well lit, Air conditioned
VIP Room	1	50 Sq.m	VIPS	Closed space, Well ventilated, Well lit, Air conditioned
Ticket counter	1	20 Sq.m	Public	Semi Open/Closed space, Well ventilated, Well lit
Entrance space and circulation passages, Staircases and lifts		APD	Public	APD
Other facilities		APD	APD	APD
<b>Kho-kho training spaces (For 60 Athletes at a given time slot)</b>				
Training space	2 Play areas	1200 Sq.m	Athletes, Coaches	Open/Semi open space, Well ventilated, Well lit, min 6 m height.
Toilets for Athletes	10	50 Sq.m (25 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit
Showers for Athletes	10	50 Sq.m (25 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit
Changing Rooms	2	50 Sq.m (25 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit
Coach Room (4 coaches)	1	50 Sq.m	Athletes, Coaches	Closed space, Well ventilated, Well lit, Air conditioned
Entrance space and circulation passages, Staircases and lifts		APD	Athletes, Coaches	APD
Other facilities		APD	APD	APD
<b>Total Area=3665 Sq.m</b>				

<b>Kushti</b>						
<b>Tournament Spaces-Indoor stadium and Training space</b>						
<b>Kushti indoor stadium (for 2000 spectators)</b>						
Kushti indoor play area	12 m X 12 m	2	Play areas	500 Sq.m (including ancillary spaces)	Athletes	Open/Semi open/Closed, Well ventilated, Well lit, min 6 m height.
Seating Area (for 2000 spectators)				1200 Sq.m	Spectators, Media persons, Officials	Covered space, Well ventilated, Well lit
Toilets and Washrooms for Public		20	min	100 Sq.m (50 Sq.m each for ladies and gents)	Public	Closed space, Well ventilated, Well lit
Toilets for Athletes (20 Athletes approx.)		4		15 Sq.m	Athletes	Closed space, Well ventilated, Well lit
Showers for Athletes		4		15 Sq.m	Athletes	Closed space, Well ventilated, Well lit
Changing Room		2		25 Sq.m (12.5 Sq.m each)	Athletes	Closed space, Well ventilated, Well lit
Referee Room		1		40 Sq.m	Officials	Closed space, Well ventilated, Well lit, Air conditioned
Media Block		1		APD	Media persons	Semi Open/Closed space, Well ventilated, Well lit, Air conditioned
Medical Room		1		40 Sq.m	Doctors, Athletes	Closed space, Well ventilated, Well lit, Air conditioned
VIP Room		1		50 Sq.m	VIPS	Closed space, Well ventilated, Well lit, Air conditioned
Ticket counter		1		20 Sq.m	Public	Semi Open/Closed space, Well ventilated, Well lit
Entrance space and circulation passages, Staircases and lifts				APD	Public	APD
Other facilities				APD	APD	APD

<b>Kushti indoor training spaces (For 20 Athletes at a given time slot)</b>						
	12 m X 12 m	5 Play areas	850 Sq.m	Athletes, Coaches	Open/Semi open/Closed, Well ventilated, Well lit, min 6 m height.	
Training space		4	30 Sq.m (15 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit	
Toilets for Athletes		4	30 Sq.m (15 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit	
Showering Rooms		2	25 Sq.m (12.5 Sq.m each for ladies and gents)	Athletes, Coaches	Closed space, Well ventilated, Well lit	
Coach Room (4 coaches)		1	50 Sq.m	Athletes, Coaches	Closed space, Well ventilated, Well lit, Air conditioned	
Entrance space and circulation passages, Staircases and lifts			APD	Athletes, Coaches	APD	
Other facilities			APD	APD	APD	
<b>Total area=2990 Sq.m</b>						
<b>Mallakhamb</b>						
Mallakhamb indoor hall for training and tournament		1	500 Sq.m (including ancillary spaces)	Athletes	Semi open/Closed, Well ventilated, Well lit, min 8 m height.	
Seating Area (for 1500 spectators)			900 Sq.m	Spectators, Media persons, Officials	Covered space, Well ventilated, Well lit	
Warm up area		1	100 Sq.m	Athletes	Semi open/Closed, Well ventilated, Well lit, min 8 m height.	
Toilets and Washrooms for Public		15 min	80 Sq.m (40 Sq.m each for ladies and gents)	Public	Closed space, Well ventilated, Well lit	
Toilets for Athletes (30 Athletes approx.)		5	20 Sq.m	Athletes	Closed space, Well ventilated, Well lit	
Showering Rooms		5	20 Sq.m	Athletes	Closed space, Well ventilated, Well lit	
Changing Room		2	25 Sq.m (12.5 Sq.m each)	Athletes	Closed space, Well ventilated, Well lit	

Refree Room		1	40 Sq.m	Officials	Closed space, Well ventilated, Well lit, Air conditioned
Media Block		1	APD	Media persons	Semi Open/Closed space, Well ventilated, Well lit, Air conditioned
Medical Room		1	40 Sq.m	Doctors, Athletes	Closed space, Well ventilated, Well lit, Air conditioned
VIP Room		1	50 Sq.m	VIPS	Closed space, Well ventilated, Well lit, Air conditioned
Ticket counter		1	20 Sq.m	Public	Semi Open/Closed space, Well ventilated, Well lit
Entrance space and circulation passages, Staircases and lifts			APD	Public	APD
Other facilities			APD	APD	APD
<b>Total area=1795 Sq.m</b>					
<b>Indoor hall (for performing sports and other additional activities)</b>					
Indoor hall performing space		1	400 Sq.m (including ancillary spaces)	Performers, Athletes	Closed space, Well ventilated, Well lit, min 6 m height.
Seating Area (for 1000 spectators)			600 Sq.m	Spectators, Media persons, Officials	Covered space, Well ventilated, Well lit
Toilets and Washrooms for Public		10 min	50 Sq.m (25 Sq.m each for ladies and gents)	Public	Closed space, Well ventilated, Well lit
Toilets for Athletes (20 Athletes approx.)		4	15 Sq.m	Athletes	Closed space, Well ventilated, Well lit
Showers for Athletes		4	15 Sq.m	Athletes	Closed space, Well ventilated, Well lit
Changing Room		2	25 Sq.m (12.5 Sq.m each)	Athletes	Closed space, Well ventilated, Well lit
Media Block		1	APD	Media persons	Semi Open/Closed space, Well ventilated, Well lit, Air conditioned



Medical Room		1	40 Sq.m	Doctors, Athletes	Closed space, Well ventilated, Well lit, Air conditioned	
VIP Room		1	50 Sq.m	VIPS	Closed space, Well ventilated, Well lit, Air conditioned	
Ticket counter		1	20 Sq.m	Public	Semi Open/Closed space, Well ventilated, Well lit	
Entrance space and circulation passages, Staircases and lifts			APD	Public	APD	
Other facilities			APD	APD	APD	
<b>Total area=1215 Sq.m</b>						
<b>Main building</b>						
Entrance space and circulation passages, Staircases and lifts			APD	Public	APD	
<b>Administration area(for 100 people approx.)</b>						
Director's room		1	20 sq.m	Officials, Staff	Closed space, Well ventilated, Well lit, Air conditioned	
Officer's room		1	20 sq.m	Officials, Staff	Closed space, Well ventilated, Well lit, Air conditioned	
Administration Office		1	50 sq.m	Officials, Staff	Closed space, Well ventilated, Well lit, Air conditioned	
Conference room		1	50 sq.m	Officials, Staff	Closed space, Well ventilated, Well lit, Air conditioned	
Staff room		2 nos- 20 sq.m each	40 sq.m	Officials, Staff	Closed space, Well ventilated, Well lit, Air conditioned	
Room for security guards and other maintenance staff (50 people approx)		1	50 Sq.m	Officials, Staff	Closed space, Well ventilated, Well lit	
Toilet for staff		10 min	50 Sq.m(25 Sq.m each for ladies and gents)	Officials, Staff	Closed space, Well ventilated, Well lit	
Changing room for staff		2	50 Sq.m(25 Sq.m each for ladies and gents)	Officials, Staff	Closed space, Well ventilated, Well lit	

<b>Other spaces</b>						
Library (for 200 people)		1		200 Sq.m	Public	Closed space, Well ventilated, Well lit
Exhibition space (for 100 people approx.)		1		200 Sq.m	Public	Open/Semi open/Closed space, Well ventilated, Well lit
Yoga centre		1		40 Sq.m	Public	Closed space, Well ventilated, Well lit, Air conditioned
Yoga hall (for 100 people at a given time)		1		100 Sq.m	Public	Closed space, Well ventilated, Well lit
Changing room		2		50 Sq.m (25 Sq.m each)	Club members	Closed space, Well ventilated, Well lit
Auditorium (for 500 people)		1		400 Sq.m (including ancillary spaces)	Public	Closed space, Well ventilated, Well lit, Air conditioned
AV room		1		50 Sq.m	Public	Closed space, Well ventilated, Well lit, Air conditioned
Massage room		2		50 Sq.m (25 Sq.m each)	Club members	Closed space, Well ventilated, Well lit, Air conditioned
Doctor's room		1		25 Sq.m	Doctors, Club members, Athletes	Closed space, Well ventilated, Well lit, Air conditioned
Physiotherapist room		1		25 Sq.m	Doctors, Club members, Athletes	Closed space, Well ventilated, Well lit, Air conditioned
Nutritionist room		1		25 Sq.m	Doctors, Club members, Athletes	Closed space, Well ventilated, Well lit, Air conditioned
Toilets		10 min		50 Sq.m (25 Sq.m each for ladies and gents)	Doctors, Club members, Athletes	Closed space, Well ventilated, Well lit
<b>Total Area=1545 Sq.m</b>						
<b>Cafeteria (1000 people capacity)</b>						
Dining Area		1		1000 Sq.m	Public	Open/Semi open/Closed space, Well ventilated, Well lit
Kitchen and Service space		APD		500 Sq.m	Public	Closed space, Well ventilated, Well lit
Public Toilets		20 min		100 Sq.m (50 Sq.m each for ladies and gents)	Public	Closed space, Well ventilated, Well lit

Souvenir shop		APD	50 Sq.m	Public	Semi Open/Closed space, Well ventilated, Well lit
<b>Total Area=1650 Sq.m</b>					
Open play area			16000 sq.m		
<b>Hostel facilities for Athletes (for 400 Athletes)</b>					
Entrance space and circulation passages, Staircases and lifts			APD	Athletes, Club Members	APD
Residential blocks	15 Sq m room for every 4 athletes	100	1500 Sq.m	Athletes, Club Members	Closed space, Well ventilated, Well lit
Toilets		20 min	100 Sq.m	Athletes, Club Members	Closed space, Well ventilated, Well lit
Showers		20 min	100 Sq.m	Athletes, Club Members	Closed space, Well ventilated, Well lit
<b>Total Area=1600 Sq.m</b>					
Parking spaces		APD	APD	APD	
<b>Total Builtup Area=17,125 Sq.m</b>					

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