

THESIS REPORT ON

INTERNATIONAL CRICKET STADIUM FARIDABAD, HARYANA

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF:

BACHELOR OF ARCHITECTURE

BY

MOHD SAYEED

1160101034

THESIS GUIDE

(AR. GHUNSHYAM)

SESSION

2022-2023

TO THE

SCHOOL OF ARCHITECTURE AND PLANNING

BABU BANARASI DAS UNIVERSITY LUCKNOW.

SCHOOL OF ARCHITECTURE AND PLANNING BABU BANARASI DAS UNIVERSITY, LUCKNOW (U.P.).

CERTIFICATE

I hereby recommend that the thesis entitle**INTERNATIONAL CRICKET STADIUM. FARIDABAD, HARYANA** under the supervision, is the bonafide work of the students and can be accepted as partial fulfillment of the requirement for the degree of Bachelor's degree in architecture, school of Architecture and Planning, BBDU, Lucknow.

Prof.Mohit Kumar Agarwal Dean of Department			Prof. Sangeeta Sharma Head of Department
	Recommendation	Accepted	
		Not Accepted	
External Examiner			External Examiner

BABU BANARASI DAS UNIVERSITY, LUCKNOW (U.P.).

Certificate of thesis submission for evaluation

1.	Name	: MOHD SAYEED		
2.	Roll No.	:1160101034		
3.	Thesis Title	:INTERNATIONAL CRICKET STADIUM		
4.	Degree for wh	ich the thesis is submitted:		
5.	Faculty of Uni	versity to which the thesis is submitted:	Yes / No	
6.	Thesis prepara	ation guide was referred to for preparing the	thesis. Yes / No	
7.	Specification r	regarding thesis format have been closely follo	owed. Yes / No	
8.	The content of	the thesis have been organized based on the	guidelines. Yes / No	
9.	The thesis has	been prepared without resorting to plagiaris	m Yes / No	
10.	All the sources	s used have been cited appropriately	Yes / No	
11.	The thesis has	not been submitted elsewhere for a degree.	Yes / No	
12.	Submitted 3 ha	ard bound copied plus one CD	Yes / No	
 mat	ture(s) of the su	 pervisor)	(Signature of the Candidate))

Name:	Name:
	Roll No.:

Introduction about Cricket stadium

1. Cricket field

A **cricket field** is a large <u>grassy ground</u> on which the game of <u>cricket</u> is played. Although generally <u>oval</u> in shape, there is a wide variety within this: some are almost perfect <u>circles</u>, some elongated ovals and some entirely irregular shapes with little or no symmetry – but they will have entirely curved boundaries, almost without exception. There are no fixed dimensions for the field but its <u>diameter</u> usually varies between 450 feet (137 m) and 500 feet (150 m). Cricket is unusual among major sports (along with Golf, <u>Australian Rules football</u> and <u>baseball</u>) in that there is no official rule for a fixed-shape ground for professional games.

2. Background and history

The sport of <u>cricket</u> has a *known* history beginning in the late 16th century. Having originated in south-east England, it became the country's national sport in the 18th century and has developed globally in the 19th and 20th centuries. International matches have been played since 1844 and <u>Test cricket</u> began, retrospectively recognised, in 1877. Cricket is the world's second most popular spectator sport after <u>association football</u>. Governance is by the <u>International Cricket Council</u> (ICC) which has over one hundred countries and territories in membership although only twelve play Test cricket.

3. Aim and objective

- Maximum sitting
- Easy to view ground from
- Comfort zone
- Security

- Plan according condition ICC & BCCI
- Green building
- Maximum earning
- Crowd controlling
- Comfort zone
- Long-time stability

1 4 What is cricket?

Cricket is a bat and ball game played between two teams, 11 players each, on a field which has a rectangular 22-yard-long pitch in the centre. The game is played by 120 million players world-wide making it the second most popular sport in the world. The purpose of the game is to score more runs than your opposing team.

A Cricket match is divided into periods called innings. It is decided before the game begins, if both teams will have one or two innings. During the innings one team bats while the other fields. All 11 players on the fielding team are on the pitch at the same time however only two batsmen are the field at any one time.

Team captains toss a coin to decide who should bat first.

Cricket fields tend to be oval in shape. The end which is marked off is called the boundary, with the rectangle "pitch" in the centre.

At each end of the pitch are the wickets, 22 yards apart. A bowling crease is in line with the wicket and the batting or popping crease is 4ft in front of the wicket.

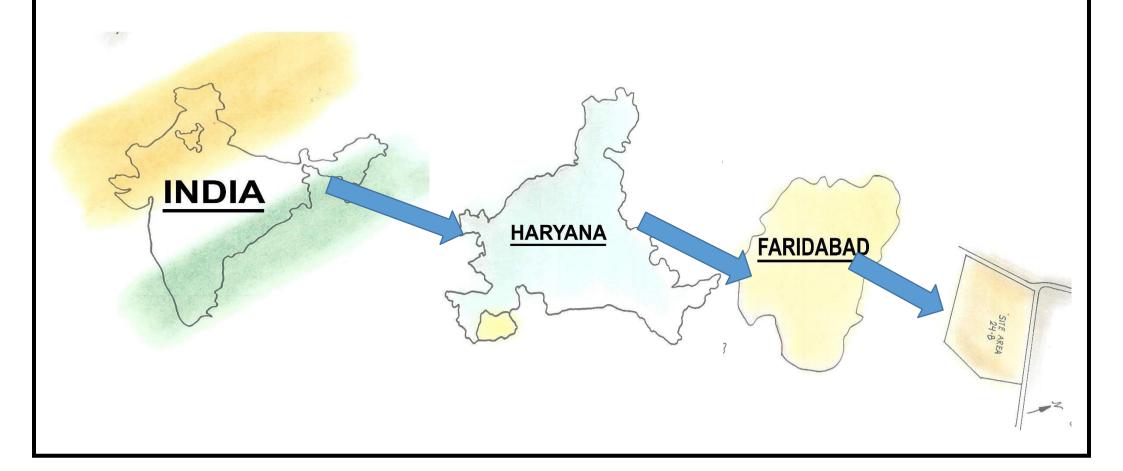
SITE INFORMATION

INTRODUCTION

1. FARIDABAD

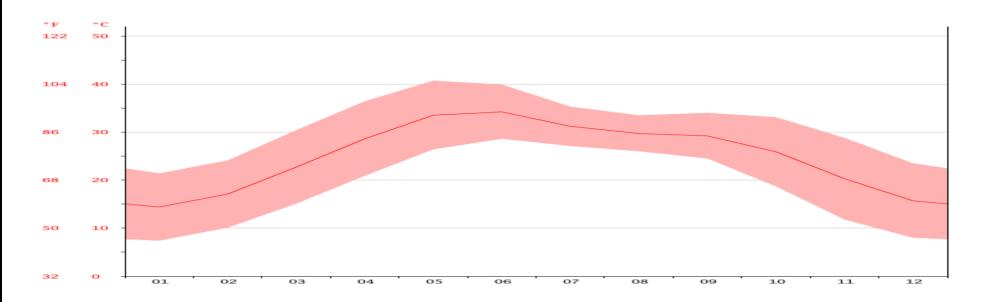
Faridabad is the <u>most populous and largest city</u> in the north Indian state of <u>Haryana</u>. It's a leading industrial centre and situated in the <u>National Capital Region</u> bordering the Indian capital <u>New Delhi</u>. It is one of the major satellite cities of Delhi and is located 284 kilometres south of the state capital <u>Chandigarh</u>

2. APPROACH TO SITE



2.3 WEATHER

FARIDABAD WEATHER



MAX. TEMPERATURE - MAY = 40.7 °C

HEAVY RAIN FALL - AUGUEST = 188 MM

LOW RAIN FALL - APRIL = 3 MM

MIN TEMPERATURE - JANUARY = 7.4 °C

AVG. TEMPERATURE - 34.2 °C HOTTEST

AVG. TEMPERATURE - 14.4°C COLDEST

2.4 HOW TO GET HERE?

NEAREST RAILWAY STATION FARIDABAD - 3.4 KM NEAREST AIRPORT LOCATED IN DELHI - 39 KM NEAREST FARIDABAD BUS-STAND - 650MT

2.6 VEGETION

Neem Tree

Shrubs

Neem

Acacia nilotica (Babool)

Bergera koenigii(bowala)

Acacia nilotica

2.5 AREA DETAIL

SITE AREA - 24.8 ACRE F.A.R - 1.75 MAX

GROUND COVERAG - 40%

HEIGHT RESTRICTION- NO LIMIT BASMENT - NO LIMIT

2.7 SITE INFORMATION

LOCATION

New Industrial Town, Aravalli Golf Course New Industrial Town, Faridabad, Haryana 121001

SITE TOPOGRAOHY

LEVELLED - PLAIN LAND

LAND USE - COMMERCIAL LAND USE



2.8 Site surrounding BUS STOP

2.9 SWOT Analysis

2.9.1 Strength

- Good soil content for creating play area
- Site is adjoining the main road
- Enough land for accommodating all facilities
- Appropriate distance from the main town
- Excellent scenic beauty

2.9.2 Weakness

- Heavy traffic zone
- Unwanted Noise pollution due to traffic
- Long distance from airport

2.9.3 Opportunity

- Scope for extending centralized tourist attraction
- Nucleus for new development
- Using natural resources (wind, sun, rain) to create energy efficiency

2.9.4 Threat

Security

2.10 Site located



NEHRU COLONY

STORY

BLOCK E

SININ

FRONTIER

GOLONY

STORY

BLOCK M

STORY

BLOCK N

FRONTIER

GOLONY

STORY

BLOCK N

FROSE Garden:

STORY

ONAhar Singh Stadium

A Ration

A Ration

BLOCK N

FROSE Garden:

STORY

ONAhar Singh Stadium

A Ration

A Ration

Golden Dustrick

FRONTIER

GOLONY

STORY

STORY

Golden Dustrick

FRONTIER

GOLONY

STORY

STORY

ONAhar Singh Stadium

A Ration

Golden Dustrick

FRONTIER

GOLONY

STORY

GOLONY

STORY

Golden Dustrick

Golonge

Golden Dustrick

FRONTIER

GOLONY

STORY

GOLONY

GOLONY

STORY

GOLONY

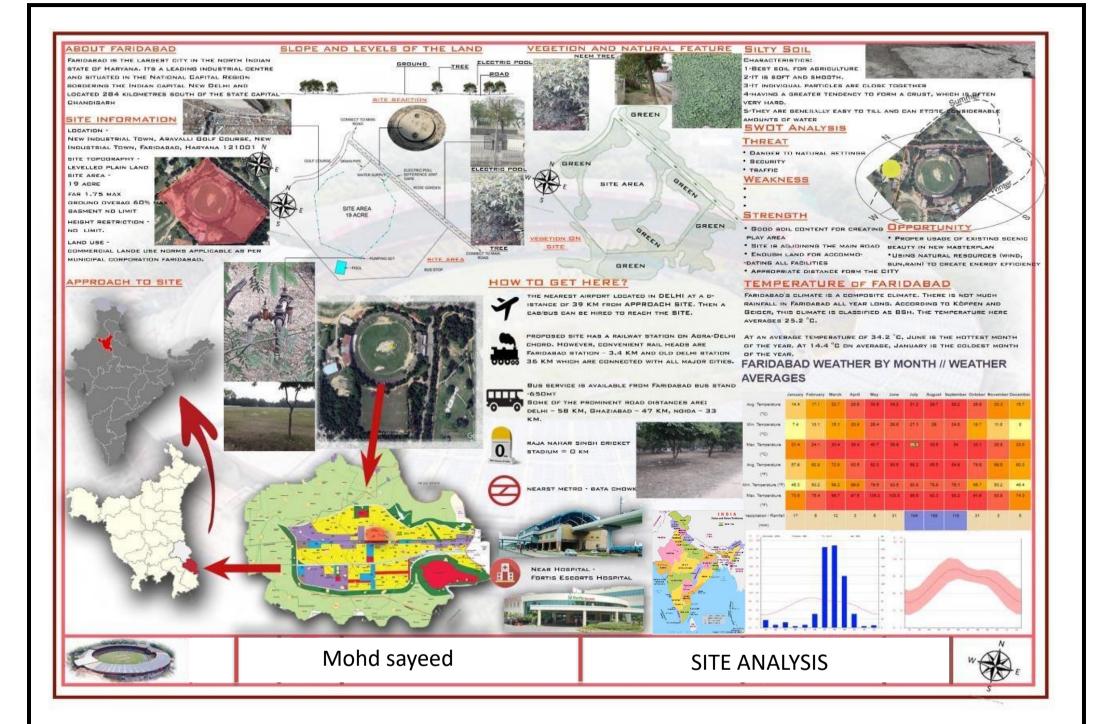
ST

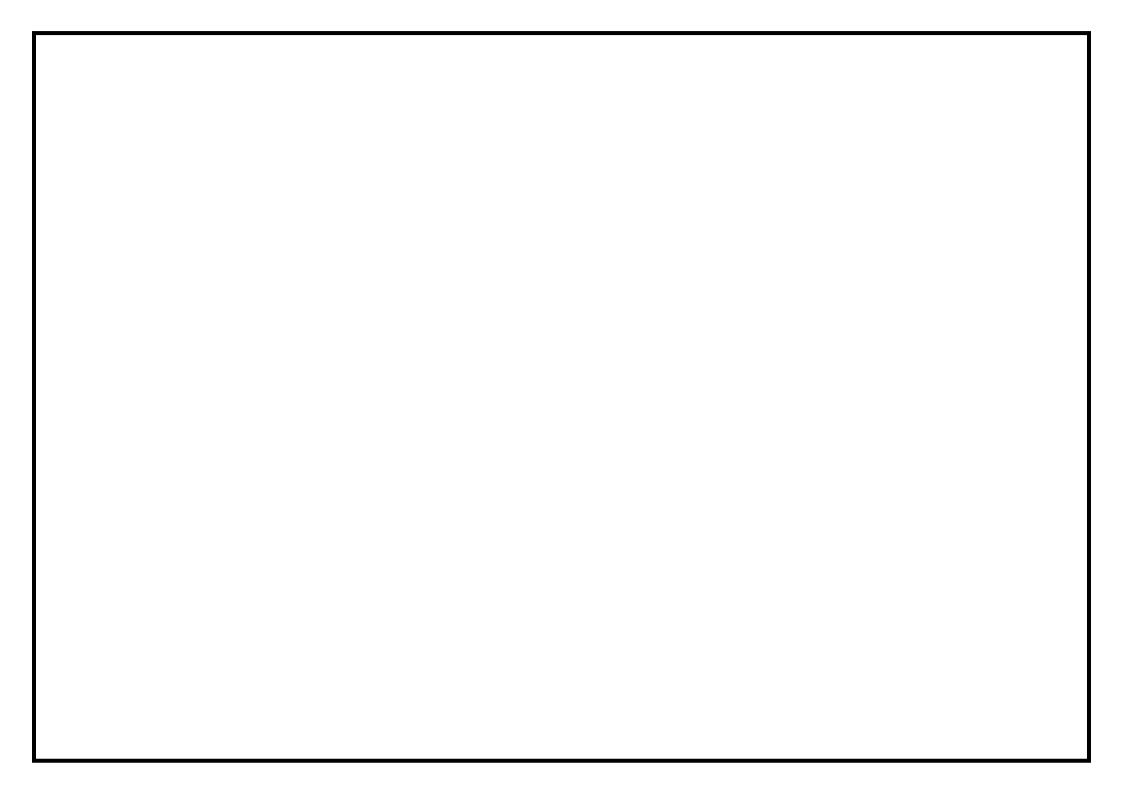
SITE DISTANCE FROM RAILWAY





DISTANCE FROM NIT BUS STAND





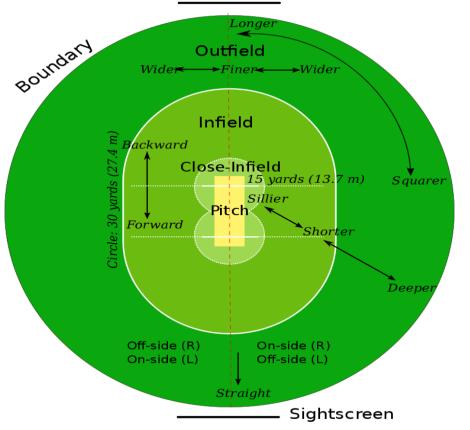
LITERATURE REVIEW

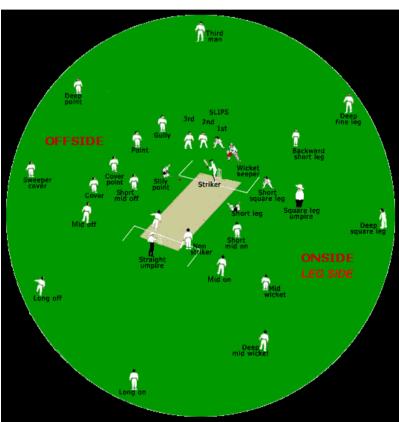
1. Cricket

The term cricket is variously thought to be derived from the target aimed at and the Implement used to defend it. In the former case it is argued that the word is related to German words which mean something related to the wickets. Others believe the word has an English origin. The game had started off in England, so the inception of the word Is more probable to be coming from an English background.

2. Cricket field

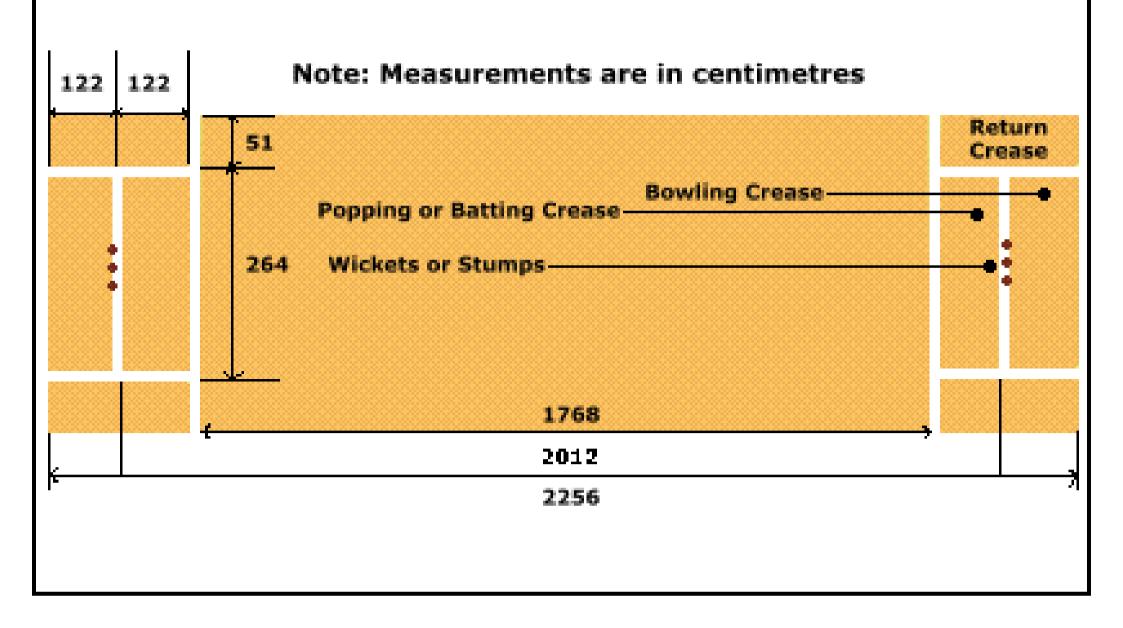
The entire area of grass, marked off by a boundary line around its outer edge, on which a game of cricket is played, as distinguished from the 'pitch' or central area between the two wickets. (Steven Lynch, Widen 2006, p 100).





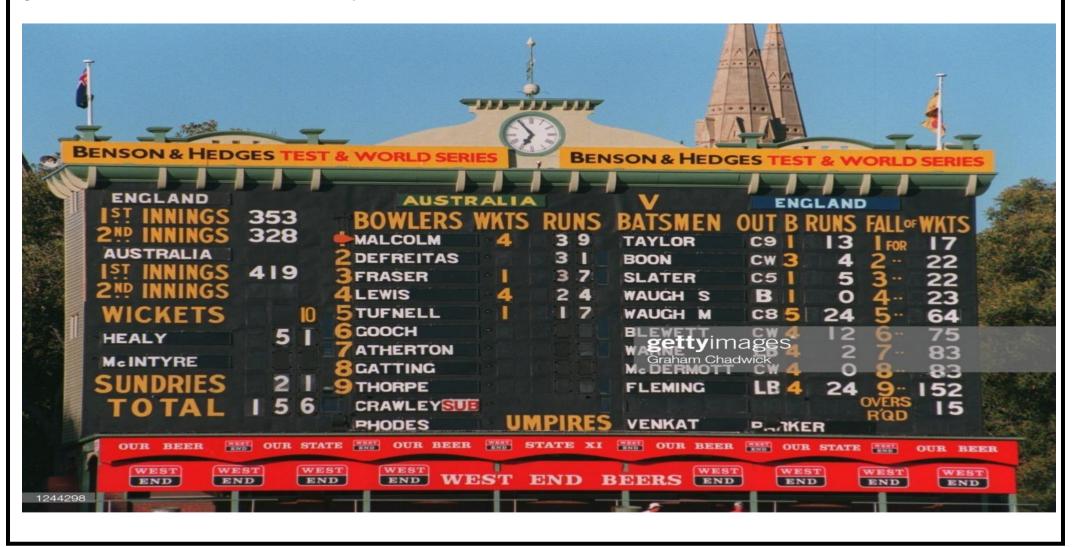
3.3 Cricket pitch

The area of ground between two sets of stumps is called a cricket pitch. It has length of 22 yards. The surface of the pitch is made up of clay. It is the main play area of cricket where the batsman stands.



3.4 Scoreboard

A device used for displaying a concurrent record of the score of the game which will be visible to both players and spectators. In the early days of cricket, before the introduction of scoreboards, it was traditional for the scorers to stand up when the scores of the two sides drew level, as an indication to players and spectators that the batting side needed only one run to win. Scoreboards: originally known as 'telegraph boards', began to appear at the major grounds in the mid- nineteenth century.

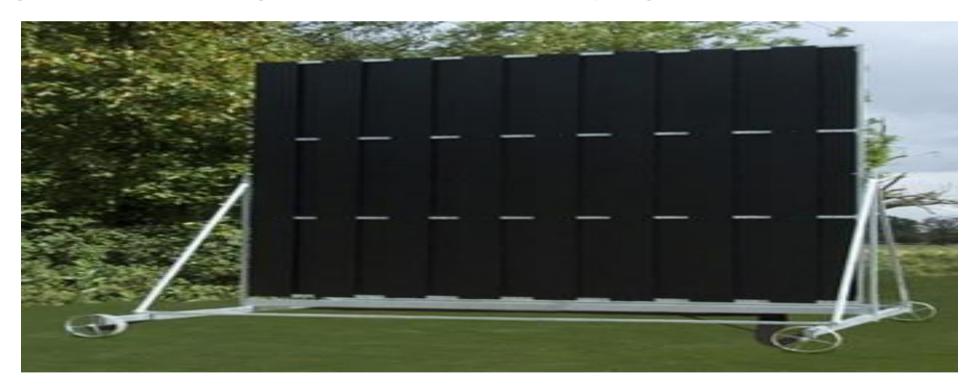


3.5 Scorecard

A printed card produced and issued for sale at a cricket ground, showing the names of the players on each side listed in their batting order and giving scores, dismissals, and fall of wickets up to the time at which the card was printed. Scorecards of some kind were already in existence before the end of the 18th century.

3.6 Sightscreen

A movable structure with a large flat surface, typically made of slatted wood but occasionally of other materials such as canvas, which is placed just outside the boundary directly behind either of the wickets in order to assist the batsman by enhancing the visibility of the bowled ball. Sightscreens are traditionally white, but black sightscreens are used for day-night games played with white balls. Some modern sightscreens have surfaces that can be changed between overs, showing advertisements when the bowler is opening from the other end.

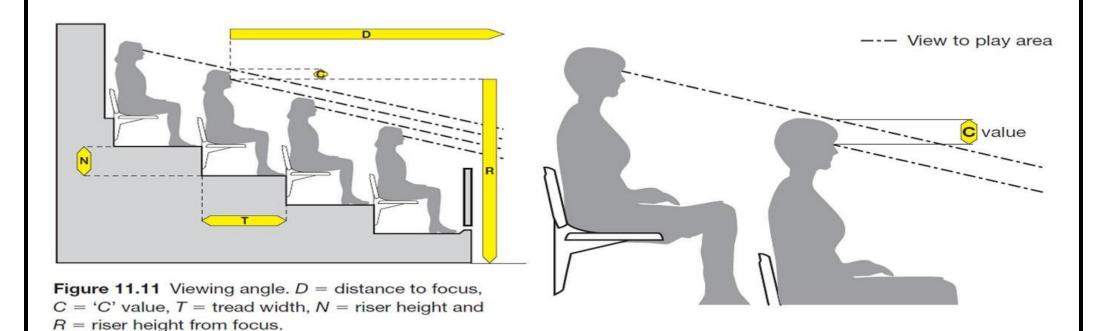


7. Umpire

Either of the two (or four in case of international matches) whose function is to ensure that a cricket match is conducted in accordance of the laws and spirit of the game and to adjudicate on any point submitted to them by the players. There are usually two on field umpires, a third umpire (TV umpire) and a fourth or reserve umpire in case of Emergency.

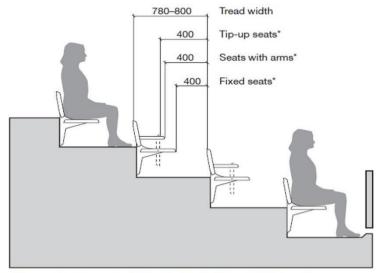
8. Spectator viewing

Spectator viewing requires specific angles which ensure best possible views of the point of focus, which is the cricket field. There is a certain 'C' value that has to be calculated in order to maximize quality of spectator viewing.



3.9 Spectator seating

Having arrived at geometry which relates the spectator areas to the playing field so that the spectators can see the action clearly and without having to crane their necks, the Next design tasks is the seats themselves. Seating design is a matter of reconciling four Major factors: comfort, safety, robustness and economy.



^{*} Clear walkway measured to furthest protruding point of the seat.

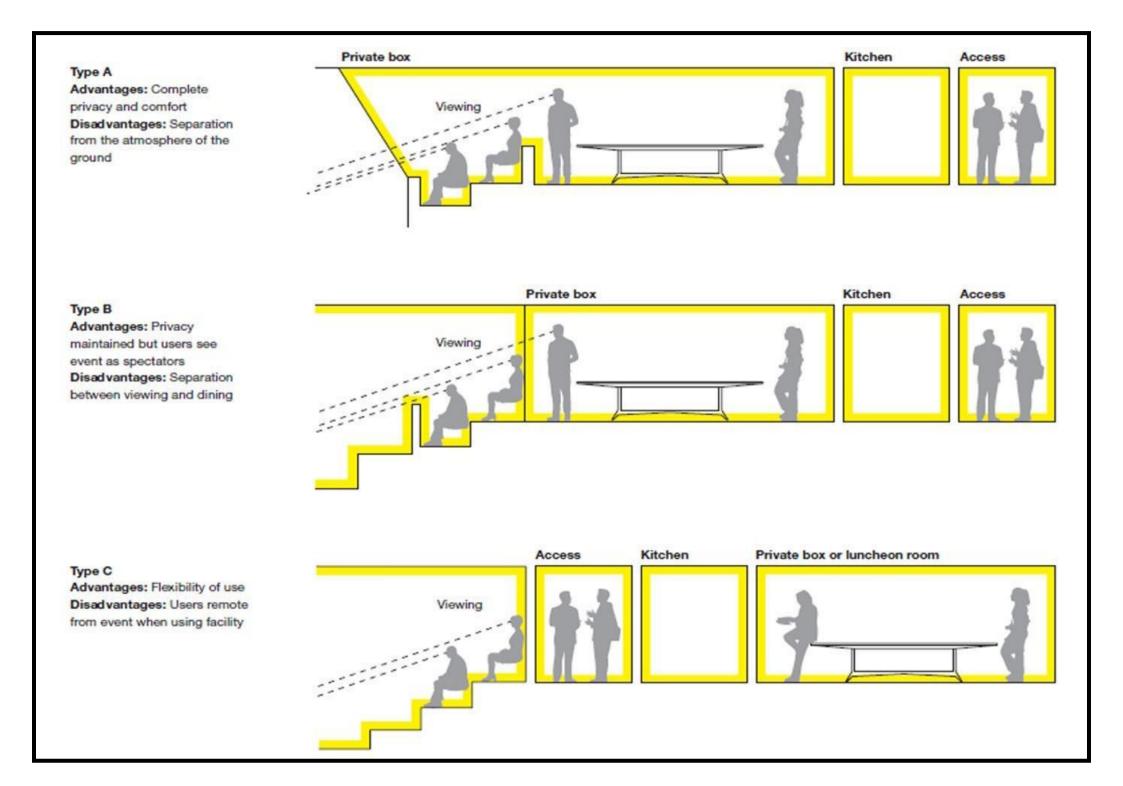
Figure 12.5 Minimum seat dimensions.

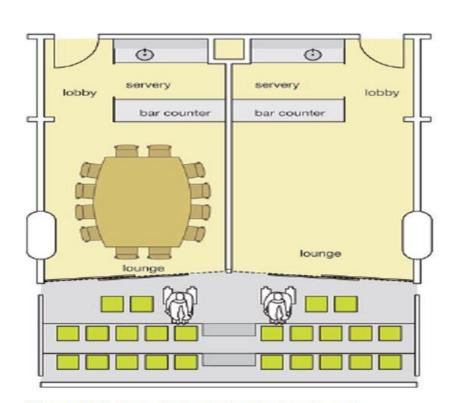
Country	Seats		Seating areas	Standing areas			
	Maximum Minimum seat dimensions			People per m ²	People per m ²		
	number of seats per row	Width (mm)	Depth (mm)	(maximum)	(maximum)		
England*	gland* 28 seats 460 500 with armrests 500 recommended		700 minimum 760 recommended	3	4.7 (current standard)		
(FSADC Guidelines)	28 seats	450	760				
USA	22 seats	450	762 (with back)				
		450	559 (seat only)				
Germany	72 seats	500	800	2.5	5		
Austria	30m bench length	450	750	3	5		
Italy	40 seats	450	600	3.7			
Switzerland	40 seats	450	750	3	5		
Norway/ Sweden	40 seats	500 800 2.5		2.5	5		
Netherlands	15m bench length	500	800				

Table 12.2 Dimensional standards for seats and standing areas

3.10 VIP facilities

Three possible arrangements for private viewing: Type A behind glass; Type B in the well of the stadium, with the private box immediately behind; and Type C in the well of the stadium with an access corridor immediately behind. Each option has its advantages and disadvantages as noted. Climatic and security aspects may also have to be taken into account when choosing which type is to be used. For type A, the Melbourne Cricket Ground (MCG) has installed a compromise solution allowing upward-opening windows, enabling the interior to be opened to the stadium bowl.





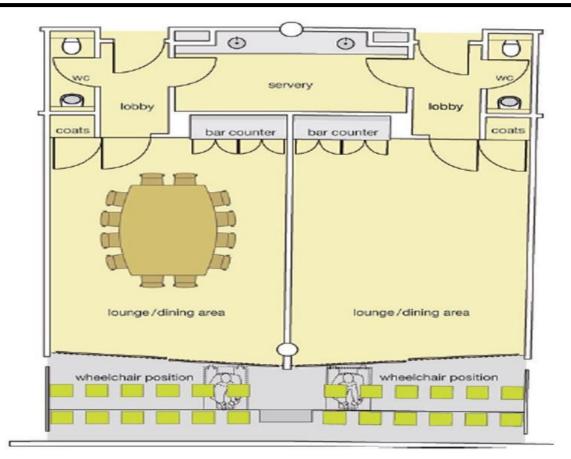
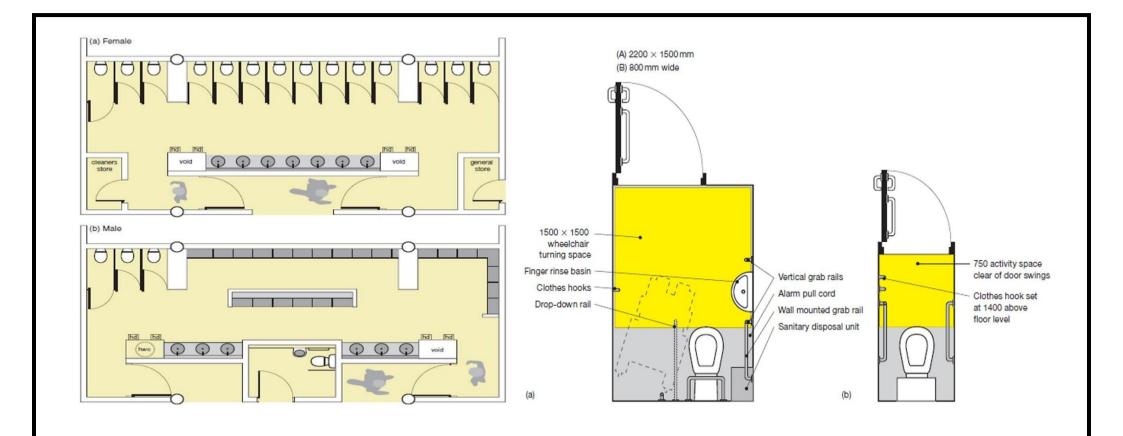


Figure 13.2 Typical private viewing box layouts.

3.11 Toilet provision

Toilets and other ablutionary facilities may be needed for several individual types of stadium users in addition to those for the mass spectators. These facilities should be thought of if in conjunction with spectator toilets so as to minimize the number of sanitary appliances and drainage stacks in the stadium while still making adequate provision for all types of users.



3.12 Media facilities

Facilities for media are an integral part of stadium design, not least because of the large sums of money that are now-a-days entered from the media rights for sporting events. These facilities involve the three main categories of public information and entertainment services- the press (including newspapers and magazines), radio and television. Clubs may also have their own media requirements club TV and websites.

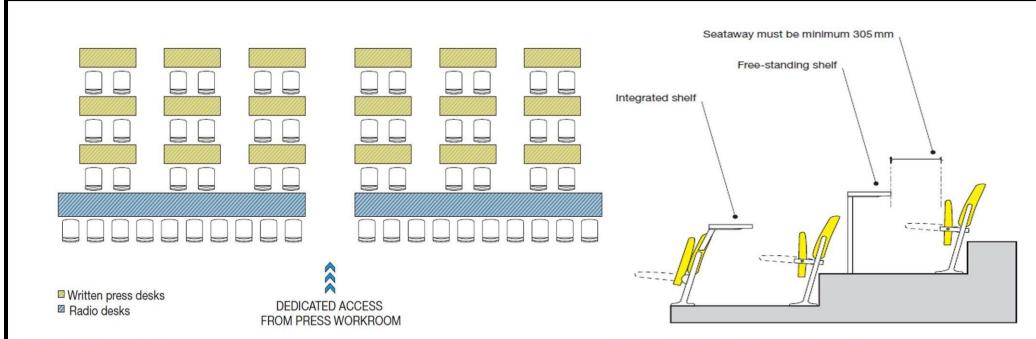


Figure 18.1 Press and radio area.

Figure 18.2 Press box seating options.

3.13 Pitch orientation

The cricket pitch orientation is extremely important because the game cannot be played across the direction of the wind. In order to play along the wind direction, the pith is oriented in the north-south direction, with a maximum deviation up to 15 degrees.

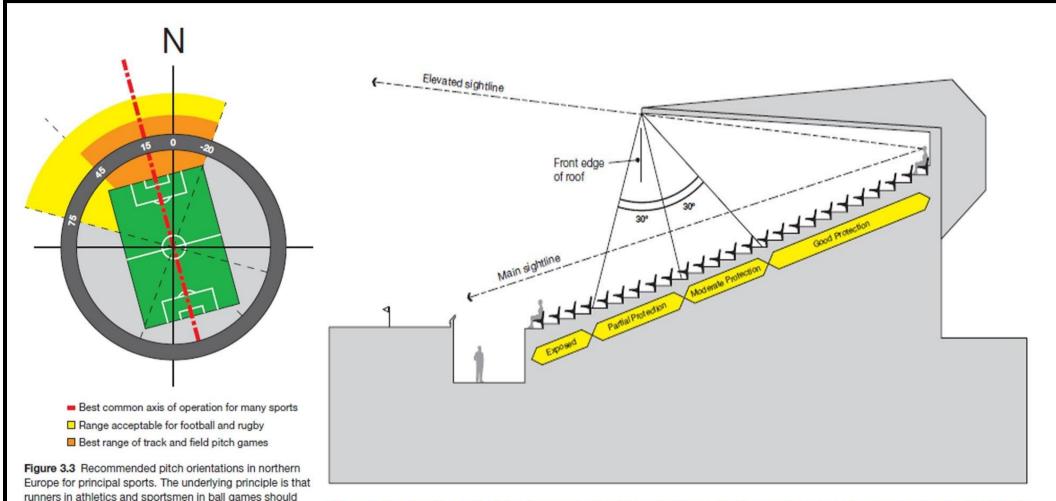


Figure 5.7 A simple model of the degree of protection offered by a stadium canopy. For actual design more detailed studies are needed taking into account factors such as orientation, prevailing wind direction and local patterns of turbulence.

3.14 Shading depth and angle

never have the late afternoon sun in their eyes.

The shading depth and angle of the gallery spaces are important for comfort and quality of viewing so the spectators. The roof of the stadium provides such shading facilities to counter the direct sunlight and rainfall. For multi-tier gallery systems, the upper gallery provides shade to the lower one. The roof structure then provides shading for the upper gallery. Usually, half of the gallery must be shaded by the upper tier or the roof structure.

3.15 Roofing materials

	Profiled metal sheeting		led metal sheeting Concrete PVC		VC	Acrylic	GRP	Polycarbonate		Fabric	
	Steel	Aluminium		Single glaze	Double glaze			Single glaze	Double glaze	PVC- coated	PTFE- coated
Relative cost factor (supply and fix) as at 1992 in the UK		1.2	2.5 to 8.0	2.4 to 4.0	3.0 to 5.0	2.4 to 4.0	1.5 to 3.5	4.5 to 7.0	6.0 to 8.0	3.0 to 5.0	5.0 to 8.0
Durability	Good	Good	Good	Medium	Medium	Medium	Medium	Good	Good	Medium	Good
Flame retardancy	Incombu	stible	Incombustible	Self-extinguishing		Class 1 (when edges are protected)	Class 1	Self-extinguishing		Approx Class 1 equiv.	Class 0
Transparency	Opaque		Opaque	Transparent: 70% to 85% light transmission, which lessens markedly with time.		Translucent or transparent: 50% to 70% possible light transmission, which lessens moderately with time.	Opaque	Transparent: 80% to 90% visible light transmission, which lessens slightly with time.		Translucent	

Table 5.1 Comparative properties of roof covering materials

3.16 Security zones

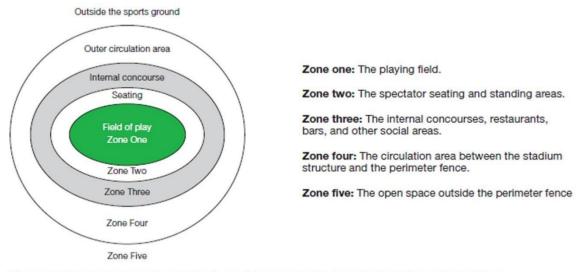


Figure 3.4 Zoning diagram showing the five 'safety zones' which form the basis for a safe stadium.

3.17 Pitch composition

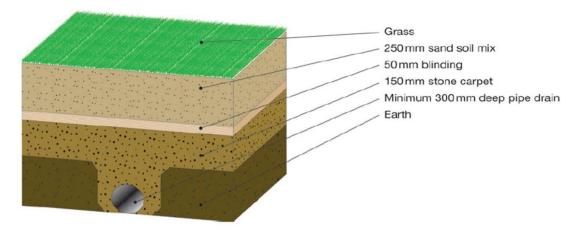


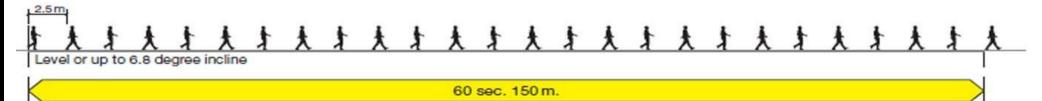
Figure 7.1 Elements of a typical natural grass playing surface.

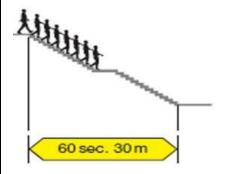
3.18 Entry and emergency exit timing

The entry and exit timing has to be strictly controlled so that the spectators and all other people can be evacuated from the stadium within a limited given time. The standard timing for emergency exit to safety zones, i.e. the ground level opening is a maximum of 8 minutes. This measurement is made from the basic walking velocities of the people Through various modes of circulations such as horizontal and vertical circulation. This velocity, together with the unit width of the exit routes are calculated to form the efficient circulation system where the evacuation time of maximum 8 minutes is designed.

Average unobstructed walking velocity is 150 m per minute. A person exits every second or every 2.5 metres. (9 km/h)

One line exit width allows 60 people to pass through it in 1 minute





Average unobstructed walking on staircase 30 m per minute (1.8 km/h). Spacing between people is 0.75 m.

3.19 Locations and scales of provision

Self-service restaurants or cafeterias are usually located at the lower levels of the stadium, near the main kitchens and service roads. They require large spaces.

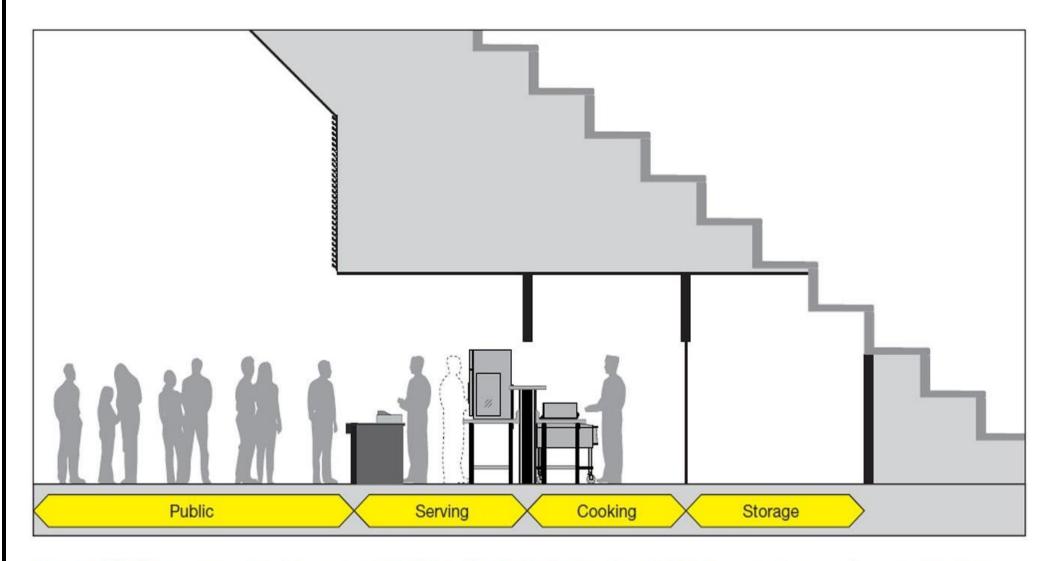


Figure 15.3 Schematic section through a typical food kiosk located on the inside of a concourse under a seating tier.

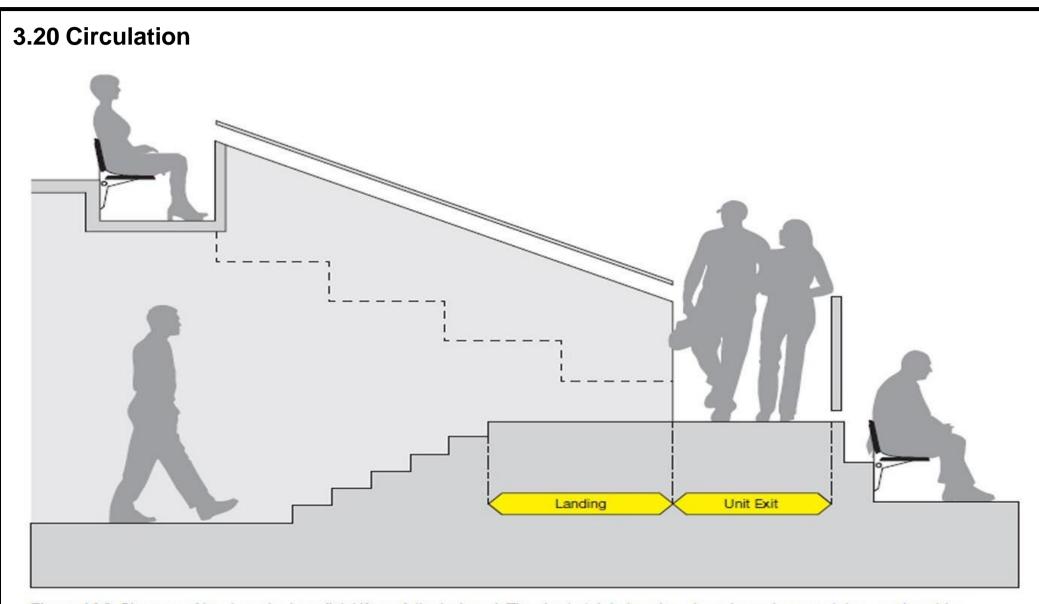


Figure 14.2 Changes of level can be beneficial if carefully designed. The short stair helps slow down incoming spectators, and enables those leaving to see over the heads of the people in front. Provision for people in wheelchairs has to be handled separately.

3.21 Solar panels

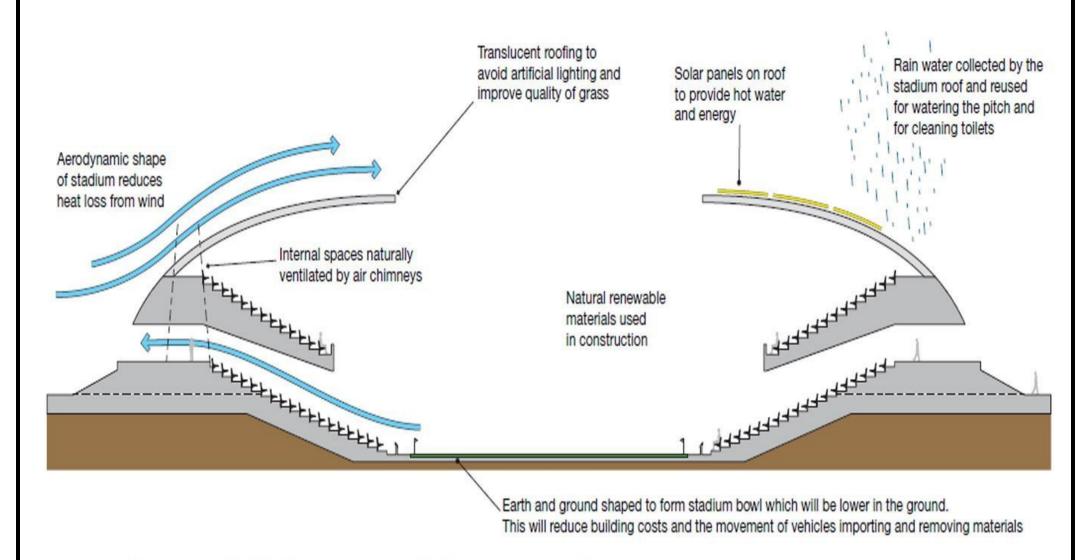


Figure 24.4 Environment-friendly design incorporates all the factors noted in this chapter.

