

DELHI 2010 COMMONWEALTH GAMES

COMMONWEALTH GAMES VILLAGE

RETURN FACILITY BRIEF

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DELHI DEVELOPMENT AUTHORITY

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Section 1

1 PROJECT INTRODUCTION

PREFACE

This Return Facility Brief (Return Brief) for the Commonwealth Games Village in Delhi has been prepared for and on behalf of DDA by Suresh Goel and Associates (SGA) and their sub Consultants Jackson Architecture Pty Ltd Australia, Decathlon SA, Athens Greece, Contemporary International (CI) & SEMAC India .

The Return Brief is a review, comment and augmentation of the 2010 Delhi Venue Brief (Brief) for the Commonwealth Games Village which was prepared by Event Knowledge Services Pty Ltd (EKS) as a “benchmark document” for and on behalf of the Organising Committee for the 2010 Commonwealth Games (Organising Committee).

SGA and their Consultants have used every care and diligence in the preparation of this document, based on information provided by EKS and others, but disclaims any responsibility for the accuracy of the information provided.

1.2 THE RETURN BRIEF

1.2.1 Purpose of the Return Brief

The purpose of the Return Brief is to fully develop and expand the required outcomes and performance standards outlined in the “benchmark” Brief. The Return Brief is a working document which where appropriate and by agreement will be periodically updated as the design evolves.

Some of Return Brief items require a reasonable degree of flexibility to be able to adopt proper solution for various facilities have been provided in the Games Village venue. The post game legacy requirements have been received for the training area from the client (DDA);

- (i) Athlete track
- (ii) Swimming pool
- (iii) Indoor hall - 2 Nos
- (iv) Fitness Centre

In the design the above facilities have been accommodated in the design adjacent to the International Zone

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1.2.2 Layout of the Return Brief

The Brief is an extremely thorough and a high quality document. To avoid unnecessary repetition in the Return Brief, particularly where it is considered unnecessary to amend or add to requirements already stated in the Brief we present the Return Brief in the following manner:

Original Brief inserts will be identified in a box thus:

This brief is divided into six sections plus Appendices.

- **Section 1 – Project Introduction**

This section gives a general description of the brief, the venue and the uses.

- **Section 2 – Design Requirements**

This section describes the overall design requirements that apply to the whole venue.

- **Section 3 – Venue Functional Requirements**

This section describes the specific requirements of each constituent group and their spaces.

- **Section 4 – Concept Planning**

This section describes the outcome of a concept planning exercise from which a benchmark proposal was produced which describes how the planning principles could be achieved.

- **Section 5 – Building Services**

This section describes the requirements for structural, civil, electrical, lighting, lightning, IT, security systems, mechanical, hydraulic and fire services.

- **Section 6 – Furniture Fixtures and Equipment**

This section gives a broad description of the FF&E requirements.

- **Appendices**

This includes supporting information including the schedules and drawings.

Comments or amendment to original Brief will be noted thus:

This is a clarification, amendment or augmentation of the Brief

Where additional research, design development or client clarification is required the comments or questions relating to the original Brief will be noted thus:

[This is a question related to an aspect of the Brief]

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1.2.3 Agency Deliverables

1.2.3.1 *Process*

Prior to acceptance of the final design, compliance with the Venue Brief for each mode of operation will need to be demonstrated by the Agency. All the functional requirements and design standards shall be addressed as part of this process.

The process to achieve this shall be agreed between the Organising Committee and the Agency but, at a minimum, the designs and relevant supporting documentation are to be submitted to the Organising Committee for review and comment at the following stages of the process:

- Concept Design;
- Design Development;
- Tender Documentation;
- Full Documentation; and
- As-Built Documentation.

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1.2.3.2 *The Deliverables*

The design, construction and operation of the Games Village shall meet the requirements of the Commonwealth Games in an efficient and effective manner, by either permanent or temporary facilities. The extent of temporary facilities will depend on the permanent design and the ability to meet Games requirements.

The Agency shall provide the following deliverables as a minimum to the Organising Committee for their review and comment:

- A Facility Brief that fully describes the permanent facilities and details how the Commonwealth Games requirements, as detailed in this Venue Brief, are to be accommodated.
- Documentation at each stage of the design process to the appropriate level of detail for each mode. This documentation would generally be limited to site, master and general arrangement plans, sections, elevations and specifications. The Organising Committee however reserves the right to request full documentation at certain stages of the process but at a minimum this would be at the Full Documentation and As-built stages of the process.
- Drawings describing the Commonwealth Games Village in Games mode, to a sufficient level of detail to allow the Organising Committee to assure themselves that the Games Village can economically and efficiently stage the Commonwealth Games. This shall include site master plans, individual building floor plans (where appropriate) and building sections drawn in accordance with OC CAD standards/colour coding.
- Schedules of all proposed permanent spaces giving details, including:
 - Location;
 - Size;
 - Utilities, including power, lighting, and air-conditioning;
 - Finishes;
 - Furniture, Fixtures and Equipment (FF&E); and
 - Proposed Games mode use.
- Where temporary works are to be delivered by the Agency the following shall be provided:
 - Location size and services provided;

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1.3 VENUE DESCRIPTION/FUNCTION

1.3.1 General

The Commonwealth Games Village will accommodate up to 8,000 Athletes and Officials during the 2010 Commonwealth Games. All facilities required in the Games Village are outlined in Section 3 - Games Village Functional Requirements.

The site has no existing structures. The site is generally level, though access roads to the west of the site are at a higher level due to the bund separating the site from the Yamuna River floodplain. In some areas of the site there is mature landscaping.

The adjacent Akshardham Temple complex adjoins the site at the east and south sides and has existing security walls and fences.

The Rail corridor is on the north side and the site on east abuts the DMRC corridor near NOIDA Link Road. The whole site is at lower level than the adjoining Road network and Rail Corridor. The Residential and Commercial Zones are located on the strip of land west of Akshardham boundary while International, Operational, Transport Mall and Training areas are on north of the temple boundary.

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1.3.2 Site Description

The site is located adjacent to the Akshardham Temple Complex accessible from the Noida Link Road to the east and NH 24 to the south.

The site has a number of constraints with respect to zoning, setbacks, land ownership issues, temple interface issues and transport/access issues. These constraints are broadly identified through the Site Constraints Drawing in the Appendices. It should be noted that these constraints are subject to confirmation with the Agency as there is an ongoing evolution with respect to resolving many of these specific issues to improve the planning opportunities for both Games and Legacy modes. Specific site issues which will need to be considered include:

- Level differences between key access roads and the site, which will require significant ramping for vehicle access.
- Resolution of proposed flyovers/upgrading of key intersections to facilitate vehicle movements at the site perimeter.
- Sound attenuation issues with respect to the adjacent railway and perimeter access roads, to mitigate noise disturbance within the Residential Zone.
- Interface with the Akshardham Temple, particularly with respect to access, security and Games Village operations.

It is recommended that any facilities that are not required by the Commonwealth Games should be closed for the Games period, or their operation managed in a manner that does not affect the Games.

The formation level proposed for the site is RL 204. The adjoining roads are at about RL 208. The site constraints are being tackled to give the Village complete workability both in the Games mode as well as Legacy mode as under:

Level Difference

Level difference is proposed to be negotiated by providing ramp from 208 level to 204/206 as per the requirement. In the transport mall a subway with ramp is also proposed to connect arrival and departure sections. The athlete buses coming to the transport mall will cross over the entry to the operational area at 208 level and then ramped down to 206 level for going to the transport mall. The entry to operational area will be at 204 level thus, facilitating an unhindered movement both to athletes buses and service vehicles.

Key Intersections

Key Intersections are being considered for proper treatment to maintain smooth and unhindered flow of traffic. For the intersection on NH-24, a half flyover and a split rotary have been proposed by the Transport Consultant to have signal free right turn. The internal circulation movement is also being studied in detail to provide for safe and secure movement of vehicles. Similarly, the intersection on the NOIDA link road will be designed using good engineering practices. The Traffic Police requirements will also be appropriately integrated in the scheme.

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Sound Attenuation

Sound attenuation is to be achieved by taking various measures so as to bring the noise levels within norms, particularly for the night time requirement of 45 dB(A). The sound barriers will be constructed towards north side and NH-24 side. The noise from Bund side will be taken care of by having double glazing in windows apart from measures like plantation of trees and shrubs.

Interface with Akshardham Temple

The axis are being planned and also the buildings of varying heights have been planned dipping towards Akshardham Temple boundary with an idea to keep the view from temple clear as much as feasible and at the same time achieve maximum possible FAR. With the restricted height it may not be possible to achieve full admissible FAR.

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1.3.3 Commonwealth Games

For the Commonwealth Games, the Commonwealth Games Village will be the home for all the Athletes and Team Officials attending the Games. In summary, The Commonwealth Games Village will be developed in two separate zones supported by a third operational back-of-house zone that supports both primary zones summarised as follows:

The Residential Zone

A Residential Zone, including, but not limited to:

- Residential Units;
- CGA Facilities (Offices, Medical, etc.);
- Resident Centres;
- CGA Services Centre;
- Sport Information Centre;
- Chef de Mission Auditorium;
- Main Dining Hall;
- Casual Dining Hall;
- Polyclinic;
- Recreational Facilities;
- Fitness Centre; and
- Religious Centre.

The main dining hall will be provided in the Residential Zone adjacent to Operational Zone. Similarly Recreational Facilities, Fitness centre and Religious centre are being provided in the Residential Zone and in the Training venue adjacent to the International Zone. Operations of the training Venue will be independent of the Village with independent accreditation requirements and an independent workforce.

The International Zone

An International Zone, including, but not limited to:

- Main Entry;
- Village Media Centre;
- Commercial Centre;
- Entertainment Facilities; and
- Welcome Ceremony Plaza.

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- *Information kiosk*
- *Village Mayor Office*
- *Protocol Office*
- *First Aide Post*
- *Media Pass centre*
- *Entertainment facilities, Green room and control room*

The Operational Zone

A BOH Operational Zone, including, but not limited to:

- Village Accreditation Centre;
- Village Motor Pool;
- Village Operations Centre;
- Security Command Centre;
- Logistics and Technology Centre;
- Staff Centre;
- Housekeeping;
- Athlete Transport Mall; and
- External Parking and Operational Areas.

Delhi Fire Service had advised during one of the meetings that they require stationing of two fire tenders and six personnel at the Games Village as an emergency arrangement. The bulk requirement will be supported by other Fire Station from nearby areas. Accordingly, space has been earmarked on the north side adjacent to Services area. Similarly, space is marked adjacent to Fire Tender for keeping at least two ambulances. It is recommended the ambulance parking bays be located within the Secure perimeter.

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THE OBJECTIVES

The primary purpose of the development of the Commonwealth Games Village is to:

- Provide a world class Games Village for the 2010 Commonwealth Games , to be held in Delhi in October 2010, that allows and assists the OC to deliver the best ever Commonwealth Games; and
- Leave a legacy that provides a first class residential precinct for the citizens of Delhi.

The primary objective is the overall basis for judging whether the Games Village is 'fit for purpose' and should be referred to where there is conflict or uncertainty about what is to be provided. Where there is any uncertainty on what is required, reference should be made to the primary purpose and facilities should be provided to suit that purpose.

For the legacy, it is recommended that supporting project objectives be:

- To provide an international standard precinct for residential, recreational and commercial activities;
- To create an architectural expression appropriate to a world class residential, recreational and commercial precinct;
- To develop a design capable of flexible operation;
- To achieve a design that minimises maintenance and operational costs;
- To facilitate access and use by people with a disability;
- To comply with the requirements of the relevant Delhi and Indian Authorities and Standards; and
- To minimise the impact of the precinct on the environment.

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THE MODES

The Agency, respecting the operational timelines of the Organising Committee, shall define the proposed programme for the delivery of the Games Village, including the delivery of all temporary Overlay works unless otherwise agreed with the Organising Committee, and the proposed date for handover of the Games Village to the Organising Committee. In addition, all exclusive access periods required for the bump-in and bump-out periods shall be clearly defined and agreed by all parties. The Games Village will operate in three modes:

1. Pre-Games

The Agency should discuss the proposals for the Pre-Games use with the Organising Committee to ensure that the scope and timing does not adversely impact on the transition to Games Time operations. The fitout and bump in period for the Games Village will be extensive, and will require no less than 4 months to complete for all areas of the Village. It is anticipated that for this 4 month period or such longer period as may be agreed, the Organising Committee will require exclusive access to all areas of the Games Village in order to implement the fit-out, assuming Overlay construction has been completed. All arrangements regarding the exclusive access period should be agreed between the Agency, the Organising Committee and Commonwealth Games Federation.

2. Games

This mode of operation includes the incorporation of those elements identified in the Facility Brief which are different to the Post Games utilisation. These changes may be of a temporary nature and be removed following the event. The Design Consultants must clearly show how the precinct and venue is to be configured in this mode to meet these requirements and shall prepare documentation to support this. It should be noted that over the next four years the Organising Committee will undertake a detailed operational planning cycle which will further define these requirements and that this could change the way these requirements are interpreted and implemented. This is known as the Games Overlay.

Games Overlay is the event-specific temporary installations required for the Commonwealth Games. It may be added to permanent or temporary facilities, or it may stand-alone. It includes temporary products (tents, platforms, ramps, signage, Look of the Games treatment etc.) and services (electrical, mechanical, waste water, ventilation and air-conditioning).

3. Post-Games/Legacy

The requirements for this mode are to be briefed by the Agency. These works also include bump-out of the fit-out and any reconfiguration and repair works required following the removal of all Games Overlay. It is anticipated that approximately 2 months will be required for the bump-out and removal of the Games Overlay, based on previous experience.

All access roads, Athletic track, Swimming pool, Fitness centre, Indoor halls will be on legacy mode. All temporary offices etc. in the residential zone and special fitments for EAD shall have to be knocked out and the required repairs/renovations undertaken for residential buildings and other legacy buildings and areas. The schedule for removal, repairs and renovation works also will be worked out in more detail once the designs of these structures are finalised and approved by the competent authority. However, it is anticipated that at least 2 to 3 months will be required for all these activities.

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Section 2

2 DESIGN REQUIREMENTS

2.1 GENERAL

The Games Village shall set high standards of design and construction, based on best international practice. The Village shall meet these standards for the Commonwealth Games at least. However, it is recommended that these standards be included in the permanent design and construction to ensure that the Games leave Delhi with a legacy of a high quality residential precinct.

The venue design shall:

- Meet the requirements of this Brief and all accompanying documents;
- Meet the requirements of the Commonwealth Games; and
- Be of a consistently high standard, including its functionality, services, finishes and fitout.

The design for the Village being provided shall meet all the requirements listed out by EKS and other essential requirements of the Commonwealth Games to ensure its functionality. The design is such that wide open spaces are being provided in order to have openness and also to have a suitable massing with the adjoining Temple. The Temple view has also been maintained by keeping a wide axis. Moreover, the external finish of the buildings will be selected to fit in the requirement of site. The temporary structures will be of appropriate design and quality to give an appropriate image in the precinct.

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2.2 IMAGE AND EXPERIENCE

2.2.1 Image

The precinct shall be designed to reflect its status as a key facility for the Commonwealth Games which will represent Delhi to a large portion of the world. It should be a cohesive design with a distinctive image and identity in keeping with its status.

We would expect new buildings to have suitable massing in relation to the location, surrounding buildings and views to and from other areas and buildings, and incorporate a suitable choice of materials, including texture and colour, appropriate to the site and use.

All temporary structures in FOH areas shall be of the highest quality in order to maintain an appropriate image for the precinct.

The image of the Village design will have a distinctive identity reflecting its status. The design has evolved in such a way that wide open spaces are being provided to have an openness and also to have a suitable massing with the adjoining Temple. The Temple view has also been maintained by keeping a wide axis. Moreover, the external finish of the building will be selected to fit in the requirement of the site. The temporary structures will be of appropriate design and quality to give an appropriate image for the precinct.

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2.2.2 Look of the Games

The Commonwealth Games will require significant dressing of the Commonwealth Games Village to create an event look and feel. This is known as the Look of the Games. This will include, but not be limited to:

- Flags;
- Banners;
- Signage and Wayfinding;
- Special Structures;
- Fence fabric; and
- Games and Sponsor signage.

Look of the Games shall be implemented in all areas of the Games Village, particularly where temporary structures and installations may be visible to Residents and Guests.

The Look of the Games shall be provided, including all, poles, rigging, fixings and other support structures necessary for installation and operation.

All of these shall be provided in addition to the theme of having "Beacon Posts" along the Central Boulevard. The International Zone shall have all these features as a part of the "Look of the Games". These shall be detailed out subsequently.

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2.2.3 Experience

The design of the Games Village shall provide facilities that not only function well for all users but also promote an enjoyable experience.

Enjoyment by the all users can be increased by the following:

- The convenience, clarity and quality of the approach and entry to create or heighten a sense of excitement;
- The development of 'Gateways' at all major entries into the Games Village
- The establishment of 'vistas' through to the dome of the Akshardham Temple Complex at strategic locations throughout the Games Village;
- The sense of being part of a cohesive integrated community for the duration of the Games; and
- The convenience and clarity of circulation to, and quality of, accommodation, recreation, dining and support services.

The approach and entry to the Village is being planned so as to enhance the quality and make its look attractive. The 'gateways' are proposed to be developed at the athletes entry from NH-24 and main entry for the media, guests and VIP's from east side. "Vistas" are also being established linking the historical monuments of India Gate and Humayun Tomb symbolically. In addition a wide central green plaza is provided along Akshardham axis. In addition a Central boulevard is also planned which will further heighten a sense of excitement. The planning provides proper clarity of circulation to the accommodation, recreation and other supports services for the convenience of the users.

2.3 TRAFFIC MANAGEMENT PLAN

A Traffic Management Plan shall be produced for the Games Village. The Design Consultants shall liaise with the Organising Committee to ensure that the precinct plan fits in with the overall Games planning. The Games Village planning shall fit in with the requirements of this plan.

The principles shall include, but not necessarily be limited to:

- Access within the site for the safe conduct of athletes and officials to the different zones;
- Athlete arrivals and departures, with specific reference to key operational periods such as initial Arrivals and Departures, Opening and Closing Ceremonies;
- Accredited access to the precinct
- Guest access to the precinct.
- Access to and from public transport for Games Workforce and non-accredited visitors;
- Secure access of accredited personnel to and into the precinct, both vehicle and pedestrian;
- Access and loading for services and deliveries, out of hours; and
- Control at precinct approach and entry.

The traffic management plan which fits in with overall games planning requirement shall be produced and sent to Organization Committee to ensure that the plan takes care of safe conduct of athletes and officials to different zones, their arrivals and departure, opening and

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closing ceremony, accredited access to the precinct, guest access, access to and from public transport for games work force and non accredited visitor. In addition traffic management plan also have to provide secure access of accredited personnel and controls for approach and entry.

Games Operational decisions will have a significant impact on the Traffic Management Plan for the Village. These decisions include but are not limited to:

- *Arrival mode of teams e.g. overland or by air*
- *Arrival times of teams e.g. will teams be in India for pre-Games training*
- *Decision on whether there will be any team accreditation facilities at the port of entry*
- *Location and distribution of training sites*
- *Athlete training programs*
- *Decision on whether hotels will be operational for non-Games and non-accredited use*
- *Decision on the operation of the Temple for non-Games and non-accredited use*
- *Separation of access by different accredited groups e.g. workforce and athlete/officials*
- *Contingency planning for emergency and "lock-down" situations*

ACCESS AND CIRCULATION

The planning principles for access and circulation shall apply to all users. They are as follows:

- The separation of different accredited groups;
- The safe separation of pedestrians and vehicles in all areas; and

An effective and efficient access and circulation system shall be provided for all users. This shall provide:

- Good access to the Games Village from the external road network to suit the types of vehicles and separation of groups;
- Good access to the venue from the public transport system for Workforce;
- Sufficient areas within the Games Village for efficient and comfortable movement, between areas and for entry and exit;
- Simple but adequate separation between accredited users, that prevents access to accredited zones with minimal staffing;
- An egress system shall be provided that allows all constituent groups to leave the Games Village by smooth, unimpeded exit routes;
- An egress system shall be provided that, in emergencies, allows all constituent groups to leave the Games Village by smooth, unimpeded exit routes to well lit and clearly indicated assembly points in safe areas outside the Games Village;
- All access and circulation areas shall be free from hazards, adequately drained where necessary, and slip resistant to suit international standards; and
- Adequate slip resistance, appropriate for the specific areas, complying with the standards in both wet and dry conditions and take into account the recommended cleaning method.

Access control shall be provided between different accredited zones. Where permanent structures, such as walls, are not available, temporary barriers shall be used. Barriers, includes barricades, post and rope, planters, screens or other similar devices suitable for the circumstances.

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Other design criteria that should be considered in the provision of the access and circulation infrastructure include but is not limited to:

- *Road infrastructure should be designed to withstand multiple bus and semi-trailer movements per hour*

The access to the Village is from three entry points;

- From the NH-24 side along bund road will be exclusively for the athletes*
- The main entry from NOIDA Link road will cater for entry of guests, media and VIP's.*
- Another entry from NOIDA Link road is exclusively for the entry of service vehicle, goods vehicles and logistics vehicle etc.*

In addition another link has been given parallel to the service road on the rear side to provide an alternative route in case on any emergency. The design also provides separation of the athlete buses from the service vehicles by constructing the roads at different levels near the operational area. The access control has also been provided as per the requirement of the Traffic Police and Security agencies. The additional requirements, if any, will be worked out by the Police authorities for ultimate implementation on the ground.

2.5 COMMERCIAL

For the Commonwealth Games, all commercial facilities shall be either, removed, vacated or made available for Games use without encumbrance. Where this is not possible, this shall be identified and agreed with the Organising Committee prior to contracts being signed. In particular, this shall apply to ongoing operations, advertising and sponsorship to avoid conflict with Games time commitments.

[The policy of the Organising Committee as to whether the Village, for the purposes of signage, product labelling and advertising, is a "clean venue" will impact on the operations of commercial facilities within the Village]

The provision of commercial facilities will be decided as a policy matter by the Organizing Committee.

2.6 SIGNAGE AND WAYFINDING

A comprehensive, visible, readable, flexible and effective signage system shall be provided for the Commonwealth Games, both outside and inside the Commonwealth Games Village. This shall match the standards set for all Games venues.

Signs shall be prominent and legible to all users. The design of the precinct shall provide for suitable signage including wayfinding, zone and location, special purpose and internal signage.

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2.7 ADVERTISING

The Design Consultants are to ensure that any advertising complies with the following:

- Meets local code requirements;
- Conveys, advertises messages and images while complimenting and conforming to both the development on which it is displayed and the character of the surrounding locality;
- Does not adversely affect the area in which it is located in terms of appearance, size, illumination, over-shadowing or in any other way;
- External facades and structures should be designed to accommodate such signage;
- Include all power, data and communications connections; and
- Does not lead to visual clutter through the proliferation of signs.

- *Complies with the Organising Committee's "Clean Venue Guidelines"*

2.8 LANDSCAPING AND EXTERNAL WORKS

The site will require extensive landscaping around the perimeter and internally around the facilities. Delhi has a policy of protecting existing trees and planting new ones. Therefore, any existing trees and mature landscaping should be surveyed and protected as much as possible. This will also have the advantage of providing a mature landscape for the Commonwealth Games.

A Landscaping Plan for the entire precinct shall incorporate soft and hard landscaping, including paving, lighting, signage, and external furniture. The planning shall attempt to provide the best appearance for the site in October 2010. This shall include the choice of plants and the maturity of the planting.

External works, including roads, paths, hard standing and landscaping, shall be consistent across the whole complex to help unify the site. Significant landscaping should be included to help define the site and provide shade and shelter. Landscaping to car parking areas will improve the overall appearance of the site and provide shade. Shade will also be very important for athletes and visitors in external areas.

Soft landscaping should have regard to native vegetation and water conservation.

Landscaping will play an important role in alleviating some extreme climate conditions. The provision of external shaded areas will be part of the overall landscape plan. Both covered and uncovered green spaces and grassed areas will be provided for exercise and recreational use.

Presently the land is almost level with a small number of trees. On north and south side some trees exist. Beyond this there are no other landscape features existing within the precincts. The landscape both hard as well as soft will be provided in the overall scheme. There will be footpaths and other paved areas with adequate quality to give best appearance for the site. The landscape concept and plan are being prepared by the consultant. Further details will be possible only after the plan is ready. However, the landscaping will be of high standards keeping in view the importance of the precinct with an attempt to provide best appearance for the site in October 2010.

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2.9 ENVIRONMENT

The precinct shall comply with the local Environmental Planning Codes and statutes. However, the health and safety of the athletes and visitors is critical and a high quality environment shall be provided that is not only safe but also assists athletes to achieve good performances. Therefore, it is recommended that international standards be applied.

In both its design and operations, the overall precinct shall integrate principles for Environmentally Sustainable Design (ESD), including those for passive climate design and water management. The project shall maximise the use of environmentally responsible materials and processes, and minimise energy and water consumption and adverse effects on the environment in both construction and operation.

In particular, the design shall minimise adverse effects of:

- **Wind**

The design shall minimise adverse wind effects in and around the precinct and buildings;

- **Noise**

The design shall minimise adverse effects from external noise, such as traffic or adjacent buildings, especially the residential zone and other areas where it may affect the quiet enjoyment of the precinct. Based on the Concept Master Plan, this will likely result in some sound attenuation structures along the main access road to the Athlete Transport Mall, as well as along the Railway corridor. The designers shall demonstrate the means of achieving acceptable levels of noise along these key elements.

- **Sun and Rain**

The design shall maximise the shelter from sun and rain for all users of the site, especially at entries and to and from the key facilities on the site.

[As part of the environmentally sustainable water management for the Village consideration should be given to the recycling of "grey water" for toilets, clothes washing and irrigation]

A high quality environment shall be provided that is not only safe but also assists athletes in achieving good performance. The overall precinct shall integrate Principles of Environmentally Sustainable Design (ESD) including those for passive climate design and water management. The design will use materials and processes that minimize energy and water consumption. The design shall also provide for use of solar energy, water harvesting, and recirculation of treated effluent for irrigation of plants/lawns. The design will also minimize adverse effects of wind, noise, sun and rain to have Environmentally Sustainable Design. The noise level attenuation is being dealt with by provision of noise barriers, trees and bushes, providing double glazing in windows and some other measures like cavity wall construction. Similarly protection from sun and rain will be achieved by having shelters by way of Chajjas, balconies etc.

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2.10 EQUITABLE ACCESS

The Games Village shall provide an equitable environment for attendance and participation in the Commonwealth Games by all people, including those with a disability.

It should be noted that there will be EAD Athletes resident in the Games Village. As such the Village shall be fully accessible in all areas where EAD athletes have access. With respect to Residential units, an agreed number of units, distributed across the Village, shall be fully accessible for EAD Athletes.

All facilities and provisions must meet local codes for accessibility and shall meet international best practice for accessibility, where this is higher than local codes.

Equitable access shall apply to all facilities, unless specific approval is given. Particular care shall be given to the following:

- Access and circulation through public spaces;
- Access to all common facilities throughout the Village, in particular facilities within the Residential and International zone; and
- Residential Units (based on an agreed distribution).

The design for games Village shall provide equitable environment for attendance & participation in commonwealth games Village by all people including those with a disability. The Organizing Committee requirements for EAD athletes will be met fully. The other requirements, as per codal provisions shall also be incorporated in the design. The EAD athlete residences (approx. 200 numbers) shall be distributed all over the Village so as to provide their accommodation with their contingents which are going to be about 24 Nos.

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2.11 SAFETY

Safety of all people in the precinct is of paramount importance and all aspects of design, detailing and selection of materials shall have due regard to this requirement, including but not limited to:

- Handrails and balustrades;
- Surface finishes to floors and paving;
- Egress paths;
- Lighting; and
- Paths of travel to transport nodes.

All safety requirements for the people in the precinct shall be provided. These requirements will be detailed in the drawings. The material and the design to be provided shall be according to the codal provision and designs for the handrails and balustrades, Surface finishes to floors and paving, Egress paths, Lighting and paths of travel to transport nodes.

2.12 DESIGN AND CONSTRUCTION STANDARDS

2.12.1 Building Regulations

The relevant Indian building codes and regulations shall apply to all of the proposed development works, permanent and temporary. The Design Consultants shall determine the applicable codes and regulations and identify any differences to international best practice that would adversely affect the Overlay being delivered.

Relevant building codes and regulations applicable shall be followed. Wherever necessary the International best practices shall also be followed. Some of the important regulations to be followed are:

- Building bye - laws of MCD Delhi.*
- Master Plan Delhi-2021*
- National Building Code*

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2.12.2 Standards and Codes of Practice

All components, elements, structures and installations shall be designed and constructed in accordance with relevant Indian Standards and Codes of Practice, and to international best architectural, engineering and building practice, to have the strength and durability such that, if maintained as proposed during design and construction, they are fit for purpose.

The relevant Indian standards and codes of practice will be followed for all design of structures and installations etc.

2.12.3 Best Value Options

The requirements as per the brief will be achieved by selection materials and processes

All components, elements, structures and installations shall be chosen based on best value solutions based on the following criteria (not necessarily in order of importance):

- Capital cost;
- Ease of maintenance;
- Maintenance cost;
- Ease of cleaning;
- Operating / cleaning cost;
- Value for money;
- Ease of use;
- Appearance;
- Expected life;
- Resistance to damage;
- Ease of repair;
- Ease of replacement;
- Availability of spares; and
- Compatibility with environmental criteria.

2.12.4 Quality of Finishes

The type and quality of finishes should match the purpose of use of the room / space and be fit for purpose to international best standard for each application.

2.12.5 Flexibility

The design and construction shall allow a high degree of flexibility to accommodate changes to the Games requirements as the Organising Committee policies and procedures are developed.

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2.12.6 Coordination and Concealment of Services

A management system shall be provided for all services to ensure that they are reticulated in a coordinated manner. All service reticulation shall be rationalised where possible to minimise penetrations and improve manageability.

All services shall be concealed where possible, whilst maintaining all necessary access, to reduce visual clutter. Where services are exposed, they shall be run in a manner that minimises their visibility, especially in Front of House areas.

2.12.7 Acoustics

All buildings, and in particular Residential Units, shall be designed to high acoustic specifications, to meet international standards. The acoustics shall assist the efficient operation of the Games Village. This shall include, but not be limited to, the following:

- Minimising external noise, including traffic and rain;
- Minimising sound transfer between adjacent rooms. The degree of acoustic separation shall be appropriate for the use of the rooms;
- Minimising sound borne noise through structure and services;
- Achieving good speech intelligibility, especially for Press Conference and any meeting or briefing areas; and
- Achieving good acoustics through choice of finishes.

The acoustics of residential units will be taken care by selection of appropriate materials and other design elements. The press conference room will be properly designed to achieve the desired acoustics. The details will be known after the designs are worked out by the Private Developer who develops the housing. In addition, signage will be displayed at selected places to caution against use of horns.

2.13 AUTHORITY REQUIREMENTS

The design and construction of the Games Village shall meet the requirements of all local and national Indian standards and codes. All necessary approvals, licenses and the like shall be obtained from the relevant Authorities.

All relevant occupation certificates shall be obtained once the works have been carried out prior to handover and occupation to the OC for its exclusive use.

This entire process will be undertaken for each mode of operation and phase of the project.

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2.14 EMERGENCY SERVICES

Design and construction of the precinct shall accommodate the requirements of the emergency services, including ready access for vehicles and personnel and a ready means of exit to a public road. This shall include at least:

- Fire;
- Ambulance;
- Police; and
- Security Services.

Provision shall include easy access into and around the precinct and the venues.

Provision has been made in the design (as per the requirement of CFO) to keep two fire tenders at the site along with six fire personnel. This requirement has been marked on the plan in the services area adjacent to Police Station site. Similarly a space is allocated adjacent to the fire station for stationing of ambulances. Police and Security services will also have accommodation in the games Village. The ready access for vehicles and personnel for quick exit to public road in case of emergency will also be kept in view while finalizing the circulation plan.

2.15 ENERGY EFFICIENCY

In order to provide a high quality facility for the legacy, we recommend that the precinct should be designed and constructed to maximise energy efficiency. We recommend that the design should incorporate passive design principles (such as natural ventilation, natural light and insulation, and energy efficient appliances and light fittings) and maximise use of renewable energy sources, as appropriate, particularly within the permanent facilities of the Residential Zone.

The design for housing and other legacy structures in the practice zone will be provided to maximize energy efficiency as far as possible by having natural ventilation, natural light and insulation and use of renewable energy resources. Principles of "Green Building" will be used for the permanent legacy structures.

2.16 MAINTENANCE

For the Commonwealth Games, the Games Village shall have a full maintenance check prior to the Games to ensure that everything is in good working order and to minimise the risk of failure, especially for utilities.

In order to ensure this, and provide a high quality facility for the legacy, we recommend that the design and construction of the precinct should ensure that maintenance costs can be optimised and provide reasonable access for inspection, cleaning, maintenance repair and replacement of all elements of the facilities.

The choice of components and materials should take into account the likely availability of replacements and repair expertise, and suitable storage shall be provided for spares. These shall be available for the period of the Commonwealth Games that shall be not less than 6 months.

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Particular importance shall be paid to the following areas which in past Games have proved to be problematic:

To have an efficient cost effective maintenance, the design will attempt to provide reasonable access for inspection, cleaning, maintenance repairs and replacement of elements. In addition materials of high quality which are easily available shall be suggested and recommended in the design. Based on the experience of past games the following areas will be kept in view

- *Sewerage infrastructure to handle the 'over-capacity' generated by resident use. In particular consideration should be given to the waste methods of toilet paper which can differ from country to country. Provision of pumps (temporary or permanent) shall be considered.*
- *Hot water supply demand should not be underestimated. Athletes generally place a higher demand on the use of hot water compared to other similar residential situations.*

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Section 3

3 VILLAGE FUNCTIONAL REQUIREMENTS

The Games Village shall be developed into two distinct zones supported by an operational Back of House (BOH) support area. These are:

- *Residential Zone*
- *International Zone*
- *Operational BOH Support (located across both zones)*

The following section identifies functional planning requirements within each zone and for Operational BOH support. In addition, the Concept Master Plan contained in the Appendices, identifies the underlying master plan configuration based on the brief requirements, following discussion with EKS representing the Commonwealth Games Organising Committee. The detailed special requirements are outlined in the Space Schedule in the Appendices. The Concept Plan as contained in Appendices has been revised based on the concept of design consultant and as per discussions with EKS.

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3.1 INTERNATIONAL ZONE

3.1.1 General Description

The International Zone is the 'gathering' place within the Commonwealth Games Village. It shall accommodate commercial and recreational services for visitors and residents of the Village. The commercial area is required for residents to purchase essential items without leaving the Village. Facilities for CGA Welcome Ceremonies and Media interviews shall be provided in the International Zone.

The International Zone can be either permanent or temporary construction. If elements of the International Zone are provided as temporary construction, they shall be of a high standard. If provided as permanent construction it must be ensured that the 'legacy' components are designed in such a way so as to comply fully with the space and operational requirements outlined in the Design Brief.

The image and 'Look' of the International Zone must be carefully considered, and the appropriate treatment of all spaces and structures is required to enhance the visual experience of this area. If there is extensive use of temporary structures, this is particularly important.

The following spaces shall be provided within the International Zone:

- Main Entrance
 - Guest Pass Centre
 - Village Media Centre
 - Guest Parking/ Bus Holding
 - Main Entrance Vehicle Load Zone
 - Access Control Point
 - **Mayor Office**
 - **Protocol Office**
 - **Motor Pool Parking**
- Welcome Ceremony Plaza - **associated Green Room, Storage and AV Control**
- Commercial Centre
- Cyber café
- Bar
- Recreation Centre
- Zone Control Point

The International zone is the heart of the games Village. This is where the media/ guests/ VIPs meet the players/ officials. It broadly consists of

- *Main Entrance*
- *Media centre*
- *Forecourt (with theme gallery)*
- *Commercial centre*
- *Recreational centre*
- *Welcome ceremony plaza*
- *Zone control point*

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The structures proposed shall be temporary made of fabric and steel.

The idea of welcome ceremony plaza to be carried forward in legacy with the plaza being the focal point of the 'Cultural Plaza' stretching from metro station on east and continuing till the boulevard from the residential zone can be conceived as a collage of diversity of Indian culture.

The whole complex shall be a colourful collage with flags and banners and Screens projecting the games live relay as well as highlights. Throughout the complex the focal point shall be cultural plaza, which shall be a very active recreational zone.

3.1.2 Location

The International Zone should be at the perimeter of the Village and also connected to the Residential Zone. It must be located in close proximity to vehicle parking and load zones adjacent for guests and visitors, and with connectivity to the primary road network. It should also be located in close proximity to public transportation/taxi ranks etc. to facilitate access for non-accredited visitors.

The location of the International Zone should also be considered with respect to achieving an appropriate level of separation from the Residential Zone for activities which may generate disturbance to the Residents.

The International zone is provided adjacent to the Residential zone as well as Transport mall. It can be approached directly from the Noida Link Road and the Metro station on the east. The vehicle parking area is provided at the perimeter of Village adjacent to the Metro Station as per the recommendations of the security agencies, whereas drop off point is provided just at the entrance of International zone.

The International zone is located in close proximity to the public transportation in order to facilitate access of the workforce. It is also connected to Village Operational centre for back of house servicing from service road on the south of International zone.

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3.1.3 Main Entrance

3.1.3.1 General Description

The Main Entrance of the Commonwealth Games Village will be the first point of arrival for the majority of Guests visiting the Village. As such it must be suitably prominent and designed to form an appropriate 'gateway' to the Village for visitors. The use of unique entry structures, high quality temporary buildings and structures, and extensive use of 'Look of The Games' should be considered.

The Main Entry will accommodate the following spaces:

- Guest Pass Centre;
 - Village Media Centre;
 - Guest Parking;
 - Main Entrance Vehicle Load Zone; and
 - Access Control Point.
- Mayor Office
 - Protocol Office
 - Media Pass Centre
 - Motor Pool Parking (T1) and Drivers' Lounge
 - Toilet Facilities (public)

For the majority of guests to Village, the International zone is the only point of arrival hence proper consideration has been given to the design of International zone entrance. Firstly there is games marker placed strategically at the entrance point adjacent to metro corridor which can remain legacy structure – 'A permanent landmark' of the site. The main entry at the International zone is designed with unique structures of fabric, steel and cables.

The main entry will accommodate in addition the following spaces:

- Mayor Office
- Protocol Office
- Media Pass Centre
- Motor Pool Parking (TI) and Driver's Lounge
- Toilet Facilities (Public)

3.1.3.2 Location

The Main Entrance shall be located on the perimeter of the Village and connect directly to the International Zone.

The Main Entrance must be well connected to primary road networks and public transport to facilitate visitor access.

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The Main Entrance straddles the secure perimeter. Part of this area is within the secure perimeter and part is within the accredited perimeter or soft secure zone.

The main entrance is located on the perimeter of the Village. Part of this area is within the secure perimeter and part is within the accredited perimeter or soft secure zone. It is connected directly to the International Zone as well as connected to the Primary road network and the residential zone so as to facilitate both visitors and Athletes/ officials access.

3.1.4 Guest Pass Centre

3.1.4.1 General Description

The Village Guest Pass Centre is the location where CGA Guests will obtain their entry documents to access the Games Village. Media personnel will also utilize this facility. The Guest Pass Centre shall accommodate the following areas:

- Guest Pass Collection/Return Area;
- Guest Waiting Area;
- VIP Waiting Area;
- Staff Work Area; and
- Male and Female Toilets.

The VIP Waiting Area has been provided adjacent to:

- Protocol/Mayor Office
- VIP toilets
- VIP Tea/coffee facilities
- Meeting room

- The Guest Pass Centre can be a permanent or temporary structure, and shall be of a high standard;
- The Guest Pass Centre shall be large enough to facilitate movement into and out of the Village effectively. The Guest Pass Centre should be able to accommodate 20 – 30 people at any one time; and
- The Guest Pass Centre shall be accessible for people with a disability.

The Village guest pass centre is located where CGA Guests will obtain their entry documents to access the games Village. In addition the following facilities have also been provided. The areas accommodated are as follows:

- VIP Tea/Coffee facilities
- VIP Toilets
- Meeting Room

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The Guest Pass Centre has been proposed as temporary structure. The overall size provided in 9m x 10m which is sufficient to accommodate 20-30 people at any one time. The guest pass centre is fully accessible to people with disability.

3.1.4.2 Location

The Guest Pass Centre shall be located at the Main Entrance to the Village, outside of the secure perimeter and therefore before the Access Control Point to the International Zone.

Alternatively, the Guest Pass Centre can be located after the Access Control Point. This should be considered with respect to the Games security policy for the Village.

The Guest Pass Centre has been located at the main entrance to the Village, outside the secured perimeter. Location after the ACP is not recommended as once the Guest is through the secured perimeter it can be operationally difficult to exit the Guest if the Guest fails to obtain pass.

3.1.4.3 Guest Pass Collection/Return Area

An area for the collection and the return of passes shall be provided. The following should be considered in the design of this area:

- A 'front desk' or counter should be provided for the issuing of passes, of sufficient length to deal with multiple Guests simultaneously;
- A separate area should be provided for the return of Guest Passes; and
- Shelving and boxes should be available for storing Guest Passes and identification.

Storage of passes will ultimately be dependant on the chosen system (manual or computer).

The Guest Pass collection and Guest Pass return Desk has been separated so as to facilitate smooth movement of visitors in and out of the Village. The following are the design consideration:

- *Entrance foyer/ general waiting has been provided at the entrance with access to VIP waiting area.*
- *A front desk counter provided where guest can do the formalities while moving towards the access check point ; Hence it is ensured that there is no stagnation in the area and people are continuously on move in single direction.*
- *Proper storage with shelves etc. will be provided for the officials working to store and catalogue the guest passes.*
- *Computerised system shall be developed which will drastically reduce the storage space needed (as compared to manual system).*

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3.1.4.4 Guest Waiting Area

A small waiting area shall be provided for visitors waiting for the issuing of Guest Passes. This should accommodate up to 20 people in comfort. Tables and chairs shall be provided as required.

The guest waiting area 8m x 10m sufficient & accommodate 20 people in comfort has been provided at the Entrance foyer for guests waiting for issuing of guest pass.

3.1.4.5 VIP Waiting Area

An additional waiting area for Games Family/VIP's shall be located within the Guest Pass Centre, separate to the general waiting area. This area should accommodate up to 10 people. This should contain comfortable furnishings.

The VIP Waiting Area should be adjacent to or include:

- *Protocol/Mayor Office*
- *VIP toilets*
- *VIP Tea/coffee facilities*
- *Meeting room*

About 50 sq. m of VIP waiting area has been provided for the Games family/ VIP in the guest pass centre. The finishing shall be of high quality. The VIP waiting area includes VIP tea/coffee facilities and toilets.

3.1.4.6 Staff Work Area

A Staff Work Area shall be provided. The following shall be provided, as a minimum:

- An open plan work area should be provided for up to 10 staff. These workstations can be within the main area but separated by a partition or division wall, so as to be discreet from public areas; and
- Telephones, faxes, photocopiers, printers and computers will be required, with appropriate power and data services as required.

Staff work area is provided to facilitate the work of guest pass centre. An area of about 70 sq. m has been provided. The work area is provided separate from the public area yet connected to the Guest pass collection/ return centre. Proper consideration will given while detailing of facilities to make sure the work area has proper power, data, communication facilities.

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3.1.5 Village Media Centre

3.1.5.1 General Description

The Village Media Centre is a facility for all accredited and non accredited media to undertake their activities at the Village. The following facilities will be located within the Village Media Centre:

- Reception/Help Desk;
- Media Work Area;
- Press Conference Rooms;
- Interview Room; and
- Male and Female Toilets.

The Village media centre is designed to facilitate all accredited and non-accredited media to undertake their activities in the Village.

The following facilities will be located within the Village media centre:

- Media Pass Centre
- Reception/ Help desk
- Media work area
- Press conference rooms
- Interview room
- Toilets

3.1.5.2 Location

Ideally, this facility would be located near to the Main Entrance, and outside of the secure perimeter of the Village.

The Media centre is provided outside the secure perimeter. It is well connected to the International zone and players can easily move in & out of the media centre.

3.1.5.3 Media Entry/Reception

A Media Reception shall be provided with the following facilities:

- An entry/reception area for media enquiries and distribution of media information; and
- Seating for up to 20 people.

- Media Pass desk

Media Reception consists of Media Guest Pass Centre, security check area, reception/ help desk and waiting for 20 people. A total area of 100 sq. m has been provided for comfortably handling all the media persons coming in and going out of the Village.

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3.1.5.4 Media Work Area

A Media Work Area shall be provided with the following facilities:

- A work area for the media to prepare and file their reports at workstations, with a minimum of 4 Games Information terminals and 5 Media workstations;
- A utility area including facsimile/photocopy machines; and
- Lockers for photographers.

Media work area is provided for media to prepare their reports. To facilitate the activity games information terminal, media work stations; cabinets and lockers shall be provided. Also a small refreshment area has been provided for break. A total of 115 sq. m has been provided for this facility

3.1.5.5 Press Conference Rooms

Three Press Conference Rooms will be required, one to accommodate 200 people, and two to accommodate 25-50 people each. Each Press Conference Room shall contain:

- A raised platform at one end for tables and chairs for the interviewees, with lighting for broadcast;
- Seating for the Press with good views to the platform;
- A raised platform at the rear for television cameras; and
- An audio system.

One Press Conference room for 200 people (290 sq. m) and two conference rooms of 25-50 people capacity (90 sq. m each) has been provided. Each conference room is designed in such a way that there is a raised platform at one end for the spokesperson with proper lighting and broad cast facilities. Also care is taken that media gets a good view of the platform. AT the rear a raised platform is provided for television cameras. Audio Visual systems shall be integrated in the design with proper acoustical treatment.

3.1.6 Access Control Point

3.1.6.1 General Description

An Access Control Point (ACP) shall be provided at the Main Entrance to facilitate entry and exit for accredited Guests to the International Zone. This facility will accommodate facilities to effect an accreditation and security check for all Guests.

The access control point is provided at the main entrance and is approachable only from the guest pass centre. The area is designed in such a way so as to facilitate the in & out movement from the International Zone without conflict through proper security check. In addition another ACP is provided in the meeting centre.

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3.1.6.2 Location

The ACP should be located on the secure perimeter of the Village, and between the Guest Pass Centre and the International Zone (subject to OC security policy).

It is located on the secured perimeter of the Village and between the Guest pass centre and the International Zone.

3.1.6.3 Design Considerations

The following issues should be considered in the design of the Access Control Point:

- The ACP shall be designed with appropriate shelter for the queuing of up to 20-30 people and to ensure the protection of security equipment (x-ray machines and magnetometers).
- The number of magnetometers and security check points within the facility should be based on the peak numbers of Guests arriving at the Village at any one time, with a view to avoiding excessive queuing within the facility.
- A solid base is required for the installation of security equipment.
- Suitable power and lighting will be required for x-ray machines, magnetometers, and lighting.
- The ACP shall have a separate exit route. The exit should be able to accommodate the movement of sporting equipment (e.g. bicycles), media cameras and other equipment which may need to be moved into and out of the Village.
- Tables should be located before and after the x-ray machines for Guests to place their personal items upon. Trays must be provided for small items and miscellaneous clothing.
- The ACP shall be accessible to people with a disability.
- The ACP shall be lockable in the case of an emergency or out of hours.
- A communication mechanism must be in place in case of problems, queries or emergencies experienced at the ACP. This can be facilitated by radio or a fixed telephone line connected to the Village Security Command Centre and/or Village Management.

- *Climatic conditions should be considered in the design of the ACP. Equipment such as x-ray machines and magnetometers may not function adequately in high heat and high humidity. Air conditioning should be considered for the ACP.*
- *Security should advise whether CCTV is required*

The ACP is designed with proper weather proof shelter for queuing up of 20-30 people. Four checking counters are provided with magnetometer and x-ray machine in order to avoid excessive queuing. Proper detailing will be done to ensure power and communication connectivity of the ACP with the control centre. The entry and exit are segregated and is fully accessible to people with disability. ACP is designed in such a way that it can be locked in emergency or odd hours. Provision of CCTV is being thought about for security concerns.

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3.1.7 Guest Parking

3.1.7.1 General Description

A Guest Parking and Bus Holding Area shall be provided near to the Main Entrance. This area should be designed to accommodate 30 – 50 cars and have a minimum of 2 bus bays to facilitate holding of shuttle buses for the Media. It should be noted that this area is separate to the parking area required for T1/T3 vehicles.

Guest parking and Bus holding area is provided near the main approach on eastern boundary to accommodate about 300 cars as per the requirement of Police. The requirement of Bus holding will be met out of this parking. This parking is well connected to Main Entrance of International Zone with both pedestrian and vehicular traffic segregated.

Additional parking area should be provided for Motor Pool (T1/T3) cars near Main Entrance with associated Drivers' Lounge facility.

3.1.7.2 Location

The Guest Parking and Bus Holding Area shall be located near to the Main Entrance and must be well connected to the Main Entrance Load Zone and to the surrounding primary road network. Consideration should also be given to locating this area so as not to interfere with pedestrian movements at the Main Entry.

The Guest Parking and Bus Holding Area shall be located near to the Main Entrance of the Village. It is also connected to the Main Entrance Load Zone and to the surrounding primary road network. The pedestrian & vehicular movements are segregated. The parking area is provided away from main Village because of safety concerns expended by Police department.

3.1.7.3 Design Considerations

The following additional issues should be considered in the design of the Guest Parking Area:

- The Guest Parking Area should have an appropriate hardstand surface to facilitate large vehicle movements.
- An appropriate level of lighting should be provided in this area, as vehicle movements will also occur at night.
- All areas of the Guest Parking should be fully accessible for people with a disability.
- *Additional facilities like drivers lounge, toilets etc. the provided*

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3.1.8 Main Entrance Load Zone

3.1.8.1 General Description

A Vehicle Load Zone shall be provided adjacent to the Main Entrance. This area shall be designed to accommodate the 'pick-up' and 'drop-off' of guests who arrive by vehicle to the Village.

A vehicle Load Zone has been provided adjacent to the Main Entrance and Guest Pass Centre of the Village. It is also well connected to both the primary road network and the Guest Parking and Bus Holding areas.

3.1.8.2 Location

The Vehicle Load Zone should be located as close as possible to the Main Entrance and Guest Pass Centre of the Village. It should also be well connected to both the primary road network and the Guest Parking and Bus Holding areas.

3.1.8.3 Design Considerations

The following additional issues should be considered in the design of the Main Entrance Vehicle Load Zone:

- A Transport Desk will need to be located in close proximity to the Vehicle Load Zone for CGA Guests and media shuttle transfers.
- Shelter should be provided for Guests who are waiting for their vehicles.
- The Main Entrance Load Zone should be fully accessible for people with a disability.
- *Location of Motor Pool and Drivers' Lounge should be in close proximity to Load Zone*
- *Proper communication system shall be provided between the entrance load zone & the guest parking.*

3.1.9 Zone Control Point

3.1.9.1 General Description

The Zone Control Point (ZCP) is an internal control point between the Residential Zone and the International Zone. The ZCP will facilitate the checking of accreditations and Guest Passes of visitors entering the Residential Zone from the International Zone. Any person without appropriate access rights will not be permitted to access the Residential Zone of the Village.

It is recommended to maintain a single ZCP where possible. However, additional access may be required for Logistical and Staff movements between the commercial facilities in the International Zone and the Operational Zone. This access should be in a 'back of house' area and not visible to residents and Guests within the Village.

The Zone Control Point between the Residential and International Zone is only required to operate during the main Guest Pass hours (usually 9.00am to 10.00pm). Outside these hours it

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should be possible to assume that anyone in the International Zone will also have accreditation for the Residential Zone.

A single ZCP is designed with in Residential and International Zone. Additional access for Logistical and staff movements between the commercial facilities in the International Zone and the Operational Zone is provided in a back of 'house' area along service road and is not visible to Residents and Guests with in the Village.

3.1.9.2 Location

The ZCP should be located on the fence line between the International and Residential Zone.

3.1.9.3 Design Considerations

The following additional issues should be considered in the design of the Zone Control Point:

- Shelter shall be provided for the staff operating the ZCP. This could be provided as a temporary shade structure; and
- A lockable gate shall be provided to secure the ZCP when not in use and in emergency situations.

Temporary shade structure has been provided per staff operating the ZCP with arrangement to lock the gate to secure to ZCP when not in use and in emergency

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3.1.10 Commercial Centre

3.1.10.1 General Description

A Commercial Centre shall be located within the International Zone of the Village so that residents or Guests can purchase essential items and access particular services that they require without leaving the Village.

The Commercial Centre shall consist of:

- General Store;
- Bank ;
- Call Centre and Mobile Phone Store;
- Hair Salon;
- Travel Agent;
- Merchandise Store;
- Post Office;
- Ticket Office; and
- WADA Outreach Office.

The following additional functions shall be provided as either 'stand alone' facilities or areas accommodated inside other facilities:

- Florist (can be accommodated within the General Store); and
- Dry Cleaning/Alterations.

The following facilities are optional though recommended:

- Photo and Camera Store; and *self service machine for downloading images to CD*
- CD, DVD and Electrical Appliances store. - ***these could be sold out of the General Store***

These additional facilities are also commonly available in the Commercial Centre

- *ATM outside bank for out of banking hours*
- *Café which serves tea/coffee, soft drinks and some frozen foods (alternatively could be in Residential Zone))*
- *Male and Female Toilet Facilities (essential)*
- *Fore court- theme gallery.*

3.1.10.2 Location

The Commercial Centre shall be easily accessible from the Main Entrance and be situated in a prominent location easily accessible to residents and Guests in the Village. The layout of the Commercial Centre should be such that all facilities are visible and the use of signage and 'Look of The Games' should be considered to provide an appropriate aesthetic

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The commercial centre has been located within the International Zone behind main entrance. Its layout will be such that facilities are visible and there is appropriate aesthetic.

3.1.10.3 Design Considerations

The following additional issues should be considered in the design of all facilities within the Commercial Centre:

- The Commercial Centre can be permanent or temporary construction.
- Facilities within the Commercial Centre will require re-supply during the Games, therefore 'back of house' access from the Logistics Centre and other service areas will be required. This connection shall be discreet and not visible from 'front of house' areas.
- Dedicated storage areas shall be provided near the Commercial Centre or within the individual facilities to support re-supply of goods.
- All individual facilities shall be fully accessible.
- All individual facilities shall be provided with essential services (power, water, data).
- All individual facilities must be lockable.
- Shop fronts to the individual facilities shall be prominent.
- Walkways and corridors within the Commercial Centre shall be dimensioned sufficiently to cater for several hundred people using the area at one time. It is advisable not to locate facilities in 'dead ends' if possible.

- *Depending on how the fitout of the Commercial Centre is delivered, Fitout Guidelines may need to be prepared by Organizing Committee for issue to individual shop 'owners'. Fitout guide lines would be necessary to control image, look and feel of Commercial Centre. The Commercial centre shall have temporary construction. There will be back of 'house' access from the Logistic Centre and other service area which will not be visible. Dedicated storage area will also be provided near Commercial Centre to support re-supply of goods.*
- *Fore court: A large fore court is design near the main entrance area which will display traditional Indian welcome to a theme gallery. It will display vibrant Indian culture and heroics of games etc.*

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3.1.10.4 General Store

A General Store shall be provided for the sale of personal healthcare items, snacks and beverages, books, magazines, office supplies, electronic goods, etc. with the following facilities:

- Appropriate shelving/display units for all goods;
- Lockable storage areas;
- Direct access to Back of House areas for re-supply; and
- Space for cash holding/safe facilities.

- *Point of sale counters and technology*
- *Newspaper stands*
- *Electronically equipped sale counters.*

3.1.10.5 Bank

A fully functional Bank shall be provided with the following facilities:

- ATM machine with data connection;
- Teller services for currency transactions with waiting area;
- Bank manager's Office;
- Vault/safe; and
- CCTV facilities (if required).

- *Appropriate infrastructure will need to be provided for the demanding requirements of ATM installation.*
- *In addition to ATM at the bank, provision is kept for two additional ATM's in the International Zone.*

3.1.10.6 Call Centre Shop

A Call Centre Shop shall be provided for the sale of mobile phones and accessories, calling Cards and technical assistance, with the following facilities:

- Sales counter;
- Help Desk facilities; and
- Private calling stations with data connections.

3.1.10.7 Hair Salon

A Unisex Hair Salon shall be provided with the following facilities:

- Reception area with product sales capability; and
- Hair washing and cutting stations.

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Concept of operations of the Hair Salon, for example offering free haircuts, will have considerable impact on the size of this facility. Free haircuts in the past have meant that the Hair Salon was an extremely popular site.

3.1.10.8 Travel Agent

A Travel Agency shall be provided to assist with flight bookings and information and national/regional tourist services, with the following facilities:

- Service counters and waiting area for customers; and
- Display area for brochures, magazines and travel information.

3.1.10.9 Merchandise Store

A Merchandise Store for all licensed Games merchandise shall be provided with the following facilities:

- Appropriate retail display units for all goods;
- Lockable storage areas;
- Space for cash holding/safe facilities; and
- Connectivity to 'back of house' service areas within the Operational Zone.

- Point of sale counters and technology- electronically equipped.

Merchandise Store could be part of the General Store if no official supplier is nominated

3.1.10.10 Post Office

A fully functional Post Office shall be provided with the following facilities:

- Sales counters with sufficient queuing space;
- Retail display space within the facility;
- Separate mail sorting and storage room;
- Counter space for customers; and
- Connectivity to 'back of house' service areas within the Operational Zone.

3.1.10.11 Ticket Office

A fully functional Ticketing Office shall be provided with the following facilities:

- Ticket sales counters with appropriate queuing space; and
- Computer terminals with connectivity to the ticketing sales network.

The Ticketing Office could double as Information Kiosk.

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3.1.11 Cyber Café

3.1.11.1 General Description

The Cyber Café is the one of the most popular facilities within the Village and is used exclusively by the Athletes and Officials. It consists of approximately 100 computer workstations with additional data access points and WIFI connections.

3.1.11.2 Location

The Cyber Café can be located in either the International Zone or Residential Zone of the Village. If located in the International Zone, additional internet locations should be considered within the Residential Zone. These additional locations could be facilitated within the Resident Centres.

3.1.11.3 Design Considerations

The following facilities should be considered in the design of the Cyber Café:

- A reception/helpdesk facility;
- Minimum 100 computer workstations with access to the Games information system (note some computers must be accessible for the disabled); and
- Centrally controlled printers within the Cyber Café.

- *Air-conditioning capable of handling the load generated by the concentration of electrical equipment.*

The facilities provided to respond to the popularity of access to computer workstations and the internet will depend strongly on the progression of technology development at the time of the Games. Given the use of wireless technology and the popularity for personal lap tops, palm pilots and the like, it may be worth considering a decentralised 'Cyber Café' network. The facilities typically provided in a Cyber Café (Games Info terminals, Internet terminals for those without personal laptops and printers) could be accommodated within the Residents Centres.

3.1.12 Recreation (Entertainment) Centre

3.1.12.1 General Description

A suitable Recreational Centre shall be provided within the Village. The use of the Recreational Centre shall be exclusive to the Athletes and Officials, and should have a relaxed, inviting atmosphere. Media access to this facility shall be restricted to a minimum.

Facilities to be accommodated in the Recreational Centre will include:

- Television Lounge;
- Table Games (e.g. Pool, Table Football, Air Hockey, etc.); and
- Stand Alone Games Machines (e.g. Pinball Machines, etc.).

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3.1.12.2 Location

This can be accommodated in either a single Recreational Centre in the International or Residential Zones or as multiple Recreational Centres in various locations within the Residential Zone. These facilities should be located so as to facilitate exclusive access for Athletes and Officials.

- *It is located in the International Zone.*
- *Co-location with the Resident Centres inside the Residential Zone is an option.*

3.1.12.3 Design Considerations

The following additional issues should be considered in the design of the Recreational Centre

- The Recreational Centre(s) can be in permanent or temporary buildings (tent structures are not advisable).
 - The floor surface shall be flat and suitable to hold pool tables and other machines.
 - Suitable power requirements should be provided to run the games machines and televisions.
 - The Recreational Centre shall be fully accessible for people with a disability.
- *The Recreational Centre should be well air-conditioned*
 - *Sound attenuation of the Centre's envelope should be considered to prevent disturbance to the surrounding areas, particularly if located in the Residential Zone.*

3.1.13 Bar/Coffee Lounge

3.1.13.1 General Description

In addition to the Recreational Centre, a Bar should be provided for Residents.

A dedicated Bar facility is generally used by the coaches and officials, with use by athletes discouraged, and in the case of Shooting Athletes banned. By expanding the facility to have less emphasis on alcohol it may become a more appropriate social gathering place.

Size of the facility should also depend on how far the Village is for the main city attractions, and how easily these attractions can be accessed. If the Village is considered 'isolated' then a larger facility may be needed.

3.1.13.2 Location

The bar should be located in the International Zone and be away from any areas where noise disturbance may occur.

It is located on the upper level away from the Commercial Centre in the International Zone.

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3.1.13.3 *Design Considerations*

The following additional issues should be considered in the design of the bar:

- The Bar should serve alcoholic and non-alcoholic beverages for the use of residents;
- The Bar shall be designed to hold live music events and should be able to accommodate up to 200 people comfortably;
- The Bar should be fully air conditioned; and
- The Bar should be fully accessible for people with a disability.

- *Flexible and theatrical lighting*
- *High power loads with flexible connection points*
- *Dance floor*
- *Refrigeration storage*
- *Security to prevent pilfering*
- *CCTV*

3.1.14 **Welcome Ceremony Plaza**

3.1.14.1 *General Description*

The Welcome Ceremony Plaza is the location where each CGA is required to be officially welcomed to the Commonwealth Games by the Organising Committee at a Ceremony held at the Games Village. The Welcome Ceremony Plaza should be a focal point, and prominent within the International Zone. The Ceremony stage can also be utilised as an entertainment Games Village site for live music and cultural shows. It is also possible for the Ceremony stage to be used for cinema activities at night exclusively for residents of the Village.

The Welcome Ceremony Plaza will consist of the following facilities:

- Covered Stage Area;
- Change Rooms for Performers;
- 'Green Room' (VIP lounge) for Dignitaries/Performers; and
- Seating Plaza for up to 500 people.

- *Control Room for AV control*

3.1.14.2 *Location*

The Welcome Ceremony Plaza should be located in the International Zone. It should provide a suitable backdrop for photographic opportunities and should be able to accommodate approximately 500 people. The Ceremony Stage should be situated away from residential buildings so that any noise disturbance is limited.

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3.1.14.3 Design Considerations

The Welcome Ceremony Plaza is the location where each CGA is required to be officially welcomed to the Commonwealth Games by the Organising Committee at a Ceremony held at the Games Village. The Welcome Ceremony Plaza should be a focal point, and prominent within the International Zone. The Ceremony stage can also be utilised as an entertainment Games Village site for live music and cultural shows. It is also possible for the Ceremony stage to be used for cinema activities at night exclusively for residents of the Village.

The Welcome Ceremony Plaza will consist of the following facilities:

- Covered Stage Area;
- Change Rooms for Performers;
- 'Green Room' (VIP lounge) for Dignitaries/Performers; and
- Seating Plaza for up to 500 people.

- *Media camera platform*
- *Flags of Nations*
- *The Ceremony Plaza is design in such a way that becomes a prominent activity place during the game and in legacy as well. The idea to have a cultural spine along the temple boundary from Noida Link Road to the Boulevard shall have major focus on the plaza which shall be properly landscape. The plaza has been designed in such a way so that large crowds can gather in future.*

3.2 RESIDENTIAL ZONE

The Residential Zone is the largest zone within the Commonwealth Games Village. It is a secure zone within the Village where residents undertake their daily routine without interruption from the Media or Guests. The following facilities will be located within the Residential Zone:

- Residential Accommodation;
- CGA Facilities;
- Resident Centres;
- CGA Services Centre;
- Sports Information Centre;
- Chef de Mission Meeting Room;
- Main Dining Facility;
- Casual Dining Facility;
- Staff Dining Facility;
- Polyclinic;
- Recreational Facilities; and
- Religious Centre.

The Residential Zone is generally developed using permanent construction with some temporary structures required for additional facilities.

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All facilities required in the residential zone shall be provided except following:

- *The main dining facility*
- *Staff dining facility*
- *Recreational facilities and*
- *Religious Centre*

These facilities will be provided adjacent to residential zone and accommodated in temporary structures.

Location

The Residential Zone must be located away from other active areas within the Village to ensure privacy for the residents.

It should have a direct and secure link to the Athlete Transport Mall, which in turn should be well connected to the primary road network connecting the Village to the competition and training sites.

Operational areas and 'back of house' services should be located away from the Athletes and Officials activities in the Residential Zone where possible, and be discreet from residents.

Residential area has been located away from the International Zone. It has been provided a direct and secure link from Transport Mall.

Residential zone is located in such away that it is least affected by the noise from Railway line & NH – 24.

The pedestrian boulevard connects directly the residential to the transport mall & is the main lifeline of the Village.

The site conditions are utilized in such a way that we get a independent service road network on the lower land & main pedestrian circulation on the upper level.

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Design Considerations

The following additional issues should be considered in the design of the Residential Zone:

- The Residential Zone must have good internal circulation, both pedestrian and vehicular. All services must be accessible for all residents.
- The Dining Hall, Polyclinic and Athlete Transport Mall should be located in close proximity to the residential accommodation, however in locating these facilities consideration should be given to minimizing bus traffic noise so as to not adversely affect the residents.
- The Residential Zone should be linked by a Zone Control Point to the International Zone.
- Access to CGA car parking and pedestrian entrances / exits for the Residential Zone shall to be provided.
- Services within the Residential Zone need to be visible and easily identifiable to the residents. These facilities should be located on major pedestrian routes and appropriate signage and wayfinding should be implemented to facilitate identification.
- An appropriate level of landscaping should be provided to enhance the experience and image of the Residential Zone.

- *The site conditions are utilized in such a way that we get a independent service road network on the lower level & main pedestrian circulation on the upper level.*
- *The main dining, casual dining & the transport mall are connectedly placed. So that it is within reachable distance.*

A proper internal circulation, both pedestrian and vehicular has been provided. The various facilities have been accommodated within the residential zone.

3.2.1 Residential Accommodation

3.2.1.1 General Description

The residential buildings must provide accommodation for all eligible Athletes and Officials. A contingency of extra rooms is required, approximately 3%. Residential accommodation can be provided in the form of apartments, hotels or houses. This will be dependent on the legacy concept for the Village. Some supplementary accommodation can be provided in the form of temporary structures, however a high standard of accommodation must be maintained irrespective of whether the accommodation is permanent or temporary. All accommodation should be provided at a consistent standard to ensure equity amongst the residents of the Games Village. Where temporary accommodation is provided, it shall be at a similar standard to permanent accommodation.

Consideration has been given to increasing the contingency percentage to 5% to accommodate:

- *24hour staff accommodation*
- *Doping Control accommodation for staff that are responsible for delayed samples*
- *Some NOCs convert bed allocation into office space, particularly where Athletes are accommodated outside Village*

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- *The residential accommodation has been provided in the form of apartments which will be of high and consistent standard.*
- *The site conditions & have been utilized in such a way that we get the residential units and two levels of services & facility below. The residential centre, CGA offices and other facilities are conveniently located on the lower levels of still & basement wherever there is ample light & ventilation.*

3.2.1.2 Location

Residential accommodation should be conveniently located to the main services of the Residential and International Zones and have an efficient internal transportation system.

Residential accommodation should not be located in close proximity to buildings external to the Village that overlook the Residential Zone. Railways, main roads, waterways or pedestrian areas that are nearby can be security risks and/or can provide noise disturbance to the residents. Where possible, Residential accommodation should be at least 100 metres from any external buildings or roads near the Village.

Where possible, Residential buildings should incorporate CGA Offices, Medical Spaces and Storage. If this is not possible these facilities should be located adjacent or very close to the CGA's residence.

The residential accommodation has been located in quieter area and within the secure perimeter. In the lower floors car parking has been provided. Some of this accommodation will be converted into CGA offices, medical spaces and storage during the games.

3.2.2 Residential Units

The following design criteria shall be considered with respect to the design of residential units:

- Individual residential units can be in any configuration. (Note: the larger the apartment the more complex the Village allocation process). Each residential unit should house a minimum of 2 and a maximum of 14 residents.
- Living space should be provided in each building for athletes and officials to congregate and relax.
- Kitchen areas or Garages (legacy mode) can be used adequately as bedrooms for the Games.
- Each apartment and bedroom must be lockable.

- *Residential key system- careful consideration needs to be given to the keying system chosen for the residential units. Decisions on whether standard metal keys or digital cards are issued will have significant impact on the construction of the room doors and the key management system.*
- *The units have been designed as 4 & 5 bedrooms types with drawing room living room & kitchen.*
- *8 athletes will stay in 4 bedroom units (2 in each bedroom) & 10 will stay in 5 bedroom unit.*

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3.2.2.1 Bedrooms

The following criteria apply to Bedrooms within the Residential units:

- Each bedroom must be configured for no more than 2 persons at any one time and be a minimum size of 12m².
- Men and Women shall not be accommodated in the same bedroom
- ~~• Athletes of different competing nations shall not be accommodated in the same bedroom~~
- Each bedroom must have:
 - Curtains/blinds to block sunlight;
 - Bed linen, pillows and blankets;
 - ~~○ 60cm hanging space;~~
 - ~~○ At least 3 drawers of storage space (one must be lockable for valuables);~~
 - Beds must be 2.00metre in length with additional long beds available (it is recommended that approximately 20% of the beds shall be 2.20 metres in length and these should be distributed according to team delegation requirements;
 - Bedside lamps, clothes hangers and wastebaskets should be provided; and
 - Each residential unit shall have television, telephone, and internet connections.

- ~~• Athletes of different competing nations shall not be accommodated in the same bedroom, house or unit~~
- Each bedroom shall have:
 - 60cm of hanging space per bed
 - At least 1 drawers of storage space (one must be lockable) per bed
- Consider option of 2.20 metre being provided as standard beds and mattresses with 0.2metre snap on extension pieces. This will facilitate the on-selling of beds after the Games.

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3.2.2.2 Bathrooms

The following criteria apply to Bathrooms within the Residential units:

- The maximum ratio of bathrooms to occupants is 4:1
- Bathrooms should be within or directly adjacent to the residential units
- Each bathroom must have:
 - Wash basin;
 - Lavatory;
 - Shower;
 - Mirrors;
 - Toilet brush, shower, curtain, toilet holder and paper;
 - Suitable lighting and extract fans if no natural light or ventilation; and
 - Fixtures for Athletes and Officials with a disability (e.g. grab rails), where the residential unit is allocated for EAD Athletes.

- Two towels/person

- Each bedroom has got one toilet attached with an exception of 1 which is either accessible from outside as shared by 2 bedrooms.

3.2.2.3 Living Spaces

Living spaces shall be provided in all Residential Units, of a size appropriate to the number of residents in each unit. With respect to hotel style accommodation, adequate living space should be provided on each floor for each delegation, to comfortably accommodate the number of residents. Where there are multiple delegations per floor, these spaces can potentially be combined, if appropriate and as determined in conjunction with the Organising Committee and the CGF. In general, the proposed distribution of living spaces throughout the Village shall be subject to the approval of the Organising Committee and CGF based on projected allotment model.

Living spaces shall have appropriate soft furnishings and televisions.

As per the present decision hotel rooms are not being used to house the athletes. All the athletes will be housed in the residential apartments only.

3.2.2.4 Chef de Mission Accommodation

The Chef de Mission for each delegation shall have a single occupancy room within the Village. The following criteria apply to residential units for the Chef de Mission for each delegation.

- Each Chef de Mission room must be a single occupancy room and have:
 - Desk and Chair;
 - Telephone (with local and international access);
 - Television (with live Games coverage); and
 - Small refrigerator.

- Minimum size for single occupancy room is 9 sqm

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3.2.2.5 Accessibility

With respect to accessibility for Residential Units, it is a requirement to have fully accessible units distributed throughout the Games Village to accommodate EAD Athletes. The specific number of Athletes and their distribution will not be available until nearer to Games time, and as such it is proposed that the Agency work with the Organising Committee and the Commonwealth Games Federation to establish the appropriate strategy in terms of the provision of accessible residential units.

Accommodation for EAD athletes will be provided for nearly 200 Nos as per the information given by OC during one of the meetings. It was also informed that the EAD athletes should be adjusted along with the respected contingents and this shall be done

In each block lower floor will be retrofitted to a fully accessible EAD unit in addition care is taken that there are proper ramps throughout the Village to negotiate the level differences.

3.2.2.6 Vertical Transportation

The Agency is responsible for demonstrating that vertical transportation systems (lifts) within the Residential Buildings will adequately accommodate the population of each building during the Games, in accordance with acceptable international standards with respect to waiting times, safety and comfort. It should be noted that if the Games time population of these buildings is significantly greater than the Legacy population, additional lifts or other appropriate solutions may be required to ensure an adequate level of service

Lifts will be provided to ensure an adequate level of service to the Athletes. Tentatively a core of four apartments on each floor will be serviced by two lifts.

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3.2.3 CGA Facilities

3.2.3.1 General Description

All CGAs are entitled to Offices, Medical Spaces and Storage facilities. The size and number of rooms for these CGA spaces will not be clearly understood until closer to Games time, therefore the design of the spaces should be 'generic' and able to be increased or decreased in size based on the requirements of the individual delegation.

The following is a guideline for CGA Office requirements:

CGA OFFICE TYPE	APPROXIMATE CGA DELEGATION SIZE	SIZE IN SQUARE METRES	Chef's Office	Team Office/ Meeting	Medical	Physio	Bathroom (basin with hot and cold water)	NUMBER PROVIDED (71)
Type 0	0-10	9	9	Bookable	Bookable	Medical Centre	-	8
Type 1	10-25	18	9	9	Bookable	Medical Centre	-	14
Type 2	25-60	36	9	18	9	Medical Centre	5	21
Type 3	60-100	72	9	27	18	18	5	14
Type 4	100-250	90	9	40	18	18	5	6
Type 5	250-400	108	9	40	27	27	5	5
Type 6	400-500	126	9	61	30	21	5	1
Type 7	500-600	144	9	64	30	36	5	1
Type 8	600+	180	9	91	30	45	5	1

- Consideration shall be given to using structured grid as modules (in single or multiple configurations) as flexible office space. As the facilities are provided on the lower levels of stills & basements.
- Resident Centres could also include Business Centres to support the CGA offices. These Business Centres would include fax, printer and computer stations.
- Offices shall have easy access to Male and Female toilets
- **It is suggested to provide the following:**

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CGA office type	Bathrooms(basin with hot & cold water)
<i>Type 2</i>	<i>1</i>
<i>Type 3</i>	<i>2</i>
<i>Type 4</i>	<i>3</i>
<i>Type 5</i>	<i>3</i>
<i>Type 6</i>	<i>4</i>
<i>Type 7</i>	<i>5</i>
<i>Type 8</i>	<i>5</i>

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With respect to the above Office types, it should be noted that each CGA delegations may vary the actual space requirements between the individual areas, subject to their specific needs. The following overall FF&E items shall be provided or each delegation relative to the above CGA Office types:

MINIMUM FURNITURE AND EQUIPMENT ALLOCATION BY OFFICE TYPE	CGA OFFICE TYPE								
	0	1	2	3	4	5	6	7	8
Bookcase - 4 Shelves	0	1	1	1	1	1	1	2	2
Cabinet - 2 Doors	0	0	1	2	2	3	3	3	3
Chair-Folding Padded	2	8	15	22	32	35	41	47	53
Chair – Office	1	1	2	3	3	4	4	4	4
Coat Rack	1	1	1	1	1	1	1	1	1
Computer and printer with access to the Games information system including, administration of the Village, transport timetables, starting lists and electronic messages, etc.	1	1	1	1	1	1	1	1	1
Desk - 3 Drawers	1	1	2	3	3	4	4	4	4
Desk Lamp – Electric	1	1	2	3	3	4	4	4	4
Esky (Cool Box) 44 Litres	1	1	1	1	1	1	1	1	1
Examination Lamp	0	0	1	2	2	3	3	3	3
Facsimile machine	1	1	1	1	1	1	1	1	1
Filing Cabinet – 4 Drawers	1	1	1	1	1	1	1	1	1
Kettle – Electric	1	1	1	1	1	1	1	1	1
Massage/Examination Table	0	0	2	4	4	6	6	6	7
Multi-Function Fax/Copier/Printer	1	1	1	1	1	1	1	1	1
Notice Board	1	1	2	3	3	4	4	4	4
Pedestal Fan	1	1	1	1	1	1	1	1	1
Refrigerator - 230 Litres	0	0	0	1	1	1	1	1	1
Refrigerator - 95 Litres (Chef de Mission office)	1	1	1	1	1	1	1	1	1
Safe – Medium	1	1	1	1	1	1	1	1	1
Stool – Medical	0	0	1	2	2	3	3	3	4
Table-Folding	0	1	2	3	5	5	6	7	8
Table Round	1	1	1	1	1	1	1	1	1
Telephone Handset	2	2	2	2	2	2	2	2	2
Television	2	2	2	2	2	2	2	2	2
Video Recorder	1	1	1	1	1	1	1	1	1
Wall Clock	1	1	1	1	1	1	1	1	1
Waste Bin – Recycling	1	2	3	4	4	5	5	5	6

Consideration should be given to economy of equipment by providing multi-function fax/copier/printer in lieu of individual fax and copier and printer in each office space. Consideration should also be given to providing only 1 television in a 9 sq m office.

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3.2.4 Chef de Mission Offices

3.2.4.1 General Description

A separate office shall be provided for each Chef de Mission. Each office shall accommodate, as a minimum:

- Desk and Chair;
- Telephone (with local and international access);
- TV; and
- Small Refrigerator.

Consideration should be given for teams under 10 people to be provided with shared, lockable facilities in a Resident Centre Business Centre, in lieu of an individual office.

3.2.5 CGA Team Office/Meeting Spaces

3.2.5.1 General Description

Each CGA is entitled to have a working space to complete their team administration tasks during the Games, with the exception of some smaller delegations, who will have access to a bookable space to be provided within the Residential Zone.

3.2.5.2 Location

CGA Team Office/Meeting Spaces must be situated within the CGA residence or adjacent.

3.2.5.3 General Description

The following additional issues should be considered in the design of the CGA Office/Meeting spaces:

- The office/meeting space can be in permanent or temporary structures.
- The office/meeting space must be lockable.
- For small delegations one or more bookable spaces shall be provided (possibly located at a Resident Centres). These spaces shall be fully equipped in accordance with the general requirements for CGA Team Offices as outlined above. The number and location of these spaces shall be agreed between the Agency and the OC, though they should be located in a convenient location, easily accessible by the smaller CGA delegations.
- CGAs may request to put CGA Team Office into their residential building. This is acceptable as long as it is achieved within the team quota and does not affect the overall contingency for residential units.

- *CGA office must have easy access to male and female toilets*

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3.2.6 CGA Medical/Physiotherapy Spaces

3.2.6.1 General Description

For type 3 offices and above, a lockable and private team medical office / space shall also be provided. This will generally consist of a Medical Treatment Space and Physiotherapy Room(s), either as separate spaces or consolidated into one area within the Team Office Area. Medical Spaces shall include the following:

- Private doctors consultation room;
- Examination table;
- Examination stool;
- Examination lamp;
- Desk;
- Chairs;
- Lockable cabinet for medical supplies;
- Waste paper baskets;
- Sharps disposal units;
- Disposal paper towels; and
- Clothes rack and hanger.

Medical space should also include the following in proportion to the team size:

- Massage tables;
- Waste paper basket;
- Clothes rack;
- Chairs;
- Lockable cabinets;
- Coolers;
- Disposable paper towels and linen towels for physiotherapy; and
- A wash basin with hot and cold water supply should be included within team medical space or team doctor's office.

- *Medical waste unit/bin*

3.2.6.2 Location

CGA Medical/Physiotherapy Spaces shall be situated within the CGA residence or adjacent. Ideally, these facilities should be placed adjacent to the CGA Team Office and should be close to bathroom facilities.

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3.2.6.3 Design Considerations

The following additional issues should be considered in the design of the CGA Medical/Physiotherapy Spaces:

- The CGA Medical/Physiotherapy Spaces can be situated in permanent or temporary structures.
- The CGA Medical/Physiotherapy Spaces must be lockable.
- For small delegations one or more bookable spaces shall be provided (possibly located at a Resident Centres). These spaces shall be fully equipped in accordance with the general requirements for CGA Medical Spaces as outlined above. The number and location of these spaces shall be agreed between the Agency and the OC, though they should be located in a convenient location, easily accessible by the smaller CGA delegations.

- *Adequate hot and cold water*
- *Toilet facilities*
- *Disposal of medical waste*

3.2.7 CGA Storage Space

3.2.7.1 General Description

Dedicated storage space shall be provided for each CGA. These spaces should be lockable enclosures in close proximity to the residential areas for each delegation. Consideration can be given to utilising underground parking areas for storage, or other suitable space within the residential buildings. They should accommodate access for small vehicles and trolleys, and be suitable for sports equipment, including bicycles etc.

Design Considerations

- *Storage spaces should be designed to be discrete, that is contents not visible from outside space.*
- *Accessible by vehicles including forklifts (many teams will bring items in one large container and goods will need to be transferred to other vehicles for loading into storage space).*

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3.2.8 Resident Centres

3.2.8.1 General Description

Resident Centres provide a range of services for the residents of the Village, including housekeeping, general information and problem resolution.

Each Resident Centre shall service a maximum of 1000 residents, and no resident should walk more than 250m to a Resident Centre. Whilst it is not a requirement to have a Resident Centre in each Residential Building, these facilities should be evenly distributed so as to be convenient to all residents.

At least one of the Resident Centres must be available 24 hours/day.

The following facilities shall be provided within each Resident Centres:

- Reception/Front desk;
- TV Lounge;
- Housekeeping Storage;
- Vending Machine and Ice Machine; and
- Public Payphones.

- Games Info Stations

- Toilet Facilities

- Eight resident centres are strategically placed across the Village so that there is one accessible by every resident.

The following spaces should be provided within selected Resident Centres, evenly distributed across the Residential Zone:

- CGA Business Centres; and
- Laundry Facilities.

The following additional spaces are recommended within Resident Centres:

- WIFI Hotspots;
- Cyber Café;
- Games Room; and
- Meeting Rooms.

As noted earlier in this Return Brief the Cyber Café(s) within the Resident Centre could replace the Cyber Café in the International Zone.

3.2.8.2 Location

Resident Centres should be dispersed throughout the Village and planned strategically to ensure convenient access for all residents. Dependent on the design of individual residential buildings, Resident Centres could be located within each building.

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Eight resident centres are strategically placed throughout the Village on the lower floors of stills & basement so that they are easily accessible from all the blocks. Also it will be ensured that they get natural light and ventilation as much as possible.

Resident Centres are to be fully accessible for people with a disability.

3.2.8.3 Laundry Facilities

The following should be considered with respect to Laundry facilities:

- Laundry facilities should be distributed throughout the Residential Zone, with a maximum of 4-5 laundries in total. ~~If self-service laundries are provided, washing machines shall be provided at a ratio of 1:50 and driers at a ratio of 1:70 per resident. Laundries will require adequate hot and cold water supply and power. Waste removal and sewerage needs to be considered. Generally, washing machines will be a cold wash. Temperature control mechanism and vents may be required for laundry.~~
- Laundry can be a self service or serviced facility.

- *If self-serviced laundries are provided, washing machines shall be provided at a ratio of 1:50 and driers at a ratio of 1:25 per resident.*
- *Washers and driers need to be heavy duty commercial machines typically used in pay laundries. Machines will have to be reconfigured to operate free of charge.*
- *Preferred location of laundries is as part of Resident Centres*
- *If laundries are serviced an additional 50m2 of space should be provided*
- *Laundries should be air-conditioned, particularly if serviced*
- *Use of only cold water washing should be considered*
- *Power requirements which may be greater than residential laundries*

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3.2.9 CGA Services Centre

3.2.9.1 General Description

The CGA Services Centre is a central communication and service centre provided for all CGAs. It provides information and facilitates problem resolution for Chefs and Officials of the CGAs. The following facilities will be required within the CGA Services Centre:

- Reception/Information;
 - Transport Desk;
 - Finance and Rate Card Desk;
 - Technology Desk;
 - CGA Services Administration Offices (max. 3 people);
 - Meeting Room;
 - CGA Services Staff Work Area (6 workstations);
 - CGA Assistants Office;
 - CGF Office; and
 - Male and Female Toilets.
- *Waiting Lounge*
 - *As part of the Reception area provide 12m2 offices for Finance and Rate Card, Catering, Technology, Protocol, Arrivals/Departures, Transport, Freight*
 - *CGA Assistants Meeting Room*

3.2.9.2 Location

The CGA Services Centre should be located in close proximity to residential accommodation. Ideally, the CGA Services Centre would be located adjacent to the Sports Information Centre, in which case some sharing of facilities would be possible.

Location of the CGA Services Centre close to the Main Dining Hall and Transport Mall should also be considered.

3.2.9.3 Design Considerations

The following additional issues should be considered in the design of the CGA Services Centre:

- The CGA Services Centre can be in a permanent or temporary structure;
- All spaces should be fully accessible for people with a disability;
- All spaces require computer terminals and connections, lockable cupboards, tables and chairs and Games network telephones; and
- Games feed television should be available in the CGA Services Centre.

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- *The CGA BOH offices should be separate from the FOH offices of Finance and Rate Card, Catering, Technology, Protocol, Arrivals/Departures, Transport, Freight and the office for CGF.*

3.2.9.4 Reception/Information Desk

- A Reception/Information Desk shall be provided which should accommodate fax, printing and photocopying facilities.
- The Reception/Information Desk should have in close proximity a mailbox system. CGAs will collect mail from this location.

- *Reception Desk should be used for making appointments to see the CGA Services Centre staff.*

3.2.9.5 Transport, Finance and Rate Card, Technology Desks

- Desks should be provided for CGA enquiries and services for Transport, Finance and Rate Card and technology. These desks should be semi-private booths, and could be located in an open area near to the reception.
- All desks should be provided with appropriate power and data services, with computer terminals connected to the Games Information system.

- *Desks should be provided with telephones*
- *Although semi-private booths are acceptable the provision of 12 sqm offices for each of these should be considered*
- *Additional desks/offices should be provided for Catering, Protocol, Arrivals/Departures*

3.2.9.6 CGA Services Administration Offices

CGA Services Staff will require 3 administration offices. Each office should accommodate up to 3 people and should have appropriate power and data connections:

3.2.9.7 Meeting Room

- A Meeting Room for up to 20 people shall be provided for general sport meetings. If the Sport Information Centre is located near to the CGA Services Centre, these spaces could potentially be shared.

3.2.9.8 CGA Services Staff Work Area

- An open plan work area for 6 people shall be provided within the CGA Services Centre. This should comfortably accommodate 6 workstations and should have a resources area with printer, photocopier etc. This should be located adjacent to the CGA Services Administration Offices and CGA Assistants Office.

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3.2.9.9 CGA Assistants Office

- A CGA Assistants office shall be provided. This should be located adjacent to the CGA Services Administration Offices and the CGA Services Staff Work Area

3.2.9.10 CGF Office

- An office space for CGF Staff shall be provided
- Office shall include Games Info terminal, phone, copier/fax/printer and a TV with Games feed.
- Location of this office should be FOH of the CGA Services Centre

3.2.10 Sports Information Centre

3.2.10.1 General Description

A Sports Information Centre is required within the Residential Zone for CGAs to obtain sport information, transport support/information, results/schedules etc and general support. . The following facilities are required within the Sports Information Centre:

- Reception/Waiting Area;
 - Transport Desk;
 - Sport Information Desks (1 per Sport);
 - Results Production Office;
 - Sport Entries Office; and
 - Meeting Room
- Sports Information desks can be shared for some sports
 - Results Production Office should have storage facility and printing capability
 - Centre should be air-conditioned

3.2.10.2 Location

The Sport Information Centre should be located close to the residential accommodation and if possible should be located adjacent to the CGA Services Centre and the Chef de Mission Meeting Hall.

Consideration is given to locating this Centre close to the Main Dining Hall and Transport Mall.

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3.2.10.3 *Design Considerations*

The following general issues should be considered in the design of the Sports Information Centre:

- The Sports Information Centre can be provided in permanent or temporary structure.
- All areas within the Sport Information Centre will require Games Information System connectivity, data, international telephone connections, faxes and printers.

- *Connectivity between the Venues and the Village*
- *Air-conditioned*
- *Results production needs to withstand the demands of heavy printers*

3.2.10.4 *Reception/Information Desk*

- A Reception/Information Desk shall be provided which should accommodate fax, printing and photocopying facilities.

3.2.10.5 *Transport Desk*

- A Transport Desk should be provided for CGA delegation enquiries and services for Transport. This desk should be a semi-private booth, and could be located in an open area near to the reception.

3.2.10.6 *Sport Information Desks*

- The Sport Information Desks should be in the form of a semi-private booth for each sport. Each booth should be equipped with Games network telephone and computer with Games Information System connectivity.
- Some Sport Information Desks could potentially be shared for smaller sports with a relatively short program.
- A number of 'stand alone' Games Information Systems should be available within the Centre (minimum 3 stations).

3.2.10.7 *Results Production Office*

- A separate results production space shall be provided with printers and photocopiers to support the Sport Information Desks. This area should be convenient to the Sport Information Desks, though can cause noise disturbance which should be considered in the design and location of the space.

3.2.10.8 *Sport Entries Office*

- A Sport Entries office shall be provided for sport entry data input for 3-4 people, consisting of open plan workstations.

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3.2.10.9 Meeting Room

- A Meeting Room for up to 20 people shall be provided for general sport meetings. If the Sport Information Centre is located near to the CGA Services centre, these spaces could potentially be shared.

3.2.10.10 Sports Viewing Room

Consideration should be given to the provision of a Sports Viewing Room. This would comprise meeting rooms, to accommodate 12 to 25 people, where facilities are provided to view copies of events provided by the Host Broadcaster. A video library could form part of this facility.

3.2.11 Chef de Mission Meeting Room

3.2.11.1 General Description

A meeting room is needed for the Chefs de Mission meetings held in the Village where the Organising Committee and the CGAs will convene regularly. The Meeting Room should comfortably accommodate 200 people. The Chefs Meeting Hall can be also used for internal CGA meetings and volunteer or Organising Committee staff meetings. Other uses for this space which should be considered are as follows:

- Cinema (for Village Residents); and
- Alternative location for a CGA Welcome Ceremony (in the case of inclement weather).

3.2.11.2 Location

The location of this meeting room can be in either the International or Residential Zone. It should be suitably located in relatively short distance to the residence buildings.

It is preferable for the Chef de Mission Meeting Room to be located close to the CGA Centre.

3.2.11.3 Design Considerations

The following additional issues should be considered in the design of the Chef de Mission Meeting Rooms:

- The Chef de Mission Meeting Room should accommodate the following facilities:
 - Microphones/sound system;
 - Projector and screen; and
 - Stage/Podium.
- A/V Control Room
- Interpreter Sound Proof Rooms

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3.2.12 Main Dining Hall

3.2.12.1 General Description

The Main Dining Hall is the primary Dining facility for Athletes and Officials in the Village. The Dining Hall must provide suitable hot and cold food of good nutritional quality and variety.

Food selection should take into account the cultural and religious groups at the Games (e.g. Indian, Asian, Pacific Basin nationalities, European).

The Main Dining Hall should accommodate of the following areas/spaces:

- **Front of House Areas:**
 - Main Dining Hall Entry;
 - Baggage Claim Area;
 - Main Dining Hall Seating;
 - Food and Beverage Serveries; and *Hot and Cold*
 - Male and Female Toilets.
- **Back of House Areas:**
 - Preparation Kitchen;
 - Refrigerated Storage;
 - Dry Storage;
 - Loading Dock;
 - Ware-Washing facilities for dishes, glasses, etc.;
 - Waste Compound;
 - Staff Changing Rooms;
 - Male and Female Toilets; and
 - Catering Managers Office.

- *Consideration is made to include a dedicated Staff Dining area (accommodating 33% staff) as part of the Main Dining Hall. This could create some economies of construction and operation.*

3.2.12.2 Location

The Main Dining Hall is a core component of the Village must be centrally located to be easily accessible to all residents. The Main Dining Hall must have a service road for deliveries and waste removal in a 'back of house' area, and should have adequate space for the loading/unloading of goods. Additional space will be required for temporary generators, a/c, etc. as required.

Where possible it is desirable to locate the Main Dining Hall in close proximity to the Village Transport Mall and Residential Accommodation. This should be considered in the development of the Village master plan.

Main dining hall is located near the transport mall & residential zone & easily accessible from international zone & training facilities.

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3.2.12.3 Design Considerations

The following additional issues should be considered in the design of the Athlete Dining Hall:

- The Dining Hall and associated facilities can be developed as temporary structures.
 - The Main Dining Hall should be fully accessible for people with a disability.
 - The Dining Hall must be able to accommodate 33% of the residents at any one time and must operate hot and cold food service on a 24 hour basis.
 - The respective movements of residents and staff within the Main Dining Hall should be considered whilst developing the layout. Staff movements and loading docks should be in a discreet 'back of house' area.
 - Residents and Guests will be checked at the entry to ensure they have appropriate accreditation, and space should be allocated for this function.
 - A baggage check facility should be located at the main entry to accommodate at least 600 bags at any one time. No baggage will be allowed into the Main Dining Hall.
 - Male and Female toilet facilities must be available at the Main Dining Hall. The number of toilet facilities should be based on the anticipated peak demand.
 - At least 4 serveries should be provided for hot food, 2 serveries for cold food and one large beverages station. Beverage stations generally consist of refrigerators and post-mix syrups. Food stations typically accommodate:
 - Hot service, BBQ, grill, steamed meat;
 - Cooked vegetables;
 - Pasta/Pizza station;
 - Indian/Asian station;
 - African station (can be incorporated into menu);
 - Salad and fruit bar;
 - Breads and cereals station;
 - Cold meat and cheese station; and
 - Desert bar including ice cream and yogurts.
 - An area for trays, cutlery and napkins should be placed in convenient locations in close proximity to, and before the hot serveries.
 - The serveries should be located away from entrances and exits to avoid congestion and should have ample pedestrian space in front to allow for queuing.
 - Hot and Cold serveries should be kept separate and drinks stations should be placed away from hot food stations to avoid congestion.
 - An appropriate system of waste disposal and tray deposit should be developed within the Main Dining Hall. These facilities will be required in multiple locations.
 - Essential utilities and services including gas supply, electricity supply with back up generator power will be required.
 - Waste disposal containers/compactors will be required adjacent to the Main Dining Hall in a 'back of house area'. The flow of waste should be designed so as not to conflict with the delivery of goods into the facility.
-
- *Provide the ability to partition off smaller sections of the Main Dining Hall*
 - *Provide extensive power outlets throughout the Main Dining Hall*

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- *Storage should be hold extensive dry goods and at least 3 day store of perishables in case of security lock-down in a security alert situation.*
- *Main Dining Hall to be air-conditioned*

3.2.13 Casual Dining Hall

3.2.13.1 General Description

The Casual Dining Hall provides an alternative and different dining experience for Athletes and Officials. It also provides an overflow to the Main Dining at peak times. (Casual dining does not operate a 24 hour service but helps to alleviate congestion at the Main Dining, generally at breakfast and dinner times). The Casual Dining Hall should accommodate approximately 100-200 people.

The Casual Dining Hall should accommodate the following spaces:

- Casual Dining Hall Seating;
- Cooking Stations with Hot Serveries;
- Cold Food Station;
- Beverages Station;
- Waste Disposal Station;
- Kitchen Preparation Area;
- Dry Storage Area; and
- Refrigerated Storage Area.

3.2.13.3 Location

Ideally the Casual Dining Hall should be located in a different area of the Residential Zone to the Main Dining and therefore be convenient to residents' located remote to the Main Dining Hall.

It is provided along the central green plaza. Hence each unit has easy access to dining hall. There is also an option of having dining facilities outside in the open green.

3.2.13.4 Design Considerations

The following additional issues should be considered in the design of the Casual Dining Hall:

- Food preparation areas can be developed within the Casual Dining facility or preparation could potentially be undertaken at the Main Dining and transported to the Casual Dining if appropriate.
- A baggage check area is not usually required, however an entry accreditation check will be undertaken at the main entry to the Casual Dining Hall.
- External Dining areas should be considered at the Casual Dining Hall as this is often an attractive style of dining for Village residents.

- *Air-conditioning*

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3.2.14 Polyclinic

3.2.14.1 General Description

The Polyclinic shall be a purpose built medical facility for the exclusive use of the Village residents. The Polyclinic will also provide support, as required, to Games Family.

It should be noted that the scale of the Polyclinic and the medical services provided will be dependent on the availability of a high standard medical facilities (i.e. hospital) in close proximity to the Village. If

such a facility is not available, the level of service and facilities within the Polyclinic may need to be increased from the minimum requirement outlined below.

The Polyclinic should provide the following facilities, as a minimum:

- Reception/Waiting area (seating for approximately 20 people);
- Administration Offices;
- General Outpatient Care Facilities;
- Emergency Care Facilities;
- Physiotherapy Care;
- Pharmacy;
- Radiological Services; *CT Scan, MRI, X-Ray (digital)*
- Laboratory Services;
- Dental and Optical Care Facilities;
- Podiatry;
- Male and Female Toilets; and
- Doping Control Facilities.

- **Isolation room**
- **Ambulance Parking**

3.2.14.2 Location

The Polyclinic must be located with an external entrance/exit to the Village for emergency vehicle access. It should be located in a convenient location for all Village residents.

The polyclinic located on the northern edge of the residential zone & it has a good connection with the service road network.

Accreditation issues need to be considered in relation to the location of the Polyclinic.

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3.2.14.3 Design Considerations

It is recommended that a specialist medical facility planner be engaged to assist with the design of this facility, and as such detailed briefing for the individual components of the Polyclinic are not provided within this Venue Brief.

The following general issues should be considered in the design of the Polyclinic:

- The Polyclinic can be accommodated in an existing specialized building or can be developed as a temporary structure.
- MRI facilities can be located in a temporary portable building or trailer.
- The Polyclinic must have an adequate power supply and back up power supply will be required.
- Water supply is required for all parts of the Polyclinic. *hot and cold*
- All internal finishes should be specified to allow for ease of cleaning and maintaining throughout the Games.
- Adequate external area should be provided for Ambulance parking and efficient access.
- Male and Female toilets should be provided within the Polyclinic.

- *Walls and structures must be able to accommodate radiological equipment. Specialist wall lining may be required.*

3.2.14.4 Doping Control

Doping control facilities, to the requirements of the World Anti-Doping Agency (WADA), shall be provided for use during the Commonwealth Games.

The facilities include:

- **A Reception/Waiting area**
To include a reception desk, a seating waiting area for up to 90 people, and a drinks fridge;
- **Processing Areas**
Three processing areas shall be provided. Each area shall contain a table, four chairs, a storage cabinet and a lockable fridge for samples;
- **Toilets**
Three toilets shall be provided. Each toilet shall be large enough to accommodate the athlete and the chaperone. From previous experience, disabled toilets are a good solution;
- **Office/Storage**
A small lockable office shall be provided within the Doping Control Station; and
- **Chaperone Waiting Area**- A small waiting area for chaperones shall be provided.

This is a restricted area, accessible only to authorised personnel. Access to the Doping Control should be separate to the other entrances to the Polyclinic.

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3.2.15 Recreational Facilities

3.2.15.1 General Description

Recreational facilities should be provided within the Residential Zone. These should consist of facilities for leisure activities for the Village residents. The following shall be provided as a minimum:

- Fitness Centre; and
 - Jogging Track and/or open area for Athletes.
- *Swimming pool (with aquatic centre to be designed for legacy)*
 - *Athletic track 400m.*

3.2.15.2 Location

These facilities can be located anywhere in the Residential Zone, though should be convenient to the residential accommodation.

These are provided on the northern side approachable by the pedestrian boulevard and properly enclosed in a secured perimeter.

3.2.15.3 Fitness Centre

- The Fitness Centre can be developed as permanent or temporary structures/facilities.
- The Fitness Centre shall be fully accessible for people with a disability.
- Saunas shall be provided within the Fitness Centre.

The following Facilities shall be provided within the Fitness Centre, as a minimum:

It is designed as a part of sports complex on the upper level above the change room. Centrally placed between the swimming pool & the under sports hall.

3.2.15.4 Cardio/Weights Area

The Cardio/Weights area should contain the following facilities as a minimum:

- 5 treadmills, 5 stationary bikes and 2 rowing machines.
- 3 free weight stations and a range of dumbbells and barbells for use. Weight machines are also recommended. (Note: Floor material should be suitable to hold free weights and treadmills).
- An open area for stretching or static exercises.
- Ceiling mounted televisions and sound system.

- *Reception/check-in desk (also controls sound system and towel distribution)*

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3.2.15.5 *Change Rooms*

A minimum of two change rooms shall be provided to accommodate the requirements for athletes. The size and configuration of the change rooms shall allow for but not be limited to the following:

- 20 people to use each change room;
- At least one massage table;
- Lockers for each athlete;
- Seating or benching; and
- At least four showers, toilets and hand basins, as well as mirrors, hand driers and dispensers.

3.2.15.6 *Additional Sports Facilities*

In addition to the recreational facilities, a number of additional sports facilities have been identified for Athlete Training/Recreation at the Village. These are as follows:

- Indoor Hall;
- Swimming Pool; and
- Athletics Track/Playing Field.

These facilities are proposed as a 'legacy' project for the Village site, and it is understood that they will form the basis for a multi Sport Complex in the longer term. The following issues will need to be considered for the development of these facilities:

- If these facilities are to be used for training and for general utilization of the Village residents, an operational solution will be required to facilitate the use for both users. In general, Games village training sites (during a Games) are not available for recreational use.
- Access privileges for training Games village sites will be more extensive than access privileges for the Village Residential Zone. Media and Athlete coaches may have access to training Games village sites. Therefore, if located at the Village, the additional sport facilities may require an independent perimeter with an Access Control Point into the Residential Zone of the Village (and other zones depending on its location).

As a part of legacy, the aquatic centre is also considered which shall be a part of the proposed swimming pool.

3.2.16 *Religious Centre*

3.2.16.1 *General Description*

A Religious Centre needs to be provided for residents for prayer, counselling and meditation.

3.2.16.2 *Location*

The Religious Centre can be situated anywhere in the Residential Zone, though should be in a relatively quiet and secluded area if possible.

The religious centre is provided on the periphery of the residential zone on the north side, which is approachable by the pedestrian Boulevard.

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3.2.16.3 *Design Considerations*

The following additional issues should be considered in the design of the Religious Centre:

- Two multi-purpose prayer rooms should be made available for residents of the Village. These rooms should be suitable for any religious denomination.
- A storage area is required for religious items.
- Space should be provided for private counselling.
- Shoe racks and bathroom facilities should be provided within the Religious Centre.

3.2.17 *Access Control Points (ACP)*

3.2.17.1 *General Description*

Access control points should facilitate entry and exit for residents and staff to and from the Residential Zone of the Village.

3.2.17.2 *Location*

ACPs should link the Residential Zone to external areas, particularly if the Village is located near to local commercial/retail areas or public transport. ACPs connected to local parklands are also recommended.

The number of ACPs should be limited but should ensure that all residents can enter and exit the Village at convenient locations if required.

3.2.17.3 *Design Considerations*

The following additional issues shall be considered in the design of the Access Control Points:

- The ACP shall be designed with appropriate shelter to ensure the protection of security equipment (x-ray machines and magnetometers). Shelter could be provided as a temporary structure.
- A solid base is required for the installation of security equipment.
- Suitable power and lighting will be required for x-ray machines, magnetometers, and lighting.
- The ACP shall have a separate exit route. The entry and exit should be able to accommodate the movement of sporting equipment (e.g. bicycles), media cameras and other equipment which may need to be moved into and out of the Village.
- Tables should be located before and after the x-ray machines for Residents to place their personal items upon. Trays must be provided for small items and miscellaneous clothing.
- The ACP shall be accessible for people with a disability.
- The ACP shall be lockable in the case of an emergency or out of hours.
- A communication mechanism must be in place in case of problems, queries or emergencies experienced at the ACP. This can be facilitated by radio or a fixed telephone line connected to the Village Security Command Centre and/or Village Management.

- *The ACP may need to be air-conditioned to ensure proper working of equipment*
- *Provision of CCTV, Entry and exit routes through ACP should also accommodate luggage*

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3.3 OPERATIONAL ZONE

General Description

The Operational Zone of the Village will accommodate a range of facilities required to ensure the efficient operation of the Village.

The following specific areas will be located within the Operational Zone of the Village:

- Access Control Points;
- Vehicle Check Points;
- Athlete Transport Mall;
- Village Accreditation Centre;
- CGA Parking;
- Village Motor Pool;
- Village Operations Centre;
- Security Command Centre;
- Logistics and Technology Centre;
- Waste Management Compound
- Workforce Centre; and
- Housekeeping Facilities.

- *Salle Ports – for materials transfer, including cash from armoured vehicles*

Several of the operational areas will straddle the Village boundary in order to be accessible from both inside and outside the Village. Access will need to be carefully controlled in the areas via VCP's, ACP,s and Zone Control Points. These areas include:

- *Village Accreditation Centre – should provide direct access to Residential Zone*
- *Village Operations Centre – preferred to be located on boundary but within Village*
- *Security Command Centre - preferred to be located on boundary but within Village*
- *Logistics and Technology Centre – half in, half out of Village*
- *Waste Management Compound – half in, half out of Village*
- *House Keeping Facilities – half in, half out of Village*

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Location

The Operational Zone should be located in an area adjacent to, and directly linked to both the International Zone and Residential Zones. It must be well connected to the primary road network as the majority of deliveries to the Village will enter through the Operational Zone. The Operational Zone must be also be well connected to the major commercial and dining facilities in the BOH area, so as to facilitate effective and discreet service access to these facilities.

Design Considerations

The following additional issues should be considered in the design of the Operational Zone:

- The Operational Zone can be developed with the use of temporary structures.
- Roads, parking areas and loading areas should be sufficiently sized and specified to allow for effective servicing of the Village.
- 'Back of House' connectivity to all key facilities within the Village should be considered in the planning of the Operational zone.
- There will be extensive requirements for permanent and temporary utilities (including power, water, technology and waste management systems) within the Operational zone.

- *Requirements of large pallet x-ray machines in logistics transfer area*
- *Operational Zone is well connected to the Transport Mall, residential area, service road network & International Zone.*

3.3.1 Access Control Points (ACP)

3.3.1.1 General Description

Access Control Points are required to manage the movement of resident, Staff and Goods into the Village at various locations.

3.3.1.2 Location

ACP's are required at various locations within the Operational Zone along the Village perimeter fence to facilitate the movement of staff and goods in this zone. In addition major ACP's will be required at the Athlete Transport Mall and Accreditation Centre

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3.3.1.3 Design Considerations

The following additional issues should be considered in the design of Access Control Points:

- The ACP shall be designed with appropriate shelter to ensure the protection of security equipment (x-ray machines and magnetometers). Shelter could be provided as a temporary structure.
- A solid base is required for the installation of security equipment.
- Suitable power and lighting will be required for x-ray machines, magnetometers, and lighting.
- The ACP shall have a separate exit route. The entry and exit should be able to accommodate the movement of sporting equipment (e.g. bicycles), media cameras and other equipment which may need to be moved into and out of the Village.
- Tables should be located before and after the x-ray machines for Residents to place their personal items upon. Trays must be provided for small items and miscellaneous clothing.
- The ACP needs to be accessible for people with a disability.
- The ACP shall be lockable in the case of an emergency or out of hours.
- A communication mechanism must be in place in case of problems, queries or emergencies experienced at the ACP. This can be facilitated by radio or a fixed telephone line connected to the Village Security Command Centre and/or Village Management.

- *Air-conditioning may be required to ensure effective operation of some magnetometer and x-ray equipment*
- CCTV

3.3.2 Vehicle Security Checkpoint

3.3.2.1 General Description

A Vehicle Check Point (VCP) is made up of two parts:

- Vehicle Permit Checkpoint
- Vehicle Security Checkpoint

All vehicles entering the site will be liable to a security search of both the vehicle and the occupants. A Vehicle Security Checkpoint, with facilities for vehicles and their occupants to be stopped and searched shall be provided. To avoid delays to critical vehicles, such as Athlete buses or emergency vehicles, the design of the Vehicle Security Checkpoint shall allow searches to be carried out without blocking the road.

Out of hours, the Vehicle Security Checkpoint will be used for logistics and service vehicles, and so will need to operate 24 hours a day. Therefore, good lighting and protection from wind, sun and rain shall be provided.

The size will depend on the number and type of vehicles expected and the flow rates. Flow rates and detailed requirements shall be determined by the Organising Committee in conjunction with the Security agencies.

Where the Vehicle Security Checkpoint is not located close to a road junction, provision shall be made for a soft check to prevent non-accredited vehicles from reaching the search point.

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It is recommended to locate at a reasonable distance prior to all Vehicle Security Checkpoints the Vehicle Permit Checkpoint (soft-check). This will prevent all non-accredited vehicles from adversely impacting on the operation of the Vehicle Security Checkpoint.

3.3.2.2 Location

A Vehicle Security Checkpoint shall be located at the perimeter of the Village in a location where vehicles will enter the Village Secure Perimeter. The specific location for this facility must be agreed with local security agencies. Space will be required at the Vehicle Security Checkpoint to reject vehicles and for these vehicles to exit the Vehicle Security Checkpoint without entering the Village. A Vehicle Check Point will be required into the BOH area accessing the Logistics and Technology Centre and Main Dining.

As per discussion with security agencies VSC has been provided on all the three major entry points Viz.

- 1. Bund road (prior to the residential accommodation)*
- 2. VIP/Media/Guest entry from Noida Link road.*
- 3. Service entry from Noida Link road*

3.3.2.3 Design Considerations

The following additional issues should be considered in the design of the Vehicle Security Checkpoint:

- For a full security screening facility, each Vehicle Check Point should contain:
 - Shelter;
 - Lighting;
 - Radios;
 - Power Generator; and
 - Portable Toilets.
- *Shelter to be suitable for all types of vehicles including buses, cars and semi-trailers*
- *Location of the Vehicle Permit Checkpoint so as to not impact on the operations of the Vehicle Security Check Point*
- *Salle Port which enables secure transfer of pre-sealed or x-rayed material from a vehicle which is not permitted entry through the secure perimeter to a secure vehicle or trolley which is generally permanently located within the secure perimeter.*

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3.3.3 Athlete Transport Mall

3.3.3.1 General Description

The Athlete Transport Mall is the primary transport facility for Athletes and Officials. All bus transport to and from the competition and training Games village sites will be facilitated at this location.

3.3.3.2 Location

The Athlete Transport Mall should be located adjacent to the Residential Zone to allow direct and efficient access for Athletes and Officials. It should be well connected to the primary road network linking the Village to the competition and training sites. Consideration should be given to locating the Main Dining Hall in close proximity to the Transport Mall if possible.

Transport Mall is provided at the end of pedestrian spine so that it is well connected to the key zones & residential area. The Bund road on west is dedicated to athletes transportation from Village to the city & is connected to the transport mall.

3.3.3.3 Design Considerations

The following additional issues should be considered in the design of the Athlete Transport Mall:

- The Transport Mall must be large enough to accommodate the movement and manoeuvring of large buses.
- Separation between buses and pedestrians is a priority and pedestrian crossings where bus movements occur should be avoided if possible.
- A Vehicle Check Point will be required at the entrance to the Athlete Transport Mall. Dependent on the security policy implemented, this may be an accreditation check.
- An ACP will be required into the Residential Zone for residents. The number of magnetometers should be considered relative to the peak demands of the residents to allow for efficient access into the Village.
- An additional gate access to the Residential Zone maybe required for special circumstances (e.g. dignitary visits, emergency vehicle access, Ceremonies loading/unloading).
- The Transport Mall must operate 24 hours a day. The Transport Mall should be able to handle approximately 1000 people per hour at peak time.
- The number of bus load zones within the Transport Mall will be based on the number of competition and training Games village sites, frequency of services and to some degree the design and layout of the terminal. It is recommended that a minimum of 20 bus load zones be accommodated within the Transport Mall.
- All areas of the Transport Mall shall be accessible to people with a disability.
- The design of the Transport Mall should ensure appropriate:
 - Street lighting;
 - Seating/benches;
 - Shelter;
 - Signage and Wayfinding; and
 - Look of the Games.

- *Transport office/control centre*

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The number of load zones will also be dependant on the distance of the Village to the Training Venues

The number of load zones will also depend on the accessibility and acceptability of public transport for the athletes access in non-competition or training mode to venues and city sites

The number of load zones will also be dependant on the final resolution of airport operations and associated athlete accreditation processes

Temporary Bus load zones can be created on occasion like opening and closing ceremony; rather than designed an oversize transport mall for the rest of the games.

3.3.3.4 Armoury

Subject to final OC policy on this issue, an Armoury shall be located within or near to the Transport mall in order to store the guns for shooting competitors. It must be outside of the secure perimeter of the Village, but fully secured 24 hours/day. These guns will be transferred to the Shooting venue by the individual Athletes, where they will be stored for the duration of the Shooting competition programme.

The Armoury location should be adjacent to the Village Accreditation Centre.

3.3.4 Village Accreditation Centre

3.3.4.1 General Description

The Village Accreditation Centre is the facility where Athletes and Officials will obtain their accreditation for the Games and where luggage and personal items are security screened prior to entering the Village and being transported to their accommodation.

The following facilities will be located within the Village Accreditation Centre:

- Athlete Load Zone (external to Village secure perimeter);
- Baggage and Personnel Screening;
- Accreditation Facilities;
- CGA Delegation Registration Centre;
- Male and Female Toilets;
- Logistics Area for Baggage and Freight;
- Left Luggage Area;
- Access Control Point; and
- Athlete Load Zone (within Village secure perimeter).

- *Waiting Area*
- *Accreditation Offices*
- *Problem Resolution Desk*
- *Staff Break-room*

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One option that should be considered in regards to the Accreditation Centre is its potential use (or part use) as an Airline Check-In Terminal for departing delegation members. This option can be made possible as the use of the space as an arrivals Accreditation Centre towards the end of the Games becomes redundant. The Accreditation Centre will have all the baggage security checking equipment that is required for an airport and early check in of airline baggage and passengers may alleviate much of the pressure on the airport operations.

3.3.4.2 Location

The Village Accreditation should be located at the perimeter of the Village so that once security screened and accredited, residents can enter directly into the Residential Zone of the Village. Ideally this facility would be located adjacent to the Logistics and Technology Centre to utilize effectively shared resources (e.g. security staff, x-ray machines, etc.).

The Village Accreditation Centre is required to be adjacent to the Transport Mall.

3.3.4.3 Design Considerations

The following general issues should be considered in the design of the Village Accreditation Centre:

- Appropriate power and data should be provided for all areas of the Village Accreditation Centre.
- X-ray areas suitable for large amounts of luggage and equipment screening
- Adequate floor support for heavy duty, high load x-ray equipment
- Air-conditioning, particularly in regards to the requirements of equipment
- CCTV and Televisions

The design considerations for the Accreditation Centre will be influenced by the Organising Committee's operational decisions. Some previous Games have provided an accreditation facility outside the Village, for example at the airport, which has reduced the load on the Village Accreditation Centre which would then only have to cater for overland arrivals.

3.3.4.4 Baggage and Personnel Screening

- The baggage and personnel screening area should be located at the main entry to the Village Accreditation Centre. The number of x-ray machines and magnetometers should be based on the peak arrival numbers. It is anticipated that a minimum of 2 x-ray machines and 2 magnetometers should be provided in this area appropriate space for queuing at the main entry to the facility should be allowed.

- The number of x-ray machines will ultimately depend on the predicted arrival schedules of the delegation teams. If the arrivals times are concentrated in a short period more than 2 x-ray machines and 2 magnetometers may be required. If many teams (particularly ones that are attending pre-Games training in India) arrive by buses spread out over a longer period of time than 2 x-ray machines and 2 magnetometers would be sufficient.

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3.3.4.5 Accreditation Facilities

Accreditation facilities will be required within the Accreditation Centre to validate accreditation passes (if issued prior to the Games) and to resolve accreditation problems and issue accreditation passes. The following facilities should be provided:

- Approximately 5 desks will be required for Accreditation validation, with space for queuing. This area should be located after the security screening area.
- Approximately 15 desks will be required for problem resolution, with appropriate space for queuing and a small waiting area. This area should be located adjacent to the accreditation validation area but not in a location which will disrupt flows through this area.
- All accreditation facilities should have adequate power and data, and be linked to the Games Accreditation system.

3.3.4.6 CGA Delegation Registration Centre

The CGA Delegation Registration Centre is the location where all Athletes and Officials will officially be registered for the Games, and where Village Management will undertake allotment of spaces and confirm rate Card and Technology requirements. The following facilities should be accommodated within the CGA Delegation Registration Centre:

- 3 to 4 Meeting rooms capable of holding between 8 and 20 people each;
- Sport Entries Office;
- Village Allotment Office; and
- Waiting area for up to 100 Athletes and Officials.
- Accreditation issues office

The CGA Delegation Registration Centre should be located within the Village Accreditation Centre, but in a separate area after the completion of the security screening and accreditation process.

Technically the delegation, although through the security screening and accreditation process, cannot enter the Village until successfully completing the CGA Delegation Registration process.

Residential Key Distribution – careful consideration needs to be given to the keying system chosen for the residential units. Decisions on whether standard metal keys or digital cards are issued will have significant impact on the construction of the room doors and the key management system.

3.3.5 CGA Parking

3.3.5.1 General Description

The CGAs will have dedicated cars for their personal use. Parking areas are required for these cars at the Village.

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3.3.5.2 *Location*

The CGA parking should be in close proximity to the Residential Zone and convenient to an Access Control Point. This area should be separate to the Athlete Transport mall, though could be adjacent if there is no conflict with bus movements.

3.3.5.3 *Design Considerations*

The following issues should be considered in the design of the CGA Parking Area:

- CGA Parking should consist of 300 numbered spaces, and should be within a fenced area.
- The car park will operate 24 hours and should have appropriate lighting.
- The CGA Parking should be of a hard surface (e.g. Bitumen).
- A VCP is required on entry to the car park and an ACP will be required for pedestrians entering the Village from this area.
- Appropriate separation between vehicles and pedestrians should be considered in the design.
- The CGA Parking area shall be wheelchair accessible.

3.3.6 **Village Motor Pool**

3.3.6.1 *General Description*

The Village Motor Pool is a support facility for all vehicles operating at the Village. The Motor Pool should incorporate the following areas:

- Vehicle holding area and parking;
- Vehicle maintenance area;
- Vehicle Cleaning (can be done off site);
- Re-fuelling area for vehicles;
- Driver lounge and break area;
- Athlete system holding area (buses); and
- Security escort vehicle area (If required).

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3.3.7 Village Operations Centre

3.3.7.1 General Description

The Village Operations Centre will accommodate all management offices for the Village 'Back of House' administration facilities. The Village Operations Centre will coordinate all Village operations, administration and procedures. Communication throughout the Village will be controlled from this location. The Village Operations Centre will accommodate the following areas:

- Mayors Office;
- Village Management Work Area;
- Village Communications Centre;
- Meeting Rooms;
- Food Services Operations Office;
- Transport Operations Office; and
- Male and Female Toilets.

- Finance Office

3.3.7.2 Location

The Village Operations Centre can be located in either the International Zone or the Residential Zone. The location of the Village Operations Centre should allow for direct and efficient access to all areas of the Village.

3.3.7.3 Mayors Office

An office for the Village Mayor shall be provided. This should be designed with space and facilities adequate for the Village Mayor to conduct one-on-one meetings and receive Guests.

As it is recommended that a "Mayor's Office" be located at the Main Entrance associated with the "Protocol Office" it is more likely that this office will function more as a Village General Manager Office.

3.3.7.4 Village Management Work Area

A Village Management Work Area shall be provided. The scope and layout of this room will depend on the Organising Committee Operations Plan. From previous experience, this contains:

- A reception area;
- Workspace providing hot desks for Functional Area managers;
- A resources area; and
- A Village Venue Managers Office.

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3.3.7.5 *Village Communications Centre*

A Village Communications Centre (VCC) shall be provided. This is the communications centre for the venue, where all radio traffic is managed. It shall be a separate room located next to, but at least close to, the Village Management Work Area. The room should have acoustic privacy and provision for communications equipment to be easily installed. This includes power and cable pathways.

The scope and layout of this room will depend on the Organising Committee Operations Plan.

3.3.7.6 *Meeting Room*

Two meeting rooms shall be provided for use by the functional managers at the venue and for general venue operations briefings. One meeting room shall be provided for up to 10 people, and one shall be provided for up to 20 people.

3.3.7.7 *Food Services Operations Office*

Office accommodation and facilities shall be provided. This shall include be a work area for the Food Services Operations staff, preferably an open plan office. Access to a meeting/briefing area is required, which can be shared.

3.3.7.8 *Transport Operations Office*

Office accommodation and facilities shall be provided. This shall include be a work area for the Transport Operations staff, preferably an open plan office. Access to a meeting/briefing area is required, which can be shared.

3.3.7.9 *Finance Office*

Office and accommodation and facilities shall be provided. This shall be a work area for the Finance Operations staff, preferably an open plan office. Access to a meeting/briefing area is required, which can be shared.

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3.3.8 Security Command Centre

3.3.8.1 General Description

The Security Command Centre will be the focus for security operations within the Village. The Security Command Centre will generally accommodate all security personnel required within the Village (Police, Special Services etc.) and coordinate their activities within the Village. Operations undertaken by Security Personnel will include:

- Maintaining the Secure Perimeter of the Village;
- Security screening at VCPs and ACPs;
- Security Screening of Goods Deliveries at Logistics Centre;
- Asset protection;
- Bomb disposal and major incident coordination; and
- Law enforcement within the Village.

The following areas/spaces should be provided within the Security Command Centre:

- Security Commander Office;
- Security Work Area;
- Briefing room (could potentially utilise Chefs Meeting Hall if conveniently located);
- CCTV Monitors;
- Staff Break Area;
- Communication Command Desk;
- Armoury Vault (if required);
- Holding Cells (if required); and
- Parking space for vehicles, bikes, etc.

- *Toilets, change rooms, showers*

3.3.8.2 Location

The Security Command Centre should be located in a secluded area of the Residential Zone, or within the Operational Zone. If possible, this facility should be located in close proximity to the Village Management Centre.

This facility should be placed on the secure perimeter of the Village.

3.3.8.3 Design Considerations

The following additional issues should be considered in the design of the Security Command Centre:

- The location and layout of the Security Command Centre should facilitate efficient and direct access to all zones within the Village.
- The size and layout of the Security Command Centre will depend on number and type of security personnel in the Village. Minimum staff requirements will be approximately 40 people per shift and can be as many as 100 per shift depending on law enforcement needs.
- Consideration should be given to co-locating other emergency services in this area, including Fire Services vehicles etc. This may increase the space requirements.

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- *Parking for vehicles including fire trucks*

3.3.9 Logistics and Technology Centre

3.3.9.1 General Description

The Logistics and Technology Centre is the key facility accommodating 'back of house' Village operations. These operations will include the delivery and storage of goods, material security screening, Village maintenance and technology operations and storage. The following facilities will be located in this area:

Logistics Centre

and transfer

An efficient, effective and secure system for the receipt, storage distribution, collection and issue of goods shall be provided. This shall include, but not necessarily be limited to:

- A Logistics Centre including:
 - Vehicle Screening Area;
 - Vehicle Staging Area and Loading Dock(s);
 - Logistics Warehouse (Equipment, Catering, Housekeeping Supplies, CGA Freight and FF&E);
 - An office for the Logistics staff and contractors;
 - Storage for material handling equipment and vehicles;
 - Access to toilets. These could be shared with other BOH areas;
 - Dedicated contractor storage and possible workshop/repair facilities; and
 - Satellite storage if necessary.
- *Materials Transfer Area*
- *Salle Port*
- *ACP*
- *Large Vehicle Parking*

This area shall be securely fenced, level and trafficable in wet weather by large vehicles.

Adequate, efficient and conveniently located storage facilities shall be provided for all material and equipment, including technical equipment required for the Commonwealth Games, in addition to that mentioned in other sections. This includes both general and dedicated storage. Temporary storage of Commonwealth Games equipment should be provided, from prior to their first use until after the Games.

The extent of Logistics facilities at the Games Village will depend on the Organising Committee policy in relation to:

- Centralised or localised storage and distribution;
- Security requirements for pre-checking or venue checking of deliveries; and
- Movement of goods whilst the Games Village is occupied.

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Technology Centre

A Technology Centre shall be provided to accommodate key operational and storage areas required for the effective operation of the Games Village. This centre will include:

- Technology Management Office
- Technology Work Area
- Communications Equipment Room
- Technology Warehouse (Storage for Computers, Faxes, Copiers, etc.);

3.3.9.2 Location

The Logistics and Technology Centre should be located at the perimeter of the Operational Zone of the Village and well connected to the adjacent primary road network. Within the Village this zone should be linked to 'back of house' areas for the major facilities in the International and Residential Zones, including the Main Dining Hall and Commercial Zone.

The Logistics Centre shall be located so as to allow discrete access to the BOH of these areas and zones.

The Logistics Centre requires direct access to the internal Village vehicle circulation route.

3.3.9.3 Design Considerations

The following additional issues should be considered in the design of the Logistics and Technology Centre:

- The Logistics Centre for a Village operates throughout the night and can generate significant noise and disturbance. It should not therefore be located in close proximity to the Residential Accommodation.
- Loading areas should be clearly marked and appropriately sized for large vehicle manoeuvring for large vehicles.
- All items entering the Village will need to be security screened and therefore appropriate space is required at the Vehicle Check Point. A specific x-ray machine will be required within this VCP suitable for the screening of goods.
- Pedestrian and vehicle movements should be kept separate within the Logistics and Technology Centre.
- Ground surfaces should be solid and where needed reinforced to accommodate large vehicles.
- *Vehicle parking areas and turning circles, particularly for large vehicles.*

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3.3.10 Cleaning and Waste Compound

An efficient and effective system shall be provided for the collection, storage and removal of waste, including recycling. This shall include:

- A Waste Compound including:
 - An office for the waste management staff and contractors (can be shared with cleaning);
 - Storage for waste and recycling containers, including a compactor if required;
 - Storage for equipment and vehicles; and
 - A Vehicle Staging Area to accommodate large vehicles. This could be shared with other compounds.
- Access to toilets. These could be shared with other compounds; and
- Waste bins distributed around the venue.

The compound shall be securely fenced, level and trafficable in wet weather by large vehicles.

The Waste Management system shall include the following features:

- All collection and storage provisions should be protected from sun and rain;
 - Collection bins should be located in convenient and visible positions, but should not interfere with circulation, and should be easy to empty and clean;
 - Storage should provide hygienic and easily cleaned conditions with refrigeration if necessary;
 - Storage should make efficient use of space, such as the use of compactors;
 - Recycling containers should be colour coded and clearly identified on all visible sides;
 - The system should allow for the efficient and effective collection of waste that is not put into collection containers, such as garbage chutes; and
 - Recycling provisions should be in accordance with the Environmental Strategy developed for the project. Due consideration should be paid to current Delhi government programs in this area.
- *Bin Washing Area*

The extent of Waste Management facilities at the Games Village will depend on the Organising Committee policy.

In addition to the above provisions a dedicated "Dog Soiling and Exercise Area" should be provided within the International Zone for Residents or Visitors with guide dogs. This area should be grassed and have a dog waste bag dispenser and a dog waste bin.

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3.3.11 Workforce Centre

3.3.11.1 General Description

A Workforce Centre should be provided within the Operational Zone of the Village. This facility will include staff check in and check-out functions (primarily for volunteers) and an information point for all staff issues within the Village. The Workforce Centre should consist of:

- Workforce Check-In Facility;
- Workforce Office;
- Workforce Briefing; and
- Workforce Change Rooms.

The size of the Workforce Centre will depend on the number of workforce per shift and the time control mechanism put in place by management.

3.3.11.2 Location

The Workforce Centre should be at or near the Workforce Entrance to the Village. The location of the Workforce Centre should easily facilitate Workforce movement from this location to other areas of the Village. It should also be convenient to public transport, as the majority of Workforce will travel to the Village utilizing this mode of transport.

The Workforce Entrance should be separate to the Main Entry

3.3.11.3 Workforce Check-In

Suitable accommodation, facilities, services and equipment shall be provided to allow all staff, volunteers and contractors, to check-in at the start of the shift. This shall be located close to the workforce entry. Cloak Room facilities shall be provided at the Workforce Check-In area

3.3.11.4 Workforce Office

Suitable accommodation, facilities, services and equipment shall be provided for the management and administration of the workforce at the venue. This shall be located as part of, or close to, the Workforce Check-In.

3.3.11.5 Workforce Briefing

Suitable accommodation, facilities, services and equipment shall be provided to allow all staff, volunteers and contractors, to be briefed at the start of the shift, or at other necessary times. This shall be located in the Back of House area, accessible by all staff.

The area shall contain a room, preferably with a counter, to store and distribute equipment to Event Services staff.

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3.3.11.6 Workforce Change Rooms

A minimum of two change rooms shall be provided. The size and configuration of each change room should accommodate up to 25 people at any one time. Facilities shall include:

- Seating or benching; and
- Showers, toilets and hand basins.

3.3.11.7 Workforce Satellite Break Areas

Workforce lounges shall be provided for Workforce to rest. These should be located in each zone of the Village and provide accommodation for 40-50 people at any one time. This shall provide a comfortable atmosphere with facilities for light snacks and tea/coffee to be served.

3.3.12 Workforce Dining Hall

3.3.12.1 General Description

All Workforce in the Village are entitled to eat meals at the Workforce Dining Hall. The facility should cater for 300 - 500 people at any one time.

In addition to the Workforce Dining Hall, additional Workforce 'break' areas should be developed throughout the Village. These areas should be fitted with vending machines, tables and chairs.

3.3.12.2 Location

Ideally the Workforce Dining Hall would be situated adjacent to the Main Dining Hall to share facilities and infrastructure and reduce operational costs. However, the design of the facility shall ensure that access to the Workforce Dining Hall is through the International Zone, as not all Workforce will be accredited with access to the Residential Zone.

Further discussion should be held with the Organising Committee to clarify access restrictions for Workforce. In some previous Games there has been no distinction for Workforce accreditation to International Zone and Residential Zone.

3.3.12.3 Design Considerations

The following additional issues should be considered in the design of the Workforce Dining Hall:

- If food preparation areas are shared with the Main Dining Hall, serveries will be required for hot and cold food rather than cooking stations.
- Toilets should be provided at the Workforce Dining Hall.

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3.3.13 Housekeeping

3.3.13.1 *General Description*

Housekeeping will be provided to all residential buildings, public areas, and recreational and commercial facilities. A central Housekeeping facility should be provided within the Operational Zone. This facility should stock extra pillows, blankets, linen and towels. These items can be requested at Resident Centres. Housekeeping facilities will consist of:

- Central Housekeeping Facility; and
- Satellite Housekeeping Storage (at Resident Centres).

3.3.13.2 *Location*

The Central Housekeeping facility should be ideally located with Village Operations Centre. Satellite storage areas and smaller offices should be located within the Residential Buildings and / or at the Resident Centres.

3.3.13.3 *Design Considerations*

The following additional issues should be considered in the design of the Central Housekeeping Facility:

- Adequate facilities shall be provided for dry storage of all housekeeping items; and
- The Central Housekeeping Facility should be well connected to Residential Units, and located in a BOH area in close proximity to the Logistics Warehouse. It will also require large vehicle access.

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Section 4

4 CONCEPT PLANNING

4.1 BACKGROUND

Detailed site studies have been carried out with respect to its location, existing physical features, availability of services, traffic and transportation, surrounding environments including the adjoining Akshardham Temple, Noise levels etc.

The functional requirements of the Village given by EKS/ Organizing Committee have been studied in great detail. Based on these studies and interactions with the various concerned authorities the concept Master Plan has been developed which is enclosed as Appendix 'B'.

4.2 PLANNING PRINCIPLES & CONCEPT PLAN

4.2.1 General

The Master Plan has been developed considering the site levels, functional requirements, historical linkage with the city, its interface with the Akshardham Temple and the River Yamuna.

4.2.2. Planning Principles

The planning principles mentioned above and in the Venue Brief have generally been followed and the facilities have been so arranged to make the plan more effective and efficient.

4.2.3 Games Village Zoning

The Game Village have been developed into three distinct zones i.e. Residential, International and Operational as shown in the zoning plan enclosed as Appendix 'A'. Each zone had been provided with a separate and discreet access and contains distinct facilities as mentioned in the Brief of Functional requirements.

4.2.4 Urban Design

Delhi is known for its Mughal architecture and plan organization of the exotica of the old and the splendid urban civility of New Delhi precinct.

The development of Commonwealth Games Village draws attention to such elements, in particular to focus its composition form on the India Gate and National Stadium is one geographic inter-section and Humayun's tomb, also on the west bank of Yamuna river, the

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other one other generating axis is the relatively new emphasis on the Village site created by Akshardham Temple on the Noida link road.

The first two axis reach out from the plan form to connect into the city. The third cut into the plan form to find the Temple as a key focusing influence within the precinct. Unrelated to these Vectors a fourth open space corridor has been envisaged to bisect the Village plan at an angle which orients towards the north, this appears as an Urban street connecting both section of the land available for the Village. As a connector it enables both the residential/ commercial sites on the south to engage with the recreational areas further north.

Three main entries to the Village have been provided. The main entry for the athletes is from NH24 to Bund road which leads to the transport mall. The other two entries are from Noida Link road. One is for the VIP, Media and Guest etc. and the other is for the services i.e. power, sewerage and water treatment, facilities etc. and the police station. Extensive landscaping is proposed to enhance the image of the Village and to observe any offensive work of the services.

Street lighting and lighting of public spaces have been thought fully planned through out the Village to provide safe environment and utilization of the site at all times at the same time quite functional and aesthetic. Certain feature lighting has also been included to enhance the visual experience of the Games Village. Well defined gateways in Indian Architectural style depicting the sports environs have been planned on all the three entries to give distinctive character to the Village.

4.2.5 Site Boundaries

The site boundaries have been marked as per the actual site survey provided by DDA.

4.2.6 Secure Perimeter

Two levels of secure fences have been provided after discussion with the Police authorities. The outer perimeter fence forms the accredited zone where the entry of all vehicles and pedestrians is by permit check and an inner fence forming the secure perimeter of the Village with entry of all vehicles and pedestrians subject to full security check. In addition to this a number of check points at key access points have also been provided. The location of the fences and security check points is as shown in the plan attached as Appendix 'C'.

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4.2.7 Adjacent Sites

4.2.7.1 Akshardham Temple

Akshardham Temple is more of a monument than a temple. Due importance has been given to the temple in the development of the concept design. The layout of the Village have been so planned so as to capture the vista of the Temple Dome within the Village as well as to link it with the city to enhance the experience of the residents and visitors. Building heights have been so planned so that the temple remains as a prominent feature of the area.

The temple traffic has been segregated from the Village traffic to avoid any conflict and maintain security.

4.2.7.2 Railway

A properly designed sound barrier has been planned between the elevated railway track and the Village to achieve sound attenuation and to minimize noise mitigation into the Village site. All the services have been planned along the railway line to help maintain security and to act as a buffer between the railway line and the Village.

4.2.7.3 Noida Link Road

A metro (MRTS) link is proposed on the Noida link road side. Two entries have been proposed on this side for proper management of traffic. The improvement of intersections of Noida Link road and NH24 has also been taken up by DDA.

4.2.7.4 National Highway 24

The athlete's entry has been provided from this road and a flyover has been proposed on this road to facilitate the bus movements.

4.2.7.5 Internal Roads

An internal North South Boulevard has been provided which provide easy access to operational zone and training areas. Necessary arrangement for sound attenuation from operational zone to residential zone has been done by proper landscaping etc.

4.2.7.6 Site Utilities

All the site utilities have been planned on the northern side along the railway track and separate access to these facilitates from the Noida Link road have been provided, outside the secure

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perimeter of the Games Village, but within the accredited zone. Separate check points have also been provided near the entry to the facilities. These are located on the extreme edge of the site and have been segregated by access road and intense landscape is provided to obscure from noise and to avoid any offensive look.

4.2.7.7 Proposed Police Station

The site for the police station has been provided after consultations with the police authorities in the accredited zone adjoining the site for services.

4.2.7.8 Proposed Hospital

It has been decided by DDA that only a polyclinic will be provided in lieu of a 50 bed Hospital. This polyclinic is located in the residential area for convenient use of the occupants and shall be most likely retained for post games legacy use.

4.2.8 Separation of Constituent Groups

Separation of Athletes and officials from all other guests and constituents within the Village precinct has been ensured by providing separate zone for them as shown in the zoning plan enclosed as Appendix 'A'.

4.2.9 Site Access

4.2.9.1 General

All the three access provided for the game Village have been designed to accommodate the vehicle movements in an efficient and effective manner. Transport studies have been undertaken by DDA and Fly over on the intersection of Noida link road and NH –24 as well as on intersection of NH24 and Bund road have been proposed.

4.2.9.2 Athletes and Team Officials

A Transport mall with dedicated parking area of 40 buses accessible by bund road from NH24 has been provided which also provides direct access to residential zone.

4.2.9.3 Games Family/Media/Guest Access

Separate entry for Guest / Media/ Games Family along with security check point has been provided from Noida link road. Another security check point have also been provided for access to international zone..

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4.2.9.4 Operations

A separate entry, from the Noida link road discreet from the Residential Zone has been provided exclusively for all logistics and service vehicles entering the Games Village. Adequate provision has been made for security screening of the vehicles and also proper space for large vehicles for exiting the Village.

4.2.9.5 Games Workforce

A properly designed walk way has been planned from the service entry to the operation zone for the pedestrian access to the Village arriving by Metro / Buses. A walkway from Metro station and Bus Terminal to the entry point has also been planned.

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Section 5

5 BUILDING SERVICES

Please see the detailed sections on Building services

5.1 GENERAL REQUIREMENTS

The requirements in the Venue Brief will be fulfilled and also requirements as per codes shall be met with.

5.1.1 Connection to Utilities

The line departments like the Delhi Jal Board (DJB), BSES Rajdhani etc shall undertake the development of the Sewage Treatment Plant, Water treatment plant and the 66 KVA Electric Sub Station. Area is already provided for these utilities in the Proposed Master Plan of the Commonwealth Games Village.

5.1.2 Services Reticulation

The connections between the above utilities and the zones in the Commonwealth Games Village shall be worked out as per the requirements of the venue Brief and applicable codes.

5.1.3 Coordination and Access

Adequate access shall be provides for easy inspection and maintenance of the Utilities.

5.1.4 Sensitivity to Architectural Features and Adjacent Uses

All care shall be taken not to obstruct the view and all sensitivity to the Architectural form and urban design shall be maintained.

5.1.5 Flexibility in Design

The Services shall be designed keeping in view the legacy requirements of the site and at the same time fulfilling the Games mode requirements.

5.2 STRUCTURAL

5.2.1 General

The Commonwealth Games Village in Delhi consists of a mix of permanent and temporary structures. The temporary & permanent structures for the are enlisted below:

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Temporary Structures

1. *Dinning Area (7000sqm)*
2. *Village Operational Center (23400sqm)*
3. *Players Recreational Area*
4. *Players Commercial Recreational Area*
5. *Village Media Center*
6. *Transport Hall*

These may be constructed of steel, concrete, pre-engineering and membrane structures and timber .Their purpose is to provide facilities to the players during the duration of the games and be de-assembled and be reconstructed at any other places or being salvaged.

Pre-engineering structures

These are developed to the requirement of the client /architect in cold rolled member, in work high strength Bolt & nuts. The system can be erected in short time and dismantled .In addition, other factors like fire preventive must be taken. All cutting, punching and forming may be performed at the factory. Shop welding is possible with "General Specifications for Welding"

Surface structure

It can be made from a suitable material having a very small thickness compared to other dimensions. It may be a material very flexible & can be taken in the form of air inflated structure.

Permanent Structures

1. *Residential Zone*
2. *Swimming pool*
3. *Running Track*
4. *Change Room, Halls*
5. *Police Station*

Permanent structure may be constructed of steel, concrete, Pre-stressed or composite structure. Concrete is a non homogeneous, composite material that consists of concrete and steel and reinforcement and is fairly popular in the capital to resist pollution, fire and carbonation.

The permanent structures shall be checked for excessive crack width, undesirable vibration special limit states, failure or damages due to abnormal condition or abnormal loading such as in extreme earthquake structural effects of fire explosion or vehicular collision .

Progressive collapse is prevented by correct structural detailing to tie the structure together & to provide on alternates load path in case of localized failure.

Process of Construction

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In order to build temporary or permanent structure after having the final layout of Mechanical & Electrical of structure design should satisfy the following six major criteria :

- 1. Appropriateness : The arrangement of spaces ,spans ,height & traffic flow, must complement the intended use.*
- 2. Economy: The overall cost shall not be exceed the clients budget. The cost of different alternatives be compared selected system.*
- 3. Structural Adequacy: The structure must be strong to support safely all Dead loads, Live loads and Imposed loads and any other anticipated load.*
- 4 Serviceability :Structure must not deflect, tilt& vibrate or crack beyond tolerable limits.*
- 5: Maintenance: It should require a minimum maintenance & be able to be maintain in simple manner*
- 6. Design criteria : In above Criteria should be fulfilled by understanding Client priorities & needs.*

5.2.2 Structural Loading

The following criteria shall be used.

(LIVE LOADS)

	kN/m ² (IS:875)	kN/m ² (EKS)
Dining	3.0	—
Operational centre	3.5	3.0
Players Recreational Area	3.0	—
Village Media centre	4.0	—
Transport Hall	5.0	7.5

Permanent Structure

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Swimming pool	—	—
Running Track	—	—
Change Room Hall	4.0	—
Police Station	3.0	—

5.2.3 Seismic Loads

Delhi is in seismic zone four (Z - 0.24) as per Indian code IS: 1893

5.2.4 Crowd Loads

500 kg/sqm (Live Load) shall be assumed.

5.2.5 Foundations

Temporary - Ground modification strip foundation

Permanent - Raft & Piles

5.2.6 Concrete

Concrete types used shall be are plain ,Reinforced & Pre-stressed, accordingly the Grade may be M20 , M25, M30 ,M35 (Design Mix)

5.2.7 Reinforcement

The Reinforcement shall be any of the following conforming to be accepted standard (As per National Building Code of India 2005)

- a) Mild steel and medium tensile steel bar.*
- b) High Strength deformed steel bar.*
- c) Hard drawn steel wire fabric.*
- d) Grade A of structural steel.*

5.2.8 Joints

May be Construction joints, Control joints & Expansion joints as per building and codal requirements.

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5.2.9 Structural Steel

All structural steel shall be as per IS: 800 (240, 250 MPa) & High Strength Steel.

5.2.10 Cladding

Shall be as specified in the brief and detailed architectural requirements

5.2.11 Masonry

All Partition walls, Cavity walls, Curtain walls & Bearing walls shall conform to IS:1905 specifications.

5.2.12 Ladders, Platforms, Stairs and Hand Rails

The following criteria shall be adopted

- a) In Ladder Platform & Staircase - Live Load 400kg/sqm (ISI)
Live Load 400kg/sqm (EKS)
- b) Staircase & Balconies, Hand Rail - 0.75 MPa (ISI) Lateral Force.
- c) Parapets & Balustrades in Assembly - 2.25 MPa (ISI) place of entertainment

5.2.13 Temporary Structures

Please refer to 5.2.1 where in details are provided.

5.3 CIVIL

5.3.1 General

The design setup of Civil work will be carried out as long term and not just for a short period of games, before or short after.

While all roads, pathways, earth works, storm water are the main constituents, however all related work / miscellaneous work in connection with CWG will be taken care off during design staff as per DDA's directions.

Effective Road hard surfaces & storm water drainage will be designed to ensure "No water retention on roads" & thus free flow of pedestrian or vehicular traffic. The events being world class, all the areas temporary / permanent can not be differentiated but will be designed for all season's events.

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5.3.2 Earthworks

To the extent possible, cut & fill operations will be balanced to avoid stock piling. Consideration will be made to dispose off the balance /residue economically

5.3.3 Roads and Hardstand Areas

All the roads & hard standing areas will be designed for life span, and will be sealed. The capacity will take care of loading due to buses / trucks / cars & any other general loading. Pedestrian Pathway will be provided to ensure safe movement of Pedestrians. Emergency access from the village complex can be carried out through a road network, connected with existing roads nearby. This network will facilitate free movement of traffic as well as pedestrians.

All permanent roads will be designed to comply all the basic needs and special needs of CWG, as specified in the 2010 Delhi venue brief.

The roads will be designed wide enough to allow two way movement of traffic in addition to pedestrian foot path. The inter sections will allow free movement of traffic. The road and hard standing will allow adequate slope for storm / surface water & cross fall on road pavement shall be 3% and minimum grade on hard standing area shall be 0.5%. All external and important roads will be designed for a minimum traffic loading of 5×10^6 ESAs and other internal roads for minimum traffic loading of 2×10^5 ESA or more. Car park and hard stand areas will be designed for a minimum traffic loading of 5×10^4 ESAs.

In case of any discrepancy / confusion, directions from DDA will be followed.

5.3.4 Kerbs

Concrete kerbs will be provided on all hard standings and roads.

5.3.5 Footpaths

Footpaths of adequate size shall be designed for free movement of pedestrian all along the CWG.

5.3.6 Line Marking

Line marking on Roads / Hard standing with proper colour paint and as per standards will be made.

5.3.7 Signposting

Signposting colours & height and locations will be designed to meet the CWG requirement and will be discussed with DDA / other important Agency, prior to finalization.

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5.3.8 Safety Barriers and Road Furniture

Safely barriers for vehicular / pedestrian safety will be designed in consultation with authorities, and to local design standards. The suitable location and numbers will be concluded after discussion with DDA. Road furniture is to be procured by DDA / Games Village Authorities as we are not fully aware, what sort of furniture is desired. Or if requirement is clearly stated, the same can be included in the design.

5.3.9 Services Corridor

As per the Master Plan a dedicated services corridor shall be provided for services.

5.3.10 Surface Water Drainage

Storm water runoff will be collected in surface water drain and will be used for ground water harvesting, to the extent possible. Overflow of the same from harvesting pit will be discharged into the nearest existing drain / external authority surface water drainage system.

Adequate number of pits will be provided for maintenance and cleaning and drainage covers will be able to withstand the load of vehicular movement.

The invert level & capacity of existing drain will be duly considered during design stage of new drain. The new drain network will be designed to meet the average rain fall in this area. In case, existing near by drain is not capable to take away discharge of thus area, the matter will be discussed with local authorities, to enhance the capacity of the existing drain / make arrangement of alternate drain.

All this is essential to ensure free pedestrian as well as vehicular movement in the village complex.

5.3.11 Drainage Pipe work

The drainage pipe work will be suitably designed to cater to the drainage need of the village complex. The scheme has been explained in return brief of section 5.9.12, 5.9.14.

5.4 ELECTRICAL POWER

5.4.1 General

As discussed in meetings, BSES has confirmed that at least two sources of power supply will be made available at common wealth games Village complex. To ensure reliability, the substation

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will be constructed in the Village complex area itself. This will not only provide reliability in terms of availability of the power, but in terms of quality of power as well.

The circuit breakers in the system will be VCBs, which are most reliable, free from Breakdown and almost maintenance free. Spare circuit breaker/breakers will be made available in the system to upgrade, if needed, and also can be used in case of breakdown of any other circuit Breaker.

Electrical services will include from 11KV system to 415 V / 230 Volts, 3 phase / single phase as per the requirement of all areas. The system will provide complete H.T/L.T system, switch boards, metering, wiring with conduit/open depending upon if the building is permanent / temporary. The wiring / power supply will be available in all the offices / canteen, swimming pool & other areas, directly / conveniently & safely to be used by occupants.

UPS of adequate capacity will be provided for EPABX & other essential security systems. Power points will be provided, for public address systems / security. Distribution board will also cater to the requirement of providing power to broad casting equipments / Tel. exchange etc.

Power factor correction capacitors will be considered in the design to ensure automatic power factor correction to 0.97. General lighting / Flood Lighting/ Security Lighting / Architectural Lighting / Emergency /Exit Lighting is considered in the design.

World standard lightning protection are available in the country now & we have access to this technology. The same will be provided for these prestigious events. To ensure safety of man / machine / equipments, adequate number of earth pits will be considered. The chemical earth pits are most relievable having over 25 years of life, with practically no maintenance.

We have considered four Nos. generators of 1500 KVA each to meet the Village complex requirement, except the residential / hotel area. This requirement will be met by an independent agency. The generators will be silent generators, with full canopy and least noise level. The generators will be put on auto switching to avoid power interruption / minimize power interruption.

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The events, being world class, cable path ways normally will be through cable trenches to the extent possible. Over head structure is not being considered for the same.

5.4.2 Standards and Requirements

Requirement of DDA/CGF/NBC & BS/IS (Latest standards) will be followed including rules / regulations of BSES & local authorities will be followed all through.

Requirement of Host Broad Caster for common wealth games 2010, TRA1, IEEE are not available with us., and would request concerned authorities to provide the same, so that any special requirements are taken care of in the design.

5.4.3 Coordination

Coordination of various activities in any project are the essential feature for the quality and success of the project. The co-ordination will be done with all agencies involved in the project design / execution at all stages.

5.4.4 Electrical Power Supply Strategy

As already explained in 5.4.1, two separate HT source will be available with adequate capacity DGs back up and DBs to key technology equipments, to maintain safe, secure & reliable supply.

5.4.5 Electrical Design Parameters

415V, 3 phase 4 wire system of 50HZ, with earthing will be the primary supply for games Village complex. Metering provision will be made in all HT boards, distribution centers. The system will be designed for suitable fault level for system safety & reliability.

5.4.6 Diesel Electrical Power Generation

Silent & efficient generators from reliable resource/ suppliers will be considered. Sufficient fuel storage fuel for over 48 hrs generator running will be provided in the design. The generators will be coupled with main bus through bus couplers, which will be automatically switched in case of mains power failure, after a few seconds interval.

5.4.7 Uninterruptible Power Supplies (UPS)

The UPS systems of adequate capacity are being considered to ensure transient free, stable power supply to all critical equipments of the game Village. The equipment will be maintenance free with synchronous static bypass switch & manual maintenance by pass switch. The protective system of the same will ensure least down time of Key servers / computers, security

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systems. Key servers / computers security systems and other systems, considered essential, will be fed by UPS.

5.4.8 Main Switchboards

The main switch boards will be provided safe, secure & reliable supply to the games Village. No of switch boards are under consideration, as per the capacity requirement of each load centre. Automotive load transfer switch is considered for generators, to feed into the main bus system, in case of mains failure. Each switch board will be designed for + 25% spare capacity and will consist of Essential / Non essential / Generator supply. Air circuit breaker, withdraw able type for non essential supplies will be provided. For PLC, Software communication or BMS, Metering Auto transfer switches, surge generators, check metering, PF correction cubicle and all essential safety protections will be given due consideration in the design. Panel will be designed, so that the same can be bifurcated into smaller switch board for relocation after the games.

5.4.9 Power Factor Correction Cubicle

Fully automated P. F. correction panel will be designed along with safety equipments, to ensure 0.97 lagging P.F.

5.4.10 Consumer Mains

Common mains will be designed with 25% spare capacity and will be located close to the load centre to minimize cabling. Bus duct /cabling shall be finally decided after due discussion with the concerned engineers of DDA.

5.4.11 Submains

Sub mains shall be of 25% spare capacity, with segregation of essential / Non essential / generator / Mains, and shall be designed to meet standards for fire & life safety.

Sub main, whether temporary or permanent can not be differentiated as safety standards must meet the required rules / regulations / standards etc. These sub main will feed various areas as specified in the brief and SLD will be drawn accordingly.

5.4.12 Distribution Boards

Copper bus bar distribution boards of IP40 protection, with proper mounting arrangement for all temporary/ Permanent installation will be provided throughout the precincts. Bus bar shall have min fault level of 20 KA for 0.1 second. While internal design will consider fully safe & reliable

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system, however external feature will be duly considered for proper visual impact. Proper grading of protective relays will be provided through out the electrical system, in order to ensure minimal power interruption in any area.

5.4.13 Technology Distribution Boards

Technology distribution board shall be designed with non essential / essential / generator sections and DBs will supply power to technical equipments through UPS. The DBs will be provided with necessary protection system including RCCBs and have at least 25% spare capacity.

5.4.14 Surge Protection

Surge protection devices will be introduced in all DBs and main switch boards, to eliminate system surges. A separate lightning protection system shall be installed to protect the games Village complex in all.

5.4.15 Wiring, Cabling and Supports

The wiring and cabling shall be carried out to minimize clustering /crossing. Major cables will be laid in cable trenches, in order to ensure least visibility. Where ever this is not possible, the cables, wires will be laid in covered conduits of best quality, in order to provide good look in all occupied areas / offices, temporary / permanent. The spare capacity of ladders / trays will be at least 25%. Where ever required, adequate ducts will be installed to hide the wiring.

All H. T. & L. T. cables (say 11000 volts or 415 volts) shall be double insulated heavy duty copper. Cable route markers will be considered on the ground, to define cable route. The size of the cable shall be designed as per the rating of the equipment and will follow guide lines for minimum sizes.

5.4.16 Sub-Circuit Requirements – Power

All sub circuits will be fed from distribution boards and max. number of power outlets will be restricted as per the guide lines provided in Venue Brief.

5.4.17 Power Outlets

The power outlets of adequate capacity and numbers will be provided in various areas. The demand of such outlets will be ascertained with the final building plan. The type of outlets will be considered, depending upon the physical requirements of individual building.

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5.5 LIGHTING

5.5.1 General

All the areas of Commonwealth Village will be provided with adequate lighting, subject to the requirement of each area, building, road and other areas.

5.5.2 Exterior and Precinct Lighting

The safe, reliable and efficient system of lighting and lighting fixture will be provided to ensure illumination level as per NBC and will ensure optimum Lumen Level / Watt.

The fixture will not only meet the illumination requirements, but will be considered to suit the external architecture, landscaping, path ways, parking areas & control points etc.

While electrical energy is the life line of a human being, but is equally dangerous, if adequate precautions are not taken. Accordingly, distinguishing between temporary and permanent will be duly discussed with the concerned agencies & final decision will be taken accordingly . While road & street lighting will be independent of temporary lighting & will meet BSES / IER / NBC requirements. External illuminated signage will be provided in the Village complex, duly controlled by Village lighting control system.

5.5.3 Lamps

Electronic ballast controlled lamps will be selected all throughout the Village to attain highest efficiency. Lamp with best available life and color rendering, like metal halide Lamps, CFL, FL, of various type, sizes will be selected, with due consideration to their application / use in different areas.

5.5.4 Lighting Control

Lighting for interior as well as exterior areas will be PLC controlled, in order to ensure highest efficiency and for meeting any specific need of the area. Safety of lighting system as well as all electrical system is of prime importance and absolute. The security lighting adjacent to Village entry will be designed to detect Unauthorized movement, through integration of dual technology motion detectors. Local lights will be installed with robust flush switches adjacent to the lights with best suitable location. The quality of switches will be selected out of best lot available in the country. Surface mounted switches will also be taken due care for safe amounting on high impact mounting block.

5.5.5 General Emergency and Exit Lighting

Self illuminated emergency & exit sign lighting with provision of supply from mains & back up batteries, will be provided for safe evacuation of all users. Regulations in respect of emergency

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luminaries exit signs will be adhered to. Additional emergency luminaries & exit signs board can be provided, where ever deemed necessary.

5.6 IT COMMUNICATIONS AND TECHNOLOGY

5.6.1 General

The IT and technology requirements of the Commonwealth Games Village are special and these services would be provided as a games mode overlay in the Residential Areas. In the temporary areas these services shall be integrated into the detailed design of these zones and as per the requirements of the Venue Brief. The coordination with the Service providers shall be also undertaken and their specific needs and requirements shall be met with during the design.

5.6.2 Communications Systems Extent

All the requirements of the magnitude and type of the services shall be met with during the detailed design phase.

5.6.3 Category 6 Structured Communications Cabling System

These shall be provided in consultation with the Organising Committee

5.6.4 Coordination

The coordination with the Service providers shall be also undertaken and their specific needs and requirements shall be met with during the design.

5.6.5 Risers

Dedicated raceways, ducts shall be provided wherever required.

5.6.6 Access Equipment

All these services and ducts would be easily accessible for easy maintenance.

5.6.7 User requirements

These requirements shall be met in consultation with the Organising Committee

5.6.8 Carrier Connections

These shall be met in line with the service providers requirements.

5.6.9 Carrier Services

These requirements shall be met in consultation with the Organising Committee

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5.6.10 Telecommunications

These shall be worked out considering the legacy and the Games Mode requirements.

5.6.11 Technology WAN/LAN Games Systems

These requirements shall be met in consultation with the Organising Committee

5.6.12 Media

These requirements shall be met in consultation with the appropriate agency

5.6.13 Outside Broadcast

These requirements shall be met in consultation with the appropriate agency

5.6.14 Fibre Backbone

These requirements shall be met in consultation with the Organising Committee

5.6.15 Voice Backbone

These requirements shall be met in consultation with the Organising Committee

5.6.16 Mobile Phone System

These requirements shall be met in consultation with the Organising Committee

5.6.17 Telecommunications Equipment Room (TER)

These requirements shall be met in consultation with the Organising Committee

5.6.18 Building Distributor Room

These requirements shall be fulfilled during the finalisation of the detailed design

5.6.19 PABX

The system will take into account all the features desired. No of lines will be decided with the concerned authorities, after the building plan details are finalized.

5.6.20 Games Staff Radio System

These requirements shall be met in consultation with the Organising Committee

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5.6.21 Television Services

These requirements shall be met in consultation with the appropriate agency

5.6.22 Internet

These requirements shall be met in consultation with the Organising Committee

5.7 SECURITY SYSTEMS

5.7.1 Closed Circuit Television (CCTV)

Design Scope of the System

Surveillance system has been designed considering the Area details and Design basis in the documentation currently available. It has been designed with approximately 90 Cameras in various indoor and outdoor locations. Following areas have been considered for coverage; Main Entry to the Premise and the Perimeter covered with six speed domes and 1 auto focus zoom camera. International Zone is proposed to be covered with thirty two cameras including a balanced mix of indoor dome cameras and outdoor box cameras and one speed dome for general surveillance. Operational Zone is proposed to be covered with forty cameras with a similar mix of indoor and outdoor cameras. Finally the Residential Zone is proposed to be covered only on the entry/exits and perimeter as of now, with twelve cameras. Indoor surveillance is subject to the Builder/Contractor decision.

System is designed to be an IP Surveillance system and with distributed architecture, considering the Security Command Center to be the main control room for central surveillance. With the distributed architecture client can opt to set up distributed control rooms or monitoring points without any changes in the system and further expenditure. Communication back bone for the CCTV system should be 100/1000 Giga bit Network LAN which will be dedicated for the same. This network should not be considered for Email or other data traffic. For designing the network Managed switches should be considered as minimum and the LAN points (RJ-45 sockets, 10/100 interface) for connecting the Cameras will be provided near the cameras for all indoor cameras (Or in the local control room of that zone) and all outdoor cameras shall be wired through coaxial or fiber cable depending upon the distances from the zonal control room location. The architecture is flexible and can be modified to suit any planned changes in setting up the network or location of control rooms.

System Architecture and Solution brief

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CCTV system will be an IP based system in which the 16 channel transmission systems (Encoders, digital recorders) shall be suitably located in a zonal control room in each individual zone ie International, Operational & Residential Zone.

International Zone will have 3 Nos of 16 Channel Transmitters which are proposed to be kept in Village media center and will provide the connectivity to the Cameras in common areas as well.

Similarly 3 Nos of 16 Channel Transmitters will be placed in the Security Command center of Operational Zone providing connectivity to the cameras in the zone. For the residential Zone 1 No. 16 Channel Transmitter will be required to be placed in either a suitable location in Residential zone itself or can be placed in the Security Command center in the Operational zone as per the site design.

The Video Management System shall include a database server with a robust database engine like SQL Server or equivalent and will perform the administrative functions and control of the system. For the purpose of recording there will be dedicated Camera servers designed as per the spec guidelines to record and retain the video evidences for a period of 15 days as minimum. The facility to archive the recordings is recommended to be considered in the scope. The camera servers shall receive the video streams from the 16 Channel Transmitters located in various zones and perform the recording functions as programmed and will also create various alarms as programmed. It is essential to integrate the CCTV System to Access control system to enhance the security and ensure that the alarms from the Access control system are enunciated in the Video Management system to provide video verification of alarms which will help in activating the response mechanism quickly and efficiently as required. CCTV system will be seamlessly integratable with Access control platform to be deployed at the site.

All the operators shall make use of the client machines for monitoring and controlling the system. A Supervisory Control and Management Software should be deployed to provide Multi operator and Senior Security Officers an Easy means to control, communicate and share alarms and clips with other operators, users in the LAN environment. All the perimeter Cameras and common areas like parking, inside roads, pathways shall be backed by strong analytics engine to provide alarms and inputs in case of intrusion at perimeter, directional motion detection and capability of motion detection to work in outdoor condition by rejecting the false alarms created by environmental conditions like rain, wind, lighting condition changes etc. The Analytics should essentially provide the classification of humans and vehicles with a facility to program rules by the users which when violated will create alarms to prompt security to initiate suitable actions. It is mandatory to consider the Video management platform which has the

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Analytics functions built in the solution to avoid third party integration and limited facilities, and also to reduce the cost of ownership of the system to the end user.

All the recordings saved in the Servers shall be watermarked during extracting the evidences and shall be accessible to the authorized operators and users only.

5.8 MECHANICAL

5.8.1 General

System shall be based on total heat load calculations, accordingly suitable capacity chilling units of reputed make shall be provided to maintain required uniform temperature during the entire operational period of the Games.

5.8.2 Energy Efficiency

We shall select and install equipment of International Standard make viz Voltas, Blue Star, Trane, York, which use zero rated ODP refrigerant and also saves electrical energy.

5.8.3 Level 1 Comfort Conditioned Areas

Suitable capacity chilling units of reputed make as specified in 5.8.2 shall be provided to ensure required conditions at Commonwealth Village i.e. $22^{\circ}\pm 1.50^{\circ}\text{C}$ db and humidity to the range of 40% to 65% RH.

5.8.4 Level 2 Comfort Conditioned Areas

Shall be same as above. The required conditions maintained shall be 25°C with 65% RH maximum and minimum of 20°C at 40% in separate functional space. In the swimming pool separate AHU of suitable capacity shall provided to ensure required temperature of $27^{\circ}\pm 1^{\circ}\text{C}$ and humidity range of $60\% \pm 10\%$ RH.

5.8.5 Ventilation

Suitable capacity ventilation fans depending on the size of respective areas shall be provided for both supply & exhaust system as per Standard norms per person like 10 CFM for Office, Meeting room, Commercial centre etc and 15 CFM for Restaurant, Dining room, Bar etc. 30 CFM air / Sqm area shall be required for exhaust from toilets.

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5.8.6 Smoke Control

Smoke detection and control systems shall be provided as specified in the relevant codes. A proper Smoke Management Plan shall be prepared in accordance with the Fire prevention and protection guidelines.

5.8.7 Design Criteria

To maintain required inside conditions, internal heat gain, occupancy, fresh air make up shall be taken into consideration before finalizing the capacity of chilling plant, AHU's etc.

5.8.8 Internal Light and Equipment Heat Outputs

Apart from equipment load, occupancy, internal illumination inside the space shall also be worked out. This being one of the source of heat gain essentially required for sizing the capacity of AC plant and AHU's.

5.8.9 Outside Air Ventilation

In the AC system provision will be made to exhaust polluted air inside the space by providing fresh make up air in the AHU room as per the standard norms for the type of areas like Meeting rooms, Dining room, Office area, Commercial Centre etc.

5.8.10 Supply & Exhaust Air Ventilation

Please Refer 5.8.5 above.

5.8.11 Air Filters

Dry media type air filters of required filtration level as per Standard norms shall be provided in the Air handling units. Kitchen exhaust system shall be provided with grease absorption filter.

5.8.12 Acoustics

Required Db level shall be maintained as per standards norms and adequate protection/suppression systems shall be provided.

5.8.13 System Selection

For temporary areas split ductable chilled units (Dx type) shall be provided. After the games are over, these units can be installed at some other places or alternatively disposed off.

For permanent areas chilled water cooling system comprising of chillers, condensers, chilled water / condenser water pumps, cooling towers, AHU's, controls etc. shall be provided.

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5.8.14 Air Handling Units

Air handling units comprising of different sections like fan section, cooling coil, filter section etc. all of reputed make shall be considered.

5.8.15 Building Monitoring and Control System (BMCS)

This shall be done keeping in view the BMIS integration requirements and the Venue Brief

5.8.16 Mechanical Services Requirements

Areas in various zones i.e. International zone, Operational zone, Residential zones shall taken into consideration for finalizing the capacity of AC plant, Ventilation / Exhaust system required conditions wherever specified in areas of respective zones shall be provided as stated above. The requirements of Climate Control as envisaged in the Venue Brief shall be fulfilled.

5.9 HYDRAULIC SERVICES

Common Wealth Game Village has temporary & Permanent structures, the overall Village site will require a major system of water supply/drainage and storm water.

An Efficient, reliable and effective potable water and sanitary system shall be provided that complies with International best practice standards.

Approximate total water requirement is about 3000 m³ per day including potable and non potable water. 200 m³ per day potable water requirements of 13000 person (Including Athletics, Common Wealth Games Officers and Visitors) 80% of non potable water will be treated in Sewage Treatment Plant (STP) that will be used for irrigation.

The system shall be designed of sufficient pipe grade, drain slope and velocity to ensure self cleaning action. An efficient hot water system shall be designed for sanitary fixture and personal hygiene. We propose solar water heating system for energy conservation. An efficient rain water harvesting system will be designed for water conservation and re-charging the water table.

5.9.1 Water Supply and Sewerage Infrastructure

We know that in the Common Wealth Games Village, there are two type of structure i.e. permanent and temporary. During the design of water supply and sewerage infrastructure we

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will ensure that the system is efficient and economical. We assume that for the designing of temporary structure for water supply and sewerage, infrastructure can be reused in the other places after the completion of the Common Wealth Games. Efficient water treatment plant & sewerage treatment plant will be designed by Delhi Jal Board (DJB) which meets the International standard.

Water supply infrastructure

Approximate total water requirement is 3000 m³ per day both (potable & non potable). The water supply shall be by High pressure pumping system in to the CWG Village area. It is proposed to provide separate water supply one for residential and one separate line for International & operation zone. The material to be used for water supply i.e. pipes & fittings shall be of excellent quality in G.I./PPR/SS.

Sewerage Infrastructure

Soil, waste and vent pipes are integral parts of the drainage system that carry foul and ablution waste from the building fixture to the sewer system. Efficient and quick disposal of sewage and waste water from any building is essential for ensuring hygienic and healthy environmental condition, which will take precedence in our design

5.9.2 Natural Gas or LPG Gas

This is being worked out in consultation with the line agency for supply of piped LPG and consideration shall be given for requirements in the Venue Brief

5.9.3 Sanitary Drainage

The sewerage system will be based on conventional water carriage system in which soil and domestic waste generated by individual building / units will be collected into a collection chamber through soil and waste pipe system. Then the domestic sewerage will be conveyed from branch line to nearest sub lateral, sub lateral to lateral and then to trunk sewerage line, which will finally carry the entire sewerage to STP for further treatment.

The system shall be designed with sufficient pipe grade and velocities to ensure self cleaning action of the drainage system.

The sewage treatment plant shall be designed by Delhi Jal Board (DJB). The treated effluent water will meet the national/International standard. The treated waste water will be used for Horticulture purpose.

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5.9.4 Sanitary Plumbing

Soils waste water from the sanitary fixtures through vertical pipe network shall be discharging to the ground level / low level. The soil water collected directly in to the manhole and waste water comes through gully trap and then comes into the manhole, to avoid the blockage. The soil & waste comes with the branch sewer line to main sewer line. The number of manholes will be constructed at appropriate locations to maintain the sewer line. The pipe carrying the suspended solid system shall incorporate sufficient pipe grades and velocities to ensure self cleaning action in the system with regular access to cleaning point throughout

5.9.5 Trade Waste

Oil & Grease is found in the waste generated from food preparation area and Car Parking Area. Quality of oil and grease shall depend upon the volume of water and quantity of material handled and then concentration may be as high as 250-300 mg/l.

Being organic in nature fats and hydrocarbon will interfere with sewage treatment plant and it is essential to reduce these before waste enter into the drainage system.

Grease and Oil tends to solidify at low temperature/cold climate, attaching loose and fibrous material to the pipe surface blocking the flow.

Oil and grease from dining & car parking area are separated by bypassing the flow though a grease interceptor/arrester which is constructed in a manner to retard the flow by providing baffles which enables the grit in the flow to settle, cools the water and solidify the grease which then floats on the top in form of a scum layer, remove the grease mechanically/manually. The grease is then imposed to the city garbage disposal system.

5.9.6 Toilet Flush Systems

A dual flush (6/3 line flush) system shall be incorporated in toilet flushing systems for all types of water closet in both temporary & permanent sites. S.T.P. treated water shall be used for toilet flushing system.

5.9.7 Drinking Quality (potable) Cold Water

The approximate amount of potable water is 200 m³/day, this amount will be supplied to games Village to meet the requirement of all three zones.

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The water treatment plant to be installed in the Common Wealth Games Village complex will be capable to meet the above requirement. The requirement of potable water during games period is being taken for 13000 persons (including players/operational staff & visitors)

It is proposed to provide separate adequate capacity, potable water line to residential / Hotel and similarly separate premises line on the periphery of Village and required tapping will be taken from the mains after the building plans are finalized.

The best quality of pipe shall be used for potable water line, NBC & MCD guide line and any special guide lines from DDA will be followed in the design. Construction & installation of quality potable water needs to be carried out by DJB. We assume that RO water will be supplied by DJB for drinking purpose.

5.9.8 Pre-Treatment of Towns Water

The water treatment plant (WTP) shall be constructed in the common wealth game Village. WTP shall be designed by Delhi Jal Board (DJB). Characteristic of potable water should comply with WHO standards.

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5.9.9 Potable Hot Water

Hot Water System shall be designed for various temperature ranges. We propose solar heating system for energy conservation, with electrical back up.

We understand that following water temperature are applicable for the Games facilities.

75°C for Cooking and food preparation area.

50°C for general purpose are ablution fixture shower basin baths etc.

43°C for Disabled and parenting area.

We can use thermostatic mixing valves for maintain the various range of temperature. In the Village operation centre, only 75°C potable hot water is required for kitchen, while other temperatures are applicable for residential complex, which shall be fulfilled by the Private developer.

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5.9.10 Hot Water System Design

For all the temporary and permanent structures, efficient Solar water heating system and shall be designed for non potable water requirement for sanitary fixture, with electrical back up and personal Hygiene, best quality of pipes & fittings shall be used for Hot water system. Hot-water pipe shall be insulated with non toxic heat resistant material with an approved thermal conductance and combustion and smoke emission ratings.

5.9.11 Water Conservation Systems

Efficient water conservation system shall be designed by using the sensors in sanitary fixture to maintain the discharge in fixture and save water. The warm water outlet served from thermostatic valve will maintain the various range of temperatures.

We shall provide the flow rate in sanitary fixture.

Basin 4 L/min

Sink 6 L/min

Shower 10 L/min

5.9.12 Roof Water and Storm Water Drainage

Rain water falling on roof, paved area and other open area must be collected and disposed off efficiently and quickly. All building roof top and paved area rain water shall be collected through network of storm water drains.

We are proposing intermediate silt traps to intercept silt, then water shall be collected in dug well for recharging. Over flow from dug well shall be collected again into storm water drain. The drain system shall be designed with sufficient slope and velocities and adopt the central ground water authority guide lines.

We shall design efficient storm water drainage system. In case of heavy rain fall, the over flow of rain water from the dug well will discharge into the municipal drain or nearby any stream.

5.9.13 Roof Gutters and Downpipes

The rain water from the roof top through roof gutter and down pipes shall collect into the storm water drain. We shall efficient & economical design of the roof gutters and down pipes and

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*adopt the notional building code, plumbing code and MCD guide lines for design purpose.
Materials proposed are:*

RCC/Steel - for Roof Gutter

UPVC/CI - for Down Pipe

5.9.14 Rainwater Harvesting

Re use of rain water collected from roofs is one of the best example of water and energy conservation measures. Rain water from roofs of different blocks, will be first collected in the storm water drain. The rain water from storm water drain shall enter into the dug well for recharging the water table.

We propose the roof top rain water to be collected into the large size underground water tank. Wherever needed, it will be treated after obtaining the test results of Physical chemical & bacteriological characteristics. After treatment, it will be pumped to overhead water tank for various domestic applications.

5.9.15 Grey Water

Sewage Treatment Plant (S.T.P.) will be constructed in the common wealth game Village. Sewage treatment plant shall be design by Delhi Jal Board. Approximate 80% of total water requirement shall be treated into the STP. The treated water shall meet the IS standard. The treated water will be used for irrigation purposes as well as toilet flushing in legacy use.

5.9.16 Materials and Pipe Systems

Material used for potable, non potable, drainage, rain water shall be of IS standard as per national plumbing code etc. we propose the following pipe material such as :

Potable water - SS and PPR

Non Potable Water - G.I./PPR

Drainage - SWP, CI and Concrete

Rain Water - UPVC, PVC, and CI

5.9.17 Branch and Fixture Isolation

All the branch connection from main infrastructure, ring main pipe riser and supplies to major plant shall be provided isolation valves to allow isolation of each functional area or fixture group. Individual fixtures such as hand basins, sinks and water closet should have stand alone isolation valve.

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Established principles and work practices as spelled out in plumbing code, municipal bye laws etc shall be adopted. We shall ensure that the material used shall be of highest standard.

5.10 FIRE SERVICES

As we know that in the Common Wealth Games Village there are two types of structures. A complete and integrated fire protection services system shall be provided throughout various zone of the Village as per the specific requirement of being permanent or temporary.. Fire safety system within the residential, institutional, sporting/recreation of zone of the Village are essential in providing safe environment for athletics, official and employees at the game Village site. We shall design separate fire system for different zones.

5.10.1 Fire Evacuation Plan

This shall be worked out in collaboration with the Delhi Fire Service and the Disaster Management Unit of Delhi Police.

5.10.2 Fire Protection Services

For Designing Fire Protection System in Common Wealth Games Village, we shall consider all fire protection service option, we are follow the Nation / International code and standards. We are not limited to the following:

- *Fire sprinkler System*
- *Fire Detection and Alarm System*
- *Hose Reel System*
- *Fire Extinguisher*
- *Emergency Warning and Enter Communication System*
- *Fire Hydrant*

5.10.3 Fire Codes and Standards

The following standards bylaw manual shall be followed in designing the fire fighting system.

- *Relevant IS Code published by Bureau of Indian standards.*
- *National Building code part IV for Fire protection system.*
- *Tariff advisory committee (TAC) manual on Fire Protection System.*
- *TAC Manual on sprinkler system.*

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- *NFPA codes for sprinkler & fire protection system.*
- *British standards.*

5.10.4 Fire Sprinkler System

The automatic sprinkler system shall be provided in multi story building basement and other buildings in Common Wealth Games Village are as per the NFPA/National Building Code. The sprinkler piping shall have water under pressure all the time with sprinkler head fixed against the out let at appropriate place. The building are required to be fully sprinkled respective of its height and occupancy except. The following areas:

- i. Wash room, toilet and WCs.*
- ii. Staircase, space below stair headings.*

5.10.5 Fire Detection and Alarm System

Shall be provided as per the relevant codes and the Fire safety requirement specified.

5.10.6 Emergency Warning and Intercommunication System (EWIS)

Shall be part of the Building Management System

5.10.7 Fire Hydrants

A fire hydrant system shall be installed throughout the Village precinct. The fire system shall consist of fire hydrant valve located in or adjacent escape stair which to provide the coverage to the entire Village under the relevant IS standards design code the fire hydrant system shall be connected fire main ring. Adequate water flow and pressure shall be provided by dual electric and diesel fire booster pump sets with the entire system capable of connection to fire authority pumper vehicle for additional boosting in all case. Two fire tender in ready condition in all cases.

5.10.8 Hose Reels

Hose reel shall be installed on each floors of the building, basement area and throughout the Village precinct to meet the code and standards. The first aid hose reel shall be connected to one of the female coupling of twin coupling of landing valve of wet riser installations by means by sprinkler in the multi storey building. For Village area fire hose reel shall be serviced from fire hydrant system net work.

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5.9.9 Fire Extinguishers

Fire extinguishers hand appliance like CO2 & dry power types water type shall be provided at different location in the building as required, to meet codes and standards. Fire extinguisher shall be provided through out the Village precinct site.

The size, type and location of fire extinguisher shall be in accordance with local regulations and code and be provided with the appropriate signage. Additional extinguishers shall be provided to protect the special hazards. Wet chemical fire extinguishers shall be installed in kitchen and hot food / beverage preparation locations. Fire extinguisher shall be housed in tamper proof cabinet where they are accessible to the general public.

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Section 6

6 FURNITURE FIXTURES AND EQUIPMENT

6.1 GENERAL

These requirements shall be fulfilled by the Appropriate Agency in line with the requirements specified in the Venue Brief.

6.2 FURNITURE AND FIXTURES

These requirements shall be fulfilled by the Appropriate Agency in line with the requirements specified in the Venue Brief

6.3 TECHNOLOGY EQUIPMENT

These requirements shall be fulfilled by the Appropriate Agency in line with the requirements specified in the Venue Brief

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APPENDICES

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