

COMMONWEALTH GAMES VILLAGE – 2010 : A GREEN VILLAGE

1.0 Background

India, the largest democracy and second most populated country in the world is one of the member countries of the Commonwealth, which has more than 75 countries as its members. The Commonwealth Games are held after every four years on the pattern of Olympic Games and are the second largest Sports Event after the Olympic. For the Commonwealth Games to be held in the year 2010, bids were submitted by Delhi - India, Manchester – U.K. and Canada. The Commonwealth Games Federation Team visited the City of Delhi in June 2003 and November, 2003 respectively and based on their assessment based on the final voting by member countries at Jamaica, Delhi the Capital City of India was awarded with the opportunity of hosting the Commonwealth Games 2010.

1.1 As per details provided by the Commonwealth Games Federation (CGF), about 75 countries will participate in the event and there will be about 7500 athletes, players, coaches and team managers etc., who will be coming for the event. The scheduled dates for the Games are October 3-17, 2010.

1.2 As per the requirement of CGF, the arrangements in the Village Complex are to be done for the participating contingents of different countries i.e. (i) Residential Zone – Accommodation for 7500 competitors and officials, dining area, polyclinic, resident centres etc.; (ii) International Zone – Comprising the main entry, logistics centre, accreditation centre, ceremonial plaza, retail facilities, media centre, cultural centre, transport centre, information centre, leisure and entertainment facilities; (iii) Village Operation & Support Area (VOSA) – Providing Village Support and Service functions such as waste collection / removal, delivery and storage facilities for food, linen, fuel depot etc.; (iv) Transport Mall – Adjacent to Main Dining, providing bus services to athletes to and from competition and training venues and (v) Athletics Track, Swimming Pool, Gymnasium, etc.

1.3 The Sports Events which are to take place during the Commonwealth Games - 2010 are Badminton, Squash, Swimming/Aquatic Sports, Hand Ball, Lawn Bowl, Wrestling, Boxing, Cycling, Archery, Table Tennis, Hockey, Gymnastic, Weight Lifting, Shooting, Rugby, Judo and Cue Sports etc.

2.0 The Site

The National Capital Territory of Delhi has an area of 1483 sq.km and a population of 17 million persons. The River Yamuna bisects the City in two parts and offers a unique natural environment to the City. On Eastern Side of the River, a population of about 4 million persons live whereas on the Western side the remaining population lives. The Competition Venues where the sports events are to take place are within the populated area mostly on the Western Side of the River but some venues are also on its Eastern side. Considering the requirement of every competition event and to facilitate the movement of players, coaches and team managers etc. for different events, the competition venues have been finalized and the site of Games Village have been selected near the River Yamuna. A beautiful view of River basin, Akshar Dham Temple – a miracle in granite stone and the unique sky line of city of Delhi is visible from the complex.

2.1 The total area of the site is 47 ha. The Site is almost in shape of a square of about 1 x 1.1 km. The site is also connected with Metro Line and Station (Fig – I Site Map). On the Northern side of the site, there is a Railway Line leading to Kolkatta and on Southern Side, a National Highway passes through it. There is considerably high noise level due to heavy traffic on National Highway and by honking of Goods / Passenger trains on the Railway line.

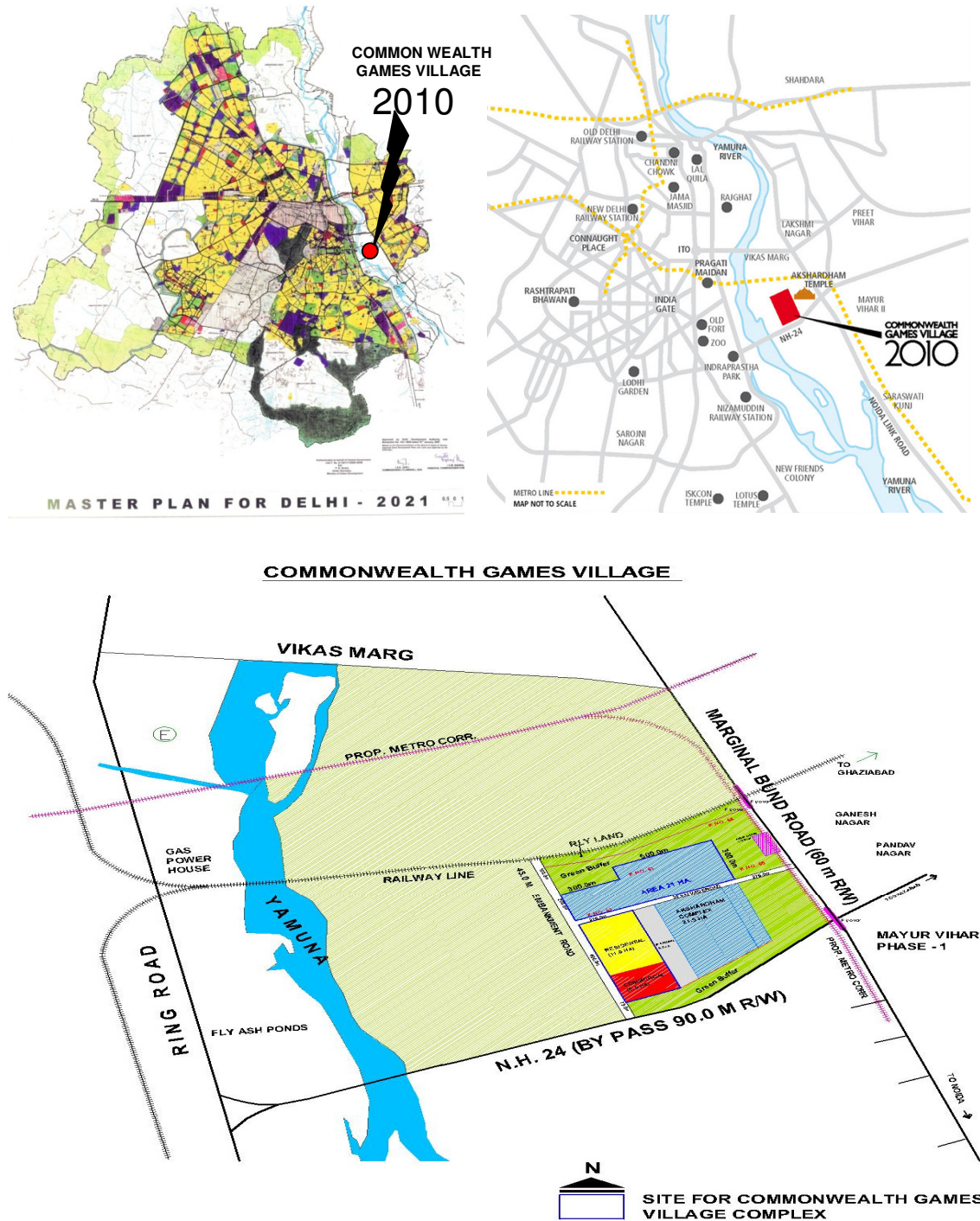


Figure - I

2.2 The site is almost a flat terrain and is about 4-5 m below the surrounding level of developed area. In fact, the level of the site is similar to that of adjoining River basin but being comparatively isolated and considering its central location having high propensity of attracting encroachments by squatters, in the year 1998 it was considered for development and a marginal bandh was constructed which segregated it from rest part of the River front and made it safe for development.

2.3 The site is well connected with both the Eastern and Western parts of the city by road and metro and is at a distance of 5 to 20 minutes drive from the nearest and farthest competition venues, respectively.

3.0 The Village

For the urban design aspect and the design of the village complex, bids were invited from well established Architects of India with or without collaboration with International Architects. The Architecture consortium Firm presently doing the work was selected based on its merits of design, experience, capacity to complete the work in time bound manner and strength of technical persons to tackle all related issues of the design and the financial capacity of the Company etc.

3.1 The site was analyzed by the Architect with respect to topography and urban design linkages with rest of the City. The design finally worked out, ensures view from different roads of the iconic landmark i.e. Akshardham Temple, River and other important Monuments of the city. The design gives a dramatic visual link with surroundings and other Heritage structures / landmarks.

3.2 The site identified for Residential Complex is about 11 ha, in which about 1168 dwelling units (DUs) are to be constructed with FAR of 167, ground coverage 33% and maximum height of 33 m. The maximum density of DUs is 175 per Ha. The land is also earmarked for schools, Milk Booth, Convenient Shopping Centre, Parks, Playgrounds and tot-lots etc. in the village complex. In addition about 400 sqm area is to be constructed for Community Hall, Crèche, Library etc.

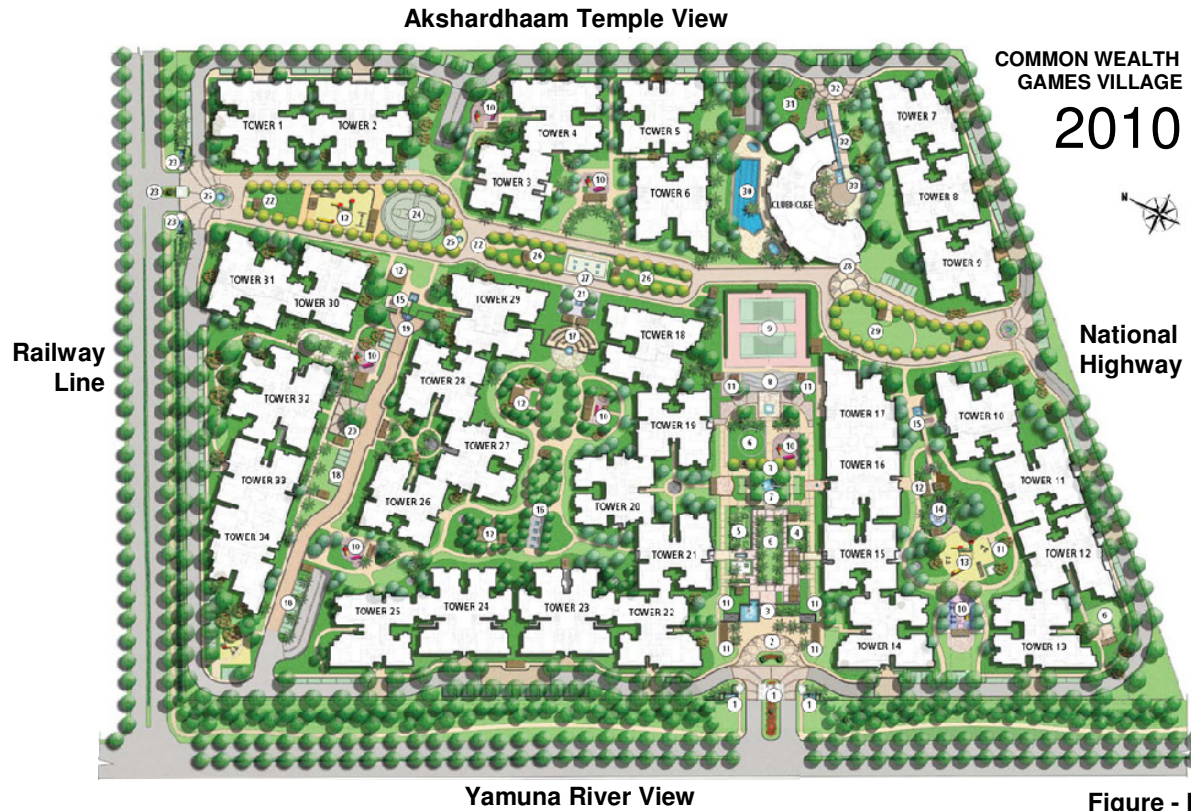
3.3 The other conditions for designing the village complex were that, there should be a minimum of 4000 bed rooms in the complex and no unit should have more than 7 bed rooms. The number of bathrooms to be one less than the number of bed rooms and each dwelling unit to have fittings for TV, telephone and internet etc. Provision of window air conditioner in each bedroom with an option of central air conditioning is to be kept and adequate number of lifts to be provided in each block. About 20% of the dwelling units are to be with facility for physically challenged persons.

3.4 The elaborate provision has been made for parking in the complex, and for every 2 bed room DU, there is provision of one car parking space and for 3 & 4 bed room DU, 2 car park spaces and 3 car park spaces have been provided for 5 bed room DU, respectively.

3.5 The floor area of 2 bed room is 140 sqm, 3 bed room is 200 sqm, 4 bed room is 245 sqm and 5 bed room is 300 sqm, respectively.

3.6 Based on the local conditions the design which has finally emerged, has a total covered area of about 0.24 million sqm with 0.2 million sqm as carpet area. About 51640 sqm has been provided in first basement and about 9300 sqm in second basement for parking and services. There are 31 DUs with 2 bed rooms, 765 DUs with 3 bed rooms, 209 DUs with 4 bed rooms, and 163 DUs with 5 bed rooms, which adds up to 1168 dwelling units in total.

3.7 Considering the view of Akshar Dham Temple from different parts and to save it from any blockade / distortions, the height of the tower blocks in Games Village have been designed in 6 to 9 levels and have been placed in such a way that the grandeur view of Akshar Dham is not disturbed from any angle. There are total 34 towers of different heights with different composition of dwelling units, connected with continuing greens having elaborate landscape to create most pleasing living environment (Fig – II, map of village).



3.8 The amenities available to every DU is 100% power back up, treated water supply system, CCTV in basement and main entrance lobby and Intercom facility, Wi-Fi enabled complex, Basketball Courts, Multipurpose hall, Kids crèche and many more facilities. Sports facility i.e. Tennis Courts, Health Club facility with fully equipped gymnasium, 30 M Swimming Pool and Gym are provided in the complex and it will be a certified “Green Building”.

3.9 The Village Complex has rich specifications and double Window Panes system for reducing noise levels inside the buildings.

3.10 During the games, the dwelling units are to be used by Commonwealth Games Federation for accommodating contingents of different countries and for which they have to be furnished as per the specifications of CGF. The temporary overlay is to be provided, which is to be used for common dining, first aid facilities, village office etc. which are to be removed after the Games and the space thus vacated will be part of the Games village and mostly to be used as open spaces.



The view of Village

4.0 The Environmental Consideration

Every effort has been made to make the Village Green and the concepts like rainwater harvesting, use of non-conventional energy, minimal use of conventional energy, recycling of effluents / waste, provision of large area in form of parks and open spaces with appropriate species of plants, noise reduction barriers along railway line etc. have been considered in designing the village.

4.1 While working out the design before the sanction, the proposals are submitted to the Ministry of Environment for their suggestions, so that based on that all the possible measures are taken and provided/included in the building design to minimize its environmental impact. Thus the proposal was submitted to the Ministry of Environment and Forest after its examination by a panel of experts a list of specific conditions were given by them which are to be adhered while construction and operation off the games village and are as under:

Development / Construction Phase

- i) Project site shall be filled with sand from Yamuna bed instead of fly ash. The proposal for dredging the river to provide material for raising the bed level of the project site will be examined in consultation with concerned authorities.
- ii) The requirement of water shall be met from self-contained arrangement without placing strain on the supply system for the nearby area. Delhi Jal Board will construct an additional Renney Well for the water supply to the project.
- iii) No rain water will be discharged out of the project site into existing drains. The entire rain water would be utilised for recharging groundwater.
- iv) To cut off noise, the green belt proposed a long the railway line shall have high trees growing fast. An embankment may not be constructed along the railway track but other measures suggested in National Physical Laboratory report shall also be adopted.
- v) Development of Green Belt and tree plantation shall be done in consultation with Council of Forest Research and Education.
- vi) Since the design of the proposed structures is yet to be made, so as far as possible the works should not be of a permanent nature. It should be possible

to take this point into consideration and adopt dismantlable structures. Unless detailed studies lead to the conclusion that the proposed structures can be left behind permanently, the proposals should proceed with the assumption that the river bed may have to be restored to the river.

- vii) Since environmental significance and public open space amenity of the river flood plain should be recognized, the Ministry urges the concerned authorities that an extension of similar development in the area between river Yamuna and its flood protection bunds must not be proposed without due environmental planning and prior environmental clearance.
- viii) All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.
- ix) A First Aid Room will be provided in the project both during construction and operation of the project.
- x) Adequate drinking water and sanitary facilities should be provided for construction workers at the site. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.
- xi) All the topsoil excavated during development / construction activities should be stored for use in horticultural / landscape development within the project site.
- xii) Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the hours.
- xiii) Ambient noise levels should conform to the residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase.
- xiv) Storm water control and its reuse as per CGWB and BIS standards for various applications.
- xv) Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water.
- xvi) Treatment of 100% grey water by decentralized treatment should be done.
- xvii) Fixtures for showers, toilet flushing and drinking should be of low flow either by use aerators or pressure reducing devices or sensor based control.
- xviii) Use of glass may be reduced by 40% to reduce the electricity consumption and load on air-conditioning. If necessary, use high quality double glass with special reflective coating in windows.
- xix) Roof should meet perspective requirement as per draft Energy Conservation Building Code by using appropriate thermal insulation material to fulfil requirement.
- xx) Adequate measures to reduce air and noise pollution during construction keeping in mind the norms on noise limits.
- xxi) Opaque wall should meet prescriptive requirement as per draft Energy Conservation Building Code which is proposed to be mandatory for all air-conditioned spaces while it is aspirational for non-air-conditioned spaces by use of appropriate thermal insulation material to fulfill requirement.

Operation Phase

- i) The problems related to traffic are already being looked into by a high level committee headed by the Chief Secretary.
- ii) Sewage treatment facilities will be provided for treating the sewage generated at the project site and that generated at Akshar Dham campus. Treated sewage will be entirely utilised at the project site.
- iii) The installation of the Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the Ministry before the project is commissioned for operation. Discharge of

- treated sewage shall conform to the norms & standards of the Delhi State Pollution Control Committee.
- iv) Rainwater harvesting for roof run-off and surface run-off, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease. The solid waste generated should be properly collected & segregated before disposal to the City Municipal Facility. The In-vessel bio-conversion technique should be used for composing the organic waste.
 - v) The solid waste generated should be properly collected and segregated before disposal to the City Municipal Facility. The in-vessel bio-conversion technique should be used for composting the organic waste.
 - vi) Any hazardous waste including biomedical waste should be disposed of as per applicable Rules & norms with necessary approvals of the Delhi State Pollution Control Committee.
 - vii) The green belt design along the periphery of the plot and along railway line shall achieve attenuation factor conforming to the day and night noise standards. The open spaces inside the plot should be suitably landscaped and covered with generation of indigenous variety.
 - viii) Incremental pollution loads on the ambient air quality, noise and water quality should be periodically monitored after commissioning of the project.
 - ix) Application of solar energy should be incorporated for illumination of common areas, lighting for gardens and street lighting in addition to provision for solar water heating. A hybrid system or fully solar system for a portion of the apartments should be provided.
 - x) Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilised.
 - xi) A report on the energy conservation measures confirming to energy conservation norms finalised by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology. R & U Factors etc. and submit to the Ministry in three months time.

4.2 Adherence to Environmental Conditions:

The specific conditions have been laid (para 4.1) by the Ministry of Environment and Forest, which are to be adhered to while development / construction phase and ultimately at the operation phase of the Commonwealth Games Village.

- i) For the conditions regarding development / construction, all actions have been taken by the developer responsible for developing the Commonwealth Games Village and the contractor who has been awarded the construction work. The required arrangements for the labourers working on the project has been done by them and due care is being taken for water pollution, air pollution, reduction in soil pollution, saving of energy etc. To reduce the pollution by traffic, the cross section through which the access to the Commonwealth Games Village is available, is being designed in such a way that the traffic does not stagnate and keep moving with acceptable speed.
- ii) For the operation phase, all arrangements are being done for proper natural lighting and ventilation of the complex to minimize the load on power. The treatment of solid waste is to be done in a small sewage treatment plant which is being constructed in the Complex. Water harvesting will be with the pre-treatment / removal of suspended material, oil and grease etc. To reduce the noise level, the sound barriers are being erected based on the specialized study by the National Physical Laboratory and plantation is being done with the expertise of National Forest Research Institute so that the impact could be

reduced and good micro climate can be created. After completion of the project, the energy auditing etc. shall also be done as per the laid conditions.

4.3 Public Interest Litigation

A public interest litigation was filed in year 2007 by an NGO objecting that the village site is in river basin and will adversely affect the ground water recharge. The High court of Delhi heard the petition and ordered constitution of a Committee to examine the issue and give its report, which was challenged in Supreme Court of India, which in July 2009 dismissed the petition and gave green signal to the Project.

5.0 The Legacy

The Commonwealth Games Village is proposed to be used as a prestigious Housing Complex after the Games and has been developed keeping in mind the requirement of elite group with high end specifications, luxury fittings, state of the art technology and liberal parking provisions etc. The cost vary from 0.36 million US \$ to 1.00 million US \$ for 2 bed rooms to 5 bed room houses, respectively.

5.1 The project has been taken up in Public Private Participation basis. The land was given to the developer at a premium based on tenders and with the condition that apart from the agreed upfront payment for the land the developer will give 1/3rd of the total dwelling units to landowning agency after the games which means the developer will dispose remaining 775 dwelling units of the Commonwealth Games Village. The dwelling units are to be handed over to the prospective buyers after the games.

5.2 The games village is going to set an example of model village which has minimal impact on environment, self-sufficient in terms of physical, social and sports infrastructure, pleasing landscape and appropriate link with the adjoining landmarks and heritage structures.

6.0 Conclusion

The Village Complex will showcase a good community living, healthy environment, mixing of cosmopolitan characters, people of different caste / background / social and income levels. The system being set for its maintenance post games is also very good and efficient. In over all terms, the Village may showcase several aspects which may be useful for such complexes worldwide, irrespective of their physical location.

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