

Infrastructure Corporation of Andhra Pradesh Limited (INCAP)

REQUEST FOR PROPOSAL (RFP) International Competitive Bidding

Volume III: Project Information Memorandum

SELECTION OF THE DEVELOPER FOR AN INTERNATIONAL SCHOOL AT TIRUPATI IN ANDHRA PRADESH ON PPP BASIS

(December 2015)

(BID DUE DATE: 15-02-2016)

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1. BACKGROUND

The Government of Andhra Pradesh's vision is to be amongst the top 3 states in India by 2022, the top state in India by 2029, and be the most preferred global destination by 2050. The state is a progressive state and the government is taking steps to provide an environment conducive to economic and social growth. These include formulation of investment friendly policies; creating world-class infrastructure; improving good governance and taking necessary steps to attract investments into the state. Promotion of social infrastructure is one amongst the many initiatives being taken up by the government on a priority basis.

International schools are being promoted to provide world-class education to the students and also as a tool to attract foreign investments to Andhra Pradesh. It is well known that availability of international schools is an important consideration for non-Indian staff of MNCs who come to India. Continuity of children education is an issue faced by them as they frequently move / transfer between different countries. Also, international schools help in contributing to better standards and quality of education in the region in addition to a multitude of benefits. Thus, one of the flagship projects being taken up in the social infrastructure sector in Andhra Pradesh includes development of International School in Tirupati.

1.1 Project brief

An International School is a school that promotes school education, in an international environment, either by adopting a curriculum such as International Baccalaureate (IB), Cambridge International General Certificate of Secondary Education (IGCSE) or by following a national curriculum different from that of the school's country of residence e.g., American International School in Chennai. International schools provide an opportunity to develop cross cultural understanding, an international outlook and an ability to build quality relationships with people from diverse nationalities. A good international school will have both students and faculty from mixed cultures and nationalities in order to develop a global outlook.

The Government of Andhra Pradesh intends to develop international schools in each of the cities of Visakhapatnam, Nellore, Tirupati, Guntur, Anantapur and Puttaparthi on Public Private Partnership (PPP) model. These international schools will play a key role in not just imparting world-class education to the residents of Andhra Pradesh but also in attracting industrialists, investors, diplomats and students from across the globe.

In this regard, Infrastructure Corporation of Andhra Pradesh (INCAP) has requested for an Expression of Interest (EOI) Notice No. INCAP/P/ International Schools/127/2015 dated 26-02-2015. The EOI is invited from private developers (single entity or a group of entities) for development of International Schools on Design, Build, Finance and Operate basis under Public- Private-Partnership (PPP) mode at Visakhapatnam, Nellore and Tirupati in Andhra Pradesh. There were seven (7) responses to the EOI and a respondents meeting was held at the Board Room of INCAP on 24-04-2015 to discuss the suggestions and feedback from the EOI participants.

1.2 About INCAP

The Govt. of Andhra Pradesh created the Infrastructure Corporation of Andhra Pradesh (INCAP) on 31st May, 2005, as part of the Department of Infrastructure and Investment. INCAP was envisaged to expressly increase the pace of infrastructure development by assisting the setting up and development of Private public Participation projects in the State. It is designated to don the roles of a Developer, Advisory and Manager and render a full range of services in every phase of project development, from inception to completion. The Corporation runs in the commercial Format. INCAP will thus enable socioeconomic progress and all round development of the State under PPP route.

It acts as a special purpose vehicle constructing different project schemes for the state governments, and other public authorities and to carry on the business of developing, operating maintaining and upgrading infrastructure facilities at different locations and to engage in the activities of development of physical infrastructure.

2. PROJECT CONCEPT

The school design is envisaged for holding around 1000 students at steady state capacity. There will be twelve classes (I to XII) along with upper & lower kindergarten and a nursery. The syllabus to be followed could be either IB, IGCSE along with the option of CBSE, CISCE or SSC. The key aspects envisaged in the International Schools apart from strictly adhering to the global standards of international schools are detailed below:

- **Global Student base:** These schools typically have students from across the globe. These schools largely cater to children of expats and diplomats who come for an international learning environment and are characterized by very high student and faculty diversity. These schools also cater to the local HNI (High Net-worth Individuals) and upper middle class parents who seek international education quality for their children.
- **State of the Art Infrastructure:** International schools offer high quality infrastructure including facilities which provide students opportunities to develop their skills and knowledge. Typically the schools have large campuses for outdoor activities including large playgrounds, swimming pools, auditorium, large libraries with latest books, technology centers etc.
- **Differentiated Curriculum:** Focused on global outlook, these schools typically follow international curriculum such as IB or IGCSE. In addition, there is a focus on creating learning opportunities to students through other extra-curricular programs.
- **Quality of Placements (to Foreign Universities):** International schools have a good track record for placements in foreign universities and provides overseas based training opportunities as well.
- **Faculty quality and diversity:** These schools have faculty from across the globe. For example: Woodstock School, Mussoorie has 60 academic staff who come from various countries such as United States, the United Kingdom, Canada, Australia, New Zealand, South Korea, and Europe.
- **International Recognition / Accreditations:** Several international accreditations and alliances for student exchange, placements in global universities etc. are common features in international schools. These schools also have affiliations for foreign exchange programs and tie ups with international institutes for providing certification in music etc. These schools are accredited by agencies such as the CIS, NESAC, and TAISI among others and hence, are able to project an international image

2.1 Curricula

Some of the widely followed curricula by International Schools in India are as follows:

1. **IB:** Founded in 1968, the International Baccalaureate® (IB) is a non-profit educational foundation offering four highly respected programmes of international education that develop the intellectual, personal, emotional and social skills needed to live, learn and work in a rapidly globalizing world. Schools must be authorized, by the IB organization, to offer any of the programmes.
2. **IGCSE:** Cambridge IGCSE is one of the world's most popular international qualification. It is taken in over 140 countries and in more than 3700 schools. Cambridge International Examinations is the world's largest provider of international education programmes and qualifications for 5 to 19 year olds. It is a division of Cambridge Assessment of IGCSE, a not-for-profit organization and part of the world-renowned University of Cambridge.

Other curriculum models which are found in India are the US Curriculum model and the Ontario Curriculum model (Canadian). Following the definition that an international school offers a national curriculum different from that of the school's country of residence, India has about 500 international schools. Of these, 319 schools offer Cambridge IGCSE, 119 schools offer IB curriculum and the rest are at various stages of accreditation from these curricula or offer various other curricula like American curriculum, German curriculum, French curriculum etc. Some of the schools offer multiple curricula along with national curricula like CBSE and ICSE.

2.2 Target Segments

Student profile in an international school is global, a key differentiating factor. For example, Woodstock school, Mussoorie has children from 26 nationalities. Certain target segments for an International School are mentioned in the figure below:

Non Resident Indians and expatriate Indian families	They want their children to study in India and are able to easily afford the premium fees being charged by the International Schools
Affluent Indian Families / HNI Parents	Children of parents working in multinational firms / corporates Children belonging to affluent business households / conglomerates / celebrities
Foreign Diplomats / International HNI parents	Foreign diplomats are an important target segment as they prefer IB curriculum International students rely mostly on brand and reputation of the school

2.3 Key Examples in the International School Education Space in India

Some of the prominent schools which have been able to create an identity by offering differentiated value proposition include the following:

Name of the school	Entity Structure	Curriculum Board
The British School, New Delhi	Not-for-profit day school registered as Society under the Societies Registration Act, 1860	<ul style="list-style-type: none"> • Primary/ middle – England National Curriculum, IGCSE • Higher school – IB (Diploma Program), IGCSE
Woodstock School, Mussoorie	Registered as non-profit Society	IGCSE
Pathways School, Gurgaon	It is run as a company with profit accruing capability	<ul style="list-style-type: none"> • IB PYP (Pre Nursery to Grade 5) • MYP (Grades 6 to 8) • IGCSE (Grades 9 & 10) IB Diploma (Grades 11 and 12)
Doon School, Dehradun	It is a Section 25 company Managed and owned by Indian Public Schools' Society (IPSS)	IB, ICSE
Dhirubhai Ambani International School, Mumbai	Run as not-for-profit Trust	<ul style="list-style-type: none"> • ICSE • IGCSE • IB
Kodaikanal International School, Tamil Nadu	Registered as Section 25 company	<ul style="list-style-type: none"> • International Baccalaureate (IB) • American curricula

2.4 Few prominent well designed schools in India

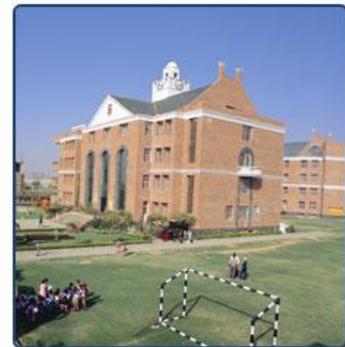
Dhirubhai Ambani International School, Mumbai (www.da-is.org)

Dhirubhai Ambani International School located in Bandra (East), Mumbai is one of the best International School in India established in the year 2003 and spread over an area of around 3 Acres, the School aims at imparting world-Class educational experience to its students covering all the required facilities like Playground, Laboratories, Class Rooms, Landscape, Study Centres, Activity Areas, Cafeterias etc.



Scottish High International School, Gurgaon (www.scottishhigh.com)

Scottish High International School, located in Gurgaon, has an attractive Building in Scottish Architecture. Spread over 5 Acres of area, the School is best known for its quality of education which is a good balance of both curricular and co-curricular activities. The management aims to provide each student the right education in a creative, secure and supportive environment that promotes all round development, value based learning and quest for excellence.



Indus International School, Bangalore (www.indusschool.com)

Indus International School is established in July 2003 at Sarjapur near Bangalore, and is the brainchild of the Indus Trust. The School was established with a vision to create leaders of the future, by imparting holistic education in an environment of excellence, where students and faculty from different parts of the world come together for the purpose of learning. It is ranked No.1 amongst International day boarding Schools in India.



Adani Vidyamandir, Ahmedabad (www.adanividyamandir.org)

Adani Vidya Mandir was started in 2008 by The Adani Foundation to promote its CSR activities. Adani Vidya Mandir is envisioned as an answer to the growing trends of so called “International Schools”, providing free education to the adept but deprived Classes. The trust provides free education to children hailing from families whose yearly income is less than Rs.1.00 Lakh. The School has become a unique example of unconditional distinction.

The School building is located in a pollution free area of Makarba in Ahmedabad. It is spread over an area of over 7 Acres with a total built-up area of over 1,10,000 Sq.ft. A rambling campus in picturesque surrounding with lush green lawns and gardens provides a refreshing environment, stimulating intellectual alertness, creativity and an exotic look. Designed by Apurva Amin architects, the School building has well planned Activity Centre, Multi-Purpose Hall, Library, SMART Lab, Computer Lab, Science Labs, Math Lab, Seminar Halls, Sports facilities, Play-ground and a Canteen. The campus is fully networked. Presently the School is from 3rd to 12th Science and Commerce. (www.archdaily.com)

**Heritage School, Pune**

The Heritage School in Pune, established in 2005, in collaboration with Pearson Schools in Pune, is one of the best residential Schools in India. As a co-educational School, it offers Classes from nursery upwards, providing blend of academic, sporting, cultural and artistic activities in a high quality environment. Designed by Madhav Joshi and Associates, the School comprises a spacious building with modern facilities.

The School has state-of-the-art Class Rooms, a Laboratory and library, and audio-visual room and art studio, and a playground for sports and recreation. The School campus area is 10.4 Acres with a built-up of 21,043 Sq.m. The residential cluster comprises of 10 dormitories, 5 studio apartments for warden, residence for the principal and



students' centre. The academic cluster consists of 14 Class Rooms, 3 Laboratories, 2 teacher's Rooms and 2 toilet blocks. Provision for Rock-climbing, Swimming, Horse-riding and sports like Volleyball have also been made. A Catering Center with dining hall & adequate service areas has been provided. The School also has a 12-bed medical facility along with a registered nurse.



Nirma Vidyavihar, Ahmedabad (jws.nirmavidyavihar.co.in)

Nirma Vidyavihar is a recent initiative of Nirma Education & Research Foundation [NERF], after successful academic endeavor of Nirma University towards exploring value-based education through offering an enabling environment to young minds to discover and achieve their potential.

The philosophy evolved around *'Schooling, as it should be...'* with innovative yet fundamental academic practices aimed at holistic development, with educating core human values for worthy livelihood. The state-of-art campus is equipped with large spaces for daily assembly and varied curricular / co-curricular activities and administration functions, including various support functions such as Labs, Libraries, Music Room, Dance area, Amphitheater, etc. The ClassRooms are spacious and well-ventilated, with necessary lighting and network connectivity. The School is on a Site of 1.52 Acres



and has a built-up area of 8,615 Sq.m.

Delhi Public School, Raigarh

The DPS Society is a non-proprietary educational body, widely recognized for its progressive approach and commitment to excellence. Distinction and diversity are the twin hallmarks of our philosophy; educational leadership and scholarly achievement is their mission.

The 26 Acres DPS Raigarh School aims in the service and the reconstruction of the community with a basic component of academic development of its children a warm iconic climate is set to pursue pedagogic superiority. The School provides education from pre-primary to High School and has facilities like Robotics Lab, Computer Lab, Science Park, Play-ground, Library, Swimming pool and Smart Class.



Nalanda International School, Vadodara (www.nalandaschool.org)

Nalanda International School is situated on a picturesque 25-Acre campus at Sevasi-Mahapura Road, Vadodara. The School has been established in 2004 by the Nalanda Knowledge Foundation, a registered, not-for-profit organization which professionally manages the School. The School focuses on the overall personality development of the child – the mind for the Sciences, the heart for the arts, the physique for sports. The School buildings are open and spacious, seamlessly integrating environment with learning.



2.5 Top 10 International Schools in India

In the survey conducted by The Education World, the following top boarding schools were listed for the year 2014. The survey was done on the selected 913 schools across the country and different parameters and different categories. The list of schools prepared under day schools, day-cum-boarding schools and residential schools.

The following table shows the list of top 10 international schools in India.

INTERNATIONAL SCHOOLS		
DAY	DAY-CUM-BOARDING	RESIDENTIAL
1 Dhirubhai Ambani International School, Mumbai	1 Indus International School, Bangalore	1 Kodaikanal International School
2 The Riverside School, Ahmedabad	2 Pathways World School, Aravali	2 Woodstock School, Mussoorie
2 Ecole Mondiale World School, Mumbai	3 The International School, Bangalore	3 Mahindra United World College, Pune
3 Oberoi International School, Mumbai	4 Indus International School, Pune	4 Hebron School, Ooty
4 Mercedes Benz International, Pune	5 Canadian International School, Bangalore	5 Good Shepherd International School, Ooty
5 Scottish High International, Gurgaon	6 Agha Khan Academy, Hyderabad	6 Fravashi International Academy, Nashik
6 Pathways School, Gurgaon	6 G.D. Goenka World School, Sohna Road, Gurgaon	7 SCAD World School, Coimbatore
7 Pathways School, Noida	7 Genesis Global School, Noida	8 The Cathedral Vidya School, Lonavala
8 International School of Hyderabad	7 Indus International School, Hyderabad	9 Vishwashanti Gurukul, Pune
8 Aditya Birla World Academy, Mumbai	8 Stonehill International School, Bangalore	10 Kimberley — The Boarding School, Chandigarh
9 Podar International School, Santacruz (W), Mumbai	9 Lancers International School, Gurgaon	
9 Billabong International, Santacruz W, Mumbai	9 Vidya Sanskar International, Faridabad	
10 Ryan Global School, Mumbai	10 Singapore International School, Mumbai	
10 Sadhbhavana World School, Kozhikode	10 KIIT International School, Bhubaneswar	

Source: Education World India School Rankings (www.educationworldonline.net)

3. OVERVIEW OF TIRUPATI

3.1 Demography

The urban population of Tirupati city is 4.1 lakhs. The city has a literacy rate of 85.3 % (Andhra Pradesh - 67.4 %) with male literacy at 90.4 % and female literacy at 80.1 %.

Tirupati is the biggest city in the district of Chittoor which has an area of 15,359 sq. km, with an agriculture based economy along with forest, minerals, engineering, leather and chemical based industries. The district has a significant young population of about 14 lakhs (males – 7.3 lakhs; females – 6.8 lakhs) i.e about 33.7 % of the total population are less than 20 years of age. Of these, 11 lakhs lie between the ages of 5 – 19 years i.e. 26.3% of the total population are of school going age.

3.2 Industrial Profile

Tirupati is a major tourism hub in Andhra Pradesh and the largest city in Chittoor district. Chittoor is a hub for various type of industries including agricultural, horticulture, food processing, forest, minerals, tourism, leather, etc. It is ideally located in close proximity to the Chennai – Bangalore Industrial Corridor (CBIC) and the Vizag – Chennai Industrial Corridor (VCIC). In 2014, the total value of production by Large and Medium scale industries in the district was Rs. 4,500 Crores and there was a capital investment of about Rs. 3,200 Crores. These industries provide employment to about 17,227 people.

Tirupati also has a huge potential for growth of service sector enterprises. Currently, many Public Sector Enterprises and MNCs exist in the region. There exists wide scope for service providing companies to set up tool rooms, machine shops, testing centers, design centers, CAD/CAM centers, IT service providers, BPOs, etc. Other services like DTP Centers, Market consultancy agencies, financial accounting services, Chartered Accountants, X ray clinics, Diagnostic services, DTP, Xerox, and other Hand holding services, etc. have ample scope for development. Software Technology Parks of India, under Department of Electronics and Information Technology, Ministry of Communications and Information Technology, Government of India, set up in the year 1991 with the objective of encouraging, promoting and boosting the Software Exports. STPI Tirupati is operational since December 2001 with the objective of promoting the local IT Industry.

Sri City SEZ

Sri City is a Planned Integrated Business City (Township) located in Chittoor District about 80 km from Tirupati. Envisioned to become one of “India’s five best cities to live and work in”, the Integrated Township includes various Zones: Industrial, Residential, Educational, Commercial and Recreational. The Industrial Zone includes a Special Economic Zone (SEZ) for Export Oriented Industry and Domestic Tariff Zone (DTZ) for Domestic Industry. It is a business destination for global companies to establish Manufacturing, Services and Trading operations in India. At least 100 multi-product international companies including Pepsi, Cadbury, Kelloggs, Alstom, Isuzu Motors, Kobelco and others have together employed more than 18,000 people in SRI city.

Apart from creating a vast number of white collar jobs, the township has a huge potential to attract a lot of foreign investors & workers and Indian MNC professionals to the district. Also the overall investment scenario of the region is expected to have a strong positive outlook.

Satish Dhawan Space Centre

Satish Dhawan Space Centre or Sriharikota Range (SHAR) is a rocket launch center operated by Indian Space Research Organisation (ISRO) located in Sriharikota in Chittoor District, about 100 kms from Tirupati. Employing about 2000 people, the Centre has two operational orbital launch pads. SHAR is ISRO's satellite launching base and additionally provides launch facilities for the full range of Rohini sounding rockets. The Vehicle Assembly, Static Test and Evaluation Complex (VAST, previously STEX) and the Solid Propellant Space Booster Plant (SPROB) are located at SHAR for casting and testing solid motors. The site also has a Telemetry Tracking & Control centre, Liquid Propellant Storage and Servicing Facilities (LSSF), the Management Service Group and Sriharikota Common Facilities. The PSLV launch complex was commissioned in 1990. It has a 3,000 tonne, 76.5 m high Mobile Service Tower (MST) which provides the SP-3 payload clean room

Tourism

Tirupati is also one of the holiest Hindu pilgrimage sites. Attracting billions of devotees every year, the world famous Tirumala Venkateswara Temple, which is located at about 20 kilometres (12 mi) north west of Tirupati in the Tirumala hills at an elevation of 853 metres (2,799 ft). The city is also home for other historical Temples like Sri Padmavathi Temple, Sri Govinda Raja Swamy Temple, Sri Kodanda Rama Swamy Temple, Sri Kalyana Venkateswara Swamy Temple, Kapilatheertham. Silathoranam (Natural Arch) is a distinctive geological wonder located in the Tirumala Hills. Tirumala Tirupati Devasthanams is headquartered at Tirupati.

3.3 Connectivity

A. Road: Tirupati Central Bus station Complex is one of the largest in the state and has three mini bus stands within it based on destinations. Edukondalu Bus station is dedicated for the buses connecting Tirupati and Tirumala, Srinivasa Bus Station is for west-bound destinations and Sri Hari bus station is for east bound destinations. Tirupati Bus station Complex has direct bus services to major towns across South India. Balaji Link Bus Station (BLBS) is another bus terminal located at Alipiri for buses only to Tirumala. A number of buses are operated by government operator APSRTC and private operators connecting Tirupati to other major cities and towns such as Vijayawada, Bangalore, Chennai, Hyderabad and Visakhapatnam . Due to its proximity with Karnataka and Tamil Nadu, buses from KSRTC, TNSTC, SETC also operate to Tirupati. APSRTC runs express buses, popularly known as 'Sapthagiri Express', from Tirumala to Tirupati and other major destinations around Tirupati.

B. Rail: Tirupati Main is under the jurisdiction of Guntakal railway division of South Central Railway zone. It is also connected to Chennai Suburban Railway's North Line. Renigunta Junction which lies on the Chennai - Mumbai rail corridor is 15 km away from Tirupati main station. Other stations in the city include Chandragiri, Tirupati West, and Tiruchanur.

C. Air: Tirupati Airport is located 15 km from the city center and has regular flights to Coimbatore, Hyderabad, Kolkata, Mumbai, New Delhi, Vijayawada and Visakhapatnam. The closest international airport is Chennai International Airport which is 130 km (81 mi) from Tirupati. There are plans to upgrade the airport to international status and work is in progress.

3.4 Education in Tirupati

Tirupati is home to many prominent educational institutions including schools including schools, junior colleges, degree colleges, PG colleges and Universities. Famous institutions include:

- Sri Venkateswara University established in 1954.
- Sri Padmavati Mahila Visvavidyalayam is a dedicated women's university
- Medical colleges include Sri Venkateswara Medical College, Sri Padmavathi Medical College for Women, and Sri Venkateswara Institute of Medical Sciences(SVIMS)
- Sri Venkateswara Vedic University to preserve, foster and promote oral traditions of Vedic, Agamic and Cognate Literature
- Rashtriya Sanskrit Vidyapeetha, a University established for higher learning in Sanskrit studies, Traditional Sastras and Pedagogy.
- Sri Venkateswara Veterinary University to strengthen education and services in the fields of Veterinary Science, Dairy Technology and Fishery Science in the State of Andhra Pradesh.
- Sri Venkateswara Institute of Traditional Sculpture and Architecture (SVITSA) run by TTD is one of the two institutions in India offering courses in traditional sculpture and architecture to students.
- Indian Institute of Technology Tirupati (IIT Tirupati) is set to start classes in Academic year 2015-16
- The city is also set to get an culinary institute sponsored by the Ministry of Tourism (India) and Indian Institutes of Science Education and Research (IISER)

A break-up of the various educational institutions present in Tirupati is as follows:

S.No.	Type of Institution	Owned by Govt.	Pvt. Sector	Total no. of Institutions	No. of Teachers	No. of Students
1.	Primary Schools	45	103	148	928	28299
2.	High Schools	19	23	42	361	8128
3.	Junior colleges	2	57	59	720	27,550
4.	Degree Colleges	4	14	18	597	10,517
5.	P.G. Colleges	3	6	9	250	1,935
6.	Universities	7	0	7	986	9621

Currently, there are no international schools and a few prominent CBSE schools in Tirupati. Some major CBSE schools in Tirupati are Sri Vidya Niketan, Accord School and Edify. Their details are as follows:

Key Parameter	Sri Vidya Niketan	Accord School	Edify
Location	Sree Sainath Nagar	Chiguruwada	Thiruchanoor
Established in	1993	2012	2012
Area in acres	50 acres	8 acres	0.6 acre
Day / Residential	Day cum residential (about 60% residential students)	Day cum Residential	Day
Curriculum	CBSE	CBSE	CBSE
Levels Taught	Nursery to 12 th	Nursery to 9 th	Nursery to 8 th
Student Strength	1000	650	550
Faculty Student Ratio	1:25	1:15	1:20

4. PROPOSED PROJECT SITE

The identified site location is an area of 15.17 Acres has been located at Surappakasam near Thandlam Village, Renigunta Mandal, Near Tirupati City, and selected to be developed into an International School. The Site has an excellent connectivity and its serene location makes perfect site to be developed as an International School.

4.1 Location and Site Photos

The location of the identified site is as given below:



4.2 Connectivity

Key distances to major landmarks and residential areas in and around Tirupati are:

Area	Approximate Distance
Tirupati Railway Station	12 kms
Tirupati RTC Bus Stand	11 kms
Airport at Tirupati	12 kms
National Highway (NH-205)	4 kms
SV University	14 kms

Site Surroundings:

The Natural setting of the Site is surrounded by open fields on its four sides. The unique positioning of the Seasonal Pond on its South side is the interesting feature for the entire development. Views from the site towards north and east give good hill scape at a far distance. There are no signs of well-grown plants and site slopes gently from South towards north.

Following is the immediate Built-Context of the Site:

- Northern side : Private Property & Vacant Lands
- Southern side : Open Land , Seasonal Tank (Cheruvu)
- Eastern side : Private Property & Vacant Lands
- West side : Road and Vacant Govt. Lands beyond

4.3 Land Title of the Site

The proposed Site belongs to Tirupati Urban Development Authority (TUDA), Municipal Administration & Urban Development Dept. Government of Andhra Pradesh. Hence, the Govt. of Andhra Pradesh shall govern the 'Project Development Guidelines' and since the proposed project is an 'Education Infrastructure Development Project' in PPP mode, the prevailing PPP Guidelines of Govt. of Andhra Pradesh for 'Infrastructure Development Project' shall be applicable.

4.4 SWOT Analysis of International School at the Identified Location**Strengths:**

1. Proximity: The location is conveniently accessible from many localities in and around Tirupati
2. Construction cost: The identified land for the school is reasonably plain land and will optimize the cost of construction of the school
3. Connectivity: The location is well connected via the NH 18A which is just 3 kms away

Weaknesses:

1. Nascent Market: The market for International Schools at Tirupati is at a nascent stage and it will take slightly longer duration to firmly establish the market for the same.
2. Operational Costs: The cost of running a School with IB / IGCSE curricula is high when compared to schools offering only National Curricula.

Opportunities:

1. Growing Awareness: There is a growing awareness of International Schools and their curricula and parents are willing to send their children to the international curricula as the benefits of a well-rounded and holistic curriculum become apparent.
2. Growing Demand: There is a growing demand for International Schools based on the economic growth profile of Tirupati.
3. Low Competition: There are no schools offering IB / IGCSE curricula in Tirupati and the planned international school can become the market leader if suitably marketed due to its inherent advantages.

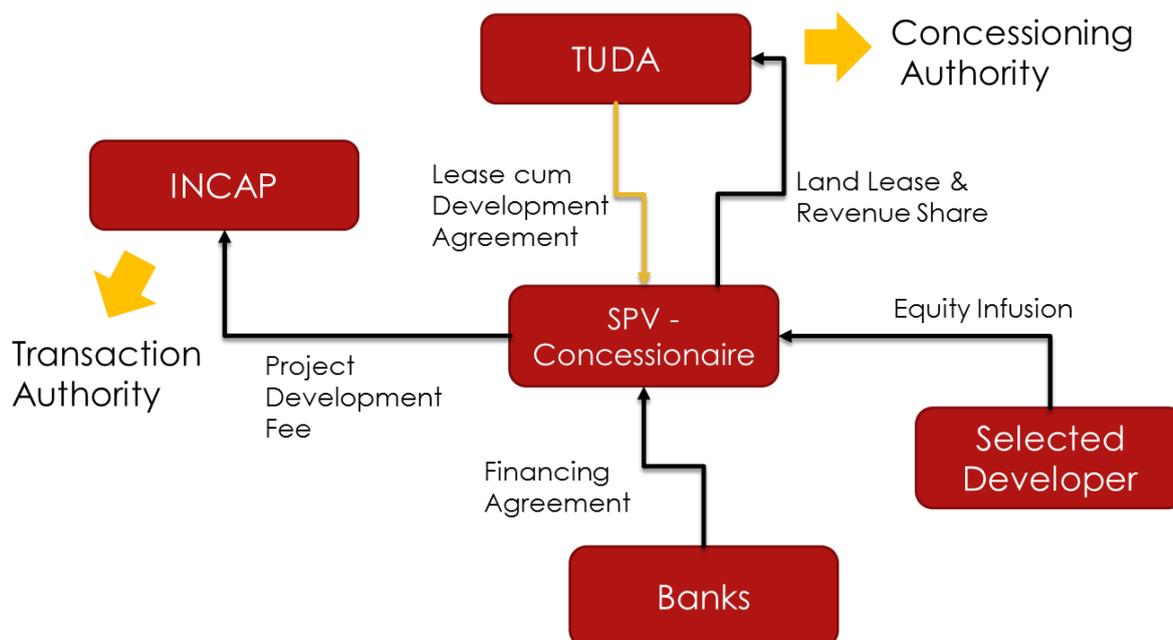
Threats:

- 1 New Market: The Project is the first time that an International School will be developed on a Public Private Partnership and there are inherent risks involved for various parties before the project can be made successful.

5. Project Development

5.1 Suggested Project Structuring and the Rationale

The suggested project structure for the International school can be depicted in the figure below:



The various players in the structure are as follows:

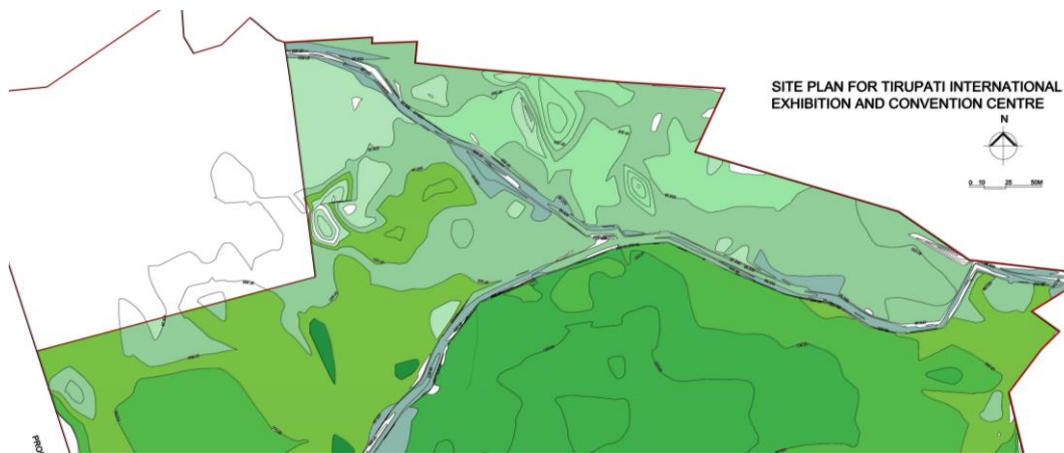
1. **Concessing Authority:** The land at the project site belongs to the Tirupati Urban Development Authority (TUDA) which would be the Concessing Authority.
2. **Transaction Authority:** INCAP may act as the nodal agency to Energy, Infrastructure & Investment (E,I&I) Department and would conduct the bid process management for the project. Correspondingly INCAP will be the transaction authority for the project and the Concessionaire shall pay the project development fee.
3. **Concessionaire:** A Special Purpose Vehicle (SPV) has to be formed by the selected winning bidder (or Developer). The selected Developer would form an SPV (or Concessionaire) as per the Concession Agreement without any subsidiaries. The selected Developer will be the promoter of the SPV (Concessionaire) and the Concession Agreement would be between the SPV and TUDA with INCAP acting as the Transacting Authority.

The lease deed would be between TUDA and the SPV (Concessionaire). The SPV will manage all the activities after the award of the project including financial closure, construction and operations of the project. INCAP as the Transacting Authority shall provide assistance in getting clearances for the project execution and monitoring the execution as per the provisions provided in the Concession Agreement. The Concession fee in the form of Land Lease and Revenue Share shall be paid by the Concessionaire to the Concessing Authority.

ANNEXURES TO PROJECT INFORMATION MEMORANDUM

Annexure 1: Proposed Project Site Plans

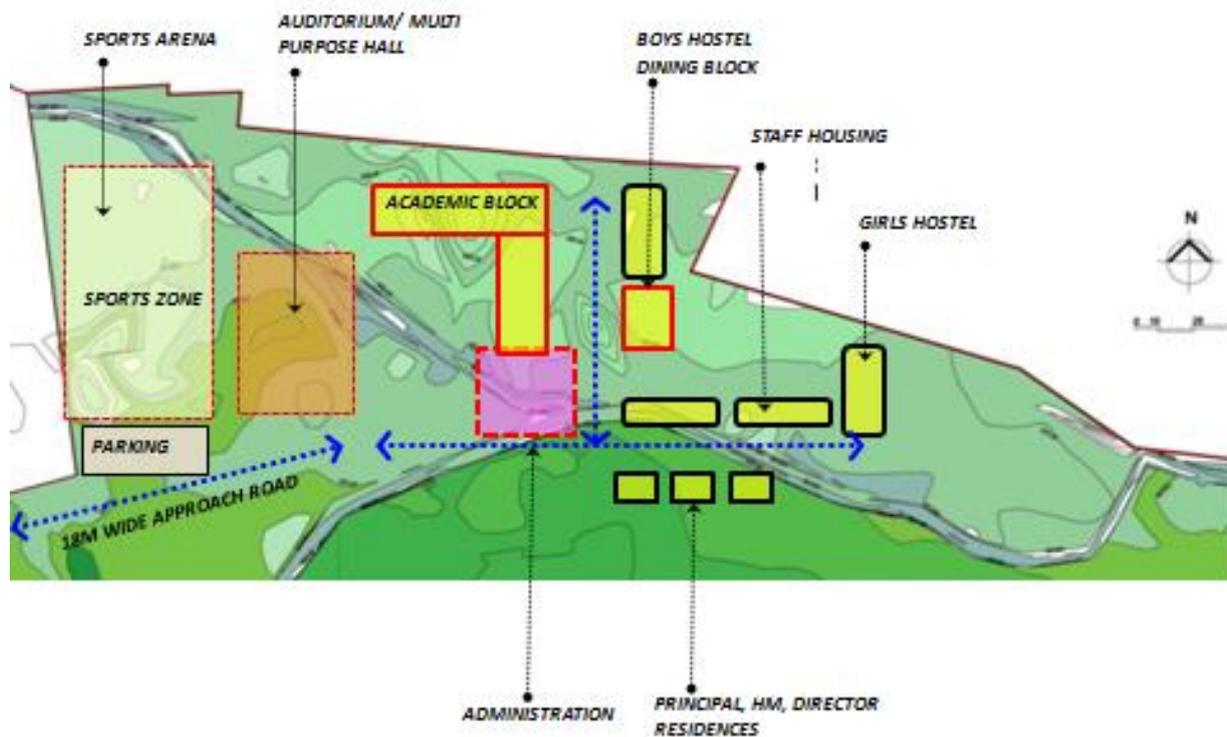
1. Land Parcel



2 Concept Zoning Plan

A brief summary of areas is estimated for the proposed components assuming the minimum areas as per the standards and the area allocation plans in this report specify the minimum capacity and requirements for the project.

In view of the Site context and Topography, it is evident that the School Components are to be placed strategically to minimize the landfill and cut, which in turn the optimization of project cost can be achieved. The Concept Zoning Plan indicates the zoning of the School Components:



3 Conceptual Master Plan

The entire master plan for the International School has been conceived in three precincts planning. The first precinct accommodates the academic, administration and auditorium, while second precinct includes the Sports activity, and Third precinct has been designed with hostels and Housing for the principal and Staff.

In The master plan, the sports zone acts as the interface between the two precincts and connects the both activities. Sufficient car parking and Bus parking has been proposed at the South West corner of the Site at the main entrance. Secondary entry has been proposed at the Northwest corner of the Site towards the Residential precinct for easy access from the main approach road.

The campus has been designed with the main objective of free flow pedestrian movement from Class Rooms to sports zone and to auditorium activities. Vehicular movement has been restricted to the edges of the development so as to create conducive spaces for playing and pedestrian activities.

Auditorium & Multipurpose Hall

The location of the Auditorium has been carefully selected to keep the flexible movement of students and outsiders for any stage shows or indoor games. The connectivity from the Admin block and the Landscape courts towards the entrance plaza has been well positioned for easy movement patterns.

750 capacity Auditorium has been designed with multipurpose spaces to accommodate the indoor games as well. Proper Stage, Green Rooms etc., have been programmed to house the student's shows etc.

Reception, waiting areas and common toilets, manager's room, stores, utility and services spaces also have been carefully placed to manage the flexible space for the indoor activities.

Hostels

The Residential precinct has been designed with Hostels for both boys and Girls along with Staff Housing and Principal, HM and Directors bungalows. A typical room with 3-bed sharing has been designed with a floor plate accommodating 30 Rooms. Common toilet blocks have been accommodated sufficiently as per the NBC-2005 standards. Entry-level floor consists of respective dining areas, kitchen, and stores etc., for the student's facility. The segregation of Boys and Girls hostels has been placed with Staff Housing in the midst of the planning.

5 AREA STATEMENT

As per the design brief and project components, the proposed built up area for the International School has been achieved approximately 1.85 lakh sq.ft. The built up area includes the academic block, administration, auditorium, hostels etc.

1	SITE AREA – SCHOOL (approx.)	10 ACRES	
2	SITE AREA – RESIDENTIAL (approx.)	5 ACRES	
3	TOTAL SITE AREA (approx.)	15 ACRES	
S.No.	DESCRIPTION	AREA IN SQ.M	AREA IN SQ.FT
A	ADMINISTRATION		
	Ground floor	900.00	9,688
	Level-01	900.00	9,688
	Total Area- A	1,800.00	19,375.20
B	ACADEMICS BLOCK- 1,000 STUDENTS, 40 CLASS ROOMS		
	Ground floor	2,750.00	29,601
	Level-01	2,750.00	29,601
	Total Area- B	5,500.00	59,202
C	AUDITORIUM/ MULTI PURPOSE HALL		
	Ground floor	1,500.00	16,146
	Level-01	500.00	5,382
	Total Area- C	2,000.00	21,528
D	DINING - BLOCK / CANTEEN		
	Ground floor	500.00	5,382
	Total Area- D	500.00	5,382

E	BOYS HOSTEL- 300 CAPACITY		
	Ground floor	820.00	8,826
	Level-01	820.00	8,826
	Level-02	820.00	8,826
	Total Area- E	2,460.00	26,479
F	GIRLS HOSTEL- 200 CAPACITY		
	Ground floor	820.00	8,826
	Level-01	820.00	8,826
	Total Area- F	1,640.00	17,653
G	STAFF QUARTERS- 24 UNITS		
	Ground floor	900.00	9,688
	Level-01	900.00	9,688
	Level-02	900.00	9,688
	Total Area- G	2,700.00	29,063
H	PRINCIPLE, DIRECTOR ETC QUARTERS		
	4 Units-Ground floor-H	500.00	5,382
	TOTAL AREAS- X= (A TO H)	17,100.00	1,84,064

6 ESTIMATED PROJECT COST

The area allocation plans in this report specify the minimum capacity and requirements for the project. Development cost estimates have been arrived at assuming efficient construction and fit out to a minimum expected standard.

Construction cost assumptions

- 1 Average cost of construction of civil works is assumed and varies from Rs.1500-2500 per Sq.ft. for Admin, Academics, Dining, Auditorium cum Multi-Purpose Hall, Utility Blocks etc., construction according to market assessment excluding transport cost, in case of any prefab constructions as per discussions with concerned experts and business houses.
- 2 Landscaping cost is assumed as Rs.15.00 Lakh per Acre from similar development projects including standard lawns and hard scape (paving & standard lighting)
- 3 Land development cost is assumed as Rs.2.00 lakh per Acre from similar development projects, which includes leveling of Site and standard drainage facility and laying of electrical channels. Additional cost for Site grading will be assessed during detailed engineering design for the steep contours with detailed building designs.
- 4 Cost of development of School equipment costs etc., are assumed according to market assessment and discussions.

Total estimated project cost

Total Project cost is estimated based on the projects brief and it's built up areas of the respective components. The Total Estimated Project Cost is Rs.5008.00 Lakh (Rs.50.08 Crore). The Details of the same has been indicated in the following table.

S.No.	DESCRIPTION	AREA IN SQ.FT	COST PER SQ.FT	TOTAL COST
1	ADMINISTRATION	19,375.20	1,500.00	2,90,62,800.00
2	ACADEMICS BLOCK-	59,202	2,200.00	13,02,44,400.00
3	AUDITORIUM/ MULTI PURPOSE HALL	21,528	2,500.00	5,38,20,000.00
4	DINING - BLOCK / CANTEEN	5,382	1,500.00	80,73,000.00
5	BOYS HOSTEL- 300 CAPACITY	26,479	1,500.00	3,97,19,160.00
6	GIRLS HOSTEL- 200 CAPACITY	17,653	1,500.00	2,64,79,440.00
7	STAFF QUARTERS- 24 UNITS	29,063	2,000.00	5,81,25,600.00
8	PRINCIPLE, DIRECTOR ETC QUARTERS	5,382	2,000.00	1,07,64,000.00

9	TOTAL- X	1,84,064.40		35,62,88,400.00
	OTHER INFRASTRUCTURE			
10	SITE DEVELOPMENT & LANDSCAPE	15.00	15,00,000.00	2,25,00,000.00
11	MEP, FIRE SERVICES	1,00,105	400.00	4,00,42,080.00
12	TRANSFORMER & DG SETS	LS		20,00,000.00
13	SPORTS FACILITY	LS		1,00,00,000.00
14	FURNITURE	LS		1,00,00,000.00
15	SCHOOL BUS	10.00	60,00,000.00	6,00,00,000.00
16	INFRASTRUCTURE COST-Y			14,45,42,080.00
17	TOTAL = X+Y			50,08,30,480.00
18	TOTAL COST including IDC etc.			62,60,38,100.00

Annexure 2: Soil Investigation Report

CE 060615/5

REPORT ON

SUB SOIL INVESTIGATION AND RECOMMENDATION FOR THE
FOUNDATION OF PROPOSED MULTISTOREYED BUILDINGS AT
SURAPRAKASAM (V), RENIGUNTA (M), CHITTOOR DISTRICT

LOCATION

R.S. No. 764, 767, 768, 769, 770, 771, 772
SURAPRAKASAM VILLAGE
RENIGUNTA MANDAL
CHITTOOR DISTRICT

PROJECT WORK TO

M/S INFRASTRUCTURE CORPORATION OF ANDHRA PRADESH
M/S ANDHRA PRADESH PROJECT FACILITATION CONSULTANCY SERVICES LTD.,
HYDERABAD

SOIL BORING BY

M/S SANDHYA SOIL ENGINEERING WORKS
VIJAYAWADA



SOIL TESTING BY

DEPARTMENT OF CIVIL ENGINEERING
V R SIDDHARTHA ENGINEERING COLLEGE
VIJAYAWADA

Soil Investigation for the proposed "Multistoreyed Buildings" at Suraprakasam (V), Renigunta (M), Chittoor District

**REPORT ON
SUB SOIL INVESTIGATION AND RECOMMENDATION FOR THE
FOUNDATION OF PROPOSED MULTISTOREYED BUILDINGS AT
SURAPRAKASAM (V), RENIGUNTA (M), CHITTOOR DISTRICT**

1. INTRODUCTION

M/s Infrastructure Corporation of Andhra Pradesh and M/s Andhra Pradesh Project Facilitation Consultancy Services Limited, Hyderabad, requested M/S Sandhya Soil Engineering Works, Vijayawada to conduct sub-soil investigation and to recommend suitable foundation for the proposed "Multistoreyed Buildings" at R.S. No. 764, 767, 768, 769, 770, 771, 772, Suraprakasam Village, Renigunta Mandal, Chittoor District of Andhra Pradesh. M/S Sandhya Soil Engineering Works, Vijayawada requested the Civil Engineering Department, V.R. Siddhartha Engineering College, Vijayawada to conduct tests on soil samples collected by them and to recommend suitable foundation for the above proposed structure (vide letter No. Nil, dated 06.06.2015).

The following are the responsibilities of M/S Sandhya Soil Engineering Works, Vijayawada.

1. Soil boring of 150 mm diameter up to 6 meters in ten locations.
2. Collection of undisturbed and disturbed soil samples from the bores.
3. Conducting Standard Penetration Test (SPT) at regular intervals within the bores.

The following are the responsibilities of V.R. Siddhartha Engineering College, Vijayawada.

1. Testing of undisturbed and disturbed soil samples collected from the bores in the laboratory.
2. Recommendation of suitable bearing capacity and type of foundation for the proposed structure.

This report contains the results of field and laboratory tests. Recommendations on bearing capacity of soil and type & depth of foundation for the proposed structure are also included.

2. THE STRUCTURE AND LOCATION

The proposed structures are Multistoreyed buildings, framed structures supported on beams and columns. The proposed structures are to be located at R.S. No. 764, 767, 768, 769, 770, 771, 772, Suraprakasam Village, Renigunta Mandal, Chittoor District of Andhra Pradesh.

Subsoil Investigation for the proposed "Multistoreyed Buildings" at Suraprasanna (P), Ravigunta (M), Chittoor District.

3. SUB SOIL INVESTIGATIONS

3.1 OBJECTIVE

The sub-soil investigation was carried out to determine,

- i) Sequence and extent of each soil & rock stratum likely to be affected by the proposed work.
- ii) Nature of each stratum and engineering properties of soil, which may affect the mode of construction of the proposed structure and their foundation.
- iii) Location of ground water table and possible corrosive effects of soil and water on foundation materials.

3.2 FIELD SOIL INVESTIGATION PROCEDURE

The following methods were adopted for sub soil investigations as per IS: 1892-1979. Ten soil investigation bores of 150 mm diameter and to a depth of 6 metres were proposed and drilled within the proposed building location.

Boring was done using a combination of shell and auger methods with casing pipe depending upon the type of strata met with in the bore hole location using hand boring machine. Bore holes of 150 mm diameter with casing pipe were drilled to facilitate collection of undisturbed (UDS) and disturbed (DS) soil samples and to conduct standard penetration tests (SPT).

Standard penetration tests (SPT) were conducted at every meter intervals within each bore. These tests were conducted as per IS:2131-1981. Number of disturbed but representative soil samples were collected from the auger cuttings and builders for identification and for conducting laboratory tests.

The bore hole number 1 - 4 and 6 - 9 were advanced up to a depth of 6.00 meters below the existing ground level. The bore hole number 5 and 10 were advanced up to a depth of 5.00 - 4.00 meters below the existing ground level. A strata is considered to be hard, when the standard penetration test value N, i.e., the number of blows required for 300mm penetration of the SPT spoon beyond a seating penetration of 150 mm in the strata is more than 50 (clause 3.3.3 of IS:2132-1981). If the penetration of the spoon is less than 300 mm for 50 blows, the N value is written as N>50. The depth of ground water table at the end of boring operation is observed. All the results obtained from the field operations are shown in the log of bores (Figures 1 to 10).

3.3 LABORATORY TESTS

Index tests such as natural moisture content, liquid limit, plastic limit and unit weight were conducted on clayey soil as per Indian Standards to identify and establish the

Soil Investigation for the proposed "Maittareyana Buildings" at Sangipalasa (P), Revigunta (M), Chittoor District.

consistency of these soils. Differential free swell index test was conducted on clayey soils to know the degree of expansiveness of the soils. Sieve analysis was done on sandy soils for knowing particle size distribution.

Unconfined compressive strength and direct shear tests were conducted on SPT/DS soil samples to know the shear strength of the clayey soils. All the results are given in tables 1-20.

4. SUB SOIL PROFILES

The sub soil profile at the bore location, based on the identification of soil samples and the results of the tests (both field and laboratory) are indicated in Figures 1 to 10. The idealized design soil parameters are given in Tables 1, 3, 5, 7, 9, 11, 13, 15, 17 & 19. The water level was found at 5.00 meters (seepage) depth below the existing ground level during June, 2015.

Bore Hole Number : 1

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 1.00	Brownish clayey sandy + pebbles [SC]	14
1.00 – 3.00	Brownish silty sand + little binder [SM-SP]	9 – 10
3.00 – 4.50	Brownish clayey sandy + pebbles [SC-CI]	17
4.50 – 6.00	Brownish clayey sandy + pebbles [SC-CI]	50

Bore Hole Number : 2

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 1.00	Brownish clayey sand [SC]	18
1.00 – 3.00	Reddish brown clayey sandy + pebbles [SC-CI]	5 – 8
3.00 – 6.00	Reddish, whitish brown clayey sandy + pebbles [SC-CI]	16 - 21

Bore Hole Number : 3

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 2.00	Brownish sandy silty clay [MI-CI]	15 – 20
2.00 – 3.00	Brownish clayey sandy + pebbles [SC-CI]	17
3.00 – 6.00	Reddish brown clayey sandy + pebbles [SC-CI]	30 - 20

Soil Investigation for the proposed "Multistoried Buildings" at Sangrakshana (V), Rangipeta (M), Chittoor District.

Bore Hole Number : 4

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 2.00	Reddish brown sandy silty clay [MI-CI]	2 – 4
2.00 – 3.00	Reddish brown clayey sandy soil [SC-CI]	13
3.00 – 6.00	Reddish brown clayey sandy + pebbles [SC-CI]	19 - 25

Bore Hole Number : 5

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 1.00	Reddish brown silty sand [SM-SP]	5
1.00 – 3.00	Grayish brown clayey sandy + pebbles [SC-CI]	10 – 18
3.00 – 5.00	Whitish clayey sandy + pebbles [SC]	20 - 28

Bore Hole Number : 6

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 1.00	Reddish brown sandy silty clay [MI-CI]	18
1.00 – 2.50	Reddish brown clayey sandy soil [SC-CI]	16
2.50 – 3.50	Grayish brown clayey sandy + pebbles [SC-CI]	34
3.50 – 6.00	Grayish brown clayey sandy + pebbles [SC-CI]	22 - 16

Bore Hole Number : 7

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 1.00	Reddish brown sandy silty clay [MI-CI]	7
1.00 – 3.00	Yellowish brown sandy silty clay + pebbles [MI-CI]	24 – 29
3.00 – 6.00	Yellowish, whitish brown clayey sandy + pebbles [SC]	33 - 38

Bore Hole Number : 8

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 1.00	Reddish brown sandy silty clay + pebbles [MI-CI]	15
1.00 – 2.50	Reddish brown silty sand [SM-SP]	9
2.50 – 4.00	Reddish brown clayey sandy + pebbles [SC-CI]	24 – 20
4.00 – 6.00	Brownish, whitish clayey sandy + pebbles [SC]	21 - 27

Soil Investigation for the proposed "Multistoreyed Buildings" at Saravolam (T), Renigunta (M), Chittoor District.

Bore Hole Number : 9

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 1.00	Reddish brown sandy silty clay [MI-CI]	12
1.00 – 3.50	Yellowish brown sandy silty clay [MI-CI]	8
3.50 – 4.50	Yellowish brown clayey sandy + pebbles [SC-CI]	11
4.50 – 6.00	Yellowish, whitish brown clayey sandy + pebbles [SC]	24 - 22

Bore Hole Number : 10

Depth (metres)	Soil Type	Recorded "N" Value
0.00 – 0.50	Reddish brown clayey silty sand [SM-SC]	-
0.50 – 4.00	Yellowish brown soft disintegrated rock fragments	29 - 58

5. SELECTION OF FOUNDATION & BEARING CAPACITY OF SOIL:

Since the proposed structures are Multistoreyed buildings, supported on beams and columns and the good soil is available at shallow depth, Open foundation in the form of Isolated footing/Raft foundation is suitable. Though the good soil is available at Bore Hole No's. 3 – 8, 10, Bore Hole No's. 1, 2 and 9 (less bearing capacity compared to Bore Hole No. 3 – 8, 10) governs in deciding the safe bearing capacity of the soil.

OPEN FOUNDATION:

The size and depth of foundation can be decided based on loading and soil characteristics. The depth of foundation should satisfy the following requirements.

1. It should rest on sound strata of adequate bearing capacity and safe from settlement consideration.
2. It should have adequate embedded length so as to resist the over turning moments due to horizontal forces.

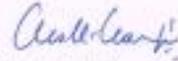
Since the good soil is available at shallow depth, a depth of foundation of 2.50 – 3.00 metres below the existing ground level is proposed. The safe bearing capacity of soil at different depths and different locations are given in Table 1, 3, 5, 7, 9, 11, 13, 15, 17 & 19. Though the good soil is available at Bore Hole No's. 3 – 8, 10, Bore Hole No's. 1, 2 and 9 (less bearing capacity compared to Bore Hole No. 3 – 8, 10) governs in deciding the safe bearing capacity of the soil.

Soil Investigation for the proposed "Mahatma Jyoti Buildings" at Singaprolasam (V), Rongireddy (AO), Chittoor District.

An allowable bearing capacity of 100 kN/m^2 (10.0 tons/m^2) is recommended at a foundation depth of 2.50 meters below the existing ground level for the isolated footing/raft foundation.

An allowable bearing capacity of 125 kN/m^2 (12.5 tons/m^2) is recommended at a foundation depth of 3.00 meters below the existing ground level for the isolated footing/raft foundation.

Below the base of the foundation, a bed concrete 1:4:8 mix, 200 mm thick is recommended. The soil should be well compacted before laying the foundation.



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Annexure 3: Standards and Specifications for International Schools

School Space Specifications

1. The location of the school must not be adjacent or close to noise sources, commercial or industrial sites, and hazardous locations like petrol station that might affect the educational process.
2. It should be in an appropriate, easily accessible location, with entrances not close to highways and main roads. It should also have adequate parking spaces and school buses, and be away from anything that might endanger the safety of students.
3. The school building shall not be used for residential purposes to accommodate school staff and workers. A maximum of two guards can stay in the premises during night shifts.
4. It should have parking area that is safe and large enough to facilitate easy movement of cars and buses.
5. The school must obtain a certificate from the concerned Authorities that, the building meets the safety and security regulations.

School Building Specifications

1. Elementary schools should have a minimum of six classrooms, a science lab, art room, gymnasium, praying room, nurse / first aid station, principal office, staff room, storage room, reception area, guard room and toilets.
2. Preparatory and secondary schools shall have three labs (biology, physics, and chemistry).
3. Classrooms and educational services halls should be quadrilateral with four parallel sides to allow for good view for all students.
4. Using wooden structures for educational purposes is prohibited.
5. It should have activity rooms and halls appropriate to the educational phase.
6. The number of administrative staff in the school should be proportional to the number of students. A separate room should be allocated for each of the principal, vice--principal, secretary, storekeeper and the social worker.
7. All classrooms, administration and activity rooms must be clean, appropriately lit, well ventilated, and air---conditioned.
8. Adequate drinking water coolers should be provided for students away from toilets – one cooler for every 50 students.

9. The building should have adequate, well---ventilated toilets that are built in accordance with health regulations, and should be far from classrooms.
10. It should have a 15x15 m sunshade made of appropriate material.
11. There should be more than one emergency exit.
12. It should have a large praying room to accommodate the students.
13. Fully equipped cafeteria.
14. A suitable outdoor waiting area for students.
15. A minimum of one outdoor sport court (with legal dimensions) for volleyball, basketball, or handball.

Equipment and Facilities Specifications

1. Each school facility should be equipped with one telephone system (at least), fax and e-mail.
2. Each school facility should be equipped with fire---fighting equipment.
3. Schools should have nurse room. The room should be equipped with first aid equipment.
4. School and KG should provide air---conditioned buses with comfortable seats.

KG or School Building Specifications

1. Each educational facility (KG or primary) should have a garden of minimum size 20.2 m².
2. Toys should be made of non---metal materials and comply with safety and security requirements. To be maintained regularly.
3. Schools' play grounds should be cover with soft tartan.
4. Each KG building should have an air---conditioned room for games.
5. Each primary or preparatory school should have one science laboratory and drawing room. (Famine education etc.).
6. Each girl's school should have three rooms for science lab, drawing and ICT laboratory, and an additional room for famine education for girls' school.
7. There should be (at least) one library, and should be supplied with reference books.
8. School buildings should be made of concrete, not wood rooms and to meet requirements.

New Educational Facilities Specifications

1. The width of hallway should not be less than 2.5m if the class is located from one side, and 3.5m if it's located from both sides.
2. The school building should be characterized by simple design and ease of movement and enable for control and oversee of exits and entrances.
3. Classes and activity rooms should be quadrilateral to allow for good view for all students.
4. Provision of accommodations required for students with special needs (e.g. toilets, ramps, drinking water fountains, lifts and emergency exits etc.).
5. Provision of parking area for cars and buses.
6. There should be a minimum of 2m² usable space per student based on international standards.

Air-Conditioning System Specifications in School Building

1. Schools should use split units or central air-condition system in classes and other activity rooms.
2. In case split units are installed, the external unit should be placed on concrete foundation or metal base with circuit breaker near each unit.
3. Making concrete foundations and metal cover for water pumps.
4. Air condition pipes should be combined together and to be linked to the nearest drainage point.
5. Providing water coolers with three taps, and allocating one cooler per 50 students, to be placed on iron base with a basin to collect dropping water and to be linked with drainage system.
6. Water coolers should not be placed inside toilets.

Electrical System Specifications in the School Building

1. Power supply should be provided by a main source, not a generator.
2. In case the school uses a backup generator in addition to the main source, it should be of a muffler type and placed into a closed and safe room and away from students.
3. All electrical panels should be placed inside ventilated closed rooms, or inside key-locked cupboards away from students.
4. All electrical supply panels should be labeled for easier maintenance and repair in case of emergency or disconnection of power.

5. All the lighting units used in bathrooms and kitchens as well as in the building and those units used outside the building or at wall or any external lighting units exposed to weather conditions in addition to electrical switches, should be all weather proof.
6. All electrical wires outside the building that are exposed to weather conditions should be placed into GL PIPE.
7. Electricity room should not be used, as a storage area as to avoid catching fire that will result from short circuit in the panels that are placed inside the room.

Construction & Building Specifications

Construction Specifications, Building Materials, Building Requirements, Building Services, Safety Specifications shall be as per the National Building Code of India, 2005 and Building Regulations shall be as per G.O.Ms.No.168 of MA&UD Dept., GoAP., dated 07.04.2012.

General Principles for the New School Campuses

Natural Surveillance

The building and its environs should be designed so as to provide natural surveillance of external areas. Recessed spaces, which are hidden from view, should be avoided. Surveillance provision to use CCTVs/cameras

Energy Use

The design and orientation of the building should promote energy efficiency through maximizing solar gain and natural lighting, whilst allowing temperature control in south-facing rooms.

Materials

Choice and use of materials should take cognizance of building character in the local area, whilst creating buildings with a contemporary feel. Maintenance free exterior finishes need to be used

Vehicular Access

Vehicular access points should be designed and located in accordance with the regulations

Pedestrian / Cycle Access

There should be a clear strategy for pedestrian and cycle movement into and within the site, which should generally have priority over vehicular movement. This should be based upon a recognition of the surrounding path network and desire lines, the provision of clearly defined access points and safe, direct pedestrian/cycle paths, and the minimization of pedestrian/vehicular conflict. The upgrading of off-site linkages may be required as part of the Safe Routes to Schools programme.

Access and Security

Whilst pedestrian access to the school should be encouraged by providing access points according to identified desire lines, casual access across the site for trips unrelated to the school should be discouraged. Pedestrian entrances should be limited to those necessary to provide convenient access, avoiding duplication. Where there is an existing right of way traversing the site this should, however, be maintained, or a suitable alternative provided.

Buses

Bus access and parking bays should be provided for. Parking should preferably be located within the school site and kept separate from parent drop off/pick up areas. It should connect to safe pedestrian routes to the school building.

Service Vehicles

Access for service vehicles should be clearly identified and should avoid conflict with pedestrian routes.

Drop-off / Pick-up Areas

Where opportunities for safe drop-off/pick-up on the public road are limited, provision should be made within the site. The location and design of such areas should link to safe pedestrian routes to the school building.

Traffic Calming

Traffic calming on adjacent public roads should be considered as part of the strategy for safe pedestrian access to and from the school.

Car Parking

Provision should be made for staff and visitor parking within the site. Parking provision should be based on the school capacity rather than the current roll. These parking levels should be augmented, as necessary, to cater for community use. External social space should be capable of accommodating visitor parking for special events. The location of car parking should be convenient for access to the community wing as well as the main entrance, and should be overlooked by the building.

Cycle Parking

Cycle parking should be provided in the form of racks. The Standard is 1 space per 10 staff and pupils. However, the scale of provision may be reviewed by taking into account local circumstances and likely future demand. Cycle parking should be convenient, well overlooked and secure, with consideration given to lockable areas.

Landscape Strategy

The landscape strategy should integrate the building into its surroundings, impart a sense of identity and cohesion to the site layout, create and define attractive and usable external spaces, soften parking areas (e.g. through use of hedging) and screen unsightly edges. Landscaping must be robust, discourage vandalism, be easily maintained and avoid awkward islands of soft landscaping. It should integrate with the strategies for circulation and biodiversity

Existing Features

Existing hard and soft landscape features (trees, woodland, hedgerows, walls etc.) should be assessed in terms of their landscape, ecological, and cultural value, and incorporated within the layout where they make a positive contribution to the amenity or biodiversity of the site and the area generally. Where trees, hedgerows or other habitats of local importance are removed, there will be a general requirement for these to be replaced at appropriate locations elsewhere on the site.

Bio-diversity

The landscape strategy should, where possible, promote biodiversity through the design, choice of species and maintenance regime. Opportunities for creating areas for outdoor study and promoting biodiversity in the curriculum should be pursued where possible.

Social Space

The external environment should provide for interconnected spaces of varying scale and character capable of accommodating informal student play, congregation and outdoor study. These should be attractive and stimulating areas, combining hard and soft landscaping, and offering seating and shelter from wind and rain. Where possible, they should link to indoor social spaces. Depending on the building configuration, the possibility of using courtyard or 'quadrangle' spaces should be explored. External social areas should enjoy a high level of natural surveillance.

Boundary Treatment

A robust and attractive boundary treatment will be needed to secure the site and define its access points. The design should specify the type/quality of enclosure for different parts of the site boundary, depending on the nature of the edge. For edges bordering public streets and

spaces a higher quality, architectural treatment (walls, railings etc.) and/or appropriate hedging will generally be required, whilst less visible edges may be secured by good quality security fencing, softened as appropriate with planting. Whilst security is important, avoiding a ‘siege’ environment is equally critical.

Public Art

The use of art and sculpture within the school’s public realm will be encouraged as a means of expressing identity and fostering a sense of place. Opportunities for public art should be identified for each school.

Lighting

A lighting strategy is required to ensure that the impact on the locality from floodlighting is minimized. Lighting installations should be designed and located to minimize light spillage to allow adjustment of lighting levels to suit varying levels of use.

Drainage

A drainage strategy will be required for each site, which should include SUDS treatment of surface water. Ideally a shared solution between the school site and associated housing sites should be sought.

Waste

Adequate provision should be made for the management of waste within the site, including facilities for recycling and composting, if possible.

ANNEXURE 4: APPLICABLE BYELAWS & BUILDING GUIDELINES**G.O.MS.NO.168, MA & UD DEPT., GOAP.**

The information provided in this section, is as per the existing byelaws, regulations (G.O. Ms. No. 168, issued by Municipal Administration and Urban Development, Government of Andhra Pradesh, Dated 07.09.2007) and it is subjected to change with change in the Regulations / Development Controls of Tirupati Municipal Corporation and other Statuary or applicable laws from time to time, without any notice.

The building bulk coverage and height shall be governed by the minimum all-round setbacks to be left, the organized open spaces to be left and the height restrictions imposed by the Airport Authority (if applicable) / Defence Authorities (if applicable) and Fire Services Department and the City-level Impact fee on built up area required to be paid, as applicable.

As per Table II, Non High Rise buildings shall be permissible with abutting road width of minimum 12 mt and setbacks vary from the site area and proposed building heights. Other components of Tot-lot and utility areas also have been indicated.

Sl. No.	Plot Size (In Sq. mt.) Above – Up to	Parking provision	Height (In mt.) Permissible Up to	Building Line or Minimum Front Setback to be left (in m)					Minimum setbacks on remaining sides (in m)
				Abutting Road Width					
				Up to 12m	Above 12m & up to 18m	Above 18m & up to 24 m	Above 24m & up to 30m	Above 30m	
1	2	3	4	5	6	7	8	9	10
11	Above 2500	Stilt + 2 or more Cellar floors	7	3	4	5	6	7.5	5.0
			15	3	4	5	6	7.5	6.0
			18	3	4	5	6	7.5	7.0

Maximum height achievable is about 18 mt and 7.0 mt all-round setbacks on remaining side as per Table III of section 7 of the said G.O.

Provision of Greenery

- In every high rise building Site, an organized open space which shall be utilized as greenery, tot lot or soft landscaping, etc. shall be provided over and above the mandatory open spaces to be left in and around the building. This space shall be at least 10% of total Site area and shall be a minimum width of 3mts. This may be in one or more pockets and shall be open to sky.
- In addition to the above, a minimum 2 mt. wide green planting strip in the periphery on all sides within the setbacks are required to be developed and maintained greenery and trees in all high rise building Sites.
- Rainwater structures shall be provided in the prescribed manner within the setbacks.

National Building Code Provisions for Amenities and Facilities

- The building requirements and standards other than heights and setbacks specified in the National Building Code, 2005 shall be complied with.
- Such buildings shall be undertaken by owners by engaging registered architect, licensed builders/developers and licensed structural engineers. The designs and building plans shall be countersigned by the owner, licensed developer, registered architect, licensed engineer and a qualified & licensed structural engineer who shall be responsible for the supervision, and structural safety of the high-rise building and ensuring that such buildings are designed for compliance with earth quake resistance and resisting other natural hazards, and a fire engineer / fire consultant who shall be responsible for fire and life safety and specifications compliance in such buildings.
- The Completion Certificate shall clearly mention that the norms for the above structural safety and fire and life safety requirements have been followed in the design and construction of buildings for making the buildings resistant to earthquake, compliance with structural safety and fire safety requirements.
- The work of the building services like sanitation, plumbing, fire and life safety requirements, lifts, electrical installations, and other utility services shall be executed under the planning, design and supervision of qualified and competent technical personnel.
- In addition to the required staircases and lifts, there shall be at least one fire escape staircase and lift. These lifts shall be certified from the manufacturer's authorized

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- Provision for power generator shall be made in such buildings.
 - Such buildings shall be planned, designed and constructed to ensure fire and safety requirements are met and maintained and shall comply in accordance with the Fire Protection Requirements of National Building Code of India.
 - vii. The facilities for providing fire protection and fire fighting in such buildings shall be in compliance with the stipulations laid down and clearance issued by the Fire Department from time to time. NOC from the Fire Department shall be obtained from time to time regarding the fire safety requirements and facilities installed. The designs and installations regarding fire protection and safety measures including exit requirements and smoke containment and smoke management measures shall be undertaken through a fire engineer / fire consultant.
 - Compliance of the parking requirements shall be as given in these rules. The parking facilities and vehicles driveways etc. shall be maintained to the satisfaction of the sanctioning Authority.
 - Such buildings shall be provided with solar water heating system in the building and solar lighting in the Site for outdoor lighting, etc. and give a bank guarantee to this effect to the sanctioning authority for compliance of the same.
 - All High-Rise buildings with covered area above 300 sq m shall be designed and constructed to provide facilities to the physically handicapped persons as prescribed in the National Building Code of India, 2005.
 - All environmental aspects like provision of Rain water harvesting structures, greenery, solar heating and lighting systems and provisions of the Andhra Pradesh Water, Land and Trees Act 2002 shall be complied in such of the Sites and Schemes where these are applicable.

Parking Requirements

For activities of institutions, the parking area to be provided, as percentage of total built up area is 30% in the municipal corporation areas the parking spaces may be provided in.

- Basements or cellars allowed upto 3.25 mt. height, in one or more levels/multi-level and such cellars shall be allowed in plots 750 sq m and above; or
- On stilt floor or in upper parking floors (at any level) - the height of such parking floor shall be allowed up to 2.75 mt. height;
- In the open space over / setbacks (except the front setback) to be left around the building with adequate vehicular access, aisle, drives, ramps required for maneuvering of vehicles, or

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- In case of non-residential occupancies on Sites below 750 sq.mt., for parking a semibasement of 3 mt. height and with such height not exceeding 1.5 mt. above ground level may be considered.

Other Aspects of Providing Parking Spaces

- The parking spaces should be efficiently designed and clearly marked and provided with adequate access, aisle, drives and ramps required for maneuvering of vehicles.
- Stilt floor/ sub-basement /Cellar parking floor shall be used only for parking and not for any habitation purpose. Misuse of the area specified for parking of vehicles for any other use shall be summarily demolished / removed by the Enforcement Authority.
- For parking spaces in basements and upper storeys of parking floors, at least two ramps of minimum 3.6 mt., width or one ramp of minimum 5.4 m width and adequate slope shall be provided. Such ramps may be permitted in the side and rear setbacks after leaving sufficient space for movement of fire-fighting vehicles. Access to these may also be accomplished through provisions of mechanical lifts wherein the height of the parking floor upto 4.25 mt. is allowed.
- Basement/cellar shall be set back at least 1.5 mt. from the property line and in case of more than one cellar 1 m additional setback for every additional cellar floor shall be insisted
- Visitors' parking to be provided shall be 10 % of the area mentioned (*In Table VI, Section 11 of G.O Ms. No 678*) which is over and above the required parking area, and may be accommodated in the mandatory setbacks other than the front setback, wherever such setbacks are more than 6m. The Visitors' Parking facility shall be open to all visitors.

Inferences

- The Plot size is more than 6 Hectares as per the G.O., requirement and the maximum coverage shall be bound by the Project brief as institutional and not more than 18.0 mt. Height or ground plus five floors permissible.
- The type of construction shall be of institutional architectural style and the remaining area shall be landscaped area with appropriate vegetable cover.
- All round setback of 7.0 mt. is proposed for the development as per the G.O.168.

Recommendations based on ETS & SBC Reports

Based on the Electronic Total Station (ETS) Survey and Soil Bearing Capacity (SBC) Survey Reports, it has been noted, that the proposed site for development of International School is good for construction of building blocks and other facilities. The soil encountered is reddish clay soil upto 3.8 m and beyond is the soft disintegrated rock. It has been recommended safe bearing capacity of the soil at a depth of 3m below EGL and width of 1.5 m is 22 Tones / sq.m.