The institute main building was designed in the form of a spiral to portray its dynamic and expanding nature. The design is also a recall of the cyclonic circulation generated over the oceans. It has quiet centre manifested through the information processing centre that is primary strength of the institute’s activities. The spiraling character also creates a very coherent and compact campus with all the components closely linked around the information block and all other blocks around it. The spiraling circulation pattern emanating from the circulator connects all the other functions of the campus. The internal courtyards offer excellent natural circulation of air as well as shaded quiet ambience. The design recalls a traditional built form in hot arid regions of India which are manifested around courtyards and are tight and well knit built forms.

The total plinth area of the building is about 7600 Sq. m covering the Main Building, Amenity Building, Sub-Station, Car Parking, Covered Pathway, Amphitheatre, Security Building, Sump and Pump House, Over Head Tank and Sewage Treatment Plant.

The Main Building houses Information Block, Director and Administration Block, Library and Tsunami Early Warning Centre Block, Conference Block, Auditorium Block. The Information Block comprises various laboratories viz. PFZ, OSF, Ocean Modelling & Argo Data Centre, Coastal Oceanography, Web-based Services in addition to a specially designed glass chamber for the High Performance Computing Facility and Storage Systems. The Amenity Building houses Canteen, Multipurpose Hall, Guest/Transit Rooms, room for Bank and First Aid facilities.

Technical services comprises of High Tension Power Supply, Transformers with High Voltage/Low Voltage Switchgears, Diesel Generator Sets, Uninterruptible Power Supply, Air Conditioning, Water Supply, Sewage Treatment Plant, Recycling Plant, etc. which included advanced and high end specifications for further expansion in near future. State-of-the-art Access Control System, Building Management System and Fire Safety System and Public Address System are the important technical features of the Building. The Fire Safety System, Air Conditioning System, Access Control System and Public Address System are connected to the Building Management System. The system facilitates automatic attendance and controlled access to various facilities in the Campus. Video Conferencing facility was also set up at INCOIS which facilitates Video Conferencing with the MoES Head Quarters, NIOT and NCAOR.

Extensive floor trunking network to avoid open wiring was provided in all areas of the Main Building for Local Area Network (LAN), Data Cable wiring etc. The Main Building is equipped with the lightning arrester system and lightning interceptors were installed on Over Head Tank and Sub-Station for protection from the lightning.

Intensive landscaping activities were taken up and an artificial lake is being developed to create a good environment in the campus. INCOIS has now plans for extension of INCOIS Building, construction of residential quarters, guest house and hostel accommodation.

Recognising the imperative to put in place an Early Warning System for mitigation of Oceanogenic Disasters that cause severe threat to nearly 400 million of our population that live in the coastal belt with devastation of life and property, and further driven by the national calamity due to the Indian Ocean Tsunami of December 26, 2004, the Ministry of Earth Sciences (MoES) has taken up the responsibility of establishing the National Tsunami Early Warning System. The Warning System has been established by MoES as the nodal ministry at a cost of Rs.125 Crore in collaboration with Department of Science and Technology (DST), Department of Space (DOS) and the Council of Scientific and Industrial Research (CSIR). The National Tsunami Early Warning Centre has been set up at INCOIS, Hyderabad.

The Hon. Minister for Science, Technology and Earth Sciences, Shri. Kapil Sibal inaugurated the National Tsunami Early Warning System that has been set up at the Indian National Centre for Ocean Information Services (INCOIS), Hyderabad on October 15, 2007. Hon. Chief Minister of Andhra Pradesh, Dr. Y. S. Rajasekhara Reddy has graced the occasion. Dr. P. S. Goel, Secretary, Ministry of Earth Sciences gave welcome remarks and spoke about Tsunami Early Warning System at INCOIS.

The Early Warning Centre receives real-time Seismic data from the national seismic network of the India Meteorological Department (IMD) and other International seismic networks. The system detects all earthquake events of more than 6 Magnitude occurring in the Indian Ocean in less than 20 minutes of occurrence. BPRs installed in the Deep Ocean are the key sensors to confirm the triggering of a Tsunami. The National Institute of Ocean Technology (NIOT) has installed 4 BPRs in the Bay of Bengal and the 2 BPRs in Arabian Sea. In addition, NIOT and Survey of India (SOI) have installed 30 Tide Gauges to monitor the progress of tsunami waves. Integrated Coastal and Marine Area Management (ICMAM) has customised and ran the Tsunami Model for 5 historical earthquakes and predicted inundation areas. The inundated areas are being overlaid on cadastral level maps of 1:5000 scale. These community-level inundation maps are extremely useful for assessing the population and infrastructure at risk. High-Resolution Coastal Topography data required for modelling is generated by the National Remote Sensing Agency (NRSA) using ALTM and Cartosat Data. INCOIS has also generated a large number of model scenarios for different earthquakes that are being used for operational tsunami early warning.
Response of the Interim Tsunami Warning Centre (ITWC) to the Earthquakes of September 12, 2007

The interim tsunami warning centre, which was operational at INCOIS before setting up of TEWC, once again proved to be effective as it responded quickly to a potential tsunamigenic earthquake occurred in the Andaman-Sumatra subduction zone at 16.40 hrs on 12th September 2007. The magnitude of the earthquake was 8.4. The ITWC team went into action as soon as the centre received the earthquake information. The centre monitored the water level changes at different locations using the real-time tide gauge data and issued the first tsunami information bulletin which contained an ‘alert’ for Andaman and Nicobar islands within 30 minutes after the occurrence of the earthquake. The second tsunami information bulletin issued at 18.28 hrs also contained alert signals for Andaman and Nicobar islands as the observed water level at Padang (60 cm) and Cocos Island (50 cm) indicated that a minor tsunami was generated. In the third information bulletin issued at 19.35 hrs the alert for Andaman and Nicobar islands continued and a watch signal was issued for Orissa, Andhra Pradesh and Tamilnadu. Since the water level deservatong showed only minor variations, later an “all clear bulletin” was issued at 21.15 hrs. The efficiency of the end-to-end system was successfully proved during this event.

Dissemination of Tsunami Advisories

The TEWC is thereby equipped with necessary facilities to disseminate the advisories directly to the administrators, media and public through SMS, e-mail, Fax, etc. The cyclone warning network of IMD and electronic ocean information boards of INCOIS which are being used for Potential Fishing Zone (PFZ) and Ocean State Forecast (OSF), advisories could be effectively used for dissemination of warnings directly to the public. Periodic workshops will be organized for the user community to familiarize them with the use of tsunami and storm surge advisories as well as inundation maps. Easily understandable publicity material on earthquake, tsunami and storm surges have been prepared and will be distributed to the general public.

INCOIS campus dedicated to the Nation

Hon’ble Union Minister for Science, Technology and Earth Sciences, Shri. Kapil Sibal formally dedicated the Indian National Centre for Ocean Information Services (INCOIS) to the nation on October 15, 2007. Dr. P. S. Goel, Secretary, Ministry of Earth Sciences and Dr. Shailesh Nayak, Director, INCOIS, were present on the occasion.

The permanent campus for INCOIS was developed in a 50 acre land (acquired from the Government of Andhra Pradesh in 1999) at Gajularamaram, Quthbullapur Mandal, Ranga Reddy District, Hyderabad) with state-of-the-art facilities and the right ambiance for an S&T institution. This campus, named as “Ocean Valley”, has been conceived with a vision and realized within a short span of two years. The construction of the building with state-of-the-art technical support facilities commenced in March 2003 with 18 months-schedule for its commissioning i.e. August 2004. INCOIS started functioning from its permanent campus from August 19, 2004. The Civil Engineering Division of the Department of Space (CED/DOIS) carried out the project management of the construction activity.