

**INFRATRACK**

# Curvo Ropeways can be installed



# in all congested cities of the world

Conveyor & Ropeways Services Pvt Ltd (CRSPL) was born in the year 1975 with a vision to provide a safe alternative transport. The company started its activity as a consultancy and has today emerged as a forerunner in the field of aerial ropeways. CRSPL has installed ropeways all over India and in neighbouring countries. **SHEKHAR CHAKRAVARTY, FOUNDER & MANAGING DIRECTOR, CONVEYOR & ROPEWAY SERVICES PVT LTD** responded to **SHRIKANT RAO's** queries.

Give us an understanding of this pioneering technology which could bolster Indian transport infrastructure? Over time cities have experienced gravitation of population towards them for economic reasons. Consequently they have grown at a very rapid pace as a result of which we are now witnessing serious problems of urban commuting. While vehicular transport, metro rail and monorail services have brought down the misery to a great extent in the large cities they have also contributed to pollution leading to human ailments, congestion leading to loss of time and productivity, accidents claiming human lives, not to mention excessive investments in implementation of projects and increasing rate of road damage and repair. Curvo Ropeways, which provide relief from all that, can be installed in all the congested cities of the world.

Curvo is pioneering technology because it assumes an improvisation whereby the overhead ropeway for once can be made to follow a non-linear route along the urban roads. It is adaptable and amenable to bends, being able to follow

existing road routes, travelling overhead without consuming or interfering with the road space below and the vehicular traffic that plies under it. It is safe, pollution free, both in terms of emission and noise. It runs on electricity and does not use organic fuel, thereby permitting the government to cut down on fuel import and subsidy expenditure. Further, having an automated drive system instead of multiple human controls, it is accident proof.

**Tell us more of the need for installing such a system in our cities?**

Commuters travelling in Indian cities have to face many hurdles. They inhale toxic gases from vehicular emissions, drive 2 or 4 wheelers in chaotic traffic conditions, hang out of buses, get sandwiched in metro compartments. Family members, in fact, dread for their dear ones' safe return home. A comfortable, gentle and safe ride every day to office and other destinations and back over crowded city roads is a dream of every commuter. Presently, auto vehicles constitute the main transportation force and it requires considerable growth in infrastructure like roads and flyovers to accommodate the growing traffic volumes. In Kolkata itself, there is a 52 per cent growth since the last decade with less than 7 per cent of effective road space leading to high automobile density, congestion, accidents and effect on air quality. The proposed installation will generate a 2nd tier alternative aerial transportation system along the existing road route negotiated mainly by pedestrian and vehicular traffic. Being electrically driven, and thus being fully pollution free it will

eliminate any possibility of additional generation of toxic emission from diesel driven vehicles. Ropeways can prevent thousands of casualties taking place on the road from accidents every year. Roads saturated with vehicles, with hardly any scope to widen, in most urban cities, develop congestions, and commuters lose a lot of time and energy in getting to their destinations. The objective of overhead Curvo is to avoid them totally.

**Can you talk of the other spinoffs from the introduction of Curvo ropeways?**

This completely new system for urban transportation has the huge potential of opening up an industry and can spread throughout the length and breadth of the country. Being a new system Curvo Ropeway will result in creating an additional infrastructure project for effective transportation. It will generate employment opportunities for commercial operation of the system. Ropeways will require skilled manpower for its installation and operation and being a new technology, the practical training opportunities for engineers coming out of technical schools and colleges would be enormous once the system under consideration is implemented widely. Being an infrastructural project, it will cater for comfortable transportation of commuters. The new technology having originated from the city, traffic feature associated with it will definitely lead to the administrators of major cities getting interested in it. From an environment perspective there is no pollution – whether atmospheric or in terms of noise; it also



does not lead to disturbance of flora or fauna or the aesthetics of the place where it is adopted.

**What can you tell us about the technical aspects of the Curvo Ropeways?**

Curvo is a unique non linear concept permitting ropeways, for the first time in the world to be amenable and adaptable to bends and curves of city roads. It will be an elevated and aerial mode of urban transport. It will run along existing arterial and other roads on steel portal frames spaced at 90-100 metres supporting the ropes. It will need nominal ground space for stations and rope supporting portal frames. It will have no interference with road spaces and vehicular traffic below, or with pedestrian flow. Running on electricity, Curvo eliminates polluting effect of poisonous and green house gases as systematically spewed one by vehicular transport. By the same token Curvo being reasonably noiseless, wages no decibel war. Statistics indicate average vehicular speed in various metros in India to be between 7-10 kmph. The Curvo Ropeway can be made to travel at an average speed of 12.5 kmph irrespective of route alignment, thereby cutting down on commuting time, considerably. The cabins which cruise overhead are aesthetically designed, spaced at 22-25 seconds intervals and have a capacity of 8-10 seats. Since, under no circumstances standing or overloading will be allowed on the ropeways, the quality of ride will be extremely comfortable for the commuters. On any designated route there will be provision for boarding or deboarding facilities at every 750 metre making it convenient for commuters. There will be elevator service to assist passengers to reach the levels of the station. The estimated power consumption for running an equivalent Curvo system for one hour would be approximately about 12 MW only. The entire system will be under constant CCTV surveillance. Risk of accidents is successfully eliminated by pre-empting vehicular accident factors. The construction of the system can take place during night hours without disturbing normal traffic on the various routes. Creation of such a system will also not disturb underground utilities as happens when carrying out construction of metro

and flyover foundations or structures. The disturbance will be miniscule since foundations of the Curvo system are comparatively lighter, located on kerbs and at sizeable intervals

**What is the passenger capacity that this ropeway system can absorb and how many can be transported within a set time?**

The carrying capacity can be so designed and augmented as to ferry 2000-2500 passenger per hour (pph) in each direction on a single track and 4000 PPH on a double track. A study on Kolkata city revealed possible overhead Curvo capacity of more than 200,000 commuters per hour, through multitude routes, which could be equivalent to 3000 bus load of passengers per hour. It is instructive to know that 3000 buses, as a ball park estimate, consume around 5000 litres of gasoline per hour!

**What is the cost of installing Curvo Ropeway transportation systems? What are the main infrastructural requirements for setting it up?**

The cost of installation in the present day would be approximately ₹15-17 crore per km. It could vary with conditions. As far as infrastructural requirements are concerned not much land is required. All stations, angular modules and intermediate support portals shall be of elevated structure and sited on existing road. Hence limited land on the surface will be required for constructing foundations for pylons. For stations approximately 400 sq m area would be required as for angular modules it would be approximately 160 sq m per each. The power requirement for the Curvo Ropeway installation inclusive of lighting shall be 175/200 KW for a 3 km drive section.

**Where else can the Curvo Ropeways be installed?**

Curvo also has the potential of opening up unique transportation facilities over city canals with colourful cabins suspended on moving ropes supported on frames spaced at approximately 100 metres. It can relieve a sizeable percentage of commuter load from road routes. Installation of such systems over them will automatically upgrade the canal banks. Thought could be applied to incorporate solar panels over canals which could contribute to

power required to operate the Curvo drives at installations spread over the city. The Curvo could also be considered for installation along river banks

**Tell us about the outcome of your discussions with the West Bengal government for installation of such ropeways?**

Early last month our team made a presentation to the government and they have expressed interest in the implementation of the project between Sealdah and BBD Bag, Kolkata. We have been asked to submit a Detailed Project Report. In view of the high traffic between BBD Bag and Karunamoyee (Salt Lake), extension of the CURVO Ropeway from Sealdah to Karunamoyee could be considered. ♦

**MAJOR ROPEWAY PROJECTS**

- » Maa Vijayan Deviji Ropeway Salkanpur, Sihore, Madhya Pradesh
- » Narmada Ropeway Bheraghat, Jabalpur, Madhya Pradesh
- » Kailashgiri Ropeway Visakhapatnam, Andhra Pradesh
- » Bhopal Ropeway Bhopal, Madhya Pradesh
- » Sanhati Park Ropeway Ashoknagar, 24 Parganas (N), West Bengal
- » Darjeeling Ranjeet Valley Ropeway, Darjeeling, West Bengal
- » Maa Bamleswari Passenger Ropeway Dongargarh, Chattisgarh
- » Ropeway, Udaipur, Rajasthan
- » Kempty Falls Ropeway, Mussorie, Uttaranchal
- » Passenger Ropeway, Tala, Bhutan
- » Valley Passenger Ropeway, Lonavla, Maharashtra
- » Tsomgo Ropeway, Gangtok, Sikkim
- » Ropeway, Chittagong, Bangladesh
- » Adlabs Imagica Park, Sangdewadi, Mumbai-Pune Highway

**CLIENT LIST**

Hindalco Aditya Birla Group, Coal India, Diamond Cement, Manganese Ore India Limited, SMC Power Generation Ltd., Bhopal Municipal Corporation Limited, Visakhapatnam Urban Development Authority(VUDA), Gorkhaland Territorial Administration (GTA), West Bengal Forest Development Corporation (WBFDC), Sikkim Tourism, Tala Hydro Power Authority, Bhutan, Sahara India.