

Underground Space Development in Singapore

Development of underground space is closely associated with the economic and social development in Singapore. Major development of underground works started in 1970's when the first Singapore Mass Rapid Transit (MRT) line was constructed. Part of the MRT line was built in tunnels under the central business area. The use of basement in highrise buildings have been a long tradition in Singapore and some of the basements 4-5 levels, often used as car parks.

In the last two decades, use of underground space extended to various forms, including underground shopping corridors, underground road and expressways, mass rapid transit system, sewerage tunnels, power distribution tunnels, deep basement, and numerous underground pathways. With geological limitation, most of the underground space developments are in soft ground, in the forms of tunnels and cut-and-cover basement.

The recently completed Deep Sewerage System Tunnel and central treatment plant replaces the existing sewerage pipes and surface treatment plants, which releases substantial land surface otherwise occupied and benefits the people with much better environment.

Presently, the on-going major underground projects include the MRT Circle line, which is totally underground, one underground expressway, and tunnels for power transmission.

One major development of underground space is the use of rock caverns. The study of use rock cavern in Singapore started in 1990, and the first large cavern complex was built between 1999 and 2002, for the storage of ammunitions. This underground storage complex along saved up to 800 hectare of land for Singapore. Other underground rock cavern projects under the planning and development are the Underground Science City to provide office and laboratory space for a science park setting, oil and gas storage in rock cavern in west Singapore to store oil and liquefied gas up to 4 million cubic meters.

Underground space becoming an important element in Singapore, and is being part of urban redevelopment. Combining and integrating above ground and underground space, people can enjoy a better environment, efficient transport and communication system, and quality life.

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All NHPC Projects on Schedule

The National Hydroelectric Power Corporation (NHPC), India is at the forefront of developing the hydel power sources of the country. Chairman and Managing Director Mr. Yogendra Prasad is an outspoken votary of Hydropower. Excerpts of an interview are as follows:

What are NHPC's capacity addition programme?

All projects in the Tenth plan period are under construction and some are nearing completion. We will achieve the target of 4357 MW. The capacity addition programme envisaged for the Eleventh plan period is about 14000 MW. Construction of 10 projects with a total installed capacity of 4967 MW is going on. Construction on some projects like 280 MW Dhauliganga project in Uttaranchal, 510 MW Teesta Stage-V project in Sikkim and 800 MW Parbati-II project in Himachal Pradesh is progressing well.

What are the funding pattern of these projects?

NHPC gets its funding through equity provided by the Central government, the balance is arranged through internal sources and by loans from domestic, foreign financial institutions. NHPC's requirement is Rs. 322.26 billion, which includes equity of Rs.1,42,00 crore, the balance will be arranged from internal sources and loans. The requirement for the two-plan periods together is Rs. 1,000.00 billion. Of this, about 30% will come as budgetary support while we will raise Rs. 100.00 billion through internal accruals.

How is the Subansiri project faring?

NHPC has taken up three projects, the 2000 MW Subansiri Lower, 2000 MW Subansiri Upper and the 1600 MW Subansiri Middle. Work on the first has just started after award of contracts. The project is situated partly in Assam and Arunachal Pradesh. The project is going on within the time schedule.

Source: Hindustan Times, March 28,2005

GEOPARKS

A tool for public education, recreation and sustainable economic development through geo-tourism.

What is a UNESCO Geopark?

- It is a territory encompassing one or more sites of scientific importance, not only for geological reasons but also by virtue of its archaeological, ecological or cultural value;
- It should have a management plan designed to foster socio-economic development that is sustainable (most likely to be based on geo-tourism);

- It should demonstrate methods for conserving and enhancing geological heritage and provide means for teaching geo-scientific disciplines and broader environmental issues;
- It should be proposed by public authorities, local communities and private interests acting together;
- It should be part of a global network which will demonstrate and share best practices with respect to Earth heritage conservation and its integration into sustainable development strategies.

Advantages of Geoparks

Geoparks will be territories wherein the geological heritage of the Earth is safeguarded and sustainably managed. It should also be recognised that success can only be achieved through strong local involvement. Geopark nominations must therefore come from local communities and local authorities with a strong commitment to develop and implement a management plan which meets the economic needs of the local population whilst protecting the landscape in which they live. This novel initiative, which draws on four billion years of geological history in preparation for tomorrow is an excellent means of gaining international recognition for locally or regionally important geological sites.

Within the framework of an international meeting, held at UNESCO headquarters in Paris on 13 Feb., 2004, the “Operational Guidelines for National Geoparks seeking UNESCO’s assistance” and recommendations were presented in their final version. A global “UNESCO Network of National Geoparks” was established. The aim of this network is to provide a platform of cooperation and exchange between experts and practitioners in geological heritage matters under the umbrella of UNESCO. The network spans all regions of the world and shall bring together groups that share common values, interests, or backgrounds. The International Network of National Geoparks under UNESCO shall serve to develop models of best practice and set standards for territories, which integrate the preservation of geological heritage into a strategy for regional economic development.

Source : Geoscience News letter, AGID, December, 2004

Bangalore Metro

The centre will pitch in with Rs. 9.00 billion in equity for the proposed Bangalore Metro rail project, jointly implemented with the Karnataka government. Allocation of the amount is likely to be made in the next budget.

Buoyed by the success of the Delhi project, the UPA government has put Bangalore Metro on fast track. The Planning Commission has given an ‘in-principle’ clearance for the Rs. 56.05 billion project. Sources divulged that a group of ministers headed by Defence Minister Mr. Pranab Mukherjee is scheduled to vet the project shortly. Finance Ministry, it is learnt, is not averse to invest Rs. 9.00 billion in Bangalore Metro rail as 50 per cent partner.

The decision to pitch in with 50 per cent equity marks a shift in the government's position. Earlier, it had clearly told the states that it would only have a nominal stake while they will have to hold most of the equity.

While the detailed project report for the project and financing plan is ready, work on the project is expected to commence in the first quarter of 2005. Delhi Metro Rail Corporation has put together the Bangalore Metro rail project, while the financing plan has been sewed together by UTI Bank.

After Delhi Metro, this is the second major project being taken up by the Centre in conjunction with a state government. Other projects, Hyderabad and overhauling the Mumbai metro rail are at various stages of clearance.

While the Centre and the Karnataka government pitch in with Rs. 18.00 billion towards equity, the Bangalore Metro Rail Corporation will raise Rs. 29.53 billion as loan from domestic banks and institutions. The land cost would be reimbursed to the stage as subordinate debt of about Rs. 3.60 billion.

Source : Hindustan Times, Dec.22, 2004

Longest Overland Tunnel

With a final blast through the granite, Swiss engineers linked Europe's north and south by completing drilling on 28.4.2005 for the world's longest overland tunnel.

The 21-mile (34 km) Loetschberg tunnel under the Swiss Alps, set to open to trains in 2007, will be longer than the current overland record holder – Japan's 16.4 mile (26 km) Hakkoda Tunnel – and will come third overall behind the underwater 33.5 mile (54 km) Seikan Tunnel, also in Japan, and the 31.3 mile (52 km) Channel Tunnel.

It will trim to under two hours the time trains will need to cross between Germany and Italy, a journey that now takes about 3½ hours.

The Loetschberg has been dug parallel to an even more ambitious project – the 36 mile (58 km) Gotthard Tunnel, which will be the world's longest when it is completed over the next decade or so.

For Swiss taxpayers – who are footing the bill for the twin, multibillion-dollar projects – the main selling point is that they will move heavy European Union trucks off narrow highways and onto trains.

Source : Hindustan Times, April 30, 2005

Surat's Diamonds

Diamond traders here operate from the Hira Bourse in a building called the Belgium Tower, right next to Belgium Square. But most of them don't know, or probably don't

care, that their city is set to overtake the Belgian city of Antwerp as the diamond processing centre of the world.

This is not surprising because it seems most of the 15,000 diamond merchants here would rather keep a close watch on the finishing (cutting and polishing) or rough diamonds in their factories than read reports like the one about Surat 'stealing' Antwerp's diamonds in Flemish weekly *Knack*.

Jivrajbhai Surani, owner of JB Diamonds that exports Rs. 100.00 billion worth of polished diamonds, is one such trader. He spends most of his day staring at the three CCTVs on the wall across his desk. Though he insists it's for quality control everyone knows he's just making sure the stones stay where they are supposed to.

Antwerp has been steadily losing business (in carat terms) now comes to India, and Gujarat grabs 95 percent of it. In real terms, the cutting/polishing business in India is worth about Rs. 500.00 billion of which Surat accounts for Rs. 300.00 billion.

One reason for this surge in trade is that in Antwerp, more than 70 per cent of the trade is controlled by Indians who outsource cutting / polishing to India. In fact, an Indian owns Belgium's largest diamond company, Rosie Blue.

Surat's diamond traders now have their eyes on a bigger pie. "India needs to progress from the cutting / polishing sector, that accounts for around \$14 billion, to setting, designing and trading that accounts for \$56 billion," says Nanu Vanani, President, Surat Dimond Association.

In keeping with Surat's emerging place on the international map, the city is set to get an international airport and more five-star hotels.

Source : Hindustan Times, April 13,2005

The Healing Power of Prayer

While no one can absolutely prove that prayers cure illnesses, many doctors cite cases of recovery that can't be attributed to any other reason. What we do know, though, is that religion and spirituality can reduce stress and boost the immune system. "When I started interviewing elderly patients for a study," says Collen McClain-Jacobson, an American researcher," it seemed that people for whom religion had played a major role throughout their lives were aging better than those who weren't religious. A handful of studies have looked at spirituality and immune function and found a connection."

In a 1997 study of older adults by Harold G. Koenig, an American professor of psychiatry and behavioral sciences, those who frequently attended religious services were less likely to have undesirably high levels of interleukin-6, a protein involved in immune response and inflammatory factors, signaling healthier immune systems, than those who did not attend. In a 1998 study of 4000 adults, Dr Koenig found that those who prayed daily and attended religious of 4000 adults, Dr Koenig found that those who prayed daily and attended religious services weekly had 40% less hypertension than those who didn't pray or go to services. A 2004 US study linked church attendance with living longer.

In a 2001 study of women with metastatic breast cancer, S.E.Sephton, an American psychiatrist, found that the women who rated spirituality as important had greater numbers of circulating white blood cells and total lymphocyte counts, reflecting stronger immune systems, than those who did not.

A 2002 study of AIDS patients published in the Annals of Behavioral Medicine found that the most religious patients had the lowest levels of the stress hormone cortisol, and significantly related to longer survival.

Source: Reader's Digest, June 2005

Being Happy

Happiness is the normal natural state of life, so being happy is of the utmost importance. Our success and the fulfillment of our desires come from that inner sense of well being and contentment.

There is nothing in life to take seriously except the joy of life. Our only serious responsibility is to not be serious. Being happy is just learning to appreciate the miracle of life in the present moment. Happiness keeps us in a simple innocent awareness which is the self-referral state of consciousness.

-Deepak Chopra

Source: The Times of India, June 12, 2005

Think Big!

I heard a story about a man on vacation in Hawaii with his wife. He was a good man who had achieved a modest measure of success, but he was coasting along, thinking that he'd already reached his limits in life. One day, a friend was driving the couple around the island, showing them the sights. They stopped to admire a gorgeous house set high on a hill. As the man gazed at the magnificent home, he commented to his wife and friend, 'I can't even imagine living in a place like that.'

Right there, something inside him said, 'Don't worry. You won't. You will never live in a great place like that.' Started at his own thoughts, he asked himself, 'What do you mean?'

As long as you can't imagine it, as long as you can't see it, then it is not going to happen for you. The man correctly realised that his own thoughts and attitudes were condemning him to mediocrity. He determined then and there to start believing better of himself, and believing better of God.

It's the same way with us. We have to conceive it on the inside before we're ever going to receive it on the outside. If you don't think you can have something good, then you never will. The barrier is in your mind. It's not God's lack of resources or your lack of talent that prevents you from prospering. Your own wrong thinking can keep you from God's best.

To conceive it, you must have an image on the inside of the life you want to live on the outside. This image has to become a part of you, in your thoughts, your conversation, deep down in your subconscious mind, in your actions, in every part of your being.

What you keep before your eyes will affect you. You will produce what you're continually seeing in your mind. If you foster an image of defeat and failure, then you're going to live that kind of life. But if you develop an image of victory, success, health, abundance, joy, peace, and happiness, nothing on earth will be able to hold those things from you.

Too many times we get stuck in a rut, thinking we've reached our limits. We don't really stretch our faith. But God wants us to constantly be increasing, to be rising to new heights. He wants to help you to make better decisions.

God wants this to be the best time of your life. But if you are going to receive this favour, you must enlarge your vision. You can't go around thinking negative, defeated, limiting thoughts.

To experience this immeasurable favour, you must rid yourself of that small minded thinking and start expecting God's blessings, start anticipating promotion and supernatural increase. You must conceive it in your heart and mind before you can receive it. In other words, you must make room for increase in your own thinking, then God will bring those things to pass. Until you learn how to enlarge your vision, seeing the future through your eyes of faith, your own wrong thinking will prevent good things from happening in your life. God will not pour fresh, creative ideas and blessings into old attitudes.

God has so much more in store for you. Start making room for it in your thinking. Conceive it on the inside. Start seeing yourself rising to a new level, doing something of significance, living in that home of your dreams. Get rid of that small-minded thinking and start thinking as God thinks. Think big.

Source: Times of India, June 26, 2005