



News & Views

Coober Pedy Underground Homes, Australia

The early Coober Pedy dugouts were indeed the holes that had been dug in search for opal.

It started out over 60 years ago, as a one room dugout manually, used by the mail truck driver. Today opal mining in the town area of Coober Pedy is not allowed any more.

Now nobody digs by hand any more. Any new building work is done by modern tunnelling machines. The homes aren't the deep caves that people imagine. They are actually dug into the hill sides. The entrance is usually at street level, and the rooms extend towards the back into the hill.

The sandstone in Coober Pedy is perfectly suited for underground homes. It is easy to dig through, like all sandstone, but it is very strong and stable. No need to worry about cave ins, no complicated engineering necessary to calculate ceiling heights or spans. When the building work is finished the sandstone is sealed with a clear sealer, otherwise an underground home would be rather dusty. All rooms are ventilated via narrow vertical shafts. One can see the top of those shafts poking out of the hills everywhere in and around Coober Pedy.

Often there is also natural light entering areas like the kitchen and the living room, through wider shafts. The bedrooms are kept at the back of the house. It's an amazing experience to sleep in an underground room. No noise penetrates, the stillness is absolute.

The climate underground is also fantastic. Whether it's below zero or above 50°C outside, the temperature in an underground home is always perfect. And so is the humidity, which is really pleasant compared to the bone dry air in the desert outside. It's a nice relief for the skin and the lungs.

*Source: www.outback-australia-travel-secrets.com
Jun 1, 2015*

19TBMs engaged in Delhi Metro, Phase 3

A total of 19 Tunnel Boring Machines (TBMs) are simultaneously engaged in constructing Metro tunnels across the length and breadth of the national capital, Delhi, thus emerging as one of the largest tunnelling projects ever undertaken below any major urban centre globally.

As part of its third phase of extension, Delhi Metro is constructing over 53km of underground Metro lines comprising of 74 different tunnelling drives of about 37kms. Approximately, 35 TBMs are to be used for this mammoth assignment during the entire third phase and about 21km of tunnels (or 41km tunnels including up and down tunnels) and 33 tunnelling drive have already been completed so far. The entire tunnelling work of Phase 3 is expected to be finished by the end of 2015.

According to Delhi Metro Rail Corporation Ltd. (DMRC) the use of 19TBMs simultaneously within the confines of one city is among the highest used anywhere in the world. In Phase 2, Delhi Metro has used a total of 14TBMs during the entire span of work. For the current phase, so many TBMs are being used because the quantum of underground construction has increased significantly in comparison to the last two phases. While Delhi Metro currently has an operational underground section of approximately 47km, Phase 3 will alone have over 37km of underground section.

*Source: Tunnel Magazine, Apr 2015
(www.tunnel-online.info)*

Four strategic rail lines along China border

The government has kick-started the process of building four top-priority strategic railway lines along the China border - a project that had been stuck in deliberations for years for want of a political decision at the highest level.

Last week, at a high-level meeting with officials from the Planning Commission, Defence, Railways and Finance ministries, the PMO finally asked the Railways to carry out detailed engineering survey of the 1000-odd kilometres of lines identified by the Defence Ministry as strategically crucial. They are in Arunachal Pradesh, Assam, Himachal Pradesh and Jammu and Kashmir.

The Railways has been given time till next month to come up with a cost of the detailed survey, which will be borne by the government (Defence/Finance). Sources said the cost of the engineering survey could be around Rs. 200 crore.

The identified lines are Missamari-Tawang (378 km) in Assam-Arunachal Pradesh; North Lakhimpur-Along-Silapathar (248km) in Assam, Murkongselek-Pasighat-Tezu-Parashuram Kund-Rupai (256 km) in Assam-Arunachal Pradesh; and Bilaspur-Mandi-Manali-Leh (498 km) in Himachal Pradesh-Jammu and Kashmir.

The detailed engineering survey, kind of detailed project report, is the blueprint based on which work is commissioned.

The Railways has informed the PMO that the topography and the geology is such that most of the lines are in the fault and folds of the Himalayan range, which involves stupendous engineering challenges. This means boring railway tunnels through geologically treacherous terrain.

“We had quite a few geological surprises holding up the numerous tunnel works in the Kashmir line many years ago. From that experience, we are sure that these lines will also throw up such surprises. So the detailed engineering survey has to be thorough,” said a Railway Board source.

The survey will take around two years to complete but sources in Railways said given the priority attached to it, they might be asked to expedite as well. But a detailed engineering exercise like this cannot be needlessly rushed as well, officials said.

These four lines are part of the 14 strategically important lines of the armed forces to be used presumably for supplies for the Army and troops movement in times of need.

The 14 identified strategic lines are:

- Murkongsellek-Pasighat-Tezu-Parasuramkund-Rupai
- Missamari-Tawang
- North Lakhimpur-Along-Silapathar
- Patti-Ferozpur
- Jodhpur-Jaisalmer (Doubling)
- Pathankot-Leh
- Tanakpur-Bageshwar
- Jammu-Akhnoor-Poonch
- Dehradun-Uttarkashi
- Rishikesh-Karanprayag-Chamoli
- Anupgarh-Chattargarh-Motigarh-Bikaner
- Tanakpur-Jauljibi
- Jodhpur-Agolai-Shergarh-Phalsund
- Srinagar-Kargil-Leh

The list was drawn up by the Services based on the inputs from the operational commands and validated from an operational and logistics perspective.

All these years, the government had been indecisive about who would fund the lines. Railways had been telling the government that it would make the lines but cannot fund it because of financial difficulties and also citing the fact that the lines were not part of its operational needs. The matter had been stuck at that.

Soon after coming to power, the new government has been holding meetings at the Cabinet Secretariat level to arrive at the decision on this. The lines are part of the government programme of building permanent transport infrastructure along the international borders for strategic purposes. It has recently decided to build 1800 km of highway along the Arunachal Border.

Source: Indian Express, Oct 22, 2014

Canal top solar power plant at Gujarat

Sardar Sarovar Narmada Nigam Ltd. (SSNNL) has achieved a path breaking development in Indian Engineering by completing a 10 MW canal top solar power plant on its Vadodara branch canal at Vadodara, Gujarat which was inaugurated by Mr. Ban Ki-Moon, Hon'ble Secretary-General of United Nations on 11th January 2015. This has been bolstered by the innovative and visionary idea of Hon'ble Prime Minister of India, Mr. Narendra Modi who has advocated utilizing land of canals for solar power generation. This solution takes care of reduction in land cost and reduced evaporative loss of precious water resources.

Source: IEI News, Feb 01, 2015

China plans to build rail link with Nepal through Mt Everest

China plans to build a 540 km strategic high speed rail link between Tibet and Nepal passing through a tunnel under Mt Everest.

“A proposed extension of the Qinghai-Tibet Railway to the China-Nepal border through Tibet would boost bilateral trade and tourism as there is currently no rail line linking the two countries,” state-run China Daily reported on Thursday.

The rail line was expected to be completed by 2020. However, there was no word on the cost of the project. The 1956 km long Qinghai-Tibet railway already links the rest of China with the Tibetan capital Lhasa and beyond. Wang Mengshu, a rail expert at the Chinese Academy of Engineering, said that engineers will face a number of difficulties once the project begins.

“If the proposal becomes reality, bilateral trade, especially in agricultural products, will get a strong boost, along with tourism and people-to-people exchanges,” he said.

Source: Extract from News, Hindustan Times, Apr 10, 2015

Burying a mountain of CO₂

In a cramped work trailer not far from Iceland’s largest geothermal power plant, a researcher pored over a box of core samples – cylinders of rock that a drilling rig had pulled from deep underground just a few minutes before.

In a test that began in 2012, scientists had injected hundreds of tonnes of water and carbon dioxide gas 1500 feet (450m) down into layers of porous basaltic rock, the product of ancient lava flows from the nearby Hengill volcano. Now the researcher, Sandra Snae-bjornsdottir, a doctoral student at the University of Iceland, was looking for signs that the CO₂ had combined with elements in the basalt and become calcite, a solid crystalline mineral.

In short, she wanted to see if the gas had turned to stone. “We have some calcites here,” she said, pointing to a smattering of white particles in the otherwise dark gray rock samples. “We might want to take a better look at them later.”

Snaebjornsdottir and her colleagues are certain that the process works, but the cores – eventually hundreds of feet of them – will undergo detailed analysis at a laboratory in Reykjavik to confirm that the calcites resulted from the CO₂ injection.

The work is part of a \$10 million project called CarbFix, which is developing an alternative way to store some of the carbon dioxide emitted by power plants and industries. When that carbon dioxide is released into the atmosphere, it traps heat, making it the biggest contributor to global warming. So to help stave off the worst impacts of climate change, experts say, billions of tonnes of CO₂ may have to be captured and stored underground.

But doing so is costly. And there are only about a dozen large-scale projects operating around the world, storing a total of less than 30 million tonnes a year, according to the Global CCS Institute, which promotes the technology. Only one of these is at a power plant – the Boundary Dam project in Saskatchewan, Canada, which started capturing and storing emissions from one of its coal-fired boilers last fall.

Boundary Dam and the other projects operate roughly the same way: Carbon dioxide gas, highly compressed so that it acts like a liquid, is injected into a formation, usually sandstone and often an old oil or gas field. Impermeable rock layers above the storage zone should, in theory, keep the CO₂ trapped indefinitely, but because the gas remains buoyant, there is a risk that it will move upward through cracks and eventually bubble back into the atmosphere.

The CarbFix project differs from this conventional approach by using water along with carbon dioxide, and by injecting them into volcanic rocks. The technique is designed to exploit the ability of CO₂ to react with the rocks and turn into solid minerals.

“Basically we’re using a natural process and engineering it for climate-change mitigation,” said Juerg Matter, a geochemist at the University of Southampton in Britain and one of the lead researchers.

But injecting huge amounts of water along with the CO₂ – 25 tonnes of liquid for each tone of gas – adds to the cost. CarbFix scientists have estimated that transportation and injection could cost about \$17 per tonne of CO₂, about twice the cost of transporting and injecting the gas alone.

But Sigurdur Gislason, a geochemist at the University of Iceland and the project’s chief scientist, said the CarbFix approach might have a cost advantage over the long term. Because of the risk of leakage, a conventional storage site would have to be monitored, potentially for hundreds of years. A CarbFix site, with its stable minerals, could be left alone.

What Iceland lacks, however, are significant CO₂ emissions.

Source: Indian Express, Feb 22, 2015

What to do in an Earthquake!

Get under – and hold onto – a desk or table, or stand against an Interior wall. Be prepared to move with your shelter if the shaking shifts it around. Stay clear of exterior walls, glass, heavy furniture and appliances. The kitchen is a particularly dangerous spot. If you’re in an office building, stay away from windows and outside walls and do not use the elevator.

If you’re outside: Stay clear of buildings, power line or anything else that could fall on you.

If you’re driving: Move the car out of traffic and stop. Avoid parking under or on bridges or overpasses. Try to get clear of trees, light posts, signs and power lines. When you resume driving, watch out for road hazards.

If you’re in a mountainous area: Beware of the potential for landslides and snow avalanches. Likewise, if you’re near the ocean, be aware that tsunamis are associated with large earthquakes. Get to high ground.

If you’re in a crowded public place: Avoid panicking and do not rush for the exit. Stay low and cover your head and neck with your hands and arms.

Source: Hindustan Times, May 13, 2015

Breakthrough of India’s longest highway tunnel in J&K

An important milestone was achieved when the final blasting was done to open the India’s longest road tunnel between Chenani to Nashri on the Jammu – Srinagar National Highway. The event was witnessed by Minister of Road Transport & Highways Mr. Nitin Gadkari on July 13, 2015.

The project involves construction of approximately 9.2 kms long main tunnel along with parallel escape tunnel interconnected by 29 cross passages at 300 metres interval. The escape tunnel will

exclusively be used for pedestrians. Deputy Chief Minister of J&K Dr. Nirmal Singh along with various other dignitaries was also present on the occasion.

Speaking on the occasion, Mr. Gadkari said that the Central Government is committed to provide every possible assistance to the state in achieving prosperity and development. Citing the project as a path breaking success, the Minister informed that the tunnel meets all the safety standards with state-of-the-art facilities deployed including fire safety and control etc.

The tunnel will provide safe and all-weather route that will result in a significant time saving to the commuters travelling along the National Highway between Jammu and Srinagar. The tunnel will also reduce distance between Jammu and Srinagar by 30 kms.

The tunnel will ensure preservation of pristine forests in the ecological sensitive Patnitop area. Mr. Gadkari while addressing the gathering informed that the project has already provided employment to about 2000 youth of J&K. This constitutes 94% of the total workforce that has been employed for the construction of this project from J&K. the Minister while applauding the role of the people involved in this ambitious project especially the employees of NHAI and IL&FS Transportation Networks Limited, said that this milestone would not have been possible without their tiresome efforts and immense dedication.

This state-of-the-art tunnel project will also have parking spots after a specific distance to tow away or shift vehicles in case of a breakdown. The four-lane project would go a long way in creating an all-weather road to the Kashmir valley.

Source: <http://beforeitsnews.com/india/2015/07/>, July 27, 2015

Living in a world of professions

We are living in a world of professions. In the present world, it is mostly your profession that defines your identity. Everyone is Mr. Profession or Ms. Profession. The profession-oriented life is the generally accepted lifestyle of every man and woman.

Having a profession means living according to the dictates of the 'money market'. And everyone tries to develop a professional skill that enables him to be a sharing partner in the flow of money in the market. This culture has resulted in a new phenomenon that was absent in former times, that is, living in accordance with external requirements and setting aside internal requirements. In other words, you no longer live according to what is required by your inner nature.

The result is that while everyone is a developed personality in terms of his profession, in terms of his own nature everyone is an underdeveloped personality.

Take anyone at random and ask him about his profession. He will readily give you specific answers. If you speak to him about his professional subject, he will give you a detailed answer for every question. But, if you ask him about those issues which pertain to human life, that is, non professional issues, then you will find that he is not mentally prepared to discuss this subject.

Once I was in a city in Europe, where I happened to meet a learned man. When I asked him about his profession, I found that he was well disposed to share information with me. I learnt a lot from him regarding his professional field. But, at the same time, he was uncomfortable with his wife and admitted that he had decided to separate from her. I asked him the reason. He replied with some confidence: "She is an adamant person and I don't like adamant people." I said that his wife was

doing a very tough job and so she had to be adamant to be successful in it. But, I failed to convince him. The reason was that he knew the science of profession, but was quite ignorant of the science of life.

This is true of every man and woman. Every person is living in a culture of duality. When it comes to their profession, everyone is well-equipped. But, as far as the science of life is concerned, everyone is ill-equipped. This is so common that finding an exception is very difficult.

It is not a question of balance; it is a question of priority. I am not saying that everyone should keep a balance between these two requirements. I am saying that everyone has to rightly set, or resent his priorities.

The problem is that when you try to reset your priorities, you fear that you are going to damage your commercial interests, because when your mind is engaged in intellectual issues, it will not be able to engage in money-related issues. You gain one thing, but at the same time you lose another. But, this is not a genuine excuse. You should not think in terms of money: you should think rather in terms of intellectual development. Intellectual development is so important that no excuse for neglecting it is acceptable. Adopt a simple formula: make intellectual development your first priority and then try to manage all other aspects of your life.

A lack of intellectual development is not a very simple matter. And it is the lack of intellectual development which has resulted in all those problems that are common in our present age, for example, tension, unnecessary disease, lack of peace of mind and losing that very thing that man so desperately wants - happiness.

Source: Speaking Tree, Times of India, Feb 06, 2015

What the Japanese taught us about grief and fortitude

The earthquake in Nepal (of 7.9 M on 25.4.2015) reminds me of an earthquake that ravaged Japan four years ago. The way the Japanese conducted themselves in those moments of grief and crisis should be a lesson for everybody. Here are a few things that left an indelible impression on my mind.

When relief items were being distributed, the victims not only stood in a queue for them, but when somebody felt that the other was needier than him, he gave up his place. Foreign journalists were wonderstruck as they could not find even a single instance where the affected jostled to grab food packets or created a ruckus.

People deposited the valuables found in the affected area at the police station, and only those who had lost their belongings filed claims. A vast number of valuables remained unclaimed. The average Japanese reduced his purchase of household items so that those could be made available to the victims. Those who ran outside when tremors struck went back to clear their bills in restaurants and hotels once the situation became normal.

At one stage, the authorities felt that running a few pumps to cool the nuclear reactors was essential. Fifty-odd engineers risked their lives to fix the damaged pumps and restart their operations.

The agony of loss was visible on their faces, but people showed strength of character by exercising patience of tolerance.

This is how Japan has time and again emerged like a phoenix from the ashes to command a place of pride in the world, whether it is economy, technology or new innovations, and these are some lessons we must remember. It is up to us to face the most torturous tragedies with fortitude, and rise from them stronger and more united.

Source: Hindustan Times, Apr 30, 2015

Asia's fab 50

The top 10 by market cap (in \$bn)

1. Tencent (China)	155.6
2. TCS (India)	80.1
3. Baidu (China)	76.8
4. HDFC Bank (India)	33.0
5. Galaxy Entertainment (China)	32.8
6. Sun Pharma (India)	27.8
7. NAVER (S. Korea)	25.7
8. Tata Motors (India)	25.1
9. Avago Tech (Singapore)	19.0
10. HCL Tech (India)	17.5

(Market capitalization as estimated by Forbes)

Source: Hindustan Times, Sep 03, 2014

Drink juices to be healthy

In the modern world, there is no place where we do not encounter toxins. Toxins can enter our system through pesticides in food, chemicals in water, and pollutants in the air, fresh paints, furniture polish and drugs. But the effects of these toxins vary widely from person to person. They can be acute or chronic depending on the circumstances, dose and duration of exposure. If we eliminate foods that contribute to our toxicity (sugar, maida, junk, refined foods) and eat those that help cleanse the body, our health will improve. Herbs, vitamins, minerals, vegetable juices, correct deep breathing (Pranayam), saunas, aromatherapy, exercise etc. help in detoxification.

Juices that help

Consuming vegetable juices is the best way to improve the nutrient density of your diet without adding too many calories. Raw vegetable juice provides the richest available food source of vitamins, minerals and enzymes, much needed by our bodies. Drinking vegetable juices enables your body to easily assimilate the nutrients found in food. Cooking destroys these enzymes and most vitamins.

Juices that can be made at home

Amla and Turmeric juice: Fresh Amla and fresh Turmeric have many therapeutic benefits. Amla is the richest source of Vitamin-C. It helps increase immunity, aids detoxification and promotes health.

Carrot, beetroot and tomato juice: Use two tomatoes, two large red carrots and one fresh beetroot, and pass all these through a juicer. This combination contains a lot of biologically active

components, which help rejuvenate the cells, detoxify the liver and ensure a glowing complexion. Beetroot juice is a liver tonic. It reduces acidity and aids the elimination cycle. It revitalizes the blood.

Tulsi juice: The juice of Tulsi leaves is known to be an excellent remedy for asthma, bronchitis, cold, cough, sinus problems, acidity, constipation and fever. Crush about 25 leaves into a paste, add water, lime and salt and drink it twice a day.

Carrot juice: Rich in calcium (do not use for Kidney patients), vitamin A, sodium, potassium and magnesium, this juice contains trace amounts of vitamins B, C, D, E and K. It helps fight tumours, increases vigour, helps improve functioning of the nervous system, improves skin, hair and nails, and purifies the blood. You can also take carrot juice along with spinach juice. Blend 50 gm of spinach leaves (after washing them thoroughly in a vinegar solution). Add this paste to the extracted carrot juice. It strengthens immunity, prevents constipation, bleeding gums, anaemia, indigestion, colds and coughs.

Source: Hindustan Times, Mar 11, 2015

Soft skills enable customer success and business productivity

According to a survey, 77% of employees from multinational corporations say that soft skills are just as important as hard skills. With a plethora of carefully designed learning engagements and workshops, soft skills training programs help you realize your maximum potential according to Ms. Neelanjana Choudhury, an internationally certified soft skills training professional with a rich corporate exposure in HR and IT sectors. An avid reader and a person passionate about bringing out the best in people, she strongly believes that in today's world collaboration is the key to success whether it is a corporate setting or social, soft skills are the key ingredients enabling collaboration and productive relations.

Business leaders are becoming more and more concerned with what they call the "skill gap" in today's graduates. They are concerned that today's generation doesn't have all of the necessary soft skills to succeed in today's workplace.

Our job readiness program is specially designed to arm the youth with soft skills that are must in today's competitive job market, says Ms. Choudhury.

The modules covered under job readiness and skill development program include;

- Interview skills
- Inter personal skills
- Goal setting
- Stress management
- Vocal and verbal communication
- Body language
- Time management
- Emotional intelligence & empathy
- Negotiation skills
- Managing conflicts

The modules covered under life skills training program for children include;

- Interaction with other
- Public speaking skills
- Organizing and de-cluttering
- Healthy habits
- Decision making skills
- Relaxation techniques increasing self esteem

Source: www.metaskillsconsulting.biz, Jun 30, 2015

Humour

- Laughing at your own mistakes can lengthen your life; Laughing at your wife's mistakes can shorten your life.

- Shakespear's wife

- It is impossible to lose weight just by eating salads. Ever looked at buffaloes? They eat only grass!

- Anonymous