

Seminar and Demonstration: Drone Surveying for Civil Engineering Students

Date: 16th March 2024

Venue: Jain College of Engineering and Research

Workshop Objectives:

- Introduce students to drone technology and its applications in surveying and mapping.
- Provide practical experience in drone operation and data collection.
- Familiarize students with data processing techniques and software.

INTRODUCTION TO DRONE TECHNOLOGY

A rotor helicopter usually has one single lifting rotor with two or more blades. Helicopters are generally manually controlled and usually difficult to fly. A multirotor is a drone with more than one rotor, generally four to eight rotors. The multirotor needs an internal flight controller, a computer that makes it easier to fly the drone. It simply would be too difficult to control the thrust of all the individual rotors in order to maintain the center of gravity meanwhile controlling the different tracks and movements in all axis. The flight controller takes all the inputs from different sensors, such as altimeters, gyroscopes, magnetometers, etc. and combines it with the input from the operator. The flight controller can also be programmed to perform an automatic flight pattern without any involved operator. A fixed-wing aircraft must have air moving over their wings to generate lift. This means they must stay in forward motion and cannot hover in one spot in the way a helicopter can. Usually the fixed wing will give you a longer flight time for less energy. Fixed wings will generally withstand stronger wind than multirotor.

Description:

A comprehensive seminar and demonstration on drone surveying was conducted for the Civil Engineering students at Jain College of Engineering and Research. The session was led by a seasoned resource person who provided valuable insights into the application of drones in the field of civil engineering.

The seminar began with a theoretical overview of drone surveying, covering its principles, advantages, and limitations. The resource person explained how drones equipped with specialized cameras and sensors can capture high-resolution aerial images and data, enabling accurate and efficient surveying and mapping.

Following the theoretical presentation, a practical demonstration was conducted to showcase the actual use of drones in surveying operations. The students had the opportunity to observe as the drone was flown over the college campus, capturing aerial imagery.

Overall, the seminar and demonstration provided the Civil Engineering students with a valuable understanding of drone surveying and its potential applications in their field.









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Exploring Eco-friendly Construction at “Gokuldham” on 30.04.2024

Introduction

Krishna consciousness activities began in 1986 at a village called Tirtha Kunde, near Belagavi. It all started with a small Satsang and over a period of time devotees shifted to Tilakwadi in the year 1992 where the temple is existing now. Congregation of devotees would gather at weekends and would conduct programs on week days in different places like colleges, temples, homes etc. Since 1997, His Holiness Bhakti Rasamrita Swami Maharaja became president of ISKCON Belagavi. He started Brahmachari ashram in 1998. Gradually books distribution, house programs, programs for children, ratha yatra festival, Gokul Dham project, goshala, matchless gifts shop and outreach centers grew significantly. Around 700 devotees gather every Sunday. In future there is a plan to build a new temple. Currently a new ashram and kitchen is built, which is the 1st phase of our construction.

The International Society for Krishna Consciousness (ISKCON), is a religious organization belonging to the Gaudiya Vaishnava Sampradaya, a monotheistic tradition within the Vedic or Hindu culture. Philosophically it is based on the Sanskrit texts Bhagavad-gītā and the Bhagavat Purana, or Shrimad Bhagavatam. These are the historic texts of the devotional bhakti yoga tradition, which teaches that the ultimate goal for all living beings is to reawaken their love for God, or Lord Krishna, the “all-attractive one”.

The Sri Sri Radha Gokulananda Mandir, situated in the Tilakwadi area of Belagavi, holds a special significance for the devotees of the International Society for Krishna Consciousness. ISKCON Belagavi was started in 1987 and has held and organized spiritual training programs, food distribution, temple worship, spiritual discourses and book distribution to people from all walks of life.

GOKUL DHAM IS A UNIQUE ECO-VILLAGE

Nestled in the Sahyadri hills, with exquisite natural beauty, heavy rainfall, and dense surrounding forests – lies the picturesque Gokul Dham. It is spread across 450 acres, and is located 40 kilometers from Belagavi (Belgaum) city and 30 kilometers from the Karnataka-Goa border in southern India. With the traditional village fast disappearing, there is a crying need for self-sufficient villages that can serve as role models to inspire a society that is allured and captivated by modern exploitative technology, lifestyles and values. Gokul Dham is inspired by ancient Indian wisdom and spirituality, as taught by A.C. Bhakti Vedanta Swami



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Prabhupada, who made a simple and yet profound articulation of the principle of self sufficiency: "*Use only what you can produce, and produce only what you need.*"

The Vedic Economic Model

The questions of survival & livelihood have become very complex issues in the present day. However, the Vedic civilization of our past followed a very simple & sublime socio-economic model that gave material fulfilment and yet facilitated spiritual growth.

A partial hint of that model is mentioned by Lord Krishna in the Bhagavad-Gita (18.44): Krishi, go Raksha, vanijyam / vaishya karma svabhavajam i.e. "Agriculture, cow- protection & trade are the qualities of work for the vaishyas or the mercantile class".

The Vedic economic model provided for self-sufficiency of varying degrees at various levels from the individual household, through the individual village up to a group of villages. Sometimes there would be trade over larger distances.

The Flaws of the Modern Economic Model

The modern day economic model is progressively eroding the self-sufficiency of social units, making them more and more dependent on external, and hitherto unconnected, forces and situations. Indeed, in this age of globalization and so-called 'free trade', individuals and social units are becoming enslaved rather than free. In this complex web of artificial inter-dependency and control, events in one place drastically affect the situations and destinies of people in distant places.

The Merits of the Vedic Model

The Vedic model, by promoting self-sufficiency at the local level, insulates a region from disturbances in other regions. It gives humans an honorable measure of control over their own life & destiny. It nurtures and facilitates the spirit of cooperation, rather than competition; of hard-work, rather than indolence; of sensitivity to one's environment - human and natural, rather than callousness; of sharing and giving, rather than grabbing; of refinement & upliftment of the human spirit, rather than its degradation. The benefits are numerous. But above all, it provides the perfect atmosphere & background in which people can practice spiritual life, individually and collectively, free from the pressures, impurities



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and needless struggles that plague modern life & make self-realization seem such a utopian and distant possibility.

No Products of Modern Industry in Gokul Dham

Gokul dham avoids the use of electricity, cement, steel, plastic, modern household gadgets like mixers, TV, radio, telephone etc and indeed, anything that is a product of the modern industrial set-up for which we will have to be dependent on someone or something external to the community. Instead, we attempt to revive various forms of traditional technologies to meet our simple needs.

Gokul dham as a Beacon Light

Extreme though its principles may appear to be to the modern eye, Gokul dham is intended to be a beacon light for a society that is obsessed with the enjoying & acquisitive spirit, wherein worldly pleasure and accumulation of more and more goods and wealth are considered to be the standards of success and happiness. Gokul Dham as a template for an alternate, holistic paradigm - simple living, high thinking. It seeks to demonstrate that true happiness and success in human society is possible and indeed easily and genuinely achievable, when we live simply and in harmony with the world around us.

Initiatives and Impact

1. Organic Farming: Usage of chemical fertilizers and pesticides is greatly destroying the purity and productivity of soil and crops. Human health is also adversely affected due to the chemical toxins. At Gokul Dham, we use natural farming methods and strictly avoid chemical fertilisers and pesticides, heavy machinery like tractors, tillers and so on, and factory-manipulated hybrid seeds so that we have rich soil and pure, high quality crops and fruits. Additionally,

we will use traditional technologies which will also provide employment to many. Farming activities include agriculture, horticulture (to start with) and floriculture, medicinal herbs, spices etc. as the project develops. Gokul Dham also aims to provide training to farmers of neighboring villages in implementing many effective indigenous technologies of organic farming for small-power generation, watershed management, compost-making etc.

2. Watershed Management: In this day of water scarcity, proper watershed management is of utmost importance. Using traditional simple eco-friendly and effective, methods we will



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charge the water table, conserve water and distribute it as per need in our area. Our volunteers have gone through training programmes and are equipped for this purpose. With experience and development of expertise, we will reach out into the neighboring areas to train the people there in these simple techniques of watershed management. Activities will include 1.Ensuring steady all-year-round availability of water by creating tanks, reservoirs, well, 'nullahs', small (micro) dams and so on. 2.Recharging of ground water by afforestation, contour 'bundling' and so on. 3.Traditional water - lifting & water- transporting technology (without use of motors & pumps)*Rain-water harvesting at the individual dwelling level.

3. Cottage Industries: This will consist of widespread, labor-intensive means of production of utility items like honey, incense, food processing products, pottery items and so on. Cottage industries will be required for three purposes: (1) To supply the needs of the community & thus help in achieving self-sufficiency; (2) To serve as a source of livelihood for resident householders; and(3) To generate some livelihood for the residents of villages around Gokul Dham.

A partial list of proposed cottage industries includes: Honey, Agarbatti & 'Dhup' manufacturing, Cow products, Carpentry, Blacksmith, Pottery (for all our vessels, lamps etc.), Jaggery production, Oil- Ghani, Ahimsa silk production (yarn), Products of straw, grass, cane and bamboo, Products of some important useful trees like coconut, palm, banana etc., Hand-made paper, Khadi cloth - growing cotton, spinning, weaving, dyeing with natural dyes on traditional handlooms.

4. Afforestation: By planting and nourishing many flowering and fruit bearing trees all over, we will provide strength to the top soil and enable greater water retention. It will also provide a pleasant sight for citizens from all around to behold. To counter the rapid tree felling in the rural areas. we will attempt to motivate villagers in similar afforestation programmes.

5. Use of Alternative Energy Sources: In this time of acute national power shortage. we will aspire to be self-sufficient in power requirement by the simple method of avoiding electricity altogether, and using instead, alternative and simpler methods like animal draught power, utilization of agricultural and bio-waste and so on.

6. Traditional and Eco-Friendly Construction: Scarcity of cement and construction materials is another great national problem. At Gokul Dham, all our structures, spread out over the entire campus will be made entirely of natural raw materials like mud, stone, bamboo, straw, cow-dung, etc. using indigenous skills and technologies. Only traditional designs & patterns for individual dwellings and for the overall village lay-out are employed.



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- 7. Cow Protection & Animal Welfare:** In an age when cows are being mercilessly slaughtered, Gokul Dham is a happy home for cows. Here cows and bulls are looked after with great love and care till they die a natural death. People have forgotten that the cow and bull have great value for humankind. In fact, even their waste matter is valuable. At Gokul Dham, the milk, dung and urine of these animals will be used for making food products, fertilizers, insecticides, soap, incense, medicine and a host of other products. The working energy of bullocks is gainfully engaged in ploughing, and other activities like making of jaggery from sugarcane, oil from oilseeds, mortar from lime etc., and in transportation.
- 8. Baal and Yuva Samskar Kendra:** This center will provide moral and practical education to children and teenagers from the villages around Gokul Dham. This is very important in an age where morals, character and human values are rapidly deteriorating. We see this as a very important service for society.
- 9. Free Food Distribution:** One of the important objectives of the Gokul Dham project is to provide free food to one and all. We will also have correspondingly large food preparation and distribution facilities.
- 10. Eco-friendly hygiene and sanitation systems:** We will revive traditionally known (but neglected) principles and systems of public hygiene and sanitation that are eco-friendly, health-friendly, simple, practical and inexpensive. Today, in the modern world, the treatment and disposal of waste is a big problem. But at Gokul Dham, our simple systems will organically treat and transform all kind of waste-matter into end products that will be useful for the community. We will also attempt to educate the residents of the neighboring villages in these matters and help them to design and implement such hygiene and sanitation systems.
- 11. Natural Health Department:** The goals of this department are: To help in preserving traditional knowledge systems of health-care by: their practice and propagation (Yoga, Ayurveda, herbal and kitchen remedies); publishing literature for the general public; growing medicinal plants that are very essential but are rare or becoming extinct. To practice and propagate the principles of natural and simple living and high thinking, avoiding all vices. We will be travelling into villages encouraging people to give up alcohol, tobacco, gambling and other harmful ways of living and to adopt healthy and godly ways of life.
- 12. Village Outreach Programmes:** As the years go by and the community develops



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expertise in various fields, we will reach out into villages in the region to attempt a holistic, total transformation - economic, social, educational, cultural and spiritual.

Some of the houses are built with the laterite stone and a special filler (mixture of lime, jaggery and Harda). The amazing quality of this mixture is that it gains strength as time passes! (I thought time weakens everything but this mixture is exception) So for decades and centuries these walls will not fall. The forts and old structures during bygone ages were built with this special mixture hence they are still standing unlike cement houses which needs to be renovated every 60 years. And cleaned the roofing tiles used for construction of houses and thoroughly checking of tiles is done to identify the cracks. And debris, dust and leaves over the roof tiles is cleaned and stacked in correct order.





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Report on the ESG Seminar

Seminar Details

Topic: Environmental, Social, and Corporate Governance (ESG)

Speaker: CA Mahaveer Upadhye (ESG Foundation)

Location: Jain College of Engineering and Research Belagavi.

Date: 05/06/2024

Attendance: 31 students

Seminar Highlights:-

Environmental Issues: The speaker provided insights into pressing environmental problems and global warming.

Natural Resource Conservation: Environmental aspects and the importance of conserving natural resources were discussed.

Student Engagement: Students found the topic interesting and actively participated in a question-and-answer session following the seminar.

Conclusion:-

The seminar on ESG conducted by CA Mahaveer Upadhye proved to be informative and engaging for the students of Jain College of Engineering and Research. The session highlighted the significance of environmental sustainability and responsible corporate practices. The positive feedback from the students indicates that the seminar was a valuable learning experience.



Exploring Innovative Construction: “A Site Visit to Witness Interlocking Brick Technology in Civil Engineering” on 18.11.2023

Site Owner Details:

Mr. Mahantesh Kanthi, Associate Professor at Angadi Institute of Technology and Management, Belagavi.

Introduction

On a bright and insightful day, the civil engineering students embarked on a site visit that promised a unique perspective on construction methodologies. Their destination was a construction site where a building was being erected using interlocking blocks instead of conventional burnt bricks. This visit aimed to provide the students with first-hand experience and insights into the advantages of this innovative construction technique.

Interlocking Brick Technology:

As the students arrived at the construction site, the first thing that caught their attention was the sight of interlocking bricks neatly stacked and arranged. Unlike traditional burnt bricks, interlocking bricks are manufactured using a pressing method that forms a hollow interlocking pattern. This unique design eliminates the need for mortar, making the construction process more efficient and environmentally friendly.

Advantages of Interlocking Bricks:

1. **Cost-Effectiveness:** One of the primary advantages of interlocking bricks is their cost-effectiveness. The manufacturing process requires less energy compared to traditional brick kilns, resulting in lower production costs. Additionally, the absence of mortar reduces labor costs, making interlocking brick construction an economically viable option.
2. **Rapid Construction:** The interlocking design of the bricks allows for quick and easy assembly. The absence of mortar eliminates the curing time required in traditional construction, accelerating the building process. This not only saves time but also reduces overall construction project timelines.
3. **Environmental Sustainability:** Interlocking brick technology is hailed for its environmental sustainability. The production process generates less waste, and the bricks themselves are often made from locally sourced materials. The reduced need for transportation further minimizes the carbon footprint associated with construction projects.
4. **Durability and Structural Integrity:** Interlocking bricks form a solid and cohesive structure due to their unique design. The interlocking pattern enhances the structural integrity of the building,



making it resistant to earthquakes and other external forces. The durability of these bricks also contributes to the longevity of the constructed building.

5. **Thermal Insulation:** The design of interlocking bricks creates natural gaps and voids, providing improved thermal insulation. This feature helps regulate indoor temperatures, reducing the reliance on heating and cooling systems. As a result, interlocking brick buildings are more energy-efficient and environmentally friendly.

Conclusion:

The site visit left the civil engineering students impressed and enlightened about the advantages of interlocking brick technology. The innovative construction method not only offers economic benefits but also addresses environmental concerns and enhances the overall quality and sustainability of structures. As these students carry forward their knowledge into the field, they are sure to contribute to the evolution of construction practices, integrating more eco-friendly and efficient solutions for the benefit of future generations.





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Signature and Seal
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