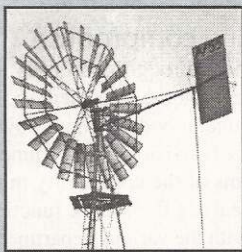


# Auroville Today

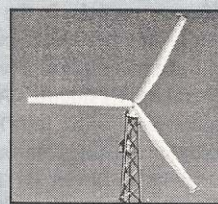
SEPTEMBER 2001, No.152



## SPECIAL THEME: PROMOTING RENEWABLE ENERGIES IN INDIA

- "Blessings for effectivity"
- Wind energy for Sagar Island
- Wind mills for pumping water
- From water turbines to electric trams
- Providing renewable energy services
- Training for a sustainable habitat

pages 1, 4, 5 & 6



**F**rom Sagar Island in West Bengal to Kanyakumari on India's southern tip, from the Andaman Islands in the Indian ocean to the Indian border with Pakistan, everywhere in India Aurovilians are actively promoting renewable energies such as biogas systems, solar lamps, windmills for electricity generation, hydro power, water pumping windmills and solar powered pumps. The seed which was planted and grew in Auroville through numberless experiments and much trial and error – mostly error – is now slowly blossoming. It is not a question of transplanting the Auroville solutions, but of finding the correct answers for each specific situation. The contacts with people all over India have shown that there is large interest in finding environment friendly energy solutions and it is with a sense of great satisfaction that the Aurovilians involved share their knowledge and experience. In this issue of Auroville Today, we profile five units that are thus involved in India.

## Wind energy for Sagar Island

Jan Imhoff (40) lived as a boy in Auroville, later worked as a civil engineer in Germany. He served on several of Auroville's committees, then started Auroville Energy Products – Wind Section.

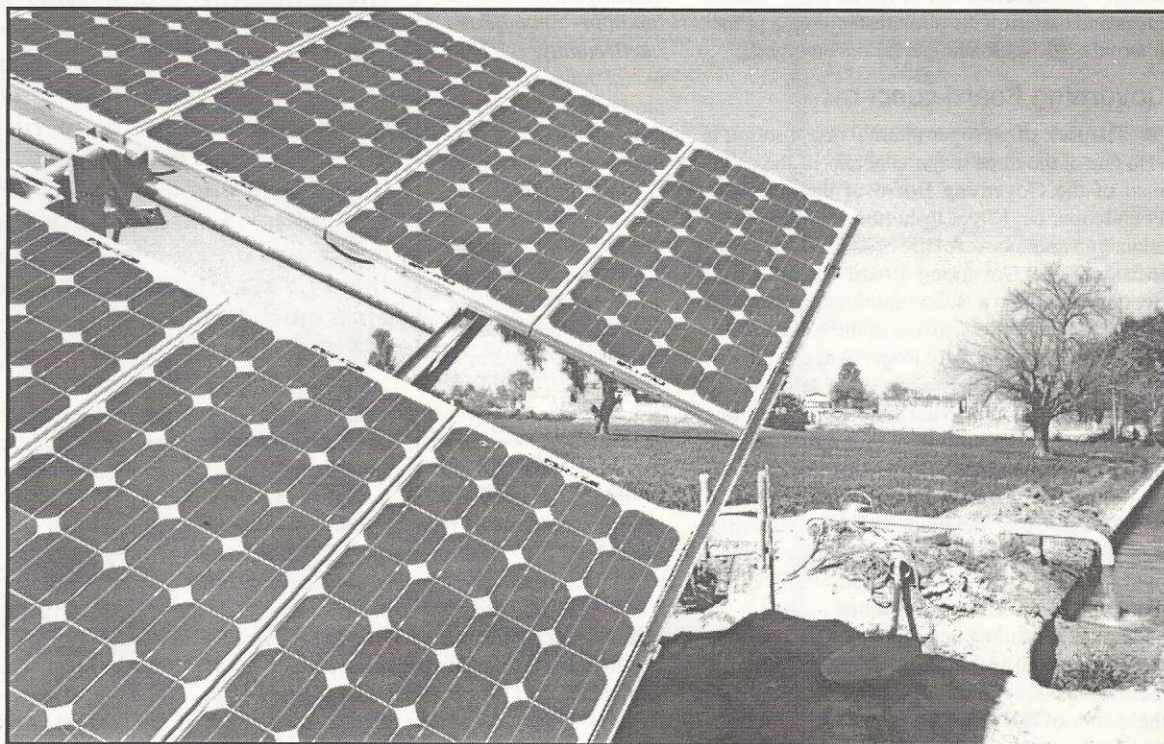
Sagar Island is one of the largest islands in the Sunderban delta of the Bay of Bengal, about 150 km South of Calcutta, in the mouth of the river Ganges. Its total area is around 300 sq kms, and it has a population of more than 150,000 people spread over 16 villages. Rich in mangrove swamps, waterways and small rivers, it is also home to the endangered Royal Bengal Tiger. Like its neighbours, it has no connection to grid power supply. The inhabitants depend on six twenty-year-old diesel generators to provide power between four to six hours each day. To mitigate the energy crises, a number of solar photovoltaic power plants have come up.

"The living conditions on that island are really marginal," says Jan, who, as executive of Auroville Energy Products – Wind Section worked for four years to realise the Wind-Diesel Project on Sagar Island. "There is farming and fisheries, and

very little else. Without electricity, not even small industries can develop. A ferry to the mainland serves to get their products to the Calcutta markets.

The regular electricity supply that our project offers means a big improvement of their living conditions, something which our client, the West Bengal Renewable Energy Development Agency (WBREDA), was quick to recognize. But they could only fund 10% of the total project value of Rs. 7.2 crores (US\$ 1.5 million). We then approached the Indian Canadian Environment Fund (ICEF) which, considering that the project would uplift the poor and would promote Canadian machinery, consented to fund 30% of the project costs. The remaining 60% came from the Indian Ministry of Non-Conventional Energy Sources which is keen to support this type of research projects."

continued on page 4



Solar photovoltaic systems for pumping water installed in the Punjab by Aurore Projects and Services.

## "Blessings for effectivity"

The Mother

"Renewable energy has a great future in India" says Dr. Chamanlal Gupta, a nationally and internationally known expert on renewable energy, who lives in the Sri Aurobindo Ashram in Pondicherry.

"India first started to take a serious look at its energy requirements in 1965. At that time, renewable energies were still considered to be the domain of backyard tinkers and not serious alternatives for solving the nation's energy requirements. In fact, there was a tremendous hostility to solar and wind energy. Oil, coal, gas and nuclear energy got the absolute priority," recalls Chamanlal Gupta who has been the moving force behind the introduction of renewable energy systems in the Ashram and Auroville. "The Mother, at the time, was truly far sighted. The Sri Aurobindo Ashram had the first biogas plant in south India in 1954, the first solar cooker in 1958, and the first multi-blade windmill imported from the USA in the early sixties. In 1965, She agreed to have a solar hot water system installed in the Ashram. When the photo of the system was shown to Her, She wrote on it 'Blessings for effectivity' and that has become the charter for renewable energy systems both in the Ashram as well as in Auroville."

"Shortly afterwards – I often wonder if this a matter of coincidence? – the Indian renewable energy program took off. Now, 35 years later, India counts as the world's fourth largest wind-power user and the fifth largest user of solar photovoltaic programmes. The Ministry of Non-conventional Energy Sources (MNES)

estimates that India has an enormous potential for renewable energies.

"When Mother gave us her message, I wondered what She meant with 'effectivity'. Much later I found out that it means doing the right thing rightly. And in renewable energy, that right thing is contextual. The right thing for a village situation is not the same as a right thing for an urban or industrial area, which have the same objectives and mores as anywhere else in the world. Rural India has specific needs, mainly to create sustainable livelihoods at minimum capital investment. And then there are the niche areas, remote areas with tribal populations, and areas with difficult logistics such as hill areas and islands."

"The government, after many failures, has understood that a uniform approach is incorrect. Today, it has given the care of 18,000 villages which have no chance of being electrified ever to the Ministry of Non-conventional Energy Sources. Another 80,000 villages are likely to be connected to a grid, but may not get electricity in the foreseeable future. The reason is that rural electrification corporations cannot make the grid economical as the load demands are insufficient. The demands are not there because there is no rural industrialisation. And rural industrialisation doesn't happen because there is no money, and money is not to be found in the village. The electricity systems for rural villages, then, have to be tailor made: the sys-

tems require a high community acceptability, easy to be maintained and with minimum costs per unit efficiency. Niche areas again require a different approach: they need minimum facilities such as lighting and water for drinking and communal lavatories at 90 to 100 percent subsidy. To give an example of an adequate village system: an Indian company has been extremely successful selling home electricity systems for Rs. 15,000 (US\$ 320) that provide lighting for four hours a day: 2 lights, one fan, and one socket for a television. It is a good alternative for the traditional kerosene lamps. This company realised that village economies and priorities are different from those in the cities."

"There is another aspect to effectivity," says Chamanlal. "And that is product quality. We witness a tremendous development of renewable technologies in India that are well-engineered and well-made. For example the solar pumps that are now operational are the result of ten years of solid design work. The biogas technology has advanced to the point where today it can even handle garbage to generate local power. Sugar companies have developed systems where they generate zero percent waste and export power. The wood gasifier technology has been adapted to be able to deal with coffee grinds, coconut fibre, and all kinds of waste products."

continued on page 5

• Towards a Divine Anarchy  
• Sound Wizard

page 2

• Teaching drama at Udavi  
• Matrimandir's petals

page 3

• AV Health Center  
• Handling village garbage

page 7

• German Pavillion and the problems of Germany's past

page 9

• A baseline study of Auroville employees

page 10



# Towards a Divine Anarchy

On May 15th, 2001, a working paper on a possible internal organisation for Auroville entitled "Towards a Divine Anarchy" was submitted to the community. This document was discussed in a seminar on July 29th.

Ideas to organize Auroville appear with clock-work regularity. They are indicators of the dissatisfaction of many Aurovilians with the present state of non-organization. They also show the willingness to keep on experimenting with new models. In the last few years the community has tried out seminars, workshops and platform meetings as a replacement for unwieldy general or Residents' Assembly meetings. An experiment with a 'Representative Group' looked promising, but failed in the end. An idea to create a seven to twelve member Town Council as the apex body of Auroville's organisation was launched but never took off. But all ideas and experiments notwithstanding, a proper internal organisation has so far not emerged.

## Governing Board concerns

The lack of a proper internal organisation is also one of the three major concerns of the chairman of the Governing Board of the Auroville Foundation, Dr. Kireet Joshi (the other two being education and the Auroville economy). Upon his insistence the Governing Board constituted in September 2000 a sub-committee called 'the Unity Committee' consisting of three of its members, Mr. Kashyap, Mr. Roger Anger and Ms. Jyothi Madhok. It wrote an open letter to all Aurovilians, asking "What are the problems that slow down the realisation of Auroville?" Based on the responses received it concluded that the lack of an effective internal organisation seriously affected the development of Auroville. Realising that the work to develop a proper internal organisation would take many months and that none of the Unity Committee members are permanently residing in Auroville, the Governing Board co-opted in March 2001 three Auroville members to this committee, Anupama, Serge and the author of this article, with the task to formulate a proposal for a proper internal organisation for Auroville in consultation with the community at large. The document 'Towards a Divine Anarchy' was the first working paper we produced.

A lot of input from the community has been included in this document. Many ideas were proffered. We have attempted to synthesize all ideas which, given the sometimes widely divergent views, was not always possible. Some Aurovilians stressed the necessity to follow the ideal system of government mentioned by The

Mother: Preferably things should be decided by a representative of the Supreme Consciousness, but if there is no one holding that level, She suggested that "perhaps this could be replaced (it would be an experiment) by the government of a few - which should be decided between four and eight, something like that: four, seven or eight - who have an INTUITIVE intelligence. "Intuitive" is more important than "intelligence": an intuition manifested intellectually. (That would have its drawbacks from a practical point of view but perhaps it would be closer to the truth than the lesser solutions of socialism or communism.) All these intermediaries have proved to be inadequate: theocracy, aristocracy, democracy, plutocracy, all that has been a complete failure." (1)

However, we felt that, even assuming such people do exist in the community, the latter would not recognise them as such and consequently would not be ready to follow their guidance. We, therefore, proposed a formula that would enable the development of an atmosphere conducive to the progressive manifestation of the organisation envisioned by The Mother as a first step towards the ideal. As they explained in the seminar: "What the paper represents is not what we think is the most ideal - after all, Mother has expressed those ideals quite clearly - but what we consider possible at the present moment in time based on the feedback received."

## All aspects included

The paper, for the first time in Auroville, deals with all aspects of an internal organisation while focussing on the ultimate aim of a Divine Anarchy. In a sense, it can be said that the historic concept of the separation of powers into legislative, executive and judicial bodies, as worked out centuries ago by John Locke and later

Montesquieu, and which forms the basis of many constitutions in the world, has also been reflected in this system. The paper deals with the functioning of the Residents' Assembly and its Working Committee, bodies which have been created

## What political organisation do you want for Auroville?

**Mother: "An amusing definition occurs to me: a divine anarchy. But the world will not understand. Men must become conscious of their psychic being and organise themselves spontaneously, without fixed rules and laws - that is the ideal.**

**For this, one must be in contact with one's psychic being, one must be guided by it and the ego's authority and influence must disappear." (2)**

by the Auroville Foundation Act (the legislative part). It proposes a Steering Committee, a body of seven to twelve people as an active force for change (the executive body); and it proposes arbitration (the judicial part) as a means for final conflict resolution. Additionally the paper suggests that an Active Residents' Assembly (consisting of Aurovilians who explicitly want to participate in decision-making on community issues) might replace the Residents' Assembly. And finally

it proposes that the system of Auroville working groups is replaced by a number of departments consisting of professionals working full time, which it called, rather casually, the Auroville civil service.

## Dutch Polder model

Apart from the theory of separation of powers, the paper is equally influenced by another trend, already existing in Auroville, and internationally known as the Dutch polder model. Holland relies on consultation, on the involvement in decision-making of as many people as possible. In The Netherlands, the need for compromise and consensus has been institutionalised in countless advisory and consultative bodies. Each issue where there is a remote danger of disagreement has its own forum in which all interested parties are represented, be it traffic issues, defence matters or education affairs. This culture of consultation naturally has repercussions on politics. The more the relevant bodies agree with each other, the less freedom of movement remains for the politicians. It is under these con-

ditions that the polder model was born in the early 1980's, incorporating all parties concerned in the decisions making process.

## Consensus and compromise

The need for unity through consensus and compromise is reflected in the document in that the Steering Committee, a body without power, has the essential task of envisioning the immediate and long term aims of the community in the perspective of its ideals (a think-tank function) and in co-operation with the various departments, units and individuals, turn those visions into concrete proposals (seeking unity through consensus and compromise). This then can be submitted for approval to the Residents' Assembly after which the Steering Committee would facilitate and harmonise the implementation of these proposals. Another reflection is found in the description of the system of consent. Those who cannot agree with the views held by the majority will be requested to consent (meaning: while not agreeing to the proposed decision, nevertheless agree to accept it) to the majority view being implemented. A person who objects would have the opportunity, within a limited time period, to persuade everyone else of the validity of the objection. In the case that such person fails to persuade the majority, the person has to accept the decision. This will stop one person or very small faction from blocking a decision.

The seminar was set up to obtain feedback. Over a hundred people participated. In small groups they discussed the pro's and con's of all aspects of the proposal. From their constructive and positive responses it became clear that a considerable amount of fine-tuning and re-working remains to be done before the document can be presented to the community for a final decision. "And please change the nomenclature," was a common request. In particular the words "Steering Committee" and "civil service" received strong condemnation. A reworked version of the proposal is expected before the end of September.

Carel

(1) 10 April 1968, Mother's Agenda 1968 p. 106, Collected Works The Mother vol. XIII p. 275.

(2) 28 December 1972, Collected Works The Mother vol. XIII p. 225.

## BUSINESS

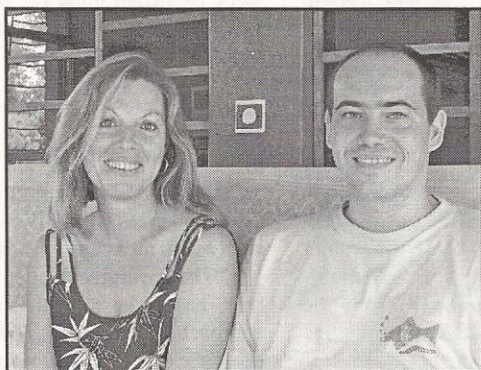
# Sound Wizard

Six months ago Cecilia and Didier Weiss, who have been living in Auroville for the last seven years, entered the Indian market with their architectural acoustic design company.

Acoustic design consists of calculating and profiling a specific architectural design most suited for a specific acoustical purpose. The work is primarily undertaken for film and music sound recording studios but also for concert halls, auditoriums, and home theatres.

Didier had his own sound recording studio for ten years in France before coming out to Auroville. Two years ago he decided to add acoustic design to his knowledge and undertake new research in the field. "One is always learning something new as the technology becomes more and more refined and precise," he observes. Having mastered computer simulations and calculations, Didier proceeded to build the recording studio for Auroville's unit "Sunshine Music," and then became involved with the acoustics of the Sri Aurobindo Auditorium in Bharat Nivas. It was the beginning of Sound Wizard, a unit under the Auroville Foundation. The objective is to work outside Auroville as well, as India has a vast array of sound recording studios due to its extensive film industry.

A team formed naturally as acoustic design cannot be undertaken without a component of architectural expertise. Together with François of Auroville's unit "Capability" who takes up the architecture and construction side, Sound Wizard offers a package. Claudine specializes in 3D rendering for presentation to the client and acoustic simulations. Nathalie is in charge of interior design and Arul has just been taken



Cecilia and Didier

aboard as all-round assistant.

"As far as architecture goes," says Didier, "there is something that may surprise Westerners: Indians have their own architectural tradition called Vastu which parallels the Chinese Feng-Shui. That is why we need in our team people who know India well, and who are open to the principles of this tradition. Without this element it would be impossible to establish a good working rapport with clients." The human dimension is a priority for Cecilia and Didier. "Working in India involves working from the heart. The contact and connections are made in a very different way than in the West. The projects are undertaken with people who have a life outside of their particular profession, a spiritual life that is frequently connected to art. There is no hesitation to open that part of their personality, and the resulting individual contacts are very

rich," remarks Cecilia. One of their most beautiful and fruitful contacts is with Vijay and Aruna Modi from Madras who run "Modi Digital", the foremost importer in India of professional audio equipment. "We have become commercial partners. On one hand, the materials are of an extremely high tech precision, and without it, Sound Wizard might not have taken off. On the other hand, in order to satisfy its own clients, "Modi Digital" needs Didier's expertise that lacked so very much in terms of appropriate acoustic set up," says Cecilia.

While Didier is occupied with the design aspects, Cecilia "my guardian angel," says Didier, takes responsibility for all the administrative work and the liaison with the other members of the team, and conducts meticulous follow-up work. She also takes on the PR work as once a project is launched each member of the team starts working in his or her domain. At present Sound Wizard is involved in a number of projects in Madras mostly.

To keep up-to-date with the latest developments in the fast evolving field of acoustic design, it is extremely important to maintain outside connections. This sometimes entails travelling the world over, seeking out new equipment and scientific information. Didier will be going to Bombay in September to deliver a talk at an international conference of audio professionals. Given their enthusiasm and energy one can only wish them many wonderful projects ahead.

Emilie

## EXHIBITION



# Children's paintings

An exhibition of joyful paintings of the Kindergarten children (the four to six years old) was held in Pitanga. The colours are so vivid and original that they would make an expressionist envious. "Little children don't function like adults as they are not yet in the mental part of their being, they have an incredible rich fantasy. They do not think before painting 'I'll paint this or that,' they just take the brush and paint spontaneously, joyfully," writes Claire in an explanatory note to the exhibition. And she further clarifies: "The paintings are like a story, a diary on which one can follow the development of the child. All children are going through the same 'phase' of painting, although those periods are shorter or longer, come earlier or later for each child. At that age they are not able to express verbally what they feel. Painting is a good way to express deep feeling."



# Teaching Drama at Udavi

A performer in the satirical trio, The Akademik Genius Brothers, Jesse also writes for Auroville Today and teaches drama at Udavi. Here he talks about his educational philosophies and experiences at Udavi.

Set in one of the cement pillars supporting Udavi school's main hall, an unusual quote for a school reads: "Nothing can be taught". While traditional teachers might question these words anywhere in a school, many educators have begun to see the point: nothing can be taught, only learned. Supply students with resources and situations offering information and experience, but require them to do the teaching by themselves. We only learn the things we teach ourselves. For example one thousand cyclists can tell us only use the back brake, otherwise the bike buckles or flips over its front wheel when stopping hard. We hear these words and take them as the die-hard dogma of fanatic cyclists until the day we brake hard with the front wheel and end up wounded and wiser. Experience defines wisdom, nothing else.

Recently Udavi School centre-piece Sanjeev asked me if I would teach drama there. In accordance with a philosophy of saying "yes" to all reasonable possible requests, I agreed. Udavi had in recent years been resurrected from dilapidation by the involvement of Auroville and had begun to build a name for itself as a selective private school. The School grounds occupy a large piece of land spanning almost two-thirds the width of Edayanchavadi village. Udavi has two entrances, a smaller Auroville-side entrance with a pivoting Auroville symbol to allow a view on the outside world and a larger main entrance perhaps a kilometre away.

After a gentle reprimand for riding my bicycle in school grounds, headmaster Sanjeev showed me the way to the drama classroom, the school's main hall. An Auroville-designed structure, the hall features innovative elements and hidden details daily revealed. A vibrant healthy lily pond filled with water plants and studded with stepping-stone boulders shines in a sunny courtyard beside a long smooth floor. On at least three occasions, students in the class called to show me a lotus leaf.

"Look. See how it doesn't get wet or dirty?" while pouring water from their hand across a leaf. Appropriately



Morning concentration at Udavi. Sitting against the wall are Sanjeev, Manohar and visitor Krishna Tewari.

the lotus in India symbolises the spiritual path: out of the mud rises the lotus which dirt can never touch. The Tibetan meditation chant Mane Padme Hum means: "the jewel is in the lotus", enlightenment lies there. In the Udavi School hall the lotus fills the room and draws children to it again and again.

On either side of the pond on a wall at the far end, two large circular wooden wheels move freely on centre axles. Painted with black and white designs, the wheels serve no purpose but to entertain and fascinate children using the space. And they do. Spun hard and viewed from a distance, the wheels create a spectacular effect due to their perfect balance and oscillating patterns.

At times, however, the room's many distractions challenge the teacher who seeks a focused class.

The process of beginning work often involves corralling students from chasing each other across the pond rocks, spinning the pattern-wheels and throwing the floating pond plants. Year eight drama focuses on focus – the ability to narrow your field of distraction to the point where concentrated work begins. Focusing Udavi year eight drama class rests on par with organising hydrogen atoms into a theatre class.

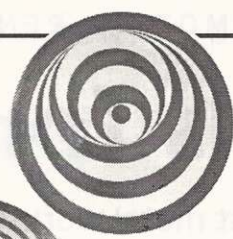
The challenge to teaching self-investigation through drama presents itself through discipline: how to reduce noise levels and frenzied running without resorting to suffocating rigidity. Here we discovered the counting game: students sit in a circle (or not) and count to ten calling out numbers in no particular person-order. For example I call "one", anybody else may call "two", but if any-

one else calls two at the same time (often about seven students simultaneously call), the game returns to "one". Once the concept had been grasped, year eight Udavi gripped it fiercely. Driven by the tangible challenge of the game's simple, yet unattained goal – to get to ten, the group self-focuses.

The game: "What happens next?" gives students a beginning location or situation and asks the audience: "what happens next?". Two might begin hunting in a forest. What happens next? "A lion comes" the students shout amongst other suggestions. "Who wants to be the lion?" I ask and someone crawls forward growling (or asks me to growl for them). Stories surprise with brilliant court room dramas, tales of corrupt priests, and hunters delivering the lion they thought was dead to an Asian prince for his birthday that comes alive upon presentation.

Through these exercises students experience (on their own terms) mime, improvisation, public speaking, performance, imagination and working together among many other things. The class aims not to 'teach', but to place the students in situations where they learn things about themselves. And it works, over the months running the class, students who initially chose not to participate in performance activities, for reasons of shyness or fear, have begun to perform and actively participate. These students have made the decision to participate and thus empowered themselves and boosted their confidence and skills.

"Anytime you want to leave, leave." I tell students, "You're free to go." Only come here if you want to." Some students leave, not everyone enjoys the challenges of drama class, but those who stay, stay because they want to "do drama". The students that remain focus on working in their own directions, learning on their own terms, about themselves, things impossible to 'teach'.



Oscillating patterns on swirling wheels fascinate the youth.

## In brief

### Sri Aurobindo's Birthday

Two bonfires in the amphitheatre nearby Matrimandir were lighted at dawn of August 15th in celebration of Sri Aurobindo's Birthday. When the sun came up, a huge symbol of Sri Aurobindo of about 3 x 3 meters, executed in flowers on a base of sand, became visible.

### Independence day celebration

India's 54th Independence day was celebrated on August 15th by the hoisting of the Flag by Aster Patel at Bharat Nivas and children from Auroville schools singing patriotic songs.

### Messages from Mother

An exhibition of selected handwritten messages of The Mother on Auroville was held in Savitri Bhavan.

### Ganesh Chaturthi

A large number of Aurovilians participated in the celebration of the birthday of Lord Ganesh, the elephant headed god of the Indian pantheon, on August 22nd at the Sri Ganesha temple nearby Auro-Orchard and in the Aspiration community.

### No more pesticides

Six thousand leaflets against the use of pesticides have been distributed in the villages surrounding Auroville and to Auroville's commercial units to hand-out to their employees. The action has gained momentum after publications in the national newspaper "The Hindu," and in the magazines "India Today" and "Down to Earth" describing the sorrowful plight of the victims of pesticide use.

### International Zone survey

The Industrial Zone Group has conducted a survey on the future development of the Industrial Zone to about 50 residents and unit holders from this area. Data collected is presently being processed.

### Energy Utilisation Survey

In an attempt to know and devise the measures to improve the energy efficiency in the community, the Electric Masterplan project co-ordinators under Asia Urbs are collecting the field survey data on energy generation and consumption – solar, wind, gasifier and biogas systems existing in various communities in Auroville.

### Alarming road development

The road from Kuilapalayam down to the beach is getting crowded by shops and restaurants owned by people from the village and Pondicherry. Concerned Aurovilians are studying ways to promote establishing an Auroville complex there with an information centre and space for Auroville units who want to promote their products.

### Keeping dangerous dogs

After an incident in which a newcomer was bitten by a dog belonging to an Aurovillian, the Executive Committee has raised the question why people keep dangerous or threatening dogs, reminding the community that The Mother was not in favour of Aurovilians keeping dogs or cats as pets.

## MATRIMANDIR

# The Petals

A lot of thought and energy has gone into designing and building the twelve petals which encircle the main sphere and form the interface between the Matrimandir and its gardens. The large petals, with their wavelike crests, represent the earth opening up to release the golden sphere. A ripple effect can be seen in the subsequent ring of smaller petals, and echoes of it are found throughout the gardens in the variously sculpted earth shapes.

Each of the petals was named by the Mother after one of her attributes. These include Sincerity, Humility, Gratitude, Perseverance, Aspiration, Receptivity, Progress, Courage, Goodness, Generosity, Equality and Peace. Within each large petal there is a meditation room, in the shape of a flat tilted egg. At present work is going on to finish plastering the walls and ceilings of these rooms. In a future article we will talk more about these meditation chambers.

The outside of the petals is covered with a soft unpolished red 'Agra' stone, which blends in well with the colour of Auroville's red laterite soil. At the base of the petals one finds a geometric pattern of red stone and green grass. For a long time only the petals visible from the West entrance of Matrimandir were completed, creating a beautiful preview of how it will look when all the work is done. Now the con-



The earth opening up creates the large and smaller petals waving out into the gardens.

struction of the four small petals on the East side, where all the various workshops are located, has begun and one by one these workshops will have to be dismantled in order to make way for the new petal

construction. The small petals flow into the twelve inner gardens and that will be taken up as the next step.

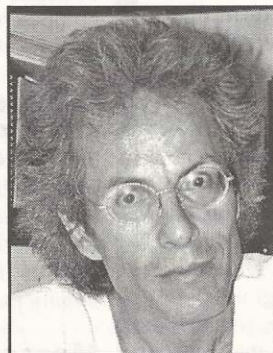
Tineke



# Windmills for pumping water

Aureka is Auroville's oldest metal workshop specialising in sheet metal enclosures for computers and hospital equipment. It is equally active in the field of renewable energy systems and alternative building technologies.

Cloink. Tick, tick tick. Cloink. These are not the sounds of some nocturnal animal disturbing the sleep, but the quiet signs that the nearby windmill continues to pump water all night and day. Sticking its head out high over the tree tops, it is one of the more than 30 windmills of various designs that are spread all over Auroville, providing water on a year round basis for agricultural, afforestation and domestic purposes. Most of them are stand-alone systems without any backup, where people depend entirely on the windmill for their water requirement.



Robi

"Windmills for pumping water have been designed and built in Auroville since the early pioneering days. It all started with five WP-2 windmills that came from Bangalore. They had failed in the field and were given to us for free. We repaired and maintained them, as they were really good. Even today, two are still working," says Robi, a Swiss designer who heads Aureka, the main metal workshop of Auroville and sole producer of the AV 55 and AV 45 windmills. "And then we started our own experiments.

Jean from the Two Banyans community made a big windmill with a wooden tower with metal head and cloth sails. Then followed another prototype with tower and head in metal but still with cloth sails. The disadvantage was that in any storm you have to furl the sails. It makes you sleep like a watchdog, you wake up at two a.m. to hear a storm approaching and then you run and climb the windmill hoping that you are faster than the storm. It was also a bit dangerous," smiles Robi. Aureka, in collaboration with CSR, then started work on the design of a multi-blade windmill, taking into account the practical experience of Aurovilians gained in operating windmills. "After a couple of years we shifted to galvanized metal blades and developed an automatic lock for the tail which is a safety mechanism for storms, and then we could sleep soundly. With support from dedicated Dutch students, gradually the AV 55 model windmill was developed."

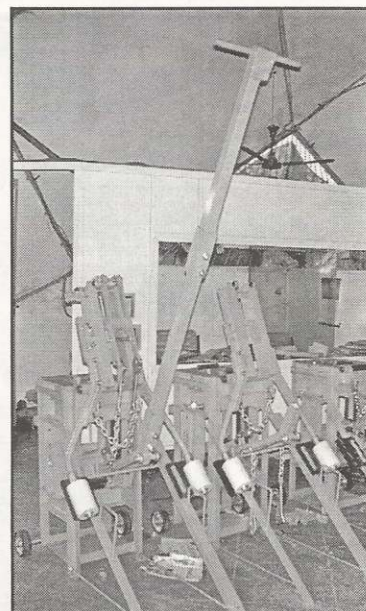
Though not computer designed, the AV 55 has some highly sophisticated features integrated into its design. Outstanding is the matching valve,

developed by the Technical University of Eindhoven in the Netherlands, which allows a windmill to start without any load and to operate at low speed. Aureka got the benefit of this development through an accidental visit from one of the Dutch technicians, who impressed by the work, convinced the university to give the know-how for free. In return, Auroville agreed to act as an independent test-site for them.

"We have worked on that matching valve for 5-6 years, and by now it is perfect. We also continued to work on the design of the other parts of the mill, such as reducing the weight without jeopardizing the strength or safety. The end-product today is a highly cost effective windmill, one of the best windmills money can buy you in India. They all survived the last cyclone in Auroville without any major damage."

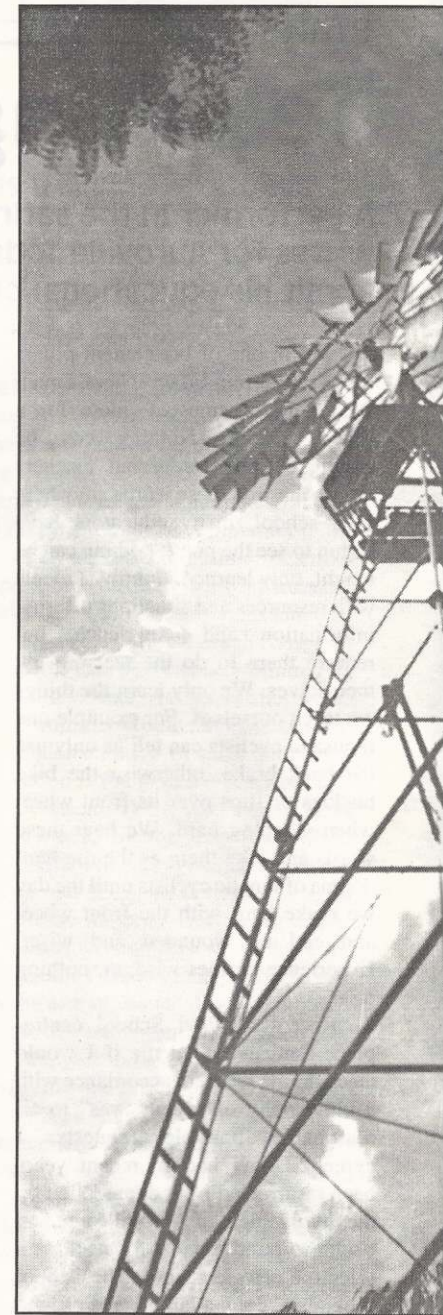
It is an observation to which all windmill owners in Auroville will agree. For apart from the occasional dot of grease and the incidental need to remove a nest of rock-bees that has settled underneath the platform, windmills require but little maintenance and are a cheap and constant water provider. The days that you had to climb the windmill once a month to put the well pipes out and in occasionally dropping your spanner in the process, as immortalised by greenbelter Alan in his lamentation "Windmill Blues" [see *AVToday* #5, April 1989] are well past.

The economic advantages notwithstanding, windmills for water pumping do not sell like hot cakes. "The initial investment is too big for the average farmer," says Robi. "If you look at the life span of say 20 years, windmills are highly economical and cheaper than a diesel pump. But a farmer doesn't look at it this way. He will calculate that a diesel pump and an engine costs him now Rs.20,000 (US\$ 450), and that he has to spend yearly some money on diesel. He cannot come up with Rs. 1.5 lakh (US\$ 3,200) to put up a windmill. Even if a farmer is in a position to obtain the central government subsidy of Rs 45,000 (US\$ 950) and the Rs 20,000 (US\$ 450) subsidy of the Tamil



Nadu government, he still has to come up with Rs 85,000 (US\$ 1,800) which most often is still an impossible high sum."

Nevertheless, Aureka does a nice windmill business. "Our average sale outside Auroville is now about 12 windmills a year. Since 1988, more than 60 machines have been installed in various places in Tamil Nadu and in three Tibetan refugee settlements in Karnataka. The marketing is entirely by word of mouth. We have proven that these windmills are reliable, we give a two-year warranty and even after that period we send people for servicing. This helps to change the bad reputation that the water pumping windmills got when, because of government subsidies, cheap windmills got installed that did not work. That is now slowly changing. We hope that the government authorities will realize that the subsidy they give for the small windmills is a waste of money, and that instead they should give subsidies in proportion to the size and water hoisting capacity of the windmills. For if you make a cost-effectiveness calculation, it will show that the AV 55 is perhaps three to four times cheaper on the long run than the small windmills," says Robi.



Windmills count for ten to twenty percent of Aureka's turnover. But it is active too in other renewable energy areas. "We manufactured the stands for the solar pumps ordered by Aurore [see the article *Providing renewable energy services elsewhere in this issue*] and recently we are constructing the Eurodish, a big moveable solar bowl where the heat is used to drive a Sterling engine in the mirrors' focus. This is an order from the Vellore Engineering College for particular applications.

In the area of alternative building technologies Aureka manufactures the Auram 3000 mud brick press, the only India-made mud brick press which is sold all over India and exported to Africa, Sri Lanka, the USA and

**The Auroville windmills are horizontal axis, multidirectional metal blade windmills with rotor diameter of 5,7meter (AV 55) and 4,5meter (AV 45). They are mounted on free standing tripod towers made out of tube available in different heights from 9 to 23 meters and can be used for pumping water from deep bore-wells - maximum 100 meter depth with the AV55 and 70 meter depth with the AV45 - as well as for low lift high volume output from shallow wells.**

**In 1993 the Auroville Windpump was listed and described in the European Community Joule project "Power for the World - A common concept" as an Excellent Example of a Renewable Energy Application.**

**A cost-comparison of different pumping methods published in the report "Windpumps In Developing Countries" by Halcrow Gilbert Associates Ltd., shows that the Auroville Windpump delivers the lowest cost per water unit, compared with other alternative pumping systems.**

## Wind energy for Sagar Island

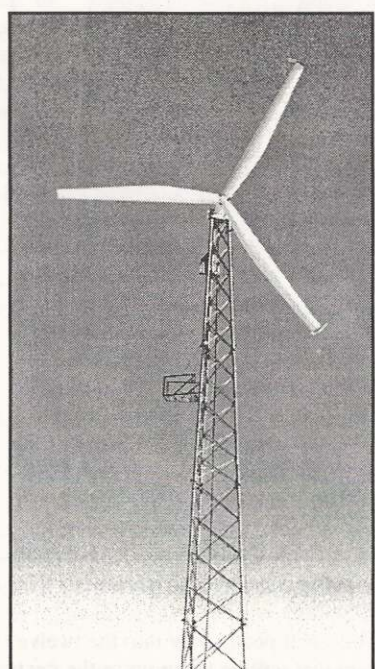
*continued from page 1*

"The wind-diesel system was engineered by the 'Atlantic Wind Tests Site,' A Government of Canada undertaking," explains Jan. "Normally, a wind generator feeds electricity into an existing electricity grid. This grid serves to stabilise the wind generator's input which is always unstable as the wind-speed varies. But there is a limit to the stabilising capacity of the grid. For that reason a normal wind generator can only supply 20 to 30% of the total energy requirement, otherwise the grid would become unstable."

"With a contribution of only 20 to 30%, wind generators are economically unattractive for use on a small island, as the remaining 70% - 80% still has to be generated using diesel, which is very costly. The Canadians solved that problem in an ingenious way. In their system, diesel generators start up the windmills, then are shut off. The specially designed frequency controller stabilizes the voltage and prevents excess energy from being fed into the grid if the wind-speed is too high. If the wind-speed is too low, the diesel generators are switched on automatically to provide the additional power required. The switch over time is about thirty seconds. This means that with a normal wind speed, electricity requirements

will be met by the wind generators, and only when the wind speed is too low will diesel be required."

The Sagar Island Wind-Diesel Project consists of 10 wind generators of 50 kilowatts capacity each, two 180 kVA diesel generators and a control-



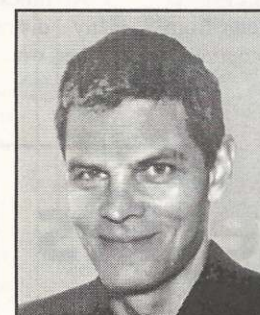
Windmill at the Atlantic Wind Test Site

ling system. "Phase one of the project consists of two wind generators and the controller," says Jan. "Atlantic Orient Canada will supply the two wind generators. These two windmills will generate an average of about 30 kilowatts, sufficient for a small village. If they perform well, the second phase of the project will start and we will erect the remaining 8 windmills. The agreement with the Canadians specifies a technology transfer. For phase 2 of the project, we will manufacture the generators in India, which leaves only the gearboxes, the blades and the controller to come from Canada. Gradually we want also to manufacture those components locally. After the entire project is commissioned, our unit will for two years be responsible for operation and maintenance."

Being a newcomer in this world, problems were to be expected, both on the technical as well as on the administrative level. "Technically the most challenging problem was the tower. The Canadians had supplied the design. But the specified steel dimensions were not available in India, and we also wanted to be very sure that the towers would be cyclone-proof as cyclones occur regularly in the Bay of Bengal. What resulted are very sturdy towers of 25 meter height, to be erected

on three enormous pile foundations each of which goes 26 meter deep into the sedimentary river sludge. The work was very tricky. The contractor even lost one of the 2600 kg steel cages, it just disappeared in the hole and we had to give up the pile and drill another one."

Administratively the project was a challenge as well. "It generated two and a half meter of paper work," says Jan. "My unit, of course, is extremely small, and all I had to start with was Rs 10 lakhs (US\$ 21,000). As the client is a government body, advance payments are as a rule not possible. It was only after meeting the Secretary of the Auroville Foundation, Mr. Bala Baskar, that the chairman of WBREDA agreed to paying a small advance. In fact, the Foundation was a big help. As a small private company you can't qualify for such an order, but the Foundation, being another Government undertaking, inspired confidence. Mr. Gon Chaudhuri, the Director of WBREDA, who knew already about Auroville's spiritual background - Sri Aurobindo is highly respected in West-Bengal - was also



Jan

impressed by the number of alternative energy systems employed in Auroville.

But when the project was about to take off, another complication arose. India decided to perform a nuclear test, and ICEF followed the

ban imposed on India, and for nearly a year did not even answer to any email."

All that is now passed. The project is well under way, the commissioning of the first two windmills and the two diesel generators is planned for November. "And then Sagar Island will see an improvement in its socio-economic conditions. Home lighting will be provided and educational centers and small industries will greatly profit from a continuous power supply. There will even be an ice manufacturing plant, which was requested by the fishery industries on the island. This will use the excess electricity generated at times of high wind velocity," says Jan. "And that is very satisfactory."

Does Auroville Energy Products - Wind Section have a promising future? "Definitely," answers Jan. "This system fills a niche in the market. Recently we put up a small wind-diesel system (7.5 kW) in Ghandidham,



# From water-turbines to electric trams

**Auroville Energy Products specialises in the sale of solar energy products and micro-hydro systems, and provides consultancy on rural electrification. Its research projects focus on the development of solar transport.**

**T**he hydro-system in Putsil village in Orissa [see box] was one of our nicest projects,' says Carsten with a hint of satisfaction in his voice. This 40 year old German electronic engineer started Auroville Energy Products in 1996. Micro-hydroelectricity systems are one of the cheapest ways of generating electricity and it was small wonder that, along with solar energy, his first interest went in that direction. "We got the technology from a non-governmental organisation and we have used it for Putsil and for three more systems in the Western Ghats around the Nilgiris. India has a tremendous potential for micro-hydroelectricity projects, in particular in the Himalayas where, according to one estimate, more than 40,000 villages are not linked to any grid. But contrary to Nepal and China, in India these systems of community-based electricity generation have not come from the ground due to the fact that there is as yet no political will in India to decentralise power generation. Our clients, typically, are not the villages but non-governmental organisations such as WIDA or technical schools that use the microhydels for demonstration projects. Unless there is a change in the government policy to actively promote these systems, this promising market will remain small. Recently there has been a move in states like Himachal Pradesh and Kerala to give the people the power to have their own microhydels. So the market starts opening. But to do an active marketing of our product, we need capital which so far has not been available," says Carsten.

Instead, AEP concentrated on its other arm, that of producing small

**"As night falls, oil lamps and kerosene lanterns lend a ghostly glow to the villages in Koraput in Orissa, women hurry to finish their chores and men retire in their charpoys. But at Putsil village in Semeliguda block, night life has become vibrant thanks to the mini hydel plant that the villagers built with their own hands. The project, coordinated by an NGO called WIDA, generates 7 kilowatts, supplying 60 watts to each house. Modernity is peeping in: the community hall has a brand-new TV, a dish antenna and even a computer.... The machinery for the mini hydel project was supplied by Auroville Energy products"**

**E. Vijayalakshmi in 'From Darkness to Light,' The Week, July 2, 2000.**

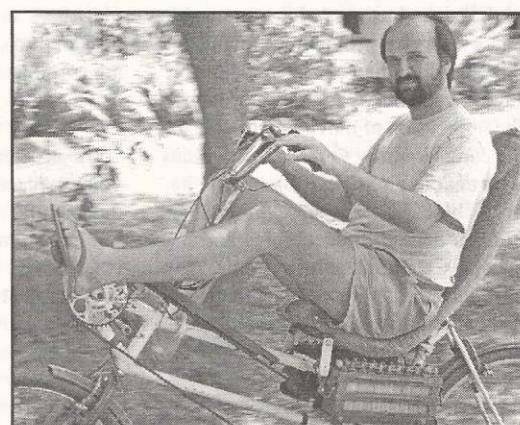
another product for use in India: a series of highly sophisticated charge controllers. Charge controllers are electronic devices to control the charge and discharge of the battery. To get more out of your solar energy system, the battery needs to be protected against overcharge and discharge and there are certain ways of properly charging it. Normal charge controllers only check the voltage, but the one from Germany also regulates the effects of the ambient temperature, and it has an internal clock so that once a month the battery is boost-charged, which cleans the battery plates automatically and circulates the acid. We are now representing this company in India, assembling the smallest controller of the range ourselves and importing the larger ones.

These products are well received. The high quality is the determining factor, and people are willing to pay extra because of the fact that it comes from Germany. The main problem we have with these systems is the import duty. There is a concessional rate for solar equipment, but its application is up to the custom authorities. Last time we lost the discussion, and we had to pay 40% extra which heavily influenced our prices. India has a large import of uninterrupted power supply (UPS) systems and inverters from China, and the custom authorities regarded our solar inverters as UPS inverters." To solve the problem of import duties, AEP has started to manufacture small solar gadgets, such as solar torches and garden and table lamps using nickel-metal hydride batteries. "We'll export them to Germany," explains Carsten. "Our exports will give us in turn some concessions for importing the charge controllers."

Apart from selling solar products, Carsten is also involved with consultancy and research. He is just back from a trip to Nepal. "The European Union wants to implement a large project for rural electrification, and along with a few others I got the assignment to evaluate the situation, judge what is possible and feasible and what technology should be used. It is a very exciting project, Nepal has a lot of isolated valleys, and is ideal for solar. As an offspring, more and more ideas are coming up how to develop solar systems for the rural area. In cooperation

with a Pondy company we are now designing a solar water-ozoneiser, a water purification system that runs on solar and which is extremely beneficial for these areas and for those such as Orissa which have recently been hit by a cyclone."

But Carsten's main interest is solar transport. "We have developed the second generation of solar bicycles," he says enthusiastically, "and the Aurovilians and all the guesthouses should really go for that. The price is reasonable (Rs. 30,000 - Rs. 35,000, US\$ 650 - \$750), the range is 15 kilometers per battery, and with say five charging stations spread out in Auroville, where within a minute the battery can be exchanged, we would reduce the air pollution from our motorbikes. Just imagine the public image if the Auroville guesthouses would have these bikes available for the guests instead of scooters and mopeds!" Realising that something more will be needed to push them over the threshold, AEP has submitted a funding request to the Indian Renewable Energy Department, IREDA, for 20 solar cycles as a demonstration project.



Carsten on the "relaxed" model of the solar bike. Normal models are also available.

"And then there is of course the third phase of the Asia-Urbs project which deals with alternative transport," says Carsten. "My dream is to have a solar tram operating between the Visitors Reception Centre and Matrimandir. Luigi from Auroville's Future dreams about a solar tram on the ring road. We are in contact with the person who designed a prototype of a solar tram in Germany. If the European Union approves this project, Auroville would have its solar public transport on rails, a novelty for India!"

For more information on Auroville Energy Products see [www.auroville.org](http://www.auroville.org) or email [aep@auroville.org.in](mailto:aep@auroville.org.in)

## "Blessings for effectivity"

continued from page 1

"All this has developed in the last 20 years. Still, I think, we are only in the first flush of youth. Better systems will come on the market."

Though renewable energy is actively being promoted, it ranks fifth after coal, oil, gas and nuclear energy. India is equally actively promoting the expansion of its nuclear power program. The installed nuclear power capacity is only 2720 MW, less than 3% of India's electricity capacity, and the Department of Atomic Energy has recently proposed building a 500 MW Prototype Fast Breeder Reactor at Kalpakkam and a 2000 MW nuclear Power Plant in Koodankulam in Tamil Nadu.

Though he objects to nuclear energy, Chamanlal is not worried that its promotion will affect the future of the renewable energy sector. "Conceding the fact that India is energy starved, there is no alternative but having renewables together with creating public awareness about the need to be energy conscious," he says. "Even if we could add 10,000 MW a year



Dr. Chamanlal Gupta

capacity - which India can't - the demand would still exceed the availability. Renewables are an absolute necessity. The target of achieving 10 percent of incremental capacity addition by renewable energy systems by the year 2010 is a realisable one, provided the achievement process is driven not by target but by the ground situation. And it will require an active government co-operation to do away with all the existing legalistic and bureaucratic barriers."

## Estimated potential for renewable energy technologies in India

Sources/systems	approximate potential
Biogas plants (no.)	12 million
Improved woodstoves	120 million
Biomass	17,000 MW
Solar Energy	20 MW/km <sup>2</sup>
Wind energy	20,000 MW
Small hydro power	10,000 MW
Ocean Energy	50,000 MW
Energy from urban, municipal and industrial wastes	1,700 MW

source: MNES (1999)

Top: AV 55 windmill in Auroville Information Centre  
Left: Auram mud brick presses ready for export

Europe. It was designed by the Auroville Building Centre's Earth Unit.

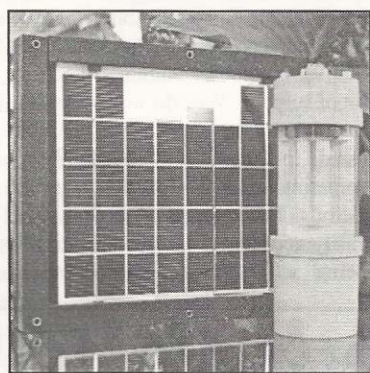
"Both from a commercial and an idealistic perspective, we are happy doing this work," says Robi. "It shows that we are not here to rip off the planet and empty our resources, that we are serious in trying to promote renewable energy systems."

For more information on Aureka see [www.auroville-products.com/aureka](http://www.auroville-products.com/aureka) or write to [aureka@auroville.org.in](mailto:aureka@auroville.org.in)

Gujarat. After the earthquake the utility grid went down and our system was the only power supply for several days. Also environmentally these systems make sense as they help to reduce pollution and preserve the environment. We have enquiries from the authorities of the Andaman and Nicobar islands and from the Lakshadweep electricity department. We also received an order from an organization in Assam to put up a small wind battery charger at an altitude of 4,200 meters.

This is truly an interesting market which is beneficial for the people of India. It will also generate a decent profit which will benefit Auroville, in due time." And he adds, with a grin "This work has given me a shift of perspective. Previously, when I was a member of the Funds and Assets Management Committee, I used to be pretty sharp on the performance of the Auroville business units. Now doing business myself, I have developed a lot of respect for Auroville businesses!"

For more information contact Auroville Energy Products - Wind, Aurosarjan complex, Auroshilpam, Auroville 605 101, India, website: [AurovilleWindSystems.com](http://AurovilleWindSystems.com), email [Jan@Auroville.org.in](mailto:Jan@Auroville.org.in)



The AEP solar torch and panel.

portable solar lanterns. "We got a grant in kind from a German local government, 100 sets of solar lanterns together with the assembling tools, so that we could start a workshop and with the lamps sold, purchase the next batch. I got trained in Germany, we started and then tried to create a distribution network in India. That failed due to an unforeseen circumstance. The government has a subsidy system for solar lamps that spread their light 360 degrees. Ours didn't, and was classified as a torch. Notwithstanding the fact that our lamp was technologically superior to the Indian makes, we did not manage to sell it as the local article was 50% cheaper. Even Tata BP, a big Indian company, couldn't market it. It was just bad luck. The lamp was designed in such a way that we couldn't change the specifications. And, though we tried, the Indian authorities refused to change the parameters for the subsidy. We still have a minimum production of a hundred lamps a year, mainly for use in Auroville.

"Then I discovered in Germany



# Providing renewable energy services

Aurore Projects and Services is a renewable energy service providing agency. It aims at progressively introducing renewable energy systems in India by interacting with product manufacturers, lease companies, subsidy givers and end users.

"Move slowly," counsels the screen saver of Hemant's computer terminal, obviously a necessary reminder in the tricky business of the renewable energy service provider. Hemant, the 34-year old Indian executive of Aurore Projects and Services, does indeed give the impression of moving with deliberate care. Contrary to most Aurovilians who deal in alternative energy, he has no technical background. Instead, he holds a degree in economics and has specialised in financing systems. As a corollary, his unit does not manufacture alternative energy systems, but ensures that those systems reach the end-user by connecting product manufacturers, lease companies, subsidy givers and end users in a complicated foursome with his unit in the hub. "It's a juggling act," says Hemant smiling. "Loose one of the four, and you are out. But if you do it well, the work is extremely rewarding."

Hemant got his first juggling lessons while working for Altecs and Auroville's Centre for Scientific Research, CSR. In the years 1994-95, CSR hosted a solar pumping project, then a new activity in India. The Ministry of Non-conventional Energy Sources (MNES) and the Indian Renewable Energy Development Agency (IREDA) were keen to promote this technology, and there was a great interest in these products in Auroville itself. This gave the initial impetus. CSR brought the interested Aurovilians together, got the subsidy on their behalf from MNES and placed the order for the pumps and the solar panels after having selected the best manufacturer. Soon afterwards Aurore Trust was born as CSR cannot entertain commercial activities. Its objective is to become a service providing agency for all products in the renewable energy sector. Its present focus is on solar pumps.

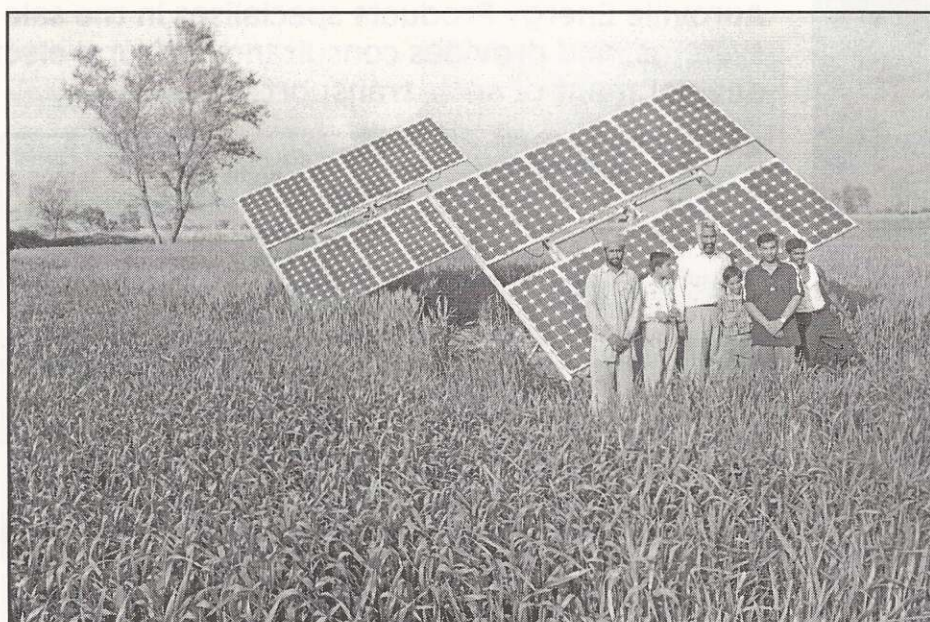
"Renewable energy technologies are generally very expensive, especially solar energy technologies," explains Hemant. "As you cannot expect some-

body to pay their electricity bill for the next 25 years in one shot, the Indian Government has introduced several schemes. For solar pumps, for example, there are direct subsidies up to 50% of the price of the pump-set, there are soft loans with 2.5% instead of the usual 14% interest, and there are income tax benefits in the form of 100% accelerated depreciation. And, if you can place a sufficiently large order, the manufacturers will give a discount.

For an individual farmer in Tamil Nadu or elsewhere in India, it is almost impossible to take advantage of all these schemes. Most likely, the farmer would get lost in the bureaucratic corridors of New Delhi trying to get a subsidy, and he would probably not even qualify for any of the other advantages. And that's where we come in. Through our work, the farmer profits indirectly from all schemes and discounts, and gets a pump-set for a price far below what he would pay normally. Our involvement reduces his costs. For every Rs 100 he would pay doing everything himself, he would pay Rs. 30 using Aurore. That is a substantial saving."

Aurore's first work then is to approach potential clients interested in the alternative technology. When a sufficient number of clients has expressed interest, the next work is to develop a financing packet. This implies selecting a lease company who is interested to order the pump-sets, and who will obtain the subsidy, the soft loan and the income tax benefits from the government. Then there is the work of selecting the best products, which implies dealing with a number of product suppliers, and ensuring that they can supply all at the

same time. "When we have this all online, we have to clinch the deal," says Hemant. "Once all the signatures are in - which guarantees us a rather large pile of paperwork - the suppliers will deliver and we then have to ensure the proper installation of the systems at the various sites. After installation the farmers will, for a certain period of time, pay a yearly service and insur-



Aurore installed a solar pump-set for farmers in the Punjab in the middle of their wheat fields.

ance charge. By the end of that period, they own the pump."

It's a win-win situation for all involved. The farmer gets a pump below the costs he would pay otherwise; the manufacturers have the benefit of fairly large orders; the lease company has the advantages of subsidies, soft loans and income tax benefits; MNES and IREDA fulfil their policy; and for Aurore "there is the satisfaction that renewable energy is spreading all over India with solar pumps installed from Kanyakumari in the south, to Midnapur in West Bengal, to earthquake ravaged Bhuj in Gujarat, and to Firozepur on the border with Pakistan," says Hemant.

How well is Aurore doing? "It is fluctuating, we've had both good and bad years," says Hemant. "We started with a bang in 1994-95, installing 132 pumps, then we had lean periods in which we would only do 20 to 30 pumps annually. Last financial year was good. We managed to install 219 solar pumps, and our turnover was Rs. 3 crores (US\$ 640,000), which is about one third of the total value of all the projects. Our turnover consists mainly of our service charges. A small part is generated by dealing in subsidiary products, such as the solar panel stands manufactured by Aureka, and the solar devices manufactured by Auroville Energy Products."

The prospects for the future, however, are vague. "The expectations are that the subsidies will be gradually phased out, in the wake of a global trend to abolish government subsidies all-together. But the prices of solar panels are also coming down as India has developed a very vibrant solar industry. So we cannot really predict what is going to happen," says Hemant. "And this affects also our possibilities of contributing to Auroville's development. Though there are many projects in the pipeline, this financial year we have not yet clinched a deal so we live on our reserves. This may hopefully change tomorrow. Meanwhile, we help Auroville in other ways through our knowledge of financing systems and subsidies."

How is it to sit with a farmer in the hinterland of the Punjab discussing solar systems and answering the traditional question 'where do you come from?' "Most of them have never heard about Auroville, but when we explain the spiritual background - yes, that we are not an ashram - there is a lot of surprise. Why do we go for commercial activities? Why are we interested in alternative energies? We sometimes get into very deep conversations. The concept of spirituality is easily accepted, but the connection to being active in matter is something

else. And that we do not work for money but for a cause is a novel idea entirely."

Concludes

Hemant: "Doing this work, I often remember The Mother's words that India has become the symbolic representation of all the difficulties of present-day humanity, that India will be the site of the resurrection of a higher and truer life and that it is for that that She created Auroville.\* This means that the little things we do here get translated in India, that they have a ripple effect outside. If Auroville is able to meet

its energy requirements progressively from renewable energy sources, it will then undoubtedly have a very large impact on India and the World."

\*3 February 1968, *Mother's Agenda IX*, p. 41.

For more information on Aurore see: <http://www.Auroville.org> under CSR or contact Hemant@Auroville.org.in



Hemant

**Solar pump-sets come in different varieties. A Rs. 2,5 lakhs (US\$ 5,000) pump-set consisting of a 1 hp low-suction centrifugal pump and 900W solar panels can pump up to a depth of 7,5 meters. Through Aurore, such a pump-set costs the farmer Rs 65,000 (US\$ 1400). Other models having a 2 hp pump with 1,800W panels costs in between Rs. 4-5 lakhs (US\$ 8,500 - 10,500), depending on the type of well. Through Aurore, these systems will cost the farmer up to Rs 81,000 (US\$ 1750).**

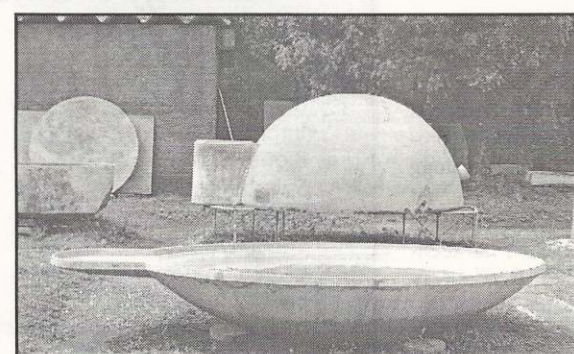
## Training for a sustainable habitat

Auroville's Centre for Scientific Research CSR is promoting renewable energies by hosting national conferences and giving courses on how to realize moving towards sustainability.

Since the early days, Auroville has been involved in the research and implementation of renewable energy systems. Interest in these systems developed out of sheer necessity to secure energy for living and day-to-day activities. Interested persons carried on with the improvement of the devices, and those activities led to the formation of units involved in research and development.

Foremost among these is Auroville's Centre for Scientific Research CSR. It was founded in 1984, with an original focus on ferro-cement technologies: roofing channels, water tanks, doors, biogas tanks and other products. Though the products are difficult to transport, CSR has since 1993 been shipping yearly an average of seven biogas plants to the Andaman Islands. Its ferro-cement products are sold in Tamil Nadu and have been exhibited in New Delhi and used in model houses built in Orissa and Gujarat.

Next to the sale of products, the sharing of acquired expertise and skills has become part of CSR's activities. The aim is to promote integral choices for a sustainable future by providing education to professionals, voluntary organisations and students through awareness programmes, workshops, training courses and seminars in environmental and sustainable technolo-



Top and bottom part of a ferro-cement biogas system, designed to be transported on a bullock cart.

gies. These trainings are executed in collaboration with more than 22 partner organisations in India and abroad.

"We have probably trained more than 2,500 people over the last 10 years," says Tency who heads CSR. "It started in 1991. The Housing and Urban Development Corporation of India, HUDCO, asked us to give training in ferro-cement technology to those who work for their approxi-

mately 600 building centres in India. This soon expanded. Our syllabus now includes ferro-cement technology, earth technology, renewable energy technologies and wastewater recycling. All these technologies are based

on field experiments in Auroville. This knowledge we disseminate in two, three or five day courses. Those attending range from university professors to masons, from government officials to members of private organisations and other individuals. We have trained people from all over India"

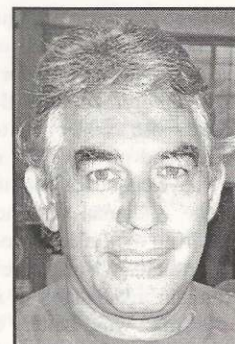
"People come because they heard about the course. We cannot claim excellence in a particular field of research we are engaged in - perhaps with the exception of reforestation and solar energy. There are many organisations in India that are doing much better work in one particular activity. But people come because they are aware that we are working in all possible areas at the same time. Auroville has taken up everything, from environment to education, from alternative economy to natural healing systems, from renewable energies to research on gold tiling, from alternative building technologies to spirituality. There is no other place in India, which does that.

"Many of those who attend our courses have visited Auroville

on a short trip before. They tell us that they left unsatisfied, curious to know more and then, after some time, got into contact with us. The courses are ideal to get to the inside of Auroville, as through such a course the community actually opens up. The course experience, as they report back invariably, is very valuable and in quite a few cases a life changing experience."

Concludes Tency: "You see, we are not a theoretical training institute. We are speaking of what we have done, what we have learned and experimented in life. And that's why we call our courses "Towards a Sustainable Future". It is the faith behind our work."

For more information on CSR visit <http://www.auroville.org>



Tency



# "By the Light we live, to the Light we go"

(Savitri)

Jacques Lusseyran (1924-1971) lost his eyesight in a school accident at the age of eight. After surviving World War II, he became a professor at the Sorbonne and two American universities. This is an extract from one of his essays in *"Against the Pollution of the I"* (Parabala Books, NY 1999), submitted by former Auroville Today editor Bill Sullivan.

Because of my blindness, I had developed a new faculty. Strictly speaking, all men have it, but almost all forget to use it. That faculty is attention. In order to live without eyes it is necessary to be very attentive, to remain hour after hour in a state of wakefulness, of receptiveness and activity. Indeed, attention is not simply a virtue of intelligence or the result of education, and something one can easily do without. It is a state of being. It is a state without which we shall never be able to perfect ourselves. In its truest sense it is the listening post of the universe. I was very attentive. I was more attentive than any of my comrades. All blind persons are, or can be. Thus they attain the power of being completely present, sometimes even the power of changing life around them, a power the civilization of the twentieth century, with its many diversions, no longer possesses.

Being attentive unlocks a sphere of reality that no one suspects. If, for instance, I walked along a path without being attentive, completely immersed in myself, I did not even know if trees grew along the way, nor how tall they were, or whether they had leaves. When I awakened my attention, however, every tree immediately came to me. This must be taken quite literally. Every single tree projected its form, its weight, its move-

ment – even if it was almost motionless – in my direction. I could indicate its trunk, and the place where its first branches started, even when several feet away.

The seeing commit a strange error. They believe that we know the world only through our eyes. For my part, I discovered the universe consists of pressure, that every object and every living being reveals itself to us at first by a kind of quiet yet unmistakable pressure that indicates its intention and its form. I even experienced the following wonderful fact: A voice, the voice of a person, permits him to appear in a picture. When the voice of a man reaches me, I immediately perceive his figure, his rhythm, and most of his intentions. Even stones are capable of weighing on us from a distance. So are the outlines of distant mountains, and the sudden depression of a lake at the bottom of a valley. This correspondence is so exact that when I walked arm in arm with a friend along the paths of the Alps, I knew the landscape and could describe it with surprising clarity. I could do it when I summoned all my attention. Permit me to say without reservation that if all people were attentive, if they would undertake to be attentive every moment of their lives, they would discover the world anew. They would suddenly see that the world is entirely

different from what they had believed it to be. All science would become obsolete in a single moment, and we should enter into the miracle of immediate cognition.

When I was seventeen I graduated from high school and entered college. The false peace between the two wars had just come to an end. Europe had thrown itself into the worst conflict of its history, and my homeland, France, had been conquered within five weeks. During the first months of the occupation I experienced something like a second blindness. Nine years earlier the outer light had been taken from me. This time outer freedom was taken from me. Nine years earlier I had found the light again in myself intact and even strengthened. This time I found freedom there, just as present and demanding. Within a few weeks I understood that fate expected the same work from me a second time. I had learned that freedom was the light of the soul.

Reminding myself unceasingly that freedom existed had become for me the same unquestionable duty of keeping alive the light behind my closed eyes. There was no other reason for my entering the Resistance Movement. A blind person would never be admitted to a group of the Resistance so I myself founded a Resistance group. In July 1943 I was

arrested by the Gestapo. I was interrogated for forty-five days, kept in jail for six months, and in January 1944, taken to Buchenwald concentration camp. Of the two thousand Frenchmen who arrived in Buchenwald the day I did, only thirty were alive when the United States Third Army liberated the camp. That I am here is one of those thirty miracles. My twenty-nine companions cannot explain it any better than I can. In order to survive in a concentration camp, no ruse is sufficient. No form of intelligence is enough. When death is present every minute, when all those we love disappear, when humanness vanishes, when no concrete reason any longer exists, nor a single sensible reason to hope, then an immediate refuge is necessary, an all-powerful refuge. And that is faith. Yet even the most fervent faith is usually no more than faith. A kind of faith is necessary that has its roots in our very being, that in time has to become our very self. In other words, an experience is necessary. I had encountered that experience. Blindness taught it to me.

I knew that when the light was taken from me, I could bring it to life again in myself. I knew that when love was taken away from me, its spring would flow again in myself. I even knew that when life is at stake, it is possible to find its source within one-

self. I know these are explanations that may seem abstract and that one does not live by theoretical solace. But for me they were not abstract. Every time the sight and tests of the camp became unbearable, I closed myself off from the world. I entered a refuge where the SS could not reach me. I directed my gaze toward that inner light which I had seen when I was eight years old. I let it swing through me. And quickly I made the discovery that that light was life – that it was love. Now I could again open my eyes – and also my ears and nose – to the slaughter and the misery. I survived them. If someone does not accept this explanation, which is the only correct one, then it seems to me that he does not know an all-important truth, namely, that our fate is shaped from within ourselves outward, never from without inward. Blindness, like any other great physical or moral loss, teaches this truth so thoroughly that in the end it is impossible to deny. Can I still call it an accident that brought me such a gift, "misfortune"?

*For this joy is close to you,  
It is in you!*

*None of you has a spirit so heavy,  
nor an intelligence so feeble,  
none of you is so far from God  
not to be able to find this joy  
in Him.*

Meister Eckhart

## AUROVILLE AND INDIA

# A Walk through Historic Pondicherry

Aurovilians are treated to a guided tour of old Pondicherry.

"Would you like to join us on April 1st on a walk through historic Pondicherry?" was the announcement on the e-mail. Somebody thought that it was an April fool's joke, but Ajit, the organizer, was adamant that it was not. So there we were, about 20 Aurovilians, on a hot Sunday afternoon in front of the Subramaniam Bharathi Museum. Most Aurovilians only know certain areas of Pondicherry because of purchasing trips, during which we hardly have time to take a closer look at the historic side of town. So the INTACH (Indian National Trust for Art and Cultural Heritage) guided tour that we received through a small part of historic Pondicherry was for many of us an eye opener.

The original town of Pondicherry was destroyed by British in 1761. Subsequently it was rebuilt on the old foundations. Pondicherry architecture can roughly be divided into three categories: Tamil, French colonial and – the least interesting – modern Indian architecture. A unique feature of historic Pondicherry architecture is the mixture of Tamil architectural elements on the ground floor with classical colonial features on the first level.

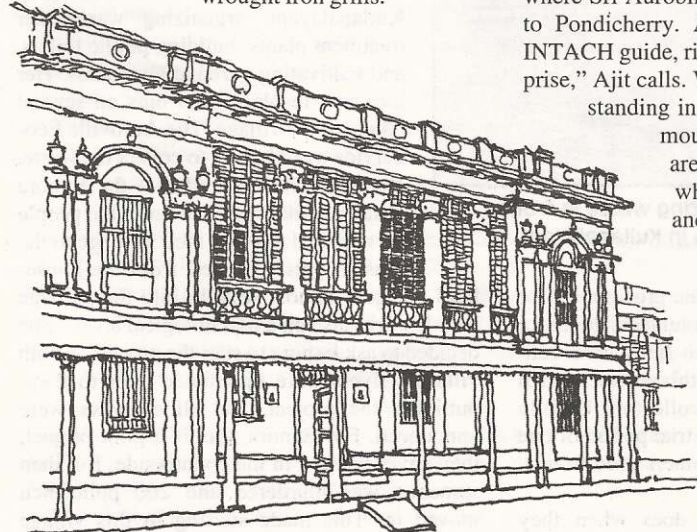
### Tamil architecture

Our walk started in Eswaran Koil Street. This is one of the few street in Pondicherry which has many of the original historic Tamil houses left, so allowing us to understand the way such houses were constructed. Tamil houses traditionally have a 'taalavaram' on the street side, a veranda which is covered with a lean-to roof covered by tiles, corrugated sheets, or sometimes thatch supported by thin square wooden pillars. Then comes the 'tinnai', a veranda with a raised platform on both sides of the entrance door, supported by thick round wooden pillars. This is a place where the residents sit and watch the street or where visitors can wait. In earlier times it was used by travellers who needed a place to rest.

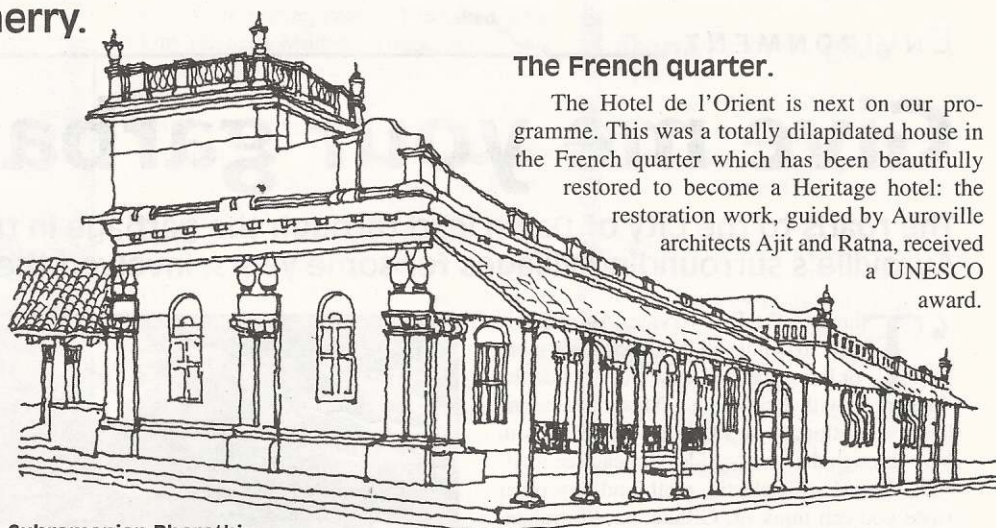
The main doors usually have a heavily decorated carved frieze, depicting details about the owners of the house. Without name plates one can tell, by looking at the door, the caste or community to which the person living in the house belongs.

When you enter a Tamil house, a small vestibule leads you to the 'mutram', a courtyard ringed by round wooden pillars and surrounded by rooms. Sometimes the 'mutram' is open to the sky, sometimes it is covered with a tile roof and open to the sides for air circulation. Houses of well-off owners might have windows below the roof, fitted with coloured glass, which usually was imported from Belgium. Another passage leads to the second courtyard, and depending on the size of the house, to a third courtyard. The kitchen is usually located at the far end of the house, an area reserved for the women of the household.

We next walked to Vysial Street, which is mainly inhabited by people from the Chettiar community (traders and money lenders). Here we find at no.65 the house of the Calve family. It is one of the largest private houses in town. As a banker who would expect many visitors, his 'taalavaram' and 'tinnai' are extra large. Inside the house the first courtyard floor is decorated with black and white imported marble. The windows facing the courtyard are covered with woven cane, the columns are made out of rosewood, the windows of the upper storey have coloured Belgian glass and imported wrought iron grills.



Tamil house in Vysial street



Subramaniam Bharathi Museum

### The French quarter.

The Hotel de l'Orient is next on our programme. This was a totally dilapidated house in the French quarter which has been beautifully restored to become a Heritage hotel: the restoration work, guided by Auroville architects Ajit and Ratna, received a UNESCO award.

All the rooms are appropriately decorated with antique furniture.

Opposite the Hotel is a grand entrance to a grand house. This house is Hotel Lagrenée de Mézières which was built by a French nobleman. One of its walls has four unique and beautifully preserved plastered reliefs, depicting arts, music, agriculture and theatre. The building is presently being used by the Sisters of Cluny Church for their embroidery section, and in so doing they are safeguarding this exquisite building.

### Muslim architecture

At first glance there seems to be no difference between Tamil and Muslim architecture, but a closer look reveals there are differences – the latter is more exuberantly decorated and colourful. Many Pondy Muslims were traders and used to travel extensively to Indo-China. From the Orient they brought back not only goods but also an influence which prompted them to add elaborate touches to their buildings. Instead of red clay they quite often used imported glazed balustrades. Another example of Muslim architecture is found on the corner of Rue Mullah: a small three storied pigeon house with Japanese style roof-corner tiles.

Tired, but enriched by this walk, we finished the tour in the ITACH office to hear more about their work in trying to save the unique historic buildings of Pondicherry.

Tineke



# The Auroville Health Centre today

Skye, a professional emergency medical technician from the USA who lived here in the early years, re-joined Auroville a few months ago. Here she reports on the present incarnation of the Auroville Health Centre.

The field of the health professions (traditional and alternative alike) has always presented a high-risk challenge to those drawn to its service. Taking another person's well being into your hands is a formidable responsibility: demanding and unpredictable by nature, and although sometimes rewarding, also often thankless and occasionally devastating.

The Auroville Health Centre, located adjacent to Aspiration has doggedly plodded through the rocky terrain of its many incarnations during its 30-some year existence. We find it today struggling valiantly to live down a sometimes infamous past and reaching to meet the growing needs of Auroville and its surrounding villages.

I met with Albert Zwaan, a former senior nurse from Holland, and Peter Kern, another trained nurse from Switzerland. Albert has over 40 years experience as a head nurse and hospital administrator, Peter runs the X-ray lab and assists with the administration. I was impressed with the caring efficiency of both men and the organised and hygienic environment of the clinic itself, having been a patient there in past years when this was not the case. When Albert came to the Centre three years ago he brought with him elevated standards of hygiene and all those years of organisational experience.

We sat on the terrace of the Health Centre Nursing Home facing a serene garden with the simple but inviting patient quarters at our backs and talked over coffee about the current capabilities of the Health Centre. I was a bit surprised to learn that though the Auroville staff of the

Centre receives their personal maintenances from Auroville and there is a small budget made available by Auroville, the large majority of the running expenditure of the Centre comes from donations and meagre payments made for care given by non-Aurovilians. Aurovilians receive the doctor's consultation for free and only need reimburse the Centre for materials used in their treatment. Local villagers are asked for a Rs.5 (US\$ 0.10) contribution, but that charge is often waived if this presents a hardship.

The Health Centre currently employs six doctors and six trained nurses, most of whom are not Aurovilians and must be paid salaries, not to mention all the other employees needed to maintain the infrastructure, from the cleaning ammas to the gardener.

The clinic also supports a well-stocked pharmacy ("if we don't have in stock what you need, we can get it in one day at the most"), and a complete lab. A Canadian midwife has recently started working there as well and is involved in pre-natal care and education. Another main activity of the clinic is the co-ordination of a lot of programs in the villages, supporting seven sub-clinics with a trained health care provider on duty daily and a doctor once a week. It also provides health education according to WHO standards and many aspects of preventive care including videos on such subjects as hygiene, water safety and

AIDS, shown both in the villages and at the schools. The clinic's concerns about the situation have also resulted in the building of nine sets of toilets next to the public school.

Next door to the clinic is a complex of buildings that has been funded and built as a nursing home for children from the surrounding villages. One part is a big, specially designed and well-equipped therapy room. There, the German Angelika and her team give occupational therapy to handicapped village children who come for treatment each day. The other part, intended as a ward for village children, has been mostly unused and was subsequently opened up to

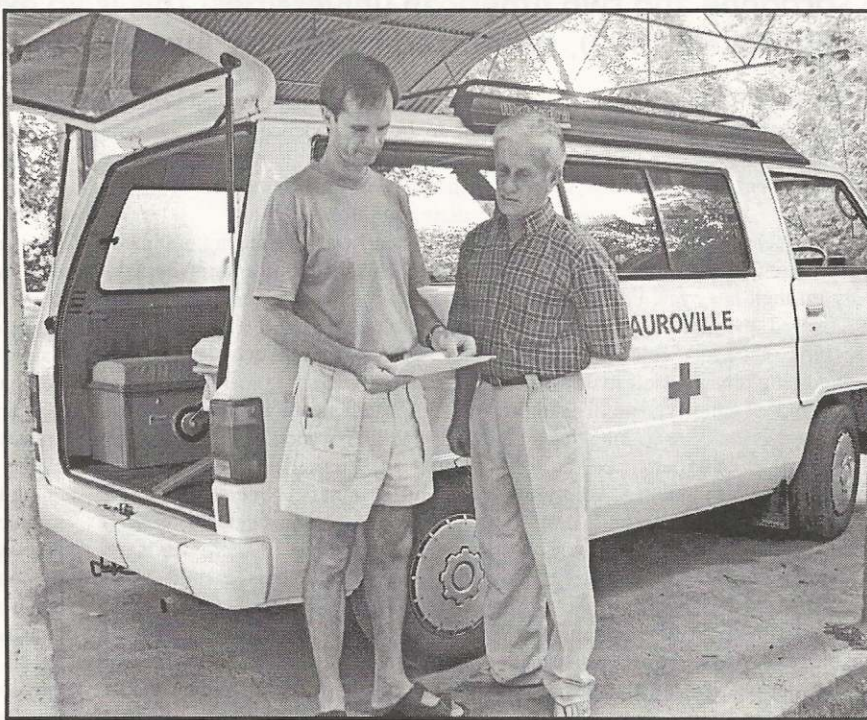
everybody, adults and children, Aurovilians and villagers alike. Several terminally ill Aurovilians have spent their last days in its peaceful environment. The use of this ward provides the clinic with in-patient capabilities for everything from childbirth to long-term care, as for example in the case of Dr. Assumpta who, suffering from cancer after eleven years of service, still administers her duties for the Health Centre from her bed or a wheelchair.

One of the newest additions to the Centre is an ambulance, a donation from supporters. Being an emergency medical technician, I found the ambulance a real step up from transporting

patients in jeeps and taxis. However, some important equipment, like a heart monitor, a defibrillator, and spinal immobilisation equipment, to name just a few, is still lacking as these expenses exceed the struggling financial capabilities of the Centre. But there is now a doctor on call 24 hours a day as well as an on-call ambulance driver. One Aurovillian told me a story about an elderly friend who tripped and fell in an Auroville public place, knocking herself unconscious, and how relieved he felt when the ambulance and doctor arrived and took over the situation. But the incident also highlighted the need for first-aid knowledge, which was lacking. We are in a somewhat precarious position here living rurally far from the immediate assistance of medical professionals. With that in mind, there is a new project in the works to create and teach a comprehensive first-aid and CPR (cardio-pulmonary resuscitation) course relevant to our life in a tropical climate. For it is easy to make serious mistakes in all good will without the proper knowledge. Even at such a basic level, more education can only help us to handle medical emergencies better and perhaps save lives.

The medical needs here are somewhat daunting in their magnitude, the resources sometimes critically lacking. No single health centre on the scale we have at present and serving such a large populace could possibly address them all, but the Auroville Health Centre is making an earnest effort and is deserving of our gratitude and support.

For more information contact [avhealth@auroville.org.in](mailto:avhealth@auroville.org.in)



Peter and Albert in front of the new ambulance

## ENVIRONMENT

# Give me your garbage, ma'm!

The roads to the City of Dawn lead through the garbage in the villages. Gillian, who has been spearheading the cleanup of Auroville's surrounding villages for some years, involved the Madras based organization of Exnora to help out.

Through the Eco-service, Auroville is able to handle all its garbage in a more or less organised way. But what do the villagers do with their waste? "Most of them just don't do anything!" says Gillian. Whenever you drive through the countryside, you can see roadsides littered with plastic, cloth and any other waste you can think of. Gillian, an Australian, has long been aspiring for a clean environment in our area. Through the Australian waste specialists Sonja and Bill, who visited Auroville recently [see AVToday June/July 2001, # 149/150] she came in contact with Exnora, a voluntary organisation based in Chennai, which deals with waste management. Two volunteers were invited to a meeting in Auroville in which they showed slides of their methods of garbage collection. Gillian realized that this might be a way to get rid of all the village waste.

Exnora is spread all over India, with around 13,000 volunteers. It started in Chennai with a retired bank manager who used to wade through the garbage to get to his house. "He probably was too busy to notice, or did not have the time to do anything about it, but after his retirement he just went ballistic and took it on. I guess he might have started in his own area," Gillian tells. He devised a special scheme, and it spread from place to place. It is very simple: they go to an area of about 200 households and present to the people a slide show on their method of door to door garbage collection. The next step is distributing two containers per household, one for organic, one for non-organic waste. And the next day they appear at everyone's house with their tricycle (a 3-wheel flatbed cycle rickshaw), the two containers and their story: 'give me your garbage, ma'am'. This is organization to the maximum!" says Gillian in admiration. For the



A steel bin for collecting waste in front of the public toilets in Kuilapalayam.

next three months or more, the process will be monitored by the Exnora volunteers to make sure that it is working. Each household contributes Rs. 20 per month for this service, which in return pays the two waste collectors. Usually this process starts with a free trial period of one month to get the future customers used to how the service works.

The first thing Exnora does when they implement this scheme is to cleanup the neigh-

bourhood. Gillian: "Then one knows what it means to live in a clean environment. Everybody helps, it is a massive cleanup. They have their ways of involving people to do that. The cleanup comes from the people themselves, they don't bring in outsiders. That's exactly how they operate wherever they are. The Exnora people have their cultural understanding of how to approach people, and how to move in with their volunteers. I feel they go quite deeply into the psychology of the people. If your village is clean, you can be proud of where you live!"

When Bill and Sonja left Auroville, Gillian took up the Exnora contacts. She was already involved in garbage collection in Laxmipuram and in cleaning up Kuilapalayam, organizing wastewater treatment plants, building public toilets, and cultivating garbage awareness. Her idea was to place steel bins on several points in the village. The Auroville Eco-Service would come to collect the waste. But then she realized that the Exnora system works better, because the people do not need to bring their garbage to the bins. It gets collected from the household. "It goes almost straight into the garbage cart. It works also on a psychological level." She decided to ask Exnora to start the process in both villages: flyers were distributed door to door, outlining the project, and slide shows were announced. For Exnora, this is a pilot project, they never worked in the countryside. But then someone was murdered and 200 policemen moved in. This made starting in this village impossible.

When the initial plan was cancelled, Auroville's Village Action, which was involved in similar projects, was called for help. Their development workers too had several sessions with Exnora and are planning to carry the scheme out to all the 40 villages surrounding Auroville. "They said, 'No problem. We will take it to Edayanchavadi', confident that they could pull it off," says Gillian. When the Exnora people arrived to start the work in Kuilapalayam, they were presented with the change of village. They had come prepared for two days of work. Though they normally need more time to organize the presentations, they did manage to meet the leaders of Edayanchavadi and verify their genuine interest in having this type of garbage collection introduced. Then they invited the villagers to the slide show and explained how the scheme works. The whole project now needs a start-up capital of Rs. 39,000 (\$900), required for the tricycle, tools, uniforms, wages and the containers. This money still has to be found.

Once Edayanchavadi is successful, the plans are to start in Laxmipuram and Kuilapalayam. Says Gillian: "All three villages are for me the outer gardens of Auroville. The co-operation with the Exnora people is essential to convince the people there that they benefit from their own clean environment. The Exnora people not only have the capacity to go quite deeply into the psychology of the people, but also possess a great vision of the need for a clean India as a matter of national pride and they know how to communicate that vision. I will be happy to see this motivation and drive expand to the other villages surrounding Auroville."

Tineke

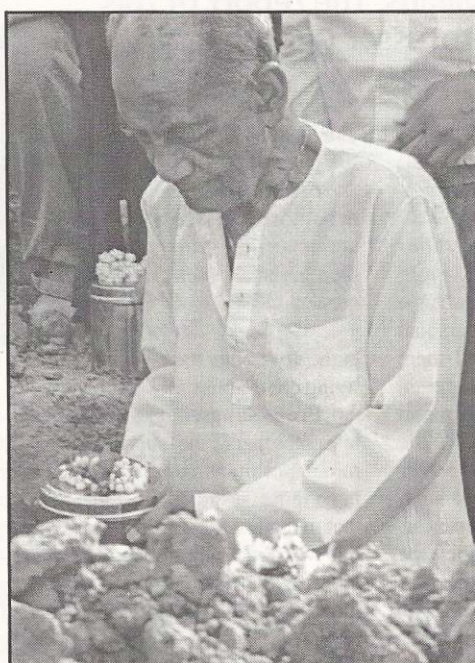
Gillian can be contacted at: [gillian@auroville.org.in](mailto:gillian@auroville.org.in)



# Auroville soil receives foundation containers for German Pavilion

On August 15th, 2001, two "foundation containers" for the Pavilion of Germany in Auroville's International Zone were entrusted to Auroville's soil in a solemn atmosphere by Dr. Nirodbaran from the Sri Aurobindo Ashram. The push for this ceremony came from Dr. Ananda Reddy who heads the Sri Aurobindo Centre for Advanced Research in Pondicherry. It was strongly supported by Friederike Werner, Wolfgang Schmidt-Reinecke and others from the German 'Pavilion Group' consisting of members of Auroville International Germany. "After a phase of concerning ourselves with the difficult German past and its consequences for us today, we opened up more towards what we can identify and accept as our special positive contribution to the great international orchestra. At the same time our group had a growing feeling that a process of nine years should satisfy even the high demands of 'German thoroughness'. We think the time has come to consider the concrete material building of a German pavilion," wrote Friederike and Wolfgang in the Auroville News.

One of the containers holds earth



Dr. Nirodbaran putting a container in Auroville's soil

from four different regions in Germany (including Weimar), earth from the Samadhi and earth from Auroville, the other one the symbols of Sri Aurobindo and the Mother and

their photos and a large heart-shaped rose-quartz from the Sri Aurobindo Center in Berlin, a symbol of love and heart energy, together with blessing packets and flowers from the Samadhi and from Auroville. The containers were consecrated in Sri Aurobindo's room on August 12th.

The German pavilion will be part of the European plaza. "It was not really possible to determine the exact spot where the German pavilion will be one day as the area is huge and empty, but we chose a beautiful site in the correct area for digging the containers into the ground," e-mailed Tine from Auroville International Auroville. "More than a hundred people attended the ceremony, mostly Germans. It was quiet and concentrated. Friederike read the passage in the Human Cycle where Sri Aurobindo talks about Germany. Nirodbaran placed both containers in

the hole and unexpectedly gave a moving speech about the 'great German nation putting their foundation into Auroville'. Then the hole was closed, a big stone with an Auroville symbol placed on top, so that we can find the spot later again. The service tree, a shoot from the Samadhi service tree, will remain in a pot and be cared for in an Auroville community for one year, until the 'real' foundation stone for the German pavilion will be laid on 15th of August 2002. At least this is the set goal - to come back with money and plans and start the pavilion construction next year."

Ananda Reddy, who had been invited to give a speech at the annual meeting of Auroville International Germany and at the Humboldt University in Berlin in May, experienced Germans having problems with their past and with being Germans, problems that originate from the Second World War and feelings of guilt. It was this experience which convinced him that the German pavilion in Auroville should be built immediately. He shared his experience with Aurovilians on July 18th in the Savitri Bhavan. The following article is excerpted from his speech.

## The problem of Germany's past

by Ananda Reddy

I had been invited to come to Germany to give a workshop on Savitri at a place at the Chiemsee in Bayern, Germany's southern state, and later to give a few talks in Berlin. The interaction with the participants who attended the workshop gave me a first perspective of what I would call 'The German Problem': the acute sense of unhappiness which many Germans feel towards their country. Some persons expressed a hatred for their country; they did not want to be identified as German, but preferred instead to be called Europeans or world-citizens. They were carrying the burden of Germany's historic past of two World Wars, and especially World War II. The horrors that their country had perpetrated was the reason why they did not want to be called German.

This problem of Germany's past was also on the agenda of the meeting of Auroville International-Germany which was held shortly afterwards. I spoke to the audience about the concept of a nation-soul, in the light of Sri Aurobindo's explanation. I emphasised that every nation could make blunders – and in fact had. India, for example, committed the historic blunder of rejecting the Cripps' Proposal – as a consequence it has fought three wars and is till today facing endless problems with Pakistan. A blunder like that creates a karma. But it does not mean that such a karma cannot be absolved.

Sri Aurobindo had described the Second World War as "the Mother's War". He said that it had been caused by Asuric forces in order to halt His and Mother's work of the descent of the Supermind. The outcome of the war was therefore in essence Their victory. But I believe that in the process, They have absolved the karma of the German nation-soul. The very fact of the re-unification of Germany proves that the nation-soul of Germany has revived; the drive towards European unification of which Germany is one of the chief architects is a clear indication that Germany is participating in the evolutionary call towards a greater world-unity.

It is in this context that the building of the German pavilion at Auroville gains a multi-tiered importance. Auroville is destined to be the spiritual womb of the new body of the earth. It carries in itself the creative vibrations of the New Race. Hence, what gets physically connected with it, carries a new significance and a new potential. If the German pavilion takes root in the soil of Auroville, it will be a living and vibrant link with Germany, which, by its very contact, may purify the clouds

of guilt and sin that suffocate the sensitive youth of Germany. I feel that the sooner the foundation stone of German pavilion is embedded in the soil of Auroville, the greater will be the unburdening of the German nation-soul. That is why I call on Auroville to give priority to the building of this pavilion, and hope that the foundation stone of this



Ananda, Friederike and Wolfgang

pavilion may be laid on August 15th. It would be Germany's tribute to Sri Aurobindo who has worked so much for the German nation!

I experienced also a heavy atmosphere in Berlin. Most of the people I met had a deep pain hidden away in their hearts, of which they didn't speak easily.

I was to give a talk on the "Integral Philosophy of Sri Aurobindo" at the Humboldt University. I was a bit unsure of how to present Sri Aurobindo's philosophy without mentioning His major concepts of Superman, the New Race, the New Man, or the Gnostic Society or even Yoga and Evolution. I could not even speak of him as a Universal Philosopher or as a Yogi. I was aware that the Germans were as if allergic to all these words and notions, for in the past, all these words and concepts – though with a different connotation – had been utilised by Hitler and his SS. It was these concepts that had mesmerized the Germans into surrendering themselves to demonical forces. Even the 'Sri' in Sri Aurobindo's name was suspect, for it denoted to them another guru.

The journal "Body, Mind and Soul", which gives each month the programme of activities in Berlin, had carried a photograph of Sri Aurobindo, with a picture of the Matrimandir as the backdrop, on the cover of its May edition. It also carried an

article about Sri Aurobindo. Perhaps because of that, a large cross-section of people had come to my talk – priests and professors, business class and artists, Aurovilians and Aurobindonians, students and writers, philosophers and scientists. I had never faced such a large audience determined to scrutinise to the core what I would say. Standing in front of the staring crowd, I invoked with all my intensity Mother's Grace, and after a moment of silence that seemed an eternity, I spoke – or perhaps someone else spoke through me! – about Sri Aurobindo the Man and the Prophet, the Dreamer and the Visionary, the Philosopher and the Social Thinker, the Poet and the Revolutionary. It seemed as if Sri Aurobindo had spread Himself in the lecture hall. There was a pin drop silence. There seemed to have been a deliberate suspension of doubt and disbelief. Then, after a while, it was no longer a problem for me to speak about the philosophy of Sri Aurobindo. So I went ahead and talked about the nation-soul of Germany and its future role in the building up of a new world-order. Later, in the question and answer session, I had to speak on Hitler – the truth of the Asuric force behind him and the Mother's role in stopping the War. Perhaps it is needless to say that, because of the atmosphere, the talk was very well received.

After a couple of days, I spoke again at the Indian Embassy. This talk, spontaneously, led to the starting of a Sri Aurobindo Centre in Berlin. Many felt that such a Centre could act as a footstool for the work of Sri Aurobindo and the Mother. On the occult levels, it was felt, it could become the second leg of the bridge between Auroville and Germany – the first one being the German Pavilion itself at Auroville. On June 1st, 2001, the Centre was inaugurated at a devotee's residence.

While sightseeing in Berlin I visited 'The Room of Silence', a small place on a busy square leading to the Reichstag (German House of Parliament) that was created after the German unification at the spot where the Berlin Wall once stood. There I had a vision. I saw Mother's head with a large and beautiful golden crown. And from below the crown white veils spread out far and wide wrapping the entire city of Berlin into its embracing folds.

My stay in Germany had made me go through a catharsis. It led me to shed the prejudices which my ashram education had embedded in me and gave me a deeper understanding of Germany and its people.

## In brief

### Sponsor a Tree

The Auroville Botanical Garden will soon start planting the arboretum, consisting of a collection of trees from the tropical world. Local and exotic species will be planted over an area that will eventually cover at least 80 acres. Due to the nature of the arboretum each tree can be individually cared for. Those interested to adopt or sponsor a tree can contact Auroville Botanical Garden, Auroville 605101 or write to nevi@Auroville.org.in

### Summer camps for village children

Annual summer camps in which over 650 children from the villages participated were organized by Village Action in the Verite Hall. Children could choose from sports, crafts, dance, medicinal herbs, singing, drama and more.

### Hymns and Songs in Sanskrit

Joy does not need introduction for those who have heard her beautiful voice singing the Gayatri and other mantras. Recently a compact disk with Hymns and Songs in Sanskrit has been brought out. Accompanied by Bryce, flute, Aurelio, conch, Krishna, tabla and Nadaka, additional voice, Joy recites and sings mantras, hymns and songs. The cd was recorded at Auroville's Sunshine Music Studio. It can be ordered from Joy, Dana, Auroville 605101 email: joy@auroville.org.in

### Skye in concert

After thirteen years in the USA, Joya Diane Skye rejoined Auroville. She gave a well attended and highly appreciated concert in the Visitors' Centre in memory of her musical partner Alan Klass, known in Auroville as orchid Alan, who had passed away in February 2001 in Crestone, Colorado.

### Donate one, give three!

AVI USA has initiated the donation matching program "Mahalakshmi At Play in 2001" which will benefit three projects in Auroville: the Auroville Land Fund, the Matrimandir Inner Skin and the USA pavilion. A donation to any of these three projects will benefit the other two equally as the donation will be tripled by an anonymous donor. A donation of say US\$ 250 to the Matrimandir Inner Skin will both benefit the USA pavilion and the Auroville Land Fund each with the same amount. The anonymous benefactor has agreed to match donations up to US 100,000 till the end of 2001. Contact AVI USA, P.O. Box 77, Santa Cruz, CA 95061-0877, phone (831)425-5620, e-mail: info@aviusa.org, http://www.aviusa.org

### British weekend proposed

British Aurovilians met to explore the uniqueness of Britain. After looking into the specific quality of the land and the British connection with the sea, they discussed Britain's soul qualities of 'Fairness and Decency' and other historic matters that have shaped the British character. Concerning the British pavilion, it was agreed that a beginning could be made hosting a British weekend showing documentaries and a Shakespearean drama. Of course there will be an English tea party.

### Correction

The name of the Consul General of India in St. Petersburg reported in issue No. 151 should have been Mr. Rajiv K. Chander.



# A baseline study of Auroville employees

In the months of February to July last year, a team of postgraduate social scientists trained as surveyors interviewed all those who work for Auroville's units and for individual Aurovilians. The report of this survey is almost ready. An interview with Aurovilian Stuart Leard and Professor Gunasekaran.

"Auroville is one, yet have you ever realised that nobody in Auroville had an accurate idea about how many people are actually working in or for Auroville and that most Aurovilians have only vague ideas about how these people live?" asks Stuart. He heads the Auroville Social Research Centre. Together with Professor Gunasekaran, Head of the Department of Sociology of the Pondicherry University, and Meenakshi, who for the last 25 years has been involved in all matters relating to the welfare of those living in the Auroville surrounding villages, he is responsible for the Socio-Economic Survey of Auroville Employees 2000. This survey is a project of SEWA, administered by its executives of the time, Meenakshi, Nolly and Shankar Aurora, and was implemented by the Social Research Centre under the guidance of Professor Gunasekaran.

Stuart: We don't know much about these people who put their life energies into Auroville each day. The idea of such a survey came from Meenakshi more than five years ago. But the money to undertake it was not found. In 1999 Professor Henk Thomas realised the importance of doing a survey of the people who work for Auroville as a way to learn about the specific dynamic between Auroville and the villages that surround it, and the Dutch Foundation *Stichting de Zaaier* decided to sponsor it. We then asked for the help of Professor Gunasekaran of the University of Pondicherry, a social scientist specialising in research methodology. Thankfully he agreed to help and devised seven drafts and the final formulation of the questionnaire.

Professor Gunasekaran: We hired social science postgraduates to do the survey, and I trained them for two weeks. They conducted sample interviews, we looked at the difficulties they encountered, and we reviewed the questions and their sequence. Then, for about five months in all, they went out and talked to each and every person employed in Auroville. The final report will be ready in a few months.

Stuart: The enormous amount of data that resulted from the survey was processed at the SRC under the direction of Professor Gunasekaran and two of his postgraduates.

**Auroville Today: How was the co-operation in Auroville?**

Stuart: Very positive. Except for two units, all the Auroville units and all the individual Aurovilians agreed to have their employees interviewed during the day. The Matrimandir and the Auroville Press refused. The refusals required us to spend an extra month interviewing these employees at their homes on Sundays. The employees themselves were very open to answer the questions. In all, only 58 employees refused to participate.

**AVToday: Out of how many people working for Auroville?**

Stuart: Between February and July 2000, a total of 4,179 people were employed in Auroville. In the course of the interviewing we were always questioning about whom we were missing. Therefore some locations had to be visited more than once. We were able to calculate the total number of employees from those we interviewed and those we missed. We interviewed 3,709 employees out of which 2,971 are employed directly by Auroville and 738 are employed indirectly. Indirect

signifies that work for Auroville is arranged to be undertaken by a village contractor or a village unit, such as the work of village construction contractors or piecework units.

**AVToday: What kinds of questions have been asked?**

Prof. Gunasekaran: We have delved rather deeply into the personal lives of the people. We asked them about their income, their education, their expectations for their children in terms of education and career, the environmental conditions around their houses, if they own a house or land, their nutrition, whether they own a car, a tractor or a motorbike, what they are short of, if there are debts, and what they think about Auroville and their relation to Auroville. Also we collected data on alcohol consumption, smoking, and the social expenditure for occasions like weddings and festivals.

Stuart: And through their answers, we learn also about the living conditions of four or five other people, their spouses and children and other relatives living in the household. The report will give the socio-economic profile of the employees in Auroville. It is a baseline study that can be used for comparisons with data that will be collected in the future as a means to gauge the overall impact of Auroville on the bioregion over time. Regarding the future: we intend to repeat this survey every six or seven years to see what concrete changes are taking place.

**AVToday: So the survey serves mainly an academic purpose?**

Prof. Gunasekaran: No, the context is academic but it has definite practical connotations. The survey will not make any judgements, but only give data. It will be up to the Auroville

policy makers to draw conclusions from these data.

Stuart: Those in Auroville who are concerned with bioregional development will now be able to speak with authority about the living conditions of the people.

Prof. Gunasekaran: For academic researchers, the survey is a gold mine. Not much comparable has ever been done in India, and I can foresee that many PhD. studies will result from this work. The areas of sociology, economics, demography, nutrition, to mention a few, are all being touched upon.

**AVToday: Does the survey show to what extent Auroville influences the lives of those living in the nearby villages?**

Prof. Gunasekaran: When I was asked to join this work, my impression was that Aurovilians were living in India like water on a lotus leaf. Now that I have come to know Auroville, I realise that this perception was wrong, and that Auroville is very integrated. But the survey will not show what exactly Auroville's impact is, isolated from the impact of India's development. We could only determine such a question when we compare our data with comparative data collected elsewhere.

However, the survey does contain questions that indicate if Auroville has influenced their lives. We asked how Auroville has affected them, positively or negatively, and have tried to eliminate the risk of getting 'socially desirable' answers by adding several check-



Professor Gunasekaran, Meenakshi and Stuart

questions. The fact that the surveyors were from outside and not from Auroville was a help here. But as the survey was voluntary, a high level of accuracy may be expected. But I expect that the real impact of Auroville is far less than many in Auroville believe.

**Auroville Today: Have any salient features jumped to your attention?**

Prof. Gunasekaran: It is too early to say. I am still busy writing the report; it may take another 2 months. Then it will be distributed as widely as possible, and every major Auroville unit and organisation will receive a copy. The privacy of the workers and of the Auroville units is of course fully secured; only aggregated data will be made available. There will be a public presentation of the report, and before that time, we can have a follow-up interview for Auroville Today.

**AVToday: Is the Social Research Centre planning to do a similar survey amongst Aurovilians?**

Stuart: Yes. It is really important that that is done. But the economic research programme, on which we have been working now for more than three years, must be completed first. It is time for that report to come out. A survey of Aurovilians will have to come afterwards.

Carel

## AUROVILLE AND TIBET

# Om Mani Padme Hum

A visit by His Holiness the Dalai Lama engenders a flurry of excitement anywhere. Sera Monastery, in a Tibetan settlement in Karnataka in South India, is no exception. Three wheelers with names like "Desire" race across rolling fields of corn. Monks in crimson robes busily whitewash stupas. New prayer flags and welcoming banners are hoisted across the roads. Indian police in Dallas style cowboy hats saunter everywhere checking passes. And at midnight on the final night, a last minute bore well is rammed in near the main temple, as about 200 monks look dutifully on.

Sera Monastery - named after a renowned monastery in Tibet which was destroyed by the Chinese invasion - was re-created here in 1962. Monks from all parts of India are sent here to study. Today Sera is the most important Tibetan monastic university in the world. Now nearly 15,000 people live in the monastery and two nearby settlements.

On this particular day, most of them, plus a handful of Indians and foreigners like me, line the road as we wait for the Dalai Lama. We carry flowers, lighted incense, and hold white silk scarves, or katas. Suddenly clouds of dust pour off the road as His Holiness arrives in a security cortege of some dozen white Ambassador cars and is whisked into the monastery. His huge grin through the car window illuminates the day.

The first Tibetan resettlement camp in Karnataka began in the 1960's against overwhelming odds. The region was a veritable jungle. "It was infested with elephants and tigers," says a small dedicated woman Dolma Yangchen, as she looks at me over the top of her glasses in Bylakuppe Settlement Camp #1, where she heads the local Tibetan women's organization. Dolma came to India in 1959, the turbulent year that the 14th Dalai Lama Tensin Gyaltso escaped from Tibet after threats to his life. India - highly populated as it was and would become - opened its doors to this future Nobel Peace prize winner and has continued to find the space and grace to accept Tibetans.

The early years were particularly arduous. Used to high altitudes and cool climates, many Tibetans died of starvation and disease as these former nomads cleared the humid land of jungle brush, struggled over safe drinking water, and planted gardens and crops. Slowly tents became

thatched huts, then mud brick and concrete houses. Initially there were 500 families on 1 acre each.

But there was another dilemma. How to preserve Tibet's strong spiritual traditions in such a

fragile environment? "Living in community is critical to the Tibetans," says Dolma. "When you live away from your home and your people, you slowly forget. When we live in community we remind each other. We are all together. We meet and discuss problems. Spiritual cohesion is there. Besides, we are better equipped to struggle to go back to Tibet." Dolma is committed to helping people obtain livelihood, which is not always easy in the isolated

settlements, especially for those with a lot or very little education. "There aren't always enough jobs here," she says in her perfect English.

This is one area where communities like Auroville can do exchanges. Auroville has spon-

sored Tibetans for training in afforestation, dental prosthesis, ferro cement, handmade paper, and other skills. Aurovilians have also gone to plant trees and establish windmills in the settlements. Tibetan doctors come regularly to Auroville to treat Aurovilians. And of course, there was the memorable visit of His Holiness himself to Auroville in 1993 to lay the first brick, hand carried from Tibet, for Auroville's very own Tibetan Pavilion.

On the first day of the Lam Rim teachings, thousands of monks stream into the main temple. After the usual chanting, His Holiness, an emanation of the Avalokiteshvara, the Buddha of Compassion, arrives and takes his seat under a giant golden Sakyamuni Buddha. His words - which range from practical suggestions about how to live with calm mind in the ordinary world to highly philosophical ideas on impermanence - sweep through the room. When the monks turn the crisp pages of their new saffron texts in unison, it sounds like rain falling. As the wind sweeps across the rolling hills bringing summer rains, deep chanting voices fill the air. What was once a hostile swamp has become an enriching learning centre for thousands of Tibetans and for the moment, a vital home away from home.

Marti



Marti and Dolma

### Subscription information:

Subscription rates for 12 issues of AUROVILLE TODAY are the following: for India Rs. 250; for other countries Rs. 1250, Can \$51, FF 195, DM 60, It. Lira 61,000, D.Gl. 65, US \$38, UK £25. This includes the postage by airmail. Please send your contribution (or your supporting contribution of double the amount) either to one of the Auroville International centres below (add 10% for admin. and bank charges) or directly to Auroville Today, Surrender, Auroville 605101, Tamil Nadu, India. Email: avtoday@auroville.org.in

Cheques should be made payable to Auroville Fund, specifying: 'Contribution for Auroville Today'.

Personal cheques are preferred to bank cheques. Please do not send postal money orders or cash. Subscribers will receive a reminder when their subscription is about to expire. Auroville Today carries no advertisements and gratefully acknowledges the generosity of supporting subscribers.

Those for who the subscription rate is an obstacle are invited to contact Auroville Today for information on reduced rates.

The following Auroville International centres will accept subscriptions:

◆Germany: AVI Deutschland, c/o Wolfgang J. Schmidt-Reinecke, Danziger Str. 121, D-10407 Berlin; tel. (0)30-42803150, fax (0)30-92091376; e-mail: info@de.auroville-international.org

◆France: AVI France, P.O. Box 58, 75462 Paris Cedex 10; tel/fax: (33)-1.40364367, email: avifrance@free.fr

◆The Netherlands: AVI Nederland, c/o Wim de Jong, Zwanewater 51, 2715 BH Zoetermeer; tel. (31)-79.3210671; email: avinl@wolvmail.nl

◆U.K.: AVI U.K., c/o Martin Littlewood, Canigou, Cot Lane, Chidham, W.

Sussex PO18 8SP; tel. (44)-1243.574099; fax: (44)-1243. 576792, email: aviuk@compuserve.com

◆U.S.A (1): AVI USA, P.O. Box 877, Santa Cruz CA 95061; tel. (1) 831 425 5620; email: aviusa@aol.com

◆U.S.A (2): Auroville Information Office, PO Box 676, Woodstock NY 12498, email: avinfo@aol.com, tel: (1) 845.679.5358, fax: 5853.

Editorial team: Alan, Bindu, Carel, Roger, Tineke. Guest editors: Shanti Pillai, Emmanuele, Skye and Jesse. Proofreading: Suzie. All photos, unless oth-

erwise attributed, have been taken by the editors. DTP: Natacha. Photo editing: Rahul. Printed and published by Carel Thieme on behalf of the Auroville Foundation, and printed at All India Press, Pondicherry, and published at Surrender, Auroville 605101, Tamil Nadu, India.

<http://www.auroville.org/journals&media/avtoday/avtoday.htm>

Auroville Today does not necessarily reflect the views of the community as a whole.