Regenerative Townships of Tomorrow

Outline of Participatory Discussions

Contents

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http://green.aurovilleportal.org/seminar-archive

Introduction

"Creating regenerative cities: Initiating comprehensive political, financial and technological strategies for an environmentally enhancing, restorative relationship between cities and the ecosystems from which they draw resources for their sustenance." – World Future Council

Townships today are becoming consumptive in nature that use up vast resources from near and far and give back very little into the ecosystem of the bio-region they are located in. It is no more sufficient to plan for low energy buildings or efficient transportation. Radical changes are required in the way planning is done with more focus on long-term impact rather than short-term results alone. It is becoming imperative for new townships to form a restorative relationship within the bioregion and hinterland in terms of water resources, energy, food production, transportation, livelihoods, society, governance and wealth distribution.

In a 3 day workshop held at Auroville, almost 100 mid-level practitioners - urban planners, architects, project developers, policy makers, consultants and volunteers engaged in stimulating interactive discussions facilitated by senior experts in areas of urban planning, mobility, energy, governance, building technologies and related areas.

The topics are vast and complex and many issues came out in the discussions that took place in 8 sessions and the closing plenary session. It has become very difficult to prepare a high level summary or articulate a clear vision for a regenerative township given the fact that the documentation from each session varied in content, style, level of detail and structure. Therefore, we have simply compiled together the discussion points and in some cases conclusions, as prepared by facilitators and participants. Therefore, this document is at best an attempt to capture the gist of discussions rather than a comprehensive presentation of a vision that can be proposed to the Government and the industry.

Nevertheless, one particular point that consistently emerged from all the sessions is that specific Government policies are an absolute necessity to bring about change from the way we are developing townships today and take a step towards regenerative townships.

We thank all the contributors – speakers, facilitators, participants as well as sponsors for their efforts and participation in the unique event which took us all closer to a shared envisioning of future habitats.

Inagural Address Message

"… In Bombay, there is Dharavi and there is a Nariman point. All the new buildings, even around Dharavi are becoming 30, 40 stories… if you visit Dharavi, you will realize that it is possible to survive and even produce material wealth, close to several thousand crores, like an SEZ, and that is because there is social integration. What we are doing now is dividing them by creating disparities, by creating different lifestyles, and different ways of living.

Similarly, we are congregating, because we need to be together, but not because we want to enjoy our community life. It is to exploit the situations that we have, the power struggles, the political, the decisions of the developers and the decisions surrounding land prices. I think there is no question of what you do, but the question is for whom are we building, what is the purpose of this building, and how is that building going to be useful, how is that habitat going to be useful to everyone, and how will everyone enjoy what we have.

Consumption has increased because distance has increased. Auto industry is expanding very fast, consequently, the roads are becoming wider, the distances are increasing further, and the governance is changing, industries are expanding in other places, but on the other hand, agricultural land, all the towns, all those rural areas, which are still good is being bought over by outside people. It means we are failing in our management. We are failing as planners, as technocrats, as administrators in creating a model, in creating something that is useful to us.

…. In this conference we will be talking about urban design, we will be talking about typology, we will be talking about materials, we will be talking about technologies, and we will be talking about the vision of the future.

Why we are doing this at Auroville? Basically because we think Auroville at least has the intent, which is not apparent today, of really creating a new world for the future, where diversity is cherished, and everybody is supposed to share themselves, in which the economic considerations will be minimum.

And this becomes one issue, it is not only economy, it is to say, how do we use our resources fruitfully, how do we balance our consumption, and how do we really relate our lifestyles which have more meaning. Basically the issue is time and energy. The basic issue is the quality of life that we lead. The basic issue is the availability of institutions and the amenities that we need close by; basically it is connected to what kind of governance, what kind of participation we have, with the people around us. Primarily how do we really reduce this divide, which is now

expanding, beyond even our imagination? We have all accepted that multi storied buildings, large urban complexes, mega structures is a must, and this myth we have to get away.

If we work together, if we discuss this together, if we create this manifesto here, if we conclude something, perhaps this is the chance to begin. The other reason of this is that we would like to share this; we would like to participate actively. We at Auroville have highly technical skills, we have ideas, you also have ideas, every body has ideas, why not combine them together, and create a new institution in which Auroville would like to participate."

- B K Doshi,
Founder, Vastu Shilpa Foundation
Member of Governing Board, Auroville Foundation

Soul of City

Facilitator: Prof. N.H. Chhaya, Dean, School of Architecture, CEPT University

Basic Standpoint:

The metaphor of "soul" is useful for considering what gives life, vitality and character to settlements. It is also useful for enquiring into the relationship between the tangible form of settlements with intangible qualities that they encourage, sustain and generate.

These intangible qualities could include the ethos and spirit of life supported by tangible frameworks, the memories and aspirations that are recorded and expressed by the manifest form of the settlement as well as the quality and character of human interactions that are regulated by the physical structure.

Soul	Mind/consciousness	Body	Tools
Drive to evolve	Institution of cultures	Organizations	Technology or patterns of interaction

The inseperability of Soul, Character, Tangible form and techniques in the case of settlements

"Soul" cannot be inserted, implanted or superimposed. Perhaps it can be searched, found, nurtured, developed, evolved and guided as well as strengthened.This can happen at the beginning, by studying and incorporating existing realities, or during development by continuous critical interaction and cooperation between the inhabitants.

Broadness and generosity of intention: Participation rather than Consumption

A broad and generous understanding of human culture and natural evolution is a necessary basis for making soulful settlements. Narrow and shortsighted goals would result in a conflict of intentions between those who plan and design and govern, and those who use and maintain.This requires participation and action of the many stakeholders in making the settlement at various stages.The settlement and the house is therefore not a product to be chosen and consumed, but a process in which one chooses to participate and gain from.

The place as a history of patterns which give character or Soul

Regenerative Townships must build upon and take into account the natural and human history, propensities and potentials of the place where they are made in order to give appropriate character to the settlement. Taking into account would mean full knowledge, acknowledgement and incorporation of existing patterns in the formulation of tangible plans.

The people living at the place, the works that they have done, the social institutions that have been evolved, the economic activities that are carried out, the skills and knowledge that are generally used, the manifestations of culture in the form of religion, festivals, rituals, customs of behavior as well as forms of architecture, crafts and art - all need to be taken into account.

Similarly, the geology and topography, the climate and seasons, the flora and fauna, natural elements such as water bodies all have evolved and stabilized over time, and must be taken into account in the making of regenerative settlements.

The "Soul" as process – need for diversity

The Character of a settlement is not a once-and-for-all phenomenon, but is a continual process encompassing the response to needs and challenges, the patterns of behavior and interaction that evolve and the organization of tangible and intangible mechanisms to enable these.

Such processes can have a singular purpose and uniform character, but then lay themselves open to destruction and extinction with unforeseen challenges. Therefore it is wise to have the greatest possible diversity of people, skills, livelihoods, economic structures and social and cultural forms inbuilt into and sustained by the settlement.

This diversity also assists the evolution of a rich character and is vital to the strong expression of "soul". Settlements which are uni-dimensional are likely to foster dullness and stagnation.

Interactions as key to evolution of specific character

Interactions amongst people, interactions between people and natural phenomena, and interactions of people with tools are interrelated dimensions which evolve a specific character at a specific place at a particular point in history. Settlements need to create sufficient structure for interactions to occur, but must not be over structured or controlled so much that they stifle evolution of new forms of interaction. Such diversity needs to provided for in the physical structure, the regulatory mechanisms and the economic and cultural life of the settlement.

The mix of activities needs to be scaled appropriately, to allow mix to occur at small, medium and large scales. Places to meet, places to hang around in, and places which symbolize belonging, need to be thought of.

"Insiders" and "outsiders": The paradoxical need for freedom as well as belonging

Boundaries that define, help make a dweller feel secure. When this applies to large groups of people, it may help them identify with others who are of the same orientation. If the definition of such boundaries is too clear and strong, a ghetto-like exclusive feeling may develop and be maintained. This is detrimental to evolution of a larger ethos and sense of purpose. It may also stifle the need for individuality. Newly planned settlements can be especially susceptible to this,

and care needs to be taken in defining and administering boundaries. Movement in and out, over a short period or in the long term - is essential to create a vibrant and vital culture or soul. Migration needs to be one of the forms of infusion of vitality and should be provided for positively.

Scale of grouping is equally important. Very large concentrations of people of similar economic activity, similar backgrounds and similar kinds of skills and knowledge would be detrimental to concretely experienced diversity, and reduce the settlement to a merely functional zone with no soul.

Scales and speed of operations, appropriate mechanisms to allow nurture

Participation in the evolution of character of institutions is possible only when the scale of the individual is proportionate to the scale of the collective. Both the physical form of the settlement and the mechanisms of providing and governing it need to keep this in mind. When too large a scale of operations is chosen, either the investment and financial risks become the main constraint, or a faceless bureaucracy is unable to provide for diverse needs and allow sufficient role to users. No real scope for choice and participation is available to those who are going to help evolve the character of the settlement.

A distribution of responsibilities at a comparatively smaller scale combined with many agencies working in the same space would be needed. New forms of organization and management of such processes need to be evolved in a period of rapid expansion.

Character evolves slowly. Speeding up this subtle process is counter-productive. A product approach does not work. A process approach is cumbersome and somewhat confusing. Models which allow modification, addition and retrofitting over time should be explored.

Key points

- Ends and Means are equally important.

- Appropriate, harmonious and beautiful physical form can encourage a sense of belonging and pride and care, but human relationships are equally important.

- Diversity and inclusiveness are vital for achieving character.

- Process makes evolution of soul or spirit or character possible.

- The aim should not be to develop property or territory, but to nurture various forms and

intensities of life-process at a location. This local focus remains open to movements in and out and remains connected to the larger contexts.

- Concern for Nature and human culture initiates appropriate, vivid and sustainable settlements. Therefore we should not work on a *tabula-rasa* approach but should weave in all the possibilities of memory and hope provided by the context.

- A settlement is an expression of a civilisational will and belief. This is not fixed but constantly evolving through multiple interactions, and so the powers of making it cannot be usurped by those who hold knowledge, power or money.

Urban Planning

Facilitator: G Dattatri, Former Chief Urban Planner, Chennai

Planning process

- Planning processes need to be understood in order to become transparent to a broader community. Identify institutions, stakeholders, decision makers, and assign responsibilities, accountability and authority clearly.
- Mandate National and State level urbanization policy (guidelines to be set)
- Develop regional and strategic plans (linking urban and rural) and monitor their implementation
- Secure Ecology and conservation of natural resources (topography, water, land, energy, biodiversity, food) in the plans
- Urban Heritage Strategies
- Embed Local Plans with the regional/strategic plans. All development activities should adhere to the plans
  Development process to continue independently of political cycles

Mobility

- Strict enforcement of existing laws
- Stronger disincentives
- Priority to pedestrians and to NMT
- Public Transportation (integrated with pedestrian and NMT plan)

Education, Research and Capacity Building

- Data Collection and Sharing, Accessibility
- Communication and Awareness Programme
- Capacity Building at Government Level
- Training the trainers
- Utilize senior citizens and professionals (adopting settlements, development and maintenance)
- Encourage CSR activities directed towards settlements (e.g. Adopt a town/city)
- Awareness of urban issues in school curriculum

City planning and urban strategies

- Mixed use development – not ”mixed-up” use
- Provide affordable and suitable housing options to the poor (instead of spending on slum upgradation)
- Provide legal space for informal activities at the planning stage itself (ex: Hawkers, street vendors)
- Discourage sprawl (through indiscriminate approval of private townships)
- Importance to natural landscape

Environment and Resource Management

Facilitator: Mohan Rao, Principal, Integrated Design (InDe)

- To work with available natural resources, instead of destroying them and then cope with natural calamities which result from human intervention. E.g. working with water bodies.
- Draw inspiration from the past and use the principles in present times.
- Use each space positively instead of letting it go waste, while keeping in mind estate value of that place.
- To maintain a balance between built and non-built environment in terms of expansion and depletion respectively.
- To take care that the means used to produce renewable energy should not demand more capital and resources than it is supposed to.
- Resources should be used in closed loop systems.
- Integration of the private sectors and government bodies should be in a fruitful manner
- Our vision should not be "short term economics" but instead look more into the future
- It is essential to know more about the city.
- At micro level, civic awareness is needed.

Governance

- There is a requirement to gather public trust by keeping projects as transparent as possible.
- There should be expositions of model cities.
- Continuous research and feedback on model cities should be carried out.
- Value of the existing model cities should be studied and then concepts should be implemented on new developing towns.
- It should be implemented into the social infrastructure through the intervention of government.

Barrier parameter

- Social and cultural barriers
- Time taken to implement administrative and government policies.
- Profit oriented investment
  Lack of awareness and lack of accessibility of information.

Performance parameter

- Realize human potential
- Access to good livelihood
- Everything for every one.

Governance

Facilitator: Dr. Harjit Singh Anand, Managing Director, Glownet Knowledge Services

Environmental framework:

- AIR: Transportation and ambient air quality within the city
- WATER: Supply, storage, and restoration of water and its sewerage and drainage.
- ENERGY: Generation and management of power and consumption by vehicles.
- SKY/SPACE: Providing 'Breathing Lungs' to absorb pollution.
- EARTH: Ratio of built up green in urban as compared to rural area.

Drawback of constitutional frameworks

- Enhance governance of the third tier of government with a commitment to a stronger support in terms of human resources and funds
- Enhance public participation.

Interface corridors

- Scientific and technological interface needed.
- Between Government, NGOs, Universities, Enterprises, Media, Professionals and Citizens of various disciplines
- Encouraging planning related research.
- Subsidizing renewable energy at cost of conventional sources.
- Need for flexibility in planning rather than a rigid approach.

Poverty issues

- Poverty is increasing faster in urban areas than in rural areas.
- Slum population has increased to 20 million in 10 years and is fast increasing.
- 99% of housing shortage is among LIG & EWS.
- In-situ slum redevelopment is necessary as it is difficult to regularize them.
- If health and education facilities are provided for them, then it will build a trust for re-development projects.

The 'Sapt Sindhu' Mantra

- ASPIRATIONS AND IDENTITY: The character of the city needs to be identified and enhanced by public participation.
- ABUDANA (WATER): Better water management and introduction of private sector into supply system up to an extent.
- LEAD KINDLY LIGHT: Incentivise renewable energy and increase energy efficiency.

- GOING PLACES: Multi-modal public transport.
- Providing basic amenities to unorganised sector viz. a place to live, work and sell.
- GREEN IS GO: Green belts, sports and recreation shall be an important factor in planning.
- ROTI, KAPDAA AUR MAKAAN: Affordable housing should not be defined by consumer expenditure.
- Many models of PPP need to be developed viz. Co-operative housing, labour housing, LIG, etc.
- ULBs to should try and accommodate the Below Poverty Line.
- ANTODYA: Putting people at the centre of the development and their participation through planning implementation and review.

Recommendations

- Appropriate policies to facilitate regenerative settlements
- Mechanisms to ensure enforcement
- Concept of Antodaya – respecting the needs of the vulnerable
- Create a consensus towards equity

Key points from discussion:

- Cities should have a very transparent political set-up at the local level.
- Evolve a democratic participatory process
- Responsibilities and power must be devolved to the tier-2 cities; a local planning committee could be formed.
- There should be a town hall in every city, envisioned as a very accessible, interactive and people friendly place. Example of Philippines was cited.
- Capacity development is a priority, and includes everyone from the Mayor to everyone down the line till the citizens.
- Responsibilities must be given to councilors and they should be held accountable for the same.
- Everyone should be informed of who is doing what; who is making which decisions, and who have the power.
- It was pointed out again and again that we have Acts and Policies already in place like the 74th CAA; what is required is to devolve the functions, funds and functionaries to the local bodies.
- There was also a discussion on whether the elections of the Mayor can changed to make him more responsible and accountable
- There was a lot of discussion on what should be done to provide for affordable housing. Various models were discussed, which included the role of the private sector as well.
- We need to devise clear cut PPP models where government knows exactly what is

happening and is not handicapped after the private sector has left.

- It was jointly agreed upon that we need Regional Plans for sustainable development. The Town and Country Planning Act plus the 74th CAA should be strictly enforced; the regional, district and metropolitan committees must be formed and plans should be worked out and enforced. Citizens must participate in the planning, implementation and monitoring process. In this regard, media can play an important role in developing the capacity of the people. Active communities result in active and lively cities.

Livelihood

Facilitator: Dave Wallack, CEO, IFMR Ventures

The objective of the session was to come to a sense of the catalysts required to create livelihoods that deeply connect people.

The economic definition was focused on survival, but that nobody in the room was pursuing a livelihood based on survival. Even in poor communities, livelihood is not just a survival mechanism.

People use their livelihood to help them get respect and dignity and something more.

In a community that was to be regenerative, that livelihood had to be about more than just survival. It had to be done in a manner that was connecting people to themselves and their community and not leaving them feeling like a cog in a wheel.

The relationship between people and their livelihood, between companies and their labor , etc had to have a different flavour, If it wasn't, then people would go to work with no connection to the work they are doing, do a mediocre job, and companies would use labor and the community like a tool to extract profit. This is not a regenerative township.

Participants interviewd each other about a time in their pursuit of their own livelihood when they felt alive and connected to themselves.

The group also wanted to add in experiences of people they knew who were below the poverty line.

Themes:

- Tangible sense of accomplishment
- People take the work seriously
- People customise for the customer
- There is a joy in the moment of doing things
- There is a good atmosphere to work
- People see appreciation in the customer
- There is an opportunity to open doors to a craft for people
- People felt welcome and a sense of connection and ownership in their workplace
- There is access to new places and ideas
- There is social recognition and respect
- The sense of 'us' versus 'them' is reduced
- People have a sense of the whole project
- People from an area are serving an area

- People see others adopting or sharing their values.
- People have some time to reflect on and tie together the past and the future
- People have variety in their work
- There is concern by the employer
- People have a sense of how their work is connected to their purpose in life
- People have a pride and respect for their craft and their sense of themselves as craftsmen
- The creator is involved in defining the job with the clients - it is a joint act of creation more than a task being handed over for completion
- Care in the workplace
- Services to nurture or mentor people
- Equity in the workplace
- People finding fulfilment in their work
- Harmony among the people in the workplace
- People having challenge and meaning in their work
- People having a sense of the bigger picture in their work
- People getting exposed to new ideas
- People having a sense of how their task fits into a bigger vision
- Respect for all nature of work -- dignity of work
- Sufficient income from work to meet basic needs
- Vocational training
- Reduced commuting time
- Local production of food
- Appreciation of all forms of work
- Available resources and water
- Access to finance
- Skills training
- Better search for talent among a much broader set of metrics
- Companies reward people in a manner visible to the community
- Greater employee ownership and profit sharing
- Regional skill and industry specialisation

Catalysts required to make the vision a reality :

- Health services and insurance for catastrophic cases and for prevention
- Scool attendance tied to economic transfuse for food, health, housing
- Acceptance of a wider notion of success
- Mechanisms that support greater income equality such as tax transfers and wage controls/ minimums
- Respect for all kinds of work
- Need to look at livelihoods in the planning process
- Equal opportunity through skill building and training

- Vocational and continuing education centres
- Effective income transfers
- Better metrics to measure potential
- Revised hiring criteria that opens doors
- Subsidy of education that requires service or payment to get out of service - education loans
- Economic development of centres of excellence
- Education reform including making it less rote, more creative, strengthening primary education, flexible arrangements for going to school
- Work and apprenticeship programs as an alternative in lieu of academic credentials

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Summary by participants

Mechanistic:

Livelihoods that are purely economical where the worker is used as commodity irrespective of his interest.

Organic:

- System where the worker pursues what he is actually interested in, hence giving a better quality of end product.
- Focus on the workers' life.
- Work is important, as we need people to do daily work.

Approach to livelihood:

- Economic
- Driven towards a social cause or for a specific community,
- Out of the blue opportunity.
- Areas that a particular livelihood touches.

Ways to increase human capital:

- Criteria for allotting work should be broadened.
- Talent needs to be identified regardless of background and/or institution.
- Practical training to be given to the underprivileged and downtrodden.
- Vocational guidance.
- Build interest and trust.
- Exposure in work so that one might gain social recognition.
- One must be made to realize the importance of his/her work.

To make the worker aware about the end product which resulted through his contribution. Hence making the worker proud of his work. In an Indian context, this helps in creating a balance between the organized and unorganised sectors Creating new dimensions of livelihoods like waste recycling.

Apprenticeship programs :

- Vocational and continuing education
- A push for acceptance of apprenticeship and vocational education in lieu of other credentials
- Education loans tied to service or repayment by an employer
- Economic development of industry clusters and skill centres of excellence
- Looking at livelihoods in the planning process
- Some mechanisms for income redistribution
- Once again, time was a constraint and we all felt like there were whole categories of social and physical design elements that were untouched in such a brief conversation.

Energy

Facilitator: Dr. Brahmanand Mohanty, Visiting Faculty, Asian Institute of Technology

Awareness: Exploring the entire energy system and its relationship to ways of living

- Leverage creative energies of the masses
- Help create a new value system that moves us away from power, greed and money.
- Use spirituality to promote sustainability
- Harness the power of media particularly movies, journalism
- Ask where each of us can begin to create awareness particularly of our clients as an architect, designer and planner
- Create mechanisms for dynamic content rather than statics.
- Get them early, get them for life - create educational campuses where students experience sustainability and start considering it normal
- Develop and promote green school programs
- Create examples/pilots particularly regional of success in sustainability
- Target the middle classes as the key segment
- Target students of architecture through architecture institutions such as the IIA
- Change the syllabus of architecture so that sustainable buildings becomes a norm
- Create grass root interpretation (in local language) of sustainability to promote it in schools and to government officials.
- Use social groups such as Lions and Rotary clubs as a channel
- Involve all stake holders
- Use faith groups to promote sustainability
- Use social media such as Blogs, Facebook and Twitter
- Target opinion makers of communities
- Create a coherent vision for creating content that is holistic and looks at 'cradle to cradle'
- Make the change in our own life and become role models
- It is easier then to go from 'me to we'
- Customise different levels of awareness for different levels of people
- Create rating agencies for eco and energy footprint for households and communities that offer both social and monetary incentives for improvement
- Get TV and Radio channels to talk about their own footprint
- Manufacturers should publish the product footprint that includes the making and operating of a product and/or a service
- Use the gaming industry as many youngsters are heavy gamers and good energy games could be a good medium
- Make low footprint living fashionable and trendy
- Create a clearing house to ensure good standard and holistic content on the issue of sustainability
- Use celebrity power to promote sustainability
- Use Auroville as a Centre for Education for energy

Energy policies at City level

Individual, to community to city to region
Objective: Dedicated fund to promote green practices
Tools: Regulation and Taxation
Some examples of how this could be done in various sectors.

Mobility
- Remove cap on NMT vehicles (like rickshaws)
- Cess on petrol to go to the City transport fund to improve public transport
- Initial step – road tax exemption for electric cars

Buildings
- City context building design codes
- Priority to indigenous methods and materials

Sanitation
- Incentives for decentralized waste water treatment plants

Water
- Differential pricing – regulation of ground water
- Certain mandated amount of recycling like rain water harvesting

Solid waste
- Waste segregation at source
- Recycling of waste to compost, building materials

Market Transformations to the new paradigm of Regeneration

A process to be developed to bring a transformation in material and technology usage thereby creating less impact on the environment and also proving to be energy efficient. This could be achieved under the following ways
1. Methodology – create awareness
2. Demonstration – implement and build a certain confidence
3. Product Specification – explore impact, performance and facilitation

1. Market Transformation through Methodology

- Energy efficient products to be marketed or propagated by a non profit institution and socially responsible organization (rather than the company self talking about their product), so that society develops a trust on the product

- Government buildings should be standing examples of energy efficient technology and material usage, thereby being an example to the public.
- Organizing a year of campaigning helps as repetitive education on energy efficiency will have a higher impact on people.
- Media to be used in a positive way to create awareness
- Disincentives for using energy consuming products and technology

2. Market Transformation through Demonstration

- A performing model with energy efficient technology to be developed, by converting a village in this regard. This will act as a standing example for people to follow those techniques and will connect environmentally educated people with non educated people.
- Selecting the right target population is a key element in creating awareness. The younger generation, construction industry people, and policy makers are a good combination for these awareness campaigns and demo models.
- Demonstration should address how the initial high capital cost in setting up the energy efficient technology proves viable after a period of time.
  Setting up Energy parks by Government is a good step on educating people.

3. Market Transformation through Products themselves

- Products that display energy efficiency in terms of carbon footprint, or money saved help people in making the right choice.
- Products should display the amount of energy used in its production
- Materials with recycled content has to be advertised with a positive attitude.
- Branding of building materials based on its efficient production should be given on product specifications.
- Public has to be made aware that maximizing usage of a particular energy efficient product will eventually lower the per unit price.
- At policy level, higher tax to be levied on non energy efficient products.

Tools - Incentives/Disincentives/Taxation

- Incentives in EMI for buying "green buildings"
- Increase of FSI, if green buildings
- Revenue neutral policy (like in Thailand – energy efficiency fund –revolving)
- Differential Tariff - much steeper than it is today

- How do you define a prosumption index that can incentivise consumers to become prosumers?

Mobility

Facilitator: Dr. Geetam Tiwari, Professor, Indian Institute of Technology Delhi

Problem Identification

- The need to travel long distances has created a mobility crisis in most cities because it increases dependence on motorized traffic (cars/two wheelers)
- Public transport is not as comfortable and flexible as cars
- Cars symbolize upward mobility
- Public transport does not provide last mile connectivity
- Walking and cycling are the two most dominant modes of transport in Indian cities, followed by public transport. However, most of the current users are captive users, aspiring to own a private vehicle.
- Walking and cycling trips are possible in most cities because low income people are living in slums with minimal public services to be close to employment opportunities
- Current policy of resettling slum dwellers on the outskirts of the city has resulted in long trips, dependence on motorized transport, often informal and unsafe transport, reducing employment opportunities, and increasing risk of traffic accidents.

Car users are in the minority (less than 20%) in most cities, yet the transportation problem and solutions focus mainly on car trips.

Vision:

The majority of trips should not require motorized modes. For longer trips, policies and structures should create an environment where walking, cycling and public transport become the preferred mode of transport instead of cars.

Policy framework should consider a 25 year horizon, with 5 yearly targets or benchmarks.

Landuse policies (State level/city level)

The need to travel long distances for most trips (work, education, recreation) should be reduced by appropriate landuse policies (which encourage mixed landuse), availability of land for low income households, around commercial and high and middle class residential areas.

City Level Policies

- Parking policy should discourage use of cars. This requires removing minimal parking requirement from commercial and residential buildings, no free parking, parking spaces that are not very close to commercial and residential locations (closer to public transport stops), proof of avaialable parking space mandatory for new car registration

- Create a dedicated fund from car tax, fuel tax, parking fee, etc. for improving pedestrian and bicycle infrastructure.
- Pedestrians and bicycle friendly infrastructure in the whole city, with some streets/areas to be made car free (pedestrianized areas). Many such areas already exist in Pune, Madurai (24x7)
- Exclusive bicycle and pedestrian networks having shorter distances should be created in addition to facilties along the roads designed for motorized traffic.

Summary by participants

Issues:

- Cars have a one to one relation with social status.
- The need to travel.
- Motorized congestion.
- Land usage and transport facility are very disconnected.
- How to make people opt walking or cycling instead of driving

Design based solutions:

- There should be a dynamic planning process for a time period of 25 years which is reviewed every five years.
- New roads should not be focused only on motorised vehicles, but also for pedestrians and cyclists.
- Parking facilities should be provided at the same distance as the nearest public transport stop. Additionally, making it mandatory for buying parking space before buying a car.
- At city centres or market places where public movement is more, motorised vehicles should not be allowed completely or should be charged heavily to avoid congestion, thereby improving the economy and efficiency of that place.
- There is no need to take the pedestrians on main roads which are indirect but have direct shorter routes for them.
- Increasing the frequency and accessibility of public transport. Making the last mile safer and comfortable for public transportation.

Policy based solutions:

- To decrease usage of cars, more taxes should be levied on petrol and diesel, heavy fees should be charged to park on main roads.
- To introduce tax benefits on using public transports.
- Making public transport almost free.
- To make multi functional roads.

- Linking land usage to transport facility.
- To have institutions which work on propagating, developing and maintaining pedestrian and cycling paths.
- To create awareness among people specially the middle class.

Barriers:

- Car industry lobby.
- Poor monitoring systems.
- Transportation is not a major issue to win elections.
- Lack of accountability.
- Age group can be a barrier? Cities have the aged as well as the young
- 1km travelled by train and 1km by car – 1/5th energy consumtion

Building Technologies

Facilitator: Sanjay Prakash, Principal, Sanjay Prakash Associates

- Impact is directly proportional to (population x technology x affluence)
- Use 21st century technology to reduce energy usage and to work efficiently with demand and need of the century.
- Use of fossil fuels is inevitable but to minimize it is essential.
- Renewable energies should be maximized.
- To understand both active and passive energy which are utilized, to gain maximum output from the available technology by decreasing the load through good design solutions.
- Maximize the usage of locally available material and technologies to reduce embodied energy.
- Zero or negligible energy solutions should be opted.
- Solutions such as use of earth walls, local materials, bio stabilized roads and rain water harvesting should be encouraged and opted.
- In urban living, the solution is not to go too vertical nor too horizontal, but to go 4 to 5 floors.

Tactics to manage physical stock and flow:

- Use less
- Grow your own requirement.
- Be a producer in addition to being a consumer.
- Make a two way network with society.
- do not to store but share with the society
- Transport less.
- Exchange through wireless network than real time.

Does Crafts have a place in todays Regenrative Townships?

- YES! Craftsmanship and mechanism:
- Give opportunity to the craftsmen to develop and enter the main stream
- Develop brands and trends, such that the craftsmen earn enough and are inspired to make a living out of it.
- Industries in rural area should take responsibility of that area and develop it rather than urbanize it.

Summary of participants' discussion

Regenerative building technologies can be categorized under three broad categories:

1. Site
- Orientation
- Ventilation
- Sun protection ,rain protection , insulation west walls etc .

2. Structure / form
- control of built up area
- building design to optimize performance
- design for food production on shared spaces and gardens
- can the parameters be reviewed for living standards (as there are only 2 or 3 people at home)?
- Can the parameters for buildings be revisited?
- Closed loop system - micro to macro management

3. Technology
- solar cells
- by products of materials as products for building materials (out of garbage, etc.)

Regenerative building technologies. What are they?

- Materials that fit either into a biological cycle or a technical cycle.
- Regeneration will also include concepts of reuse and recycle.
- Degree of regeneration is different for different materials.
- Regeneration happens thorough the biological cycle in nature.
- Further research and investment is required so that we can regenerate at a faster rate, and emulate/enhance the natural cycle.
- The balance between embodied energy, durability and energy required for material to be recycled or reused or to degenerate into nature without adverse damage is regeneration. Any building material has to be checked against these parameters to understand where they stand.
- All such materials need to be non toxic.
- Categories: Biological/technical, Balance with long term life (cradle to grave) & lifecycle, Performance index, virgin materials are not used but rather from old buildings, or grown in the back yard

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Auroville Green Practices

The Auroville Green Practices Workshop is an annual event that brings together architects, consultants, project developers and policy makers for envisioning sustainable habitats and sharing experiences covering topics such as renewable energy, green buildings, urban farming, waste management, water management, mobility and social awareness among others.
More: agp.aurovilleconsulting.com

The Auroville Green Practices Portal is a knowledge base of sustainability work done at Auroville over last 40 years.
More: green.aurovilleportal.org

Auroville Consulting

Auroville Consulting (http://www.aurovilleconsulting.com) provides strategic planning and monitoring services for corporate and government initiatives to realize the vision of sustainable habitats. It is a non-profit business unit of Auroville Foundation founded in 2010 to facilitate a two-way flow of information and expertise between Auroville and external professionals/ institutions through seminars, training and consultancy services in a wide range of areas.
More: http://www.aurovilleconsulting.com

About Auroville

Auroville is a growing international township near Puducherry on the Coromandel Coast in India. Spread over more than 4000 acres for an intended population of 50,000 residents, it is an inspiring model for sustainable practices and ecologically responsible living. Founded in 1968, Auroville is based on the vision of The Mother from the Sri Aurobindo Ashram and is endorsed by UNESCO and Government of India as an ongoing experiment in human unity. The Auroville Foundation was established in 1988 by an act of parliament of the Government of India to govern its affairs. The current population of over 2200 residents devote themselves to community building and are actively engaged in all aspects of township development: renewable energy, water harvesting, building materials, organic farming, forestation, architecture, governance and society.
*More***: http://www.auroville.org

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