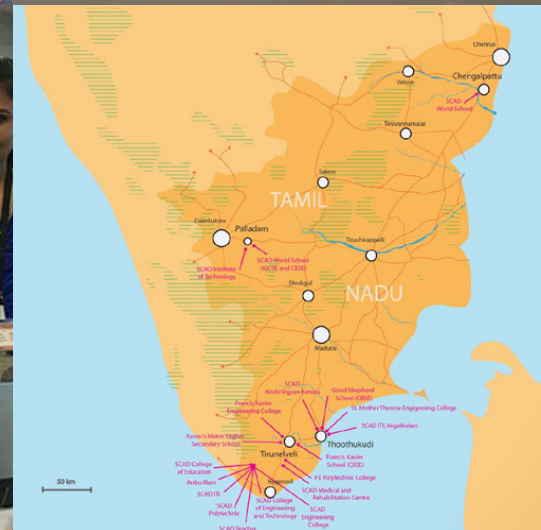


What futures for India's urban areas?

Report of the symposium



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Photographs by **Sunand Prasad** illustrating the unique **form of Indian urban settlements**

1. Introduction

Dr Nicholas Falk, Executive Director of The URBED Trust

nicholas@urbed.coop

With a population of 1.2 billion, only 30% of whom are urbanised, the challenges for the future of India's towns and cities are not only immense, but of vital importance to the rest of the world. Having visited India on a number of occasions, I was so impressed by what the SCAD Group (Social Change and Development (www.scad.ac.in), were doing to empower people in villages I wanted to see how I could help.

Having won the Wolfson Prize for showing how to build new garden cities that were visionary, viable and popular, the new URBED Trust has made one of its first projects (www.smarterurbanisation.org) finding better ways of building sustainable and affordable 'eco houses'. I have been fortunate in getting the help of a number of talented urban designers, and the Urban Design Group kindly offered to help organise a symposium, which took place on May 11th.



Uxchester Garden City - The URBED Trust's **Wolfson prize** submission



Sunand Prasad introduces the event drawing from research from his PhD on **urban form**.

The aim was to generate interest in creating new forms of affordable housing in medium sized cities facing rapid growth in the Indian sub continent, and to draw out ideas for future work to connect Indian and British cities. Some 40 people took part, including many urban designers with Indian backgrounds or connections.

The half day event was organised around a series of short presentations, workshop discussions and feedback, and was ably chaired by Sunand Prasad, former President of the RIBA. The event was filmed by Fergus Carnegie and links are provided in each section so you can see what was said.

This report highlights significant conclusions for the project (and potentially other parts of India), and a briefing paper is included as an appendix. There were four main themes:

- transport and where growth should be concentrated
- housing and how to check urban sprawl
- public health and what can be done with regard to water and waste
- and how community engagement can be handled.



Discussions following the **workshop** summaries.

Delegates were impressed by the positive spirit that ran through the discussions and personal encounters. There could be real ongoing interest among a wide range of urban practitioners, and possibly academics, in helping Indian cities avoid making the same mistakes we have!

I hope that those who read this report and want to get involved will get in touch with me in the first instance. If there is enough interest we may well organise something further as the project with SCAD starts to yield results.

Comments at the end included 'We should be more optimistic about India' while another delegate pointed out that 'African cities were looking to India as a source of creativity and technological innovation'.

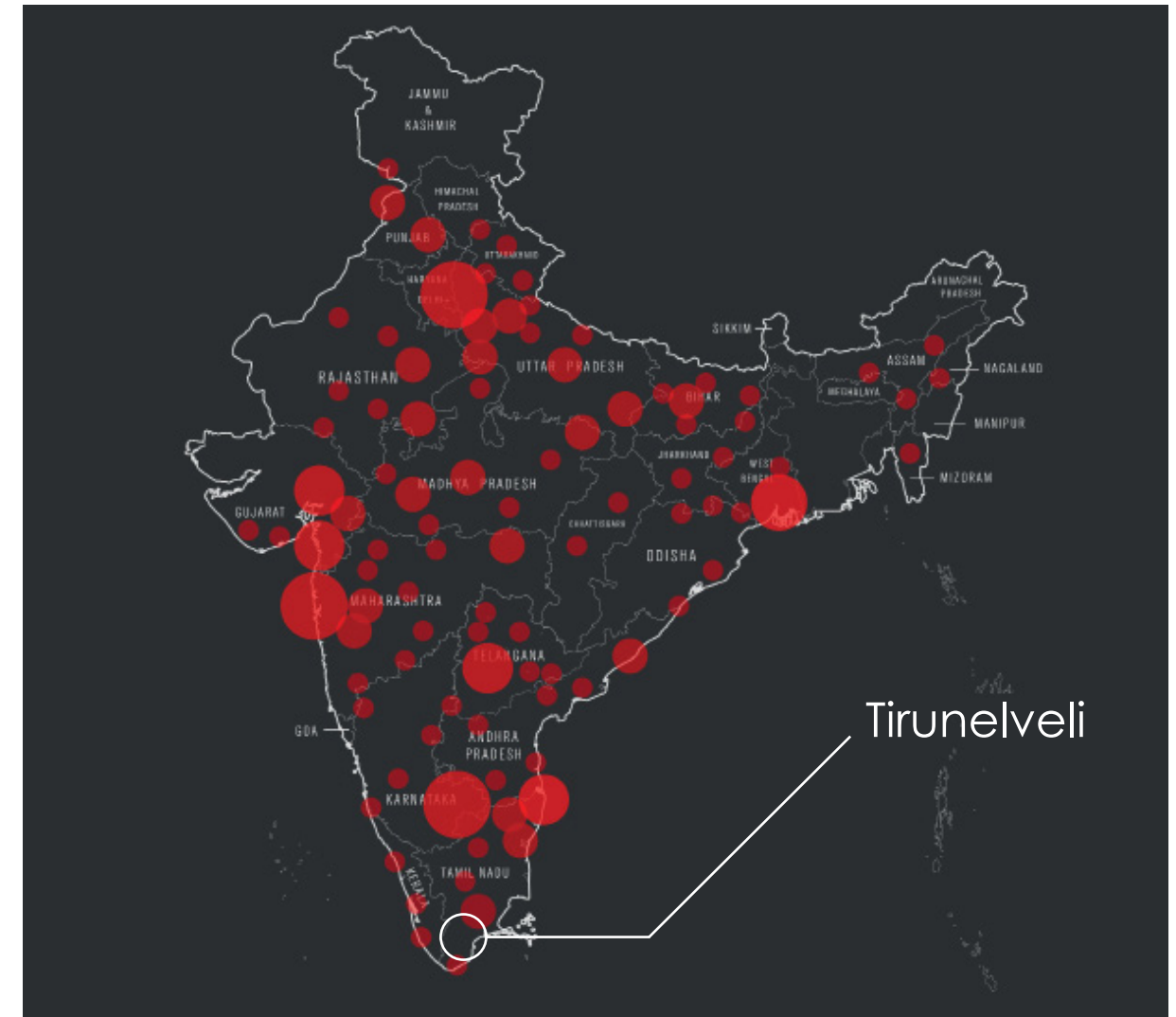
Most agreed we need a 'two way street' for information on what works, which suggests that further discussions could be fruitful. One of the speakers commented afterwards there is value in 'small and inspirational initiatives that take a holistic view working to achieve a wide range of outcomes - good design, better public health, environmental protection, socio-economic improvement etc'.

2. Recommendations

1. The web site www.smarterurbanisation.org should be used to share views as well as to access good practice or research findings under relevant headings.
2. Information sharing should include what India is doing to create new models for urban transformation, for example through electric tuc tucs.
3. New neighbourhoods should be designed to appeal to the young and opinion formers so that good practice gets spread.
4. Charging for resources such as water or parking would help promote sustainable behaviour and provide funding for ongoing maintenance.
5. Urban planners and health professionals need to work together on neighbourhood plans that encourage healthier lifestyles.
6. A brief should be drawn up for a local design competition that helps SCAD turn the vision into reality in specific locations.



Discussions between **Sunand Prasad**, **Rajat Gupta**, and **Sowmya Parthasarathy**



Spread of **urban population** within the three heirarchies of settlements
Map and data produced by **Jas Bhalla**



8 Cities with a population of over 4m

- Ahmedabad, Bangalore, Chennai, Delhi, Hyderabad, Kolkata, Mumbai, Pune
- Total combined population of over 57m
(38% approx)



17 Cities with a population of between 2m and 4m

- Includes Jaipur, Agra, Patna, Bhopal, Ludihana, Indore, Thane, Nagpur, etc.
- Total combined population of over 31m
(20% approx)



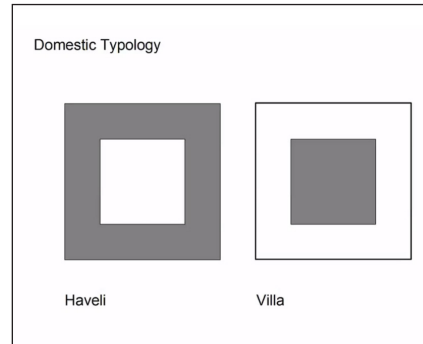
Over 70 Cities with a population of between 2m and 500,000

- Includes Gurgaon, Aligarh, Jalandhar, Bhubaneswar, Salem, Mira-Bhayandar, etc.
- Total combined population of over 62m
(41% approx)

3. Setting the context

Summary of presentations

Sunand Prasad



Typologies of the **villa** and the **haveli** from Sunand Prasad's PhD Thesis

The best of Indian urban lifestyles need to be maintained

Introducing the event the distinguished architect Sunand Prasad drew on research for his PhD into urban form. The traditional Indian haveli was built around a courtyard that was both open and private, and that was set in greenery. It was also quite high density. The villas that are replacing it are wasting space, and are less suited to the climate.

We need to start by understanding what works in different contexts. For example roof top living has formed an important part of the Indian urban life style, and there is a concern to avoid repeating the mistakes of Chinese style tower blocks. Sunand went on to chair the event, and later to draw conclusions on how urban design and public health could work together.

[Watch the full presentation here](#)

Nicholas Falk

Medium-sized cities may hold the key to 'smarter growth'

Nicholas Falk, economist and urbanist, introduced work The URBED Trust are doing with SCAD (Social Change and Development) in Tamil Nadu in Southern India. Rising populations with higher aspirations and limited natural resources, especially water, make it essential to grow medium sized cities carefully if pressures on the mega cities are not to blow up.

of rural life, such as growing food and socialising with their neighbours, as well as getting to jobs in the cities. He praised creative work by SCAD students to show how water might be saved and new 'eco homes' built. The SURGe web site www.smarterurbanisation.org has been set up to share good practice, and reactions would be welcome.

He showed how 'Smarter Urbanisation' can be achieved where development is concentrated around transport nodes, and where new housing enables people to maintain the best

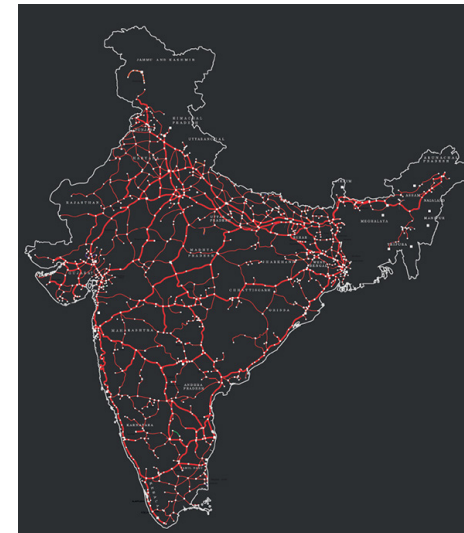
[Watch the full presentation here](#)



Above: Viable metro cities in Tamil Nadu

Left: SCAD students presenting their URBED Trust award submission

Jas Bhalla New urban typologies can learn from the past



Distribution of Indian railways

Jas Bhalla, an independent architect and urban designer, argued for a new urban typology that learns from the past, and the way different cities have evolved. This should relate to the needs of medium sized towns and cities as these, not mega cities, will account for the bulk of future growth.

[Watch the full presentation here](#)

Towns grew up around transport communications, and India has a wealth of railways, some of which are under-used. Railway junctions, like Tirunelveli, could provide the hubs for sustainable growth. But plans also need to allow for cars, and people's rising aspirations.

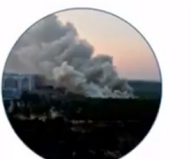
Right: Some recent **water catastrophes** in India



USD 3 billion damage in Chennai 2016



Preventable floods in Surat 2006



Bangalore's Bellandur lake on fire 2016



Dead fish in Bangalore's Ulsoor lake 2016



Mithi river floor in Mumbai 2005



'Dead' Yamuna, still Delhi's main source of Potable water

Sowmya Parthasarathy

Good practice should be shared with smaller cities

Sowmya Parthasarathy, senior planner with Arups Global, presented research findings on water in the light of the Smart Cities programme. The average Indian home only gets water for 2 hours in the day, and only 30% of urban households are connected to waste water systems. Bangalore, which once was a city of lakes and gardens, has become so built up that lakes have caught fire. Similarly the Tamil Nadu capital of Chennai, which in 1980 was largely made up of wetlands, is now down to 15%, making flooding almost inevitable. So the solutions have to start upstream in the waterways that flow into the lakes or sea.

It is clear from the success stories (for example Isher Judge Ahluwalia's book Transforming Our Cities: Postcards of Change) that good practice could be shared with smaller cities through replicable inspirational projects. 35% of the expenditure on the first 20 of the 100 Smart Cities programme, is on the built environment, whereas technology only accounts for 7%. Only 2/5th of the funding comes from the national government. As Indian companies have to devote 2% of their profits to Corporate Social Responsibility, they could provide local leadership in saving resources.

[Watch the full presentation here](#)

Nidhi Bhargava

The growth of private car usage raises fresh challenges for the public realm

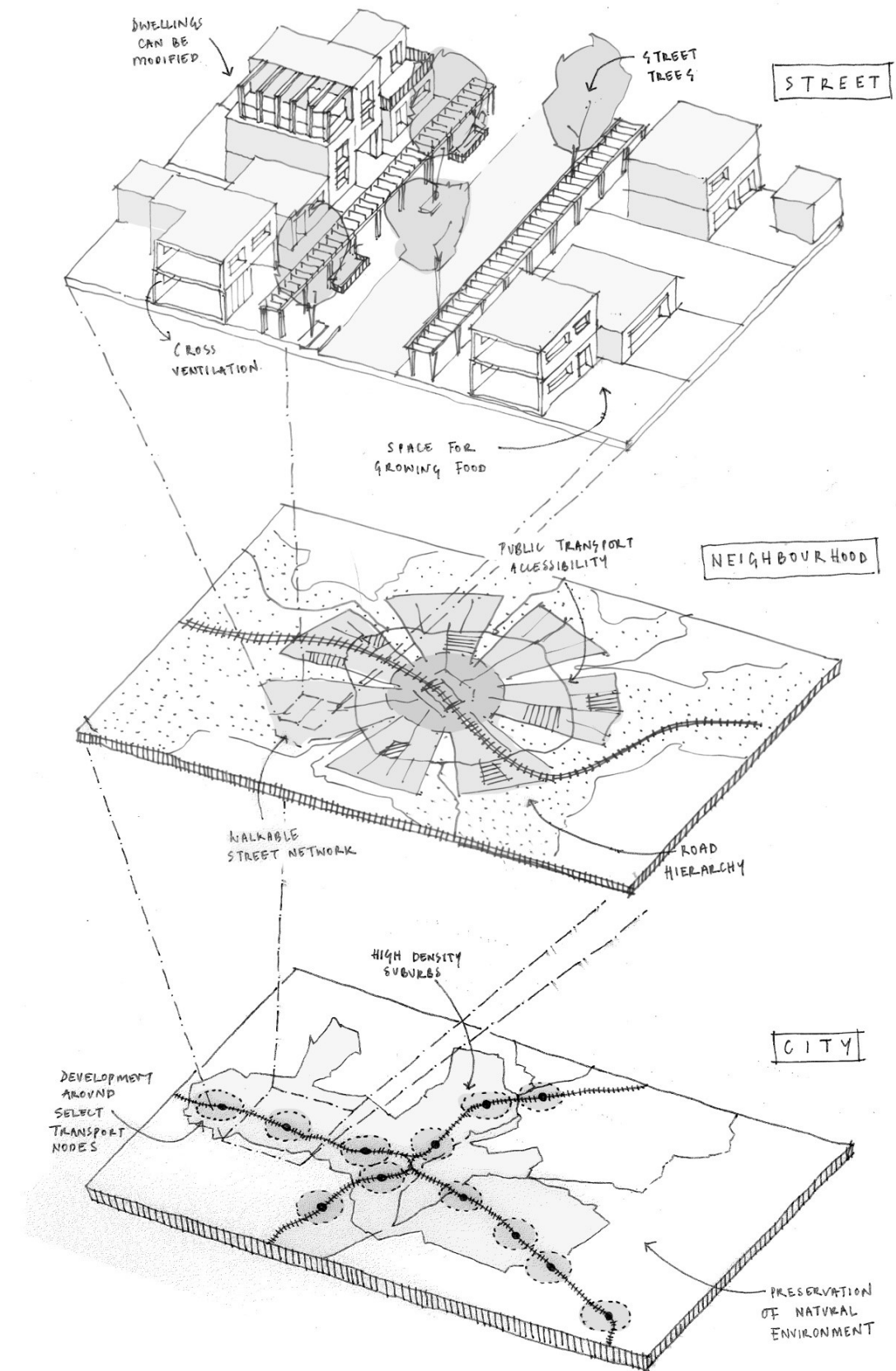
Nidhi Bhargava, urban designer now working for Tower Hamlets Council, concluded this section with glimpses of the realities of street life from her recent trip to her hometown of Allahabad in Uttar Pradesh. Streets and pathways are cluttered with uncontrolled parking and unlicensed kiosks. Road space is not managed. The public realm looks neglected (in contrast to the care people take over their own homes) in part because of negligence, but also because only about 25% of dedicated expenditure gets spent where it is intended.

While this may seem low priority to some, there is evidence from the West that well-looked after areas are safer, and 'clean-ups' can provide a mechanism for community engagement. A major challenge for the future is going to be how to handle increasing numbers of private cars looking for space to park.

[Watch the full presentation here](#)



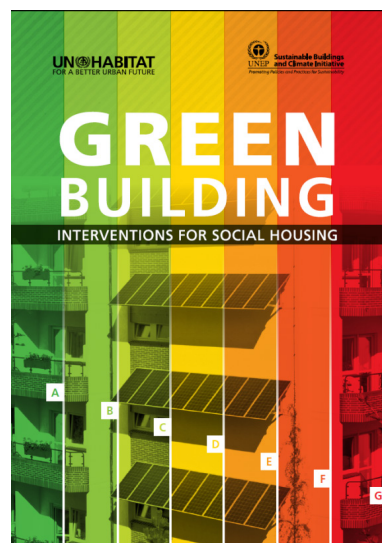
Photographs from Nidhi's recent visit to **Allahabad** showcasing the problems in **street clutter and misuse of space**.



The 3 scales of development - showcasing the utilisation of **existing railways** illustration by Jas Bhalla on behalf of the URBED Trust

Rajat Gupta

India needs to build sustainable as well as affordable homes



UN Habitats Green Building Interventions for 2015

Rajat Gupta, Director of the Institute for Sustainable Development at Oxford Brookes University, spoke at the end of the day about ongoing research into the provision of social housing. He pointed out that social housing accounts for 24% of the total, and there is a shortage of 19 million homes that need to be built urgently. The greatest demand is from the Economically Weak Sectors (EWS) and Lower Income Groups (LIG), and the Government is tending to emphasise quantity and what can be measured over factors like neighbourhood quality.

At present there is no code for the sustainable construction of residential buildings. Nor is there proper data, which encourages 'green-wash' yet house building accounts for a significant amount of carbon emissions. The big issue is going to be mainstreaming sustainable solutions, which will require models for good neighbourhoods. This is especially important if prefabrication is used to cut costs. Sunand pointed out that 80% of social housing on the edge of Delhi is not occupied, basically because it is too remote from sources of paid work.

[Watch the full presentation here](#)

4. The workshops

Housing

The findings were fed back by Jas Bhalla, who led a contentious discussion responding to the drawing that had been circulated. There was agreement on the need to relate any plans to urban contexts. This should follow a rigorous analysis of local typologies, in other words the way people are used to living. Housing has to be designed for specific market segments (for example people working at SCAD). Developments must also make the most of local resources, whether they be organic (as with Hempcrete), or inert (such as fly-ash from power stations). Slums (informal settlements) have a certain logic, but new developments must meet much higher standards.



Discussions for the housing workshop

The best places evolve incrementally, and are shaped by how their streets are connected together, as well as by the space given over to housing. With new aspirations a competition could generate new urban typologies (perhaps like the Wolfson Essay Prize for new garden cities). There would also be value in sharing experience with innovative solutions across the region. However in the end, the important message is to do something and then learn from the experience.



Apartments in Chennai encroaching upon marshland

- *designing in context is key*
- *local typologies must be analysed*
- *developments must make use of local resources*
- *the best places evolve incrementally*
- *innovative solutions should be shared regionally*



Students at SCAD present their model of 'an ideal house' for the URBED Trust student competition

Transport

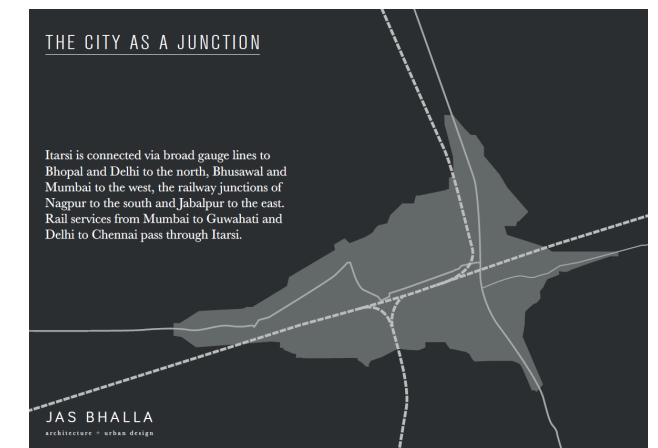
The discussion was convened by Brian Love, architect and author of www.connectedcities.org who fed back the main points. High levels of migration within States are causing major problems, and as cars clog up city centres they can start to decline. They also do not allow enough space for buses, and no attempt is being made to control congestion, for example through parking.

Smart technologies could help improve the utilisation of limited road space, driven by the need to reduce air pollution. Pedestrianised areas could help, and experience with local initiatives needs to be shared. But most important is a city-wide transport authority that can use both 'sticks and carrots' to influence behaviour. The vitality and ingenuity of Indians need to be harnessed, and, for example, 'electric tuc tucs' could be their special contribution.

- *congestion problems need policy*
- *pedestrianised areas*
- *smart technologies could improve road efficiency*
- *'sticks and carrots' to influence behaviour*
- *high volumes of traffic cause decline within cities*



Traffic congestion issues in central Mumbai



Jas Bhalla highlights existing towns such as Itarsi that already have excellent transport links



Pedestrianised area in Mumbaikars Cross, Mumbai

4. The workshops

Community Engagement

Interesting ideas emerged from the workshop led by Nidhi Bhargava. Some of the chaos produced by street vendors is actually a great asset, and they need to be legitimised not swept away. Western methods of consultation are not appropriate, and instead greater use could be made of 'self-help' groups, especially empowering those in the middle income sector. Established villages seem to work well (particularly SCAD's work in empowering women and leading education and health in Tamil Nadu), so perhaps some of their practices could be replicated in urban areas. For example groups might take over dilapidated buildings and turn them to community uses. Others might promote food growing in yards or allotments.



Womens self-help group at SCAD

Government needs to work through representatives of each caste, possibly using faith groups and the media to provide role models for initiatives that improve well-being. For example, film and TV stars are very popular and influential among Tamils - and many become politicians. Lessons need to be shared (possibly through awards and certificates that recognise achievements).



Bollywood legend and social activist Aamir Khan

- legitimisation of 'chaos' not removal
- recognition of suitable role models
- lessons need to be shared
- Western methods not appropriate
- reuse of dilapidated buildings for community use

Public Health

The group included Dr Mala Rao, a leading expert on community health, and the complex discussion was fed back by Sunand Prasad. Progress can seem impossible as urban communities wrestle with the problems of air, water, garbage and poor workmanship. Lifestyle diseases are the big killers now; a fifth of Indians suffer from diabetes brought on by inactivity and poor nutrition. Meanwhile those with middle class values favour flush toilets, air conditioning and private cars.

While culture may be an obstacle and chaos may not be a priority for most people, health is a stronger motivator for collective action. People are influenced by visible change, and, for example, Delhi has banned plastic bags and diesel cars. Urbanists and health professionals need to work together, and not just depend on catastrophes (like flooding) to provide the stimulus for action. However big projects may not be the solution. Instead long established views may need to be overcome. Support from Western professionals could help to validate the opinions of younger people, especially making the most of IT to spread good practice (which may include healthier forms of construction using organic materials).



Large gaps in healthcare between rural and urban areas in India have recieved much public outcry



Plastic bag and diesel car bans in Delhi provide a visible change

- lifestyle diseases are the biggest killers
- inequality in health
- health is a strong motivator for collective action
- people respond to visible change
- preventative measures, not just reactionary

The circulation of this report could throw up further ideas and establish whether there is enough interest to do anything more together, so responses will be welcomed.

Full length videos of the workshop summaries as well as the presentations and discussion will be available on the SmarterUrbanisation.org website.

Appendix: Invitees

Nuria Biosca
Jas Bhalla
Nidhi Bhargava
Katie Cairns
Esther Caplin
Fergus Carnegie
Stuart Croucher
Pieter De Kock
Rohit Dhawle
Nicholas Falk
Benedict Floyd
Catalina Gallego Lopez
Rajat Gupta
Leo Hammond
Robert Huxford
George Knott
Shivani Kotecha
Eleanor Lee
Harpreet Lota
Brian Q Love
Stefania Marino
Rajendra Menaria
Xiana Méndez Moldes
Malcolm Moor
Colin Munsie
Stephen Newport
Siddhartha Padhi
Sejal Patel
Hiral Patel
Sowmya Parthasarathy
Stephanie Politis
Sunand Prasad
Brenda Puech
Mala Rao
Maxine Relton
David Rudlin
Richard Simmons
Richard Slater
Steven Smith
Vijay Srao
Sagar Sumaria
Raj Suresh
John Templeton
Vishakha Tiwari
Debabardhan Upadhyaya
Noha Nasser
Steven Smith

IMC Worldwide Ltd
Jbau
LB Tower Hamlets
Assael Architecture
Esther Caplin
Urbanism
Mott MacDonald
Freelance
Student
URBED Trust
Solidea group
Atkins
Oxford Brookes University
Pollard Thomas Edwards
Urban Design Group
Knott Architects
Student
Savills
Benoy
ConnectedCities Ltd
Savills
Student
Atkins
Malcolm Moor
CRM Assignments
IMC Worldwide Ltd
UAP
Charles Russell Speechlys LLP
University of Reading
ARUP
Savills
Penoyre and Prasad
Living Streets Hackney
DHSS
Abroad Sketch
URBED
Bartlett School of Planning
Triple Line
Urban Narrative
Boars Hill Farm
Sow grow and reap
Atkins
Urban Design Group
University of Westminster
Homes and Communities Agency/AOU
Mela Social Enterprise
Urban Narrative



Appendix:

Symposium mail out

WHAT FUTURES FOR INDIA'S URBAN AREAS?
A UDG symposium on Thursday May 11th at Marshalls,

India has a population of over 1.2 billion, only 30% of whom live in urban areas. With one of the fastest growing economies in the world, the major cities are sprawling and many live in slums with inadequate water and electricity. This half day symposium will discuss principles for 'smarter urbanisation' through a series of workshops on avoiding urban sprawl, pollution, and unaffordable housing. It will feed into a project that The URBED Trust is undertaking in the far South of Tamil Nadu with the SCAD Group (Social Change and Development) www.scad.ac.in

Sunand Prasad, founder of Penoyre & Prasad, and Past President of the RIBA will chair the event. Contributions from UDG members Nidhi Bhargava and Jas Bhalla will set the scene. Brief presentations from Sowmya Parthasarathy of Arups on what Smart Cities need to offer, Rajat Gupta, from Oxford Brookes, on research into social housing, and Nicholas Falk, on his recent visit to Southern India, will pose issues for discussion (see also my blog [PostcardfromTamil Nadu](http://PostcardfromTamilNadu.org) and www.smarterurbanisation.org). Workshops will consider four inter-related sets of issues:

1. **Transport**
 - a. Making public transit more attractive
 - b. Improving walking and cycling
 - c. Managing the growth of car ownership
2. **Housing**
 - a. Stopping urban sprawl
 - b. Planning sustainable urban extensions
 - c. Designing and building eco houses
3. **Public health**
 - a. Dealing with rubbish and building conservation
 - b. Upgrading water supply and the green infrastructure
 - c. Improving nutrition and well-being
4. **Community engagement**
 - a. Managing and extending public spaces
 - b. Conserving neighbourhood heritage
 - c. Supporting community and voluntary enterprise

In the evening, at a session hosted by The URBED Trust, the conclusions will be fed back to those interested in India and the growth of emerging economies. We will discuss how Indian and British organisations could work together. As numbers are limited please register your interest as soon as possible through. If you would like to lead a discussion please contact nicholas@urbed.com More information is on www.smarterurbanisation.org
The event is at Marshalls Design Space is Unit 4, 1st Floor, Compton Courtyard, 40 Compton Street, Clerkenwell, EC1V 0BD and the nearest tube stations are Farringdon and Barbican.

Appendix:

Symposium briefing paper

FUTURE PROOFING INDIA'S MEDIUM SIZED CITIES?

A think piece about 'action planning' garden cities in India through eco-village methods

This think piece sets out findings from recent research and visits to Southern India by the Urbanism Environment Design (URBED) Trust to suggest how medium-sized Indian cities – those with populations currently of around half a million people – might cope with the pressures of future growth. It proposes five simple steps drawn from experience in promoting 'new garden cities' in the United Kingdom. It then describes how an experimental project to build some demonstration 'eco-villages' can offer solutions that could be scaled up. The conclusions identify practical ways in which collaboration between experts in the UK and those in India could be supported.

Challenges for sustainable growth

With a population of over 1.2 billion and one of the highest growth rates in the world (the GNP per head is currently increasing at 7% per annum) Indian cities are undergoing a resurgence. The largest cities, like Chennai, capital of the South Western state of Tamil Nadu, are growing fastest. Only 30% of the population are urbanised, and there is a natural tendency of those leaving their villages to seek opportunities in the biggest cities. This raises at least four challenges if cities are not to erupt in conflict:

Transport - As cities expand and sprawl, congestion and pollution becomes intolerable. Half of the 20 most polluted cities in the world are in India, led by New Delhi. The so-called 'garden city' of Bangalore is losing its appeal as a base for IT companies, and a powerful account of how people's lives are changing in Tamil Nadu highlights the impact of the process of transition.¹ As Kapur (2012) points out, on the edge of Chennai '*The farmland has become a fertile terrain for steel-framed and glass office buildings .. an urban sprawl of gated communities and plotted-out fields.*'

Buses are over-loaded and have a poor image. Railways outside the mega cities concentrate on long-distance travellers, with long 20 coach trains trundling across the country from city to city. Tuc Tuc do their best, but most people manage by piling onto motor bikes or scooters. Though electric rickshaws are being trialled, dirty fuels and noise vehicles predominate. Walking and cycling are in danger of being squeezed out, and pavements are rare and poorly lit at night. As those who can buy cars and move further out, the situation could only get worse.

Housing - Stopping urban sprawl is difficult where planning powers are weak, and so much money can be made from development. High rise towers may suit people in mega cities, but a different model is needed for medium-sized cities. Detached houses on former paddy fields can only house the relatively wealthy. Unfortunately as housing becomes ever more unaffordable, as in UK cities, over-crowding worsens, and slums or 'informal settlements' take over land that is not being used, and that lacks services. Where plans for sustainable urban extensions have been drawn up, as in the historic French town of Puducherry (formerly Pondicherry), there are problems with implementation. Conflicts over inheritance lead to old buildings being sacrificed, and India's heritage is disappearing before one's eyes.

Though there are some 'model' alternatives, like the visionary settlement of Auroville, designed to attract people from all over the world, or the inspired low cost buildings of Laurie Baker in Trivandrum, the capital of neighbouring Kerala, they have not scaled up. Furthermore, flats built

¹ Akash Kapur, *India Becoming: a journey through a changing landscape*, Penguin Books, 2012

with garages and air-conditioning cost far more than most can ever contemplate. Alternatives, like the ‘custom built’ housing so popular in the Netherlands and others parts of Northern Europe, are not to be found because serviced plots are unavailable. If housing is ever to be built on the scale required, as the UN Habitat conference in Quito called for, then a more affordable and sustainable models are required.² This forms the basis for the URBED/SCAD (Social Change and Development) Eco House project of which more below.

Public health - Despite advances in life expectancy, infant mortality levels are still quite unacceptable. Problems arise from poorly ventilated kitchens. Many children are still under-nourished at a formative age, and families need a small plot for growing vegetables or chickens. Space to prepare nutritious food is vital, along with being able to socialise with neighbours. Walkable streets with rows of houses along them can make people feel better and safer, especially if they are lined with trees to keep the sun away, and attract birds. Children need places to play, while older people like places where they can sit together and talk.

Failing monsoons have created widespread water shortages. Large ‘tanks’ are dry and bore holes bring up saline water. While the long-term answers may lie in ‘blue green infrastructure’, as a report on applying ‘Smart City’ principles to two Southern cities points out, this calls for new approaches on the part of funders, along with some short-term projects that can demonstrate early results.³ To a visitor, the obvious places to start are dealing with rubbish and old buildings. Piles of uncollected plastic bottles look unsightly. Yet Emirates Airlines say their blankets are now woven from thread from recycled plastic. Though monuments and temples are generally well-cared for, the public realm is generally neglected, and made worse by crumbling buildings. So there are huge opportunities for a general ‘wash and brush up’, using greenery and colour to show that places have a future and not just a past.

Community engagement - With very limited municipal resources and national programmes failing to get through to where they are needed, what can make most difference? It is possible that some of the approaches that have worked well in the UK (and European cities) might also apply to some parts of India. First comes involving neighbours and property owners in improving their streets or blocks. Premier Modi’s programme for 100 Smart Cities has apparently got lots of people talking about cities, and what they want to see. The problem of course lies in implementation. Not for profit organisations such as the Indian National Trust for Art and Cultural Heritage (INTACH) have produced visible results in the French Quarter of Puducherry (formerly Pondicherry), while the Social and Development Group (SCAD), based in Tirunelveli, has worked with some 600 villages and 2.500 women’s groups to tackle common problems. Primary schools can provide an excellent focus for action.

Students at SCAD who competed for one of the URBED Awards certainly seemed very proud of their city, its history and current attractions. It would seem an easy step to go from research into publicity, making the most of the internet and phone apps. But this requires educational bodies to introduce practical projects as part of the curriculum, and for communities to recognise effort and achievement. This is where we hope our [SURGe web site](#) can help in sharing good practice.

From vision to reality

² Laura Petrella et al, Planned City Extensions: analysis for historical examples, UN Habitat, 2015

³ Atkins with UCL, Future Proofing Indian Cities: key findings from applying a future proofing approach to Bangalore and Madurai, March 2015

Describing what is wrong or where one would like to be is usually far easier than finding a route for getting there! But our experience over the last 40 years is that progress needs to be made through balanced increment development with flexible plans but clear measures of success that win general support. We want to promote and test out a ‘route to smarter urbanisation’, that is one where more people lead full lives, which requires development and infrastructure to be in balance. Drawing on experience in the English university city of Cambridgeshire and surrounding County, we argue that there are five critical steps:

- 1. Collaboration** - Successful growth and ‘smart cities’ depend on generating innovation and good jobs. The best examples of transformation in Europe have all involved municipal authorities playing proactive roles, and creating the right climate for long-term investment.⁴ But what can you do where local authorities are apathetic or under-resourced? Here examples such as Leipzig in the former Soviet part of Germany or Eindhoven in the Netherlands, who lost its major employer and had to reinvent itself, offer models. The key is showing the outside world that the key ‘stakeholders’, which include universities and major employers, have a ‘shared vision’ for where they want the city to go. The best models involve ‘polycentric cities’ that make the most of their existing assets, and that use development to overcome barriers to growth.
- 2. Connectivity** - The motor car, which was a major driver of city growth in after the Second World War, is now recognised to be a dangerous weapon in the wrong hands! So cities that once demolished buildings to create urban freeways, are now taking steps to ‘tame the car’, and give priority on the ground to pedestrians and cyclists. Indian cities such as Madurai have also shown the value of overruling local interests, such as small shops, in order to raise income levels generally through better urban quality. While only some, like Chennai and Kochi, may be able to justify new overhead or underground Metros, many more can benefit from Integrated Public Transit, and from managed parking. The railway lines that branch out from junctions such as Tirunelveli offers huge untapped potential for creating a 21st century networked city with denser development around stations. So too is the scope for tapping solar power for recharging electric bikes.
- 3. Community** - Though there can be deep-rooted differences between caste and class, as well as religion, there is also great value as SCAD is showing through its schools and colleges, in bridging the gulfs. Indeed some of the best places to live are where there is a diversity of people, especially in terms of age and wealth. Writers like Akash Kapur and Amartya Sen highlight how the old distinctions are breaking down in modern India, thanks to universal education and enlightened laws. However the relatively slow rate of growth of Auroville also brings out the problems that can arise when the differences are too great. So new settlements need to appeal to groups that have something in common and that share similar values if they are to flourish.
- 4. Climate-proofing** - The challenges of tackling water shortages and periodic flooding, along with energy failures and the need to reduce carbon emissions, tend to lead to plans for mega projects that can take decades to implement. But there are also a range of small-scale projects that can make a visible difference. Thus students in Tuticorin called for schools to promote the value of saving water, and for water companies to distinguish between different qualities of water. Innovative eco technologies such as composting toilets, the use of 12volt local energy grids, and harvesting industrial hemp (which uses a sixth of the water

⁴ Peter Hall with Nicholas Falk, Good Cities Better Lives: how Europe discovered the lost art of urbanism, Routledge 2013

of cotton, enriches the soil, and removes carbon dioxide from the air) can be combined to produce a better life and living for those living in rural areas.

5. **Character** - New developments are often criticised for all looking the same, and much of the identity of traditional communities is being lost as cities grow and redevelop old areas and buildings. This has led in the West to initiatives to promote conservation and adaptive reuse. In the USA the idea of ‘smart growth’ is supporting cities that develop around ‘Transit Oriented Development’, with a mix of uses to cut travel times. In turn this can result in much more attractive looking places, where households can put their efforts into creating somewhere special. However possibly the most important measure of all lies in using ‘blue and green infrastructure’ to enhance fine buildings and places, and bring the best of the country into the town.

Eco-village projects as a way forward?

The SCAD ‘eco-villages’ project forms a building block in an ambitious proposal to test out the application of ‘garden city’ principles to the growth of the City of Tirunelveli and nearby cities such as Tuticorin, and to develop the skills and job opportunities for staff and students at SCAD ([Social Change and Development](#)) The local authority is competing to become designated in the government’s Smart City programme, and hopes to build an exemplary new settlement on the edge as well as to take traffic out of the historic centre. If the city were to double in size by 2050, assuming a growth rate of 2% a year, there is a danger of land being taken away from productive agriculture, and congestion on the roads could become socially and environmentally intolerable. It is therefore vital to have a strategic growth plan that incorporates the surrounding suburbs and villages, and avoids car use.

The proposals for this project are based on applying good practice in Europe, by making better use of land that would not otherwise be developed. With the help of ConnectedCities, a social enterprise based in London, we have identified potential land owned by Indian State Railways close to stations that could be suitable. This is being explored in the [Tirunelveli case study](#). It is also important to find ways of reducing carbon emissions and pollution, by minimising the use of concrete and using natural materials instead. The new homes need to be affordable to people whose basic incomes mainly come from agriculture, and to offer better options than currently available. Above all water must be used more carefully to avoid shortages in times of drought.

We think that the principles applied in the original garden cities and new towns in the UK, and promoted by the Town and Country Planning Association, could offer a proven way forward for some mid-sized Indian cities, provided there is a suitable delivery and financing mechanism. We believe the proposals for Uxcester Garden City - our winning entry for the Wolfson Prize about garden cities - could provide some of the answers.⁵

Going back to first principles its useful to remember what the Town and Country Planning Association has set out as garden city principles:

Garden city principles (TCPA 2012) ⁶

- strong vision, leadership and community engagement;

- land value capture for the benefit of the community
- community ownership of land and long-term stewardship of assets;
- mixed-tenure homes that are affordable for ordinary people;
- a strong local jobs offer in the garden city itself & within easy commuting distance;
- imaginatively designed homes with gardens in healthy, vibrant communities;
- generous green space linked to the wider natural environment, including allotments;
- strong local cultural, recreational and shopping facilities in walkable neighbourhoods; and
- integrated and accessible low-carbon transport systems.

Innovative design features SCAD Eco Houses should aim to innovate in seven main ways and we have shown some of these in the illustrative drawings that accompany this think piece:

1. Maximum use of public transport, walking and cycling to help improve air quality and public health through location on transport corridors or near stations
2. Sanitation measures to minimise unnecessary water consumption while improving health, for example through drawing water from restored local ‘tanks’ , and processing waste products
3. Plots that enable subsequent extensions and improvements, including space for ‘kitchen gardens’ for healthier living, and lots of trees for natural cooling to avoid the need for air conditioning
4. Designs that response to local vernacular, such as terraced streets that support active communities, but that also provide space for contemporary needs: eg storage, toilets and waste disposal or recycling
5. Construction out of reused and recycled materials, and that explore the potential for using natural materials, such as ‘rammed earth’ or Hempcrete that combines local lime with using the stems from growing industrial hemp for the clothing and motor industries. This would reduce the high carbon emissions from the use of concrete and provide farmers with a cash crop.
6. Use of 12/24 volt electricity from solar panels with mini grids, and natural ventilation and insulation to reduce carbon emissions and dependence on an unreliable electricity grid
7. ICT links, for example connections with the Internet or phone lines, to make communication easier and also to help distance learning.

In short the new ‘eco homes’ will aim to minimise the consumption of scarce resources and would enable mid-sized cities such as Tirunelveli to grow without ‘costing the earth’. They will appeal to people moving out of villages into homes of their own, as well as to municipalities and utilities wanting a more sustainable alternative to urban sprawl. They can be built by small and self-builders, offering a much better alternative to crowded slums, and creating local employment. ‘Eco-villages’ will combine the capacity for traditional forms of housing to co-exist happily with the planet, while achieving the levels of aspiration associated with urban life styles and new technologies. For example mobile phone apps can be used to encourage healthier living and overcome the isolation associated with new settlements. A linked project will draw lessons and apply them in training

⁵ Nicholas Falk and David Rudlin, Uxcester Garden City, URBED 2014 www.urbed.coop

⁶ Town and Country Planning Association Creating Garden Cities and Suburbs Today, TCPA 2012

students, for example through awards for group work in producing essays on affordable homes, natural resources or hospitality.

In summary

In our view the greatest value of the eco-village project will also come from its potential to be extended and to act as a model for other areas in line with garden city principles. The basic challenge in building sustainable homes anywhere is providing advance infrastructure, such as roads and schools, which is where the growth of certain European cities offer many lessons. As infrastructure can cost as much as building new housing, it is important to make the most of what already exists. This includes not just transport but also energy and soft infrastructure such as hospitals and colleges. It is also important to minimise water consumption and waste, and to tap solar power to make new homes independent of unreliable state power sources, and make the most of natural resources. We hope this project will help us understand more about how to take this forward.



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