“LIKE RATS”
DEMOCRACY, SUSTAINABILITY AND THE URBAN FORM

Over the past twenty years, the philosophy of self-determination has been much in the sun. We have believed in people more than in leaders. On the macropolitical level, the eventual collapse of the Eastern Bloc brought forth something close to an ultimate blossoming of European democracy – and this barely fifty years on from its near annihiliation. Calls for democracy elsewhere in the world were given additional flourish, and, inspired by the rush to Moscow and a sense of history rearing up, Western politicians rapidly became global champions of freedom, and the deliverers of an axiomatic good. At the same time, democracy on the level of the microcommunity underwent an enormous resurgence after decades of perceived community atrophy. The emergence of the internet almost at a stroke did more to democritise information than anything, certainly since Guttenberg, if not in the course of human civilisation. People were given access to knowledge, and, perhaps more importantly, to each other. The terrifically reduced frictional costs of communication allowed internet users to connect and organise outside of the mainstream channels of distribution. A global audience – for media, for services, for consumer goods – was suddenly yielded up to the homesteader, who for almost nothing could set up shop and speak out. Obdurate bank managers and capricious retailers and publishing groups, the traditional gatekeepers to the dissemination of ideas, were summarily cut from a loop which, a decade on, they are still scrabbling for a place within. In the meantime, open source approaches and wikithinking have brought people to the fore, and our faith in their collective intelligence to make decisions and generate content has never been stronger.

The democratic empowerment of users within virtual space has provided a powerful analogy for the tangible world, and has led a cultural shift toward the agency of people, and a recognition of the power of the micro. The belief that people themselves are the forebears of the future has driven a whole host of bottom-up initiatives, ranging from the vogue of microfinance in the developing world to such developed world micropolitical acts as shopping cart democracy and Facebook awareness groups. Equally, the renewed importance of microcommunities and microgovernance both reveal an underlying cultural aesthetic of “small is beautiful”, which can itself be traced back to the catalyst of our age: the microprocessor. The UK government, canny at least on the point of trends and spin, has been an early adopter of microthinking, devolving power away from the centre while looking always to stimulate the local. Increasingly, “light government” has sought to shift from being a provider of social services to a contractor for local social services suppliers – a theme which has run through local regeneration schemes as much as community policing and grass roots policies.

This mode of thinking — a form of localism blended with community participation — has struck a resonant chord with the environmental movement, which was after all only ever asking for more and grassier roots. Much of the green approach, long frustrated with sluggish governments and odious corporates, has focused on engaging people directly. Underwriting this is the green movement's fundamental belief that people care about the environment, but are unable to express this when abstracted from the true environmental impacts of their choices and actions. It is hard for people to connect with distant nuclear power stations or Latin American logging, but if we could relocalise our sphere of activities, as well as the consumption chains leading off from it, so the thinking goes, we would become immediate stakeholders in our surroundings, and consequently, better and more actively democratic protectors of them. The community, the community environment, and participatory responsible husbandry all run together in a natural confluence of greens and pinks.

It is therefore an equally natural sequitur that the green response to the environmental problem of cities, which account for an estimated three-quarters of our carbon emissions, should be a community-based form of green localism. This has found expression in the much vaunted ecotown. Ecotowns have generally been bandied about more than built, but the few dozen that actually do exist are importantly characterised by microdemocracy as much as by ecological measures. Moving in concert with the idea of green buildings is the theme of stakeholder involvement, apparent in the frequent presence of cooperative businesses and structures, as well as extensive engagement from the voluntary sector. Indeed, often themselves the products of the grass roots initiatives of their inhabitants, ecotowns are a fine expression of environmental direct democracy, with many prominent aspects deliberately tapping into the prevailing mood of localism and the microlevel. Not least among these is a strong aspiration toward local self-sufficiency, to be achieved through such celebrated microtechniques as microfarming, microgeneration of energy, microbial microtreatment of sewage, and so on.

This mixture of forces is aptly expressed by what is a near slogan for the ecotown concept: *THINK GLOBALLY ACT LOCALLY*, in which can be found the twin strains of an internet-driven worldwide consciousness, and the key role of each and every person within their immediate context. The path to the better management of big things is in fact through a closer attention to — and love for — little things. An accompanying verbal cartoon would depict a man with a laptop in the Cotswolds blogging back and forth with his counterpart in Northern California, each posting comments on domestic organic gardening, while sitting with a plate of tomatoes freshly plucked from their own respective back yards.

While the unifying aims are unabashedly planetary, there is a curious reduction of the physical ambit to the garden, the home, and the resources of the immediate community, suggesting a unity of place which goes beyond passionate localism to hint at decoupling. Mainstream urbanism may have become inextricably enmeshed in processes of global degradation, but the ecotown looks to strike out and create its own microcosm of sustainability. There is a secessionist bent to the ambition to come off-grid, active across a number of fronts (the wind turbine on the roof, the home-grown produce, the independent water supply, etc.), within which is not only a desire to disengage, but also an unmistakeably retrograde twist. After all, the principle of local self-sufficiency was, before a great deal of fairly recent infrastructure, the prevailing condition of community existence. And crucially, when people could take predominantly only from what they had around them, sustainability was a systemic factor, not an exogenous constraint.

The rhetorical sentiment of the ecotown thus finds itself harking back to a time when towns and villages were more self-reliant, and as such, more community-orientated. The sprawling ecological footprints of our current cities are maintained only by our modern systems for exporting ecological damage — a form of social irresponsibility which itself is only made possible through a much weakened sense of community, or even the absolute dissolution of the traditional community into the globalised marketplace. Modernism and unsustainability start to lock hands, just as sustainability and past times come together. In a revealing foreword to *Sustainable Communities: The Potential for EcoNeighbourhoods*, Jed Griffiths, a former president of the Royal Town Planning Institute of Great Britain, slips into fond reminiscence over his Devonshire boyhood, before concluding glumly:

‘Today many neighbourhoods like Honicknowle are fragmented communities. A range of factors are to blame, not least the advent of the motor car, home-based entertainment, and labour-saving gadgets’.

The problem of the unsustainability of today becomes one of the shattering modernising power of contemporary consumerism, by which not only the car — a common enough target — but also the tv and the washing machine are somehow swaddled up into a culprit-bundle for community demise, and our erring from greener days. Sustainable communities are seen less in terms of developments for the future than as the things we have lost, chiefly through our greed for convenience and easy stimulation. Against this backdrop, the ecotown steps forward as a kind of nostalgic semi-pastoral idyll, accompanied by the local markets and seasonality of an erstwhile era — one familiar less with environmental agendas than with technological limitations.

This recourse to the premodern runs through much ecothinking – and indeed ecobuilding, where again, practitioners frequently turn for examples to how people lived before air-conditioning and pre-cast concrete. Commonly cited paragons of ecological architecture include the effectively premodern rural huts of Indonesia and sub-Saharan Africa, which incorporate all the key principles of passive sustainable design, ranging from the use of natural locally-sourced materials (mud, grass), to solar orientation (south-facing shading), to natural ventilation (a hole in the roof), to the recycling of organic products (dung burners etc.). This line of thinking can be extended out in scale to the developing world rural village, which equally exhibits the full gamut of sustainable planning practices – the tight unity of home and workplace, the mixed-use arrangements of built programme, the predominance of non-motorised transport, the cultivation of local resources, the importance of social capital within the community, and so on. And such inhabitations are, it is true to say, very low-carbon. They are not however, for those living within them, very desirable or democratically progressive models.

The unfortunate truth of much modern development is that the march of progress has gone hand in hand with exponentially rising carbon emissions. Furthermore, contemporary graphs plotting countries for their score on a human development index against their per capita ecological footprint continue to attest to a strong positive correlation between high standards of living and the exertion of environmental strain. Any attempt to convince countries or their populations to move backwards along this curve is probably morally dubious as well as palpably futile. To an important and to some extent incontrovertible degree, development as we know it and sustainability are simply at odds with one other. Under such circumstances, the very term “sustainable development” collapses into oxy-moron, within which ecocentric and anthropocentric tendencies are in continuous turmoil. Thus the exponents of the ecotown find themselves in the eye of an whorling paradox, faced frequently with win-lose conflicts between lifestyle and low-carbon ambitions. The result is often a rather inchoate longing for places and times when communities were not so battered by desires for all the carbon-heavy social benefits offered by modern Western democracies. Notably, such longing – and indeed ecotowns themselves – tend to surface among those who already enjoy the benefits.

A friend of mine from the Czech Republic, Roman Kratochvíla, once described to me his first trip to the UK, which was to Glasgow in 1991 (a few years after the Velvet Revolution). One sunny afternoon he walked into Tesco, and there was a girl standing behind a plastic table with a canteloupe melon cut in cubes before her, which she was offering to passing customers. Roman, who throughout his life under Communism in the former Czechoslovakia had never seen a melon, took one, and eating it could not believe how delicious it was. He had never imagined a fruit could be so cool and

so sweet, nor that in Western democracies people would just give such things away in a supermarket for nothing.

There are two important points to be drawn from this. The first is that it would be a mistake to take for granted the very real delights that market democracies have – with their foodmiles and all the rest – undeniably delivered. Rolling back melons from Glasgow on the grounds of ecolocalism would provoke an outcry, as would any attempt to staunch the rolling out of melons to anwhere else in the world that is still waiting for them. The second is that the current president of the Czech Republic, Václav Klaus, is one of the EU's last standing political leaders who is an unapologetic climate change sceptic.

In terms of his scientific objections, Klaus is most likely standing on something of a melting iceberg. More interesting however are the political arguments he advances for his position, which emanate from a passionate belief in the furthering of democratic choice. The companion to this is a finely honed suspicion of any hint of centralist measures which, supported by a theory of specialists, threaten to curb the freedom of individual people to improve their own lives. Having lived through Soviet Communism, Klaus knows what federalist intervention looks like, and regards environmentalist lobby-groups within the EU with narrow eyes. What right has a state – let alone a union of states – in the sway of green interest groups, to determine whether or not an individual may eat a melon? Or, in a more direct sense, what legitimate role has the EU to play in determining how much coal may be burnt, or steel or cement produced in any of its member states, according to the logic of a carbon market which is a fiction of governments rather than an expression of private interests. In asking such questions, Klaus is a forthright proponent of a sentiment common among countries which, having only recently come into democratic capitalism, are for the most part substantially less concerned with climate change than with their freedom to continue expanding production and consumption. Carbon guilt can be left to those who have long-experienced high levels of democratic choice, and have perhaps forgotten how things might feel without it.

This issue of democratic choice comes into direct contact with urban design, and thus the ecotown, over the question of freedom of movement. For the aspired localism of the ecotown refers not only to the consumption chains of its residents, but also to the residents themselves, who ideally remain within the self-sustaining ecolocale. Less movement is of course greener, as demonstrated by our low carbon past when, without motor cars, the radius of feasible movement was that much less. However, short of the power to disinvent, for today's context it is again more instructive to consider the incidence of localism as a manifestation of politics, as opposed to a simple lack of means. While the blurry nostalgia of the ecotown gazes back in time and blinks, a more real conso-

nance for its localist agenda can again be found in pre-reform Communism, this time in China.

During the Maoist era, a combination of distrust for the bourgeouis metropolis, and commitment to the principle of centrally rationalised production, led to the carving up of Beijing. The city was divided into discrete packets, known as the *dayuan*, or big yards. These were meted out to the various state-run ministries, or *danwei*, who were responsible for their management. The *danwei* then ran each individual *dayuan* as a sealed worker unit, within which all the necessary functions of workers' lives were met, including the factory, the dormitory, the school, the leisure area, the canteen and so forth. *Dayuan* Beijingers would thus live out their days within the confines of the micro-environment to which they were assigned. The internal organisation of the city was realigned to a model of cellular urbanism, and as such required very little internal movement. Areas and their communities were well-defined, and the city's potential to act as a basin for sedition and hidden meanings was effectively contained. It was a triumph for localism, with each *dayuan* effectively seceeding from the urban whole. In the late 1950s, as the *danwei* began to engage in large scale industrial expansion, strings of new *dayuan* were built along the periphery, growing Beijing according to a spatial logic based on the essential impermeability of each lone *dayuan*. More and more units were simply added to the conglomerate, like the laying of dominoes. What happened however when totalitarian control over movement within the city was removed, and residents were suddenly free to go anywhere, was that Beijing collapsed into one almighty traffic jam. The meticulously constructed localism of cellular Beijing gave way to a huge demand for city-wide (and indeed nation-wide) transport, to which the municipality has been playing catch-up ever since. A host of gargantuan infrastructure projects, running now to six major ring roads and a twelve lane east-west arterial, have failed to curb the problem, which Chinese planners concede continues to be the most pressing issue facing Beijing. In desperation over air quality in the run up to the 2008 Olympics, totalitarian measures were reintroduced: it was decreed that only half of Beijing's fleet of 3.3 million cars would be allowed onto the road each day, according to a system of alternating odd-and-even number plates. Far from curbing their mobility, the response of those Beijingers who could afford it was to buy a second car, and thus own one of either plate.

What the Beijing example demonstrates is in fact something of a global urban rule – that there is no such thing as democratic freedom of movement within a city *and* voluntary self-constraint to localised clusters. Given the option, people move about. This has been observed time and again when planners have attempted to design self-sufficient satellite towns, or self-contained mixed-use areas within the urban fabric. In either case, the attempt to internalise within the new development all necessary urban programme

– residential, retail, office, educational, health etc. – has consitently failed to reign in movement. This is due not least to an essential misconception about what trips people make. Traditional approaches to reducing traffic have focused on bringing home and work within the same locality, based on a rather crude concept of back-and-forth urban lifestyles. However, what extensive studies of actual urban movement patterns have demonstrated is that commuter travel makes up a relatively small percentage of the total number of trips made. Someone who travels between work and home will also go to the shops, frequent the cinema, visit a friend, drop by a café, hit the gym, pick something up from someone, look in on a relative, and so on, forming an overall movement pattern which is both complex and highly individualised. The number of destinations which are neither work nor home far outweighs those that are, and over the course of a month, more unique trips are made (i.e. ones to one-off locations) than any other form of travel. What emerges is that no matter how carefully thought through a local urban area, its truculent urbanites will move widely and, for the most part, unpredictably. The majority of travel choices elude the approach of designed urbanism, as chaotically idiosyncratic movement patterns are, it transpires, a fundamental part of the free city.

What is surprising however is less this fact than that it should ever have been forgotten. For fluid urban movement is not only a feature of democratic urbanism, but at the very heart of city-building itself. The *raison d'être* of an urban concentration is to gather together a large mobile population. The point of being in a city is to be able to interact with other people in the city – to meet, share knowledge, do business, start projects, access services, serve etc. – a point which is defeated wholesale by any notion of enforced localism. The city acts as a single market-place for all the human capital within it, and as with any market place, it is effective only when buyers can get to every stall, and stalls can get to every buyer. Cities take maximum advantage of their populations primarily by ensuring these populations are freely mobile. As soon as the city starts to fragment into localised pockets, it loses its competitive advantage. The power of cities is therefore their very non-localism – the extent to which they amass and connect people from across a whole host of different origins. What is striking about Beijing is not only that the traffic problem exploded as soon as people were granted greater freedom of movement, but that, in spite of the traffic problem, or almost because of it, Beijing from that moment started its rise from ailing failed capital to new global metropolis.

When considering freedom of movement, it is important to note not only its centrality to successful urbanism, but also the social benefits it has facilitated. Over the course of the last century, first the mass-produced motor car, and then the cheap airline, democritised transport to a completely unprecedented degree. Travel,

which was once the preserve of a sealed class of the privileged, was opened to a far wider body of people, who seized hold of it with both hands. Notwithstanding the environmental and cultural consequences of this, any attempt to wrest contemporary levels of mobility from those hands is sure to prove wildly unpopular. It would be conceivable to price people out, through taxes and congestion charges, or to crowd them out, through simply refusing to build any more roads or runways, but either method would be excruciatingly counter-democratic. Moreover, imposing such constraints would probably prove damaging to the competitiveness of the city.

A second point to consider in relation to current levels of movement, which are both at record highs and continuously increasing, is the belief that these will play themselves out shortly as people shift more and more of their interactions into online forms of communication. However, very considerable as the developments in ICT are, the history of telecommunications is firmly against any theory of diminished travel uptake. On the contrary, advancements in technology thus far have invariably led to more travel not less. The facilitation of more and closer communication, with more distant and more numerous communicants, has overwhelmingly led to more trips across an ever expanding network. No technology to date has been able to displace the primacy of the “flesh meeting”, or its relationship building-capacity, and generally the more you talk or video-conference with someone, the more you feel the need to see them. Potential business partners hoping to develop trust, friends wanting to spend time together, and online daters looking to make love, irrespective of download speeds, will want to do these things in person, at least for decades to come.

Thus the localist monotopia proposed by the ecotown comes to look increasingly wan. It runs essentially counter to the trends of both technological progress and democratic choice. Moreover it contradicts the core principles of urbanism, offering instead of maximised mobility a geographically cloistered existence, faintly associated with such rank anachronisms as the job and home for life. Unsurprisingly then, the ecotown monotopia falls foul of itself. Built in little clusters of generally 100 to 150 units, the grass roots ecotowns of today inevitably land well short of their self-sustaining ideals, and instead leach off their nearest towns for the vast majority of services. Ironically, the net effect of such developments has been more traffic not less.

Given all this, that the ecotown has managed to achieve any traction at all is a legitimate source of wonder. The explanation however lies in the long-standing rhetorical magnetism of such terms as locality, community, identity, sense of place, etc. – all of which are promised in various fuzzy forms by ecotown developments. The fundamentally counter-local and ultra-mobile tendencies of the modern city fuel growth and choice, but at the same time, aggravate a low-level yearning for something closer to nature and more

human in scale. The stress commonly associated with urban life projects out a collective imaginary in the shape of its opposite: something like a bucolic village, in which life is played out in simple local amity. This projection, the evidence would suggest, is something of a chimaera. The communities that people actively cultivate, when given the choice, are overwhelmingly non-local, and based on commonalities of interest (e.g. book clubs, music groups etc.) rather than place. Geographical proximity becomes the basis for a community mostly only once other options are shut down, and social groups which are actually local in character tend to be populated by the involuntarily immobile (e.g. the elderly, the disabled, those suffering from mental health issues etc.).

Nevertheless, a seemingly irrestible tide pulls urbanites back toward an atavistic fondness for the rustic, and a somewhat fanciful notion of village life. While this struggles to achieve viability in terms of willingly self-contained local environments, it nevertheless exerts considerable market influence. An ongoing natural affinity for localised settings is sustained even when these are used as a base for fully non-local activities. That people will buy into a simulacrum of the local at the cost of an enforced increase in their overall levels of movement (i.e. having to travel back and forth to the “local setting”) has buoyed up the notion of the ecotown well beyond its practical usefulness. Not only this, it has buoyed up the market value of ecotowns, which are for the most part firmly middle-class, and car-owning. Indeed the rather mordant reality of the ecotown is that while bungling in its attempt at local sustainability, it has done rather well on the conventional commercial measures it once aimed to offer an alternative to. In reality, this alternative has proved to be little more than a refinement of the market’s long-standing response to conflicting desires for urban levels of connectivity and localised fuzzy-feel — leafy suburbia.

Clusters of cul de sac low rise positioned judiciously along major roads have proved brilliantly successful — both on measures of popularity and profitability. The promise of pleasant verdant environs has a strong appeal to the anxious but thankfully mobile urbanite. At the same time, low rise expansions along the urban fringe are commercially compelling when compared to the city proper: land costs are lower, the typology is cheap, and planning complications are considerably eased. Thus the speciously local suburb offers the magical profile of low investment and high returns to developers, while simultaneously appealing reliably to some lost intangible among buyers.

But in addition to its pull on these two, there is an important third core to the ropes of cosmetically green suburbia which encircles and hang from urban developments across the UK, and this is the history of English town planning itself. Crucially, the urge for better planning (and indeed the acknowledgement of a need

for any planning at all) originated in a sentiment of visceral repulsion toward the urban. It was the intrepid liberals and philanthropists of Victorian London who ventured into the inner city's East End, and came back bearing reports of such appalling squalor, overcrowding and filth, that initially inspired the town planning movement, and imbued it with an awesome nausea. The starting point was the abjection of the slum: noisome to the senses and offensive to the intellect, in which families lived *like rats*, huddled in all four corners of a single room, humming with pestilence, and busily practicing incest. The sense that the city itself was a force for both physical degeneration and moral turpitude fashioned the response, which was primarily geared toward dissipating this putrescent power. Planning sought to neutralise the urban chiefly by breaking it up with landscaped wedges, and containing it within stipulated green perimeters. The most sophisticated and eloquent example of this, Ebenezer Howard's celebrated Garden City, was at heart a plan to disaggregate the city, motivated by distinctly anti-urban tendencies. It is a mode of thinking which has proved remarkably tenacious.

Garden City-style disaggregation or urban-taming has informed much of the past century of urban design in the UK, from the first green belts through to the ecotowns of today. This has yielded an urban landscape which incorporates much planting (indeed London is 60% green space), but also one which is space-intensive and, given the necessary urban condition of mobility, prone to congestion. The unfortunately sprawling nature of disaggregated urbanism inevitably increases distances, and thereby car reliance, ultimately exaccerbating traffic, and leading to increased transport-related emissions. The criticality of this argument to the sustainability agenda is hard to overstate. The transport sector, led by car usage, is the number one contributor to metropolitan carbon emissions. It is also, now that the domestic and industrial sectors have flattened out, the only one continuing to exhibit strong growth. In addition to the contribution to greenhouse gases, vehicular traffic is equally at the heart of local air quality problems, and is responsible for the majority of urban nitrous oxides and particulate matter, which are reliably linked to human health issues including the development of asthma among children.

The immediate picture for sustainability efforts is therefore bleak. Democratic choice and urbanism itself both demand a departure from the local, and therefore high levels of mobility. Mobility in the context of low level urbanism, as produced by market defaults and consumer predilections, results in car-prone landscapes. Car usage demolishes efforts toward sustainability. A range of tacitly anti-urban approaches to planning serve only to intensify the problem.

So what could happen if we plan differently?

One of the most striking graphs to tackle the issue of mobility within the urban context plots levels of energy usage in private transport (essentially gasoline consumption) against population density. Unsurprisingly there is a negative correlation, with lower densities associating themselves with higher energy usages. What is remarkable however when looking at the data compiled by researchers Kenworthy and Newman of the Global Cities Database is how well-behaved it is. A clean curve of inverse proportionality runs from one axis to the other, along which cities from all over the world fairly well distribute themselves. Irrespective of local climates, cultures, history, wealth levels, traffic systems, taxation measures, tolls and so on, the majority of cities adhere astonishingly well to a single line with respect to these two measures of density and tranport-related energy consumption. Amazingly, if you tell Kenworthy and Newman what the density of your city is — *and nothing else* — they will be able to tell you roughly how much gasoline is burnt up there per capita.

The implications of this are simple: that in truth the amount of driving people do is less an issue of democratic choice — such as may be influenced by mixed-use programming, community efforts at the local level, provision of public space etc. — but simply a function of urban density. The one dictates the other. Hence having identified private car usage as the chief obstacle to enhancing the sustainability of cities, and having further identified urban density as a remarkably reliable determinant of private car usage, the simple conclusion is that the most effective means to improve the sustainability of the city is to build at higher densities.

In a whole host of ways this is no more than obvious. For one, the sucess of public transport, with all its associated sustainability benefits, is necessarily dependent upon density levels. For people to choose the public transport option, a node needs to be positioned near to where they live. The node however is only viable if a certain number of people are choosing to use it. The simple product is that a minimum population needs to be living near the node, and this creates a straight density floor. Similarly with schools, shops, health centres etc., there is again a minimum number of users who need to be located within a certain radius before access by car predominates. Once this happens, the cars themselves start to exert demands upon urban space in terms of roads and parking, and as these expand, the programmatic elements are pushed further apart. A cycle rapidly forms with lower densities leading to more car usage, which in turn generates bigger roads, longer distances, lower densities, and thereby more car usage. A greater proportion of the built footprint of London is given over to asphalt than to buildings — a situation which is globally far from uncommon. Across the world, people frequently award more of their cities to motor vehicles than they do to their homes, shops, restaurants, offices, schools, hospitals et al. combined.

A similar cycle operates with respect to the quality of the public realm. Non-car options such as public transport, walking and cycling all involve direct contact with the external environment, which is invariably vitiated by heavy traffic flows. As the air becomes dirtier and the roads more hazardous, being outside becomes significantly less appealing. Consequently an increasing proportion of people chose to drive. Gradually the voided streets grow to feel abandoned and insecure, and again, the use of the car serves to disencourage the use of anything else.

Conversely, by increasing the density, the feedback loops start to work in the opposite direction. As distances decrease, the diminishing need to drive allows for smaller roads and less parking, freeing up more space for buildings, and therefore facilitating higher densities. The higher densities allow for more public transport usage, alleviating car traffic, and thus making the public realm more appealing. And so on. Essentially, reducing the need to drive reduces the need to drive, just as density enhances the possibilities for density.

These feedback loops create the particular shape of the transport energy-density graph, which importantly is asymptotic rather than linear. Notably, the curve hugs the axes, coming down fast on the vertical, before turning fairly sharply and running away on the horizontal. The point of rapid change, where this turn is made, represents a threshold density. Below the threshold, non-motorised transport becomes untenable. Car usage plucks on more car usage, with the feedback effect driving the the steep section of the curve. As the urban density falls below 50 persons per hectare (pph), more and more energy is consumed per capita in transport. On the other hand, above the threshold density, non-motorised forms of transport become appealing, and car usage falls off dramatically. Again due to feedback effects, within a very short space the majority of trips switch over to non-motorised modes of transport, and something close to a minimum enrgy consumption per capita is achieved. By the time the urban density reaches 100 pph the curve has flattened, and the further fall in energy consumption achieved by doubling or tripling the density is far less significant. This threshold density relates quite explicitly to the point at which the catchment area of a destination, or public transport node, shrinks to a comfortable walking or cycling distance. The precise value of this threshold will be affected by local conditions – comfortable walking distances vary according to climate, and the catchment population of, for example, a school will be influenced by the surrounding demographic. But somewhere between the density levels of 50 and 100 pph, a sea change occurs in behaviour which results in a marked drop in car usage. The concomitant fall in transport energy consumption, and therefore transport energy emissions, brings density to the forefront of the sustainability argument.

Moreover, when crossing this density threshold, sustainability benefits stack up on multiple fronts. Not only does the whole transport sector become hugely more efficient, but buildings do too. No matter how ingeniously green the design, the single residency detached house is a priori the least energy efficient starting typology. Standing alone, it presents the maximum number of facets to the external world, across all of which flows of hot and cold need to be managed. Equally it consumes the maximum volume of building materials, as each wall is serving only one home. Running services infrastructure to individual dwellings is also necessarily heavy in terms of materials, in addition to which the greater distances involved increase frictional losses in transit (especially pertinent to the supply of electricity, where the majority of transit losses are in low voltage cables running back and forth to domestic properties). In contrast, as soon as the higher density solution starts to gather residences together, enormous savings are realised in embedded energy costs, through shared walls and services infrastructure, as well as in running energy costs, through mutual insulation and shorter cables.

Density analysis succintly demonstrates two points: firstly that the single most effective way to further sustainability is to pursue a strategy of compact building typologies. Gathering buildings together is the surest way to make them perform better. Crossing the transport threshold density massively reduces transport energy consumption. Given that buildings and transport are both conditions of urbanism (i.e. they cannot be retrenched or passed over), and given further that transport, followed by buildings, is the leading urban carbon emitter, density becomes the sine qua non of any realistic move toward more sustainable development. Secondly, increasing urban density levels is not something which translates readily to microlevel bottom-up engagement.

The participatory grass roots responses to the issue of sustainable urbanism, in the form of ecotowns, are a sorry red herring to the underlying practical truths. They are at best a pretty aside — a quaint combination of fancy and throwback. At worse they are counterproductive, serving to mask the lack of activity on real issues, while containing the debate at a comfortably parochial level.

In the meantime, the mainstream face of bottom-up democratic engagement with local urban planning issues is characterised by protest against change. Communities for whom local interaction consists primarily of passing each other in cars will suddenly collect together and organise to block further development in their area. The very visible consequence of this is that large patches of unused brownfield land within cities remain untouched, while expansions continue in locations increasingly remote from the urban core. Low levels of density are thus protected where they ex-

ist, and rolled out where they do not. That this runs directly in the face of any cogent approach to improving the sustainability of the city seems to impact neither upon the bottom-up component, which remains instinctively and stereotypically conservative, nor upon the top-down element, which remains reluctant to cross its democratic base with politically unpopular densification strategies. Unwilling to show leadership in a time infatuated with the micro, policy makers and planning offices defer to their local populations. These populations, safeguarded by elaborate consultation requirements over any proposed new development, and faithful to their own basic intransigence, ensure that the underutilised offcuts of downtown amongst which they live remain vacant. However, the need to supply new housing cannot be obviated, while at the same time, popular consciousness of climate change calls for some kind of a “sustainable” response. Thus in a move which falls probably somewhere between the whimsical and the scheming, fresh swathes of greenfield development are approved (no problem with direct democracy there), and, to mollify environmentalist concerns, are presented as the new paradigms of sustainability. It’s a remarkable piece of branding hootspah, which effectively seeks to label the problem as the solution.

That the sustainability debate is dominated by green false friends and slyly retrogressive village ideals, rather than comprehensive plans for urban densification, indicates a serious gap in the thinking. Indeed it points perhaps to a fundamental tension between the market democracies, and the nature of the sustainability problem. Climate change is an ineluctably long term affair. Markets, democracies, and people themselves are however dominated by short term concerns.

The current financial crisis is an excellent example of the inadequacy of the market to navigate larger issues. The enormous macroeconomic imbalances that had been mounting up pre-collapse were well-observed at the time; for the microactors operating within the market place however, they were insufficient reason to reform behaviour or avert a collapse. Indeed, as the boom continued right into the jaws of the bust, the structuring of incentives was all pushing individuals in this direction. A systemic weakness becomes apparent, whereby while microactors are able to realise short term profits from a swelling bubble, and no other larger mechanism is in place, inevitably the bubble swells on until it pops. The analogy of boom-bust economics to climate change is harrowing.

Unfortunately, democratically elected governments are equally systemically weak when it comes to far reaching considerations. Like any organism, political parties want most to survive, and are therefore fixed upon the single electoral period. Primary interests are defined by four year frameworks, while twenty and fifty year scenarios remain eerily abstract.

The long term is thus left largely to the public to arbitrate. However, while the public is excellent at assessing for itself its short term condition (indeed the success of the market democracy is based upon this principle), for its long term perspective it is reliant upon the information supplied to it by a combination of government and media – both of which institutions are necessarily motivated more to please than to inform. On the hot topic of sustainability, stories of new technologies and emotionally green ecotowns are invariably more palatable than proposals for aggressive urban development. And so the gap between the debate and the problem jaggers on. The macrolevel shirks the difficult steps toward densification that probably need to be taken. The microlevel appeases itself with re-using plastic bags and engaging in a little light gardening. What more can it do? For while the dream of a nineteenth century hamlet continues to appeal, the nightmare of a nineteenth century slum still holds the power to appall.

Adrian Hornsby, 23.04.09