New Sustainable Methods in Urban Design

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The Urban STEP

- sustainable town planning through evaluation and participation
- working with repertoires of evaluated town types

Planning is choosing – or should be

Town planning is a tricky word. It can give you, or the layman, a misleading idea about the essence or quality of current everyday planning. It's a hoax. Today's planning praxis is still very much influenced, or dominated, by an 80-year-old modernism and its idea of zoning different functions into different enclaves. This means that it does not deal with real *town planning*, rather, it continues the corbusian formula for creating more *suburbia*, or *non-town* as Dan Solomon put it. The urban debate has repeatedly dismissed the modernistic formula, – but, it seems to survive, not so much because of its strength, rather more obviously because of inertia and lack of strong or clear alternatives.

This article is another attempt.

The modernistic form of "planning" was at first very simple. Life was seen as a set of functions, each function was put in separate zones, traffic in different speed zones, "les 7v" - all neat and tidy. It was green, sunny, but also very aggressive towards the existing towns, "il faut tuer la rue corridor". It was, let's face it, with this "killing the corridor street" a recipe for killing existing towns.

After 80 years we still see the effect.

The paradigm is aggressive, "non-town eats town". The modernistic formula prevails, it has developed into an elaborate collection and inventory of facts, figures, buffer criteria and restrictions.

Much of the sustainability debate seems to get trapped in the same pattern of just adding new "functions", new restrictions and proposing larger buffer zones. With the implied assumption that if you make the inventories and processes ever more elaborate, you will avoid all disadvantages and then at the end get some sort of "sustainable town plan" falling out from this "process". It normally doesn't. Instead, this still modernistic method tends to give you modernistic zoning into enclaves for living, working and services. The enclaves are enclaves in spite of cute marketing labels, such as eco-village, garden town, office park.

This is far from the real urbanity that people would normally expect, prefer or demand when we talk about "town planning".

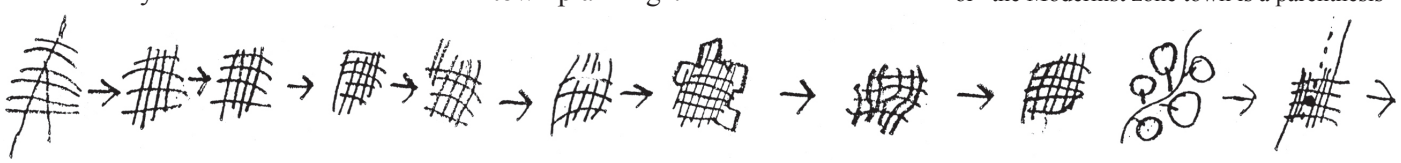
Caption 1 MidSweden University, 1997, by ARKEN Arkitekter AB. A university within a town structured as a town, with blocks, alleys, squares and quays. The Urban STEP method encompasses all functions and encourages mixed use.

There is an alternative method – "planning by choosing" – we call it 'the urban STEP' a method that changes the paradigm

This article suggests that we should move away from modernistic enclaves and "restriction plans" and move to "attraction plans" based on a broad evaluation of the town and village types that mankind has developed over the centuries. This method will help us move from meek planning of more suburbia to real planning for real towns.

The method is empiric. Instead of modernism's "New Town for the New Man" it evaluates the *performance* of settlement types, including, of course, also the modernistic "bubble plans" in the broadest way possible. It then forces you to choose: which types should we build more of and which types should we avoid.

Caption 2 Quiz: Picture puzzle Answer: "Swedish towns over the centuries", or "the Modernist zone town is a parenthesis"



Thus, evaluating performance is the **E** in the STEP method. The other key factors are:

- **S** for Sustainability,
- **T** for town types,
- **E** for evaluation performance, and empiricism
- **P** for participation.

There are several other important elements, of course, but S, T, E and P are corner stones, or keys for this door into real planning for real towns and real villages.

An evaluation of town and village types is in many respects subjective. And yes, subjectivity is a problem if plans are based on one subjectivity of one planner or one politician, whereas subjective evaluation is relevant if it sums up the subjectivities of a group or society concerned. And that is the crux of the evaluation we propose – we have evolved a value rose to assess different settlements' sustainability in a broad sense: ecological sustainability, of course, but also economic sustainability, social sustainability and physical/technical sustainability.

The value rose has turned out to be an efficient explanatory tool in the participation process. It offers a vocabulary that can be understood by both professionals and laymen, it helps you keep the many issues and aspects alive throughout the discussion.

To get a reasonable overview of the hundreds of factors involved in a sustainability analysis (fig 3a), we have summarized and grouped them for use in the value rose as shown here (fig 3b). With 0 (or 'bad') in the centre and 100 (or 'perfect') out at the edge, a value rose can be easily constructed for a town as a whole or for different districts. The indicators chosen around the circle in this value rose are, as mentioned, subjective to some extent. However, we have found that in our extensive use of this method, significant trends do occur and choice patterns seem to favour sustainable settlement types. Luckily!…

The users of this technique are of course free to add more variables, if desired. We have limited them to four headlines and twelve spokes for the sake of keeping it handy.

The indicators or variables shown in our value rose here are:

ecological sustainability, for instance:

- ❑ green corridors for animals, plant species and wild life
- ❑ green spaces for the enjoyment and recreation of man
- ❑ capacity for cultivating "in your back yard"
- ❑ local recycling
- ❑ access to daily needs within walkable distances

economical sustainability, for instance:

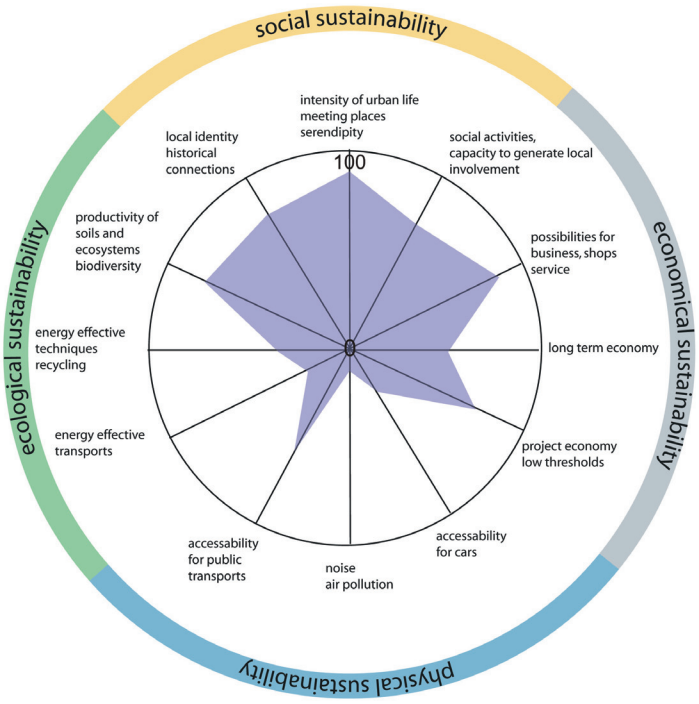
- ❑ capacity to generate local shops and businesses
- ❑ long-term economy in a national perspective
- ❑ project economy for an investor
- ❑ small investment thresholds

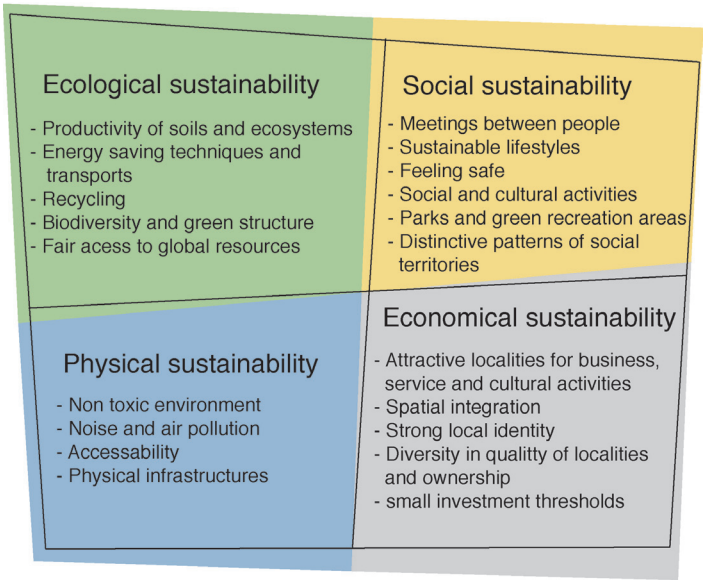
social sustainability, for instance:

- ❑ urban intensity - performance as a meeting point, serendipity
- ❑ local or unique identity – as opposed to anonymity
- ❑ capacity to generate local involvement and participation

physical sustainability, for instance:

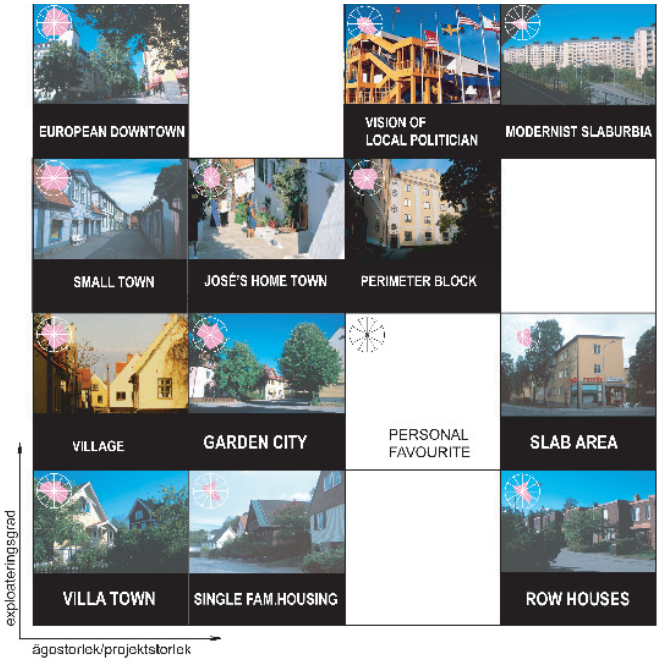
- ❑ public transport accessibility
- ❑ car accessibility
- ❑ security, safety
- ❑ noise and pollution levels

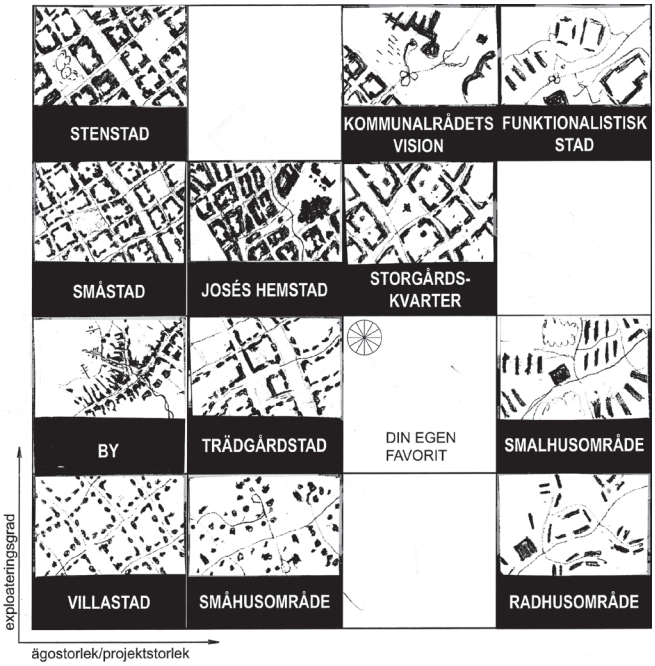




Caption 3b (above) Value-roses facilitate a transparent evaluation of different town and village types. This value-rose assesses sustainability in a broadened sense, ecological, economical, social and physical. The reader is free to use other variables if he or she so prefers. The point is that the value-roses are efficient as a basis for evaluation and makes it easier to keep many issues of debate of the debate alive throughout a discussion.

Caption 3a "Sustainability on four legs". Lists of aspects and programme criteria can be endless. To facilitate use we have grouped important aspects together as pokes of the value-rose.





Caption 4a Matrix of town and village types – as photos

In this matrix the town types are sorted according to density, vertically, and ownership/ project scale, horizontally. With these axes a remarkable clustering of agreeable variants of "the European town" takes place in the left, from sparse villa blocks, garden towns and villages up towards small towns and downtown blocks. All these types are useful when you want to build "more real town". And they all differ from the different types of suburbia that can be seen to the right in the matrix. The value-roses in the upper left corner of each box indicate sustainability performance.

Caption 4b Matrix of town and village types – as maps

Corresponding plans show blocks and street patterns. Preferred town types tend to be grid patterns as opposed to the suburban enclaves based around cul-de-sac patterns.

Use the value rose on the town types around you

It turns out that this broadened sustainability perspective makes the value rose into an efficient tool. It shows that there exists a broad palette of sustainable town and village types at hand for complementing your town or village. Fig 4a/4b shows a matrix of town and village types from a northern European context – with value roses at the upper left corner.

The value rose assessment clarifies other important observations:

- one quality is not necessarily detrimental to the others, there are town types that give reasonable balance between the different qualities and demands
- no town type or village type has maximum fallout on any of the spokes,
- there are value roses showing well-balanced town types at different densities
- grid plans perform better than cul-de-sac plans
- large scale projects and large scale ownerships tend to give weaker performance
- very sparse projects tend to give weaker performance
- over-emphasizing one aspect can lead to forgetting other aspects
- a Scandinavian perspective implies that "the European Town" has a wonderful array of examples in the Nordic scale - the Nordic pre-modernistic wooden towns and small towns are dense enough for urban qualities and sparse enough for the green capacities.

Sustainability is a relevant, but by now also a commonly misused word. As indeed most buzz words tend to be. This 'Urban STEP' method still maintains that sustainability in the broadened sense gives the most relevant criteria for a broad evaluation of our settlements and societies. And it reminds us of time.

The value rose has two more qualities. It gives overview, and it is a good metaphor for a round table where different stakeholders or lobbyists can face each other, see each other's viewpoint and by listening to each other can find mutual qualities that work over time. And so it works. 'Presence of all', the actual sitting around a round table, which is a part of the STEP method, promotes openness, openness promotes a public behaviour and the kind of responsibility that history and thinkers like Kant and Kirkegaard has taught us.

Caption 5 Participation needs tools. The Urban STEP method promotes round-table work with house or block models on ortophoto maps of the site in question. This has turned out to be more efficient and more creative than regular workshops, charrettes with pencil and sketching-paper, 3D modelling etc… People around the table can vary, professionals and laymen, neighbours and politicians, all are welcome. A good round-table is also a representation of the aspects indicated in the value-rose.

Start by putting together a matrix of town types and village types of your region

Creating a matrix can at first be an intuitive scanning of places that meet our needs and dreams. One way is to ask the group to lean back, close their eyes for two minutes and visualise the town or village of their dreams, and how it will look for their children and grandchildren. The result is often creative.

Planning in this sense means choosing what kind of town, or what kind of urban types you want to build more of. And which settlement types you need less of or should avoid completely. It does not deal with dBA, FAR, minimum this and maximum that…

The matrix illustrated here has been used in Scandinavian contexts. In different regions and countries it can and should be adjusted accordingly. Keep empty boxes in the matrix open for new types arising during the discussion. The photos in the matrix (could be postcards, clippings or private photos) can be put randomly, or, as in this matrix, with the x-axis indicating density and the y-axis indicating scale of ownerships and project.

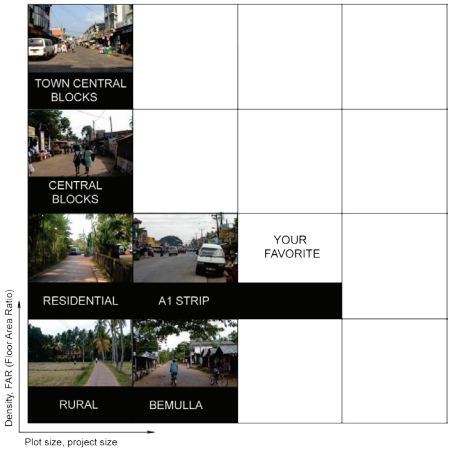
There are a lot of urban "town types" and "village types" to choose from – now double-check your spontaneous choice with a responsible sustainability evaluation

Different town types have different set-ups of advantages and disadvantages. The matrix depicts this aspect of *performance* in value roses in the upper left corner of each town type. Feel free to make your own value roses in discussion with all concerned. Then make a second choice! Ask people to circle preferred types and strike out those types they want less of.

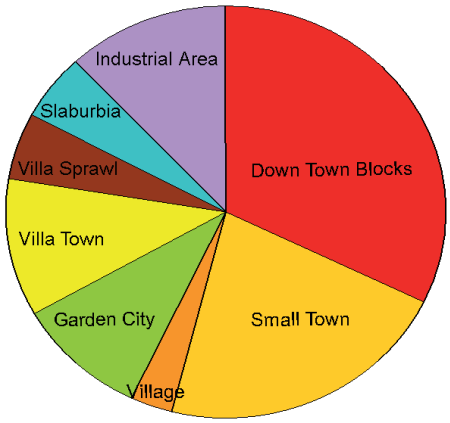
The matrix has other tasks: it helps you turn the attention away from the level of *house types or style* up to the level of *town types and morphology*. It helps the laymen and the planner to perceive and remember the qualities that come with scale, density and grid system, with the "life between the houses" that Jan Gehl has pin-pointed so well.

If a choice is made after an empirical evaluation with this broad spectrum of sustainability factors our experience has shown that town grids with moderate density give good urban performance. It's sustainable. In contrast, the segregated zoning of uses into different 'bubbles' produces weak urban performance, ie it's also poor in sustainability.

As said, this text uses a Scandinavian matrix of urban types as an example. Testing the matrix in Sri Lanka with Srilankan town types gave similar evaluations. With the X- and Y-axes used as here we found good performances on the left hand side of the matrix, in Sri Lanka as well as in Scandinavia. In the left part there are varying types and densities available. You will also notice that you have good, or even the best, performance among the traditional urban characters. Not for all, but for most people. This observation will lead you to the next step.



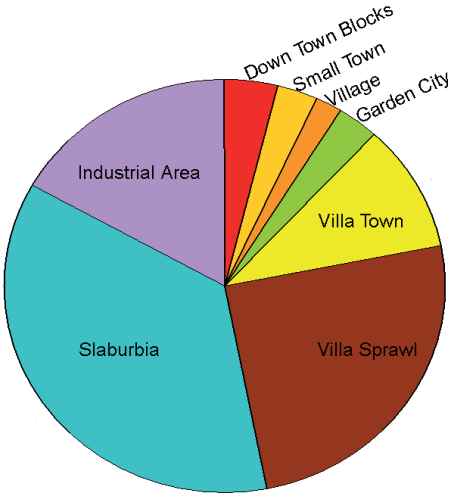
Caption 6a and 6b Matrix of Sri Lanka and Gampaha. blablablabla



Caption 7 Town type bouquet

A circle diagram that shows the distribution of town types within your town helps you understand which types could broaden the repertoire and enliven the mix that is so crucial for urban life. Do we have a repertoire of "urban arenas" for different life styles? Do we need more of some town types?

Mixed grid types are better than single-use enclaves, of course, but a "mix of different mixes" is also crucial. Mixing is the motor of synergy. Small scale alongside bigger scale, fancy along bohemian, differences in tenure, colours, form, architecture. Boring for one can be an oasis for another. This is the serendipity you can get with "a bouquet of town types".



A good town is a sum of different town types – therefore enliven your town by creating a bouquet of town types

In the next step consider the town types already existing in your town and how a richer bouquet of town types can be accomplished. People have different needs and preferences and there are different town types to make the repertoire more varied and your town more versatile and synergetic. There is no such thing as *the* best type. In fact, it turns out that urban life seems to bloom where differences meet. Where small scale meets bigger scale, fancy meets bohemian, different forms of tenure, ages, architectures, etc etc.

The town and village types method encompasses all functions

Modern post-industrial workplaces can be mixed into the town fabric. The old industrial workplaces were large-scale, noisy and polluting. Therefore there were some grounds for zoning in the days of early Modernism. But for most workplaces it is not so any more.

Modern post-industrial work places and services can be mixed into the ordinary urban fabric and street grid. Most of them. Somewhere around 90% of them. All it takes is the clever design of a differentiated street grid.

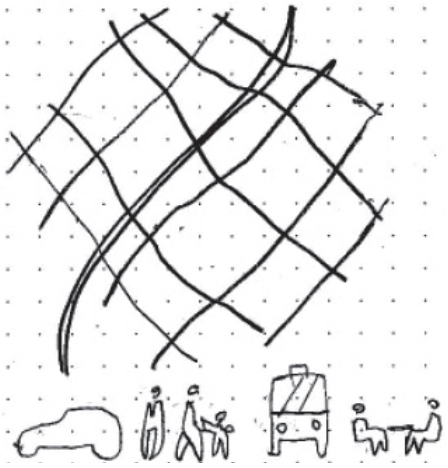
The value roses give clear evidence: the grids facilitate mixed use and therefore support urban performance. "It's easier to open a corner shop in the grid than it is at the cul-de-sac".

Grids give synergy and urban life – enclaves kill it

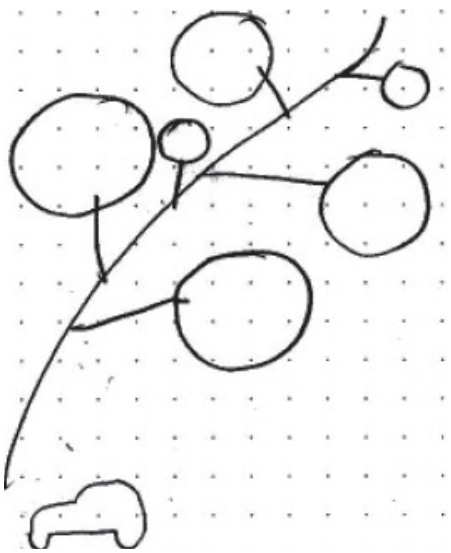
Real towns are formed by streets and blocks, the elements of moving and staying around. The grid is robust. If you take away a block you get a square, if you take away another block you get a park. This simple "urban DNA" is indeed simple. The virtues and delicacy of a good plan lies in finding and upholding the balance between streets, block, squares and parks. The balance can also be seen as a balance between two basic urban elements, the element of staying and the element of moving around. This balance is so tricky that the best formula is not a formula but a keen observation of urban empiricism.

The conclusion of such observations is that urban grids work well in a broad spectrum. AND: another conclusion is that in a way the traffic – or the element of moving – is both the upper and lower limiting factor of a well functioning urban fabric. The denser the blocks the closer you come to getting a jammed street or streets turning into barriers instead of arenas for street life. On the other hand, the more sparse the blocks get, the closer you come to loosing the basis for good public transport. From this perspective, we learn that traffic is "both ceiling and floor" in the urban equation.

Caption 8 MidSweden University, 1997, by ARKEN Arkitekter AB. A university within a town structured as a town, with blocks, alleys, squares and quays. The Urban STEP method encompasses all functions and encourages mixed use.



Caption 9 Grids – should be differentiated, but not plain hierarchical or dendritic like a tree, as in the "7v" of modernism. Grids with proper filtering encourage local business - cul-de-sacs kill local business.



Public transport should be the main arteries

With empiric evaluation we will also observe that towns need public transport as main arteries. In larger settlements the element of moving will otherwise ruin the street as a key element of the urban DNA. Traffic amounts or speeds destroy the street as arena for other activities. This already occurs in low densities such as American suburban sprawl.

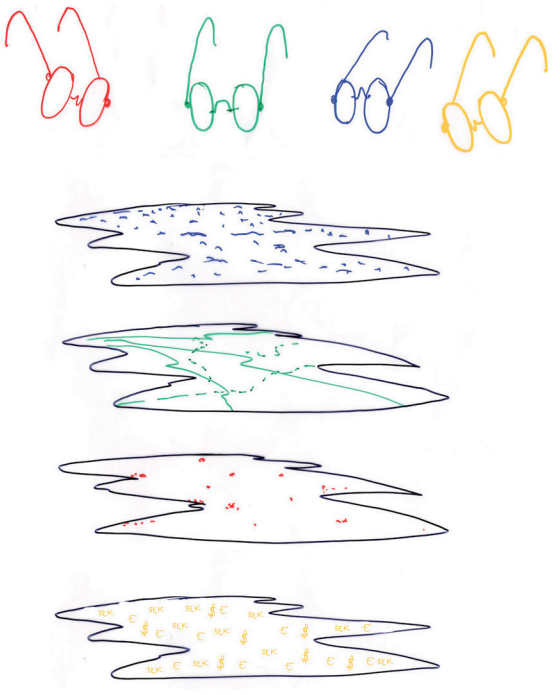
Ill advised traffic planners, architects and politicians at time still lead the public to expect that there is some short cut close to Corbusier's fake promise of "a town built for high speeds is a town built for success". 70 years of empiricism shows otherwise. Jan Gehl has illustrated this very clearly in his discussion about the 5kmh-town vis-à-vis the 70kmh-town. The 70kmh-town tends to be suburbia, i.e. sub-urbs more than urbs. Always.

Sustainability in regional settlement patterns - a STEP method using the "four glasses"

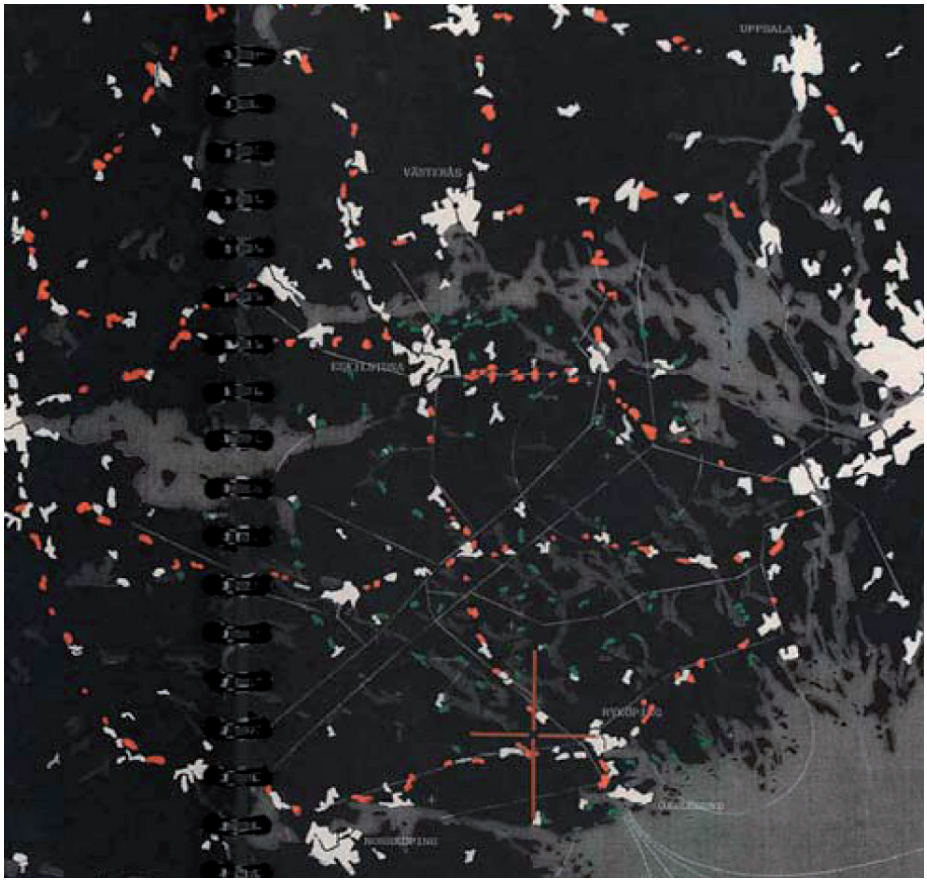
Towns and villages grow. They add up to regional patterns, or "settlement types", a notion that comes in handy when evaluating how the urban growth meets the rural landscapes. Such growth can explode as sprawl or find sustainable patterns.

The value rose works well as a tool to make assessments of the very different patterns that come from car-based amorph patterns and public transport-based linear or oblong patterns.

A matrix of sustainability in regional settlement patterns has not yet been seen. The value rose can work as a tool for assessing existing conurbations. But for creating sustainable patterns, empiricism gives little support. Therefore, a method close to "The Urban STEP" has been tested in regional studies close to the Swedish and Finnish capitals. It's nicknamed "the method with four glasses" and is very close to the four headlines of the value rose. See fig 7.



Caption 10 The "four glasses method". Observe your region with red, green, yellow and blue glasses. Lust, responsibility, local culture and money…and then check where they coincide.



Caption 11 A sustainability-based pattern for the Sörmland County south of Stockholm, derived through the "four glasses method".

First example is Sörmland county, Sweden. Act like this:

1. View the map of your region, Sörmland in this case, with the "glasses of lust"; you will see sites close to the shoreline, beautiful landscapes, mountaintops with views, islands of one's own. Then, change glasses:

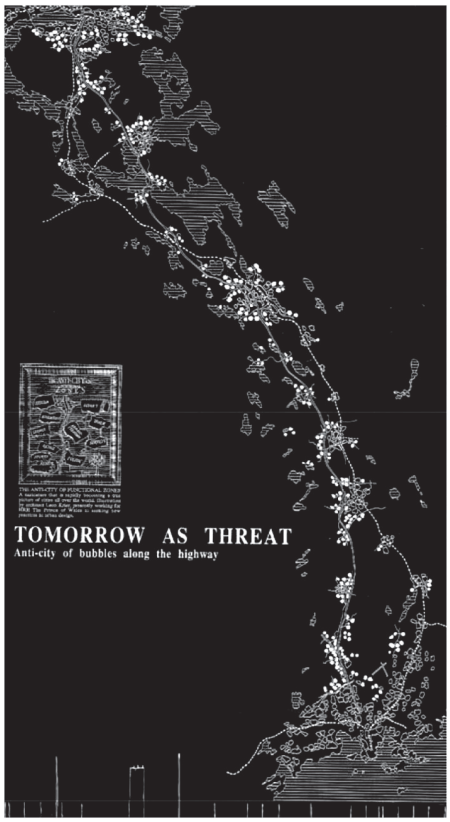
2. View the map of Sörmland with the "glasses of responsibility"; you will see communications lines, existing bus routes, potential train tracks, railways that have been closed. Now, change glasses again:

3. View the map of Sörmland with the "glasses of local culture"; you will see places that give the local spice, villages, a shut down mill, cute towns, an abandoned church, the legacy that earlier generations built, created, generated and left to us to enjoy. Then change glasses again:

4. View the map of Sörmland with the "glasses of money" or the "glasses of the entrepreneur"; you will see where it is possible to make money, run businesses, and start developments of all kinds.

5. Put these illustrations together and see where they coincide. A twinkling galaxy will come forth, showing corridors for both urban and green patterns. (See fig 8.)

The County Administration's book of inspiration recommended that the value rose and the analysis with four glasses constitute the basis for a sustainable pattern of growth at the larger, regional scale.



Caption 12
The Helsinki-Tampere axis. A vision with oblong linear grid patterns along lakes and public transport as opposed to a threatening perspective of Modernism's bubble town sprawling along the highway.

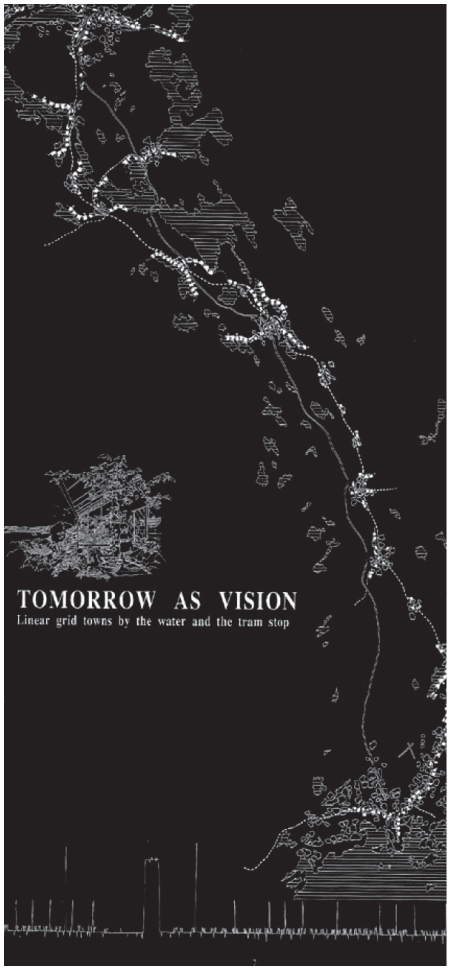
Second example is the Helsinki-Tampere axis, Finland

This corridor could illustrate a showpiece for sustainable urbanism. A new urban corridor between the two towns is evolving. But what will it be like? It can turn either way.

A vision with oblong linear grid patterns along lakes and public transport as opposed to a threatening perspective of Modernism's bubble town sprawling along the highway. See fig 9a/9b.

The Urban STEP offers real Participation – a hands-on method with town-types, models, orthophotos around the round table

The Urban STEP has been tested extensively in a Scandinavian context and once in a Srilankan urban corridor project. It is similar to a regular workshop or an American charrette. But it also tries to get one step further in realizing real democratic participation and bottom-up planning. It is based on six tools:



Tool 1
The notion of Town types offers a vocabulary and a mental tool kit that is open to all.

Tool 2
The matrix reminds us of the wide scope of settlement types that generations have developed, and is also open for individual additions

Tool 3
The value rose offers a broad perspective of evaluating sustainability and performance of this urban heritage as well as new ideas coming up during a workshop.

Tool 4
The round table where all stakeholders are invited to take part, both in listing evaluation criteria and discussing which town types should be favoured or avoided.

Tool 5
The focus on choice, based on empiricism, and thereby accepting sets of advantages and disadvantages

Tool 6
Hands-on layout with model houses or model blocks on maps and orthophotos is fun. Workshops around the round table together with the other stakeholders tend to increase mutual understanding. The fingertip contact is more realistic and creative than working with pencil and sketch paper / butter paper where the architects tend to take over, or participating in working groups listing "programme points" that tend to be wishful request lists

Tool 7
Real time communication. Input and feedback before and during the creation of the town plan. For the professional town planner these tools and the workshop give the basis not only for a well-rooted town plan but also a quick method of getting an abundance of ideas that would otherwise not occur.

No methods give guarantees for success. But this Urban STEP Method has proven to bring seemingly hostile parties closer and to take part in forming a development that bear the fingerprints of many.

Instead of the current system of sending out consultation material for scrutiny and comments, the Urban STEP method is an invitation to take part, hands-on. Instead of receiving angry letters à la "find five faults", the town planner has real cooperation with real people, co-authors of a mutual future.

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