**City and Environment – Visions for 2030***
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**Summary**
Cities are responsible for the lion's share of anthropogenic environmental change. Programs for reducing these anthropogenic impacts have often been proposed, and have proven themselves in exemplary cases. Nevertheless, the impact of cities on the environment is increasing. What this would mean for the cities themselves is shown here in a prognosis for the year 2030. In contrast and for comparison, we also present a vision for the year 2030, in which environmental protection measures have been implemented by the cities. And finally, we list the measures necessary to bring future urban development onto a more ecoconsistent course.

## There is a Great Discrepancy between Knowledge and Realization of Environmentally Compatible Urban Development

Cities have, to a great extent, decisive influence on the environment. The type of buildings, of the infrastructure, of the green space, as well as the emissions due to traffic, domestic fuel, and the local industry affect the urban environment quite markedly. Further, the diverse trade relationships between a city and its surrounding communities lead to long-range environmental impacts. An example would be the transformation of a floodplain into an artificial lake as a result of the urban demand for gravel for building construction.
The most serious negative effects which cities have on the environment are caused by the intensive consumption of fossil fuels for transportation, heating, and construction, the incessant expansion of the area built over at the cost of open space, the enormous consumption of resources for new buildings, and the damage caused by noise and pollutants indoors and in the metropolitan area.
It is surprising that, in spite of comprehensive knowledge of the means of avoiding these negative effects, as well as numerous programs (ExWoSt, Best Idea Contest Stadt 2030 [The City 2030], Bauen und Wohnen im 21. Jahrhundert [Building and Living in the 21st Century], 100.000-Dächer [100,000-Roofs] program), pilot projects (*öko*Budget® [*eco*Budget®]), and demonstration objects (the models of Kronsberg or of Vauban, IBA [International Building Exposition] Emscherpark, Solarfabrik [Solar Factory] Freiburg, the Wuppertal House), the environmental stress caused by cities is increasing instead of diminishing.

## Trend City 2030 Promotes Land Use and Social Segregation

If the present system of urban development were to be continued for the next 29 years, this would produce the following results:

- Due to the incessant spread of the settlement area, the area of the open countryside has been reduced by 1,300,000 ha. This open space was lost primarily in the communities surrounding the cities.
- The unchanged orientation on planning purely residential and purely business zones has raised the number of automobiles per 100 inhabitants to 84, has greatly increased the number of kilometers driven per inhabitant, and has considerably increased the area built over for parking.
- The construction of gigantic shopping centers in the open countryside drew purchasing power out of the municipal centers. This has led to an accumulation of considerable economic problems in some municipal centres and central districts.
- Old quarters in disadvantageous central or peripheral locations, which have an unfavourable distribution of living space, fall gradually into disrepair. Low-income groups concentrate themselves in these quarters. Social segregation, with the development of

social “hot spots“, begins. This prompts the higher-income inhabitants to move out of these neighbourhoods, and into new housing projects in the surrounding countryside. This increases the pressure for a further expansion of the settlement area.

**The Ecoconsistent City in 2030 Uses Natural Resources Sparingly**

- Increased internal development leads to the use of not more than 420,000 ha of open space in the past 29 years within the ecoconsistent city’s limits. These settlements arose primarily along the route of the rail bound public transport systems.
- In the railroad stations and other traffic junctions in the city, there are mobility (advice) centres, bicycle rental shops, and car-sharing stations.
- An efficient, well-scheduled and economically attractive public transport system makes stress-free metropolitan mobility possible for all of the inhabitants.
- Alcohol- and hydrogen fuels are also sold in gas stations.
- Cities are connected to one another by efficient, competitive, and economically attractive rail bound transport systems.
- The single-purpose settlement areas of the 70’s, 80’s, and 90’s in the suburbs are, in building and planning law and in actual fact, being gradually diversified by a stronger mixture of uses.
- Every city has plans and concepts for bicycle traffic, and in every street in which there is enough room, there are recommended cycle paths.
- Roughly 10% of the existing buildings for which no renovation with the aim of – at most – 10-liter heating energy consumption per $m^2$ and year was possible, and for which no considerations of city planning nor historical monument protection stood in the way, have been torn down and replaced by houses heated by solar energy.
- The stock of residential and office buildings has been brought to 50% to a 7-liter standard, and to 10% to a 3-liter standard. Flat roofs and those with a low inclination have to 40% either been planted over or used as recreational or as energy production areas (with solar collector panels).
- Roughly 50% of the churches, 80% of the administration buildings, and 70% of the railroad stations have been equipped with solar collectors. These are, for the most part, not installed on, but integrated into the roof. And more and more buildings use parts of the facade and the windows for solar energy production.
- The municipal demand for energy is filled to 30% by block heating and generating plants. They are driven primarily by biomass from the surrounding region.
- As a matter of principle, materials made of renewable resources from the local region, and free of noxious substances, are used for new buildings as well as for extensions and alterations.
- Internet-based recycling and exchange markets (swap shops) make an optimal practical, material, or energetic re-use of goods and buildings possible.
- Several residential areas have been equipped exclusively with composting toilets. The excrements are used as fuel, and – if they pass the quality control – as fertilizer.

**In Order to Promote Ecoconsistent Urban Development, Various Measures Are Necessary**

Initiation of ecoconsistent development was possible only by means of a bundle of measures:

- Taxes and fiscal charges on human labour were reduced, and those on energy and resource consumption were raised.
- State subsidies and tax allowances were reformed, so that the use of existing settlement areas within the city is more profitable than new building projects in the open countryside.

- The financing systems of the metropolitan areas and of the surrounding communities were modified, so that the prices of land were equalized.
- Impediments against moving to a new dwelling, e.g., taxes on the sale or purchase of residential property, were reduced.
- Budgetary possibilities for better consideration of ecological concerns in extending or rebuilding administration blocks were opened.
- In the cities, comprehensive environmental management systems for the entire city, such as *öko*Budget® (*eco*Budget®) had been introduced.
- The metropolitan and intraregional integration of markets and commerce was encouraged.
- Participative elements such as the Local Agenda 21 were integrated into the daily work of planning and of preparing decisions.

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