Planning for High Density – A Contribution Towards Sustainable Urban Areas? Targets, Parameters, Perceptions

International Urban Planning and Environment Association
12th International Symposium on Urban Planning and Environment
1st UPE Lusophone Symposium

UPE 12 Symposium
CITIES FOR US
Engaging communities and citizens for sustainable development
‘High densities? Yes, please – but …’

- **reduced land take** required per dwelling unit – future opportunities.
- **environmental benefits** – saving habitats, open space provision etc.
- **economic benefits** - a high number of dwelling units can reduce the cost of buying or renting considerably as the proportion of the land cost is reduced.
- Presupposition for efficient road **infrastructure provision** and access.
- ditto: technical infrastructure such as sewers.
- high population densities allow **efficient supply of goods and services**, provision of social infrastructure, public transport facilities etc.
- Combined with mixed use developments high densities can help to increase **walkability** and to **reduce car** traffic within neighbourhoods
- ‘**Town cramming**’ should be categorically avoided – NIMBYism etc.
- (Personal) **perception of density** varies hugely.
- Questions about **human scale, the quality of public and private open space** provision and **sufficient privacy** have to be answered.
- **Mix of uses** …

Case Study –
High Density Brownfield Development

Hypothesis:
‘There is a distinct (negative) correlation or causality between realised building densities and the density perception of inhabitants as well as their perceived quality of life.’

Objectives:
- In depth analysis of planning for high density in large scale urban developments,
- the realisation of densities and
- perception of inhabitants.
- Identify positive effects as well as problems of high densities in practice. In order to learn for future planning and development tasks…

Methods:
- Analysis of literature and planning law
- Desktop studies
- Household survey (personal interviews)
High Density Urban Extension

Source: Stadt Ostfildern, Ganser 2015
Density Parameters Binding Land Use Plan

Source: Stadt Ostfildern, Bebauungsplan Scharnhauser Park Teil 6, 2000

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Impressions
Impressions
Planning Versus Reality

Privileges and incentives at work …
Planning law permits deviations from density parameters within certain limits.

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Density Perceptions – Importance of Size of Private Open Space

- Very important: 29.3%
- Important: 53.3%
- Partly: 11.3%
- Not so important: 6.0%
Perceptions – Density in Neighbourhood Street

Ordered by:
- footprint
- site ratio

Source: Ganser, 2015
Perceptions – Density of Entire Development

Ordered by:
- footprint
- site ratio

Source: Ganser, 2015
Density Perceptions – Satisfaction With Own Home / Residential Environment

- Very satisfied: 54.7%
- Rather satisfied: 34.0%
- Partly: 6.0%
- Unsatisfied: 2.0%
- No answer: 0.7%

Source: Ganser, 2015
Density Perceptions – Satisfaction with Privacy Inside and Outside (Private Balcony / Garden)

Source: Ganser, 2015
Density vs Privacy – Difficult Dichotomy

- Satisfaction with privacy lags behind other indicators of satisfaction (own home, size of own home, quality of neighbourhood ...)
  - No distinct correlation between specific density parameters and satisfaction with privacy
  - Likely influence of building types ...
Perceptions – Satisfaction with Quality of Life in Neighbourhood / in Entire Development

Source: Ganser, 2015
Conclusions and Outlook

- Falsification of hypothesis – there is no clear correlation between built densities and
  - Personal perceptions of density
  - Perceived quality of home
  - Perceived quality of life
- Substantial variation in perceptions of inhabitants across different neighbourhoods
- (Perceived) Privacy (most) difficult to achieve in high density developments
  - Building types and layouts likely to have influence
- Individual opinions in line with survey results
- High building densities can offer high quality living environment and quality of life
- Quality of planning documents, layout, buildings, infrastructure, open spaces appear to be of crucial importance
- Potential influence of ownership proportion on perceptions …
Questions?
Density Definitions and Targets

**Building densities vs population densities**
- Population per hectare (km² etc)
- Dwellings per hectare (dph)
- Building footprint – site ratio
- Floor space – site ratio
- Number of storeys

**Quantified Targets**
- To ensure efficient use of land (e.g. min. 30 dph)
- To ensure healthy living and working environment (e.g. max. floor space – site ratio)
Density Perceptions - Built up Area vs Open Space in Neighbourhood

Ordered by:
- footprint
- site ratio

Source: Ganser, 2015
Density Perceptions - Built up Area vs Open Space in Entire Development

Ordered by:
- footprint
- site ratio

Source: Ganser, 2015
Density Parameters Binding Land Use Plan

Source: Stadt Ostfildern, Bebauungsplan Scharnhauser Park Teil 5, Änderung, 2014
Perceptions – Density in Neighbourhood Street

Ordered by: floor space

Source: Ganser, 2015
Density Perceptions – Individual Opinions

- Overall very positive connotations
  - Largest cluster of individual opinions (42) focus on high quality of life and good neighbours
  - Large cluster (21) with positive connotations on density and urbanity
    - Several suggestions of qualities which are central to the leitmotif of garden cities or urban villages
- Smaller cluster (13) with negative references to density
- Core problems linked with density: car traffic and parking
Survey indicates higher satisfaction with private open space / gardens than with shared / communal spaces.
Impressions – Public Spaces

Photos: Ganser, 2015

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Perception of Public Spaces

- Residential street: sehr ansprechend 55%, ansprechend 23%, teils/teils 8%, nicht ansprechend 1%
- Public square: sehr ansprechend 34%, ansprechend 26%, teils/teils 10%, nicht ansprechend 5%
- Landscape stairs: sehr ansprechend 45%, ansprechend 40%, teils/teils 11%, nicht ansprechend 3%
- Play/sports areas: sehr ansprechend 45%, ansprechend 41%, teils/teils 8%, nicht ansprechend 3%

→ very attractive, attractive, partly attractive, rather unattractive, unattractive

Photos: Ganser, 2015
Conclusions and Further Research Questions

- Considerable variation in perception of public spaces
- High approval ratings of large green spaces indicate that they contribute to perceived high quality of life
- Ditto: contribution to image of development / neighbourhoods
- How can communal spaces be improved?
- What can we learn from private spaces / high quality public space?
- Even higher densities conceivable if adequate open spaces are provided?