

# Affordable Housing in High Rise Buildings?

- Questionnaire from the City of Zurich, Switzerland

by Agnete Skytte, CEEC delegate for Maneco Switzerland



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## What happened?

The management of the building department of the city of Zurich visited **Rotterdam** and were surprised that social housing was provided in high rise buildings!

They came home and asked Ian Jenkinson, Head of Project Economy in the City of Zurich:  
- why can we not achieve this?

Ian Jenkinson approached Agnete Skytte, CEEC delegate from Maneco Switzerland, to conduct the questionnaire.



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## Zurich build social housing with following constraints:

- Maximal limit for “building costs” (purely construction of the building) per apartment (2 room, 3 room... etc.)
- Maximal limit for “total costs” (meaning with land + everything else) per apartment
- Minimal size in m2 for each type of flat/apartment
- Maximal limit to m2, height, length etc. on piece of land (according to zone plan regulations)
- Rarely more living m2 in high rise than in “normal” building  
(low surface efficiency due to need of circulation area, fire regulations, technical requirements, static necessities etc...)
- the land costs / apartment do not become cheaper as you build more....



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## ■ Questions to be answered by the members of the CEEC:

1. Are high-rise buildings in your country in general more expensive to build than "non-high-rise buildings"? (If yes - approximately how much more expensive and why?)
2. If they are more expensive, is it a problem in your country to build high-rise buildings for "affordable housing"?
3. Has there been any studies in your country on this subject?



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## Replies from the following countries were received:

- Netherlands: «High Rise Costs», study from University of Delft
- Germany: 2 newspaper articles
- Spain: Statement based on analysed data
- United Kingdom: Data on costs per m2 in relation to number of stories (housing, public housing and offices)
- France: No data received – due to social problems in existing high rises with affordable apartments - these are rarely built anymore...



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## Summary by Ian Jenkinson:

### Netherlands

- The main cost driver is the number of stories: 8% per 10 stories
- Main factors are: foundation, static means, facade, technical installations, lifts, efficiency of the ground plans, logistics

### Germany:

- As of 22 m height the costs per m2 rise due to fire protection and other regulations.
- High rise buildings are for premium housing - not for social housing

### Spain:

- Additional costs of 10% between 10<sup>th</sup> and 20<sup>th</sup> stories, approx. 20% as of the 20<sup>th</sup> story is plausible

### United Kingdom:

- Additional costs of 12% as of 8 stories or more (public housing – building costs, excluding external works, preliminaries and contingencies)



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## Conclusion by Ian Jenkinson:

Additional construction costs in high rise buildings: **approx. +10% to 20% (without land costs)**

The additional costs originate from the three areas:

- Technical measures
- Regulations
- Efficiency



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## Conclusion by Ian Jenkinson:

### Technical measures

- Sanitary installations (additional measures due to pressure issues)
- Ventilation (additional measures due to pressure issues)
- Façade, windows and sun protection (additional measures due to wind pressure and accessibility)
- Additional static measures
- Logistics



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## Conclusion by Ian Jenkinson:

### Regulations

- Fire protection (walls, doors, slabs, façade, shafts, technical installations)
- Fire proof materials
- Air pressure in stairwells (Air locks, doors, ventilation installations, smoke / heat flaps (openings))
- Number of stairwells and lifts (fireman lift)
- Electrical installations (fire proof, weakening of the fire section)



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## Conclusion by Ian Jenkinson:

### Efficiency

- The ground plans have less usable area
- Higher space requirements for installation shafts
- Higher space requirements for circulation area (stairwells and lifts)



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## Conclusion by Ian Jenkinson:

### Land costs and profitability

- In countries where it is possible to build more with a high rise building (exploitation) and the costs of land are high, a high-rise project can become more profitable at a certain point though (higher yield possible do to attractive location and doesn't apply for social housing)



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**THANK YOU VERY MUCH FOR PARTICIPATING!**

- Isn't CEEC a wonderful thing?



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