

City of the Future Constance: “Future City” – Quality instead of Square Meter

Sven Dübner, Lukas Esper, Felix Stroh

(M.Sc. Sven Dübner, Fraunhofer IAO, Nobelstraße 12, 70191 Stuttgart, sven.duebner@iao.fraunhofer.de)
(Dipl.-Ing. Lukas Esper, Amt für Stadtplanung und Umwelt Konstanz, Untere Laube 24, 78462 Konstanz, lukas.esper@konstanz.de)
(B.A. Felix Stroh, Fraunhofer IAO, Nobelstraße 12, 70191 Stuttgart, felix-fabian.stroh@iao.fraunhofer.de)

1 ABSTRACT

Today, more than half of the world's population lives in cities, which generate 80 % of greenhouse gas emissions and consume 75 % of the energy used worldwide. By 2050, more than 70 % of the world's population will live in cities. This usually goes hand in hand with the increasing use of space and the simultaneous growth of per-capita residential space. However, the growth of cities must not necessarily signify a problematic development. To quote the architect and urban planner Jaime Lerner „City is not a problem, city is solution“. Therefore, the "future city" implies a change of perspectives, away from the problem of growth, towards the challenge of growing smart and sustainable, for which suitable solutions within the respective city must be found.

This paper is based on the project “City of the Future Constance” which is supported by the German Ministry of Research and Education (BMBF) as part of the “Flagship Initiative City of the Future”. Within the City of the Future initiative, local communities, businesses, civil society representatives and the scientific community cooperate with each other in order to implement processes and recommendations for action for the cities of the future in Germany.

As part of the three-phase tendering, the first phase in the city of Constance focused on the question "How will we live and reside in the year 2030?". The foundations for the vision were laid during the workshops of the participatory symposium. Through the change of perspectives on fictitious persons from the year 2030 and with the help of prepared personal profiles, the - presumed - living and housing needs of different age groups and milieus were described very concretely. The concrete needs related to four fields of action City.Living, City.Mixed, City.Mobile and City.Intelligent.

Building on the vision developed jointly in the first phase, the focus in phase two is on reducing the per-capita residential space. This question will first scientifically be elaborated and, finally, also structurally implemented in a model district in phase 3. The goal is to develop a superior planning toolkit, which provides orientation for the sustainable development of all areas of the action program with regard to housing, focusing in particular on the topic of space efficiency and the resulting topics in the planning focus. Within a multi-day workshop the planning toolkit is going to be used by stakeholders, citizens and planners to work out a comprehensive concept of development for the model district.

Keywords: Constance, municipal vision 2030+, urban planning, city of the future, planning toolkit

2 INTRODUCTION – CITY OF CONSTANCE

The city of Constance has already laid an important foundation stone for future urban development with its Action Program Housing. In addition to statements about the areas to be developed, the intended building density and the types of living, the Living Action Program also contains many qualitative statements. It addresses, for example, which target groups are to live in the future districts, how the rent level will be designed, as well as the aspired qualities of housing and open spaces.

Building on the Housing action program, the “City of the Future Constance” as research project offers the opportunity to once again reflect on future Constance neighborhoods: "How will we reside and live in Constance in 2030?"

3 CITY OF THE FUTURE CONSTANCE

3.1 Phase 1 – Development of the municipal vision 2030+

The city of Constance faces a variety of challenges in the context of urban development. On the one hand, general population growth, increasing number of households and simultaneously increasing living space per household are leading to an overall increase in housing demand. On the other hand, the geographic location

of the city, the lake, the EU's external border and numerous protected areas require a highly economical and space-saving approach to land development.

Against this background, the first phase of the "City of the Future Constance" project dealt with the development of a shared vision for Constance in the year 2030, building on the Action Program Housing, with a focus on the question "How will we live and reside in the year 2030?".

The action program sets the direction in housing development: Which areas must be cultivated? What and how much is going to be built? What qualities should neighbourhoods offer? What does the price level look like?

The framework for neighbourhood development is already in place. Up to now, the structural qualities of the individual neighbourhoods have mostly been redefined and implemented in the individual projects. The City of the Future project now offers the opportunity to discuss the future design of the neighborhoods in a broad participatory process and in a thematically differentiated fashion.

In the first phase of the project, which ran from June 2015 to May 2016, various events were held to discuss the topics of the city of the future.



Fig. 1: Hidden object scene – Vision 2030+ City of Constance.¹

The citizenship has the word: »Develop the Future«

As part of the symposium "Develop the Future", various experts from the fields of urban planning, politics and science provided food for thought for the future development of the city of Constance. Citizens had the opportunity to contribute their ideas about city in 2030 in workshops accompanied and moderated by representatives of science.

Science has the word: »Explore the Future«

In a workshop with scientific representatives of the universities of Constance possible issues for the second phase of the Zukunftsstadt project were discussed and defined. In particular, it was about how possible forms of cooperation between the different disciplines, but also between the universities can be designed and which disciplines and stakeholders should be involved in phase 2 of the project.

The administration has the word: »Organizing the Future«

In a workshop on process organization, the internal administrative process for planning new neighbourhoods was discussed. Representatives from all municipal offices as well as the representative for the disabled and

¹ <http://www.zukunftsstadt-konstanz.de/assets/images/wimmelbild-zukunftsstadt-konstanz-2000x1359-1400x951.png>

the representative for citizen participation and civic engagement of the city of Constance discussed their roles as well as inter-agency cooperation in the process and worked together on this. The inclusion of other stakeholders (e.g. from private sector and civil society) was also considered as a first step.

The vision: What are the neighborhoods of the future?

The foundations for the vision were laid during the workshops of the participatory symposium. Through the change of perspectives on fictional persons from the year 2030 and with the help of prepared personal profiles, the - presumed - living and housing needs of different age groups and milieus could be described very concretely. A total of more than 80 working groups, consisting of around 350 participants in total, worked on this topic. The concrete needs related to the fields of action City.Living, City.Mixed, City.Mobile and City.Intelligent, which were defined during the symposium..

3.2 Phase 2 – Planning and implementation concept of the Vision 2030+

Based on the developed visions in the first phase, the second and still ongoing phase is about working out solutions of how to achieve more living quality with using less space. This is the central issue for the city of Constance seeking to establish a new reference for the future construction of living areas in the city.

Spatial efficiency and sustainability are considered the most important criteria for designing future neighbourhoods in the city of Constance. The challenge lies in reconciling spatial efficiency (e.g. using less space) while improving living quality. The city takes a scientific approach first to understand the full bandwidth of the issue and then transmit the theoretic insights into the physical design of real city space.

The overarching goal is not only to build a new district, but to develop a planning toolkit (see 3 Planning Toolkit) as reference for the future Action Programme Housing with reference to connected planning issues.

“Christiani-Wiesen” as model district

The goal of phase two is establish “Christiani-Wiesen” - a site with the size of 2 hectare - as model of sustainable urban planning. The designated area is part of the Action Programme Housing and is as such well-suited to work as urban living lab due to its size and planning conditions. Thus, the rather small site (see Figure 2) could become an initiator for future urban development of greater scope, e.g. in the area “Nördlich Hafner” that is home to 2.500 residential units.



Fig. 2: Model district – Christiansi-Wiesen.²

² <http://www.zukunftsstadt-konstanz.de/assets/images/plangebiet-web-1400x947.jpg>

Like in the first phase, discussions and exchange of opinions with project partners and stakeholders were essential in the second phase. In order to ensure efficient and goal-oriented communication, different event formats had been created. The outcomes of those events not only constitute the basic content for developing the toolkit, they also strengthen the future cooperation in the project. The following events are held periodically during the course of the project:

StuDialog

Exchange is crucial to this event in which students of different disciplines from the universities of Constance come together for dialogue in mixed and small groups (e.g. the department of psychology and architecture). The goal is not only to get to know each other, but to engage in a substantive discussion, exchange ideas and results and mutual impulse. In this way, it is possible for the participants to reflect on own outputs, get to know other perspectives and to correct where necessary.

StuDialog+

The platform provides students to present and to discuss their intermediate results to the citizens and other students. The event offers a small "market place" where selected projects can be discussed with interested citizens. The selection of participants is well balanced with students and citizens.

Symposium Zukunftsstadt

In the course of the project "Zukunftsstadt" two main symposia are held. Those events are the main platform for exchange in the project with presentations from students, experts, as well as workshops, working groups and the opportunity for citizens from Constance to participate. The goal is to connect the different actors in order to work together on the idea of the future city.

Planning Workshop and Toolkit Evaluation

The main event for transferring the knowledge of the research and scientific work to an urban design concept and to use the planning toolkit is going to be a planning workshop at the end of the projects second phase. The three-day-workshop will combine evaluation of the planning toolkit with stakeholders and experts, a planning competition of three planning teams as well as civic participation and involvement.

On day one stakeholders are going to intensely discuss the structure and content of the planning toolkit. By attending the evaluation process, the planning teams are getting substantial information for the concept work. On the second and third day, the three planning teams – compounds of urban designers and landscape architects – are working on a concept for the Christiani-Wiesen site. These concepts will not only cover an urban design draft but also ideas for an integrated and holistic development approach. The public will get the chance to be part of the planning process by getting timeframes for discussion with the planning teams. Presentations of the intermediate results as well as public consultation will be offered on both the evenings of the planning days.

After a two weeks period for concept revision of the planning teams, the project's scientific committee is going to choose the best concept for further development. The concept is then going to be the foundation for the application for phase 3 and for further planning and development.

3.3 Phase 3 - Implementation of the vision in "real laboratories"

The third phase is devoted to the implementation of the concepts developed in the second phase. The model district for this will be the "Christiani-Wiesen" mentioned under 2.2 Phase 2 – Planning and implementation concept of the Vision 2030+. The exact start time of this third phase is currently unknown.

4 PLANNING TOOLKIT

The planning toolkit created as part of the "City of the Future Constance" project focuses on the criteria of sustainable urban planning, which are characteristic of the urban development goal "Smart growth: quality instead of square meters". The guiding question of the concept is: How can a high quality of life / living and increased space efficiency be reconciled?

The toolkit offers various approaches to convey this theme, while promoting dialogue between the various stakeholder groups involved. The basis of the entire toolkit is the student work at the HTWG and the University of Constance, which have been combined in currently 30 criteria of sustainable urban development based on the set of criteria of the German Sustainable Building Council DGNB. These

documents clarify the parameters that are important for each criterion, the actors involved, existing urban framework programs of the city of Constance and urban planning issues, as well as example solutions.

The technical implementation of the toolkit is based on MediaWiki³ which is a free and open-source wiki software. As shown in the flowchart below, by using the toolkit, the user can directly access the individual criteria, or access them based on their importance for individual urban design planning topics or individual stakeholders.

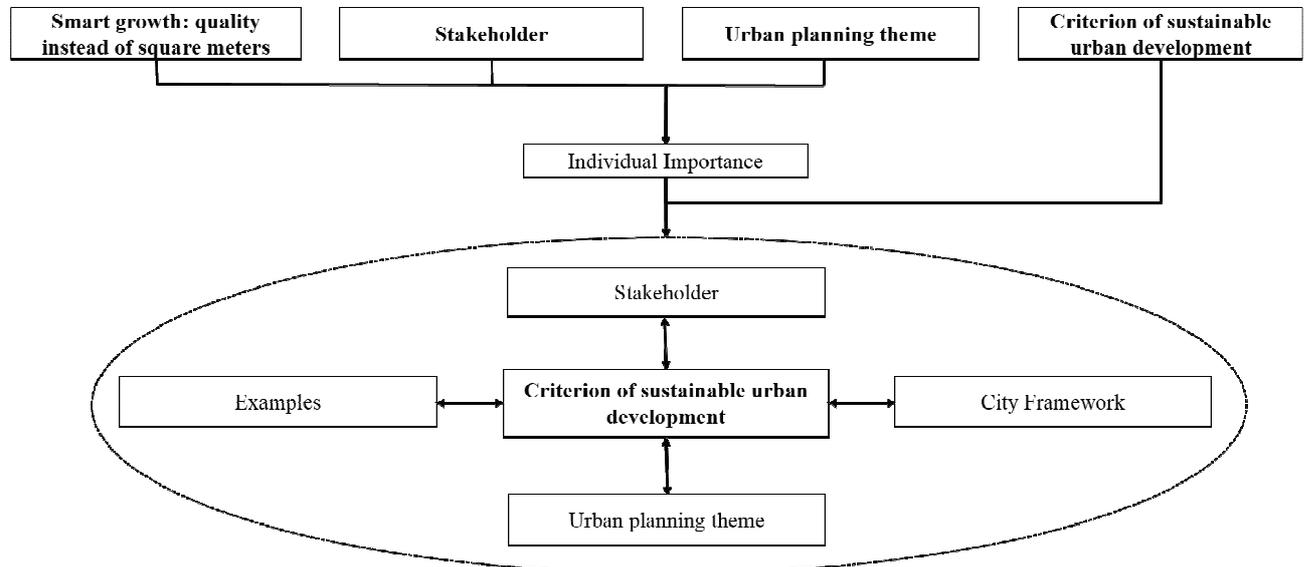


Fig. 3: Flow chart – Planning toolkit

The division into three categories “very important”, “good to know” and “unimportant” differs from planning topic to planning topic as well as from actor group to actor group. Common to all is the key question under which the classification was created. The division of the criteria into importance arises in an open process in which all involved stakeholders in the city planning process are integrated. By transparently communicating the classification according to the stakeholder group, each user has the opportunity to move into the other stakeholder group and thereby gain more understanding of the different positions.

Due to the design as a Wiki the toolbox is a system open to all involved stakeholders and able to react to current developments. It also should be expanded by working with it and previously unobserved topics should be integrated during its lifetime. The resulting transparency is intended to stimulate successful joint collaboration.

5 TRANSFERABILITY OF APPROACHES

The project’s results are not bound to on-site implementation in Constance. Further and continuous editing and addition of content of the planning toolkit is a major objective. By making the toolkit available for different user groups (local authorities, science, stakeholders, public) the permanent growth of the toolkit as knowledge platform is ensured.

The planning toolkit as well as the knowledge of the Christiani-Wiesen development is going to be transferred to all further and upcoming housing projects in Constance. The usability of the toolkit (including a specific adaption) for other cities with comparable planning tasks or parameters is obligatory.

Beyond the use on a local level, the project may set impulses for revision of legislation and funding programs on a national level within ministries or government departments, especially concerning projects with a strong focus on efficient use of (urban) space, which is a major task for growing cities in Germany.

The project set new standards for co-working processes of local authorities, local science and research partners. Within the working process, a strong partnership of co-creation between the city of Constance and both of the universities evolved. This partnership could be a prototype for future tasks in other cities.

³ <https://www.mediawiki.org/wiki/MediaWiki>

The strong participation of the public and the experiences gained in the planning events is going to be a model for future planning processes in Constance and will be part of the knowledge pooled in the Wiki toolkit, thus it is going to be available for other cities as well.

6 CONCLUSION

The project not only marks a new level of co-creation between city authorities and the local science community but also is a new initiation for sustainable and resilient development of new housing quarters in Constance. The planning toolkit as adaptable instrument could be used by other cities and local authorities in their processes of planning and urban development and also by universities as basic tool for research in the field of urban development. Furthermore, the use of the toolkit will give initiatives and interested residents an overview of the complexity of planning topics and the possibility for meaningful participation on a contentual level in planning processes. The use, the growth and further development of the toolkit by many different stakeholders will be a main goal beyond the project and a substantial project output.

Cities and communities need to be more than ever a scientific partner and proactively take part in research. The fast spatial and social changes require a deep understanding of specific local weaknesses and strengths as well as the adaption and implementation of new concepts into the local understanding of planning. In particular, this currently concerns the need of higher spatial efficiency within urban developments. Minimizing the spatial impact is not only an architectural task but requires solutions on many different planning levels. The city of Constance will offer solutions in the fields of architecture, sharing communities, mobility and multi-used spaces.

Not only the scientific outcome contributes to the solution of upcoming tasks in the field of urban development but also the participation of citizens and future inhabitants within the planning processes. As users of newly developed spaces and housing quarters, they will be the key to a well-working local urban community and well-used architectural concepts and urban spaces. For that reason it is evident to build a public understanding of planning tasks and to participate residents, stakeholders, initiatives and future users/residents in the planning processes at a very early point. In this regard the local authorities need to find practicable process tools. In many cases, the adjustment and combination of different “classic” tools such as planning workshops and competitions is required to achieve the desired outcome. The national legislation also has to assume the liability of finding ways to offer the best organizational toolkit to local authorities.

7 REFERENCES

- <http://www.zukunftsstadt-konstanz.de/>, project website of the “Zukunftsstadt Konstanz” project, Marken- & Designstudio Eminent. 2018, Konstanz.
- <https://www.mediawiki.org/wiki/MediaWiki>, website of MediaWiki, 2016.