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基于地域气候适应性的城市气候专项规划探讨

A Study on Urban Climate Special planning Based on Local Climate Adaptation

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- **内容提要**

- 1 相关概念界定**

- 1.1 地域气候适应性**

- 1.2 城市气候专项规划**

- 2 城市气候专项规划的内容**

- 2.1 区域气候条件分析**

- 2.2 城市气候适宜性评价**

- 2.3 街区微气候宜居环境区划**

- 3 城市气候专项规划的衔接**

- 3.1 总体规划阶段**

- 3.1.1 城市用地布局**

- 3.1.2 道路系统**

- 3.1.3 城市开敞空间**

- 3.2 详细规划阶段**

- 3.2.1 规划地块的气候环境分析**

- 3.2.2 建筑高度、密度、容积率与热源分布**

- 3.2.3 建筑布局**

- 4 结语**

- **Contents**

- 1. Introduction**

- 2. Theoretical framework**

- 2.1 Regional Climate Adaptation*

- 2.2 Special Planning of Urban Climate*

- 2.3 Analysis of regional climate conditions*

- 2.4 Assessments about the suitability of the urban climate*

- 3. Methodology and Discussion**

- 3.1 Overall planning stage*

- 3.1.1 Urban Land layout*

- 3.1.2 Road system*

- 3.1.3 Urban Open Space*

- 3.2 Detailed Planning Stage*

- 3.2.1 Analysis of climate and environment in planning block*

- 3.2.2 Height, density, floor area ratio of buildings and the heat distribution*

- 3.2.3 Layout of the Building*

- 4. Conclusions**

1、Introduction

- The quality of life of millions of people living in cities can be improved if the factors that affect the urban microclimate are understood and the form of the city responds to them in a manner that is appropriate to its environment. Underlying this approach is the idea that climatically responsive urban design is vital to any future notion of sustainability: it enables individual buildings to make use of ‘natural’ energy, it enhances pedestrian comfort and activity in outdoor spaces, and it may encourage city dwellers to moderate their dependence upon air conditioning in buildings and upon private vehicles.
- 在全球气候变暖的背景下，城市规划如何与地域气候条件相结合，创造适于人类生存的人居环境，必将是一个亟待探讨的话题。对气候进行专题研究，并在城市规划中力图求解，倡导生态、宜居与可持续发展才具有真正的意义。作为尝试，本文以我国当前的城市规划编制体系为线索，运用气候学的有关知识，自上而下地梳理城市规划编制结合地域气候的可能性，希冀为今后的规划工作提供一个新的视野。

2. Theoretical framework

- *2.1 Regional Climate Adaptation*
- *2.2 Special Planning of Urban Climate*
- *2.3 Analysis of regional climate conditions*
- *2.4 Assessments about the suitability of the urban climate*
-

2. Theoretical framework

- *2.1 Regional Climate Adaptation*
- Regional climate adaptation refers to urban planning which based on the formation mechanism and rules of climate change and conducted in close connection with the climate. It emphasizes that under the macro geographical climate, future urban development should by all means go forward to a favorable living environment of human beings by applying the notion of sustainable development into practice, which reflects the demands of a scientific strategy of development in further way.

2. Theoretical framework

2.2 Special Planning of Urban Climate

- Special Planning of Urban Climate refers to repeated infiltration of climate topics to make it an important element during each period of the establishment stage of urban planning. Under the precondition of the rational use and distribution of urban land, the economic and social effects must be stressed as well as environmental effects of climate. For example, in some areas where both summer and winter are unbearable, their seasons of extreme weather conditions are characterized by as torridness in summer and chilliness in winter. For these areas, the focus of special urban climate planning should be: creating a cool outdoor space under the sun of July and reducing the invasion of cold current, making urban micro-climate to evolve in the direction to more suitable space and environment for people to live and work in.

2. Theoretical framework

- *2.3 Analysis of regional climate conditions*
- It includes: analysis of the effect that pre-urban regional atmospheric circulation, topography, vegetation distribution, and the state of the water network structure have on the urban climate; the wind directions around the cities, characteristics of the speed of the wind, analysis of extend of possible pollution under the natural state. The results of the establishment can refer to the 18th Order of the Meteorological Administration of China.

2. Theoretical framework

- *2.4 Assessments about the suitability of the urban climate*

It includes: analysis of the current climate and environment in each functional area of the city, drawing heat island effect distribution in urban areas, putting forward some measures to optimize the layout of the functional areas in the city.

3. Methodology and Discussion

- *3.1 Overall planning stage*
 - *3.1.1 Urban Land layout*
 - *3.1.2 Road system*
 - *3.1.3 Urban Open Space*
- *3.2 Detailed Planning Stage*
 - *3.2.1 Analysis of climate and environment in planning block*
 - *3.2.2 Height, density, floor area ratio of buildings and the heat distribution*
 - *3.2.3 Layout of the Building*

4. Conclusions

- Special planning of urban climate mentioned above is merely an immature prospect of the climate problem with many details and issues needing discussing and expanding. It is recommendable to draw on collective wisdom and absorb all useful ideas and pool the efforts of everyone to work it out.
- In particular, we should be open-minded and ask for advice from weather experts, so that the theory of meteorology can turn into the application science of climate, to provide insights for urban planning.

4. Conclusions

- In addition, the profound development of the special programs of urban climate should be implemented to be quantified and the concreted. However, the complexity of urban problems is bound to that special planning of urban climate is not a thing that can be done in one step and then got rid of forever. It requires us to make a clam reflection on urban construction in every period of time. Therefore, this article is just for using the little to get the big. More scholars are welcomed to get involvement to deepen the Special Plan for the urban climate, the "non-mainstream" issue, further, and finally portray the city into a region with climate adaptation for urban human settlements.

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THANKS

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