



## Design guidelines for the Dashilar, Beijing Open Green Space Redevelopment Project



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### ABSTRACT

When an urban redevelopment project is planned, the design needs to reflect the preferences of the users of the planned space. In China, however, the preferences of residents have rarely been reflected in projects dealing with public places such as open green spaces in urban settings. This paper employs three independent conjoint analyses covering components of open green space, including locational conditions, physical conditions, and greenery conditions in order to propose the most preferable design for a new open green space. The results of choice simulation showed that the users prefer the private garden style to the general public park style for the new open green space in Dashilar. Our research with three independent conjoint analyses is expected to provide specific guidelines for open green space design as a whole, which is intended to satisfy potential users of the space.

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### Introduction

Open green spaces in urban areas are recognized as valuable for the benefits they provide, such as conservation biodiversity and spaces for people to relax. Thus, urban redevelopment designers try to include green spaces in their designs. When an open green space is designed as part of an urban renewal project, the unique aspects of the target city, such as environment, culture, lifestyles, and history, should be reflected in the new design. The designers easily capture environmental factors, but they typically do not notice the less obvious needs of users that derive from culture, history, and lifestyle. This is because relationships are absent between designers and the many potential users of an urban space (Katoshevski and Timmermans, 2001). However, urban designers should seek to recognize the specific needs of potential users of open green spaces. The main purpose of this paper, therefore, is to measure user preferences for design attributes of open green space in urban zones.

We investigated the preferences of potential users of an open green space in the Dashilar (中栅栏), Hutong renewal project in order to reflect users' voices in the specific design of the blueprints. This area of Dashilar has diverse attributes, including its unique history and inhabitant lifestyles, tourism, and commerce in the central area of old Beijing, southwest of Tiananmen (天安门) square. Since the year 1420, the region has gradually developed into a commercial area and a residential area. Stores and houses retain an antique

flavor, and many people visit here to experience this historic wealth. Dashilar includes a mix of residents, sales clerks in stores, and tourists, each of whom has a different purpose for staying in this place. Thus, potential users in Dashilar can be categorized into the three groups.

Since the foundation of the People's Republic of China, the urban development of Beijing has entered a new era. A conflict between preservation and development has become increasingly critical (Wu, 1999). In the interests of protecting and renewing historic places in Beijing, Dashilar is one of the target areas for preservation and restoration. To optimize this redevelopment project, any urban designer has to take into account the value of the area, including its rich historical architecture, the traditional lifestyle of residents in Dashilar, the policy direction of the government, and the expectations of users regarding the urban renewal project.

According to Wang and Li (2004), the user preference approach to urban design in China has rarely been applied. Existing research on the topic is concerned only with housing structures, which relate to the economics of the housing market. Therefore, we attempt to reflect user preferences for public areas in ways that are not directly related to commercial matters, but rather are important to users' quality of life. We apply the user preference approach to the redevelopment project for open green space in Dashilar, Hutong, in Beijing. To estimate the perceived utility, we employed three independent conjoint analyses to provide specific design guidelines for the whole urban park. We also used the method of choice simulation to determine a design that maximally incorporates user preferences.

The rest of this paper is organized as follows. Section 'Related literature' reviews previous works on the criteria of urban

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redevelopment project processes, the importance of open green space as a component of urban plans, and the method of conjoint analysis for project design. Section 'Empirical analysis' reports the conjoint analyses we conducted to estimate user preferences for open green space. In Section 'Results', the results of each of the conjoint analyses and the choice simulation are explained. Section 'Conclusions' provides conclusions for this paper and suggests areas for further research.

## Related literature

### *Urban redevelopment projects in China*

A traditional neighborhood, Dashilar Hutong in Beijing has rows of one-story houses along narrow streets. The neighborhood was established during the Ming Dynasty (1368–1644), residents put up fences to distinguish the area, and its name became Dashilar. Since then, Dashilar has become a residential and commercial centerpiece of Beijing. Currently, Dashilar attracts many tourists because of its historical atmosphere and accessible location.

Urban residential areas in inner-city Beijing suffer from overcrowding, lack of infrastructure, and generally poor circumstances. Many neighborhoods exist in circumstances that pose serious environmental and health risks to residents (Dowall, 1994). Therefore, the government has implemented redevelopment projects in Beijing inner-city residential areas with the help of urban developers. Inner-city redevelopment is propelled by the necessity of ensuring a better existence for residents of the areas (Junhua, 1993). The Chinese government implemented a policy for the allocation of welfare housing in 1998. Under this policy, the type of housing allocated to welfare recipients was mainly the result of matching processes, and not a reflection of the choices of the beneficiary households (Li, 2000). After this policy came to an end in late 1998, a market for the direct sale of houses to individuals emerged (Li, 2004). In this way, the choices of customers became increasingly important, and accommodating user preferences became a necessary aspect of the housing market in China. Previous research by Wang and Li (2004) used a choice experiment to investigate how housing preferences meet practical needs. Other than Wang and Li (2004), only a few studies regarding Chinese preferences for urban environments have been conducted. Existing studies have looked at residential mobility (Li, 2004) and residential satisfaction in redeveloped neighborhoods in inner-city Beijing (Fang, 2006). These studies, however, deal with housing types only insofar as they are directly related to the commodity housing market. Zhai and Suzuki (2008) investigated the preferences and openness of residents in Tianjin, China, to the environmental management of coastal areas for regional development purposes. That study marked the first attempt to estimate the utility of local people in determining the characteristics of surrounding elements in China by using a choice experiment. However, the findings of the study are limited to the economic value of coastal ecosystem functions using a willingness-to-pay (WTP) method.

Before starting the redevelopment of a target area, the area should be recognized as a special place having certain values due to its people and their unique lifestyles. In particular, Dashilar, Hutong, is a neighborhood characterized by close relationships among residents and by close relationships between architectural structures and the lifestyle of the people. Therefore, not only the architectural structures, but also the lifestyles of residents should be considered as main components of the Dashilar community (Akira, 2008). Even so, in the process of urban development, the actual residents of a city are often forgotten or overlooked by Chinese corporations and government (Logan, 2002). To successfully redevelop this meaningful place, the constituents of Dashilar

should act as the main agents of change. This means that when urban redevelopment is planned, both the government and the developers need to reflect the collective voices of the residents. This process of aligning incentives will help the redevelopment project mirror the expectations of the people of Dashilar as much as possible. In this paper, we try to reflect the preferences of users in the design of the Dashilar-area open green space, as well as present possible alternatives developed through choice simulation.

### *Open green space in cities, and quality of life*

A plan for open green space has important meaning among the sub-tasks in urban redevelopment projects. This is because open greenery in urban settings plays a crucial role in supporting biodiversity (Gaston et al., 2005; Crane and Kinzig, 2005) and also makes important contributions to the quality of life for urban residents (Takano et al., 2002). Moreover, public green space provides a meeting place for neighborhood residents (Germann-Chiari and Seeland, 2004; Martin et al., 2004).

When people consider green spaces in cities, they are mainly concerned with large, well-maintained park areas. Much less attention is paid to the types of nature in proximity to where people live and work, to small-scale green areas in cities, and to the benefits of these types of green spaces to people (Chiesura, 2004). However, the interest in small-scale green areas has become higher due to the current insufficient room for green space in the inner city (Peschardt et al., 2012; Nordh et al., 2013). *English Nature* (2005) asserted, "People living in towns and cities should have an accessible natural green space less than 300 m from home." Moreover, ease of access to green space influences the sustainability of urban communities (Wray, 2005). In this sense, any new green spaces in Dashilar should be frequently and accessibly located, making pocket green space a suitable model for Dashilar and other Hutong areas.

For some urban redevelopment projects, the improvement of existing underdeveloped or under-maintained green spaces may generate greater social benefits than building new open green spaces (Bae, 2011). The existing green spaces in Dashilar are valuable because the residents cultivate plants there. This personal gardening provides positive effects on individuals' emotional, physical, and spiritual renewal (Milliga et al., 2004). Accordingly, when redeveloping the Dashilar area, any public space that replaces the current green spaces of local residents should be considered carefully.

In the Dashilar area, residents grow their own plants in private gardens or on public streets. This unique habit is a reflection of how the people of Dashilar understand the value of a green environment near their houses, and accordingly, how they use green spaces for their various advantages, such as places to plant vegetables or enjoy gardening hobbies. Mainly, however, these spaces are important places for networking between neighbors. Therefore, the existing doorstep greenery is a vital aspect of the lifestyle of Dashilar residents. Many private plants are grown in public places, additionally, because a lack of space for plants and gardens is common in Dashilar-area housing. However, private gardening in public spaces causes some problems. For example, the plants and supporting structures can obstruct the activity of pedestrians. The planting structures, when neglected during winter, cause the public scenery to become unsightly. Thus, private planting in Dashilar's public areas is controversial. In this regard, the design of new green space in Dashilar should simultaneously consider both the advantages and disadvantages of private planting. An appropriate model for new open green space in Dashilar is the pocket style, which is characterized by relatively small public areas of greenery, located frequently throughout the entire urban environment.

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