Continuity of heritage urban landscape: the case of Jeron Beteng Yogyakarta

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Abstract. The urban landscape, which is in a dynamic environment, continues to change, meaning it has transformed the relationship between humans and the environment. Many changes have occurred since the early formation of the city until now. Nevertheless, many heritage urban landscape that has been formed hundreds of years ago are continuing to date with their various elements remain the same. Jeron Beteng is a part of the Yogyakarta Sultanate Palace, which has existed since the early construction of the palace. This traditional area was once a residential area for the abdi dalem (people who served the Sultan and Palace) and the sultanate princes or brothers of the Sultan. Along with the developments of Yogyakarta, Jeron Beteng has developed into a dense urban settlement. Various changes have occurred, both the function of the area, architecture building, and land use. As a heritage area, it is interesting to know whether Jeron Beteng can adapt to the changes and continue as the cultural identity of the Yogyakarta Palace. This paper is based on research that intends to identify the urban landscape characters of Jeron Beteng and examine the continuity of its physical landscape characters as the cultural identity of the Yogyakarta Palace. A qualitative method is used with two approaches: interpretation of the history of Jeron Beteng and qualitative approach based on the contemporary empirical phenomenon. This research found that Jeron Beteng today is the culmination of hundreds of years of physical and social management. It is not just a collection of heritage buildings, events, and precincts, but the whole landscapes, that have unique characters. The character of Jeron Beteng is mostly formed by its physical elements that have heritage values, mainly the Palace, Alun-alun, and the beteng wall. Changes in the spatial and physical environment have happened, however, the essence or core of the physical landscape character of Jeron Beteng is continuing and contributes to the cultural identity of the Yogyakarta Palace and the city.

Keywords: change, continuity, heritage urban landscapes, Jeron Beteng

1. Introduction
The term landscape was first introduced by Alexander von Humboldt, a German geographer, and biologist, in the early 19th century: "landscape is the total character of region of the earth". This definition is still accepted and used today [1]. Furthermore, there are several definitions of landscape, including [2], who define a landscape as an area with topographic configuration, vegetation closure, land use, and settlement patterns with its natural and cultural processes and activities. Landscape is a relationship between social and environmental processes [3], and landscape is the result of a relationship between natural factors and human activity [4]. In this context, the landscape is closely related to land that has characters due to the relationship between nature and human culture.

In the establishment and development of a traditional city, the landscape is one of the considerations incorporated into planning and design. Traditional cities generally have urban landscapes with old assets or heritage assets as its landscape elements. The urban heritage landscape of the traditional cities is the achievement of our predecessors in forming a city, so what is seen today is an expression of its altered heritage landscape, the interaction of nature and culture shaped over decades and centuries. The heritage urban landscape, then, contributes to
the shape and character of the city [5]. O’Donnel also mentions some premises for the historic landscape of the heritage cities, which are:

- The urban landscape has heritage values, comparable to urban architecture
- Urban historic landscapes are worthy of conservation as expressions of the spirit of place
- Unique landscape identity and character of a place expres heritage and spirit
- Shaped through time, the spirit of the landscape is the combined work of humanity and nature
- Processes of continuity and change are present in the historic urban landscape
- Multiple tangible and intangible values are imbedded in historic urban landscapes
- Recognition, documentation and analysis of the complexity of the urban cultural landscape is a doorway to the retention of values and spirit of place

Those premises shows that a historic urban landscape can also be called a heritage urban landscape because of its heritage values; it relates with time and space; shapes unique identity and character of a place; and experiences change and continuity. The character of a heritage urban landscape has been formed in a long period of time and is always associated with the history and uniqueness of the city [6]. The unique spatial and architecture forms the city identity, as well as the socio-culture of the community and all the combination of natural and cultural values [6].

Since a heritage city is in a dynamic environment, many changes have occurred in its landscape elements. Changes as the impact of the increasing number of people, urbanization, and urban development. Nevertheless, there are also elements of the heritage urban landscape that are unchanged or continuing until now, both the physical or cultural elements. Old assets need to be continued for fulfilling the present and future needs [7]. The heritage urban landscape needs a balance between its continuity and change of all the resources and cultures. The sustainability of heritage areas with history, landscape, and culture needs to be continuous in accepting change and development, between maintaining the continued of old assets and fulfilling the needs of present and future life [8].

As a traditional city, Yogyakarta has its heritage urban landscape in the city center, in which existence still colors the city to this day. One area of urban landscape of Yogyakarta is Jeron Beteng where the Sultanate Palace of Yogyakarta is located. Jeron Beteng is an area that has a unique, well-planned residential area and was built by Sri Sultan Hamengku Buwono I, the first king of the Yogyakarta Sultanate. The beteng (wall) structure [9] is a part of the most recent palace built-in 1782, after the construction of the palace was completed in 1757. The many cultural heritage and historical values contained in it, Jeron Beteng is considered to be able to reflect the image of Yogyakarta as a cultural heritage city.

Jeron Beteng is considered as the first residential area in Yogyakarta and still continues to function today with historical traces of heritage landscape elements that can be found. Amid the city's ongoing development, many changes are experienced by Jeron Beteng settlement as the heritage urban landscape, and two questions arise: how many changes have occurred and how many remain? Is Jeron Beteng heritage landscape still continuing? This paper aims to identify the urban landscape character of Jeron Beteng and examine the continuity of its physical landscape character as the cultural identity of the Yogyakarta Palace.

2. Methods
This paper is based on qualitative research that explores Jeron Beteng area, a unique heritage urban landscape in the heart of Yogyakarta city. Primary data was collected through a field survey on the physical environment of the Jeron Beteng to get an understanding and data on the spatial pattern, land use, spatial functions, and landscape elements. Identification of the landscape elements, which area relic of the past, and the new one were undertaken during the survey by spatial mapping, photo, and notes taking.
Data was analyzed by 1) Spatial analysis to know the spatial structure and pattern of the area based on the survey result; 2) Explanation building, that is constructing and evaluating the organized data and information into a narration. A narrative explanation is used to examine the history and values of Jeron Beteng. Supported data, such as maps and photos are needed to be interpreted.

3. Result and discussion

3.1. Jeron Beteng

Jeron Beteng area is the government center of Yogyakarta Sultanate and is the beginning of the Yogyakarta city development. Physically, Jeron Beteng is an area of Yogyakarta Palace bordered by a wall fence called Beteng Baluwerti. Inside there is a palace complex, prince’s houses, Tamansari Water Castle complex, and settlements. Beteng Baluwerti has 1,200 meters long and 940 meters wide in the West and 1140 meters in the East, while the wall thickness is 3 meters and the height is 3-4 meters. Beteng Baluwerti has four wall corners and five gates called plengkung (arch), including Plengkung Tarunasura (Wijilan), Plengkung Jagasura, Plengkung Jagabaya, Plengkung Madyasura, and Plengkung Gadhing (Nirboyo). Plengkung that still exists today, is Plengkung Wijilan, located in the East, and Plengkung Nirboyo in the South. Other plengkungs have been dismantled into ordinary gates. Above the arch is an open court called Gapura Panggung. Each arch is equipped with a guard post or bastion in the corner of the court (Pojok Beteng), which used to be a place to snoop on enemies and lay canons. On the outer side of the beteng is a jagang or moat along the edge of the beteng and planted with gayam trees, but at this time, the jagang no longer exists.

The beteng wall and space inside seem to have been planned and very well designed by Sultan Hamengku Buwono I. The primary function components in the beteng are the Sultan Palace, surrounded by Beteng Cepuri as a barrier, and the Alun-alun Utara and Alun-alun Selatan (North Square and South Square). Outside Beteng Cepuri is the settlement of Jeron Beteng, which was initially the residence of the nobles, who are the Sultan’s brothers. The Sultan built residences for the princes and nobles with a traditional Javanese architecture called Dalem Pangeran, and each was confined to a high wall and equipped with a gate as the entrance. There are 13 (thirteen) Dalem Pangeran scattered within the Beteng Baluwerti area, while the other Dalem Pangeran were built outside the beteng [10]. In the dalem complex, there are also magersari or ngindung (shelterers) who are in charge of serving the princes. The existence of the Dalem-dalem Pangeran has undergone many changes, both in terms of the ownership and its main function as the residence of the royal with magersari relatives in it. In the beteng area also, in 1758 Sultan built the Tamansari complex, which serves as a recreation area, princess baths, and vegetable and spice gardens for the palace’s needs. Although some areas have been lost, Tamansari still is functioned as a tourist attraction of the city. Figure 1 shows the position of the Jeron Beteng area in Yogyakarta city, and Figure 2 shows the Jeron Beteng area with its physical elements, and the spatial pattern formed by the road network.
Furthermore, in beteng lived the abdi dalem who served the Sultan Palace and were granted the right of lungguh (residence) by the Sultan. The settlement of the abdi dalem is the oldest in Yogyakarta [11]. Regarding the right to live and land ownership in Jeron Beteng, it currently uses Law No.13 of 2012 on The Privilege of Yogyakarta as a legal basis. The area in Jeron Beteng is divided by the Sultan into several kampungs (housing areas) for the abdi dalem based on the types of their work. At this time, the division of the kampungs has been lost, but replaced by the naming of the roads according to the naming of the abdi dalem kampung. Here are the names of the kampung of abdi dalem in Jeron Beteng [10]:

**Figure 1** Jeron Beteng area in Yogyakarta City

**Figure 2** Physical elements and spatial pattern of Jeron Beteng

*Source: RIK Budaya Perkotaan Yogyakarta 2014-2034, 2016 [12]*
Table 1 Names of kampung of abdi dalem in Jeron Beteng

| No. | Kampung's name | Meanings |
|-----|----------------|----------|
| 1   | Musikanan      | Kampung of abdi dalem: string and wind musical instrument players |
| 2   | Ngrambutan     | Kampung of abdi dalem: hairstylist for the Sultan’s family |
| 3   | Blediran       | Kampung of abdi dalem: clothes embroidery makers for the Palace |
| 4   | Kemitbumen     | Kampung of abdi dalem kemitbumi: persons who maintained the cleanliness of the Palace yard. |
| 5   | Gebulen        | Kampung of abdi dalem who prepared a fire for the cooking |
| 6   | Sekullanggen   | Kampung of abdi dalem who prepared the rice (sekul langgi). |
| 7   | Pandean        | Kampung of abdi dalem pande: blacksmith (iron makers) |
| 8   | Mantrigawen    | Kampung of abdi dalem: head of the Palace’s staffs |
| 9   | Pesindenan     | Kampung of abdi dalem: Javanese traditional singers (sinden) |
| 10  | Gamelan        | Kampung of abdi dalem gamel who in charge of caring the Sultan’s horses |
| 11  | Namburan       | Kampung of abdi dalem: drum players. |
| 12  | Siliran        | Kampung of abdi dalem silir: who in charge of managing the Palace lamps |
| 13  | Patehan        | Kampung of abdi dalem who in charge of managing drinks for the Palace |
| 14  | Palawijan      | Kampung of abdi dalem palawija, who have physical deficiencies such as dwarfs and albinos |
| 15  | Rotowijayan    | Kampung of abdi dalem sais: Palace horse cart drivers and makers |
| 16  | Langenastran   | Kampung of abdi dalem warrior guard Langenastra. |
| 17  | Langenarjan    | Kampung of abdi dalem warrior guard Langenarja. |

Source: Gupta et al., 2017

With the division of kampung abdi dalem according to their duties above, Kraton and the two Alun-alun, the space in Jeron Beteng is divided into patterns of common space, which can still be found today. Jeron Beteng, in the past, was indeed the center of the Yogyakarta kingdom, with the king or Sultan as the power.

3.2. Landscape character
The characteristic of the Jeron Beteng heritage landscape is influenced mainly by the physical elements and the social and cultural life of its community. Physically, the character of Jeron Beteng area is different from other areas in Yogyakarta because of the distinctive elements of the landscape, which have long existed and are not found anywhere else. With the traditional Javanese atmosphere, the uniqueness of the Jeron Beteng landscape is also influenced by the Palace’s rules as the landowner. These rules, include:
  a. Palace gives the right to the building, usage rights, ngindung right, and magersari right;
  b. The place of worship that can be established is only musholla and mosque;
  c. Lodging or homestay is not allowed;
  d. Foreign/Chinese residents are not allowed;
  e. The building is only allowed 1 (one) floor only.

The application of the Palace’s rules is seen physically in Jeron Beteng from the density and regularity of the buildings. Buildings with the right to use are usually built-in an orderly and low-density manner. Meanwhile, buildings with ngindung and magersari rights grow irregularly and have high-density.

Jeron Beteng has grown into a dense settlement, and at this time, not only the abdi dalem and princes who live there, but many of the descendents of the abdi dalem and others from outside the beteng wall. Even Dalem Pangeran has changed its function even though it retains its architectural form. For example, Dalem Mangkubumen is now Widya Mataram University; Dalem Mantriawen currently serves as an inn, although this is breaking the Palace’s rules; and Dalem Pakuningratan which is functioned as a restaurant. The character-forming elements of Jeron Beteng heritage landscape are shown in Table 2 below.
| No. | Physical elements                  | Pictures | Notes                                                                                                                                 |
|-----|----------------------------------|----------|---------------------------------------------------------------------------------------------------------------------------------------|
| 1   | The Palace                       | ![The Palace](image1) | The Palace with its Alun-alun (square) is the main landscape elements that physically remain the same (no changes). Both become the center of the area, and the Palace is as the center of the life in Jeron Beteng. |
| 2   | Beteng Baluwerti                  | ![Beteng Baluwerti](image2) | Walls that border the Palace and the area outside it, where there are also 13 Dalem Pangeran and the houses of abdi dalem. The wall along the north side is no longer exists, so is the moat/jagang around the beteng. |
| 3   | Plengkung (Gate)                  | ![Plengkung](image3) | The five gates are called Plengkung. Plengkung Tarunasura (Wijilan) in the East and Plengkung Nirboyo (Gading) in the South. Plengkung Jagasura, Plengkung Jagabaya, and Plengkung Madyasura have been dismantled into ordinary gates. |
| 4   | Pojok beteng (Beteng corner)      | ![Pojok beteng](image4) | The corner of beteng is located in all four corners of the beteng wall with the unique shape of a bastion that has not changed since long ago. |
| 5   | Dalem Pangeran                   | ![Dalem Pangeran](image5) | 13 Dalem Pangeran buildings still exist even though some of their functions have been changed into schools and restaurants. The architecture of the building persists with traditional Javanese architecture. |
| 6   | Tamansari complex                | ![Tamansari complex](image6) | Tamansari is currently one of the tourist attractions in the Palace area. The location of the bathing pool, Gumuling Well, barrier wall, and some old building sites are still there. Nevertheless, vacant land has been filled with residential homes making it a dense settlement. |
| 7   | Traditional houses/kampung        | ![Traditional houses/kampung](image7) | Many houses with traditional Javanese architecture are still found, providing a robust traditional atmosphere. |
Table 2 shows that Jeron Beteng has many landscape elements that have existed since the beginning of its construction. The elements of the beteng wall and entrance gates (Plengkung) with their large shape become the main physical identity of Jeron Beteng. All those heritage elements highly contribute to form the landscape’s characters, and even new commercial activities have given character variations, balancing the traditional character of the existing settlements.
Along with the development of the city, the Jeron Beteng area that used to function as a historical residence, began to experience building functions, building architecture, and the intensity of buildings triggered by the increasing economic needs of the community. Nevertheless, the character of the landscape physically still shows the uniqueness of the area as a traditional gated settlement with the Palace as the center of the area.

3.3. Continuity of Jeron Beteng heritage urban landscape
The urban landscape that is in a dynamic environment indeed continues to change. The physical and cultural changes of the landscape occur due to the dynamics of development and changes of the community activities. This has undoubtedly also affected the existence of landscape elements, and the quality of the landscape as a whole. The elements of the Jeron Beteng landscape have rich past values that continue until today. This means that these elements are still functioning properly today. An assessment of the continuity of the physical landscape elements of Jeron Beteng is done, using some criteria: 1) past and present values, 2) physical form in the past and at present, 3) well function in the past and present, 4) the number of changes at present (Table 3).

Table 3 Assessment of the continuity of the landscape elements

| No | Landscape elements                      | Criteria |
|----|----------------------------------------|----------|
|    |                                        | 1a | 1b | 2a | 2b | 3a | 3b |
| 1  | Palace dan Alun-alun                    | v  | v  | v  | v  | v  | v  |
| 2  | Beteng Bakuwerti                        | v  | v  | v  | v  | v  | v  |
| 3  | Plengkung (Gate)                        | v  | v  | v  | v  | v  | v  |
| 4  | Pojok beteng (Beteng corner)            | v  | v  | v  | v  | v  | v  |
| 5  | Dalem Pangeran                          | v  | v  | v  | v  | v  | v  |
| 6  | Tamansari complex                       | v  | v  | v  | v  | v  | v  |
| 7  | Traditional houses/kampung               | v  | v  | v  | v  | v  | v  |
| 8  | Spatial pattern                         | v  | v  | v  | v  | v  | v  |
| 9  | Toponym of roads                        | v  | v  | v  | v  | v  | v  |
| 10 | Ngindung/magersari houses               | v  | v  | v  | v  | v  | v  |
| 11 | Commercial houses                       | -  | v  | -  | -  | -  | v  |
| 12 | Commercial areas                        | -  | v  | -  | -  | -  | v  |
| 13 | Buildings with modern architecture      | -  | v  | -  | -  | -  | v  |

Note:
1a : past values
1b : present values
2a : past physical form
2b : present physical form
3a : past function
3b : present function
vvv : high
v : low

Source: analysis, 2020

The assessment result shows that all elements of the Jeron Beteng landscape still have essential values, both past values, and values for today’s life. So is the physical existence of these elements, which still exist at present. Functionally, all elements of the landscape still work well, despite there are changes. Some of the changes found are seen in Table 4 below.

Table 4 Assessment of changes of the landscape elements

| No. | Landscape elements | Scale | Changes                                                                 |
|-----|--------------------|-------|-------------------------------------------------------------------------|
| 1   | Palace and Alun-alun | v     | Physically and the function of Palace and Alun-alun does not change much. |
| 2   | Beteng Bakuwerti   | vv    | The wall along the north side no longer exists and is transformed into a row of magersari houses. The moat (jangang) around the beteng are gone. |
| 3   | Plengkung (Gate)   | vv    | There are 3 gates: Plengkung Jagasura, Plengkung Jagabaya, and Plengkung Madyasura which has been dismantled into regular gates. |
| 4   | Pojok beteng       | v     | All four beteng corners only have minor physical changes. |
Table 4 indicates that all elements of the landscape have changed, although many are at least different. Most changes occurred particularly in the use of houses and new buildings for commercial activities. Also, changes in the residents’ activities and the emerge of modern houses, due to the residents’ desire to change their traditional houses into houses with modern architectural style. Nevertheless, the physical landscape elements built from the beginning of the beteng construction can still be found and seen today. Those elements also still function well as their functions in the past.

Change has certainly been ongoing and will continue to affect the continuity of the Jeron Beteng heritage landscape. Nevertheless, the study result shows that many changes have not yet impacted to the decrease of the existence and function of the landscape. The changes that exist today are still expected to be a result of the ongoing dynamics of development, which are inevitable. Most elements of Jeron Beteng heritage landscape existence are still continuous from the past until now. The form of elements of the Jeron Beteng landscape, which are the Beteng Baluwerti, Palace, Alun-alun, Dalem Pangeran, spatial pattern, and part of Tamansari, is still survive as it existed for hundreds of years ago. The landscape is continuing in the middle of the development pressures. The balance between changing and unchanging is the key to the continuity of the heritage urban landscape. Jeron Beteng’s historical, spatial, and cultural landscapes need to be sustainable in accepting change and development, between maintaining continuity of old assets and fulfilling current and future living needs.

4. Conclusion

Jeron Beteng, with its landscape character, is the heritage of Yogyakarta city, which is not found anywhere else. The genius of Sri Sultan Hamengku Bowono I as a planner and the Sultanate Palace’s power made the Jeron Beteng residential area continue amid the rapid development of the city. The physical elements of the landscape built from the beginning to the present still exist and function properly. The heritage elements include the Palace, Alun-alun, Tamansari complex, beteng wall, Plengkung (gate), spatial pattern, and traditional houses. Despite the changes, its existence dominates the formation of the landscape character of Jeron Beteng.

| No. | Landscape elements                  | Scale | Changes                                                                 |
|-----|-------------------------------------|-------|-------------------------------------------------------------------------|
| 5   | Dalem Pangeran                      | vv    | Some functions of the 13 Dalem Pangeran have been transformed into schools, restaurants, etc. The architecture of the buildings remain or slightly changes. |
| 6   | Tamansari complex                   | vv    | No longer serves as a bathing and garden area, but is currently a residential area that occupies empty land around the relics. |
| 7   | Traditional houses/ kampung         | vv    | Kampung abdi dalen has been transformed into an ordinary settlement, due to changes in land ownership and the current function of abdi dalen that has been different from the past. |
| 8   | Spatial pattern                     | v     | Almost no physical changes                                              |
| 9   | Toponym of roads                    | v     | Road names use kampung names                                             |
| 10  | Ngindung/magersari                  | v     | The number of houses are growing but still under control.               |
| 11  | Commercial houses                   | vvv   | Many changes in house function into shops and stalls as the increase of economic needs. |
| 12  | Commercial areas                    | vvv   | The development of commercial activities along several roadsides marked by converting old houses into shops and the growth of new buildings with commercial functions (shops, stalls, arts hops, cafés, restaurants, etc.). |
| 13  | Buildings with modern architecture  | vvv   | Many traditional buildings have been transformed into buildings with modern architecture. So is the development of new buildings with modern architecture. |

Source: analysis, 2020

Note: vvv big/significant changes      vv medium changes      v small changes
The continuity of the Jeron Beteng heritage landscape is achieved because of the strong power of the Sultanate Palace of Yogyakarta. It also means that the Palace’s rules have been appropriately implemented. Nevertheless, the pressure of urban life continues to be experienced in the Jeron Beteng area. Therefore, good management and public awareness of the importance of Jeron Beteng conservation is indispensable. Jeron Beteng heritage landscape is continuing to be the identity of Yogyakarta Sultanate and the city of Yogyakarta.

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