Reconstructing Urban Heritage Character

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Abstract. The old town area gives a significant character on urban heritage, in particular regarding Kota Pusaka programme in Indonesia. While enhancing the character, in this case, part of Siak Sri Indrapura City has burned out, and raise serious issues to the local government due to lack of written data on how to reconstruct the area. In this case, extracting field data by conventional measurement from remaining buildings found ineffective. Not only consume time, but these methods have also created social and psychological problems for local people. Therefore various indirect field methods such as desktop research, digitising, and documentation are needed to be completed by more fast and interactive direct field methods. This paper confirms that field data which compiled by various field methods can more contribute to reconstructing the character of the old town.

Keyword: urban heritage, character, reconstructing

1. Introduction
General observation can create necessary responses in understanding and raising awareness of the situation in the research field [1], and creating a sense of familiarity [2]. However, this field method can be time-consuming due to having to break down superficial information. Similarly, this is also applying to other conventional field methods such as manual drawing. Doing manual drawing and measurement of the existing or the remaining area are found ineffective regarding safety and certain procedural matters that must be full filled before collect data. Moreover, this is more complicated to collect data on the same day due to the hectic situation on the area, in particular, relate to victims of the fired. Therefore, more efficient field methods in collecting data are an urge to saving time and avoiding more social and psychological problems.

This paper describes how an urban designer can conduct fast and more interactive field methods to collect preliminary field data when an urban disaster happened, in particular, relate to the fire of the heritage area such as at Siak Sri Indrapura city where this research conducted.

2. Research Methodology
This research has combine between direct and indirect methods in term of collecting data. The first-hand field data is the most significant matter in the direct method. The data by means have directly extracted from the research area [3] and serve as the primary data [4]. To support the primary data, furthermore, secondary data have validated by several indirect field methods such as desktop research, digitising, and documentation [5]. By combining direct and indirect methods [6], this research can categorise the field data in fast and more efficient ways. The accuracy data have relied on two aspects; proper usage of assistive devices such as drone and camera [7–9], and capturing local people voice
during direct ground check [10]. These aspects are seen as reliable mediums to connect between the data and the analysis process that is aimed to make summaries of findings.

3. Findings
Two blocks of buildings have been burned down on February 17th 2018 [Fig.1]. According to the regulation, SK Bupati Siak No. 240/HK/KPTS/2018 and [11], this area is part of the heritage area and has prepared to conduct the Indonesia Urban Heritage Programme [12]. The local government restrains almost all activities in the area since the disaster happened. According to the local official, the local government is very concern about heritage assessment and wait for alternative ways before to let local people redevelop the area. This situation has occurred for more than a year. This research was conducted as a part of the heritage impact assessment to find a preliminary solution for the local government to deal with the area.

Figure 1. The area has burned down in 2018.

4. Discussion and Analysis
This is important to know what methods are most appropriate suit to collect data from the field through various field documentation, in particular, to collect data on the same day when the disaster happened. In this field research, aerial view mapping becomes the first method to collect field data [13,14]. Due to the lack of documentation of technical map, the aerial view mapping has produced through low-high top view pictures [15,16]. This method was conducted by using the drone to obtain the pictures of the research area and then was comparing them to preview pictures made a year earlier [Fig. 2]. The comparison shows that the two-block area was completely burned and it was covered about 13,328 m² and 72 buildings have perished. The most advantage of using this method is that the researcher can very fast depict the area as the drone can be instantly deployed and produce the picture on the same on the disaster day.
Another field method of collecting data is by using photographs. In this means, photographs can provide certain advantages in collecting data and information [17,18]. By comparing some photographs before and after the disaster, this research found more and more information about the research area [Fig. 3]. Because, photographs are not only served as a visual inventory but also depicts the situation and familiar medium for most people [19]. From this method, comparing photographs has used to confirming something and to reveal more information. Photographs are not only used to show about the past but also as a creative medium of language to express experience identity [20].

Another method is on site-historical check method. This method is used to understand how the city and the research area have built time by the time. The city itself, Siak Sri Indrapura, was built near to the Jantan river by the Malay sultanate in the 18th century. The city has developed from the river banks to dry-land side and has designed in certain block area for certain function and rules. Throug this way, urban fabric and pattern of the city can be drawn [21], and the oldest area is still laid at the river banks area.

In that time, riverine economic life was the major source income for the city and people. In order to support this riverine economic life, the Sultan built a traditional market. Not just for trading and marketing activities, this traditional market also became an inbound area for Chinese people, and they
were only could life and having a house in this area. This is why this area today’s is called the Siak old market or the Chinese area [Fig. 4].

![Image](image1.png)

**Figure 4.** The Siak old market and inbound Chinese area.

As mostly inhabited by the descendant of Chinese people, buildings in the old market have found mostly influenced by Chinese architecture [22]. They are built in two levels of wooden construction with an inner court and narrow alleys. This character is different from other parts of the city. Therefore, these buildings also become the significant signifier of the city until today. These kinds of buildings are found unique in architectural style and its character due to the fact that most old buildings in this city are various style design apart of traditional Malay architecture [Fig. 5]. From this point, on site-historical check method can be utilised to collect field data.

![Image](image2.png)

**Figure 5.** Influencing Chinese architecture on local buildings.

Another method to collect field data is to understand the existing urban fabric of the city [23]. The existing urban fabric can assert in understanding how the city was built at the beginning until today. It is significant to find not only to figure the oldest area and space of the city but also to see the structure of the city and its relation to the research area. From this method, the existing urban fabric shows that today’s Chinese area is not much changed compared to the earlier time [24].

Documentation of built forms of the area is another important field method. By doing the documenting, research can find not only significance values on built forms but also historical and tradition values apart from how they were built [25]. From this method, typology of the built forms
can be drawn and categorised in a certain pattern. This pattern is also playing a significant role in the future of the area [26] through influencing on the architectural style [Fig. 6].

By doing these field methods; aerial view mapping, photos comparing, on the site-historical ground check, understand the existing of the urban fabric, documentation of built forms – this research can summarising the field data in certain preliminary categories in fast and more efficient ways. The preliminary can be drawn as building characters, urban fabric guidance, and technical maps.

Five of preliminary building characters [Fig. 7] can be used as prototype design in rebuilding of 72 buildings that were perished. By maintaining the previous character [27], combination on between Chinese architecture and local architecture style is still the main precedent design for the future buildings [28], and open for more contemporary materials used which is possibly different from previous materials [29]. This means that the preliminary building characters are possible to take a role as the safeguarding of the cultural identity of traditional architecture [30].

The previous urban fabric has framed [Fig. 8]. There are four aspects of the urban fabric of the area: five foot way, alley, back alley, and inner courtyard. These four aspects are necessary to put as design guidance for the urban fabric [31]. In this point of view, the urban fabric can be assumed as a
pragmatic response which is materialized through formal solutions adapted to specific requirement [30].

Figure 8. The pattern of the urban fabric.

As the urge to redevelop, the old market needs basic maps. This maps can be produced from field data by combining various methods. By having the basic technical maps, it opens for more expandable purposes and uses for more redevelopment scheme [32] such as delineation for new buildings, implementing building codes, and map for urban disaster management and planning.

5. Conclusion
The urban design is a dynamic field that demand not only blended-skilled in architecture and planning but also more a capability to expand to other knowledge, in particular, research-based projects. In this research, for example, an urbanist is also urged to understand historical and social sciences, heritage, and administrative regulation. In short, dealing with impact assessment in urban heritage projects are also dealing with wider capability and more relevant skill which has not necessarily obtained at the urban design school.

This research also confirms that capturing field situation fast creates more opportunity to carry out in scientific development both theoretically and practically. In turn, this brings more positive advantage for the urban designer. Therefore the resilience architecture can be understood as the effort to stay a balance between the changing conditions while maintaining its existing characteristics by rebuilding new systems to respond to forthcoming changes [33]. Further research can focus on how the design can be well delivered to the urban community and in the same time, it can also prepare for further impacts on the research area.

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