



Building a Suitability Scoring System for the Redevelopment of an Existing Park into an Inclusive Park for Disabled: Case Studies from Pathum Thani, Thailand

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Received 26 September 2022; Received in revised form 24 November 2022

Accepted 19 December 2022; Available online 27 December 2022

Abstract

The northern fringes of the Bangkok urban area show common traits in terms of urban physical layout, social composition, urban development processes. Specifically, these territories have in common their progressive loss of agricultural activities, the urbanisation, the presence of industries and educational institutions, the daily commuting towards Bangkok's core, the car dependency (Likitsawat and Sahavacharin, 2022); all these factors influence the quality of life of these rapidly growing territories, and consequently, their inclusivity. This article investigates in detail the need of inclusive accessible green spaces in one of these peripheral areas, Thaklong – Klongluang-Rangsit in the Pathum Thani Province. Here, the actual dotation of public parks is reduced and concentrated in six locations not connected among themselves. The need of a change of paradigm in the concept of "inclusive parks" affects not only the urban policies, but diverse aspects of the landscape discipline: the integration with the surroundings, the accessibility, the perception and the interpretation of the ideas of disability and self-use – especially the disabled, the detail design of the spaces. The main objective of this research is the analysis of the six parks in Thaklong-Klongluang-Rangsit with the Suitability Scoring System (SSS), an index developed in this article and valid for other comparable urban contexts, which includes a diagrammatic visualisation of the results. The analysis, based on physical and urban considerations, will provide a score, rating of the likeability for a specific park to be developed and improved in terms of inclusivity and accessibility for the disability carriers. The discussions will provide points useful to analyse and develop other parks in similar peri-urban areas in Bangkok and similar contexts.

Keywords

Inclusivity, Accessibility, Green Public Space, Urban Development, Thaklong-Klongluang-Rangsit

Introduction and Research Objectives

The peri-urban areas surrounding the contemporary megalopolises request alternative paradigms of inclusivity and accessibility. In Bangkok Metropolitan Area, the study of the existing provision of green public spaces can support the growth of a renovated awareness towards the topics of inclusivity, accessibility, disability, green spaces (Selanon et al., 2022). With a high number of disabled communities (Pathum Thani Provincial Social Development and Human Society Office, 2022), the study area of Thaklong – Klongluang - Rangsit in Pathum Thani Province, Bangkok Metropolitan Area, Thailand were selected and investigated (ibid.) the presence of six disconnected green spaces (The Golden Jubilee Museum of Agriculture; Thaklong Municipal Park; Thammasat University Spaces; Industrial Pocket Park; Chalerm Prakiet Park; Pier Plaza), which constitute the exclusivity of the provincial public green dotation (Fig.1). The current method or tool, in integration of these existing spaces into a more integrated dimension of inclusive city-making is deemed by the author. Therefore, it is necessary to explore a new method or tool that helps maximising the prospected benefits of these spaces and to pursue their fully *inclusive* fruition, an implementation of quantity and quality of their activities, a deeper collaboration among the stakeholders to promote social inclusivity (ibid.).

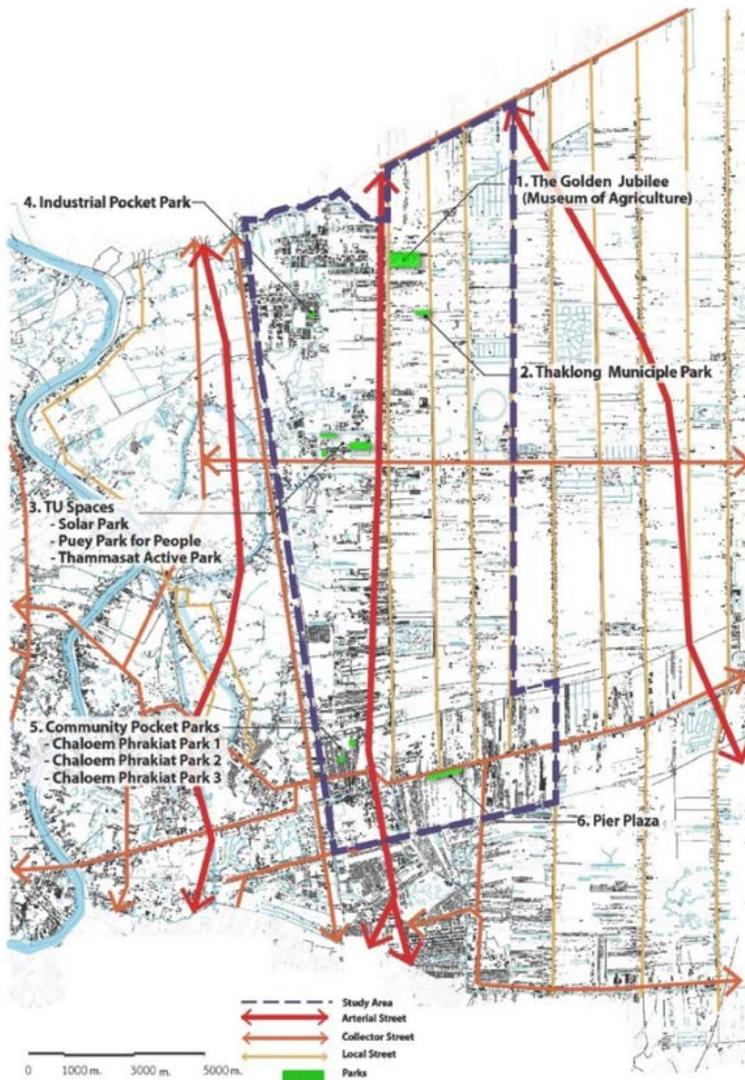


Figure 1 Mapping of existing parks in Thaklong-Klongluang-Rangsit in reference to the road network and the built environment.

Source: The Authors. Adapted from Google Map, 2022)

This article aims to the general goal of promoting the development of accessible and inclusive parks for disabled in the real-life scenario of a peri-urban area of the Bangkok's Metropolitan Area, aiming to be explanatory for comparable contexts in South-East Asia. The objective of the article is to introduce the Suitability Scoring System (SSS), as a new scientific method that helps defining the suitability of a park for its transformation into a green inclusive space for the users affected by disabilities and impairments. The research,

subsequently, applies the SSS method to the existing six parks of the study-area and their detailed analysis. After receiving the results, conclusions and future development points of the theory are provided.

Research Method and Suitability Scoring System: Criteria Designation for a Park for the Disabled People

The following subsections of the section 2.1 define the theoretical base of the article. The 2.2 and subsequent sections define the methodologies followed in the construction of the SSS.

1. Designating Suitability Criteria for a Park for the Disabled

The nexus among the landscape design, the built-environment, the notions of disabilities, accessibility and inclusiveness, the design and the creation of guidelines for inclusive, sustainable and resilient parks had been considered scarce (ibid., 2022). For this reason, the definition of the criteria had been articulated around ten main key-points related to this nexus and identified after bibliographic researching among those issues. Each of the ten points represents a crucial issue in a future possible redevelopment of a park into an inclusive space, and it arises from gaps in the different literatures. Each point has a specific meaning in reference to the recurrent urban issues connected to the peri-urban car-based nature of the study area and the chief topic of the inclusion of the disabled and impaired in the urban environment. The selected criteria are identified and defined as follows.

1.1 Presence of Nearby Communities Of Disabled (C1)

Reasonable distances for walking had been constantly indicated to be around a quarter of mile – or 400 meters – codified by the seminal Perry's neighbourhood units (Perry, 1929) studies, deepened by recent considerations which correlate specificities of the contexts and demographic factors (Yang & Diez-Roux, 2012). In regards of disabled and impaired people, a comfortably walkable or wheelable distance is under debate (Clarke et al. 2008; Rantakokko et al. 2014; Riddle, 2019), especially considering the perception of the physical obstacles of the built environment: lack of resting places, noise, orography, crossroads (Rantakokko et al., 2012). However, under the concept of the inclusion of the marginalised groups in the life of the built environment (UN-Habitat, 2020a), it is possible to take into account recent findings found in regard of another weak marginalised share of the population, the elderly, and extend their scope to this study. Amini-Behbahani et al., (2020), reported evidences of how 1,000 meters are considered an acceptable distance by the elderly in their daily life routine for the fruition of urban services (access to food outlets, religious facilities, news agents, chemists, post offices). Any distance above this threshold is considered unfavourable to commute by foot or bicycle and would be mostly considered valid

for other means of transportation. Therefore, as the main intention of the SSS is to select the most appropriate existent public park for its redevelopment as a public space where the people with any impairment or condition of any kind can access autonomously, the presence of nearby organised communities of disabled – the primal users of the prospected redevelopment – around the park has the main priority. The first criterion will hence positively evaluate the presence of an association or similar within 1,000 meters from the park.

1.2 Transport to/for the Area (C2)

This second criterion is deemed necessary by the research team for two main aspects. The first is the main discussion around the right to the city and the inclusion of the weak actors. Public transportation and mobility – especially if smart – can have a great impact in the inclusivity, (Kempin Reuter, 2019), expanding the human right principle of the inclusion of the marginalised communities and users to a broader contemporary extent (UN-Habitat, 2020a, 2020b). Moreover, an inclusive and well-connected park constitutes an urban element coherent with the reclamation of the right to the city by the marginalised actors (UN-Habitat, 2020a).

The second aspect is in regards of practical observations: one of the critical factors contributing to the frequent use of a park is its convenient location and proximity to home or community (Mohandespor and Yücel, 2019).

This criterion points to the integration of public transportation and the daily fruition of the park for a few interconnected reasons: the beneficial effects in the mobility of the people; The fostering of a culture of autonomous access to the spaces by the people affected by any disability and impairment; the blend of the future park transformations into the daily routines of the users, making of it an integrated influencing impact element in their lives.

1.3 Area's connectivity and Accessibility (C3)

The transportation network and a clear road hierarchy, including of major-minor arterial roads, collector road, community road comprise the key components of any urban planning and design projects, parks and open spaces (APA, 2006). It can be, moreover, a key factor in regards to public health and green spaces (Merriam et al., 2017). Considering the connectivity and accessibility to a park for disabled people, it is significant to determine how the accesses work and their actual state-of-the-art. In some normative frameworks as the Australian one, the importance of this point goes beyond its physical implications, since a limitation in the accessibility could constitute an act of “indirect discrimination” (HW, 2022) recognised by the law (Disability Discrimination Act, 1992). This criterion takes into account the diversity of the existent private-public transportation modes (private car, public transportation, bicycle, scooters, etc.) around the parks to study the site's accessibility in the perspective of a future requalification of the spaces. Walkability's features as walking paths

accessible for blind and wheelchairs are taken into account since their positive improvement and implementation could represent a determining factor for the disabled (Clarke et al.,2008). To examine this positive factor, the survey is extended up to the detailed scale of the connectivity modes, in relationships of the small scale of the accessibility (as equipped pavements, wheelchair accesses, safe crossings, etc.) compared to the international well-known standards (Boodlal, 2004; NACTO, 2013).

1.4 Adequacy of Site's Area (C4)

The public dotation of parks in the peri-urban of Thailand is affected by physical, social, cultural and managerial overlapped factors, seldom connected to top-down zoning approach (Selenon et. Al, 2022). The official data (NSO, 2021) shows that Klong Luang district of Pathum Thani province has the highest population density of the province, accounting for 1,990.61 person/sqm. Concerning the constant undergoing urbanisation and the increasing gentrifying work force of the province, the service-area capacity of a park is essential to accommodate a number of park users in years to come while balancing with the state-of-the-art of the context, affected by progressing spatial privatisation and land parcellation (Dovey, 1999). From considerations based on the survey of the existent spaces and from the different activities present in these, an area with a minimum designated surface of one rai (1,600 sqm) could be considered suitable for the transformation of an existent park into an inclusive recreation area for people affected by any disability or impairment. The surface is smaller than the American standard indications for neighbourhood parks (APA, 2006), but coherent with the United Kingdom's actual guidelines of pocket parks (Ministry of Housing, Communities & Local Government, 2017), with the seminal reference for the topic (Faraci, 1967), with the contemporary standards (Sinou & Gail Kenton, 2013; Hamdy & Plaku, 2020) and the context's urban tissue of the parcels. This area can be considered a realistic sufficient value for the context to accommodate a thoughtful redesign of the park with an adequate number of formal and informal active and passive devices park (Giles-Corti et al., 2005), terrains, landscape features and biodiversity for the leisure of the by a broad array of users of different demographics.

1.5 Adequacy of Public Facilities and Utilities (C5)

The nexus among public facilities and other composing elements of parks and green spaces had been studied from the point of view of the users' interactions in distinct moments of the previous century (Whyte, 1980; Gehl, 2010). Present-day instances (Mohandespor & Yücel, 2019; Dizdaroglu, 2021) conveyed that insufficiency of facilities and utilities causes a significant negative effect in the complacency of the park by the users. In this research, the prospected reconversion of the existent parks aspires to inclusivity, pleasantness, welcomeness and complacency as per the principle of general inclusivity for the weak shares

of society (UNDP, 2021). Particularly, users whose behaviour may be unanticipated (i.e., in regard of the users affected by mental-illness pathologies) or may require discrete forms of assistance request indirectly a structured park layout; consequently, it is significant for the scope of this research to evaluate the quantity and quality of the existent facilities. The criterion 5 evaluates the existent support system of a park within its borders (utilities as toilets, emergency dotation, gathering area, presence of electricity and illumination, water management, surveillance) and surroundings, in its immediate proximity: general urban facilities as a police and fire stations, hospitals and similar. It is remarkable also how the beneficial effects of these amenities can have effects which go beyond their main scope: a diversity of supported facilities in parks can empower the social dotation, favourite variety of uses and users and prevent illegal behaviours - especially in the youthful age (The Trust for Public Land, 1995; Lapham et al., 2016).

1.6 Areas for Activities (C6)

Contemporary remarks regard improvement of the public health through the visitation, the frequency and the duration of the users in a given green space (Merriam et al., 2017; Dizdaroglu, 2021) pointed out that apart from park's main activities of active and passive recreations, the quality of park is also determined with continuous social engagement and activities. Jiang et al. (2018) remarks how the Routine Activities Theory is fundamental when applied to environmental spatial cases with the goal of maintaining high level of liveability and safety - which includes also adequate open spaces to relief future possible pandemics (Eskyté et al., 2020). The indicator hence evaluates the mixture of activities structured with the intention to bring life to a green space that foster diversity, social inclusion, promote healthy and active lifestyle (Han et al, 2013), welcoming all people. This indicator hence includes: parking spaces to favourite the accessibility of the venues; food, beverage and consumption-space provision to favourite different uses from the ones already existent; active and passive recreational facilities to diversify and expand the range of possible users.

1.7 Quality of the Site (C7)

The importance of incorporating nature for psychological effects is a well-known research field (Kaplan, 1984; Kaplan & Peterson, 1993), which retained the root in the observations of the small intrinsic and natural components of the public spaces (Whyte, 1980). Seymour (1969) and more recently Jiang et al. (2014) and Jaszczak et al. (2021) suggested in the study of well-being park design that health and well-being of people are primarily influenced by the quality of the organic composition and by the general atmosphere of the park. The quality of the green spaces and the amenity provides a sense of care (Jiang et al., 2018) which can positively enrich this aspect. Therefore, this criterion favourably

regards the design features of the park like vegetation, water features, paths, areas for relaxing, overall scenery and perception.

1.8 Quality of the Surrounding Area (C8)

Abdelhamid and Elfakharany (2020), stated recently that the absence of urban services and the lack of appropriate amenities can decrease a park's usability and impoverish the overall experience of enjoyment, threatening the well-known positive regenerative effects of the park (Kaplan, 1984). For the reason, the redesign of a park should take into account its surrounding context, which additionally includes the walkability (Giles-Corti et al., 2005) and its favourable effects in the inclusion of the disabilities (Clarke et al., 2008). The quality of the immediate surroundings significantly affects the future users experience; a welcoming and accessible green recreational area assumes a primal urban importance: promoting the use and the ease to access to the park can bypass the stigmas connected to disabilities conditions as fear or anxiety, cost or inability to afford travels and trips, avoidance of social and recreational situations (AIHW, 2022). This criterion regards the network of services between the park and the neighbouring and the accessibility – measured also in terms of presence and quality of sidewalks, safe road crossings, diversity of the area, vibrancy, mixed used commercial activities, etc.

1.9 Management of the Site (C9)

Extensive observations of social interactions in public spaces and of their users as space-keepers and guarantors of care, safety, control, management have been constantly conducted during the decades (Jacobs, 1961; Whyte, 1980; Gehl, 2010). The bordering of the public spaces in car-based contexts, as it happens for the majority of the parks of the study area, however, limit these dynamics. However, the bordered parks of the study area are equipped with a public management service which has dedicated staff and personnel in charge of implementing service duties: ordinary and extraordinary maintenance; oversee and supervise the compliance of the user behaviour with the regulations; manage the opening/closing time; exercise a continuous spatial control. This aspect makes the fruition of the park less organic, limited into opening times and physical areas, but it offers positive aspects as well in regard of the mitigation of the well-known negative consequences of the unsupervised and leftover urban spaces: it limits the effects of the broken windows theory (Wilson & Kelling, 1982), the fear perception - which emerges especially in connection with gender (Jorgensen et al., 2012) and the criminal behaviours (Lapham et al., 2016). This actual condition of the parks allows the research team to focus also on management-related matters rather than solely on the urban safety issues, one of the fundamental cores of the fruition of the urban spaces (Kaplan et al., 1998). Dizdaroglu (2021) and Abdelhamid and Elfakharany (2020) suggested that park's maintenance and management are one of the

relevant criteria that influence the wellness of the park. A well-maintained park in good condition will more clearly serve its purpose of key service and consequentially be more inclusive for the disabled community – and for all others communities in general.

1.10 Physical Potential for Future Transformation (C10)

Foundational texts (Perry, 1929; Seymour, 1969), technical references (APA, 2006) and contemporary findings (Abdelhamid and Elfakharany 2020), states how physical features of the built environment contributes to the aesthetic of the area and that quality and design, green infrastructures, water and other features affects an efficient operation of the site. The fieldworks showed positive correlations among these key points and the sites' specificities. This factor evaluates holistically in each park, its state-of-the-art, its design solutions, the presence of designed or less-designed areas possible subject of development/improvement and the overall condition of the sites. This factor contributes to define the future physical potential for the park reconversion and redevelopment towards inclusivity. The following section explains the methodology of the scoring system.

Scoring Systems

The methodology followed for the construction of the SSS is explained in the following five consecutive stages.

Grouping of Criteria and Weight of Significance for Public Parks for the Inclusion of People with Disabilities

After being defined, the criteria are weighted based on their significance to the suitability future possible transformations: the weights with the operational transformation have been decided with the physical transformation of the parks into parks for the disabled as a priority. These weights on suitability are divided into three groups and reach a total of 100%. The first group is the primal one and it includes criteria number 1, 2, and 3; each of these criteria it's weighted 15%, for a total group weight of 45%. This group derives from outside factors which can not be adjusted by the research team; hence, their relevancy constitute a barrier to the future redevelopment. The significance of the second group is moderate, however it holds the largest number of criteria (number 4, 5, 6 and 7); each criterion accounts for 10% of weight, for a total 40%. This group comprises internal factors which, at the time of the potential future development possibilities, would constitute elements of design (i.e., it would be possible for the designer to work on the qualities of the activities, or the shape of the green spaces, of the paths, etc.). The third group is the least significant; it comprises of criteria number 8,9, and 10 which have a designated weight of 5% each – total score, 15%. This group offers a more general and comprehensive view of possible future

transformations, taking into account tangible and intangible factors connected both to the park in itself and to the design transformation.

Table 1 Criteria and Their Weight

| Criteria | Weight (%) |
|---|-------------------------------|
| 1) Presence of nearby communities of disabled | 15% for each of the criterion |
| 2) Transport to/for the area | |
| 3) Area's connectivity and accessibility | |
| 4) Adequacy of site area | 10% for each of the criterion |
| 5) Adequacy of public facilities and utilities | |
| 6) Areas for activities | |
| 7) Quality of the site | |
| 8) Quality of the surrounding area | 5% for each of the criterion |
| 9) Management of the site | |
| 10) Physical potential for future transformations | |
| Total Score | 100% |

Note: The table summarises the criteria and their weight.

Suitability Scoring System

The various criteria of the section 2.1 and weighted as reported in the precedent subchapter, are in this subsection evaluated numerically also to allow a simple in-field evaluations of the existent parks. A rating scale of 4 scores is adopted: each criterion in each of the six sites is ranked from 0 to 3.

- A value of 3 means “very good”: each criterion with this score indicates a “very high” potential suitability for a possible reconversion dedicated to the inclusiveness of the disabled and impaired users.
- A value of 2 means “good”: each criterion with this score indicates a “high” potential suitability for a possible reconversion dedicated to the inclusiveness of the disabled and impaired users.
- A value of 1 means “fair”: each criterion with this score indicates a “low” potential suitability for a possible reconversion dedicated to the inclusiveness of the disabled and impaired users.
- A value of 0 means “poor”: each criterion with this score indicates a “poor” potential suitability for a possible reconversion dedicated to the inclusiveness of the disabled and impaired users.

We specify that field-observations and site visits shall be completed from the point of view of the daily users and referring only to information publicly accessible (i.e., on-site panels, informative documents, websites, etc.).

Park's Suitability Assessment According to the Suitability Scoring System

In regards of each of the criteria defined, the assessment process followed these principles.

C1 - The presence of one or more of named communities or association in the given radius of the park will constitute a positive attribute for the prospected reconversion of the park.

C2 - The proximity of the site to a stop or transportation hub direct to Victory Monument will provide a score.

C3 - A well-connected by diverse means of transportation and a safely accessible park will provide positive scores.

C4 - A surface equal or higher than the indicated is positively evaluated in the context of a redevelopment since it can allow the design of park's facilities for disabled.

C5 - A park well-equipped and well-structured with utilities and facilities constitute in its state-of-the-art a space whose transformation would be then easier than the one occurring on a non-equipped space; hence, the more supplied the space, the more likeable its transformation would be and higher the score assessed.

C6 – The diversification of the existent activities would enlarge the fruition options and the range of possible users while provide a high score since it will constitute a positive factor for the reconversion of the park.

C7 - A park with more quality, environmental care of its green features' composition and green facilities will have a more positive score.

C8 - A diverse, mixed, vibrant and safely connected surroundings which can promote more inclusion will get a positive score.

C9 - A manned and supervised park, provided of management personnel and safety is awarded as an ideal positive factor in the scores.

C10 - This criterion summarises the overall holistic characteristics of the parks covered and uncovered the previous individual detailed criteria, assigning a high score in case of general overall potential for the reconversion into a space for the inclusion of the disabled people.

Weighted Scoring System and Assessment

The overall score system chart (Table 2) constitutes the base for the definition of the scores of the parks. The table summarises the criteria, their weight and the maximum scores in the two scales.

Table 2 Data Scoring Criteria and Assessment Systems

| Criteria | Weight (%) | Maximum Assessed Score | Maximum Weighted Score |
|---|---------------------------|------------------------|------------------------|
| 1) Presence of nearby communities of disabled | 15% | 3/30 | 15/100 |
| 2) Transport to/for the area | for each of the criterion | 3/30 | 15/100 |
| 3) Area's connectivity and accessibility | | 3/30 | 15/100 |
| 4) Adequacy of site area | 10% | 3/30 | 10/100 |
| 5) Adequacy of public facilities and utilities | | 3/30 | 10/100 |
| 6) Areas for activities | for each of the criterion | 3/30 | 10/100 |
| 7) Quality of the site | | 3/30 | 10/100 |
| 8) Quality of the surrounding area | 5% | 3/30 | 5/100 |
| 9) Management of the site | for each of | 3/30 | 5/100 |
| 10) Physical potential for future transformations | the criterion | 3/30 | 5/100 |
| Total Score | 100% | 30/30 | 100/100 |

Source: Research teams.

The assessments, carried out in accordance of the literature survey reported in the 2.1, were conducted by the research teams in different site visits, where data, photos and videos and topographic data were collected. To further support the park evaluations, with the aid of the existing digital cartography, census data, layered map, digital reconstructions and 3d models were created (see in the section 3).

The SSS compares the general character of the six parks in a study area with their possible future redevelopment potential. The numeric calculations represent a park's suitability potential to be developed for the physical and the social inclusion of the people affected by any kind of disabilities and impairment and as well as beneficial to the surrounding communities. The SSS is coherent with the landscape design principles previously studied (Selanon et al., 2022) which aims to empower and contribute to lives of the disabled users. More specifically:

- Generating a sense of belonging to the public space at neighbourhood level and promoting social inclusion at urban level;
- Creating inclusive accessibility and connectivity to all with ease from public transports and special assistances;
- Designing well-supportive and amiable green public spaces with opened-air passive and active designed activities;
- Integrating individual enthusiasm with social composition through green public spaces seamlessly.

Consequently, the high scored outputs represent the positiveness of a park to be transformed, improved and managed in terms of inclusivity and accessibility for the disabilities. In opposition, lower scores outputs present the lesser opportunity for an inclusive park's development and transformation.

Assessment, Data Interpretation and Presentation

After all the sites in a study area would have been assessed, the data of each park can be displayed in a variety of interpretation and presentation techniques. In the practical example provided in the following section, the data will be firstly shown in table format as per the Table 2. However, the table/numerical format contains limitations for presenting the tendency (potential and constraints) of each park. Moreover, the research teams believe numbers and table can be expressed in a variety of graphic forms for communicative purposes. In this definition of the SSS, radar-diagram is the designed form to showcase the information graphically and to control the ranges of data interpretation (numerical and %) and to interpret the assessed criteria with the tendency of each park in the same direction. Both visualisations can have different purposes: comparative descriptions, base for discussions, tool for policy making, among others. The following section will apply this theoretical framework to the study area of Taklong, Klongluang. The six provincial parks will be analysed with the SSS, and the results will be delivered graphically as described previously. The section 4 will discuss the results to provide an example of the use of the SSS.

Analysis of the Provincial Parks

This section provides practical application of the SSS to a real case study area, the Taklong, Klongluang area. This analysis is conducted with site visits and observations, photographic documentation; 3d-models are produced during the study phase to make the analysis more extensive and clearer. The following subsections will analyse the six parks.

The Golden Jubilee Museum of Agriculture

The museum was established in honour of His Majesty the King Rama the 9th. The interior space of 480,000 sqm was designed including mixed-uses activities: agricultural land - primarily, recreation (semi-public park), museum, commercial activities. A big part of the activities is accessible by whoever is affected by any kind of physical disability. It can be considered as a regional park for its size and since it serves for people of different municipalities in the province and the neighbourhood. Details in Table 3.1.

Table 3.1 Evaluation of the Golden Jubilee Museum of Agriculture based on the study's criteria

| Criteria | Potential and Constraints of the park | Assessed Score |
|---|--|----------------|
| 1) Presence of nearby communities of disabled | The closest disabled communities are two: Handicapped Lottery Trade Association, and Pathum Thani Disabled Association. Located at 20 minutes of car travel, inaccessible by public transportation. | 1 |
| 2) Transport to/for the area | Users can potentially commute by public transportation from the closest Bangkok's city centre hub, Victory Monument, with around 60 minutes and does not support travel by walking and cycling. | 2 |
| 3) Area's connectivity and accessibility | The park is accessible by public bus and private transportation with approximate 20 minutes rides from residential areas in Pathum Thani province; there's no support for entering by walking or cycling, and the path for blinds and physically disabled people is limited within a few internal paths. | 2 |
| 4) Adequacy of site area | The park has overall area of 480,000 sqm (300 rai) which is sufficient for a variety of uses concluding of agriculture, passive and active recreations, education, etc. | 3 |
| 5) Adequacy of public facilities and utilities | The nearby facilities consisted of the museum within the area, Karunvej Hospital, the public Thammasat Hospital; internally, park is equipped with electricity, water management station, drainage and sewer system. Emergency and services facilities, bathrooms and surveillance are present as well. | 2 |
| 6) Areas for activities | A variety of activities supported areas are supported: museum, park, recreation areas car parking area, restaurants and café. | 3 |
| 7) Quality of the site | The park is designed with green scenery in most of the area with shady walkways, farmlands, gardens, green recreation spaces, etc. Limited accessibility for disabled limits the possibilities of enjoyment of many of these features. | 2 |
| 8) Quality of the surrounding area | Low and medium density communities as well as mixed commercial activities can be found in the surrounding context which has no negative relation to the park. The external spaces are not designed for walkability and to support the mobility of the disabled. | 3 |
| 9) Management of the site | The area is well managed and operated by the museum with opening-closing time, entryway, cleanliness, hand-sanitiser, surveillance, etc. | 3 |
| 10) Physical potential for future transformations | The park and area are well serving to the surrounding neighbourhood and distance users with a mixture of uses, and good management & operation. | 3 |
| Total Assessed Score (/30) | | 24 |



Figure 2 Photographic impression of The Golden Jubilee Museum of Agriculture. Source: The Authors.

Thaklong Municipal Park

Thaklong Municipal Park is considered to be a district level park with the overall service area of 63,740 sqm (40 rai). The park was designed to service its surrounding composed by low and medium density residential communities. The area is unconnected to public transport services and is mainly accessible by private transport as well as walking and cycling from the nearby communities (Table 3.2).

Table 3.2 Evaluation of Thaklong Municipal Park based on the study's criteria

| Criteria | Potential and Constraints of the park | Assessed Score |
|---|---|----------------|
| 1) Presence of nearby communities of disabled | There is no presence of nearby disabled communities within a walking or cycling distance. However, some of the disabled associations such as the Handicapped Lottery Trade Association, Pathum Thani Disabled Association, International Association of Disabled Persons, and Disabled Protection and Development Centre, are able to access the park within 20 to 60 minutes car travel. | 2 |
| 2) Transport to/for the area | Private transportation connects the park in 20 to 60 minutes to the residential areas within Pathum Thani province and Bangkok city centre (Victory Monument); walking, cycling, or by wheelchair which is only supported within the close area nearby. | 2 |
| 3) Area's connectivity and accessibility | The park area is located in the inner area of low-medium scale residential neighbourhood of the province, disconnected to the public transport service. The area is only accessible by private vehicles, walking, cycling, and wheelchair with ways suitable for disabled – but not equipped for blind and not safe to be accessed. | 2 |
| 4) Adequacy of site area | The total service area of the park is accounted for 63,740 sqm which is sufficient for serving in the neighbourhood and district level. | 3 |
| 5) Adequacy of public facilities and utilities | Limited internal facilities: electricity, water management station, drainage and sewer system. Emergency and services facilities, bathrooms and surveillance are present as well. No relevant external facilities. | 1 |
| 6) Areas for activities | The park is designed for recreational activities (passive and active recreations) such as areas for exercise, sport, sitting areas, and water features. | 3 |
| 7) Quality of the site | The park has some greenery scenario and water features, but are limited in space, quantity, surface, distribution. | 1 |
| 8) Quality of the surrounding area | The surrounding context is comprised of low density-medium residential communities, industrial areas, and wastelands which have no negative relation to the park. | 2 |
| 9) Management of the site | The park is well managed and operated by the site's Thaklong municipal office, with maintenance, opening-closing time, cleanliness, hand sanitiser, surveillance, etc. | 3 |
| 10) Physical potential for future transformations | The park could be easily converted to host people with physical and mental impairments and has an overall green scenario for passive and active recreation. | 3 |
| Total Assessed Score (/30) | | 22 |



Figure 3 Photographic impression of Thaklong Municipal Park.

Source: The Authors.

Thammasat Spaces

There are three main semi-public green spaces available for possible redevelopments in the Thammasat University campus. They are managed under the authority of the University and cover a total surface of 147,000 sqm; all spaces are accessible with a variety of transportation mode such as public bus, public shuttle, private vehicles, walking, cycling, wheelchair from various zones of the university campus and from the surrounding communities. The “Solar Park” and the “100-years Puey Learning Park” were recently designed and their construction has to be considered fully completed. However, the third space, the “Thammasat Sports Centre”, presents more possibility chances of developments since it is composed by different disconnected parts (green area, parking lot, sidewalks, green spaces for a total area of 3,491 sqm) designed in different moments and not as a part of a singular project. For the purposes of the article, the analysis focuses on this last space. Its features are summarised in the table 3.3

Table 3.3 Evaluation of Thammasat Spaces based on the study's criteria

| Criteria | Potential and Constraints of the park | Assessed Score |
|---|---|----------------|
| 1) Presence of nearby communities of disabled | The service centre for TU disable students is the only disabled community located within the university; it is located at a walking distance (400 meters) to the space. | 3 |
| 2) Transport to/for the area | Transportation from Bangkok city centre (Victory Monument) requests less than 45 minutes by public transports and by private vehicles; nearby residential areas are located less than 20 minutes far. | 3 |
| 3) Area's connectivity and accessibility | The park is accessible by multi-transportation modes: public transport (bus, vans), private vehicles, walking, cycling, wheelchair comfortable paths, with a designed dedicated footpath and safe road crossing through the ways. | 3 |
| 4) Adequacy of site area | The Thammasat Sports Centre park has a surface of 3,491 sqm which is adequate to support the use by the university's community and the surrounding neighbourhoods. | 3 |
| 5) Adequacy of public facilities and utilities | There are several public facilities and utilities supports, internal and external: Thammasat public Hospital, community services, sewage and drainage system, electricity, bus station, community mall. | 3 |
| 6) Areas for activities | The space has a variety of activities supported areas such as education, sports area, recreation and relaxation, restaurants and café, etc. | 3 |
| 7) Quality of the site | The space was designed with greenery sceneries of trees, vegetation and abundance of water features which is suitable for recreation activities; however, the design is poor and isn't a part of a comprehensive project, but a progressive alteration of the space with no project guidance nor objective. | 1 |
| 8) Quality of the surrounding area | The surrounding area comprises low-medium density concentrated communities which draws to the university. The agglomeration of activities around the university creates liveliness and vibrancy. | 3 |
| 9) Management of the site | The park and other areas in the university are under the management and control by office of property of Thammasat university. | 3 |
| 10) Physical potential for future transformations | The university has good connectivity and accessibility with modes of transportation as well as a mixture of activities within and surrounding. | 2 |
| Total assessed score (/30) | | 27 |



Figure 4 Photographic impression of Thammasat Sports Centre, the most representative spaces of the three.

Source: The Authors.

Industrial Pocket Park

The industrial pocket park is located in the “D” community area of Navanakorn industrial estate and it has a service area of 4,000 sqm. The park area is designed to serve as an open-air recreational space from the industrial workers host there. There are no disable communities nearby as well as no disable support facilities within the industrial estate. The park itself provides green space and a temporary gazebo for recreational activities (Table 3.4).

Table 3.4 Evaluation of Industrial Pocket Park based on the study's criteria

| Criteria | Potential and Constraints of the park | Assessed Score |
|---|---|----------------|
| 1) Presence of nearby communities of disabled | There are no communities of disabled or impaired nearby; the closest one is at over 60minutes by car far. | 0 |
| 2) Transport to/for the area | Users can potentially commute by public transportation from the closest Bangkok's city centre hub, Victory Monument, with around 60 minutes by public transports and by private vehicles; it takes less than 20 minutes to reach the industrial estate from the neighbourhood. | 2 |
| 3) Area's connectivity and accessibility | The park is accessible by multi-transportation modes: public transportation (bus, reaching the entrance of the industrial estate) and private vehicles; walking and cycling are discouraged by the road conditions and the dense traffic. Accessibility is unfriendly for the disabled; sidewalks lacks of connections. | 1 |
| 4) Adequacy of site area | The park service accounts for circa 4,000 sqm, not adequate to serve the dense population of the area. | 1 |
| 5) Adequacy of public facilities and utilities | The industrial estate has basic utilities as electricity service, drainage and sewage system, while external are limited to the Thammasat public Hospital. | 3 |
| 6) Areas for activities | The possible activities are limited and heavily penalized by a poor design of the spaces which limits also the comfort of the use of the premises. | 1 |
| 7) Quality of the site | The site area is industrialised and busy and not designed to provide calm and relaxation to the overall. | 1 |
| 8) Quality of the surrounding area | The surrounding context comprises of a variety of industrial estates and utilities which is not support recreation activities. | 0 |
| 9) Management of the site | The park and areas in the industrial estate is under the authority of Navanakorn company. | 2 |
| 10) Physical potential for future transformations | The industrial estate and the surrounding areas have no design to support the inclusion of the disabled people. Moreover, the site is adjacent to highway and arterial roads whose high traffic volume is a threat to immediate pedestrian activities. | 2 |
| Total assessed score (/30) | | 13 |



Figure 5 Photographic impression of Industrial Pocket Park.

Source: The Authors.

Chalerm Prakiet Parks

Chalerm Prakiet community pocket park is composed by three community parks serving at neighbourhood level surrounded by low density residential communities. The parks are under the authority of Rangsit municipality with services area accounted for 3,352 sqm for Chalerm Prakiet 1 park, 3,372 sqm for Chalerm Prakiet 2 park, and 2,306 sqm for Chalerm Prakiet 3 park, in a total of 9,030 sqm. All the 3 parks are accessible by all modes of transportation and provide minimum facilities to disables and impaired (Table 3.5).

Table 3.5 Evaluation of Chalerm Prakiet Park 1, 2, 3 based on the study's criteria

| Criteria | Potential and Constraints of the park | Assessed Score |
|---|--|----------------|
| 1) Presence of nearby communities of disabled | There are no communities of disabled or impaired nearby; the closest is over 60minutes by car. | 1 |
| 2) Transport to/for the area | Public bus and rail transport from Bangkok city centre (Victory Monument) takes around 60 minutes approximately. It takes less than 20 minutes to transport from nearby neighbourhood by private vehicles. | 2 |
| 3) Area's connectivity and accessibility | The parks are intended to be accessed by foot and bicycle within the community. They are also connected to the public bus and rail transport. Road crossings, curbs and sidewalks in good conditions to promote access by disabled and impaired. | 3 |
| 4) Adequacy of site area | The total services area of the 3 sites is 9,030 sqm which is sufficient to serve people within the community. | 3 |
| 5) Adequacy of public facilities and utilities | Supralocal facilities supporting the park can be founded in nearby area such as Pathumvej hospital and Eknana International school; the single areas are poorly equipped. | 1 |
| 6) Areas for activities | Low numbers of activities are present. | 2 |
| 7) Quality of the site | The design of the parks features green and open spaces which supports both active and passive recreational activities. The design seems to have a vision and a general high quality. | 3 |
| 8) Quality of the surrounding area | The surrounding area connecting the parks is low density communities with little or moderate commercial activities and traffic | 2 |
| 9) Management of the site | The parks are under the authority of Rangsit municipality, with no contextual manning of the spaces. | 1 |
| 10) Physical potential for future transformations | The 3 parks are equipped with passive and active recreational spaces which serve directly the residents in the community; the existent layout show an average use of spaces and an overall less potential for future transformation. | 1 |
| Total assessed score (/30) | | 19 |



Figure 6 Photographic impression of Chalem Prakiet Park 3, the most representative spaces of the three.

Source: The Authors.

Pier Plaza

Pier Plaza Park (or the Chaloem Phrakiat Park of His Majesty King Bhumibol Adulyadej) is located along the Rangsit canal under the authority of Rangsit municipality. The park has a service area of 2,456 sqm and it classifies as a community level park serving the surrounding neighbourhood (Table 3.6).

Table 3.6 Evaluation of Pier Plaza based on the study's criteria

| Criteria | Potential and Constraints of the park | Assessed Score |
|---|---|----------------|
| 1) Presence of nearby communities of disabled | There are no disabled communities nearby; the closest are located over 60 minutes by car. | 1 |
| 2) Transport to/for the area | The park is accessible mainly by private vehicles as it is adjacent and opened to main road. It can be commuted by public and private transport from Bangkok city centre (Victory Monument) within 60 minutes via Future Park Rangsit hub. | 2 |
| 3) Area's connectivity and accessibility | The park area is connected to nearby multi-transportation nodes but mainly relies on private vehicles. Transport by foot or bicycle is not recommended due to high traffic volume and speed on the main road beside the park. Spaces and overall fruition are uncomfortable for disabled, with unsafe crossings, disconnected footpaths and high sidewalks. | 1 |
| 4) Adequacy of site area | The park area is accounted for 2,456 sqm which sufficient to support the medium density community with mixed commercial activities nearby. | 2 |
| 5) Adequacy of public facilities and utilities | There is only important Paolo Rangsit Hospital as the facility in area nearby, and a very limited number of facilities as illumination and water management. | 2 |
| 6) Areas for activities | The park is designed for multi-purpose usage with an area in support for physical activities not well separated from the street and poorly maintained waterfront basic recreation. | 1 |
| 7) Quality of the site | Calm and relax areas can be founded in some areas in front of the canal but all spaces are not disable-inclusive. | 1 |
| 8) Quality of the surrounding area | The park is publicly exposed to transportation network surrounded by main roads with are having high traffic volume and speed. The atmosphere does not support leisure, relax and recreational activities. | 0 |
| 9) Management of the site | The park is managed and operated by the authority of Rangsit municipality with no manned presence nearby. | 1 |
| 10) Physical potential for future transformations | The park is connected to multi-transportation modes and is located in a busy area in the medium density residential scale; there're mixed commercial activities in the immediate surroundings. | 1 |
| Total assessed score (/30) | | 12 |



Figure 7 Photographic impression of Pier Plaza.

Source: The Authors.

The following table 4 provides the summarisation of the scores of the detailed score of the single parks.

Table 4 Parks Assessment in Thaklong Municipality

| Criteria | | Parks in Thaklong Municipality | | | | | | | | | | | |
|---|------------|--|--------------------|-------------------------|--------------------|-------------------------|--------------------|------------------------|--------------------|---|--------------------|----------------|--------------------|
| | | The Golden Jubilee Museum of Agriculture | | Thaklong Municipal Park | | Thammasat Sports Centre | | Industrial Pocket Park | | Community Pocket Park (Chalerm Prakiet Park 1, 2 and 3) | | Pier Plaza | |
| Criteria | Weight (%) | Assessed Score | Weighted Score (%) | Assessed Score | Weighted Score (%) | Assessed Score | Weighted Score (%) | Assessed Score | Weighted Score (%) | Assessed Score | Weighted Score (%) | Assessed Score | Weighted Score (%) |
| 1) Presence of nearby communities of disabled | 15% | 1 | 5.00% | 2 | 10.00% | 3 | 15.00% | 0 | 0.00% | 1 | 5.00% | 1 | 5.00% |
| 2) Transport to/for the area | 15% | 2 | 10.00% | 2 | 10.00% | 3 | 15.00% | 2 | 10.00% | 2 | 10.00% | 2 | 10.00% |
| 3) Area's connectivity and accessibility | 15% | 2 | 10.00% | 2 | 10.00% | 3 | 15.00% | 1 | 5.00% | 3 | 15.00% | 1 | 5.00% |
| 4) Adequacy of site area | 10% | 3 | 10.00% | 3 | 10.00% | 3 | 10.00% | 1 | 3.33% | 3 | 10.00% | 2 | 6.67% |
| 5) Adequacy of public facilities and utilities | 10% | 2 | 6.67% | 1 | 3.33% | 3 | 10.00% | 3 | 10.00% | 1 | 3.33% | 2 | 6.67% |
| 6) Areas for activities | 10% | 3 | 10.00% | 3 | 10.00% | 3 | 10.00% | 1 | 3.33% | 2 | 6.67% | 1 | 3.33% |
| 7) Quality of the site | 10% | 2 | 6.67% | 1 | 3.33% | 1 | 3.33% | 1 | 3.33% | 3 | 10.00% | 1 | 3.33% |
| 8) Quality of the surrounding area | 5% | 3 | 5.00% | 2 | 3.33% | 3 | 5.00% | 0 | 0.00% | 2 | 3.33% | 0 | 0.00% |
| 9) Management of the site | 5% | 3 | 5.00% | 3 | 5.00% | 3 | 5.00% | 2 | 3.33% | 1 | 1.67% | 1 | 1.67% |
| 10) Physical potential for future transformations | 5% | 3 | 5.00% | 3 | 5.00% | 2 | 3.33% | 2 | 3.33% | 1 | 1.67% | 1 | 1.67% |
| Total | | 24/30 | 73.33% | 22/30 | 70.00% | 27/30 | 91.67% | 13/30 | 41.67% | 19/30 | 66.67% | 12/30 | 43.33% |

The space with the highest score is the park on which to intervene with the first priority and for which the transformation mentioned in the section 2 can bring greater benefits for the space in itself, its surroundings and for its users. In this study area, the highest ranked park is the Thammasat Sports Centre. Consequentially, all the others parks' transformations will have a less beneficial effect as the score decreases.

In order to frame a more immediate and comparative reading of the results, forecast a possible use of the SSS outside the academic fields – for instance, in reference of public hearings or with stakeholders not expert of the built environment, another diagrammatic representations of the results produced and shown in the Table 5. The score of each park is represented reporting the ten scores in the ten axes, one for each criterion evaluated in section 2. The resultant figure obtained by connecting the different scores obtained in each axis is the graphic representation of the score of each park. These resulting figures take into account the relative weight given to its factors.

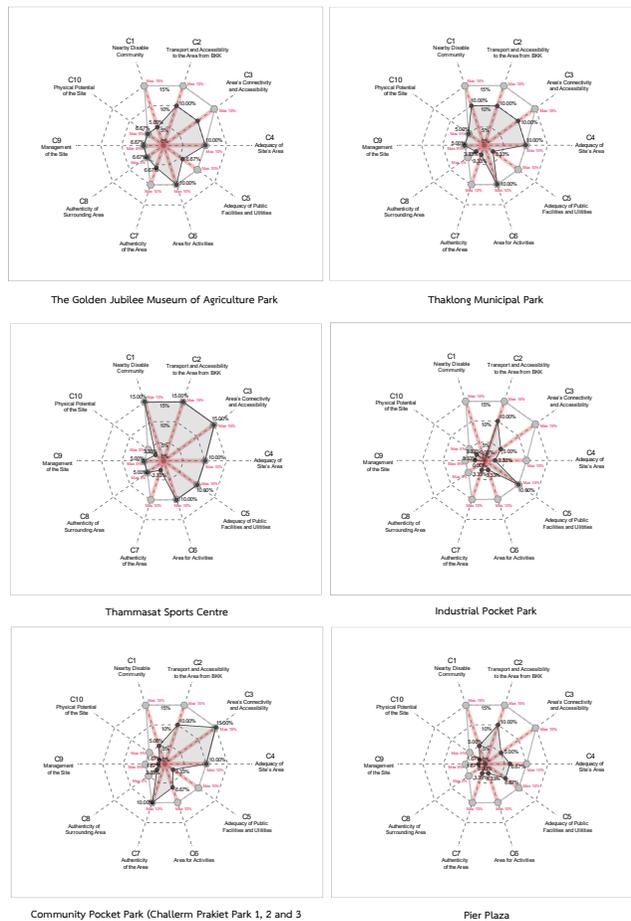


Figure 8 Diagrammatic representation of the results.

It is noticeable how the shape of the ideal shape of a park that would have achieved the maximum score of 30/30 – or of 100/100%, would have been in the shape of an irregular decahedron in order to maintain also graphically the correspondent weighting of the scores given to the criteria. The next section will discuss and analyse the results.

Synthesis and Discussion

By its principle, the SSS results reflect both theoretical criteria and physical characteristics of the spaces. The specific weighting of each criterion is hence balanced by the specific qualities of the space analysed indirectly. The following application of the SSS to the study area will contribute to express extensively this point.

In regard of the specific study area, the first element of discussion is related to the typology of the parks analysed. **The Golden Jubilee Museum of Agriculture Park, Thaklong Municipal Park and Thammasat Spaces** are structured parks: they are designed managed spaces, equipped of water, remote or in-person surveillance, fences or material divisions which separate them from the public roads, the traffic – while limiting the full accessibility and the extensive use of these premises. The actual users of these parks are diverse, and the full accessibility with public transportation, autonomous means of transportations and walking/cycling is possible only in the Thammasat Sports Centre - deeply connected to the students' life and located inside the Thammasat Campus.

The second kind of parks is the pocket-urban parks. This group is composed by the **Industrial Pocket Park, the Community Pocket Parks (Chalerm Prakiet Park 1, 2 and 3), the Pier Plaza**. They have in common the integration in the local urban fabric and the fact to be pocket-urban green areas. Except the Industrial Pocket Park, the absence of fences, gates and surveillance exposes the users to the vehicular traffic; the public transportation is not always present, and the dotation of services is minimal. Moreover, the quality of the green is lacking of maintenance and the biodiversity, the comfort and the diversity of the landscape solutions are limited.

The first group of parks scored higher than the second one, attaining the three highest results. This means that according to the criteria of the SSS, the transformation of an existing park into a more inclusive and diverse space for disabled people is more likely to produce relevant effects in the surrounding socio-economic and environmental context of a park already partially structured. The weighting of the factors acts in this case as a multiplier of the positive (or negative) values and of the positive (or negative) features associated with a space which offers already cues for a physical transformation. Similarly, for a park surrounded with, for instance, a poor infrastructural layout, a physical transformation will necessarily have to be deeper in practical terms (i.e., with the ex-novo construction of sidewalks, a careful design of safe junctions and road crossing, the plantation of new green areas, etc.).

The second element of discussion is related to the nature of the ten criteria previously discussed: there are criteria connected to factors external to the area (or “extrinsic criteria”: C1, C2, C3, C8), factors internal to the area (or “intrinsic criteria”: C4, C6, C7, C9, C10) and a hybrid factor, the C5, with both intrinsic and extrinsic traits. Their mutual interrelation constitutes a strong differentiation of the results. In this regard, the first criterion is relevant, considering that in a built context the localisation of the few communities and associations of disabled can be considered a relevant and stable element. The results obtained by all parks, visible in the axis C1 (“Presence of nearby communities of disabled”), clearly penalises with low scores the parks that are spread out in the provincial territory and less related to the planning zoning (i.e., the Industrial Pocket Park). This difference is reflected also in the graphic, considering this factor is one of the top three weighted.

Another general consideration connected to the extrinsic criteria, the graphics, and the provincial context is that the majority of the radar-charts shapes tends on the right side of the decahedron, with a considerable number of high scores remarkably registered on the axis C2 (“Transport to/for the area”) and C3 (“Area’s connectivity and accessibility”) – the other two of the three criteria parts of the first group, the more weighted one. The scores of the C2 acts as a potential strategic factor of integration of marginalised users and spaces in the research’s context. Mainly residential and privatised, the context provides a limited choice of public transportations: most lines are directed to Victory Monument in Bangkok. The score of the C3, instead, evaluates mostly the accessibility by different means of transportation. The overall good performance of all spaces under the C2 and the C3 aspects (excepts for the C3 of the Industrial Pocket Park and the Pier Plaza) is affected by a certain possibility of reaching the six parks spaces with different means of public transportations (various types of buses and vans and, in case of Community Pocket Park, a new developing line of mass rail system), while the context’s diffused car-dependency, the presence of roads and the suburban layout facilitates the accesses to the park with private cars and motorbikes, taxis and motorbike-taxis.

The intrinsic criterion of the C4 (“Adequacy of site area”) recorded in 4 parks an identical score of “average”; in the other two remanent parks, it scored below (the Industrial Pocket Park and the Pier Plaza, which are respectively the 5th and the 6th overall lowest score). Remarkable, these same two locations scored insufficiently also in the C1 (“Presence of nearby communities of disabled”) and in the C10 (“Physical potential for future transformations”). As a practical reflex of the node among these three criteria in these two parks, it emerges that the transformation of these existing parks into a more inclusive and accessible park for disabled would not benefit the disabled in the first place, the primary users of this prospected design transformation.

Another finding is found connecting the C5 hybrid criterion (“Adequacy of public facilities and utilities”) and the intrinsic criteria C6 (“Area for Activities”). These two criteria are part of the second group of value. The intrinsic and extrinsic components of the C5 evaluates how much well-equipped and well-structured the parks are: this doesn’t correspond necessarily to more activities conducted in the premises (C6). However, in the case studies, had been noted that spaces with more equipped surroundings perform better where there is a dense context, whether is residential (Industrial Pocket Parks) or educational, in a Campus (Thammasat’s), and scored less where the urban fabric is mostly suburban and composed by single houses or gated communities separated by large spaces (Thaklong Municipal Park, Community Pocket Parks).

The C6 shows also how the spaces with more diverse activities ranked higher: they are the ones with a structured and institutional organisation (Golden Jubilee, Thaklong, Thammasat). At their turn, these three spaces show the same value in the C4 and similar values in regards of the C9 (“Management of the site”), factor that in the Thai parks include a dedicated resident staff in charge of constant maintenance, management, cleaning and security and a code of behaviour, as noted previously. This correlation shows how the provincial dotation of organised parks which are managed by an authority provide a well-organised, managed and adequately big space to accommodate diverse activities – but which are not always suitable to be developed as park for disabled users.

The suitability for future physical transformations is taken into account also with one of the lowest-weighted scores, the C10 (“Physical potential for future transformations”) to cap all the previous considerations into a more holistic parameter. The structured park of the Golden Jubilee and the Thaklong Park received the maximum score, while Thammasat and the Industrial Park received medium ranks; the two remanent parks were marked as a sufficient grade. All scores are deeply related with the actual conditions of each park and the detail of each design. The designed spaces nevertheless have more room for future possibilities, given the specifics of their design (ample open spaces, structured green, non-seamless transitions among the pavements, lack of care in some extents); the Community Pocket Parks and the Pier Plaza, which obtained the smallest score, suffered more the specific physical constraints of the immediate surroundings and then, their marginal nature. Graphically, this is visualised as a shrink of the graphs towards the Centre on the correspondent axis, similar to the one that is visible on the C7 and the C8 axes (namely, “Quality of the site” and “Quality of the surrounding area”).

The relationships among these summarise the constant contrast among intrinsic and extrinsic criteria for the provincial dotation of public parks seen so far. The Pocket Parks and the Golden Jubilee parks score more than the others parks in C7 due to their designed landscape and their attention to the disabilities – even if it’s in a standardised and

uncustomed form. For the opposite reasons, both structured and unstructured parks score considerably less. The other remaining factor shows that this is unrelated to the context: Golden Jubilee and Thammasat perform well because of their diverse contexts (the 'calm' peri-agricultural context and the 'vibrant' spaces of the students' life). The other parks, especially the Pier Plaza and the Industrial Pocket Park, perform minor scores due to the marginal nature of the spaces and the unorganised lack of care of a poorly equipped surroundings.

The highest performing park, the Thammasat Sports Centre, is hence deemed as the most suitable given its actual condition, its context, the aforementioned relationships among the others. While non-excelling in all the fields and underscoring in the C7 and C10, it brings in its specific features potential for successful transformations. A forthcoming transformation will fit adequately with the transformations principles previously described in the section 2.2.5.

Conclusions

The construction of the SSS, the scores obtained and discussed in the article compel three main conclusions, as per the objectives of this research.

Firstly, the SSS allows processing a variety of sites with objective and fixed metrics and criteria rooted in the related scientific debate. With data gathering, observations and fieldwork, the application of the SSS can allow the urban planning and development stakeholders to prioritise the landscape design intervention in the urban context. More specifically, the SSS allows to develop the issues of the inclusion of impaired and disabled in the society, the need to adapt portions of cities not designed at the human scale into spaces for the human fulfilment and a stronger social living. This inclusion passes also thru the physical redevelopment of the urban public spaces. Graphic visualisations (3d, maps and radar-charts), particularly, would allow additionally an empowerment of distinct moments of the participative process: visualisation is a tool generate empathy and interactions with the local society, but are functional also to prioritise interventions and facilitate comparative discussions with other stakeholders, including the non-specialised ones during the participative processes or community meetings.

Second conclusion is about the application of the SSS to the study area. The scores highlighted the most suitable area for a possible future transformation: Thammasat Park, with its highest score, would be the space where a possible landscape design will have more impact for the context and the disabled community. As a park managed and controlled by a public authority, its transformation with a reality-based design is more likely to happen for many reasons: governance (i.e., guidance and control in the design-process; guidance in the effort to tackle inclusivity policies or to the SDGs, as the 11 - UN-Habitat, 2018); to satisfy the demands and the need of the communities which animates the local social context; urban

planning reasons (as to empower the whole provincial dotation of green spaces). Any possible prospected transformation of the park shall address in detail with the best practices of the landscape inclusive design and shall pursue the final goal of tackling the urgency of the need of more inclusive parks of self-access for the disabled – either as single individuals or as organised groups. Further studies will explore these design aspects in detail.

Thirdly, the validity of the SSS and its diagrammatic representations in other contexts deserves a further remark. The SSS has been developed following the contemporary debates in literature and has been tested in this study area. Affected by a differentiated mix of urbanising territories, non-homogeneous urban fabric, greyfields, need of private-car and a generic rigid top-down approach (factors previously and extensively documented, Selanon et al., 2022), this study area in itself can be exemplary of many Thai and South East Asian urbanisations. This touchpoint can become an element of applicability of the theory in similar environmental, social and political context whose built environment conditions requests for similar interventions; or also, in context where the built layout create de-facto marginalised users which suffers car or individual-vehicle dependency. The aforementioned systems of weights and counterweights given by the criteria weighting can help to tailor the theory to the specific local circumstances.

The SSS aims to be more, beyond that a score, a way to address the complexity of the suburban contexts, to bridge the policy making with the future possible detailed design while being useful also for the collaborative or bottom-up approaches. The SSS can be able to kickstart the process towards healthier and more inclusive cities, but also towards indirect and induced economic outcomes connected to the parks and to their surroundings (National Recreation and Park Association, 2022). For all these reasons, the testing of the SSS in other contexts would constitute an important further step of this research.

Acknowledgement

The article is the work of the Thammasat University Research Unit in Making of Place and Landscape. It is a part of the research of “A Study of Public Recreational Place for Quality of Life and Well-being of Disabled People,” which is funded by the Program Management Unit: Brain Power, manpower (PMU-B) under the Office of National Higher Education Science Research and Innovation Policy Council (NXPO), Thailand.

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