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Significance of Stakeholder participation & feedback in redesign of Urban parks - A case study of Veer Savarkar Udyaan, Borivali, Mumbai.

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Abstract

Urban green spaces are the extensions of the natural environment and provide the necessary breathing space within the everyday claustrophobia of the city. Well-planned and designed open spaces, particularly green spaces, have numerous positive influences on urban life. They contribute to the healthy development of the city and create buffer zones between different use areas within the city. An important part of the urban ecosystem, urban parks are essential to improve the quality of life of a society especially in the rapidly increasing urbanization. Ensuring community participation in planning and designing urban parks creates an impact on increasing use of such areas. Observing how people use the park and evaluating the perceptions is important in terms of how to design a park to make it a successful place.

This study is an exemplary study for stakeholder participation & its significance in the redesigning of urban parks, in case of the Veer Savarkar Udyaan, in Mumbai.

In this context, internal & external inputs were considered and during the design process, interviews & survey, within the framework of "stakeholder participatory design approach", were conducted, with the users of the park.

The results of this study validate that the participatory design process affects the stakeholder involvement & satisfaction, in a positive way and the cohesive design so achieved is adopted by the users voluntarily. Thus, it can be concluded that the participatory design process plays a key role in ensuring user satisfaction.

Key words

urban park, stakeholders, stakeholder participation, survey, park use behaviour, park use demand.

Urban Parks

An urban park is a park in cities which offer recreation and green space to residents of, and visitors to, the municipality. The design, operation and maintenance is usually done by local government agencies, but may occasionally be contracted out to a park conservancy, friends of group, or private sector company¹.

Urban Parks are seen as objects of urban regeneration and are also tangible entities, publicly lived and owned by everyone. Parks, as sustainable urban spaces, when well-integrated in the urban fabric, evoke a new ecological aesthetic, reclaims the natural systems for the vicinity, assists the indoor-outdoor amalgamation, promotes well-being, ecological integrity, construction and maintenance cost adaptation, and the mitigation of a wide range of negative impacts over the city life and environment (Tate, 2001)². It also accentuates the need for an activity-based strategy, able to deal with a creative and sensitive management of parks as urban spaces (Farinha-Marques, 2006)³. The urban park, with more space available, offers the opportunity to provide & integrate breathing space in response to the needs of a dense urban life.

As per the Indian housing ministry's 2014 Urban and Regional Development Plan Formulation and Implementation (URDPFI) guidelines, open spaces fall under three categories: recreational space, organised green space, and other common open spaces (such as vacant lands/open spaces including floodplains and forest cover in plain areas)⁴. All urban local bodies use the URDPFI guidelines for land-use planning. Open spaces include the various Development Plan reservations such as Recreation Grounds (RG), Play Grounds (PG), Parks (P) & Garden's (G). It is the primary responsibility and duty of the Corporation to maintain all the open reserved spaces with citizens participation and various collaborative models in-order to ensure public access and use for their designated purposes.

About Mumbai & its open spaces

Mumbai has evolved from a natural archipelago to its present amalgamated land form and is India's most-populous city. With the rising urban development and to cater the requirements of the growing migrating population; every square inch of Mumbai's land is used, and it accelerates day by day. It has become increasingly difficult to find a bit of greenery amidst the clusters of concrete towers that have dominated the cityscape. The city, as India's financial capital, is spread over 604 square kilometres and, according to the 2011 census⁵, is home a population of 12 million. Having sufficient accessible green open spaces is a crucial ingredient to create "sustainable cities and communities," as per the UN's Sustainable Development Goals⁶. Mumbai has an abysmal 1.24 square metres of accessible open space per person⁷.

Mumbai has been divided into 24 administrative wards under BrihanMumbai Municipal Corporation (BMC). For the convenience of city administration, wards have been decentralized. Each ward has its own ward office with the Ward Officer who is responsible for the municipal services under his area. Administratively, in Mumbai, urban parks fall under the jurisdiction of their respective ward-offices, who look after the maintenance & sustenance of these parks.

City Wards: A, B, C, D, E, F(N), F(S),

Western Suburb Wards: H(E), H(W), K(E), K(W), P(N), P(S), R(N), R(C),

Central & Eastern Suburb Wards: L, M(E), M(W), N, S, T

G(N), G(S)

R(S)



Image 1 – Mumbai Ward Map

(P K Das and Associates (August, 2011) Mumbai's Open spaces – Mas and a preliminary listing document. Mumbai, India. Available at www.pkdas.com.

Borivali & its Urban Parks

The suburb of Borivali, which lies in the northwestern region of Mumbai, falls under the central part of "R" ward and has high density residential development, and many educational institutes.

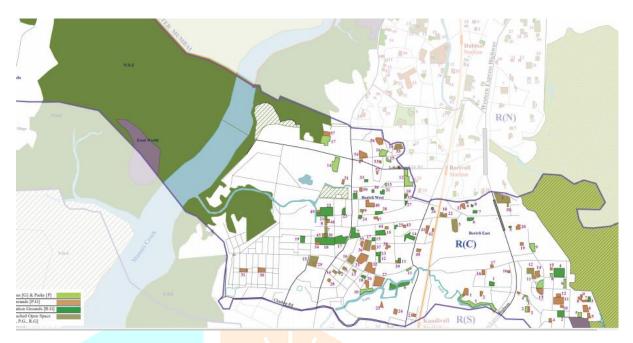


Image 2 – R Ward - Open areas

(P K Das and Associates (August, 2011) Mumbai's Open spaces – Mas and a preliminary listing document. Mumbai, India. Available at www.pkdas.com.

The suburb is blessed to have within its core; two important urban parks, namely the Veer Savarkar Udyaan (2006)⁸ and Borivali Sanskrutik Kendra Van Vihar (1994)⁹.

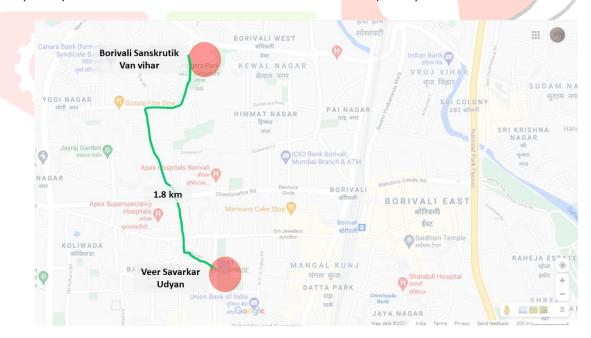


Image 3 – Google image reference of both the parks & the distance between them

The following comparison of the two parks, lying in close proximity to each other (less than 2 kms. away), differ in some of the aspects with regards to their usage.

 Table 1 – Comparison of both the urban parks based on listed parameters.

PARAMETERS	VEER SAVARKAR UDYAAN	BORIVALI SANSKRUTIK KENDRA VAN VIHAR	
Opened in year	2006	1994	
No of registered users (approx)	2500	1000	
Area (Sq M)	25,395	9500 (approx)	
Open on Days	All days	All days	
Timings	6:00 AM - 10:00 PM	7:00 AM - 9:30 PM	
Total open hours (daily)	16 hours	14.5 hours	
Activities	Walking/ jogging track	Natural Joggers Track	
	Temple	Green grass track	
	Children's play area	Yoga training area	
	Senior Citizen's park	students' study area	
	Lawn	Senior citizen's & Housewives Interaction area	
	Boating Lake (man-made	Open Auditorium (1000 pax)	
	pon <mark>d)</mark>	(Gyaan Sagar)	
	Ope <mark>n air gym</mark>		
	Open Auditorium		
	Ska <mark>ting Rink & dash</mark> ing		
	cars		
	Bad <mark>minto</mark> n court		
	Yog <mark>a traini</mark> ng ar <mark>ea</mark>		
	Am <mark>phitheatre</mark>		
	Library		
	Jungle themed kid's play area		
	Activity plaza		
	Football ground		
Facilities/ Amenities	Toilets (2 Nos)	Toilets (1 Nos)	
	Drinking Water Cooler (2	Drinking Water Cooler (1	
	Nos)	Nos)	
	Piped Background music in		
	the entire premises		
Accessibility	No provisions for Universal	No provisions for Universal	
	design	design	
Parking availability	No provisions within the	No provisions within the	
	premises	premises	

The Borivali Sanskrutik Kendra Van Vihar is more of a natural habitat for the flora and fauna whereas the Veer Savarkar Udyaan is essentially a man-made recreational activity urban park.

Though the operational timings for both the parks are similar, the Veer Savarkar Udyaan has an added advantage as it starts earlier which is beneficial for early morning risers and provides a wider range of activities.

About Veer Savarkar Udyaan, Borivali

The Veer Savarkar Udyaan, about 1.6 kms from Borivali West Railway Station, is located in the heart of the suburb in the Gautam Nagar area and is accessible by vehicular roads along the North, West & the Southern boundary of the plot, having an area of 25,395 sq. mtrs¹⁰ and is an open park offering multiple options of recreation for different groups based on age, interests, activities and

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preferences of individuals. The park is designed to offer a wide range of activities including various gathering and seating areas, lake with boating facility with an overlooking pavilion, children's play area, skating rink, amphitheatre, special yoga rooms, library, grandparent's corner, badminton area, outdoor gym equipment area and pedestrian walkway with piped music being played across the premises. The park receives increasing attention and valuation as it forms a significant community asset and serves as a place of refuge amidst the densely populated residential area.

As an urban park, the need to understand Veer Savarkar Udyaan's significance in the socio-cultural fabric of the suburb, is important, especially from the perspective of the users. Understanding the user demographics, temporal usage patterns, annual activity mapping, park use behaviour, park use demands and available facilities is pertinent to analyse and improve the park's efficacy in providing user comfort and satisfaction.



Image 4 – Aerial view of the park



Image 5 - Entry to the Udyaan from the West



Image 6 - Entry to the Udyaan from the South

Stakeholders

The term stakeholder in any project, refers to a tool or set of tools for generating knowledge from an individual or a group or organization, to understand their behavior, intentions, interrelations, and interests; and for assessing the influence and resources they bring to bear on decision-making or implementation processes and in turn may be affected by a decision, activity, or outcome of a project¹¹.

With reference to the Veer Savarkar Udyaan, based on the engagement, three key stakeholders identified are the designer, the user, and the implementing agency. All the three groups participate in the entire process to ensure the outcomes meet all demands & expectations. The designer facilitates the entire process; however, the user and the implementing agency are crucial in the success of the project.

The stakeholder analysis is used to increase chances of project success during its preparation, implementation, and during or after project completion for its evaluation. It is applied in the interconnected areas of policymaking, strategic and operational management, and project implementation¹².

Ensuring stakeholder participation in planning and designing or redesigning of existing urban parks improves the usability of such spaces, amongst the residents/ users. To provide a positive contribution to urban life and adoption of design, it is important for the user to be involved & actively participate in the design of the environment to cater to their own benefits.

Veer Savarkar Udyaan's redesign proposal is modelled on a stakeholder participation model. In this context, the process run with the stakeholder participatory design approach (Fig. 1) is discussed further.

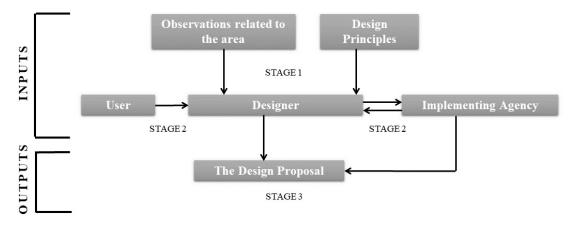


Figure 1 - The chart of the project process.

In the chart of the project process conducted with the stakeholder participatory approach technique, the inputs which included the internal and external data providers and the outputs of the process are shown. Designer's observations made on the existing area and activities, define the internal inputs and demands of the users and implementing agency constitute external inputs to the designer.

The design proposal is the output of the process.

Process - Stage 1

In the first stage, the physical data related to the area have been compiled with observations and design principles, which are the internal inputs.

Physical survey (see Appendix A for full survey questionnaire) of the park, along with the spaces & activities currently accommodated within the park premises were documented. Activities were monitored and studied at different time intervals within a single day. This monitoring was carried out over a period, to identify the common patterns of usage based on age and gender.

This examination incorporated methods of observation of use, activity, and behaviour mapping. The observations and behaviour mapping were conducted during December 2020. The fieldwork was organized for four periods of the day (morning, noon, afternoon, and evening).

The on-site interviews were conducted through Microsoft Forms application, using a Tablet, to facilitate on site responses. Alternatively, a database of email addresses of the park users, shared by the park's implementing agency, were emailed a copy of the survey form, to record their responses.

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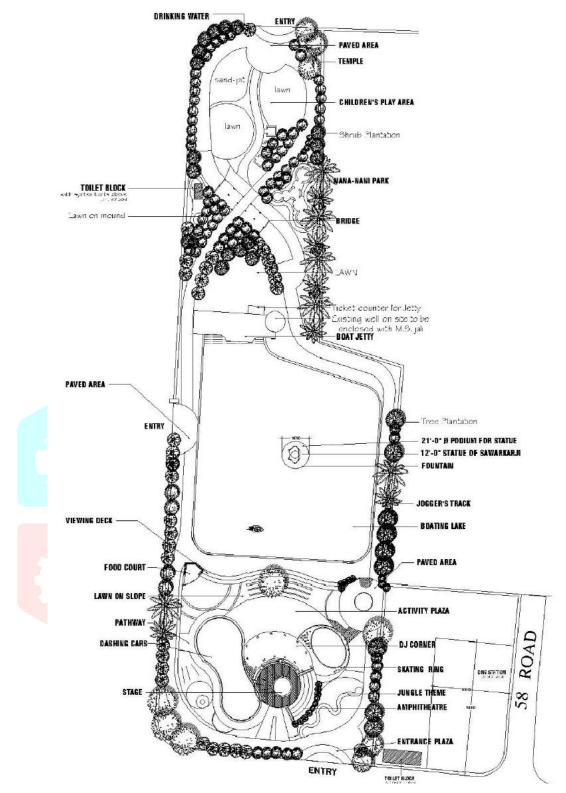


Image 8 - Existing Site layout plan of Veer Savarkar Udyaan

Designer's Observations (on site)

- Mornings 6:00 AM 7:30 AM witnessed a higher percentage of people from the age group of 18 yrs to 70 yrs., inclusive of young adults, office-goers & senior citizens, to use spaces for fitness & exercise, did not have a high percentage of house-wives, women or children.
- Evenings are mostly utilized by community groups for interaction and children



Image 9 (left) & 10 (right) - Users using the park in the evening

• Several facilities like the amphitheatre, seating pavilions etc are under utilized.





Image 11 - Underutilized pavilion facing the boating lake

• Seating benches have been provided in excess, near the north entrance, hampering the space for joggers



Image 11 - Underutilized & excessive number of seating spaces provided, blocking the jogging pathway

• Lack of provisions for universal accessibility.



Image 12 - Inadequate provisions for universal accessibility

• Elements like benches, pavers, other street furniture are not maintained



Image 13 (left) & 14 (right) - Non-maintenance of facilities & installations

- Civic facilities like the Toilets are not adequate & are not maintained well, no provisions for feeding booths or diaper-change areas for babies.
- Inadequate artificial lighting in the park premises, especially hampering late evening usage of the spaces. Damaged electrical provisions.



Image 15 (left) & 16 (right) - Inadequate artificial lighting & non-maintained installation

• Library - inadequate reading space, inadequate lighting & natural ventilation hampers usage of the facility.



Image 17 -Inadequate space, lighting & ventilation in Library space

- No dedicated cycling track or provision of cycle parking & cyclists.
- Open-air gymnasium equipment installation crowded in a smaller space and only installed at one location in the entire park, leading to crowding and queuing of people, eager to use the same.





Image 18 - Crowded spots with limited installations & more users trying the use them.

• Amphitheatre is devoid of any acoustical treatment & echo is experienced in the space, hindering the usage of the space.



Image 19 - Lack of proper acoustics within the amphitheatre

• Lack of seating in shaded areas and unshaded hardscape areas



Image 20 (left) & 21 (right) -Lack of seating in shaded areas.

• The peripheral railing for the boating lake does not encourage people experiencing the water body and has multiple rows of barricading.



Image 22 - multiple levels of barricading towards the boating lake edge

Process - Stage 2

In the next stage, a survey interface for the receipt of users' demands, expectations, and feedback on existing facilities, was created. As a result of this, the users have been included in the redesign process, and having a say in the redesign process, which impacts them directly, is provided. Also, it is aimed to ensure public participation by taking user demands or expectations through the survey.

The questionnaire related to the area is important for the determination of.

- User profile (by which part of the community is the park used).
- The strengths and weaknesses of the park besides the observations; and
- Demands and expectations related to the redesign of the park.

The questionnaire form was prepared as short as possible to keep it goal oriented. After the first section which receives personal information as gender, age, occupation & proximity to the park, following questions were asked:

- The frequency of use of the park by the respondents.
- With whom the respondents use the park (Family, children, friends, etc.)
- accessibility of the park.
- Time zone of the park use.
- The security of the park.
- Unchanged properties of the park.
- Liked/unliked properties of the park.
- Sufficiency level of the services in the park.
- Entry fee charges to the park & increase in the same.
- Requested uses and facilities in the park in future.

Answers in the form of priority ranking have been sought when open and closed-ended questions are formulated.

The survey was conducted in the park with approximately 100 respondents, selected by random sampling method, across people of all age groups, occupation, gender, resident, or visitor, during the different time of the day.

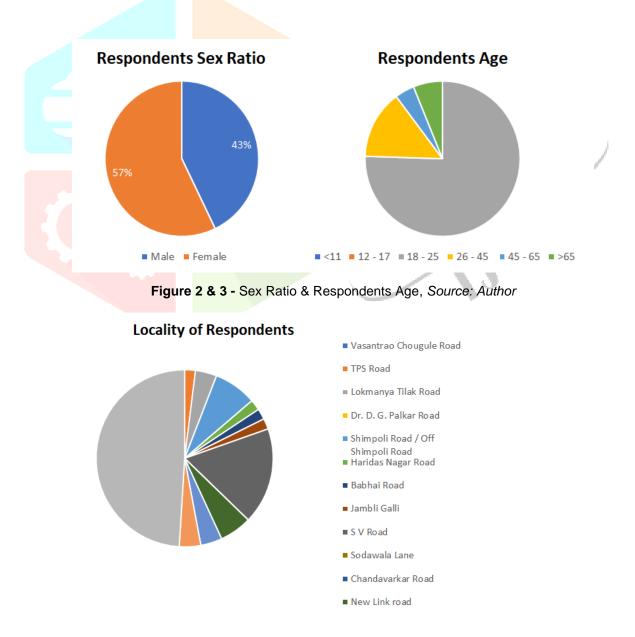


Figure 4 - User Locality, Source: Author

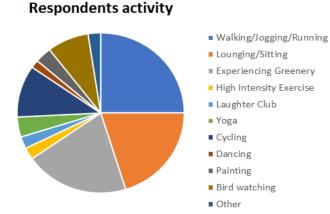


Figure 5 - User Activity, Source: Author

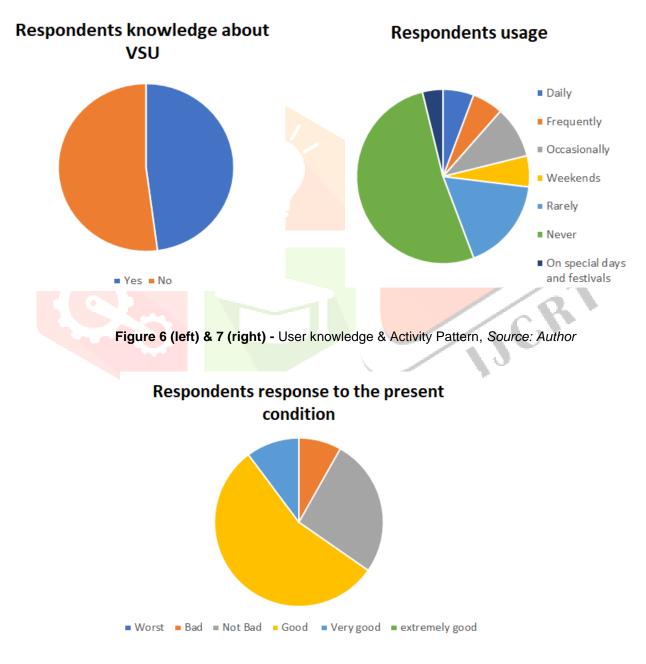
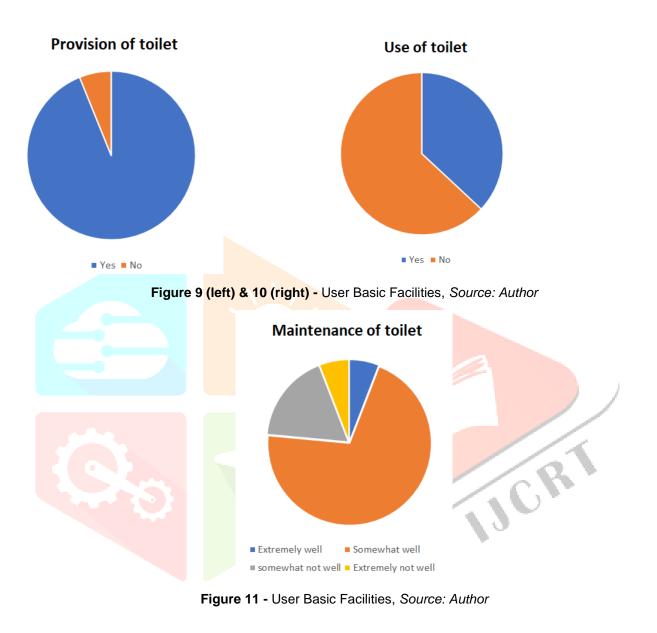


Figure 8 - User Present experience, Source: Author



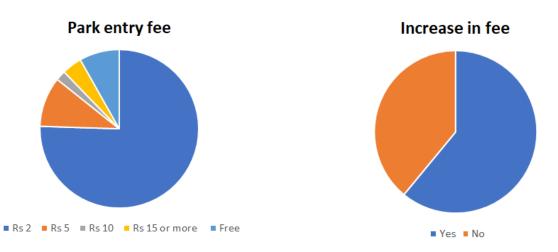
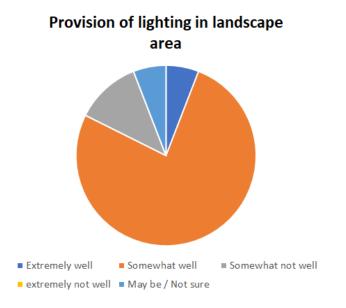
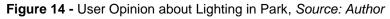
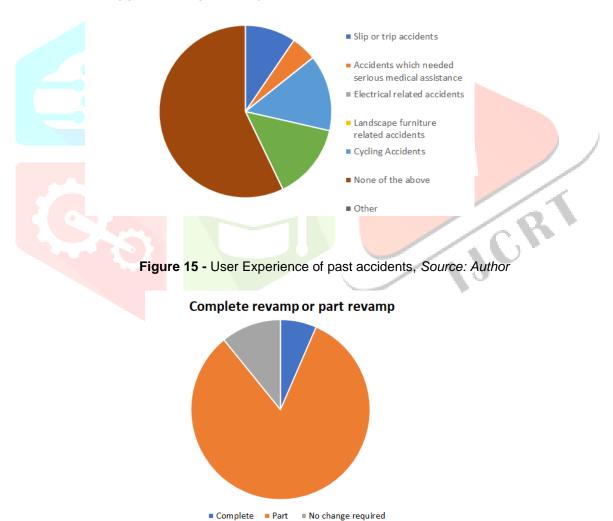


Figure 12 (left) & 13 (right) - User Opinion of Park Entry Fee & Increase in Fee, Source: Author.







Any past history of fatal / non-fatal accidents

Figure 16- User Opinion for Revamp, Source: Author

Area which requires upgrade or revamp

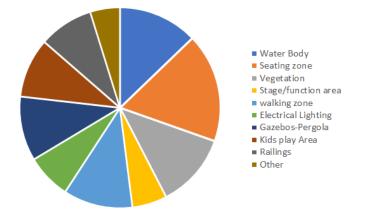


Figure 17- User Poll for Revamp & Upgrade, Source: Author

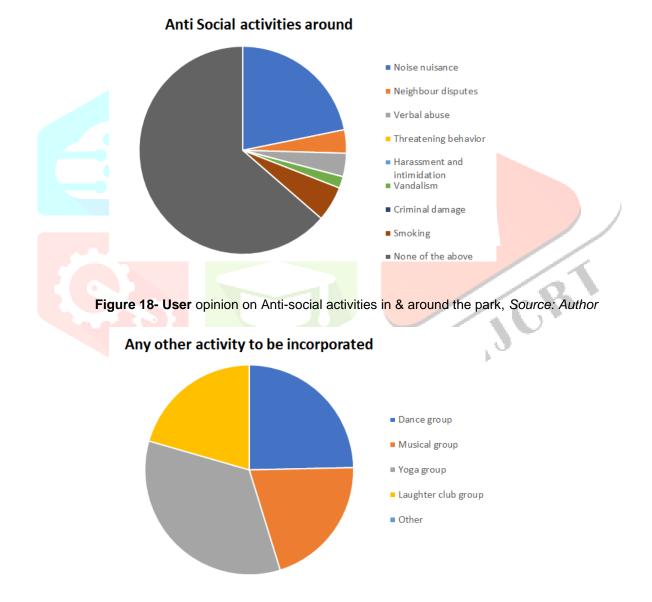
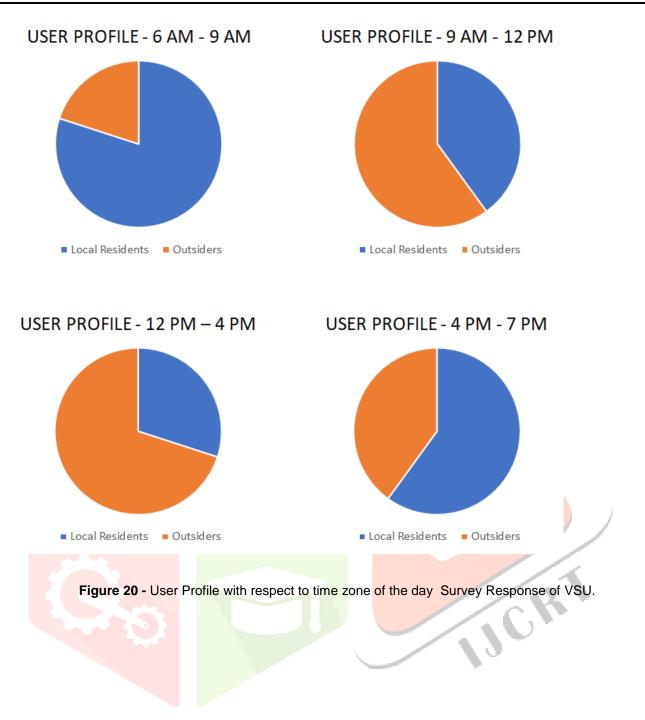


Figure 19 - User Opinion for Activity to be Involved Survey Response of VSU.



Survey Responses

SR.NO.	OBSERVATIONS	INFERENCES	SUGGESTIONS
1	Female respondents is more than 10% greater than male user group		
2	Predominantly the younger generation are actively participating in the usage and review of the VSU premises. The park is majorly used by the senior citizens in the early morning hours whereas the younger people prefer going there during evenings.		
3		Since the users agree predominantly college going age group they may be studying at institutes located near VSU and are visiting before or after college hours.	provided.
4	respondents and their family members are having	Starting from the main entry the park requires universal design strategies to be implemented	
5	Primary activities fitness (walking, jogging, running, cycling) and recreation (lounging, sitting & bird watching)		RI
6	The awareness about VSU is lesser amongst the local residents than amongst outsiders		
7	Locals residents are rarely visiting the park		
8	Majority of the respondents appear to be satisfied with VSU		
9	Fee structure needs ot be reviewed since there is significant variation in the responses.		
10	Majority of the respondents were aware of the the availability of wash rooms		
11	Majority of the respondents are not using the toilets		
12	Majority of the respondents expect better hygiene and cleanliness in the washrooms		

13	Majority of the respondents expect better artificial lighting conditions
14	As per responses, very few Separate cycling track needs accidents were reported to be provided to ensure The ones that are reported safety of all user & adequate are primarily with regard to measures need to be cycling, tripping and planned for controlling pests animal/insects issues. and insects.
15	Majority responses are positive towards developing parts of the Park rather than the whole.
16	As per the responses the primary areas that require revamp are Seating, water body & vegetation. Additionally pathways, railings, gazebos & kids play areas also require upgradation
17	Predominantly the Adequate planting needs to responses show that the be provided to create buffer park is safe and the primary on the periphery to prevent nuisance is noise. Outside noise and quite areas need to be designate within the park to minimize disturbance to passive activities.
18	The respondents have Designated zones for quite shown interest in the activities to eb provided inclusion of specific separate from other loud activities such as yoga & activities. laughter clubs as well as music and dance groups

In addition to the user demands and internal inputs such as design principles and observations made on the area, demands of the implementing agency added to the process as external inputs. The adoption of the basic principles of the design by the implementer through face-to-face meetings were aimed. Demands of the implementer are shaped by the needs of the city and the area in accordance with their own vision.

The expectations of the implementing agency listed the addition of a nature's trail within the park, to engage young children to identify & learn about various flora & fauna, assess the scope of reintroducing boating within the lake, which is currently defunct due to maintenance issues. Dedicated zone with a mural celebrating the life & efforts of martyr Veer Savarkar, after whom the park has been named, was to be added in the premises.

Process - Stage 3

To derive appropriate & accurate design solutions, it is imperative to assess all the findings & observations of the input data received.

Preliminary findings show that users find the park to be pleasant and attractive in general, yet, many negative aspects emerged. Generally, users pointed out the lack of trees and shade, the lack of care, the excess of constructed elements and unfinished places as the main negative aspects

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of the park. Conversely, playgrounds, circular pathways and shady settings seem to be very much appreciated. Overall, users were more critical about maintenance and safety issues, finding them more important than the visual qualities of the park, in response to social and their own needs. Even so, their suggestions towards the improvement of the park seemed to point mostly towards the aspects related to the usability.

The survey findings provide very important contributions in the process of identifying the problems. Results confirming the observations made by the design team have created an important input for the project. Insufficiency of shaded seating areas and park facilities, planting problems and lack of maintenance of the park were highlighted and expectations were presented for solution by stakeholders.

The majority of the park users are essentially involved in physical activity, which is consistent with the fact that the most occupied areas in the entire park are pathways, outdoor gymnasium and shaded activity areas. The presence of trees and shade opportunities seem to be seen as one of the greatest benefits of the park. The sitting areas, especially when they are not in the shade, seem to be less preferred than the shaded areas. Additionally, lack of boating activity or use of the boating lake for any kind of recreation emerged as another negative aspect.

The sedentary users seem to prefer the sitting areas by the boating lake; under the trees, which provide appealing shades; or those by the pathways.

General design suggestions for the design proposal includes the following:

- Sturdier benches and better street furniture
- Better lighting and signage
- Better equipped and multiple outdoor gym facilities
- Amphitheatre with better acoustics,
- Solar trees
- Energy saving measures
- Herbal garden
- Solid waste management for the waste generated within the park
- Better, sturdier & more exciting children's play equipment
- Dedicated Bicycle/tricycle loop with cycle parking space
- Seating enhancing experience of the boating lake
- Nature & Butterfly Park

Conclusion

Before the design proposal, it was determined that the park was used efficiently by the people in the vicinity, including women, young people, and children due to variety of activities present. However, the lacuna in the accessibility and homogenous use of all spaces was a challenge to improve the efficiency of the park. The changing process initiated by the implementing agency, started from identification of the problems, has been continued with incorporation of the user into the design with "stakeholder participatory design approach" adopted by the designer.

In the design proposal, the user profile is expanded with increased variety of specific user-group based activities, the sufficiency of facilities and finally the park shall become a beautiful place of freedom, recreation and restoration, grounded in local realities, cultural and ecologically-oriented, open to the city and to everyone.

The process adopted is applicable and real. The success of the process is associated with faith and commitment of the stakeholders.

It is experienced that especially the participatory design process effect the stakeholder involvement & satisfaction in a positive way and the design is adopted by the users. It can be concluded that the participatory design process plays a key role in ensuring user satisfaction.

This is an exploratory study and thus it requires development. Further analysis of the data and the particularities for each of the parks as well as further fields of research, such as expert evaluation,

will allow a more in-depth tracing of the qualities of the parks and needs and preferences of users, and also in developing a comparative analysis with findings from other similar research.

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Appendix

A) <u>https://forms.office.com/Pages/ShareFormPage.aspx?id=WorOXOsGI0ibABJVALQzxT4FgZC03R5Eg4myEf7k</u> <u>sJJUQk9TQUIZVThTWTNWQUkzSUhXVFpPRIpGWC4u&sharetoken=kG9HHK5xGQg5GfO1EUzV</u> (Survey form used for Park User Survey)