URBAN95

# Urban95 Phase-II, Udaipur

## Draft Detailed Project Report (DPR)
## Sensory Park at Gulab Bagh

ICLEI Local Governments

ECORYS

UDAIPUR MUNCIPAL CORPORATION

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**List of Abbreviations**

| S/n | Abbreviation | Definition |
|---|---|---|
| 1 | UMC | Udaipur Municipal Corporation |
| 2 | BvLF | Bernard van Leer Foundation |
| 3 | ICLEI- South Asia | ICLEI – Local Governments for Sustainability, South Asia |
| 4 | MoU | Memorandum of Understanding |
| 5 | UIT | Urban Improvement Trust |
| 6 | PWD | Public Works Department |
| 7 | PHED | Public Health Engineering Department |
| 8 | AWC | Aanganwadi Centre |
| 9 | PHC | Primary Healthcare Centre |
| 10 | ECD | Early Childhood Development |
| 11 | GoI | Government of India |
| 12 | MoHUA | Ministry of Housing and Urban Affairs |
| 13 | NIUA | National Institute of Urban Affairs |
| 14 | SCM | Smart City Mission |
| 15 | AMRUT | Atal Mission for Rejuvenation and Urban Transformation |

| | | |
|---|---|---|
| 16 | RTDC | Rajasthan Tourism Development Corporation |
| 17 | EU | European Union |
| 18 | PMU | Project Management Unit |
| 19 | ITDP | Institute for Transportation and Development Policy |
| 20 | NCAP | National Clean Air Program |
| 21 | CSCAF | Climate Smart Cities Assessment Framework |
| 22 | CDP | City Development Plan |
| 23 | LCMP | Low Carbon Mobility Plan |
| 24 | GHG | Greenhouse Gas |
| 25 | CFSC | Child- Friendly Smart Cities |
| 26 | KII | Key Informant Interviews |
| 27 | FGD | Focused Group Discussions |
| 28 | ITC | Infant, Toddler, and Care- giver |
| 29 | HIG | High Income Group |
| 30 | MIG | Middle Income Group |
| 31 | LIG | Lower Income Group |
| 32 | EWS | Economic Weaker Section |
| 33 | PT | Public Transport |
| 34 | IPT | Intermediate Public Transport |
| 35 | DPR | Detailed Project Report |
| 36 | BSR | Basic Schedule of Rates BSR |
| 37 | RUIDP 2022 | Rajasthan Urban Infrastructure Development Project |
| 38 | O&M | Operational & Maintenance |
| 39 | CSR | Corporate Social Responsibility |

# Urban 95, Udaipur Key Partners

## City Partner, Urban95 Phase-II, Udaipur

The Udaipur Municipal Corporation (UMC) is the main civic agency responsible for provision, operations and maintenance of the urban services in the city municipal area. With an area of 64 sq km, it is the district headquarters and is divided into 55 wards. UMC is headed by Mayor and Municipal Commissioner (MC), wherein Mayor is the elected representative and represents councilors of all the wards, while MC is the administrative head and oversees the day to day working of Corporation.

## Supporting Partner, Urban95 Phase- II, Udaipur

Bernard van Leer Foundation (BvLF) believes that giving all young children a good start in life is both the right thing to do and the best way to build healthy, prosperous and creative societies.
A private foundation focused on developing and sharing knowledge about what works in early childhood development. Over the last 50 years BvLF has worked in all regions of the world. BvLF partnerships have informed public policies in more than 25 countries, led to innovations in service delivery and training that have been widely adopted by governments & NGOs, and generated breakthrough ideas that have changed the way stakeholders from parents to policymakers think about the earliest years of a child's life.

## Technical Partners, Urban95 Phase-II, Udaipur

ICLEI – Local Governments for Sustainability is a network of more than 1,750 local & regional governments, supported by a team of global experts, driving sustainable urban development worldwide. Active in 100+ countries, ICLEI impact over 25% of the global urban population. ICLEI South Asia - the South Asian arm of ICLEI, aims to build and serve a regional network of local governments to achieve tangible improvements in regional and global sustainability through local initiatives. In Udaipur, ICLEI- South Asia is supporting UMC on the themes of climate change, sustainable urban mobility, built environment and low carbon –resilient development. It was also the technical partner for Urban95 Phase-I, and has helped Udaipur to become the lighthouse/ showcase city through the successful implementation of its various activities, especially the tactical interventions.

Headquartered in the Netherlands and a 91-year-old international organization, Ecorys provides research, consulting, programme management and communications services from its 22 offices spreading all over the globe and is known for its vision- "to address today's most important societal challenges." Having a multi-disciplinary team with good mix of researchers, policy experts, programme managers, communications specialists, planners & designers, they have marked their presence amongst the leading agencies such as World Bank, ADB, USAID, European Commission, DFID, AFD, EU, GIZ, EBRD etc. (in India & other countries) and have secured 3rd rank in the European Union under the field of Development.

# Executive Summary

Indian cities are urbanizing and growing at an unprecedented speed in recent decades, and the growth has been so rapid and uncontrolled, that cities infrastructure services has been outstripped to meet the physical and social needs much faster than anticipated. With increase in urbanization and population, India is witnessing robust growth in younger population, with 10% (~36 million) is constituted by children below 6 years[1] and another 32% of its population (~120 million) is constituted by children between 6 to 18 years of age[2].

Growing up in the cities is as complex as it is exciting, as with plenty of opportunities it is also wrought with enormous threats that impact the overall growth and development of a child. It is a well- known fact that issues that make urban life difficult for children and their care- givers also make it difficult to other vulnerable section of society in general- women, elderly and disabled people. Thus, making cities more children and their care giver friendly is an objective that cuts across many overlapping problems and doesn't just benefit children. The overall focus on Early Childhood Development (ECD) into planning and management of cities is a matter of great concern in India.

Recognizing children as a national asset, Government of India (GoI) has initiated and taken up various programs, plans and policies, initiatives, flagship missions etc. to make cities more responsive and friendly from the perspective of children and their families, and one such initiative is Urban95 which is BvLF's global initiative aimed at creating healthy, prosperous, and vibrant cities where babies, toddlers and their families can thrive.

Realizing the need to transform its urban built environment into more Infant, Toddler, and their Caregivers (ITC) responsive and ITC friendly, Udaipur in Rajasthan has agreed to be part of Urban95 Program, and in process has join hands with BvLF via a formal Memorandum of Understanding (MoU). The Phase-I of the Program began in June 2019 for a period of 18 months and given the success of the same, Udaipur now has moved into larger and bigger phase starting Feb'21, planned for 36 months.

As a part of Urban95 Phase-II scoping, an Urban Sensory Park is planned as one of the project to be developed under Phase-II at an city level park. It is in this context a site at Gulab Bagh (a city- centric garden within the walled city with high ITC footfall) has been finalized for developing the Sensory Park. In continuation a design proposal was also planned and finalized taking cues from national and international case- studies in form of numerous elements, features, material which goes into developing a holistic Sensory Park for the benefits of children and their care- givers.

An institutional setup has also been proposed as a part o Operational and Management (O&M) Strategies, it being a concept based and one of its kind facility needing specialized care for long- term sustainability, given the fact that city development agencies doesn't have the experience of taking care of such concept based facility and moreover traditional O&M practices might not be useful and helpful.

1 Census 2011
2 Census 2011

# 1. Background

Indian cities are urbanizing and growing at an unprecedented speed in recent decades, and the growth has been so rapid and uncontrolled, that cities infrastructure services has been outstripped to meet the physical and social needs much faster than anticipated. With increase in urbanization and population, India is witnessing robust growth in younger population, with 10% (~36 million) is constituted by children below 6 years[3] and another 32% of its population (~120 million) is constituted by children between 6 to 18 years of age[4].

Growing up in the cities is as complex as it is exciting, as with plenty of opportunities- access to better schools, sports facilities and health care, the urban environment is also wrought with threats- pollution, lack of independent mobility, inadequate play spaces, lack of recreational/ public spaces and break down of community support structures, that impact the overall growth and development of a child.

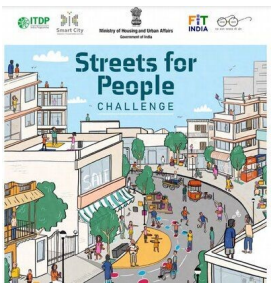
Figure 1 Young kids & children are the most impacted one with Air Pollution

It is a well- known fact that issues that make urban life difficult for an infant, toddler or a grown up child also make it difficult for their care giver too- parents, grant parents, and other vulnerable section of society in general- women, elderly and disabled people. Thus, making cities more infant, toddler, and their care giver (ITC) friendly is an objective that cuts across many overlapping problems and doesn't just benefit children. The overall focus on Early Childhood Development (ECD) into planning and management of cities is a matter of great concern in India.

Recognizing children as a national asset, Government of India (GoI) has initiated and taken up various programs, plans and policies, initiatives, flagship missions etc. to make cities more responsive and friendly from the perspective of children and their families, such as Smart City Mission (SCM) and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) with focus on ensuring public safety in public spaces, streets, roads etc. especially for children, women and elderly along with promoting development of pedestrian areas, enhancement of cities by creating and upgrading green spaces, parks and recreation centers especially for children.

In addition to the above, the latest and recent ECD focused initiatives at national level are-

1) 'Cycle4Change Challenge' and 'Street for People Challenge', initiatives of MoHUA in collaboration with Institute for Transportation and Development Policy


3 Census 2011
4 Census 2011

(ITDP), aiming at Inspiring Indian cities to create pedestrian & cycling- friendly streets through quick measures, in response to COVID-19;

2) 'Nurturing Neighbourhoods Challenge', an initiative of Ministry of Housing and Urban Affairs (MoHUA) in collaboration with Bernard van Leer Foundation (BvLF), aims to incorporate an ECD focused planning and management of Indian cities;

3) "Climate Smart Cities Assessment Framework (CSCAF)" as a step towards holistic, climate responsive urban development. Within the broader framework of urban planning, green cover and biodiversity by taking appropriate measures, to increase cities resilience to climate- related shocks. This is important from the perspective of environment, with suitable adaptation (adapting to various measures such as distributed generation, energy efficiency, electric vehicle and alternate fuel transportation system) and mitigation measures (sustainable transport infrastructure, Integrated Waste Management, water management etc.). Cities can mitigate impact on health, environment and air pollution, in the form of Greenhouse Gas (GHG) emissions, which are known to have adverse impact on children health.


Figure 2 Recent Initiatives by National Government on making cities more resilience and ECD friendly & ECD responsive

The National Institute of Urban Affairs (NIUA) has also undertaken a programme on building Child- Friendly Smart Cities (CFSC) to promote policies and practices to make Indian cities child friendly within the urban agenda of building smart cities.

Figure 3 Pic Courtesy- CFSC, NIUA

In the process, NIUA has also partnered with Bernard van Leer Foundation (BvLF) to develop a programme focusing on interventions and advocacy related to the needs of small children. The goal of the project is to mainstream the needs of young children in Indian cities by addressing the gaps in Urban Planning & Design with objective of bringing greater awareness amongst urban planners and policy makers about the interrelationship between a young child's health and the built environment/ living conditions.

## 1.1 Urban95

Urban95 is BvLF's global initiative, aims to create healthy, prosperous, and vibrant cities where babies, toddlers and their families can thrive. The initiative is meant to make lasting change in the urban landscape and provide opportunities that can shape the crucial first five years of children's lives. The goal of this initiative is to support healthier, safer, and more exciting urban neighbourhoods for young children, for those who care for them, and for everyone.

## 1.2 Urban95 in India

The challenges of any urban city in India are mirrored across length and breadth of the country and can be broadly categorized into rapid and chaotic growth concentrated on informal, slum settlements with inadequate infrastructure; open defecation; parks not being accessible; lack of footpaths, streetlights, and safe places to cross roads; and children in some neighbourhoods needing to use public transport, which is not child-friendly, to get to the nearest school.

Thriving and happy children are indicators of a healthy and sustainable society with high levels of well- being. Children form an understanding of their environment through everyday discoveries and encounters in the park, at school, during a stroll in neighbourhood or by imagining and inventing games and stories. The built environment plays a crucial role in shaping young children's narratives of the city, and their understanding and experience of urban spaces.

Realizing the need to address the issues surrounding the ITC, Bhubaneswar in Odisha, Pune in Maharashtra and Udaipur in Rajasthan became the part of the Urban95 program as a part of its Phase-I which was for 1 year period.

## 1.3 Urban95 in Udaipur

Realizing the need to transform its urban built environment into more Infant, Toddler, and their Caregivers (ITC) responsive and ITC friendly, Udaipur in Rajasthan has agreed to be part of Urban95 Program, and in process has join hands with BvLF via a formal Memorandum of Understanding (MoU). The Phase-I of the Program began in June 2019 for a period of 18 months and given the success of the same, Udaipur now has moved into larger and bigger phase starting Feb'21, planned for 36 months.

The focus of Urban95 Phase-II in on scaling up and sustainability of various projects through various "lighthouse" projects in neighbourhoods, streets and junctions, parks, and health facilities, incorporating Urban95 components in policy, enhance institutional capacities through trainings and peer learning, and build a broad coalition of support by involving relevant stakeholders in projects and other initiatives.

# 2 Udaipur

Considered as one of the oldest cities in India and famous nationally and internationally as 'City of Lakes', Udaipur is the administrative capital of the district and is the only municipal corporation in the district with an area of 64 Sq km, divided into 70 election and revenue wards.

With the population 0.45 million[5], city has 47932 young children population (0-6 years). The projected population for Udaipur in 2021 is estimated to be 0.83 million and 1.03 million in 2031[6]. The city has witnessed multi-fold development in the last two decades. It acts as an industrial, administrative, and educational center of the region. The city's connectivity and historic significance plays a major role in making it an important and famous city of the region and draws more than a million tourists annually7.

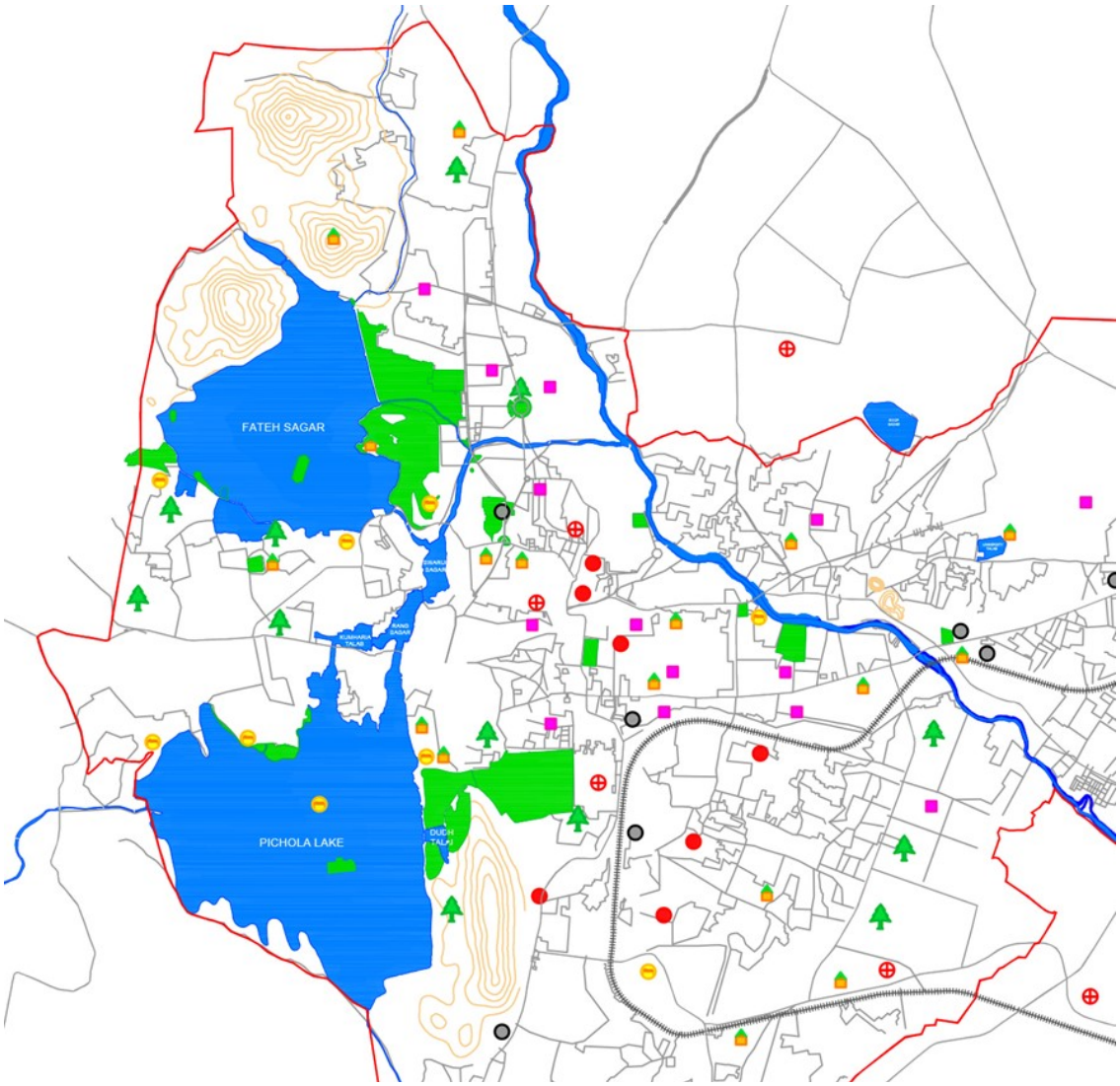



Figure 4 Municipal Area & Activity Mapping, Udaipur, Climate Action Plan for Udaipur, 2019-20, CapaCITIES

5 Census 2011;
6 Master Plan, Udaipur 2031;
7 Rajasthan Tourism Development Corporation (RTDC), Udaipur;

However, with increasing population and spread of the city, the overall quality of life is deteriorating for its citizens, especially for children and their care- givers from pollution and noise pollution perspective, as with growing city needs, the pollution levels are rising at alarming pace and due to lot of construction activities and growing vehicular traffic the avg. decibel levels are at 75 DB8 which are way above the standard 55DB for neighbourhood levels. Flooding and increasing temperatures are also worsening the emissions profile of the city, having adverse impact on ECD.

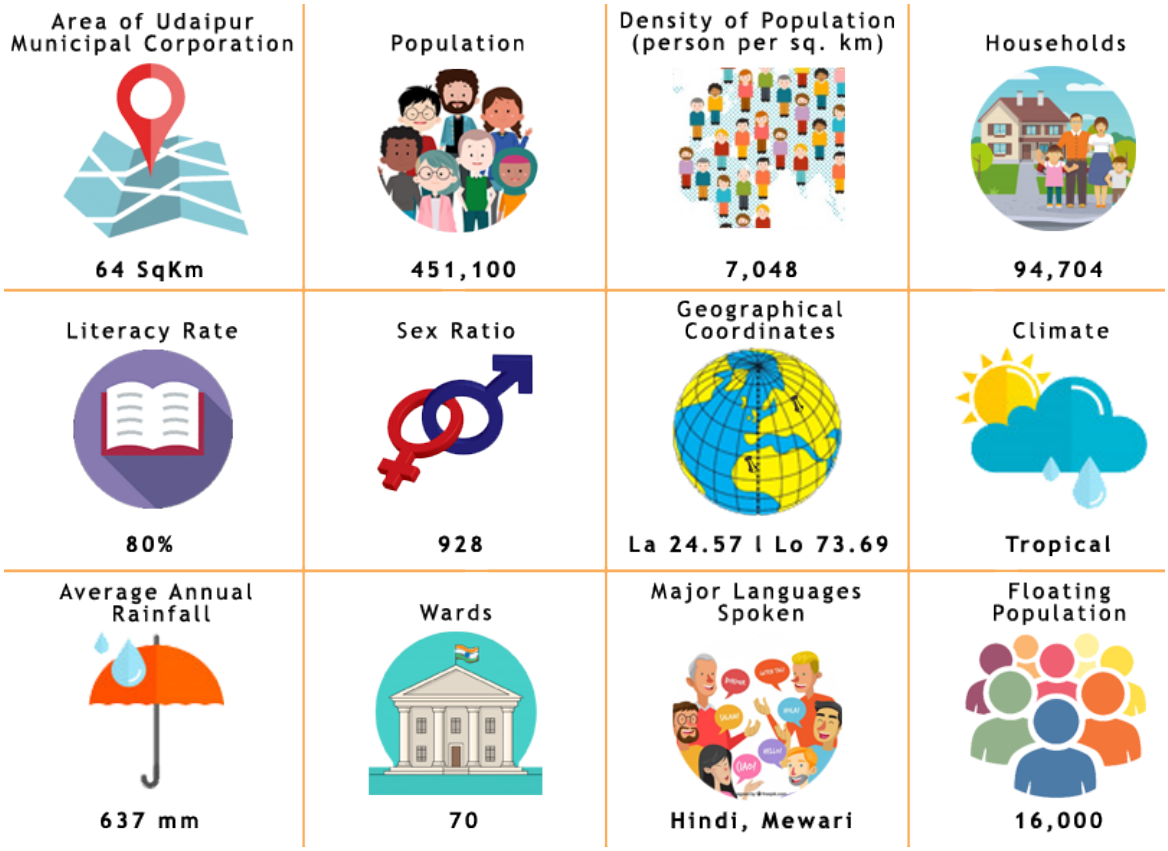



Figure 5 Quick Fact, UMC & Census, 2011

## 2.1 Demographics, Udaipur

Udaipur is the 6th largest city among cities having more than 1 lakh population in the state. The Municipal Corporation population accounts for 2.65% of the urban population of the state and 74.14% of the urban population of the district[9]. The city has witnessed considerable population growth in the last four decades while acting as a magnet city for the surrounding region. The growing economy and growing tourism sector have attracted both urban as well as rural populace. The decadal growth rate from 2001 to 2011 was 15.83% which is near to natural growth rate of population. Areas outside the core city started developing during the last few years.

8 Low- Carbon Comprehensive Mobility Plan (LCMP), 2013- 41;
9 City Development Plan (CDP), Udaipur 2014;

According to Census 2011, the young children population (0-6 years) has been recorded at 47932 and significant improvement in the sex ratio has been observed over the decades in the UMC area, i.e. from 844 in 1981 to 928 (state average too) in 2011[10]. The sex ratio of young children (0-6 years) in Udaipur is 866 comapre to the state average of 888[11].

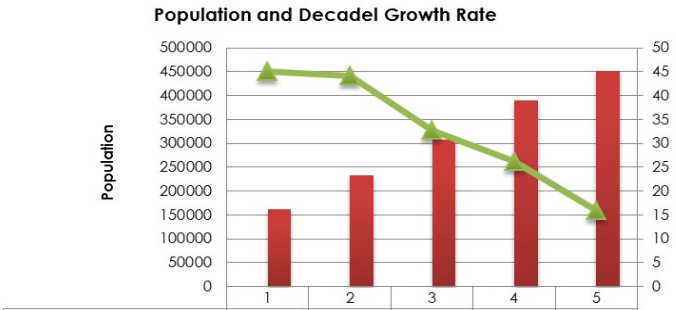



Figure 6 Population Growth Trend- Udaipur (Census 2011)

Table 1 shows the city's children population along with its child sex ratio of Census 2011.

Table 1 Age Wise Children Population (0-6 years) and Child Sex Ratio, Udaipur (Census 2011)

| S/N | Total Children (0-6 years) | Boys | Girls | Child Sex Ratio |
|---|---|---|---|---|
| 1 | 47932 | 25691 | 22241 | 866 |

## 2.2 Social and Cultural Resources

Famous not only for its lakes and gardens, and being the biggest city in the district, Udaipur is also hub of education and medical facilities in the district. The city has a wide range of educational institutions like universities and colleges which were established by the Government and private organizations.

Udaipur has many parks and gardens which form a major source of attraction for both locals as well as tourists. Due to the availability of lakes, water parks are being developed in different areas of the city. Gulab Bagh, Saheliyo ki Baadi, Nehru Park in Fatehsagar Lake, Moti Magri Park, Town Hall Garden, Sukhadiya Circle Garden, Manikyalal Verma Garden, Deendayal Upadhyay Garden, Sanjay Park, Aravalli Vatika, are few of beautiful gardens raising aesthetic appeal of the city and attract locals and tourist population. There are in all, 200 small, medium and big parks[12] in the city,

Udaipur is also considered to be a regional hub and pioneer in higher education and graduate programmes in the state, as is evident from its literacy rate, which at s 89.66% which is higher than the district (61%) and state average (66.11%).

It is home to old and famous educational institutes in the state. In last few decades a medical college, an agriculture college, the Udaipur Polytechnic College and an industrial training institute have been established. Udaipur boosts of having 3 universities and 13 major colleges and caters to large influx of students from across the country. Udaipur also has 23 (government) and another 300+ (non- government) primary schools across the city.

10 Census, 2011
11 Census 2011
12 UMC

Health care facilities in the city are provided by both government and private institutions. There are two major hospitals in the city, i.e. the Maharana Bhopal Public Hospital and the Ayurvedic hospital along with numerous private hospitals such as JK Fortis, GBH American, Geetanjali and Pacific Hospitals etc.

The economic outlook of Udaipur is positive, with tourism being the center of attraction, growing at over 15% -20%[13] over the last few decades, which is faster than any other city in Rajasthan. Udaipur is also a hub for start-up companies, industries and educational institutions.

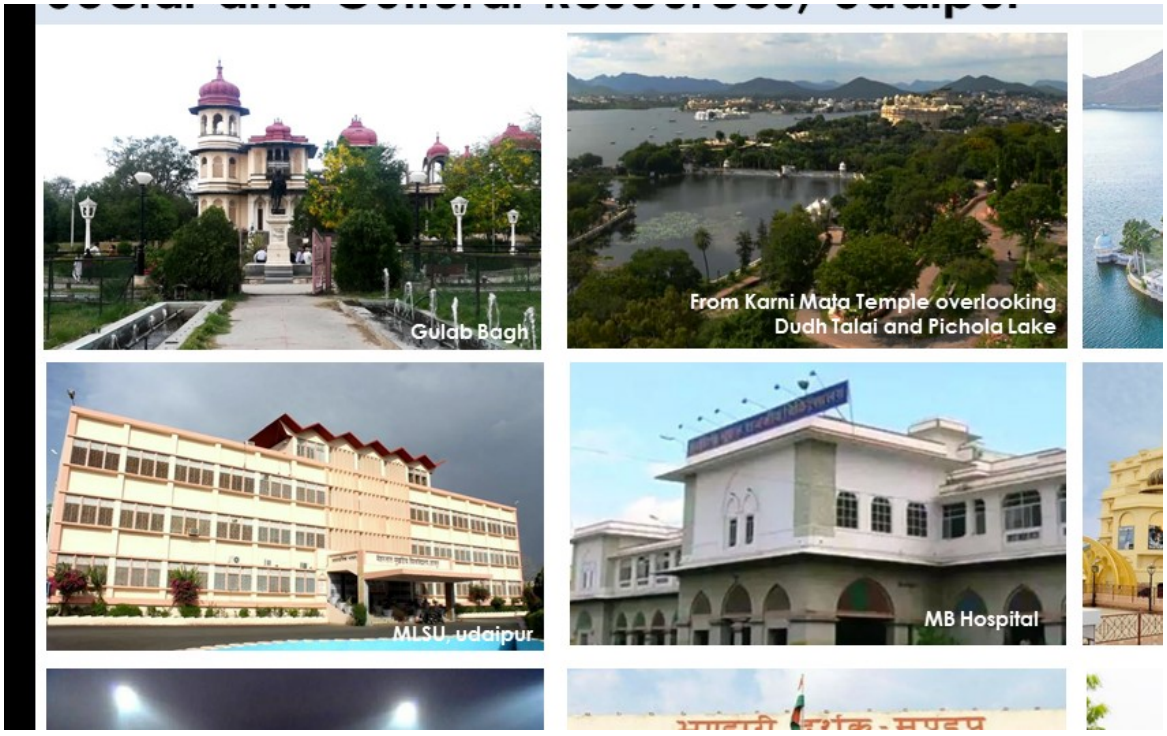



Figure 7 Social & Cultural Resources, Udaipur

[13] UMC Annual Report, 2015-16

# 3 Approach & Methodology

The Approach and Methodology for finalization for the project is as shown in Figure 8.


Figure 8 Approach and Methodology for Finalization of Project

# 4 Urban95 Sensory Park

As a part of Urban95 Phase-II scoping, an Urban Sensory Park is planned as one of the project to be developed under Phase-II at an city level park.

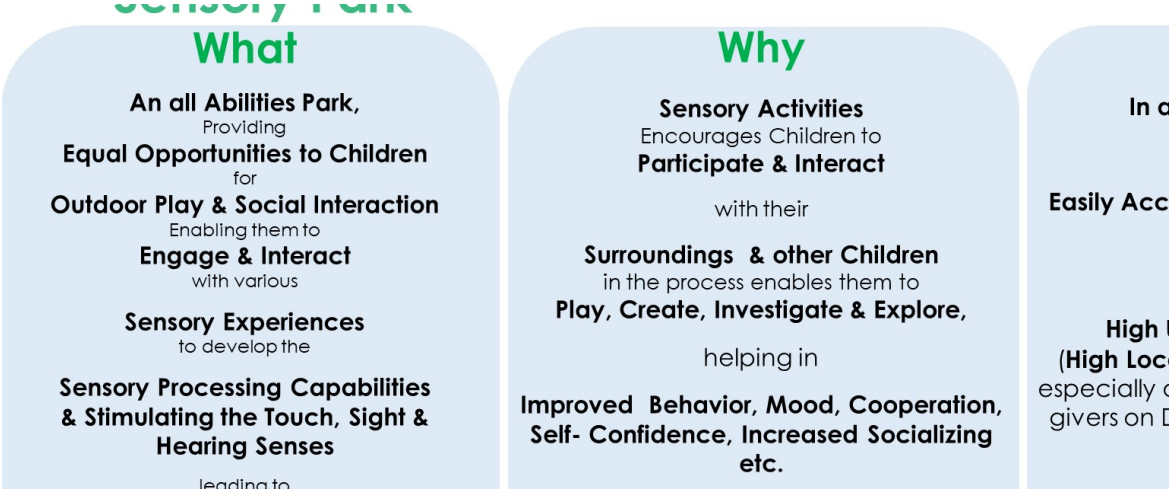



Figure 9 Sensory Park Introduction

Urban Sensory Park is a specialized and all abilities park aimed at exposing children to various sensory experiences for developing and/ or activating various sensory processing capabilities, stimulating the touch, sight & hearing senses & sensory experiences, helping in improving the overall cognitive, imaginative, creative abilities of children. Sensory Park also provides an opportunity to children and their care-givers to experience a stimulating and active atmosphere through various games, activities and social interaction which positively impact their physical and mental growth and overall development.

Sensory Park is also aimed to bring awareness in the city on the importance of ECD through various components & activities & games, such as such as sand, mud, water, planters and sensory play and many more, as according to Dr. Angela David, a developmental pediatrician based out of Bengaluru "Playing and engaging activities is everything in a child's life. When we look at developmental milestones in childhood,

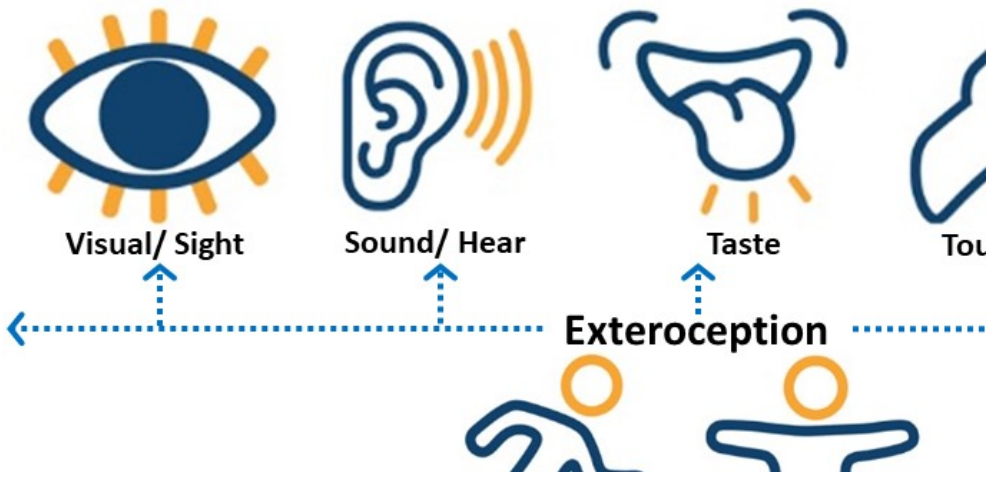



Figure 10 Sensory Integration & Simulation

everything that the child learns– motor skills, cognitive skills, logical thinking, speech, socialization – comes from play and related activities'[14].

It is also aimed at increased frequency and duration of targeted audience group (Children & Care- givers) in outdoor playing and engagement activities and also on targeting behaviours of concerned service providers in developing and maintaining such and other open green spaces in order to facilitate children and care- giver comfort, safety, hygiene, and stimulation etc., helping in children overall growth & development.

## 4.1 Sensory Park From ECD Lens

a. Involving & engaging kids as the direct and active beneficiaries by providing stimulating and active atmosphere which greatly impact their physical and mental growth & development;
b. Developing, improving and/ or activating the gross & fine motor skills, locomotive skills, cognitive development and sensory processing capabilities by exposing and engaging children in specifically designed activities, experiences, in the process stimulating various body senses- touch & feel, sight, hearing, taste, smell, body movement and balance as well;
c. Fosters listening skills & support 'Auditory Processing Needs' by stimulating the hearing senses;
d. Also helps in Proprioception (Body Awareness- Movement, Action & Location) & Vestibular Input;
e. Encourages Risk- taking abilities;
f. Encourages Social Interaction & Development;

Below are the excerpts from various Indian cities representing various forms of Sensory Play


Figure 11 Examples from various Indian Cities showcasing various Sensory Experiences to Children

[14] https://bengaluru.citizenmatters.in/childs-play-making-it-more-accessible-35058

## 4.2 Literature Study

Given the project scoping and with no such facilities in Udaipur, various international and national case studies were referred to get an idea and understanding of what an ideal Sensory Park look like in terms of elements, equipments, spaces, zoning, area and cost requirement etc.

Moreover, being in Indian context focus has been given more to national case studies to get more realistic feel and flavor of what goes into having an holistic Sensory Park. Sensory Park of 4 different Indian cities were referred to, based on the available information on Web. Below table showcase the Snapshot of the same.

Table 2 Snapshot, Case Studies for Sensory Park

| S/n | Parameters | Sensory Park, Pune, Urban95 Phase II | Sensory Park, Bhubaneshwar | Sensory Park, Chennai | Sensory Park, NIMPR, Kerala |
|---|---|---|---|---|---|
| 1 | **Area** | Approx. 1000 SqMt | Approx. 1500 SqMt | Approx. 1200 SqMt | Approx. 1200 SqMt |
| 2 | **City/ Neighbourhood Level** | Neighbourhood | Neighbourhood | Neighbourhood | Neighbourhood (within the Institute, however is open for Public use till Institute working hours) |
| 3 | **Developed under/ by** | Urban95 Phase I & Phase II | Smart City Project | Smart City Project | Institute itself |
| 4 | **Features, Elements** | Reflexology path, Plants, Play elements with sound effect, Attractive entrance, Mud Play and Sand Play etc. | Insulated pathways, playing equipment for children, an open-air gym, and other child-friendly services that comply with the universal access guideline | Scented & Edible Plants, Tactile Sculptures & Handrails, Water Features for Sound play, Textured Touch-pads, Magnifying-glass Screens, Braille Signages etc. | 51 Medicinal plants with Fragrance, playing equipment's for engaging the Children with Sensory Elements for therapy purposes by the NIPMR Professionals |
| 5 | **Pathway Material** | Natural & Artificial- Sand, Tiles, etc. | Artificial- EPDM | Natural & Artificial- Grass, Tiles, Gravel, EPDM etc. | Natural & Artificial- Grass, Tiles, Gravel, EPDM etc. |
| 6 | **Costing** | Approx. 25 Lacs seeing the Site Area, overall Elements | Approx 1 Cr. | NA | NA |
| 7 | **Source** | https://instagram.com/urban95pune?igshid=YmMyMTA2M2Y= | https://www.smartcitiescouncil.com/article/bhubaneswar-gets-indias-first-sensory-park | https://cscl.co.in/sensory-park | http://www.nipmr.org.in/Sensory-Garden.html |


Figure 12 Excerpts of National Case Studies; Top Left- Sensory Park, Urban95 Phase-II, Pune, Top Right- Sensory Park, Bhubaneshwar, Bottom Left- Sensory Park, Chennai, Bottom Right- Sensory Park, NIMPR, Kerala

# 5 Site Selection

A suitable site for accommodating Sensory Park plays an important role for demonstrating and projecting it as one of the lighthouse project under Phase-II and as per the scope, it was envisaged to build the same in any city- level park.

Given the above context and based on case studies learnings, list of parameters has been drafted in order to check the feasibility and finalize the site for developing the said Sensory Park within one of these city- level parks.

Below table shows the list of identified parameters for finalizing the site for Sensory Park.

Table 3 Parameters for Site Selection

| S/n | Parameters | Details |
|---|---|---|
| 1 | **Usability** | City- level Park with Higher Footfall of **Targeted Audience- Children (0-6 years) and their Care- givers** on Daily and Weekly basis |
| 2 | **Visibility** | High visibility for locals and tourists, Udaipur being an major tourist city and famous nationally & internationally |
| 3 | **Accessibility** | Easily accessible from all parts of city and should be well Connected via Public Transport (PT) and Intermediate Public Transport (IPT) |
| 4 | **ITC Dedicated Zone within the Site** | Presence of ITC dedicated space is an added advantage with the assumptions of having existing footfall of Targeted Audience |
| 5 | **Availability of approx. 750- 1000 sqm** | Enabling transformation of that space/ pocket into an Sensory Park |
| 6 | **Accessibility & Visibility within the Park** | Easy Accessibility & Visibility of the Identified Pocket shall attract more Targeted Audience |
| 7 | **Proximity to other ITC Destinations & Services within and around the Garden** As an added Advantage with the Assumptions of extra footfalls of Targeted Audience | Good to have High no. of other ITC Destinations within the Garden and in close proximity of it as well, such as<br>- Garden & Parks<br>- Schools- AWC, Play/ Pre- Primary Schools etc., Crèche<br>- Health Facilities- PHCs, clinics, Hospitals<br>- Other Touristic Hotspot of the city |
| 8 | **Existing Services/ Facilities within the Site** | Site having High Existing Utilities (Toilet and Drinking Water Points) & Facilities (Shaded Resting Spaces, Parking Facilities in & around, other Attractions etc.), helping in huge capital |
| 9 | **Varied Mix of Users** | Equal Opportunities to varied Section of Society |
| 10 | **Custodian/ Ownership** | Good to know Custodian of the Site for Liasoning, Approvals/ clearances, Budgetary Ideas etc. |
| 11 | **Community Interest for Long- Term Sustainability** | Community Ownership Likeability in Operational & Maintenance (O&M) such as Neighbourhood Committee or under Adopt the Park Scheme (CSR) for long- term Sustainability of the Sensory Park |

Taking these parameters into account, 3 city- level parks were identified as the potential parks, namely Gulab Bagh, Rajiv Gandhi Park and Sahilyon ki Bari and detail study has been carried out for each of these parks to finalize the site for developing this park.

Below sections covers the details of these shortlisted gardens and the identified pocket within these garden based on the above parameters and finalization of a space within Gulab Bagh as the site for development of Sensory Park.

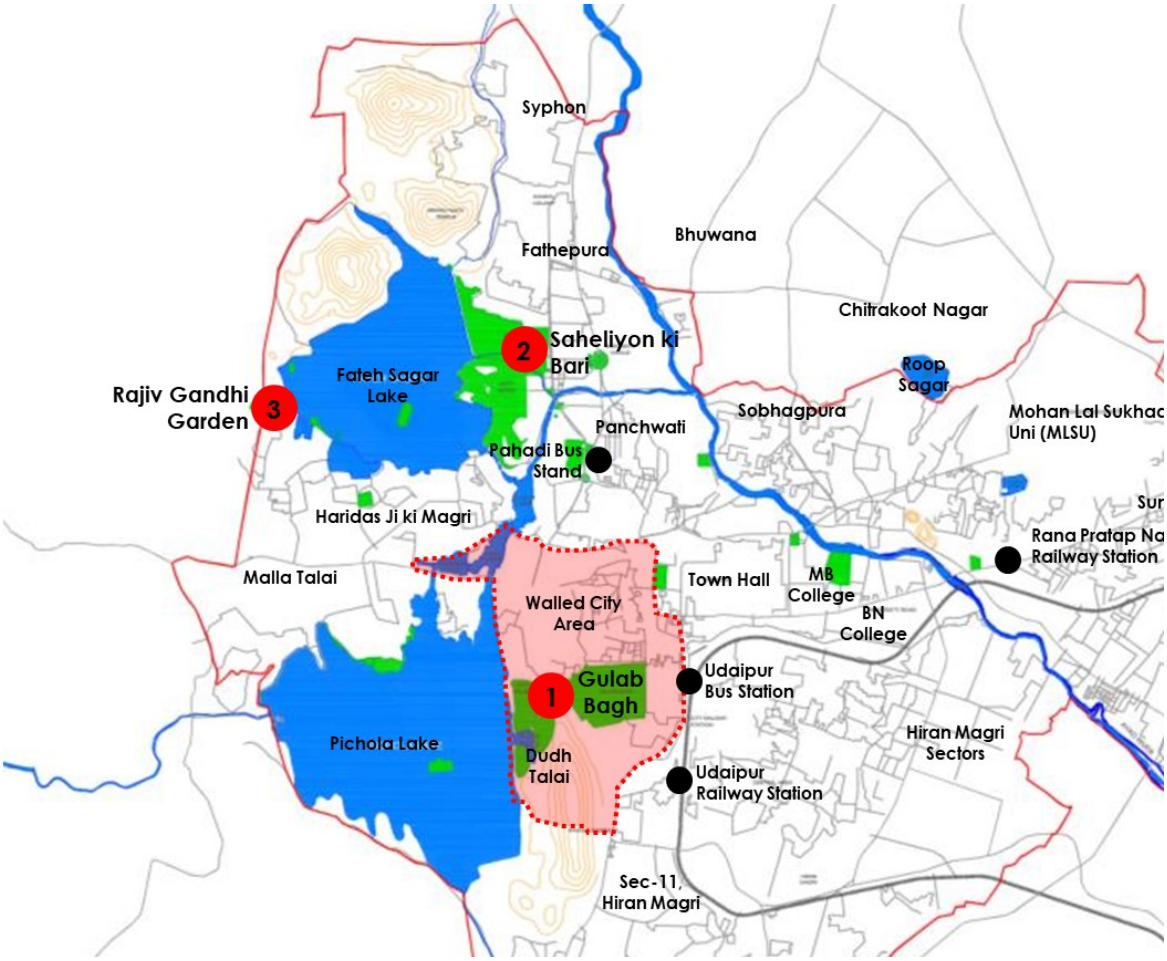



Figure 13 Map Showcasing Location of 3 City- level Parks 1- Gulab Bagh,2- Saheliyon ki Bari, 3- Rajiv Gandhi Park

## 5.1 Gulab Bagh

Built by Maharana Sajjan Singh in the 1881 and situated near to City Palace, Sajjan Niwas Garden, famously known as Gulab Bagh, literally translated as 'Rose Garden' due to innumerable varieties, colors of roses it has till mid-2000s, but over the time with growing needs of the city has consolidates in few corners of the Garden, with other areas converted and developed into activity zones for other uses for its high numbers of visitors (locals and torusits) on daily basis.

Hailed as one of the most beautiful and largest garden in the state, spreading over 100 acres (40 ha) of land, Gulab Bagh boosts of lush green campus, several places of attraction including, water bodies and several government offices (2 forest offices, 2 PHED offices, 1 PWD office).

Figure 14 Gulab Bagh and its Surrounding

Below are highlights of this Garden.

a. Officially known as Sajjan Niwas Garden & built in 1887, is one of the landmark Garden of Udaipur, with a Legacy of 120+ years;
b. City- centric garden with an area of approx. 100 Acres (40 Ha);
c. Well connected & easily accessible from all parts of city by local transport, taxis & autos;
d. Has its own micro climate with abundance greenery in form of variety of trees, plants, shurbs etc.;
e. 4 entrance gates out of which 2 remains open for vehicular entry (E1 & E4) till parking location within the park and 1 with pedestrian entry (E2);
f. 2 & 4 wheeler parking provision within the garden & other parking facilities within close proximity with approx. capacity of accommodating 350+ 2 wheelers and almost similar numbers of 4 wheelers as well;
g. Surrounded by mixed residential neighbourhoods (HIG, MIG, LIG);
h. Approx. 3000 visitors on weekends, including tourists (mix of national and international) with high numbers of Children & their Care- givers as regular visitors;
i. Several places of attraction within the garden- Public Library, Ponds, Step Wells, Fountains, Bird Park, Open Gym, Nakshatra Garden (literally translated as Astrological Garden), Navlakha Mahal cum Museum (place of pilgrimage for Arya Samaj followers), Places of Religious Interest (Temples & Dargah) along with defunct Toy Train which is currently getting revitalized and is expected to be operational within this year;
j. Has various sculptures, traditional & heritage structures such as traditional Chattirs (Cantopehas), murals of animals depicting Wildlife etc.;
k. Specially designed yet interconnected pathways known as 'Vithikas' made using different pathways materials (Sand, Gravel, Fine Aggregates etc.);
l. Presence of ITC Dedicated Zone knowns as 'Haathilwala Park' with numerous playing equipments such as swings, slides, enclosed sand pits & shaded resting spaces;
m. Various tourist hotspots within close proximity- Dudh Talai, Manikya Lal Verma Park, Deen Dayal Upadhyaya Park, Karni Mata Temple, City Palace, Jagdish Temple, Ganghaur Ghat, Bagor ki Haveli, Pichola Lake etc.;

n. Being the city- centric & one of the legacy garden, it has the merit of getting few parts developed under Corporate Social Responsibility (CSR) by private enterprises;

**o. Custodian- Udaipur Municipal Corporation (UMC).**


Figure 15 Main Entrance, Gulab Bagh and Saraswati Library overlooking Engaging Pathway with Fountains on either side


Figure 16 Navalakha Mahal & One among 12 Baoris (Stepwell)

Figure 17 Bird Park & Toy Train (the picture is from the times when it was operational)

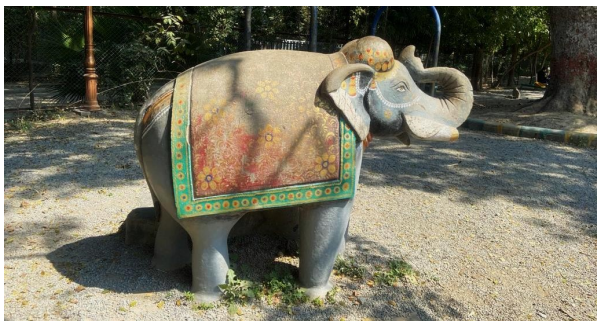



Figure 18 Animal Murals & Sculptures depicting Wildlife

### 5.1.1 Identified Sensory Pocket within Gulab Bagh

Situated within Gulab Bagh, the identified Sensory Park pocket measures approx. 1200 SqMt and is strategically located within Gulab Bagh from accessibility and adjoining ITC attractions perspective with utilities (water ATM, toilets) within 50- 100M proximity.

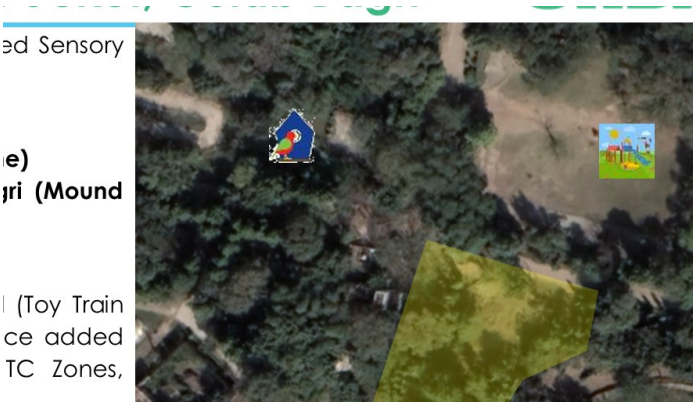



Figure 19 Identified Site and Adjoining ITC Zones

Currently a unused pocket but having the major advantage not only because of its proximity to numerous ITC Zones and utilizes but also because of its existing dense green cover, counting upto 25 fully grown trees of different variety & sizes, hence has its own micro- climate. The existing green cover plays an important dual role proving natural shading and various natural sensory experiences, i.e. Visual, Hear, Touch & Feel etc. as well.


Figure 20 Key Map Showcasing the Identified Site, Adjoining ITC Zones and Nearby Facilities and Utilities

Figure 21 Water ATM within Identified Site and Picture overlooking the Adjoining Built Structure

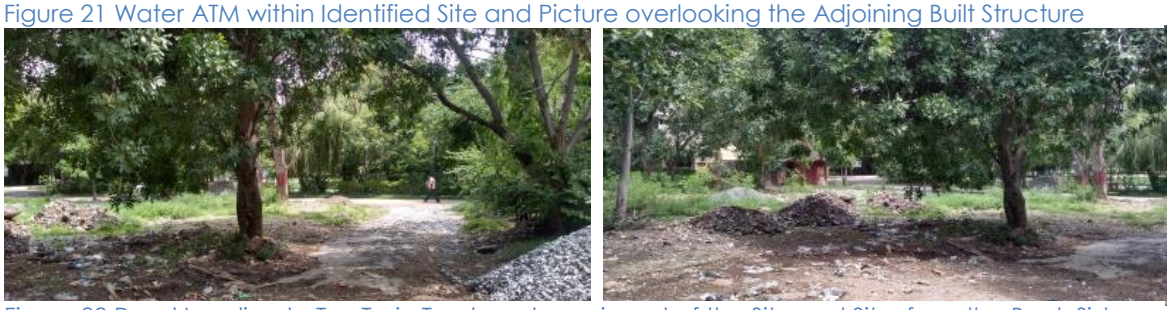


Figure 22 Road Leading to Toy Train Track and now is part of the Site and Site from the Back Side

Figure 23 Under Construction Toy Train Track on the Back Side and Wildlife Statue in Haathiwala Park Overlooking Site

### 5.1.2 Adjoining ITC Activity Zones and Facilities

The adjoining ITC attraction includes Haathiwala Park- ITC Dedicated Zone, 2 big lush green lawns or activity cum playing zone, newly constructed Bird Park, upcoming Toy Train Station and Lotan Magri- loosely translated as Mound or Sloping Gardens within very close proximity stretching maximum upto 100M, hence caters to high ITC footfall.

The identified Sensory Park site is well connected with other parks of the garden and is easily accessible with natural shaded pathways and corridors.

Figure 24 Haathiwala Park (ITC Zone) having abundance of Playing Equipments & Shaded Resting Spaces- the back side with Transparent Railing is overlooking Identified Site

Figure 25 Big Open & Lush Green Lawns (100M from Identified Site)

Figure 27 Adjoining Spaces- Lotan Magri with Traditional Chhatri (Mound with Dome- shaped Pavilions)

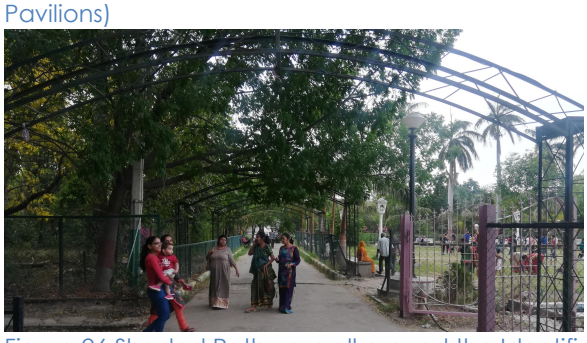


Figure 26 Shaded Pathways all around the Identified Site

## 5.2 Rajiv Gandhi Park

Built in the memory of late Prime Minister Rajiv on the and operational since 2008, Rajiv Gandhi Park is another city- level park on the banks of Fateh Sagar Lake, spreading over approx. 15 Acres (6 Ha) and has striking resemblance to famous Mysore's Brindavan Garden.

The park through its architecture with beautiful fountains, lush greenery, numerous statues depicting wildlife and animals throughout the garden pass on the message of conserving nature, wildlife, & water.

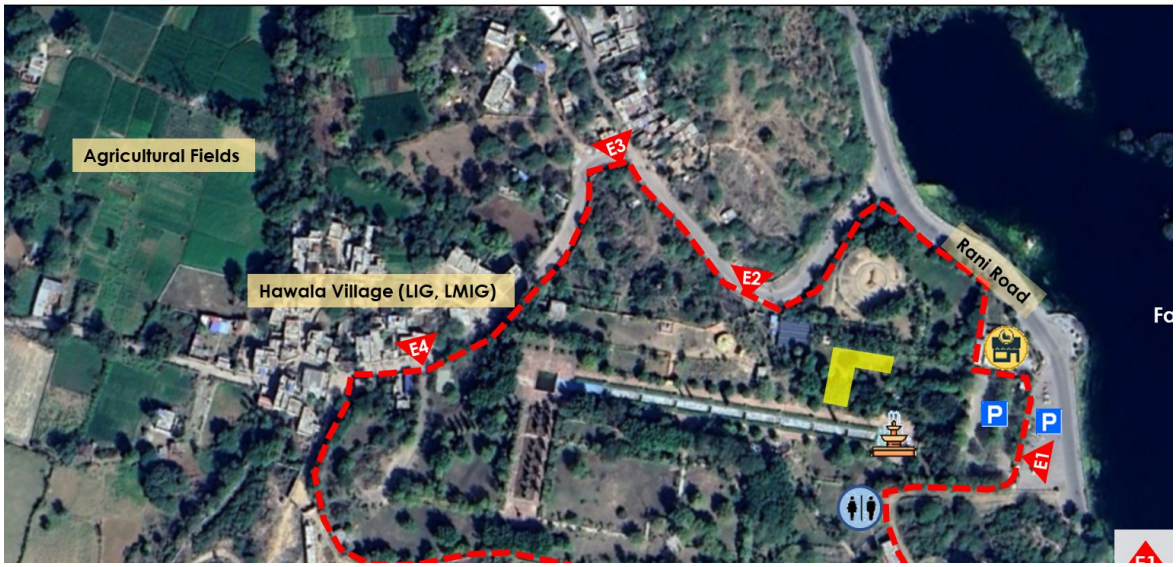



Figure 28 Rajiv Gandhi Park and its Surrounding

Below are highlights of this Park.

a. Situated in northern part of Udaipur on a small hillock on Rani Road, overlooking Fateh Sagar Lake;
b. Gives an impression of Mysore's Brindavan Garden;
c. Measuring approx. 15 Acres (6 Hectare) and is easily accessible by local transport, taxis & autos;
d. Has various Green Pockets, Water Fall cum Fountains, Traditional Chattirs, numerous Sculptures and Murals of Animals depicting Wildlife etc.;
e. Multiple Entrances to the Garden, however only 1 Gate remains open for Public;
f. Dedicated parking within & in front of the park with approx. capacity of approx. 150+ 4 wheelers and 50+ 2 wheelers along with space for Buses as well within and in front of the park ;
g. Has Food Court adjacent (in front) to the Park;
h. Presence of high nos. visitors on weekends, including tourists (mostly national), with high nos. of children & their care- givers as regular visitors;
i. Dedicated ITC Zone with abundance of playing equipments such as Swings, Slides, & Shaded Resting Spaces;
j. Has its own micro climate with abundance greenery in from of variety of trees, plants, shrubs etc.;
k. Nominal entrance fee for entry into this park, however free for Children upto 5 years.

l. Hawala Village on the back side with limited attractions in the close Proximity (Sanjay Gandhi Park);

**m. Custodian- Urban Improvement Trust (UIT), Udaipur**

Figure 29 View from in between the Park showing Manicured Lawns, Multi- level Fountain, Traditional Chhatri (Dome- shaped Pavilions), and Fateh Sagar

Figure 30 Sculptures and Murals Depicting Wildlife

Figure 31 Shaded Pathways, Worli and other Painting on Tree Trunks, and Vertical & Elongated Sculptures as an additional Beautification Elements to the Park

### 5.2.1 Identified Sensory Pocket within Rajiv Gandhi Park

Situated within Rajiv Gandhi Park, the identified Sensory Park pocket measures approx. 1000 SqMt and is strategically located from accessibility and adjoining ITC attractions perspective with utilities (water ATM, toilets) within 100M proximity.


Figure 30 Identified Site and Adjoining ITC Zones

Currently a underutilized pocket but having the advantage of being close to numerous ITC Zones and utilizes but also because of its flat topography, well maintained and manicured lawn, existing green cover and statues depicting wildlife within and around the pocket.

The existing green with its own micro- climate and with is adjoining water body in from of multi-leveled fountain plays an important role in form of proving various natural sensory experiences, i.e. Visual, Hear, Touch & Feel etc. as well.

Below are the few excerpts of the identified site for Sensory Park


Figure 31 Key Map Showcasing the Identified Site, Adjoining ITC Zones and Nearby Facilities and Utilities

Figure 32 Access towards the Identified Sensory Pocket and Entry to the same

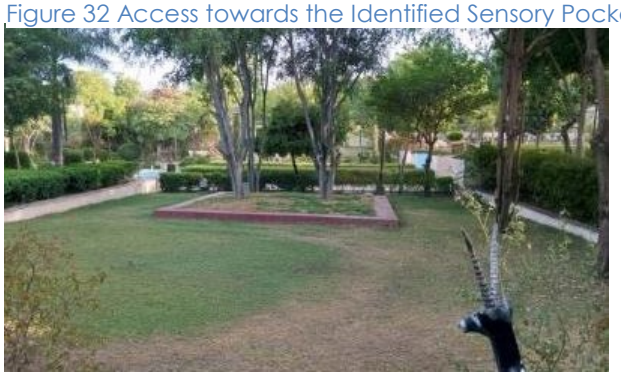


Figure 33 Views overlooking the Identified Sensory Pocket from different Angles

### 5.2.2 Adjoining ITC Activity Zones and Facilities

The adjoining ITC attraction includes Dedicated ITC Dedicated Zone, lush green lawns or activity cum playing zone all around, multi- levelled fountain. The identified Sensory Park site is well connected with other parks of the garden and is easily accessible from all parts of the parks with natural shaded pathways and corridors


Figure 35 ITC Dedicated Zone Within the park with Series and Variety of Playing Equipments (Swings, Slides, Merry go round, Hurdle & Climbing Installations etc.)

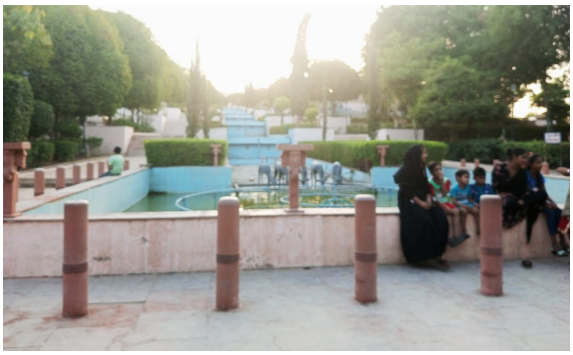



Figure 34 Adjoining Multi- leveled Fountains and way Towards Facilities and other Lawns


Figure 36 Adjoining Lush Green Activity cum Playing Zones

## 5.3 Saheliyon ki Bari

Built in 18th-century and Saheliyon ki Bari also known as the Garden of Maidens, the garden was designed specifically to create a recreational spot for Queen and its maidens. Famous for its lush green lawns, flowerbeds, canopied walking lanes and marble art including marble pavilions, traditional Chhatris (Dome- shaped Pavilions), elephants and bird shaped fountains in the four beautiful lotus pools, the garden presents a very pleasant ambience for tis visitors and famous as must visit place for tourists.

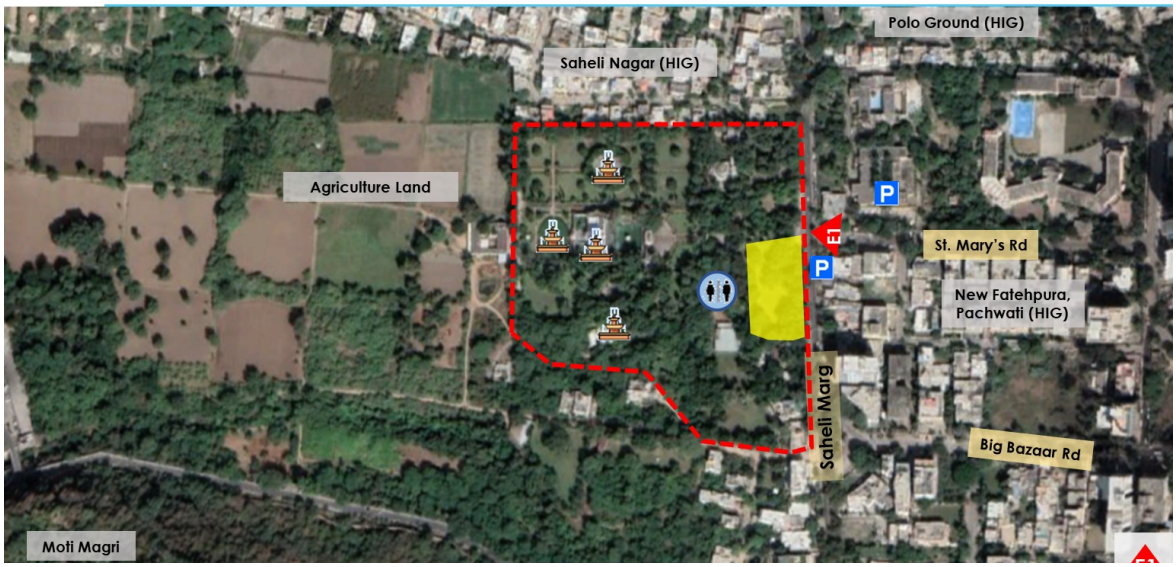



Figure 37 Saheliyon ki Bari and its Surrounding

Below are highlights of this Park.

a. Situated in northern part of Udaipur on a busy Sub- arterial road and measuring approx. 15 Acres, Saheliyon ki Bari has its own micro climate with abundance greenery in from of variety of trees, plants, shrubs etc.;
b. Famous for landscaped lush green lawns, lotus pond, canopied walking lanes, marble pavilions, flowerbeds, and ornamental fountains made out of metal and marble;
c. Is also famous for its pressure & dancing fountains, traditional chhatris etc.;
d. Has other touristic attractions within close proximity- Fateh Sagar Lake, Sukhadia Circle, Moti Magri, Neemuch Mata Temple etc.;
e. Presence of high nos. of visitors, but mostly tourists;
f. Surrounded by HIG Neighbourhood, the garden is easily accessible by local transport, taxis & autos;
g. On- Street parking in front of Garden with capacity of 50+ 2 wheelers with an off-street parking lot in State institute of Educational Research and Training (SIERT) Campus with capacity of approx. 35 4 wheelers. Both are paid parking for its visitors;
h. Lies on the another Phase-II Intervention Site (1.5 kms and 3 Junctions);
i. Nominal entrance fee for entry into this park;
j. Absence of any ITC dedicated zone, hence not able to attract local citizenry, especially children and their care- givers;
**k. Custodian- Public Works Department (PWD)**

Figure 38 Lotus Pond surrounded by Sculpted Fountains, Traditional Chhatris


Figure 40 Marble Chequred Corridors with Fountains and Colorful Flowerbeds


Figure 39 Lush Green & Well-Manicured Lawns

### 5.3.1 Identified Sensory Pocket within Saheliyon ki Bari

Situated within Saheliyon ki Bari, the identified Sensory Park pocket measures approx. 3500 SqMt and is situated in front of the garden ticket window.

Currently a underutilized pocket, it is just an open lawn with good green cover in form of variety of trees, having Utilities such as toilets, water points within nearby vicinity.

Below are few excerpts of the same.


Figure 41 Identified Site and Adjoining Facilities


Figure 42 Key Map Showcasing the Identified Site and Adjoining Facilities


Figure 44 Entrance Corridor Leading to Ticket Window (on the Left) then to Garden and 2 Wheeler Parking for Staff


Figure 43 Views overlooking the Identified Site from different Angles

### 5.3.2 Adjoining ITC Activity Zones and Facilities

As discussed earlier, Saheliyon ki Bari doesn't have any dedicated ITC Zone hence it has nominal presence of local visitors including Children and their care- givers.

# 6 Site Finalization for Developing Sensory Park

Based on the detailed studies of these potential sites and assessing each of them against the set parameters, identified pocket within Gulab Bagh has been found to be the most suitable site, hence has been finalized as site for developing Sensory Park.

Few parameters has played an important role in finalization of this site as other parameters faired almost equally for all the sites as represented in Table 4.

Table 4 Details of All the Selection Garden vis-a-vis Set Parameters

| S/n | Parameters | Gulab Bagh | Rajiv Gandhi Park | Saheliyon ki Bari |
|---|---|---|---|---|
| 1 | **Usability** | Being the city- centric garden and situated within the dense setting of 'walled city' and caters to high footfall on weekdays & weekends as well with highly integrated ITC and other Activities cum Engagement Zones, has very high usability throughout the year.<br>**Suitability- High** | Being a Contour Garden, the users accessibility is limited to ground level and slight upper level only, which is not even one- fourth of total park area. Moreover, no ITC Friendly and elderly friendly accessibility hampers the accessibility to other part of park, even if one wish to visit the entire park.<br>**Suitability- Low** | A major tourists attractions, caters to limited local users and with no ITC zone and facilities, is not an ITC Friendly garden<br>**Suitability- Not Suitable** |
| 2 | **Visibility** | Being the city- centric garden and situated within the dense setting of 'Walled City' with its close proximity to lot of other tourist has high visibility among locals and tourists as well<br>**Suitability- High** | Being situated on northern side of city on the banks of Fateh Sagar Lake on Rani Road, caters of local ITC crowd mostly on weekends with limited touristic interest<br>**Suitability- Moderate** | Same as above<br>**Suitability- Not Suitable** |
| 3 | **Accessibility** | Well connected with high nos. of off- street and on- street parking in and around the Garden.<br>**Suitability- High** | Well connected with limited parking availability.<br>**Suitability- Moderate** | Well connected with limited parking availability<br>**Suitability- Moderate** |
| 4 | **ITC Dedicated Zone within the Site** | Yes<br>**Suitability- High** | Yes<br>**Suitability- High** | No<br>**Suitability- Not Suitable** |
| 5 | **Availability of approx. 750- 1000 SqMt Land for Developing Sensory Park** | Yes<br>**Suitability- High** | Yes<br>**Suitability- High** | Yes<br>**Suitability- High** |

| | | | | |
|---|---|---|---|---|
| **6** | **Accessibility & Visibility within the Park** | Yes<br>**Suitability- High** | Yes<br>**Suitability- High** | Yes<br>**Suitability- High** |
| **7** | **Proximity to other ITC Destinations & Services** | Being the city- centric garden and situated within the dense setting of 'walled city' it has numerous ITC destination within its close proximity such as playschool, pre- primary schools, Aanganwadi Centers (AWCs- govt. run school for children upto 6 years, Pregnant & Lactating women), Primary Healthcare Centers (PHCs) and private healthcare facilities, neighbourhood parks etc.<br>**Suitability- High** | Being on the banks of Fateh Sagar Lake, with low density village on the back side has very limited ITC destination within the close proximity<br>**Suitability- Not Suitable** | Being surrounded by HIG neighbourhood has various play schools, pre- primary schools, private clinics and hospitals, neighbourhood parks etc.<br>**Suitability- Moderate** |
| **8** | **Existing Services/ Facilities within the Site** | Varied Activities and Facilities – a Library, ITC Dedicated Zone, Bird park, under construction Toy Train, Rose Garden, Pond, Temples, Open Gym, Nakshatra Garden (Constellation cum Acupressure Garden), Navlakha Mahal, water bodies in form of fountains and ponds etc., numerous green lawns along with sufficient utilities and facilities in form of strategically located water points and toilets, shaded resting spaces, parking in and around the site etc.<br><br>Moreover all these facilities are closely integrated and interconnected to each other by shaded pathways<br>**Suitability- High** | Varied Activities and Facilities – numerous green lawn, ITC Dedicated Zone, shaded resting spaces, food court just outside the park, however have limited parking facilities and moreover given that only one- fourth space is utilized due to accessibility issue, lot of other attractions (Chhatri, Temple etc.) are being missed by visitors.<br>**Suitability- Moderate** | Varied Activities and Facilities – numerous green lawn with beautiful fountains and manicured flowering beds, shaded resting spaces, food street just outside the garden, however have limited parking facilities<br>**Suitability- Moderate** |
| **9** | **Varied Mix of Users** | Yes- Mix of EWS, LIG, MIG and HIG as well<br>**Suitability- High** | No- LIG, Lower MIG with just a low density village on the back side of the Park<br>**Suitability- Not Suitable** | HIG<br>**Suitability- Not Suitable** |
| **10** | **Custodian/ Ownership** | UMC<br>**Suitability- High** | UIT<br>**Suitability- Moderate** | PWD<br>**Suitability- Moderate** |

| | | | | |
|---|---|---|---|---|
| 11 | **Community Interest for Long- Term Sustainability** | Yes, as few of the pockets and facilities are already developed and is maintained by private agencies<br>**Suitability- High** | Not so<br>**Suitability- Moderate** | No<br>**Suitability- Not Suitable** |

## 6.1 Outcome

The above table clearly indicates that the identified site at Gulab Bagh is the most suitable site from all perspective as it fulfills all the set criteria, which is not the case with other two garden.

Moreover, UMC being the custodian of Gulab Bagh also had an added advantage, as UMC being the Implementation Partner and is well very aware of the Urban95 Program and its goals, which is not the case with other two, specifically with PWD. Moreover, UMC also has indicated in past that they would be interested in developing any new facility in Gulab Bagh, hence has readily agreed to develop Sensory Park in Gulab Bagh within the identified pocket.


Figure 45 Map Showcasing Integrated ITC Facilities and Utilities

# 7 Site Characteristics

Site characteristics in forms of its topography, existing vegetation and surrounding landuse is as mentioned.

## 7.1 Topography

The topography of site is relatively flat and varies between 1.0M- 1.25M, with maximum height on the western side of it, adjoining to toy train track.

## 7.2 Vegetation

The site has good existing dense green cover, counting upto 25 fully grown trees of different variety & sizes, including but not limited to Peepal (Ficus Religiosa), Neem (Azadirachta indica), Ashok (Saraca Asoca), Gulmohar (Delonix regia) and others, hence has its own micro- climate. The existing green cover plays an important dual role proving natural shading and various natural sensory experiences, i.e. Visual, Hear, Touch & Feel etc. as well.

## 7.3 Surrounding Landuse

Being one of the oldest garden in the city and situated within the walled city, Gulab Bagh is very well surrounded by varied mix of society, i.e HIG (Sarvritu Villas), mix of MIG & HIG (Brahmapuri, Kalaji Goraji), and LIG & EWS (Khanjipee). The same has been showcased in below Figure.


Figure 46 Surrounding Landuse of Gulab Bagh- Mix of HIG, MIG, LIG & EWS

## 7.4 Activity Mapping within 600M Catchment of Gate 1 and Gate 3 (Accessible Entrances)

All the ITC Destinations within 600M catchment of Gate 1 and Gate 3 (Accessible Entrances) were mapped, not only to identify the nos. of ITC related facilities around but also for taking up the SBCC for introducing and sensitizing the users on this upcoming

concept based facility and its benefits for the overall growth and development of Children. The means of doing so has been explicitly explained in SBCC section of the report.

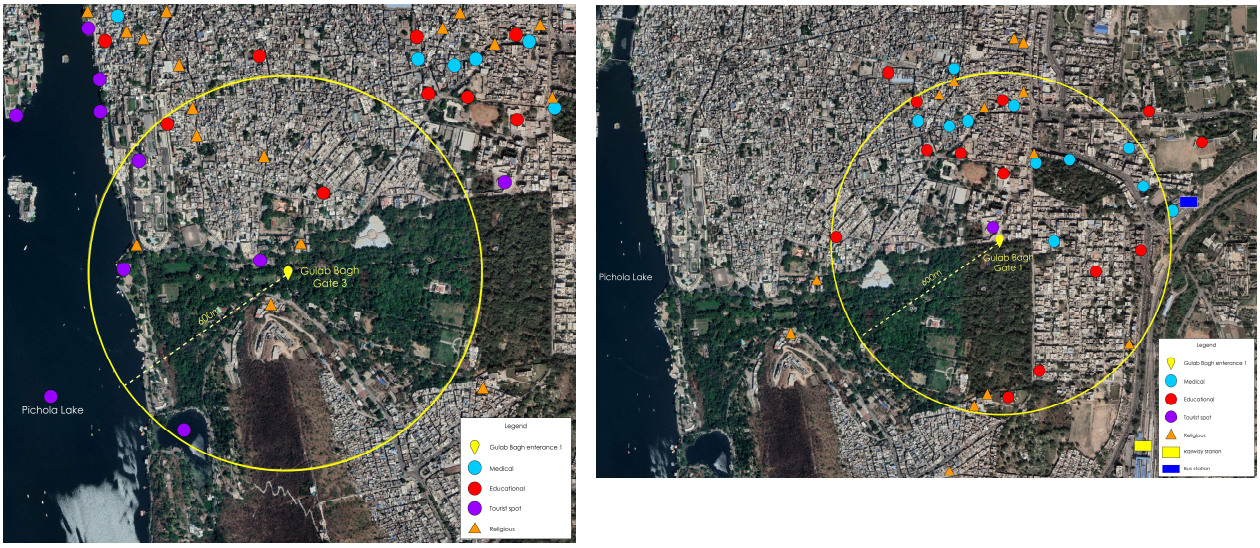



Figure 47 Activity Mapping (ITCN Destinations) within 600M Catchment from Gate 1 and Gate 3

# 8 Site Surveys, Analysis and the Results

After finalization of site at Gulab Bagh, various surveys has been conducted on a regular weekend (Sunday, 24th July'22) and weekday (Wednesday, 27th July'22) via 20 mins representative sample by using Gehl toolkit and the same shall be carried after on-ground implementation of semi- permanent cum tactical intervention to assess whether the intervention is useful in meeting the objectives for what it has been envisaged, by gauging the difference pre and post implementation and the results of the same shall be helpful in making suitable changes (if any) in the design or its elements. The same process shall be followed post implementation of the overall design.

As a part of these surveys, Footfall Count at Entrances and major Activity Zones were conducted along with Activity & Sensory Mapping. Intercept and Urban95 Quality were also gauged using visual/ observation technique. A noise survey was also conducted. Below are the details of the same.

Total Station Survey (TSS) was also done for getting spatial arrangement, levels and measurement of the site along with location of all existing elements on site such as trees, Water ATM, defunct built structures etc.

## 8.1 Footfall Count- Entrances and Other Activity Zones

Age and gender wise footfall count at 2 entrances (main entrance and back side entry, as other 2 remains closed) were conducted and the same were conducted at other activity zones, specifically at Haathiwala Park (ITC Dedicated Zone) and lawns in front of Saraswati Library to gauge the difference in overall footfall of the visitors entering into the garden and then engaged in ITC Zones. The same has been represented in Table4 & 5 and Fig 46 & 47.


Figure 48 Key Map Showcasing Footfall Count at Entrances & Other Activity Zones (Haathiwala Park & Green Lawns in Front of Saraswati

Table 5 Footfall Count at Entrance on a Regular Weekday and Weekend

| S/n | Category | Entrance-1 | | Entrance-3 | |
|---|---|---|---|---|---|
| | | Weekend Sunday, 24th July'22, 6:00-6:20 PM | Weekday Wed, 27th July'22, 6:20-6:40 PM | Weekend Sunday, 24thJuly'22, 6:00-6:20 PM | Weekday Wed, 27th July'22, 6:20-6:40 PM |
| 1 | **Baby** | 13 | 9 | 6 | 5 |
| 2 | **Toddler** | 11 | 7 | 18 | 9 |
| 3 | **Child up to 5** | 19 | 8 | 16 | 8 |
| 4 | **Caregiver** | 64 | 35 | 57 | 29 |
| 5 | **General User** | 96 | 81 | 41 | 67 |
| 6 | **Total** | **203** | **140** | **128** | **118** |

Table 6 Footfall Count at Entrance on a Regular Weekday and Weekend

| S/n | Category | Haathiwala Park (ITC Dedicated Zone) | | Green Lawns in front of Saraswati Library | |
|---|---|---|---|---|---|
| | | Weekend Sunday, 24th July'22, 6:30- 6:50 PM | Weekday Wed, 27th July'22, 6:50- 7:10 PM | Weekend Sunday, 24th July'22, 6:30- 6:50 PM | Weekday Wed, 27th July'22, 6:50- 7:10 PM |
| 1 | **Baby** | 7 | 4 | 6 | 4 |
| 2 | **Toddler** | 9 | 3 | 8 | 7 |
| 3 | **Child up to 5** | 17 | 7 | 11 | 9 |
| 4 | **Caregiver** | 53 | 27 | 36 | 29 |
| 5 | **General User** | 27 | 21 | 47 | 32 |
| 6 | **Total** | **113** | **62** | **108** | **81** |

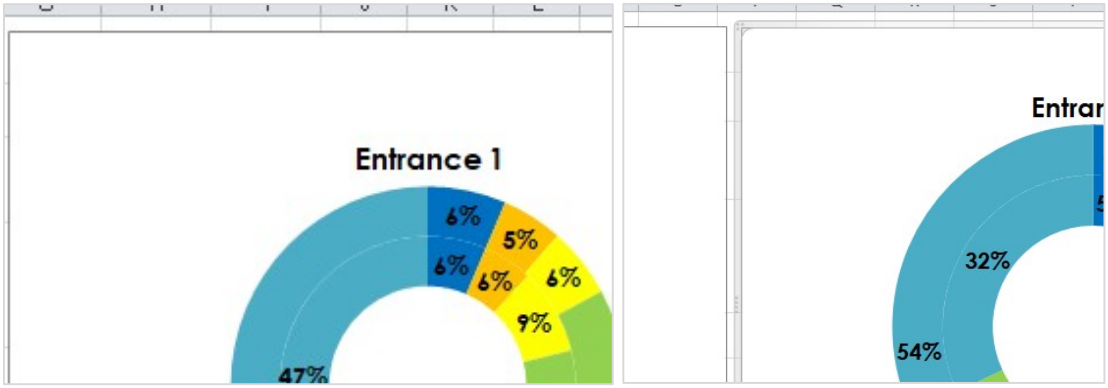



Figure 49 Footfall Count Activity Zone on a Regular Weekday and Weekend

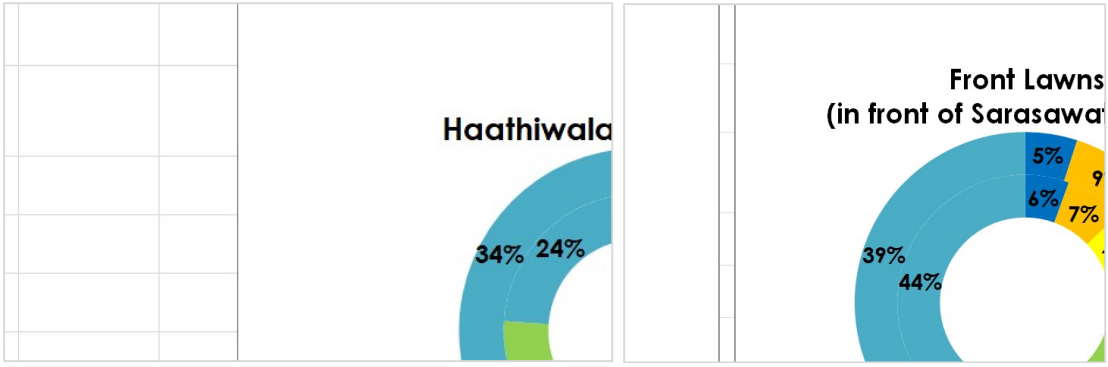



Figure 50 Footfall Count at Entrances on a Regular Weekday and Weekend

## 8.2 Stationary Mapping

A 20 mins 'Activity cum Stationary Mapping' was conducted to gauge various activities the users are engaged in. Below are graphical representation of the same.


Figure 51 Activity cum Stationary Mapping on a Weekend and Weekday showcasing the difference in Numbers of Users and the Activity they are Engaged in

## 8.3 Sensory Mapping

A Sensory Mapping was also conducted to gauge the existing sensory features already available at Gulab Bagh. It clearly indicate that Gulab Bagh is already full of sensory features and having the Sensory Park shall be a value addition to its existing features. Below is graphical representation of the same.

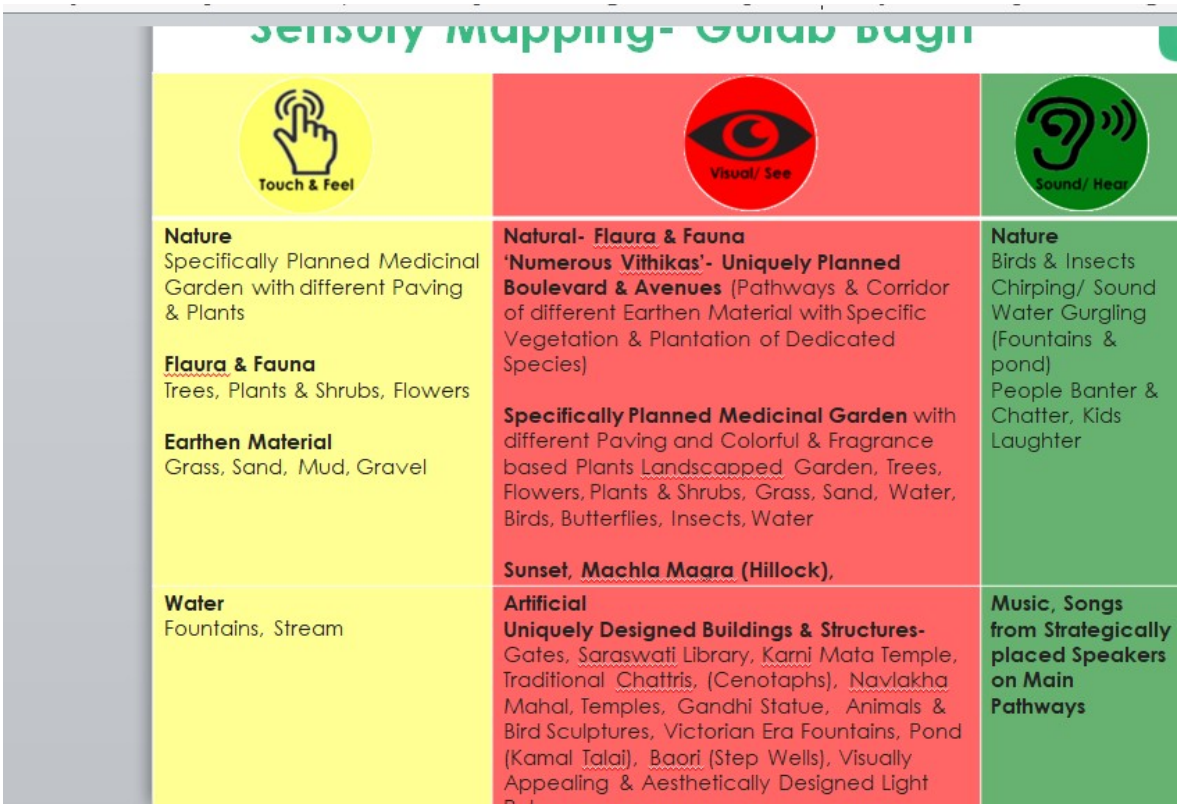



Figure 52 Sensory Mapping at Gulab Bagh

## 8.4 Noise Survey

Noise survey were also done within the selected site using an free mobile application and at other important locations, specifically around ITC Dedicated and other Activity Zones, as the same shall be helpful to gauge noise distribution in and around site pre and post implementation of the design. Figure 53 showcases the same.

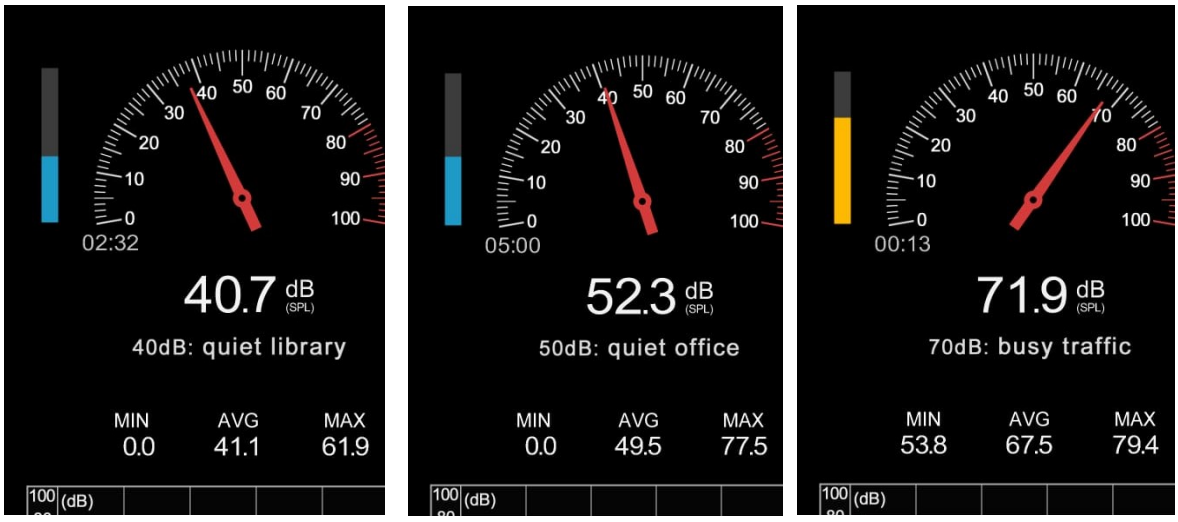



Figure 53 Noise Survey at Identified Sensory Park SIte, Hathiwala Park (ITC Dedicated Zone) & Outside Saraswati Library

## 8.5 Urban95 Quality Criteria and Intercept Survey

A Urban95 Quality Criteria has been done for Gulab Bagh using Gehl Toolkit visual observation. Below Table showcase the details of the same

Table 7 Urban95 Quality Criteria, Gulab Bagh

| Parameters | Indicator | Existing Situation |
|---|---|---|
| **Protection** | **Protection from Crime and Violence** | - One of the Safest Park in the city with High footfall, throughout the day (almost) on daily basis with Adequate Lighting in almost entire park |
| | **Protection Against Unpleasant Sensory Experiences** | - Waste lying in some Unused and Inaccessible Corners<br>- Open Cables in some Parts of the Park |
| **Basic Needs** | **The Feeling of Comfort** | - Comfortable with Easily Accessible Pathways of different Forms & Materials<br>- Away From Traffic & Noise<br>- Presence of Good Shaded and Seatings (Concrete & Metal Benches, Steps and Low- heighted Platforms) |
| | **Opportunities for Good Hygiene & Health** | - Garbage and Waste lying around in some Places within the Park presenting Unhygienic Experiences |
| | **Convenient Opportunities for Consumption** | - Ample of Restaurant, Cafes & Streets Food Vendors outside the Park<br>- Allowed to Consume Food/ Snacks from Home |
| **Comfort** | **Opportunities to Stop & Stay** | - Ample of Shaded Seating<br>- Natural Scenery all around with numerous Engagement Activities (Playing Equipments, Wall Murals, Uniquely Built Structures, Views & Vistas) |
| | **Opportunities to See** | - Natural Scenery, Views & Vistas, Uniquely Built Structures |
| **Interaction** | **Opportunities to Play** | - Dedicated ITC Zone (Haathiwala Park) with Adequate Playing Equipments<br>- Numerous Lawns & other Playing & Engagment Zones for Users to get Engage in other Games & Activities |
| **Connection** | **Opportunities for Flexibility** | - Flexible to Engage with this Park during Entire Day |
| | **Opportunities to Access** | - Being the City Centric Park is Easily Accessible from other Parts of the City<br>- With Multiple Entries and Ample Parking within & Outside the Park make it easier for its Users to Access the Park Easily |
| | **Highly Integrated** | - Being the City Centric Park with other Tourists Attractions (City Palace, Dudh Talai, Karni Mata Temple, Jagdish Temple, Lake Pichola etc.) in close proximity<br>- Caters to all Sections of Society (LIG, MIG & HIG) |

Table 8 Intercept Survey, Gulab Bagh

| S/n | Category | Existing Situation |
|---|---|---|
| 1 | **Safety** | One of the Safest Park in the city with High footfall, throughout the day (almost) on daily basis with Adequate Lighting in almost entire park |

| | | |
|---|---|---|
| **2** | **Spending Time** | Natural Scenery all around with numerous Engagement Activities (Playing Equipments, Uniquely Built Buildings & Sculptures, Views & Vistas) for Users to get Engage in Games & Activities |
| **3** | **Meeting New People** | Caters to all Sections of Society (LIG, MIG & HIG) with High footfall throughout the day provide Opportunity to Meet New People |
| **4** | **High Quality Place for a Child to Play** | Dedicated ITC Zone (Haathiwala Park) with Adequate Playing Equipments<br>Numerous Lawns & other Playing & Engagment Zones for Users to get Engage in other Games & Activities |
| **5** | **Ease of Movement** | Easily Accessible along with Interconnected and especially Designed Pathways in from of 'Vithikas' with different Materials (Sand, Gravel, Fine Aggregates etc.) |
| **6** | **Comfortable for Care-giver** | Presence of Good Shaded and Seatings (Concrete & Metal Benches, Steps and Low- heighted Platforms) |

## 8.6 Inferences

Overall all these surveys has helped in gauging the existing scenario at Gulab Bagh in terms of numbers of overall visitors (mix of locals and tourists) vis-a- vis numbers of children and their care- givers, the kind and type of activities and opportunities to engaged in.

The Urban95 Quality Survey and Intercept Survey also showcase that Gulab Bagh is not only safer for its users but has all the available facilities and utilities users can ask for in form of safety, cleanliness, comfortable place to be at with numerous opportunities of space and social interaction from various sections of society of different age group, gender etc.

The surveys also reveals that Gulab Bagh is having rich natural and artificial sensory features, hence is a good select for developing a Sensory Park.

Moreover its existing features has also helped in evolving the conceptual design proposal at the identified site, integrating lot of existing features and elements into the design.

# 9 Draft Conceptual Design

After site finalization, having obtained TSS with support from UMC and case studies learnings, set of 'Broad Design Ideas' were formulated along with 'Sensory Simulation Elements' categorizing them as 'Natural and Artificial Elements' and a draft conceptual plan has been evolved using these as a base for the same. Below mentioned are the details of the same.

## 9.1 Broad Design Ideas

As mentioned above, below are the broad design ideas formulated based on case studies learnings and were used in evolving the draft conceptual design.

a. Interactive & appealing entrances for increased usage & participation;
b. Aesthetically designed key map showcasing facilities & features in the park;
c. Interactive wayfinding/ signages for easy access within the park;
d. Barrier Free Movement by following universal standards to make it an 'all abilities park' by suitable infrastructural provisions;
e. Pathways & Stop Points using variety of natural & artificial materials- Sand, Grave, Grass, Water, Artificial Grass Carpets, EPDM flooring, Acupressure flooring etc.;
f. Defined & demarcated yet integrated spaces for children of different ages from 0- 6 years, i.e.
   - Crawl- 0-9 Months
   - Walk & Few Games- 9 months- 2 years.
   - All Engagement Zones & Activities- 2 years- 6 years
g. Specified area with natural elements- sand pits, water fountains, plants/ shrubs planted in lower beds etc. for children to access, engage & connect with, allowing children to access nature- Interconnected playing equiments for easy & uninterrupted access and use;
h. Interactive ITC friendly shaded resting spaces in and around various zones;
i. Adequate lighting for increased sense of safety
j. Promoting 'Circular Economy' via 3 R's (i.e. Reduce, Recycle & Reuse) for inculcating 'Best out of Waste Practices' and set it as an examples for Development Authorities to bring this in regular working practices as well;
   - 'Wooden Logs' for Playing cum Seating;
   - 'Used Tyres' as Playing Equipments, Seating, Planters,
   - 'Old and Discarded Utensils' for Musical Installations.

Figure 54 Interactive & Visually Appealing Entrance

Figure 55 Aesthetically Designed Key Map showcasing Facilities & Features in the Park;



Figure 56 Aesthetically Designed and Visually Appealing Way Findings

Figure 57 Interactive Pathways & Stop Points using Variety of Natural & Artificial Material- Grass, Gravel, EPDM

Figure 58 Low Heighted Plantation for Activating Various Senses- Touch & Feel, Visual, Smell, Taste

## 9.2 Sensory Simulation Elements- Natural and Artificial

As mentioned above, below are the 'Sensory Simulation Elements- mix of natural and artificial material' used in evolving the draft conceptual design.

a. Natural & Artificial Playing Elements- Mud, Sand & Water Play, Well Connected & Brightly Colored Playing Equipments;
b. Plants/ Shrubs for Activating Various Senses
   - Visual- Colorful Flowering Plants, Butterflies, Bees etc.
   - Touch & Feel- Plucking, Crushing,
   - Smell- Good Fragrance based Flowering Plants
   - Taste- Low heighted Seasonal Plants/ Shurbs with Edible Flowers, Fruits, Leaves- Rose, Tomato, Carrots, Mint etc.;
c. Natural & Artificial Elements with Good Sound/ Hearing Effect-
   - Natural- Butterflies, Bees, Cricket, Birds Chirping;
   - Artificial- Wind Chimes, Musical Installations, Water Fountains with Gurgling effect;


Figure 59 Visual & Sound Based Installation & Activities


Figure 61 Low Cost Playing cum Seating Installations


Figure 60 Mud, Sand and Water Play

## 9.3 Draft Conceptual Design

Taking all the above pointers in consideration, a draft conceptual proposal has been planned, including emphasizing on '95' of 'Urban95' as the base of the design as visible in the Fig 59.

The overall park has majorly four 'Engagement Zones' and other sensory features and elements within the park such as walking track/ trail (mix of various natural and artificial elements, flowering beds, sensory panels and writing boards, musical installations, shaded resting spaces made of various ITC friendly materials, visually appealing entrance and railing and many more at designated places.

The details of these 'Engagement Zones' and design elements are mentioned in Table9 .

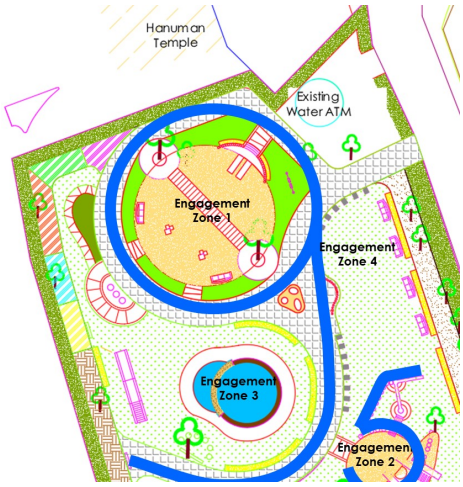



Figure 62 Draft Conceptual Plan for Sensory Park, Emphasizing on '95' of 'Urban95'

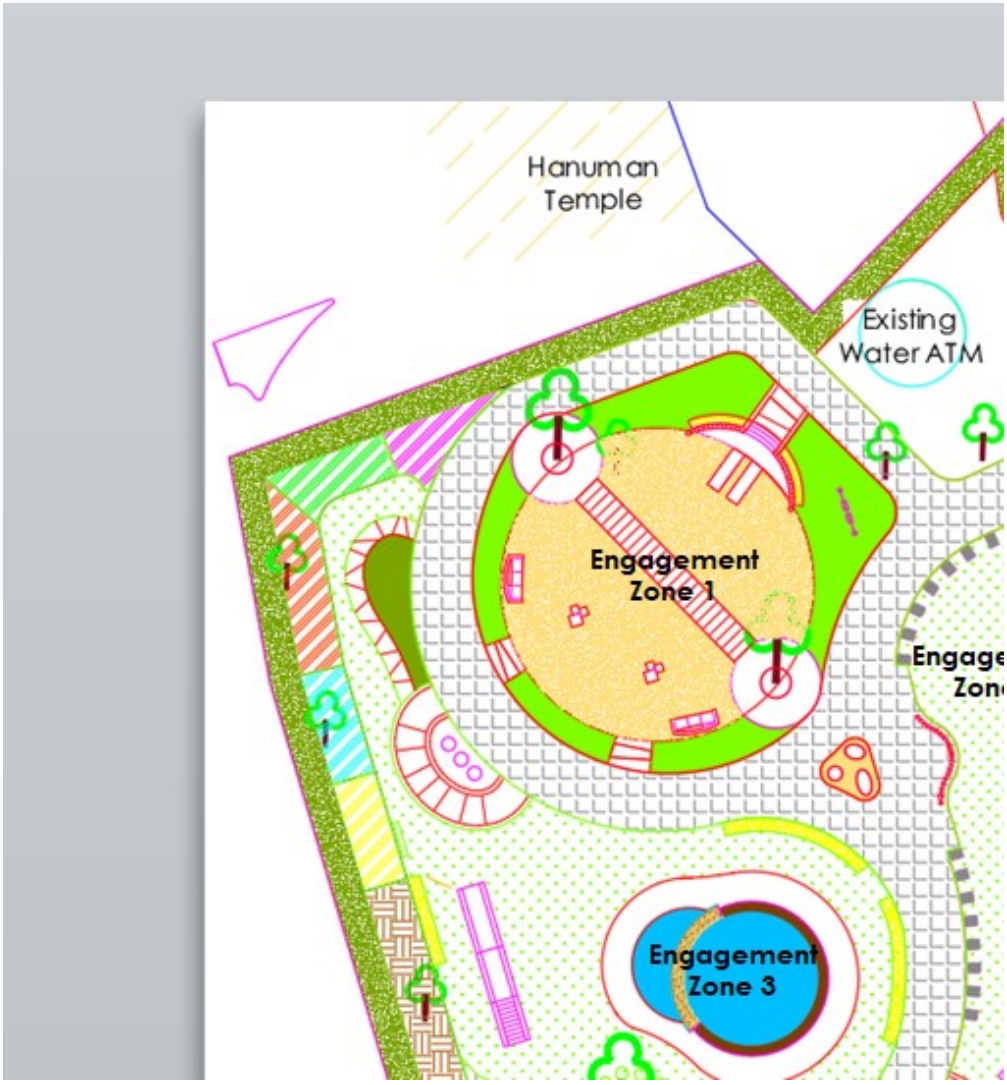



Figure 63 Draft Conceptual Plan for Sensory Park

Table 9 Engagement Zones and their Details (Elements, Features, Material etc.)

| S/n | Engagement Zones | Details |
|---|---|---|
| 1 | **Engagement Zone 1** | - Mound cum Zig- Zag Wooden Logs & in- built Engaging/ Playing Equipments, landing in Sandpit<br>- Child Friendly Hanging Bridge & Tree House connected with Existing Tress<br>- Sandpit, surrounded by Natural Carped Grass & other Sensory Pavings<br>- Shaded Resting Spaces using Benches (Concrete / Metal/ Wooden) |
| 2 | **Engagement Zone 2** | - Mounds of Various sizes with in- built Engaging/ Playing Equipments, a small cave within this Mound landing in Sandpit (Diff. Aggregates), Smaller Mounds and with Wooden Platform, Rope Hanging & Balancing |
| 3 | **Engagement Zone 3** | - Water Play- Waterfall Wall<br>- Lilly Pond on other side |
| 4 | **Engagement Zone 4** | - Open Lawn & Shaded Resting Spaces for Crawling Children and their Care- givers |
| 5 | **Other Sensory Elements & Features** | Specified Area with Sensory Paving using Various Materials, Musical Installations ( on- ground and different Wind Chimes hanging from Trees), Sensory Panels, Writing Boards, Colorful Cloth Hangings etc. |

Figure 64 Bird Eye View of the Park Showcasing Various Engagement Zones

## 9.4 Proposal Elements with Materials and Reference Images

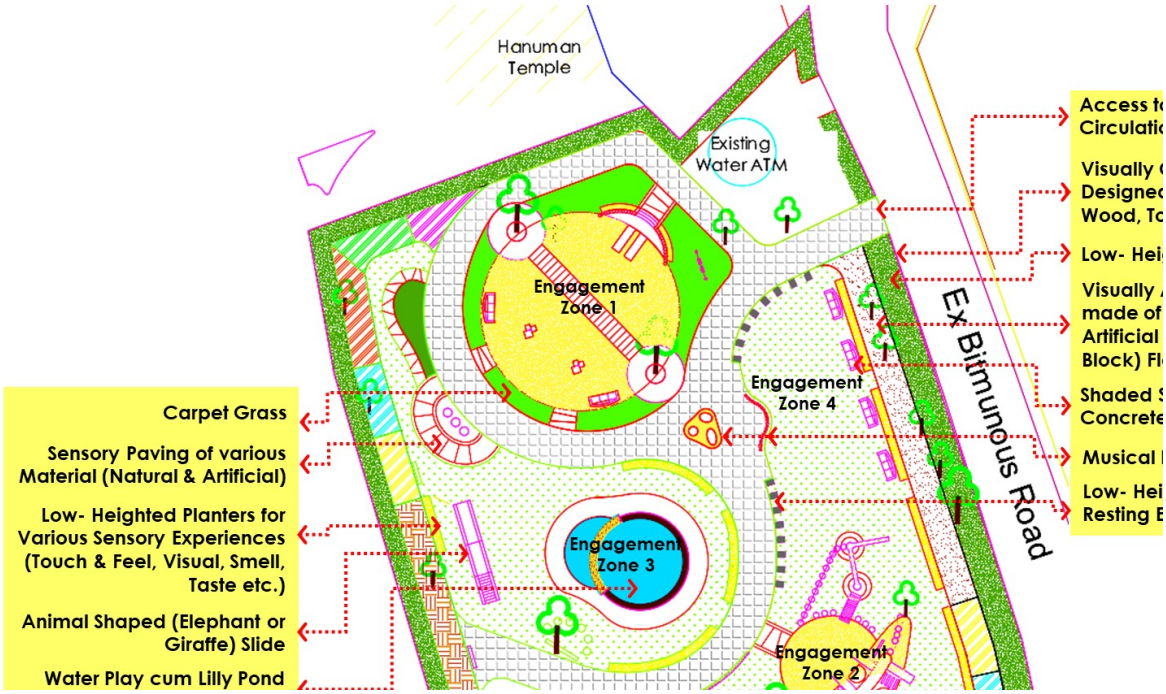



Figure 66 Proposed Elements with Materials in Conceptual Design

Figure 65 Representative Images for Engagement Zone 1

Figure 67 Representative Images for Engagement Zone 2


Figure 68 Other Visually Appealing and Aesthetically Designed Elements and Features- Starting from Top Right- Railing, EPDM Flooring, Sensory Paving, Writing Boards

Figure 69, Sensory Panels, Colourful Tree Hangings, Musical Installations

# 10 Semi- Permanent Project (Tactical Intervention)

As a part of finalizing the draft conceptual design before going into on- ground implementation for the entire space, it is envisaged to test the ideas in real world scenario in terms of its usability, adaptability and acceptance, behavior change of the users (children and their care- givers) and also to gauge their reactions to such kind of theme based spaces and facilities via a semi- permanent project in one part of the site and by using as much design elements as possible.

This is envisaged to taken for all the Urban95 projects in the city, as the concept and ideas are new to its citizenry. However, given the situation that a semi- permanent project for Sensory Park might not deliver the desired results and/or visibility, it being one- of- its kind facility and moreover a very new concept in its entirety, compared to other projects for its intended users, with them having almost no exposure to such different & specialized kind of facility to understand and engage, hence it was agreed upon to directly go into full-fledged execution of the entire proposal.

# 11 Design Elements and Components

Below mentioned are the items/ elements of the design proposal based on which the detail estimate is drawn, which is mix of BSR (RUIDP 2022) and Non- BSR items .

The total cost including 3 years O&M has been calculated as **Rs. 74,40,097/- (Seventy Four Lakhs Forty Thousand and Ninety Seven Rupees).**

Table 10 Elements Listing based on which the Approximate Cost has been Defined

| S/n | Particular |
|---|---|
| 1 | Visually Compelling & Aesthetically Designed Entry Gate |
| 2 | Front & Side Fencing (Wood) |
| 3 | Back Side Fencing (MS) |

| S/n | Particular |
|---|---|
| 4 | Main Circulation Area |
| 5 | Walking Track (Mix of Natural- Fine Aggregates, Interlocking Paver Blocks) & Artificial- EPDM) Flooring Elements |
| 6 | Hedging |
| 7 | Green Lawn with 'Doob' Grass |
| 8 | Selection 1 Grass |
| 9 | Sensory Pavings |
| 10 | Gazebo- Made of RCC with Wooden Finish |
| 11 | Wooden Platform with Hanging Bridge |
| 12 | Playing Equipments- Slides, Swings and others |
| 13 | Mounds (3 nos.) & supporting elements |
| 14 | Sand Pit, Mud Pit |
| 15 | Seating- Pre- cast, MS, Tyre |
| 16 | Water Body (Mix of Lilly pond and Water- play for Children) with necessary Treatment/ Filtration Plant |
| 18 | Musical Installations- Made out of MS, Aluminium Pipes |
| 19 | Wind Chimes (Spread out across the site) |
| 20 | Visually Compelling Cloth Hangings (Spread out across the site) |
| 21 | Flowering beds of discarded Fruit/ vegetable crates (Wooden/ Plastic) |
| 22 | Aesthetically Designed Way Findings around the park |
| 23 | Wooden logs |
| 24 | Lighting Poles & Ancillary Infrastructure |
| 25 | Bore well with necessary civil & plumbing work |
| 26 | Water Filtration Plant with necessary civil & plumbing work |
| 27 | Readymade Fountain |
| 28 | Site Clearance- Excavation, Levelling etc. |
| 29 | Site Drainage with necessary civil works |

# 12 Social Impact Assessment (SIA)

Given that Sensory Park being a new and concept based facility to be built in the city for the 1st time and no such facility exists in part also, hence a SIA has also been thought of and has been explained below.

Being one of the oldest garden in the city and situated within the walled city, Gulab Bagh is very well surrounded by varied mix of society, i.e HIG (Sarvritu Villas), mix of MIG & HIG (Brahmapuri, Kalaji Goraji), and LIG & EWS (Khanjipeer) and caters to approx. 3000 visitors on weekends including high numbers of ITC and tourists as well.

Given the scenario that Gulab Bagh already has high ITC footfall on weekday and weekend as well, hence this new concept based facility is expected to have very positive impact. Moreover, as the new facility is situated near to various other ITC activities zones, hence has as an added advantage of being used as envisaged and offers a unique opportunity to children as it shall

a) Engage them as the as direct and active beneficiaries by providing stimulating and active atmosphere which greatly impact their physical and mental growth & development.

b) Help them in developing, improving and/ or activating the gross & fine motor skills, locomotive skills, cognitive development and sensory processing capabilities by exposing and engaging them in specifically designed activities, experiences, in the process stimulating various body senses- touch & feel, sight, hearing, taste, smell, body movement and balance as well;

c) Fosters listening skills & support 'Auditory Processing Needs' by stimulating the hearing senses;

d) Encourages Risk- taking abilities and Social Interaction & Development as well;

# 13 Environment Impact Assessment (EIA) and Management Plan

The on- ground construction activities for executing the proposed design shall incur few negative environmental impacts as with all other project of similar stature and moreover it being situated in the garden with high ITC and other footfall and very near to ITC Dedicated Zone, hence it is imperative to take suitable mitigation measures to avoid/ reduce/ negate/ curb/ mitigate this impacts by taking necessary steps in line with applicable local standards and norms.

Moreover, prior information shall be provided to all the garden users (especially daily users) regarding the upcoming construction activities for them also to take precautionary measures from their side as well such as avoiding this route from their daily walking, jogging route, carrying and wearing masks and/ or covering other body parts (if allergic to dust and other construction material), be away from construction site or activities etc.

A plan has been developed listing the potential impacts, appropriate mitigation measures against the same and has been explained in below mentioned table. UMC shall

be in loop of any unforeseen situation, once the on- construction activities starts by joint site visits and monitoring by UMC and PMU on regular intervals.

Table 11 Environment Management Plan

| S/n | Potential Impacts | Mitigation Measures |
|---|---|---|
| 1 | Large quantity of waste soil, stones and debris due to Excavation, it being greenfield site | • Utilizing surplus soil, stones for beneficial purposes such as on- site construction activities and filling up low lying areas<br>• Disposal of extra items (if any) as per applicable UMC norms and standards |
| 2 | Earthwork excavation, refilling, handling and transportation of construction materials (like sand and aggregate), producing large volumes of dust | • Cover (by tarpaulins) or damp/ sprinkling down excavated, construction material (aggregates, loose soil etc.) while loading, unloading, levelling and on requirement basis<br>• Cover (by tarpaulins) the same while transportation of same<br>• Transportation of material mostly during non-operational hours |
| 3 | Cutting and pruning of existing trees (one dead tree at site), dense unplanned vegetation, weeds etc. | • Using the cut tree(s) trunk in on- site construction activities, as an design element such as wooden logs- seating cum playing equipment<br>• Using of weeds and other natural material as manure by proper disposal of the same |
| 4 | Possibility of water collecting in void created by excavation and/ or construction activities | Creation of temporary drain on- site connecting the same to the nearest drain for maintain cleanliness during construction activities |
| 5 | On- site construction activities, especially excavation might cause noise and vibrations | • Utilize modern vehicles and machinery to limit noise and exhaust emissions<br>• Such activities to be scheduled during non-operational hours |
| 6 | Damage to existing on- site (underground) infrastructure | • As such nothing has been found on site, however imperative to confirm location of underground infrastructure/utilities (in any) before start of work<br>• Alternate arrangement of the same |
| 7 | Construction workers and garden users at risk from any on- site accident(s) | • Following standard and safe construction practices<br>• Excluding garden users from the site by enclosing, barricading the construction area<br>• Providing workers with appropriate Personal Protective Equipment (helmet, hand gloves, boots, masks, safety hoists when working at height, etc.) as per set standards<br>• Follow standard practices of safety checks as prescribed before use of equipments such as cranes, hoists, etc. |

# 14 Institutional Setup- Role of UMC and Operational and Management (O&M) Strategies

UMC, being the custodian of Gulab Bagh has been kept in loop since the project inception, i.e from site finalization to design proposal and other stages via meetings/ discussions etc. Moreover, as the project is nearing on- ground implementation, it become more important to involve identified UMC Champion as mentioned in Table12 more and on frequent basis for their continuous support in tendering, on- ground implementation and moreover O&M of the project as well, after completion of on-ground implementation. This shall also help in long- term sustainability and scalability of ECD interventions in the city.

Table 12 UMC Champion and their Role

| S/n | Designation | Role |
|---|---|---|
| 1 | Superintending Engineer (SE) | Head of Technical Wing<br>- Support in Approval of DPR, Tendering Process and Selection of Suitable Agency/ Contractor for On-ground Implementation |
| 2 | Executive Engineer (EE) | 2nd in Lead of Technical Wing<br>- Support in Approval of DPR (especially BoQ and Estimates), Tendering Process and Selection of Suitable Agency/ Contractor for On- ground Implementation |
| 3 | Executive Engineer (EE) | 2nd in Lead of Technical Wing<br>- Support in Approval of DPR, Tendering Process and Selection of Suitable Agency/ Contractor for On-ground Implementation |
| 4 | Assistant Engineer (AE), Garden | 3rd in Lead of Technical Wing<br>- Support in Approval of DPR (especially BoQ and Estimates), Tendering Process and Selection of Suitable Agency/ Contractor for On- ground Implementation<br>- Continuous monitoring during On- ground Execution in coordination with PMU to check for any discrepancy |

As a part of project and Sensory Park being a concept based facility, it is imperative that an operational and management plan shall be prepared and put in place not only for long term sustainability of the same but also for replicating the same in other part of the city by UMC and/ or by other development agencies of Udaipur, specially UIT and PWD as they also are the custodian of some city- level park.

This become more important in the scenario that UMC, UIT and PWD till now has not built something of similar stature (elements, features, material etc.) and thus lacks in O&M of such specialized facility(ies) which needs specialized O&M, as traditional O&M practices might not be useful and helpful, thus needing extra care in form of specialized/ skilled human resource and machinery as well.

Given the above scenario, multiple options/ practices are thought of as explained below.

a) Having the **Annual Maintenance Contract** (AMC) for minimum 3 years (extendable on need basis) included in tender conditions with the enabler that selected agency/ contractor shall not only take care of O&M of this newly constructed facility but also train/ capacitate the UMC existing staff & other additional staff (if required), enabling UMC staff to take care of this new facility after the completion of contract period in a way that it should be taken care of;

b) Opening this facility for O&M by private agencies (corporate houses, big businesses, industrialists etc.) under widely followed practice in the city, known as **'Adopt the Park'** scheme under their Corporate Social Responsibility (CSR) in exchange of branding opportunities.

   However, the same shall be opened only to suitable agencies having suitable/ proven experience of maintaining such kind of facility elsewhere in the state or at country.

All the above will happen through UMC and PMU in coordination with UMC will do joint site visits every fortnightly for atleast a year or so to check for any errors and laxity on contractor part and set the things right.

# 15 Social and Behavioural Change Communications (SBCC) for Sensory Park

Social Behaviour Change Communication (SBCC) as the name suggests is the comprehensive communication strategy in context of Urban95 program to not only achieve the set/ envisaged objectives effectively for any of the project to be implemented under the program and but also to gauge, map and measure the long term behavior change of the targeted audience (children and their care- givers and service providers) using various tools, means and mechanism to achieve the desired outcome as stated in the RFP.

A comprehensive SBCC approach can be a very resourceful tool, when implemented in a planned, coordinated manner and within a wide range of interventions and can results into sustained change in an individual or communities adopts new behaviors and social norms or participate in civic engagement process.

In continuation to the above, a detailed SBCC strategy has been planned for Sensory Park and has been explained below.

1. **Community Mobilization** for sensitizing active and more importantly passive users about the importance of sensory parks and its numerous benefits via extensive Information Education Communication (IEC) and/ or Communication & Outreach (C&O) within ( and outside the park as well- set periphery (600m or 20 mins walk, more based on the need) on sample size basis (nearby Residential Colonies, local community- household having a children below 6 years of age - Mix of HIG, MIG, LIG & EWS, NGOs, CBOs, RWAs– if any, Community groups etc.) using various means such as In- Depth Interviews, Focused Group Discussions (FGDs), Key Informant Interviews (KIIs) etc., disseminating information on overall objective, design, benefits etc. All the above shall be conducted via specifically designed questionnaire and aesthetically designed outreach material (Banner/ Poster, Leaflets for distribution- if required);
2. The same shall be also be done at all the ITC Destinations (including but not limited to city or neighbourhood level park(s)- if any, Aanganwadi Centers (AWCs), Primary Healthcare Centers (PHCs), private play schools & pre- primary schools, clinics, hospitals etc.) within the 600m radius of Gate 1 and 3;
3. **Use of Social and Print Media** for popularizing the project objectives and for larger visibility of the new facility to the targeted audience. Print- Newspaper and Social Media- Facebook, Instagram, Twitter, WhatsApp etc.;

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# 16 Annexures I- Drawings and Details


Figure 70 Design Proposal- Layout Plan

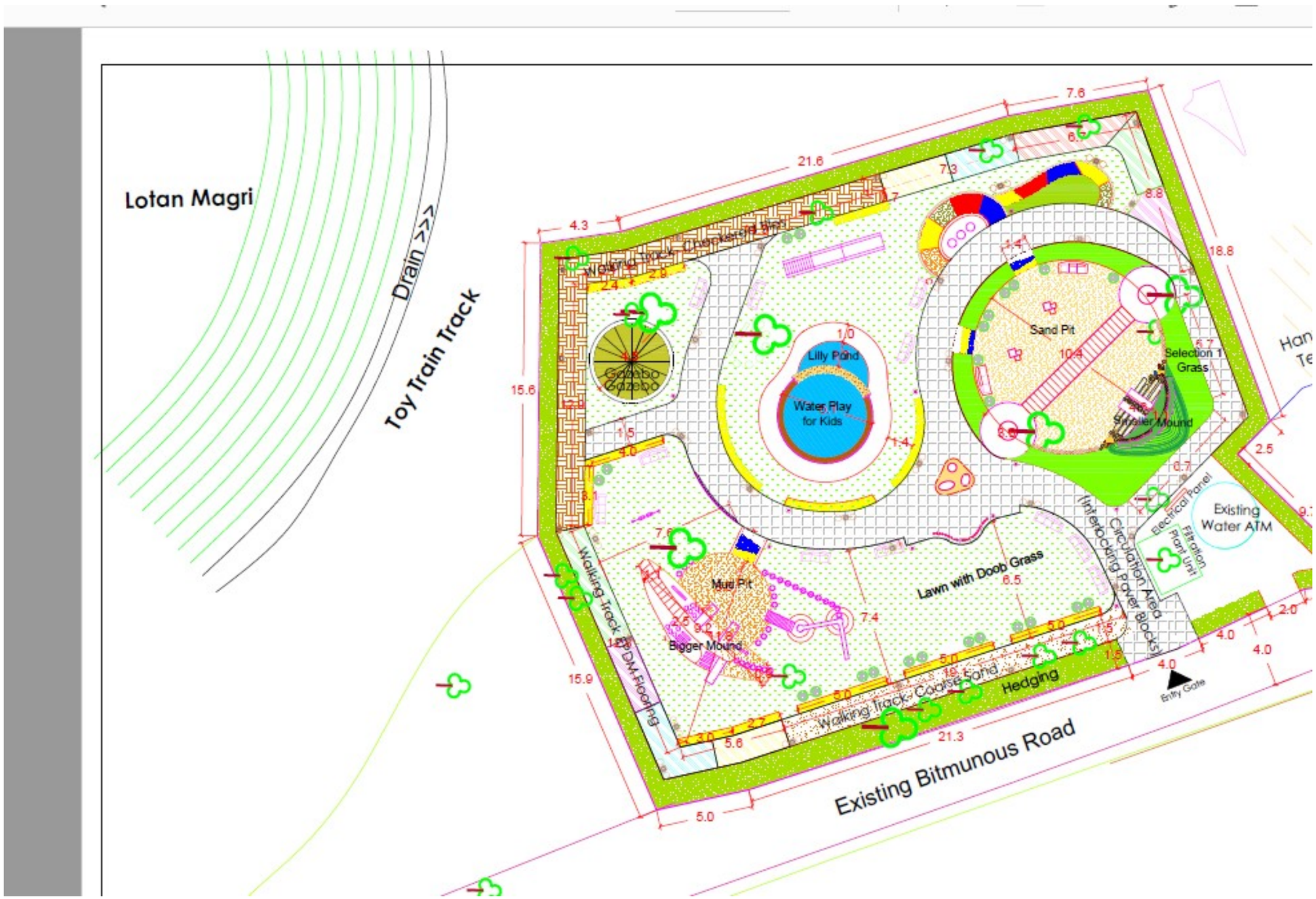



Figure 71 Labeling & Dimensions

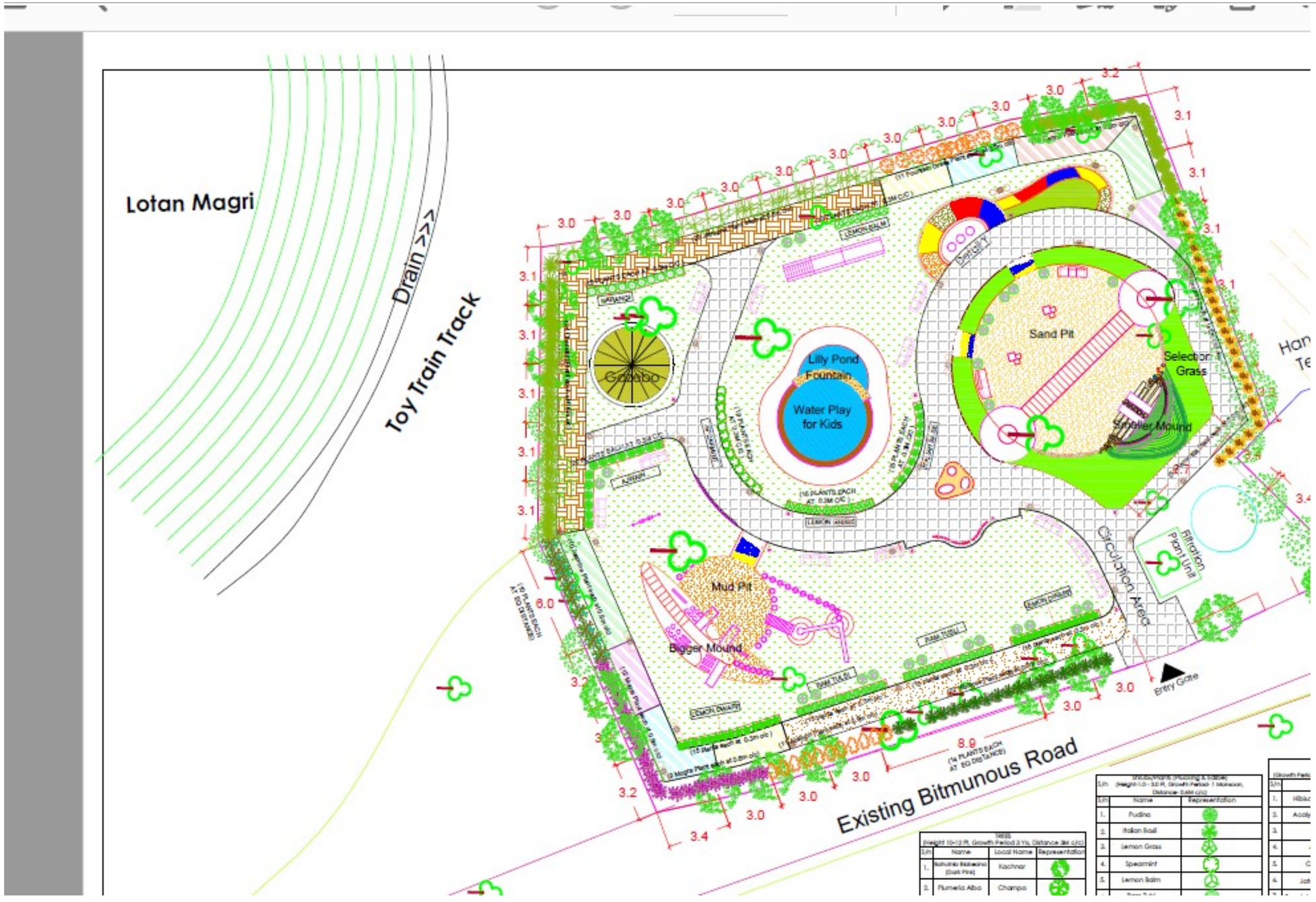
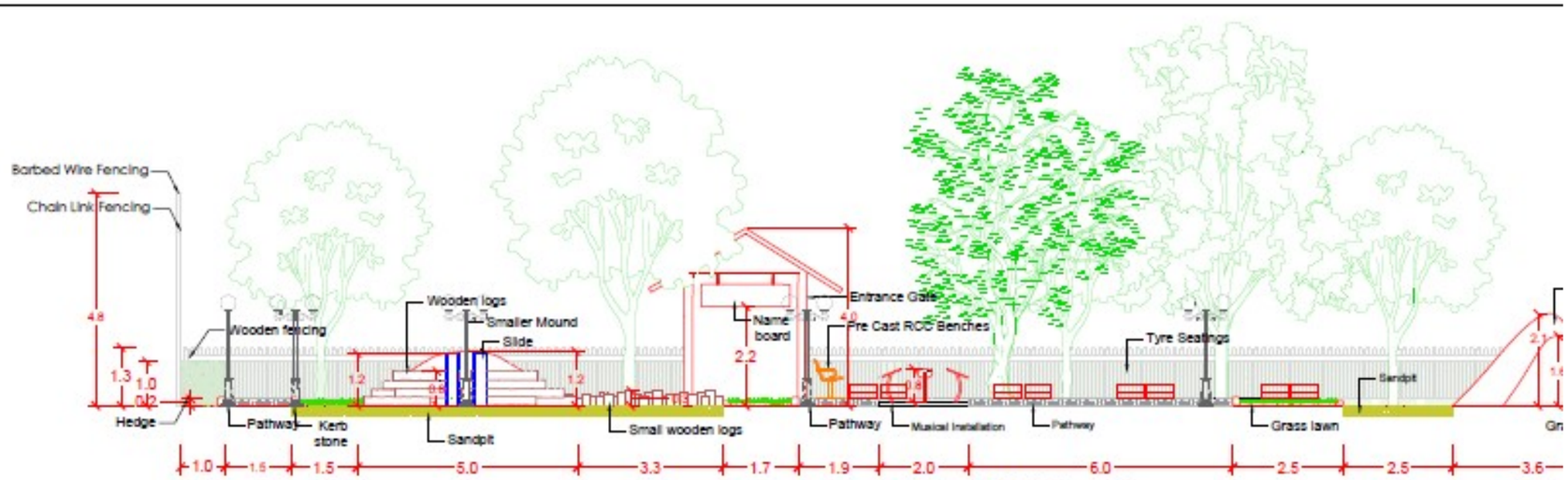



Figure 72 Landscape Plan


Figure 73 Layout Plan with Section Lines




SECTION A-A'

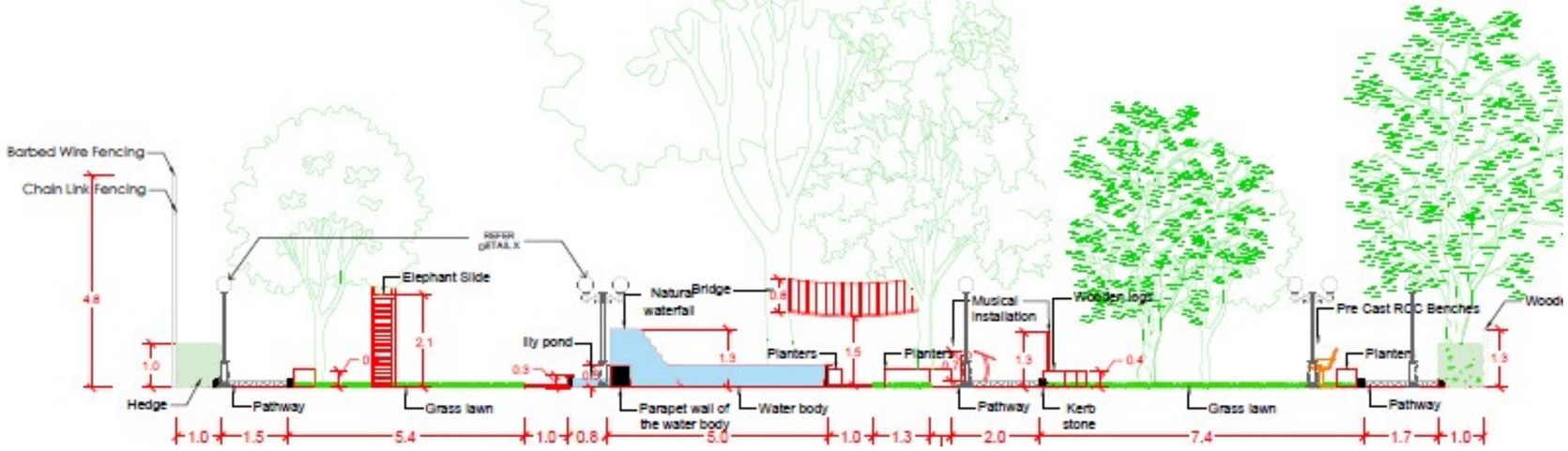



Figure 74 Section AA'- Highlighting Entrance Gate & Fencing, Mounds of Engagement Zone 1, 2 and 4 and BB'- Highlighting Water Play Area & Wooden Deck & Hanging Bridge

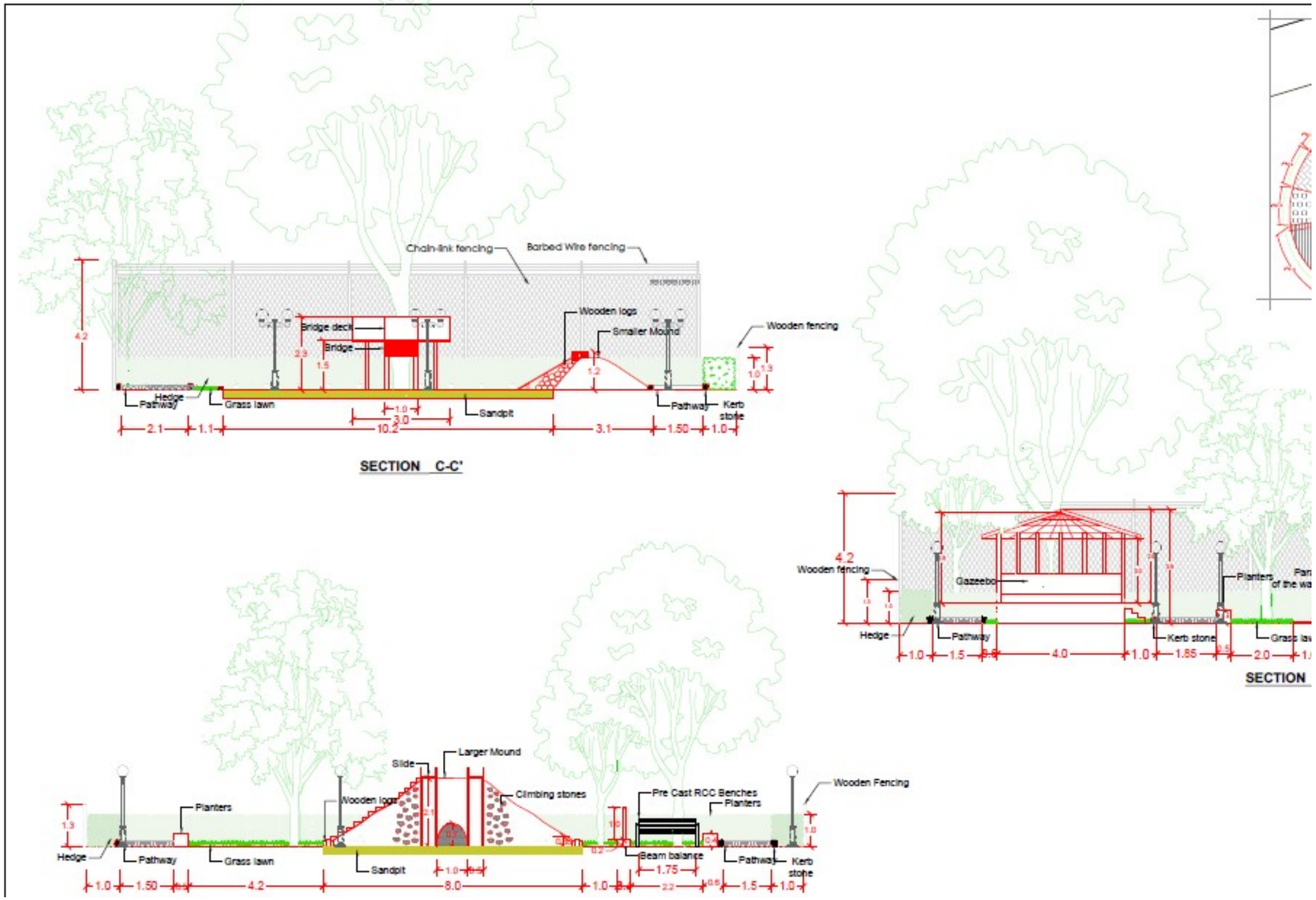



Figure 75 Section CC'- Highlighting back side Chain Link Fencing as Safety Measure, DD'- Highlighting Gazebo & back side Chain Link Fencing and EE'- Highlighting Larger Mound and Nearby Zones

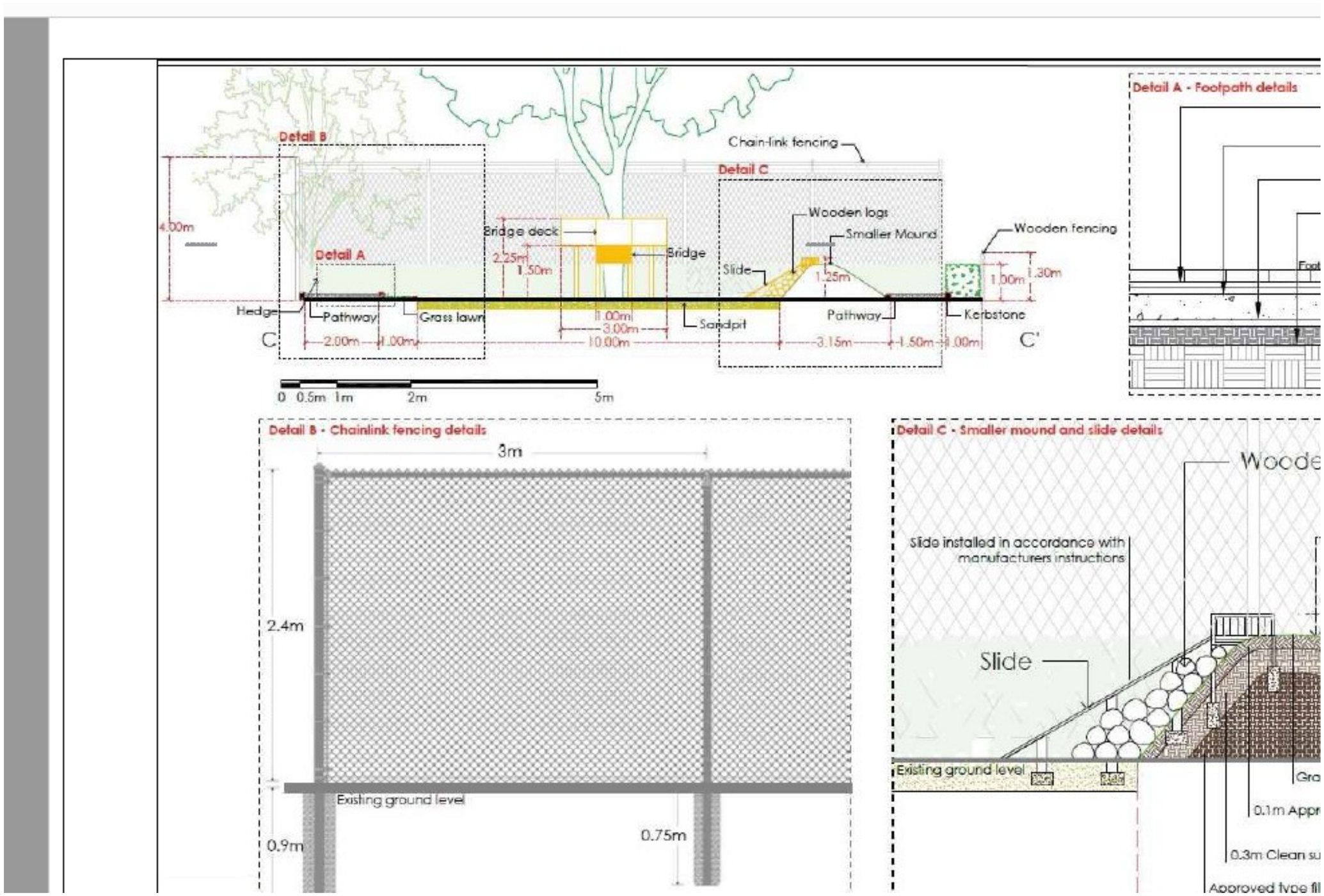



Figure 76 Engineering Details of Main Circulation Pathway (Footpath), Mesh Jalli for Safety on the Back Side and Mound

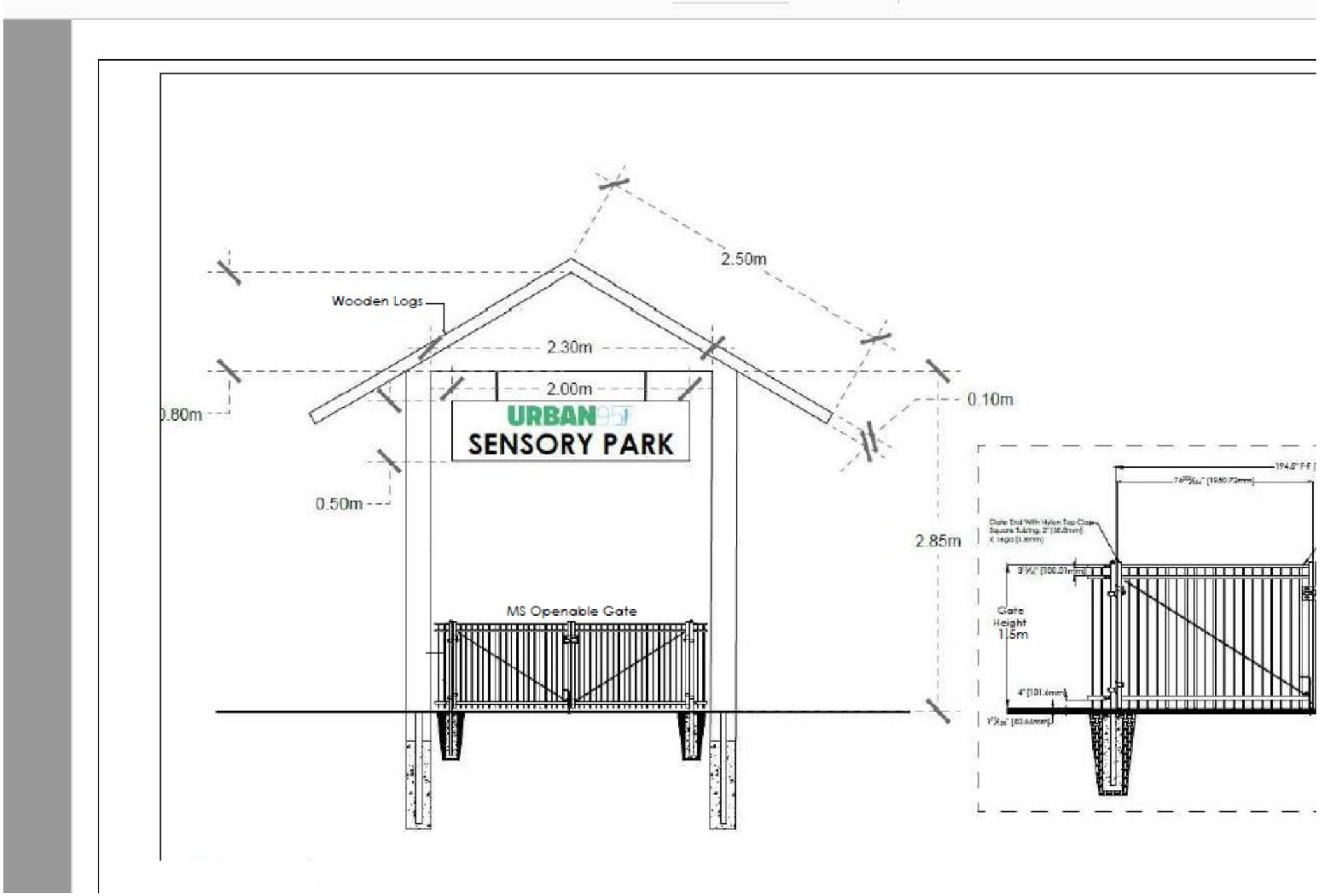



Figure 77 Main Gate Details

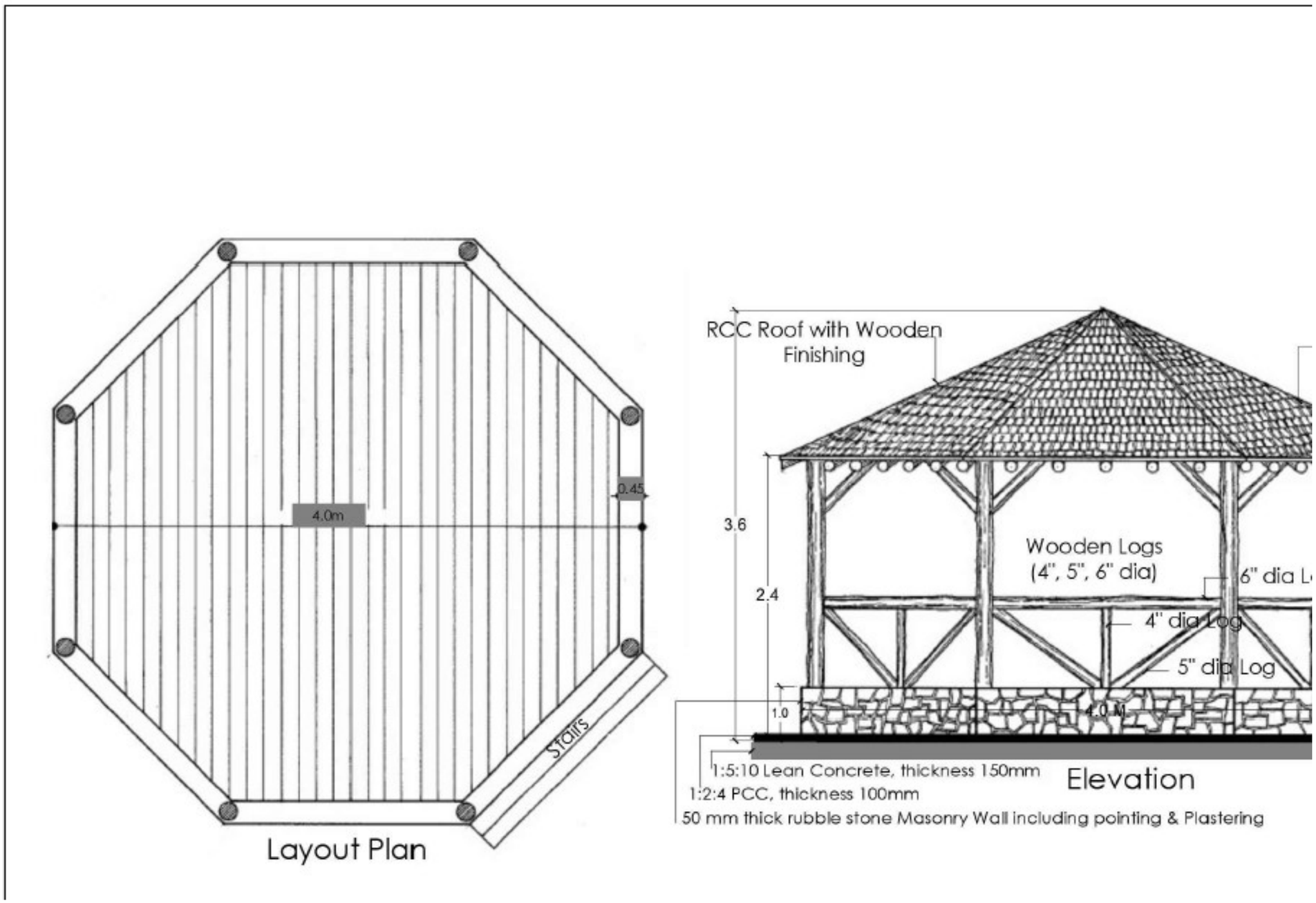



Figure 78 Gazebo Details


Figure 79 Non BSR Reference Images


Figure 80 Aerial View of the Proposed Sensory Design Proposal, Chalking out Various Zones, Elements & Components of Sensory Park

Figure 81 Aerial View of the Proposed Sensory Design Proposal

Figure 82 3D Model Showcasing Water Play Area along with Adjacent Activities

# 17 Annexure II- Bill of Quantities (BoQ) & Estimate

Table 13 BoQ & Estimate for Civil Component (BSR, RUIDP 2022)

| Development of Sensory Park at Gulab Bagh, Udaipur Municipal Corporation (UMC), Udaipur Rajasthan (Civil- Part A BSR, RUIDP 2022) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **S/n** | **RUIDP 2022** | **PARTICULAR** | **No.** | **Length (m)** | **Width (m)** | **Height/ Depth (m)** | **QTY** | **UNIT** | **RATE** | **AMOUNT** |
| 1 | 2.2 | Clearing Grass and Removal of Rubbish (Maximum 150mm) by manual means and disposal at a lead of 50 metres as per MoRT&H specification clause 201. | 1.00 | 41.00 | 30.00 | 0.15 | 0.12 | Hectare | 32500.00 | **3997.50** |
| 2 | 2.3.2 | Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to a lead of 50 metres from road boundary including removal and disposal of top organic soil not exceeding 150 mm in thickness as directed by Engineer.In area of thorny jungle | 1.00 | 41.00 | 30.00 | | 0.12 | Hectare | 74300.00 | **9138.90** |
| 3 | 4.1 | Dressing of earth work in surface excavation including cutting and filling upto 30cm depth including disposal of excavated earth upto 50m and lift upto 1.5 m. | 1.00 | 41.00 | 30.00 | | 1230.00 | Sqm | 37.80 | **46494.00** |
| 4 | 4.10.1.1 | Earth work in excavation in foundation, trenches etc. including dressing of sides and ramming of bottoms, including getting out the excavated material, refilling after laying pipe/ foundation and disposal of surplus excavated material at a lead upto 50m suitable site as per direction of Engineer for following depths, below natural ground / Road top level.In all types soils/ saturated soil such as moorum, sand, sandy silt, clay, black cotton soil, kankar, etc.Depth upto 1.5 m | | | | | | | | |
| | | Site | 1.00 | 41.00 | 30.00 | 0.25 | 307.50 | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Waterbody (Bigger) | | Area | 28.26 | 1.00 | 28.26 | | | |
| | | Waterbody (Lilly Pond) | | Area | 7.07 | 1.00 | 7.07 | | | |
| | | Gazeebo | | Area | 15.90 | 3.00 | 47.69 | | | |
| | | Walking Track (Mix of Coarse Sand, EPDM Flooring, Chequered Tiles) | | 100.00 | 1.50 | 0.30 | 45.00 | | | |
| | | Main Circulation Pathway (Interlocking Paver Block Tiles) | | 95.00 | 2.00 | 0.30 | 57.00 | | | |
| | | Sensory Paving (Soft Garvel, River stone, Pebbles, Bajri, White Sand, Brown Sand) | | 22.00 | 1.50 | 0.30 | 9.90 | | | |
| | | Hard Paving (Kota Stone) Along the Water Body | | 25.00 | 1.00 | 0.30 | 7.50 | | | |
| | | Sand pit (Radius = 5.25m) | | Area | 113.04 | 0.60 | 67.82 | | | |
| | | Mud Pit (Radius = 2.7m) | | Area | 9.81 | 0.60 | 5.89 | | | |
| | | **Total** | | | | | **583.63** | **cum** | **210.50** | **122853.12** |
| 5 | 1.1.1 | Carriage of Materials by mechanical transport including loading, unloading and stacking Earth- upto 2 km | | | | | **583.63** | **cum** | **176.17** | **102817.26** |
| 6 | 4.13 | Earth filling with available surplus soil excavated from foundations and taken only from outside of building plinth in layers not exceeding 20cm in depth, consolidating each deposited layer includingramming and watering and consolidation with lead up to 50 m and lift upto 1.5 m. | | | | | | | | |
| | | Mud Pit (Radius = 2.7m) | | Area | 22.89 | 0.60 | 13.73 | | | |
| | | Bigger Mound | 1.00 | Volume | 1/3*3.14*1.25*1.25*1.75 | | 2.83 | | | |
| | | Smaller Mound | 1.00 | Volume | 1/3*3.14*0.75*0.75*1.25 | | 0.73 | | | |
| | | Smallest Mounds | 2.00 | Volume | 1/3*3.14*0.6*0.6*1.0 | | 0.75 | | | |
| | | **Total** | | | | | **18.04** | **cum** | **144.00** | **2598.10** |
| 7 | 4.12 | Filling with locally available river sand at all levels including watering ramming consolidating and dressing complete including cost of sand. | | | | | | | | |
| | | Sand pit (Radius = 6m) | | Area | 113.04 | 0.60 | 67.82 | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Walking Track (Coarse Sand) | 1 | 25 | 1.5 | 0.6 | 22.50 | | | |
| | | **Total** | | | | | **79.07** | **cum** | **966.00** | **76385.48** |
| 8 | 39.3 | Supplying and stacking good earth at site of work for Lawns and Mounds<br>Note: 1) Loading, unloading and carriage to be paid extra as per actual lead.<br>2) Earth measured in stacks will be reduced by 20% foe payment | | | | | | | | |
| | | | | | | | **216.45** | **cum** | **299.50** | **64826.80** |
| 9 | 39.32 | Edging with 2nd class bricks, laid dry lengthwise, including excavation, refilling, consolidation, with a hand packing and spreading nearly surplus earth within a lead of 50 metres. | 2.00 | 160.00 | | | 320.00 | metre | 34.20 | **10944.00** |
| 10 | 39.4 | Supply at site of work well decayed farm yard manure, from any available source, approved by the engineer in charge including screening and stacking. | | | | | | | | |
| | | Total Site Area | 1.00 | 41.00 | 30.00 | 0.20 | 246.00 | | | |
| | | Bigger Mound | 1.00 | Volume | 1/3*3.14*1.35*1.35*2.1 | | 3.97 | | | |
| | | Smaller Mound | 1.00 | Volume | 1/3*3.14*1*1*1.25 | | 0.73 | | | |
| | | Smallest Mounds | 2.00 | Volume | 1/3*3.14*0.75*0.75*1.0 | | 0.75 | | | |
| | | Dedcution1- Gazebo | | Area | 15.90 | 0.20 | -3.18 | | | |
| | | Dedcution2- Walking Track | | 100.00 | 1.50 | 0.20 | -0.30 | | | |
| | | Dedcution3- Main Circulation Pathway | | 95.00 | 2.00 | 0.20 | -0.40 | | | |
| | | Dedcution4- Fountain | | Area | 19.63 | 0.20 | -3.93 | | | |
| | | Dedcution5- Sandpit | | Area | 113.04 | 0.20 | -22.61 | | | |
| | | Dedcution6- Mud Pit | | Area | 22.89 | 0.20 | -4.58 | | | |
| | | **Total** | | | | | **216.45** | **cum** | **671.00** | **145238.00** |
| 11 | 39.11 | Spreading of sludge farm yard manure or/ and good earth in required thickness (cost of sludge, farm- yard manure or/and good earth to be paid for | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | separately). | | | | | | | | |
| | | Total Site Area | 1.00 | 41.00 | 30.00 | 0.20 | 246.00 | | | |
| | | Bigger Mound | 1.00 | Volume | 1/3*3.14*1.35*1.35*2.1 | | 3.97 | | | |
| | | Smaller Mound | 1.00 | Volume | 1/3*3.14*1*1*1.25 | | 0.73 | | | |
| | | Smallest Mounds | 2.00 | Volume | 1/3*3.14*0.75*0.75*1.0 | | 0.75 | | | |
| | | Dedcution1- Gazebo | 1.00 | Area | 15.90 | 0.20 | -3.18 | | | |
| | | Dedcution2- Walking Track | 1.00 | 100.00 | 1.50 | 0.20 | -0.30 | | | |
| | | Dedcution3- Main Circulation Pathway | 1.00 | 95.00 | 2.00 | 0.20 | -0.40 | | | |
| | | Dedcution4- Fountain | 1.00 | Area | 19.63 | 0.20 | -3.93 | | | |
| | | Dedcution5- Sandpit | 1.00 | Area | 113.04 | 0.20 | -22.61 | | | |
| | | Dedcution6- Mud Pit | 1.00 | Area | 22.89 | 0.20 | -4.58 | | | |
| | | **Manure** | | | | | 216.45 | | | |
| | | **Good Earth** | | | | | 216.45 | | | |
| | | **Quantity of Manure (216.45 cum) and Good Earth (216.45 cum)- Total** | | | | | **432.90** | **cum** | **43.30** | **18744.58** |
| 12 | 39.12.2 | Grassing with 'Doobs' grass including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed. In rows 7.5 cm apart in either direction | | | | | | | | |
| | | Lawn with Bigger Mound and Mud Pit | 1.00 | 32.00 | 9.75 | | 312.00 | | | |
| | | Lawn with Gazebo | 1.00 | 7.50 | 7.00 | | 52.50 | | | |
| | | Lawn with Water Body/ Sensory Paving | 1.00 | 25.00 | 15.00 | | 375.00 | | | |
| | | Dedcution- Mud Pit | 1.00 | Area | 9.81 | | -9.81 | | | |
| | | Dedcution- Gazebo | 1.00 | Area | 15.90 | | -15.90 | | | |
| | | Dedcution- Waterbody (Bigger) | 1.00 | Area | 28.26 | | -28.26 | | | |
| | | Dedcution- Waterbody/ Sensory Paving | 1.00 | Area | 7.07 | | -7.07 | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Bigger Mound | 1.00 | Volume | 1/3*3.14*1.35*1.35*2.1 | | 3.97 | | | |
| | | Smaller Mound | 1.00 | Volume | 1/3*3.14*1*1*1.25 | | 0.73 | | | |
| | | Smallest Mounds | 2.00 | Volume | 1/3*3.14*0.75*0.75*1.0 | | 0.75 | | | |
| | | **Total** | | | | | **683.91** | **sqm** | **59.60** | **40760.84** |
| 13 | 21.1.8 | Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level :1:5:10 (1 cement : 5 fine/ coarse sand : 10 graded stone aggregate 40 mm nominal size) | 1.00 | 85.50 | 2.00 | 0.15 | 25.65 | | | |
| | | Waterbody (Bigger) | | Area | 28.26 | 0.15 | 4.24 | | | |
| | | Waterbody (Lilly Pond) | | Area | 7.07 | 0.15 | 1.06 | | | |
| | | Gazeebo | | Area | 15.90 | 0.15 | 2.38 | | | |
| | | Walking Track (EPDM Flooring, Chequered Tiles) | | 80.00 | 1.50 | 0.15 | 18.00 | | | |
| | | Main Circulation Pathway (Interlocking Paver Block Tiles) | | 95.00 | 2.00 | 0.15 | 28.50 | | | |
| | | Sensory Paving (Soft Garvel, River stone, Pebbles, Bajri, White Sand, Brown Sand) | | 22.00 | 1.50 | 0.15 | 4.95 | | | |
| | | Hard Paving (Kota Stone) Along the Water Body | | 25.00 | 1.00 | 0.15 | 3.75 | | | |
| | | Foundation of Gate | 1.00 | 0.60 | 0.60 | 0.15 | 0.05 | | | |
| | | Platform for Tyre Seating | 25.00 | 0.30 | 0.30 | 0.15 | 0.34 | | | |
| | | **Total** | | | | | **88.92** | **cum** | **4075.00** | **362368.10** |
| 14 | 14.13 | Providing and laying precast cement concrete M-30 Grade interlocking paving blocks of 100mm thick over 50mm coarse sand bedding (duly compacted) including filling of joints with sand suitable for heavy pedestrian traffic/ light vehicle traffic of pattern as approved by Engineer. | 1.00 | 85.50 | 2.00 | | 171.00 | cum | 855.00 | **146205.00** |
| 15 | 30.20.3 | Chequered terrazo tiles 22 mm thick with graded marble chips of size up to 6 mm in floors jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete on 20 mm thick bed of cement mortar 1:4 | 1.00 | 35.00 | 1.50 | | 52.50 | sqm | 853.00 | **44782.50** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | (1 cement :4 coarse sand) : Dark shade using ordinary cement. | | | | | | | | |
| 16 | 30.25.1 | Kota stone slab flooring 25mm thick over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of cement mortar 1 : 4 (1 cement : 4 coarse sand) : Area of each slab 900 to 2000 sqcm | | | | | | | | |
| | | Hard Paving (Kota Stone) Along the Water Body | 1.00 | 25.00 | 1.00 | | 25.00 | sqm | 1299 | **32475.00** |
| 17 | 26.25.2 | Supplying and fixing machine cut fine dressed Red/ Pink sand stone dasa or coping, with full moulding if required laid on cement mortar 1:4 including pointing with admixture of pigment matching with the stone shade. 25 mm thick | 1.00 | 30.00 | 0.60 | | 18.00 | sqm | 1243 | **22374.00** |
| 18 | 21.1.3 | Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - All work upto plinth level : 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) | | | | | | | | |
| | | Waterbody (Bigger) | | Area | 28.26 | 0.15 | 4.24 | | | |
| | | Waterbody (Lilly Pond) | | Area | 7.07 | 0.15 | 1.06 | | | |
| | | Gate | | 0.45 | 0.45 | 0.15 | 0.07 | | | |
| | | **Total** | | | | | **5.37** | **cum** | **5360.00** | **28763.10** |
| 19 | 10.16.1 | Supplying and fixing of GI chain link fencing of required width in mesh including strengthening with 2 mm dia GI wire/ G.I. staples/ G.I.U-nails/ nuts bolts with 2.4 m angle iron posts 50 mm x 50 mm x 6 mm placed every 3 metres center to center founded in M15 grade cement concrete 30cmx30cmx60cm, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only etc complete as required and as per direction of Engineer-in-charge. Mesh size 50mm x 50mm made of GI wire 3.15mm dia | 1 | 70 | | 3 | 210 | sqm | 721 | **151410.00** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 10.18 | Providing and fixing 1.8 metres high GI barbed wire fencing with 2.4 m angle iron posts 50 mm x 50 mm x 6 mm placed every 3 metres center to center founded in M15 grade cement concrete 30cmx30cmx60cm, 0.6 metre below ground level, every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and provided with 12 horizontal lines and 2 diagonals interwoven with horizontal wires, fixed with GI staples, turn buckles etc complete as per clause 807 of MoRT&H specification & type "A" as per IS : 278-1978 size designation 5 (line wire 2.24, point wire 2.00mm mass 97-106 g/m) including all material, labour. | 1 | 70 | | 1 | 70 | metre | 397 | **27790.00** |
| 21 | 13.2.2 | Random rubble stone masonry work in cement mortar with mechanical mixer in foundation (at any level) complete as per drawing and technical specification and as per clause 1000 and 1400 of MoRT&H specification including all scaffolding material, labour, machinery but excluding pointing and plastering.In cement mortar 1:4 (1 cement : 4 coarse sand) | 1 | 25 | 0.45 | 0.75 | 8.4375 | cum | 4,600.00 | **38812.50** |
| 22 | 32.3.3 | Cement plastering including T&P, scaffolding, material and complete labour, including cost of water, curing, racking of joints etc. with 20 mm cement plaster of mix : 1:6 (1 cement : 6 fine/ coarse sand) | 2 | 25 | | 3 | 75 | sqm | 264 | **19800.00** |
| 23 | 27.16 | Providing and fixing Motive pieces all coloures for glazed tiles laid over 12 mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3 kg per sqm including pointing in white mixed with pigment of matching shade complete.. Size 200 x 300mm | | | | | | | | |
| | | Waterbody Floor (Bigger) | | Area | 28.26 | | 28.26 | | | |
| | | Waterbody (1 side Wall) | | | 18.84 | 1.5 | 28.26 | | | |
| | | | | | | | 56.52 | sqm | 200.5 | **11332.26** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 24 | 39.48 | Supplying, erecting and fixing in position specified precast RCC bench made of RCC grade M-30 consisting of 2 Nos. "L" shaped base support of thickness 100 mm back height 1000mm, front height 450 mm, base width 420mm and 5 Nos. RCC planks of size of 1500x100 x 50 mm and 1 Nos RCC planks of 150x200x50mm including joining all parts with galvanised nuts and bolts of suitable size. All bolts to be sealed after assembly with nice finish and appearance and level complete in all respect as per direction of engineer in charge. Every bench should have a manufacture's logo of appropriate size Engraved at suitable place. | 15 | | | | 15 | nos. | 8500 | **127500.00** |
| 25 | 20.1.4 | Construction of Tube-well upto 100 Meter depth and above in all type of rocks by DTH system and over burden to accommodate casing pipe of following sizes in all types of soils and over burden including lowering of casing pipes but excluding cost of casing pipes as per IS : 2800 (Part I & II) 1979 specifications. The work would be completed after obtaining sand free water. The tube well should have a throughout bore as per nominal dia of casing pipe: 200 mm dia Nominal bore | 1 | 100 | | | 100 | meter | 1315 | **131500.00** |
| 26 | 20.5.1 | Supply of strainer pipes made of ERW M.S. black pipe ISI mark of following sizes at the site of work including required size of slotting as per IS:8110-1985 of following nominal bore sizes at site of work. 150 mm dia | 1 | 100 | | | 100 | meter | 1410 | **141000.00** |
| 27 | 20.8 | Supply and fixing of M.S. clamp set of 50 ×6mm flat iron with nuts and bolts etc. for holding the riser pipe assembly of submersible pump set. | 2 | | | | 2 | nos. | 287 | **574.00** |
| 28 | E210301 | Providing & Laying of synthetic rope for submersible pump ISI marked (IS:5175) of following sizes. complete in all respect. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR . 12mm (suitable up to 50 mm OD pipe) | 20.00 | | | | 20.00 | Each | 38 | **760.00** |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 29 | E210713 | Supply, Installation, testing & Commissioning of Radial / mixed flow ISI marked water filled submersible motor pump sets suitable for 100/150mm dia borewell. The size of adopter fixed on top of the motor should exceed the top of coupler , for safegaurd the coupler. The construction material of motor and pump should match IS: 8034:2018 and IS 9283 guideline. The radial flow pumpset should RUIDP 553 SOR 2022Code NoDescription Unit RateRs.operate at 5 star energy efficiency level of BEE and mixed flow pump set should operate at 3 star energy level of BEE, accompained by valid BEE certificate. Motor should be IE2 class as per IEC 60034-2-1: 2007, IEC 60034-30: 2008, & IS12615:2011 with required accessories including making connection suitable for Bore well. The job includes labour part of lowering of riser pipe G.I./ H.D.P.E. with rope, cables & pump, installation of complete fitting and accessories, jointing of electrical cables up to switch board. All labour for testing of submersible pumps set and supply of water to water mains, complete in all respect . All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR. 100 mm diameter Submersible pump shall have following HP Rating, phase, Head range, Discharge range respectively. 2.0 HP, 1-Ø, (7- 95)Mtr, (55-22) LPM | 1 | 1 | | | 1.00 | Meter | 17212.00 | 17212.00 |
| 30 | E111303 | Providing and laying of PVC insulated submersible cable , confirming to IS 694 with flexible copper conductor or superior quality including making connection etc in the following size: 4.00 Sq.mm .3 core flat/ Round. | 150 | | | | 150.00 | Each | 137.00 | 20550.00 |
| 31 | E211411 | S /F of oil / Air break starter panel made out of sheet steel powder coated enclosure comprisiong of over load protection relay, short circuit & Single phasing protection , ON / OFF push buttons, ammeter, voltmeter, indicating lamps etc. complete in all | 1 | | | | 1.00 | Each | 2645.00 | 2645.00 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | respect suitable for following rating motors. For single phase submersible / Monoblock pump 0.5 HP to 3.0 HP | | | | | | | | |
| 32 | 34.7.3 | Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in Charge Internal work - Exposed on wall - 25 mm nominal outer dia .Pipes. | 1 | 20 | | | 20 | Rmtr | 347.00 | 6940.00 |
| 33 | 34.8.3 | Providing and fixing ball valve of approved quality, High or low pressure, with plastic floats complete - 25 mm nominal bore | 4 | | | | 4.00 | Each | 531.00 | 2124.00 |
| 34 | 17.20.15 | Providing at site, lowering & laying in trenches, aligning & jointing of RCC pipes NP2 class (with s/s ends IS: 458 - 1988 (amended up to date) marked and manufactured through spun process at all levels with Rubber gaskets (EPDM/SBR) for sewer lines as per IS: 5382 (including cost of Rubber gaskets lubricants) as per drawing, sectional hydro testing of the sewer pipe line (including cost and conveyance of water to site for testing) etc., complete as directed by Engineer.<br>Note : E/w to be measured and paid separately. Length of pipe shall be measured in between the outer wall of two manholes / Inspection chambers, Pipe in the manhole/inspection chamber's wall shall deemed to be included in the item of manhole/inspection chamber shall not be payable.<br>1200 mm internal diameter | 1 | 2 | | | 2 | Rmtr | 6360 | 12720.00 |
| 35 | 39.13.1 | Grassing with 'Carpet'grass (selectionno.1) including watering and maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds and fit for moving including supplying good earth if needed. (The good earth shall be paid separately)- | 1 | 100 | 1.2 | | 120 | sqm | 928 | 111360.00 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Inrows5cmapartineitherdirection (in median area) | | | | | | | | |
| 36 | 29.26.2 | Steel work welded in built up sections/ framed work including cutting,hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc. as required.In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works. *(Gate & Interactive Maps at Entrances)* | | | | | | | | |
| | | Square Pipe 50 mm | 10 | 2 | | 1 | 20 | | | |
| | | Square Pipe 50 mm | 10 | 1.5 | | 1 | 15 | | | |
| | | Square Pipe 30 mm | 80 | 1.5 | | 1 | 120 | | | |
| | | Square Pipe 30 mm | 10 | 5 | | 1.5 | 75 | | | |
| | | **Total** | | | | | **230** | **Kg/m** | **117.5** | **27025.00** |
| 37 | 22.1.6 | Centring and shuttering with plywood or steel sheet upto two stories or height upto 7.5 metre above plinth level including strutting, propping etc. and removal of form for: Columns, Pillars, Piers, Abutments, Posts and Struts. (.45x4x1.8=3.24 sqm) | 4 | 0.45 | 0.45 | 1.8 | 3.24 | sqm | 345 | 1117.80 |
| 38 | 23.2.2 | Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. upto two stories excluding cost of centring, shuttering, finishing and reinforcement : 1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20 mm nominal size) | 2 | 0.45 | 0.45 | 1.8 | 0.729 | cum | 6780 | 4942.62 |
| 39 | 23.19.6 | Reinforcement for R.C.C. work at all levels including straightening, cutting, bending, placing in position and binding all complete. Thermo-Mechanically Treated bars. (.45x.45x1.8=0.36 sqm@100kg/cum) | 2 | 0.45 | 0.45 | 1.8 | 72.9 | Kg | 64.2 | 4680.18 |
| 40 | 1003 | M.S. heavy weight butt hinges 125x90x4.0mm IS : 1341 marked. | 6 | | | | | Each | 215 | 1290.00 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 41 | 39.19 | Maintenance of lawns or Turfing of slopes (rough grassing) for a 'period of one year including watering etc. | 1 | | | | 216 | sqm | 194 | 41904.00 |
| 42 | 39.21 | Maintenance of Lawns with Fine Grassing for the First Year | 1 | | | | 216 | sqm | 170 | 36720.00 |
| 43 | 39.22 | Planting permanent hedges including digging of trenches, 60 cm wide and 45 cm deep, refilling the excavated earth mixed with farmyard manure, supplied at the rate of 4.65 cum per 100 metres and supplying and planting hedge plants at 30 cm apart. | 1 | 125 | 1.5 | 0.4 | 75 | m | 348 | 26100.00 |
| 44 | 39.23 | Maintenance of Hedge for one year | 1 | 125 | 1.5 | 0.4 | 75 | m | 290.5 | 21787.50 |
| 45 | 39.26 | Maintenance of Shrubs - Complete maintenance of shrub for 12 months including weeding, hoeing, watering, pruning application of good earth, manure, insecticides, fungicides & fertilizers , security of plants disposal of garden rubbish from the premises to the approved +C165municipal dumping ground replacing casualty of plants(occurred due to any reason) by healthy plants | 1 | 80 | 0.5 | 0.4 | 16 | per sqm per year | 300.5 | 4808.00 |
| | | **Total** | | | | | | | | **2274795.81** |

Table 14 BoQ & Estimate for Civil Component (Non- BSR)

| Development of Sensory Park at Gulab Bagh, Udaipur Municipal Corporation (UMC), Udaipur Rajasthan (Civil- Part B Non- BSR) | | | | | |
|---|---|---|---|---|---|
| **S/n** | **PARTICULAR** | **QTY** | **UNIT** | **RATE** | **AMOUNT** |
| 1 | Supply & Installation of Slide for smaller Mound (1-3 Years) as per below description<br>The slide is supported on a 100 NB GI pipes and is 2bolted to metal platform which is made up of 16SWG GI sheet. The slide ladder is made up of 25 NB GI Pipe & the ladder hand- railing is made up of 15 NB ans 20 NB pipes respectively. The trade and riser of the ladder are designed in such a way it won't entrap children foot while playing. The triangular steps of the ladder ar made up of 16 SWG GI Sheets. the safety railing of the ladder is made up of LLDPE in Rotational molding process. All the sharp edges and corners are properly grinded to give smooth so that children are not hurt while playing on it. This slide is designed as per the ASTME & EN standards which are globally acceoted standards. | 2 | nos. | 30000 | 60000 |
| 2 | Supply & Installation of Slide for Bigger Mound (3 Years & above) as per below description<br>The slide is supported on a 100 NB GI pipes and is 2bolted to metal platform which is made up of 16SWG GI sheet. The slide ladder is made up of 25 NB GI Pipe & the ladder hand- railing is made up of 15 NB ans 20 NB pipes respectively. The trade and riser of the ladder are designed in such a way it won't entrap children foot while playing. The triangular steps of the ladder ar made up of 16 SWG GI Sheets. the safety railing of the ladder is made up of LLDPE in Rotational molding process. All the sharp edges and corners are properly grinded to give smooth so that children are not hurt while playing on it. This slide is designed as per the ASTME & EN standards which are globally acceoted standards. | 4 | nos. | 35000 | 140000 |
| 3 | Sullpy and Installation for Arch Swing (3 Seaters) for young kids. The arch shaped side frame of the swing is made up of 80 NB GI Pipe 'B" Class and top pipe is made up of 50 NB GI pipe 'B' Class. The frame is powder coated to give an aesthetic look. The 3 swings are made up of 10 mm thick anti skid chequered reinforced rubber top. the belt seat is suspended on 6 mm rubber coated GI chain. The ball bearings are mounted inside a specially designed nylon clamp as per directions of Site Engineer Incharge. | 2 | nos. | 40000 | 80000 |
| 4 | Supply and Installation of Muscial Installtion made out of hollow Aluminium Pipes of different diameters (20- 60 mm) and height (0.5- 1.5m), hold together with MS Frame and connected with MS wires for long term durability. (Ref Image Attached) | 1 | nos. | 5000 | 5000 |

| | | | | | |
|---|---|---|---|---|---|
| 5 | Supply and Installation of Muscial Installtion Console (height not exceeding than 1.0m) made out of MS Base with Leater/ Canvas top with Fibre handle/ stick. (Ref Image Attached). | 1 | nos. | 85000 | 85000 |
| 6 | Supply and Installation of Octagonal Gazebo made out of MS frame, truss and with Kelu tiles coupled with proper seatings arrangements, lighting, wooden railing (logs) and Hedging around the Gazebo etc. (the Gazebo is of 4.0m dia and of 2.4- 3.6m and hedging is upto 1.0m height) Major details as per the Drawing No. 8 & Ref Image Attached). | 1 | nos. | 250000 | 250000 |
| 7 | Supply and Installation of 25 mm Multicolor EPDM Flooring as per below mentioned specifications<br>Features: 19mm SBR Layer- 6mm EPDM color granuel layer, Weather Proof & Environment Friendly, High Wear Resistance, Shock Absorption, 1 year Warranty | 150 | sqm | 3103 | 465450 |
| 8 | Supply & Installations of Interactive Map at both the Mian Entrances of Gulab Bagh made (1.2m x 1.8m) out of MS conforming to IS 3114:1994 | 2 | nos. | 25000 | 50000 |
| 9 | Supply, Installation and Commissioning of Water Body including Water Play Area, Stone Fountain & Organic Lilly Pond, Water Filtration Plant and Necessasry Pipes and Plumbing items (Ref Image Attached). | 1 | nos. | 800000 | 800000 |
| 10 | Supply & Installation of Elephant slide made in Fibre (1- 5 years old children) (Ref Image Attached) | 1 | nos. | 50000 | 50000 |
| 12 | Supply & Installation of Discarded Fruit/ Vegetable Crates for Planters (Ref Image Attached) | 15 | nos. | 5000 | 75000 |
| 13 | Supply & Installation of Tyre Seatings cun Playing Equipments made of Used/ Discarded Tyres (Ref Image Attached) | 10 | nos. | 1500 | 15000 |
| 14 | Supply & Installations of Wind Chimes made of Natural and/ or Metal (Ref Image Attached). | 5 | nos. | 500 | 2500 |
| 15 | Supply & Installations of Colorful Cloth Hangings (Ref Image Attached). | 10 | nos. | 500 | 5000 |
| 16 | Supply & installation of Sensory Paving as mentioned | | | | |
| | Soft gravel (3mm downgraded) | 4.24 | ton | 766.5 | 3249.96 |
| | High Density Brown M Sand (3mm or less) | 2.827 | ton | 892.5 | 2522.97 |
| | Off White Sand (0.25mm to 1mm inch dia) | 2.827 | ton | 3150 | 8904.59 |

| | | | | | |
|---|---|---|---|---|---|
| | Red Murram Sand (Soft Sand, Double Sieved) | 3.534 | ton | 1575 | 5565.37 |
| 17 | Supply and Installation of Wooden Items (Sheesham Wood)-<br>- Tree Platforms (2nos.) and Hanging/ Suspension Bridge connecting these platfroms<br>- Way Findings/ Interactive Signages (18 nos.),<br>- Wooden Fencing- size- 1.5m x 27.0 m<br>- Front Gate - 2.0m x 2.2m<br>- Planks, Ramp, Stairs for Mounds, and other Elements<br>*All the items shall be supplied and installed as per the Ref Images attached* | | | | 1500000 |
| 18 | **Total** | | | | **3603192.9** |

Table 15 BoQ & Estimate- Electrical (BSR, RUIDP 2022 & Approved Non- BSR for Udaipur Smart City Ltd.)

| Development of Sensory Park at Gulab Bagh, Udaipur Municipal Corporation (UMC), Udaipur Rajasthan (Part C- Electrical, BSR & Approved Non- BSR) | | | | | | |
|---|---|---|---|---|---|---|
| **S/n** | **RUIDP 2022** | **PARTICULAR** | **Unit** | **Qty** | **Rate** | **Amount** |
| **1** | E110100 | Providing & Laying P.V.C. / XLPE insulated & P.V.C. sheathed Unarmoured/ Armoured aluminium cable of 1.1 KV grade as per PWD specification for electrical Works in existing RCC / Hume / Stoneware / PVC pipe/ open duct/cable trench with filling of excavated earth in trench , on existing cable trays or on surface etc. including making necessary connection, testing etc. as required of size and as per points (a), (b), (c), mentioned below:-<br>(a) Material :- H4- Grade aluminium conductor of purity >99.6 % & as per IS:1554 P-I / IS :7098 P – I<br>(b) conductor shall have electrolytic aluminium confirming to IS 8130, IS 3975-1999 for armouring of cables in armoured cable items , IS 5831 for sheath, IS 10810 (Part 0 to 64 ) for testing procedures.<br>(c) OEM Must have ISO 9001 & 14001 certifications for quality assurance & its own in house NABL lab setup for all testing facilities for cables . Appropriate type test certificate / OEM test report shall be submitted . All above as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR. | | | | |
| **2** | E110130 | Armoured Cable | | | | |
| **3** | E110133C | 4 core X 10 sqmm | Mtr | 250 | 112 | 28000 |
| **4** | 19.1 | Providing, lowering, laying in trenches, aligning, fixing in position and jointing socketed rubber gasket type ISI marked uPVC pipes of Class III (6 Kg/sqcm) suitable for potable water with rubber ring joints (as per IS 4985-2000) of following outer dia with all accessories (excluding specials) complete including all material, labour, hydraulic testing and commissioning as per Technical Specifications and as per direction of Engineer. Note : E/w to be measured and paid separately. | | | | |
| **5** | 19.11 | 90 mm dia | Mtr | 200 | 207 | 41400 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **6** | E140100 | Pipe Earthing as per PWD specification for electrical Works as per IS:3043- 1987 with 3.0 Mtr. Long, 40 mm dia. ' B ' class G.I. Pipe IS: 1239 (Part-1) 2004, Equivalent to BS : 1387 with perforated holes of 12 mm dia ,including all accessories like nut, bolts, reducer, nipple, wire meshed funnel, and Heavy duty weather proof poly-propylene earth pit chamber with lockable Jam free lid suitable for safe working load 5000 Kg or more of size Top Dia. 225 to 260 mm, Bottom Dia 300 to 350 mm. and Height 250 to 300 mm. and embodying the pipe complete with alternate layers salt and coke/ charcoal, testing of earth resistance for value of 5 ohms or less as required & must record by engineer in charge during site visit and ensure to enter in measurement book. All as per pre approved by Engineer in charge. For additional technical parameters of products/ work , refer Annexure "A" attached with this BSR . | set | 2 | 2254 | 4508 |
| | **Non BSR** | | | | | |
| **1** | | Supply and erection of M S swaged tubular pole conforming to IS: 2713-1980 (part I to II) with galvanised base plate in position including excavation of the pit and filling the same with C.C. of M-20 grade (1:1.5:3) from base plate to 50 cm above ground level, with the help of steel frame not less than 40 cm dia up to 114.3mm outer dia and 50 cm beyond 114.3mm outer dia around the pole. Duly finished with cement plaster, earthing terminals , cable entry, GI cable sleeve complete as required. The pole must have an inbuilt junction box with flush door having 4 terminals for connections and provision of mounting single pole MCB. The pole shall be fabricated by using ISI mark tube for structural purpose of following height & design as per directions by Engineer-in-charge. 4.5 to 5 mtrs height single arm | Each | 10.00 | 7100.00 | 71000 |
| **2** | | Supply and erection of M S swaged tubular pole conforming to IS: 2713-1980 (part I to II) with galvanised base plate in position including excavation of the pit and filling the same with C.C. of M-20 grade (1:1.5:3) from base plate to 50 cm above ground level, with the help of steel frame not less than 40 cm dia up to 114.3mm outer dia and 50 cm beyond 114.3mm outer dia around the pole. Duly finished with cement plaster, earthing terminals , cable entry, GI cable sleeve complete as required. The pole must have an inbuilt junction box with flush door having 4 terminals for connections and provision of mounting single pole MCB. The pole shall be fabricated by using ISI mark tube for structural purpose of following height & design as per directions by Engineer-in-charge. 4.5 to 5 mtrs height double arm | Each | 45.00 | 7600.00 | 342000 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 3 | | SITC of outdoor IP 55 stand mounting, dust and vermin proof street light feeder panel box made out of 14 SWG CRCA sheet for housing CCMS unit and meter panel including bi metallic contactors needed for connection from and mounting arrangement for The panel should have digital voltmeter and amperemeter including selector switches and4 pole 40 A MCB and Isolator required for each phase 32 A DP 3 nos. and indicating lamp for each phase.Panel shuld have canopy and provision of aluminium bus bar if required.Stand for mounting panel should be 40X40X5 MS angle. Feeder panel should have pad locking arrangement.as per directions by Engineer-in-charge. | Each | 1.00 | 24500.00 | 24500 |
| 4 | | P/ F IP-65/ IP-66 protected street light luminaries on existing bracket. Fixture made from powder coated single piece pressure die cast aluminum housing with heat dissipation fins on housing with high power LEDs . Diffuser / glass cover for ensuring IP-65 protection for lamp and control gear compartment, system lumen output of 100 lum/watt high power LED. Integrated driver shall be high efficiency having efficiency more than 85 % and in compliance to IEC standards. System life of 50000 burning hours with 70 % of initial lumens maintained. Fixture shall be in CE compliance.- LED street light fixture 30-40 Watt | Each | 100 | 2806 | 280600 |
| | | **Total** | | | | **792008** |

Table 16 BoQ & Estimate- Landscaping & Horticulture (BSR, RUIDP 2022, Non- BSR- CPWD 2022 and Market Rate)

| Development of Sensory Park at Gulab Bagh, Udaipur Municipal Corporation (UMC), Udaipur Rajasthan (Part D- Horticulture, BSR- RUIDP 2022 & Non- BSR- CPWD 2022) | | | | | | |
|---|---|---|---|---|---|---|
| **A** | **RUIDP 2022** | **PARTICULAR PART A- RUIDP SOR 2022** | **UNIT** | **QTY** | **RATE** | **AMOUNT** |
| 1 | 39.42 | Supply and planting following in poly bags / earthen pots well branched, well established & free from disease of 900 mm min. height plants at site in 0.60 m dia holes, 1 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, backfilling the hole watering etc as required. | | | | |
| | 39.42.2 | **Tecoma capensis (Ratanjot)** | Each | 30.00 | 502.00 | 15060.00 |
| | 39.42.4 | **Tabernaemontana variegated ( Chandni)** | Each | 25.00 | 502.00 | 12550.00 |
| | 39.42.6 | **Hibiscus variegated (Guddal) 900mm height in poly bags / earthen pots** | Each | 35.00 | 481.50 | 16852.50 |
| 2 | 39.41.9 | Supply and planting following in poly bags / earthen pots well branched, well established & free from disease of 300 mm min. height ground covers at site in 0.3 m dia holes, 0.3 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, backfilling the hole watering etc as required. **Pennisetum setaceum (Fountain Grass)** | sqm | 15.00 | 255.50 | 3832.50 |
| 3 | 39.45 | Supply and planting following species best quality container grown healthy trees of 3 mt. min. height, well established & free from disease at site in 1.20 m dia holes, 1.20 m deep dug in the ground, mixing the soil with decayed farm yard/sludge manure, backfilling the hole watering etc as required. | | | | |
| | 39.45.1 | **Plumeria Alba (Champa) 3 M height minimum** | Each | 9.00 | 1566.00 | 14094.00 |
| | 39.45.2 | **Jacaranda mimosifolia (Neelli Gulmohar)** | Each | 9.00 | 1648.00 | 14832.00 |
| | 39.45.5 | **Bauhinia blakeana (Arckid)** | Each | 9.00 | 1546.00 | 13914.00 |
| | 39.45.6 | **Erythrina variegata (Lantern Tree)** | Each | 9.00 | 2391.00 | 21519.00 |
| 4 | | **Total Amount in Rs.** | | | | **112654.00** |
| **B** | **CPWD 2022** | **PART B- Non B.S.R. (CPWD 2020- Landscaping and Horticulture)** | | | | |
| 1 | 9.9 | Providing and stacking of **Jasmine humile (Yellow)** of height 30 cm to 45 cm. in 20 cm size of Earthen pots / Plastic pots & as per direction of the officer-in-charge. | Each | 15.00 | 30.00 | 450.00 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 2 | 5.3 | Providing and Displaying **Acalypha red** well developed, fresh & healthy with good foliage, multi branch 30 to 45 cm ht. in 20 cm size of Earthen Pot/ Plastic Pot bushy plant as per direction of the officer-in-charge. | Each | 15.00 | 41.00 | 615.00 |
| 3 | 4.89 | Providing and stacking of plant **Canna dwarf** of height 25 to 30 cm., 2 to 3 suckers in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge. | Each | 20.00 | 35.90 | 718.00 |
| 4 | 9.1 | Providing and stacking **Allamanda cathartica** of height 30 cm to 45 cm. in 20 cm size of Earthen pots / Plastic pots & as per direction of the officer-in-charge. | Each | 30.00 | 45.00 | 1350.00 |
| 5 | 11.7 | Providing and Stacking of **Tulsi** of ht. 30 cm with multi branches in Poly bag of size 20 cm. as per direction of the officer-in-charge. | Each | 55.00 | 20.00 | 1100.00 |
| 6 | 11.1 | Providing and Stacking of **Lemon grass** of ht. 30cm with multi branches in Poly bag of size 20 cm. as per direction of the officer-in-charge. | Each | 20.00 | 50.00 | 1000.00 |
| 7 | 4.88 | Providing and stacking of plant **Mogra** of height 25 to 30 cm., 2 to 3 branch in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge. | Each | 35.00 | 46.15 | 1615.25 |
| | | **Total Amount in Rs.** | | | | **6848.25** |
| **C** | | **PART C- Non B.S.R. (Landscaping and Horticulture)** | | | | |
| 1 | | Providing and stacking of **plant Mint** of height 25 to 30 cm., 2 to 3 branch in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge | Each | 35 | 50 | 1750.00 |
| 2 | | Providing and stacking of plant **Lemon Balm** of height 25 to 30 cm., 2 to 3 branch in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge | Each | 30 | 50 | 1500.00 |
| 3 | | Providing and stacking of plant **Italian Basil** of height 25 to 30 cm., 2 to 3 branch in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge | Each | 35 | 50 | 1750.00 |
| 4 | | Providing and stacking of plant **Lemon Dwarf** of height 25 to 30 cm., 2 to 3 branch in earthen pots of size 20 cm Earthen Pot/Plastic Pot and as per direction of the officer-in-charge | Each | 30 | 35 | 1050.00 |
| | | **Total Amount in Rs.** | | | | **6050.00** |
| 5 | | **Supply & installation of Sprinkler System** | | | | |
| | **A** | **Sprinkler System- Head unit** | | | | |
| | 1 | Screen Filter Gold (25 3/hr)- (CML no. 7025657), size- 2" | Nos. | 1 | 4030.5 | 4030.50 |
| | 2 | Ventury Manifold Plastic, size- 2"x1" | Nos. | 1 | 1,231.50 | 1231.50 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 3 | Ventury Assembly- (CML no.3891076), size- 1" | Nos. | 1 | 1,446.50 | 1446.50 |
| | 4 | Double Action Air/Vaccum Release Valve, size- 1" | Nos. | 1 | 259 | 259.00 |
| | **B** | **Water Carrier System** | | | | 0.00 |
| | 1 | PVC Pipe 6kg/cm2 (CML no. 3293359), size- 63mm | mtr | 36 | 120.6 | 4341.60 |
| | 2 | PVC Pipe 6kg/cm2 (CML no. 3293359), size- 50mm | mtr | 240 | 112.6 | 27024.00 |
| | 3 | Control Valve, size- 50mm | Nos. | 10 | 280 | 2800.00 |
| | 4 | Valve Box, size- 10" | Nos. | 10 | 883.5 | 8835.00 |
| | 5 | M.T.A, size- 50mm | Nos. | 16 | 33.45 | 535.20 |
| | 6 | Threaded End Cap, size- 50mm | Nos. | 16 | 20.1 | 321.60 |
| | **C** | **Water Carrier System** | | | | 0.00 |
| | 1 | Spray Pop-up | Nos. | 52 | 840 | 43680.00 |
| | 2 | X-Nipple 1/2" | Nos. | 52 | 90 | 4680.00 |
| | 3 | Service Saddle | Nos. | 52 | 143.85 | 7480.20 |
| | 4 | Plain Lateral 2.5 Kg/Cm2 CL2, size- 50mm x 1/2" | Nos. | 400 | 13 | 5200.00 |
| | 5 | DRIP LINE E 16MM 4.0LPH 30CM CL2 400M, size- 16mm | Nos. | 800 | 13 | 10400.00 |
| | 6 | J Turbo Key Plus Drippers, size- 16mm | Nos. | 200 | 3.6 | 720.00 |
| | 7 | Mini Valve, size- 16mm | Nos. | 50 | 24.95 | 1247.50 |
| | 8 | Grommate Take Off, size- 16mm | Nos. | 100 | 5.9 | 590.00 |
| | 9 | End Stop "8-Shape", size- 16mm | Nos. | 100.00 | 3.90 | 390.00 |
| | | **Total Amount in Rs.** | | | | **125212.60** |
| | **D** | **Fiiting & Accessories** | | | | 18841.90 |
| | **E** | GST@12% | | | | 17286.54 |
| | **f** | **Installation & Tranportation Charges** | | | | 29122.00 |
| | | **Total Amount in Rs.** | | | | **190463.04** |
| | | **Horticulture BSR and Non BSR** | | | | **316015.29** |

Table 17 Overall Cost of Development of Sensory Park at Gulab Bagh

| Development of Sensory Park at Gulab Bagh, Udaipur Municipal Corporation (UMC), Udaipur Rajasthan (Total Including O&M) | | |
|---|---|---|
| **S/n** | **PARTICULAR** | **Amount** |
| **1** | **Sub- Total-** Part A- Civil BSR (22,74,795.81/-) + Part B- Civil Non- BSR (36,03,192.9/-) + Part C- Electrical (7,92,008/-) + Part D- Landscaping & Horticulture (3,16,015.29/-) | **69,86,011.99/-** |
| **2** | **O&M** for 5 years at 20% of the total cost | **13,97,202.40 /-** |
| **3** | **Total** | **83,83,214.39/-** |
| | **Note- All the Wooden Logs (seating cum playing equipments) and other smaller Wooden elements shall be taken up using the unused tree trunk lying with UMC, hence the cost of the same has not been included in the BOQ and Estimates** | |

*"A city that works for young children tends to become a place that works for everyone"*