

# Localized Tech Parklets

## *A Concept for a New Urban Commons*

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Abstract: Urban commons were traditionally defined as commonly owned environmental resources – forests, rivers, fisheries or grazing land that were shared, used and enjoyed by all. Commons were then adapted to include public goods and services, such as public spaces, marketplaces, public education, health and infrastructure that allow societies to function. Today, with the proliferation of technology and in the context of Smart Cities, we explore the concept of a highly localized Technology based Parklet as a part of the new Urban Commons in a suburb of Mumbai, Matunga.

## 1 INTRODUCTION TO THE NEW URBAN COMMONS

The term “commons” comes from the reference to commonly accessible sustenance resources in England in the middle ages- mostly in the form of arable land, water and forests. They represented a minimum level of lawful and inalienable access to resources that would ensure basic survival of all citizens. With a rapidly growing urban population, urban commons have become “synonymous with a range of public spaces including lakes, parks, streets, wetlands and forests”. (Unnikrishnan, 2013) Although these spaces are usually owned and managed by the state, diverse groups of citizens and communities carve out their own access and relationship with them both formally and informally.

Today, we are in the midst of the digital age, the age of networked global cities and information technology. Developing countries like India have leapfrogged into the technological age, even as many challenges of basic development persist. Technology and access to technology therefore, become critical in order to be inclusive and equitable in the economic, social and lately even institutional processes that determine the growth of these nations.

### 1.1 Bridging the Digital Divide

In 2015, India launched a 100 Smart Cities Scheme,

as a guiding vision for the urban development of a country of 1.2 billion people. A fundamental factor in the Smart Cities vision is the application of a wide range of electronic and digital technologies to development, infrastructure and governance. At a macro level, while access to information (Internet) is reported to increase GDP's of counties, at the ground level its sweeping impact on individual growth and prosperity is slowly gaining mainstream recognition. (McKinsey, 2016)

In India, the proliferation of internet has been exponential. Today, India has the second largest number of mobile phone users in the world. However, with respect to internet usage, the percentage share of internet users stands at 29% largely from urban centres. With increasing opportunities and services moving to an online platform, the technological divide creates inequity not just in terms of communication but also in terms of opportunities for entrepreneurship and livelihoods, access to essential services and financial platforms.

This pressing need in ensuring inclusion in our technological leapfrogging has been articulated in the National Telecom Policy of 2012 which recognises that in spite of the economic and technological progress, the digital divide in India continues to be significant and that the ability of the rural and urban poor to benefit from technology needs to be enhanced. The policy goes so far as “To

recognise telecom, including broadband connectivity as a basic necessity like education and health and work towards ‘Right to Broadband’”. (DoT, 2012)

It becomes essential, then, to consider that access to the realm of digital and information technology, just like access to public space and utilities is essential to ensure equity in our growth story. This project attempts at modeling precisely such public access to space and information technology in a sponsored, open and replicable format, through on ground engagement with a community. The model we propose takes into consideration the dense conditions of Indian urbanity, and the dynamic natures of our cities to create Tech parklets. These new parklets could be more inclusive of the urban poor or of those without access to the Internet, thereby reducing the digital divide in the population.

The objective of this work is to provide a prototypical design for a Technology Parklet as part of the new urban commons. It aims at creating a model for technology based parklets which can become a part of our urban landscape by coupling urban design concepts with new technology trends and a viable and sustainable business/operational model. This paper elaborates the concept of the tech parklet as a social, economic, design and technological model of new urban public spaces, and briefly speaks about it in the context of a neighbourhood in Mumbai called Matunga where the first prototype is being designed.

## 2 APPROACH

The project was born out of an interdisciplinary effort between the urban design cell of RJB-CPL and the technology firm Gaia. The collaboration aims at approaching the ongoing efforts of building Indian Smart Cities not just through a technological lens but also by finding ways to combine smart technologies with sustainable innovations in urban design and planning.

The idea of tech parklets was based on our interventions in public spaces at various scales, where we identified the current need to amalgamate space with accessible technology. Our approach to the project was to first identify the various contexts in which such an intervention would be feasible, followed by intensive spatial and social studies to identify the specifications of the parklet.

The prototype is designed with a number of technical and spatial modules which can be used in permutations and combinations according to contextual and circumstantial needs. An

overreaching approach to designing these tech parklets is citizen engagement within a participatory framework for co-design. This is an integral part of embedding the parklet within a community or neighbourhood and it will maintain the bottom up and open nature of the concept.

This idea is centred at the intersection of four themes:

- **Innovative Urban Design:** Providing a design model to use in the context of city and area dynamics, and accommodating the diversity of citizen needs in a user friendly environment. The design would aim to promote social interactions and would be inclusive by nature.
- **Digital Technologies:** The Technology elements, both Hardware and Software with new techniques and localized services that should be provided for unleashing the potential of the parklet, ensuing citizen engagement and digital inclusion.
- **Sustainable Operational Innovation:** Since management is a key parameter for the performance of public projects, identifying the localized institutions and actors and building capacity among them will ensure that the tech parklet can be operationally feasible and sustainable. This will be crucial to the longevity of the system.
- **Localization:** In order to be accessible and interactive, the tech parklets need to respond to local contexts, cultures and user patterns. Therefore, the tech parklet is modelled along the lines of existing traditional Indian spaces of urban social interaction.

In the case of our prototype which is being developed in Matunga, we are following a participatory urban design approach, where we have engaged the neighbourhood organizations and residents in generating collective urban action. The process of designing the tech parklet therefore, takes place by engaging these local actors in identifying their own requirements, and in setting up sponsorship and operational mechanisms to sustain the parklet.

The aim of our exercise of designing the tech parklet at various locations and critically analyzing the intervention is to eventually compile a handbook which will provide the necessary know-how to allow local actors to take up self-made tech parklets as community interventions in public space.

## 3 EVOLUTION OF THE PARKLET

Arising from tactical bottom up urban design



Figure 1: Images of Park(ing) Day (RebarGroup, 2016).

practice, the parklet as a concept was an attempt at low-cost conversion of small and underutilized residual spaces originally devoted to cars, into spaces for the passive or active recreation of people. The idea of the parklet in its current form grew from Rebar's 'Park(ing) Day' initiative in San Francisco—an idea that has now been adopted as an annual event in cities across the world. (RebarGroup, 2016) Park(ing) day encourages citizens to create temporary, one day installations intended to reclaim public space and create pockets of social interaction within the city in a do-it-yourself, bottom up movement.

The basic idea encourages citizens to recognize streets as public spaces and to determine need based public functions that the space could be used for. Other than providing alternate spatial visions, Park(ing) Day also questions the normative boundaries of privatization of public space and citizen presence in public space.

In our current context, we are looking at the concept of a parklet, as a model for a low cost, replicable unit for public access points to information technology. In addition to being a space of active engagement, it could benefit local businesses, residents, and visitors by providing

much needed public spaces which attract customers and foster community conversation.

#### 4 LOCALISING THE TECH PARKLET

In the context of Mumbai, interventions like the 'vachnalays' or public reading rooms have been popular but continue to be used today only by a certain age group of people, mainly the senior citizens. Vachanalaya is a Marathi term which means reading room. These are located in public spaces and provide a range of newspapers and magazines which can be accessed for free by the public. Vachanalayas also often turn into lively spaces of conversation and discussion. The 'vachnalays' constitute a healthy platform for discussion and debate on current affairs and encourage a certain knowledge based social interaction. With the spread of technology and smart phones, the younger generation refrains from using these spaces, and the once prevalent urban platforms are now becoming scarce.

Another colloquial form of localized public spaces is temporary shaded seating areas near small roadside shrines. Such "mandals", are often used as conversation spaces by local residents and as resting spaces by passers-by. Such indigenous appropriations of the streetscape follow along the lines of the parklet, functioning as 'localized parklets'. There is a need however to accommodate a varied range of users who belong to different age groups and social classes within these public pockets and technology can be used as a catalyst do this. The smart phone is today ubiquitous and appeals to people cutting across lines of economic, social and educational status, and provides a sense of equity on a technological platform.

It is essential that any design insertion which is sensitive to the Indian context needs to withstand challenges of vandalism, theft, and lack of ownership by the community. The vernacular versions of the parklets mentioned above have an institutional management system in the form of patronage by political parties, the local municipal ward or community groups who use the space on a regular basis and assert ownership through its maintenance. These institutional mechanisms need to be studied and adapted to create sustainable operational models for the tech parklet.

The challenge in designing the tech parklet would be, therefore, to meet global requirements

while simultaneously responding to local challenges and ensuring that the final outcome is socially inclusive and accessible to all.

## 5 TECH PARKLET CONSTITUENTS

The tech parklet has been devised under three main components: the design component, the digital component and the operational component. Each of these will be tackled as a global prototype which responds to local and micro conditions.

### 5.1 Design Component

The tech parklet will be incremental in design and will be developed over phases. The additions at each phase shall be made after a careful understanding of the responses inferred from the previous phases and the area of insertion. The basic module of the tech parklet shall be the same as the dimensions of one parking lot which is 3.00 m x 6.00 m.

This module is envisaged as a temporary incremental and flexible structure which can be modified in phases and with the potential of becoming a permanent public space. Figure 2 shows the phases of the tech parklet as a conceptual design and its incremental growth potential into a larger public space. A major consideration of the design is the response to the context of a public space, which requires every component to be vandal proof, steal proof and weather resistant. It must also be able to create a sense of ownership with the users who would then contribute to its maintenance and safety. The design of the tech parklet needs to allow not just individual digital access but also encourage interaction and conversation between the users which promotes educative dialogue between users. Elements like seating and shading devices could help create conducive and engaging spaces.

The structure is designed for flexibility and engagement since it will be an area for information gathering and electronic transactions, a facility for general relaxation, as well as venue for small civic interactions and meetings. In addition, it needs to be protected from vandalism, theft and other perverse activities. This is done by developing an idea of steal-proof public furniture, which will employ recycled materials of low intrinsic and resale value, high durability and weather resistance. This is also aimed at increasing the environmental sustainability of the project.

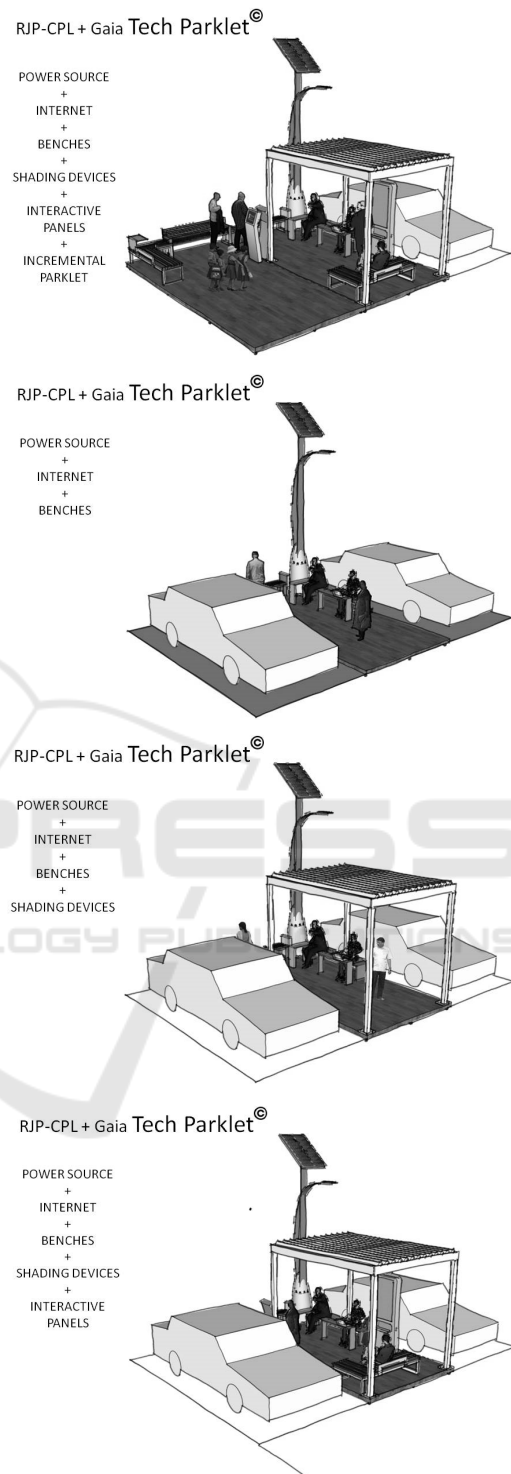


Figure 2: RJB-CPL + Gaia Tech Parklet Design.

### 5.2 Technology Component

The basic module of the tech parklet will be



equipped to provide the users with primary access to the digital sphere in the form of public Wi-Fi and charging points. This will be a self powered system, and would primarily utilise a solar panel as the power source. There is a potential here to conduct small scale experiments in other alternative methods of clean energy generation.

Depending on the context of intervention, the next phase could include an interactive kiosk incorporating local applications which would range from providing access to public utilities like bill payment and banking portals to those that provide health care services. Innovative components like stationary cycles that generate electricity to charge mobiles can be included. The tech parklet would evolve, in response to the user patterns and requirements, to include a wider range of applications, information services and public interaction systems at public spaces of larger scales.

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### 5.2.1 Hardware

Fundamentally, all the technology pieces are meant for heavy duty use in rough conditions and other harsh environmental factors with an industrial, ruggedized design providing secure and reliable protection. All pieces will be bolted to the floor or housed in secure brackets. We also refrain from specifying a processor, access speed or bandwidth or frequency of operation, considering the speed of technology growth and local conditions.

- **Digital Access:** This is provided by two means - on self owned devices via the open Wi-Fi as well as on the interactive panels provided and housed in the parklet. The interactive panels are simple tablets that

are developed for industrial use with panels meant for outdoor daylight conditions that also protect the glass from scratches and dirt. As it will be in a public space, screen viewing angles to facilitate personal use and information security are addressed.

- **Wi-Fi Router:** The Wi-Fi router is a critical component for internet access; it needs to be a high speed device. For purposes of the Matunga implementation, a 450 Mbps router that can operate in dual band is used. Wi-Fi access model and software is detailed further below.

- **Pedal Powered Charging:** Another element is the pedal powered Phone/Tablet Charging unit. This is an attachment to a cycle (uni or bi) that powers up from the pedalling motion of the bike's rider. A dynamo, the electricity generator is powered by the cycle wheel as a rider pedals and transfers electricity to a charger attached to the handlebar, which a phone or tablet plugs into. (Cnet, 2016) (Instructables, 2016) (The Charge Cycle, 2016)

- **Flood Lights and Personal Light:** Light is supplied by solar powered LED floodlights as well as individual small LED's near the interactive panels

- **Sensors:** Motion sensors that trigger an alarm when there is an attempt to dislodge the tablets is another constituent of the whole offering.

- **Vending Machine Interface:** A unit that supports coin and bill note payments. This is then connected to a connector that supplies power and the two-way communication signals to a controller that manages the duration of access and activity on the pedal and the interactive panels or tablets.

Finally, power to the tablets and interactive panels are solar generated or manpower generated.

### 5.2.2 Software

The software that manages access is meant to regulate usage and provide a fair and democratic means of using the parklet. Access to Wi-Fi, the panels, the pedal powered charging unit and even lights is controlled in a manner where certain duration could be provided free of charge and any duration beyond that is charged.

Both Wi-Fi access and the interactive panel is facilitated in a manner where there is a Walled Garden and an Open access. A walled garden or closed ecosystem is a software system where there is a limited set of applications, content, and media, which is controlled and restricts access to the wider set of applications or content. This is in contrast to an open platform, where consumers have unrestricted access to applications, content, and much more.

Besides ensuring fair access and access to important public services that include government services, financial services and limited educational or sponsored content, this is done to prevent violation of regulatory conditions that are unclear around open Internet usage.

### 5.3 Operational Component

Creating practically sustaining systems of operations and maintenance is critical to the success of the tech parklet. This pays attention to the capital and operational cost of components and services, the role of continuous suppliers, advertisers and end users, and the integrated nature of the parklet.

The parklet needs to be treated not as a value chain but a value circle in which the various components, solutions and services together with the users, make a positive contribution to resource utilization and productivity. Advertising, sponsoring, usage charges and transaction charges are the four means envisioned for generating the operational costs of the parklet

All usage beyond the Walled Garden is charged. Keeping the nature of the parklet to the unbanked or urban poor in mind, small amounts of money or micro payments are made directly to the vending machine interface. This interfaces with the requisite mechanisms controlled by the software described in the previous section and regulates the usage

The pedal powered charging unit and the interactive panels' station will work for a pre-decided duration for free. Subsequent usage will be charged. In a manner akin to digital access, money will be deposited into a vending machine equivalent which triggers appropriate responses into the systems. The solar lights could also work in a similar manner, where costs are borne by users.

## 6 PROTOTYPE IN MATUNGA

The precinct of Matunga is widely recognized as an educational hub, due to the presence of numerous institutions, schools and colleges. The urban fabric of this predominantly institutional area is interspersed with residential neighbourhoods and this overlap is what makes Matunga an interesting area of intervention. The major stakeholders in this area are not just the students and academicians but also the small neighbourhood communities and bodies like the ALM (Advanced Locality Management) that are highly active and have a strong sense of ownership of the public spaces.

Advance Locality Management (ALM) is a

partnership between Municipal Corporation of Greater Mumbai (MCGM) & the citizens, for sustainable environment friendly waste management programme for the neighbourhoods buildings. ALM was a scheme initiated in 1998 with 658ALMs in all 24 wards of Mumbai.

As of the writing of this paper, the authors and their firms are involved with the citizens of the Mogul Lane ALM in a process of re-visioning and reinventing their neighbourhood. As part of this process, the attempt is to integrate the component of technology as a social tool and as a service available to its residents. The tech parklet will be an integral component of this attempt, where access to technology will become a neighbourhood commons. The tech parklet is proposed to be installed in an area being co-created as a neighbourhood park. The park is a citizen initiative to reclaim an existing parking space as a community garden.

Our studies focused on the needs of the neighbourhood, which have been identified as social spaces, access to internet, integration of health facilities and public provision of information and educational services. The components of the tech parklet have been accordingly decided as mentioned in section 5.2 of this paper.

Another key consideration is the location of the tech parklet, as it raises issues of ownership. The residents of surrounding buildings avail an additional benefit in the form of access to Wi-fi from the comforts of their home. This vested interest can be harnessed to motivate the residents to keep watch on the tech parklet and prevent it from being vandalized.

The funding for the hardware component of the prototype is being sourced through Corporate Social Responsibility initiatives of businesses located in the neighbourhood. The software and network provisions are being sourced through network providers in return for advertising rights. In this manner, the project creates a model for a Public-Private-Community engagement at a localised and neighbourhood scale.

As of the writing of this paper, this project is at the stage of community co-design where the residents along with RJB-CPL and Gaia are ideating the design and facilities of the tech parklet.

The tech parklet, still at an early phase of development, does not have any specific scientific studies yet. The open ended and co-productive nature of the project also implies that we do not start with a fixed idea of design or technical specifications. While we have a basic programme for the parklet as a starting point, the eventual result will be a product which evolves with our process

and inputs from the stakeholders.

Since this is a very exciting new concept for urban space, we also have a number of private players keen on sponsoring the project or trying out pilots of their own products in this space. However, this also brings up questions concerning the level of private interests that can be accommodated in the creation of a public space, and these issues are to be debated at multilateral meetings with the stakeholders.

## 7 CONCLUSIONS

The tech parklet has broadly two interconnected aspirations- one, to create a lasting urban commons and the other is to create this commons as a contemporary urban space where the physical and digital realms intersect.

Common spaces are not designated. They are claimed. In cities, common spaces can be the spaces of intersection and interstice. This sort of commons arises from experiments and trials to rethink our urban spaces. Acting in interstitial spaces re-subjectivates the space and the actors and they remain so only as long as they are relentlessly pursuing the commons. A commons therefore must be maintained through continuous community action and continuous re-invention by becoming a ground for negotiation rather than affirmation. (Balasubramanian, 2014) The tech parklet therefore is an attempt to go beyond the temporality of the Park(ing) Day, and to create lasting public spaces. Therefore the project tackles the task at the levels of urban design, technology and operational sustainability with a participatory and process oriented approach.

The tech parklet also questions the concept of public and private goods, and expands the definition of the public realm to include the digital space. It engages the debates of accessibility and inclusivity of public services while at the same time tackling issues of privacy and the potential of misuse of technology. The project also tackles the institutional mechanisms of setting up tech parklets and its operational sustainability, while at the same time engaging the agency of citizens and designers in the production of public space. Tech parklets are a new venture into rethinking and linking our physical and digital identities in increasingly networked urbanities.

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Ratan J Batliboi – Consultants Private Limited, Mumbai, is an architecture and urban design studio engaged in urban research, urban planning and urban design. The firm specializes in public space design and rethinking urban public action through bottom up community based socio-spatial innovation.

Gaia Smart Cities Solutions Private Limited is a novel technology company converging areas of telecom, software and sensors paving the way for the next wave of the Internet - the Internet of Things and Smart Cities.

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