MATI- FINDING SELF AND COMMUNITY THROUGH LAND RECLAMATION

Srishti Srivastava
Srishti Institute of Art, Design and Technology, 40/D Marilingiah Building 2nd Cross Rd Yelahanka New Town KHB Colony Bangalore Karnataka 560106 IN, 2nd Cross Rd, Bengaluru, Karnataka 560064, srishtisrivastava13@gmail.com
Shivangi Pant
Srishti Institute of Art, Design and Technology, 40/D Marilingiah Building 2nd Cross Rd Yelahanka New Town KHB Colony Bangalore Karnataka 560106 IN, 2nd Cross Rd, Bengaluru, Karnataka 560064, dinerdivya@gmail.com
Sahil Raina
Srishti Institute of Art, Design and Technology, 40/D Marilingiah Building 2nd Cross Rd Yelahanka New Town KHB Colony Bangalore Karnataka 560106 IN, 2nd Cross Rd, Bengaluru, Karnataka 560064, sahilraina27@gmail.com

ABSTRACT

A small piece of land outside the N4 campus of Srishti Institute of Art, Design and Technology, was home to wilderness and trash, when the Masters students of Information arts and Information design practices (IAIDP) and Earth Education and Communication (EEC), as a part of School of Law Environment and Planning at Srishti Institute of Art, Design and Technology, decided to build a new ecosystem which could be used by the community next to this piece of land. This project, named Mati, emerged out of this idea of converting the piece of wasteland into a community garden with the vision of bringing the neighbourhood together. The project was initiated by the 2nd year students of the course with a two- week workshop asking how institutions could find ways to look at sustainability and community engagement while engaging hands on with a project like this. It was taken further, as a transdisciplinary unit for the 1st year masters students to continue the questions of sustainability through urban wasteland regeneration and reclamation.

Keywords: Urban wasteland reclamation, Community garden, Community engagement, Student Initiative

1.INTRODUCTION

Through our unit titled Cultivating 'Being' we attempted to transact the knowledge gained through embodied practice. We gained a firsthand understanding of how one can harness creativity through a framework of ethics, social and ecological thinking, and cultural and personal reflection which are key to developing intuition and insight as a art and design thinker. We have discovered that Art and Design is a form of intelligence; It is an inquiry into and of consciousness; It is the action of making and reflecting. It involves abilities in perception, cognition, heightened emotion, embodied and experiential understanding of environment and discernment; all of which then can translate into practice. Training to be an artist/ designer involves training the mind, body and consciousness. Through the embodied practice of gardening, we inquired into our own selves and began to craft ourselves into a state of preparedness in skill, perception and engagement with the outer world.

2. RESEARCH GOALS

The project aimed at:

a). identifying different issues and finding ways of reclaiming a piece of land.
b). Building a relationship with nature through the physical involvement of working with the garden, bringing one closer to the self in turn building a deeper relationship with our immediate environment.
c). To keep everything organic.

3. THEORETICAL BACKGROUND

Managing waste is a particular problem in the city of Bangalore, which has not had any formal landfills since 2013. The city has 10 processing units out of which 8 process segregated trash through recycling and composting and the other two process unsegregated trash. It is estimated that Bangalore produces 3,500 tonnes of waste in a day, and both dry and wet waste is collected on alternate days by the BBMP, just from households. The largest of these processing units in Gudlahalli can process 1,000 tonnes of trash in a day but it faces daily resistance from local residents, and the other processing units handle a much smaller amount of waste in a day. It is easy to see that Bangalore has a waste problem, as one crosses vacant pockets of land mounded with tall piles of trash all over the city (Kumar 2016).

Due to limited space and budget, the dumping of waste in vacant areas is commonly seen throughout Asia, which holds true for Bangalore as well. This leads to the leaching of various chemicals and toxins into the soil and underground water levels, which increases in concentration if this dumping is left unchecked (Saritha, Vuppala, Prashanthi & Anjum, 2014). Over time, this debris accumulates and integrates into the very land underneath it because of the pressure of added waste, seasonal rains and soil runoff.

One of the ways to curb such use of vacant spots is by converting these wastelands into community gardens. Sustainable gardens are effective in various ways to the community around it, as green spaces and infrastructure have been shown to create a sense of well-being in a community. This has been seen in similar projects carried out in other parts of the country and the world, as seen in two such areas of Poznań in China. The activities surrounding two community gardens built over urban barren lands in the Wilda garden and the Koletyw Kapelisko garden, clearly demonstrated how the presence of community gardens increased social activities and the integration of community members in the locality, which ranged from summer outdoor cinemas to growing vegetables in the garden (Gałecka-Drozda & Raszeja, 2018).

We looked towards other projects which had faced similar circumstances, and came across the Sadhana forest venture carried out in Auroville.The land there was similar to the red laterite soil which is found abundantly in Bangalore (Agriculture Department Bangalore, 2018) , where red laterite soil and black cotton soil is found along with the depletion of topsoil and 80% stones and pebbles. The land was severely eroded, and they focused on improving soil quality through the introduction of pioneer plants which consisted of indigenous varieties along with regular supplementation of mulch. They noticed that when they had planted trees with the same soil and no other intervention in the initial stages, the trees all withered and died within a year. In comparison, the secondary experiment with indigenous plants being sown along with care given in improving soil quality allowed the growth of new foliage in many parts of the barren land which helped small fruit trees in surviving in the forthcoming years, and showed the importance of using such plants in recreating the biodiversity that existed in a topographical area, before erosion took place. Their aim is to introduce people to sustainable living, wasteland reclamation and food security through ecological transformation. (Mishra & Rath 2013).

4. RESEARCH METHOD:

4.1 Land reclamation

On the basis of our understanding of reclaiming urban wastelands, we questioned the anthropocentric notions while disregarding the dilation of time in terms of the ecosystem that we live in, and the lasting effects we create while

doing so. Before we could create the garden, we had to assess the current condition of the area. The topsoil mostly consisted of smaller particles of concrete rubble and the subsoil was interspersed with larger blocks of concrete, glass, fabric and plastic. The rubble and waste were mixed with red laterite soil though the rubble vastly out measured the amount of usable soil. Though there was grass growing throughout the land with shallow roots, the land was mostly barren and inhospitable to the sustainability of the existing trees. As a first step, the first layer of this soil and rubble was removed in one area of the garden to create a false topsoil which consisted of fresh red soil. Contour bunds, using repurposed baked clay tiles reinforced by the gravelly soil, were created along the perimeter of the plot of land to stop top soil run off. The earth was loosened and shallow 1 feet deep pits were created to plant indigenous pioneer species which would eventually improve the soil quality. Fresh soil and compost were used to fill these pits in. the plants required constant watering due to the condition of the subsoil. It was apparent that the soil condition needed to be improved drastically before this garden could be sustainable. One was waste segregation and the other was in-house composting to add to the soil quality of this area. We also looked at food waste as a major problem. We started by collecting food waste from our college campuses and paying guest accommodations that students of Srishti occupy. In order to create a compost pit, we looked to our immediate vicinity for effective methods of dealing with waste, by visiting large scale compost pits in nurseries and institutions. Segregating compostable waste is one way of ensuring a lesser volume of waste. Segregation of organic and inorganic materials is already carried out across the city including Srishti campuses, though it needs to be promoted and implemented in a more thorough manner. This segregated food waste could be locally composted, creating accountability for waste disposal and it also gives localities access to enriched compost, which can either be used in home gardens or donated to nearby local farmers who might benefit from it. Small scale compost pits were started, by creating multiple 3 ft X 3 ft pits, which were layered with dead leaves collected from the neighborhood along with 1kg of food waste generated in one day. These compost pits were regularly watered to help in aeration and effectivity of microbes in breaking down the material. The pits started showing signs of decomposition within weeks. The area around it eventually became prime spots for new growth of foliage.

4.2 Keeping everything Organic

We also looked at food waste as a major problem. We started by collecting food waste from our college campuses and paying guest accommodations that students of Srishti occupy. In order to create a compost pit, we looked to our immediate vicinity for effective methods of dealing with waste, by visiting large scale compost pits in nurseries and institutions. Segregating compostable waste is one way of ensuring a lesser volume of waste. Segregation of organic and inorganic materials is already carried out across the city including Srishti campuses, though it needs to be promoted and implemented in a more thorough manner. This segregated food waste could be locally composted, which can either be used in home gardens or donated to nearby local farmers who might benefit from it. Small scale compost pits were started, by creating multiple 3 ft X 3 ft pits, layered with dead leaves collected from the neighbourhood along with 1kg of food waste generated in one day. These compost pits were regularly watered to help in aeration and effectivity of microbes in breaking down the material. The pits started showing signs of decomposition within weeks. The area around it eventually became prime spots for new growth of foliage.

The resources used in order to develop composting methods were materials like dried fallen leaves from nearby areas, coconut shells collected from coconut vendors, waste food from nearby PGs and college campuses. Bamboo sticks and thin wooden sticks found in the area were used as fencing material, the tiles that had been dumped earlier in the garden area were used to block the flow of water outside the garden during rains. Materials used for building the aesthetics of the garden were also eco-friendly in nature.

4.3 Relationship with Nature and Community

Focus was given to planting medicinal plants that could be used by various households, such as Tulsi, Neem and Aloe Vera, edible plants such as Curry leaves, easily recognizable ornamental plants like Champa and butterfly attracting flowering plants such as curassavica, which attracts the monarch butterfly, as well as many other plants. According to sources, almost 90% of the medicinal plants used by pharmaceutical industries today comes from the wild. Almost 70% of these plants are collected as a result of destructive harvesting (Bhattacharyya, 2012).

Plants such as Adhatoda, Bacopa, Plumbago, Neem, Andrographis were some of the options that we had looked at as sources of significant medicinal value. The garden remained an opportunity to build a community of people finding a reason to come together. Medicinal plants could serve as an opportunity for residents of the neighborhood to find functional value in the garden. We also envisioned this process of engagement as a way of life. This was rooted in our collective understanding of past systems, where humans' relationship with plants and herbs was deeply integrated with their daily lives. We were able to plant different varieties of medicinal plants. Something that our later research pointed out and we failed to focus on at the initial stages, was a need to ensure the soil was conducive enough for the growth of these plants.

5 RESULT AND ANALYSIS

5.1 Personal Behavioral Change:

Understanding the land for us was through embodied practices, working physically and mentally on the garden, observing the land in order to understand how it could be converted into a community garden. We reexamined our understanding of nature, our past choices which have directly and indirectly impacted the environment, the idea and importance of community and ways of looking at sustainability. For most of us, the understanding came best with direct physical work on the ground leading to interests in the areas of study like flora and fauna of the region, aesthetics and landscape design, waste and water management, medicinal plants and their values etc.

We articulated the information gathered through working on the land through mediums like visual art, story-telling, poetry, performance art and information design.

5.1.1 Art and Design practices:

Art and design are powerful tools to make people aware, bring about a change in the consciousness, and has a strong potential to bring a behavioral change in the community or a society. One of the students after working on the land reflected on the impact of human intervention on the environment. She came across various types of waste like metal, plastic, fabric etc. This led her to rethink her choices in the past and make a conscious effort to reduce her consumption. She first reflected on commonly used words like 'Time', 'Assumption', 'Responsibility' and 'Connection'. She looked at the implications of these words in the context of sustainability and environment. She created posters that reflected on these words, as her line of inquiry.

As a self- reflective practice, another student represented information in the form of infographics using icons and illustrations which depicts the interdependence between insects, soil and certain plants. It also represents different emotions associated with various actions on the garden.

A comic series was composed by one, depicting social, physical and psychological aspects of working on reclaiming urban wastelands to create a garden. It reflects on the hurdles one has to cross physically and mentally to create a garden space. It further dwells into depicting the positive psychological benefits of creating a garden.

Some of us worked on a performative piece which reflected our understanding of the space with respect to time. Embodied practices into the garden led us to explore our bodies as tools to reflect and understand. The performance was a display of our emotions during our time of working in the garden.

Keeping the benefits of social media in mind, some of the students worked extensively on creating material for the same. Comic series emerged as a practice of communicating the stories from the garden on Instagram and Facebook. A page for Mati named 'Mati-eco-club' on Instagram was created where stories and posts were created every day. Several students from Srishti engaged themselves with the garden by using it as a display space. Another group of students interested in graffiti painted the electricity poles near the garden.

5.2 Social Behavioral Change:

5.2.1 Community Engagement:

Building a community garden for us, would first mean identifying the community in the area and the people who would be most impacted by its presence. An important aspect of our work was engaging with the neighborhood and initiating a dialogue between students and the residents. One thing that worked for us immensely was the support we received from a few children who stayed in the neighborhood. It was their dedication to working on the garden that created a bond between us. There was another aspect of this community that included the students of Srishti. Conversations with faculty members, inviting them and their class to join us for a day of gardening resulted in a few students expressing interest in working in an individual capacity. We organized a community event which would serve as a platform to talk about our work in the garden, but more importantly, also how the members of the neighborhood could contribute meaningfully to making this garden a sustainable space. There were a significant number of people, both students and residents, who showed intent with their presence. Conversations revolved around the need for composting, a demonstration of our experiments with a small amount of waste and how we could find ways to convert this into a larger system.

Seedlings that were given to every person who came for the event. One of the most observable results of starting a community garden was the complete lack of any new waste being generated in this area. The mound of existing waste did not increase in size in the weeks after. None of the flowering or medicinal plants had been tampered with. The addition of certain kinds of plants and trees have led to a development of a new ecosystem where now, butterflies, birds, beetles, frogs and other small beings visit the area every day. Earthworms are also discovered in the garden. One of the most astonishing sights is the view of a swarm of dragonflies often found hovering over the plants.

5.3 Challenges

Being Masters' students of an institution, we are exposed to different contexts, working with different dimensions of practice which serve as an advantage and can also serve as a disadvantage, specifically for this context. We found it to be difficult to keep up with the maintenance of the garden, so much so that we have not been able to allot time for basic garden needs such as watering. Temporary solutions like taking the help of support staff have worked for the purpose of watering, but we haven't managed to fix a system in place for the same.

Weeds can take over the pioneer species in the garden. De-weeding therefore is another important aspect of gardening that we have not been able to be consistent at. Our effort at including the residents and the neighborhood at large has been left incomplete. There is also a challenge of perception that we have had to deal with. In certain conversations, we sensed a clear distinction of our identity as students and were told how, due to the nature of our course, we would not be able to devote more time to a project like this.

Another challenge we faced during this time was this idea of territory that led to altercations with the land owners surrounding the garden. The surrounding land owners found our work to be obstructive. This was first observed when we built a fence around the garden. The fencing was done with the intention of preventing animals from destroying the plants. This led to a dispute between the surrounding land owners and certain residents of the neighborhood supporting the garden project. This was our first exposure to the politics of land and was one of the major reasons for work halting. This was our first encounter with power and territory, putting larger contexts of land and power, into perspective. Working on a small patch of land could become a source of power struggle, in the process, unfortunately questioning the legitimacy of such a project.

6.CONCLUSIONS

Select plant species can have a major role in reversing erosion, restoring soil health and regenerating land and enabling the land to be used as a community garden for growing medicinal plants, herbs and possible food plants such as curry plant, papaya, carrots, tomatoes, beets and greens in the long run. It is possible to enable productivity in even the most degraded soil used as a dumping site within a highly developed urban space and restore it over a few years of careful cultivation of indigenous plants. The general methodology can certainly be followed to design similar experiments near the current plot where urban wasteland including dumping sites can be identified and reclaimed with similar sets of practices and suitable plant species. There are vast expanses in the dry tropics where the species mentioned would thrive. There is a lot of scope for systematic and extensive research and urban wasteland regeneration. The practices are relevant, considering the larger problem of India's expanding wastelands, which concerns both policy-makers and citizens. Given the exponentially exploding challenges of food security, population and the fact that the urban sprawl and industries are replacing the best agricultural lands, a simple sustainable solution is to stop further degradation, and unlock the productive potential of currently unused spaces that the local community can directly engage in. The practices described do not require any special skills for implementation and are effective and inexpensive ways out of the impasse of waste generation, mindless consumerism and the unseen costs of urban growth and development, especially in a city like Bangalore which has gone from being a 'garden city' to a concrete jungle in a very short span, the changes in the climate, rainfall and pollution levels are visibly concerning.

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