Bringing Back the Bukit Batok Spirit

By: Team MI

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Problem Statement

The rise of digitalisation and unintended consequence of specific residential urban design festures have created an atmosphere of isolation, and a decrease in social interaction within society. By utilising and enhancing spaces like rooftops, we hope to stimulate more community interaction, especially between different age groups.

Importance of Issue

How are rooftops used now?

Some are installed with PEGs, the Prefabricated Extensive Green (PEG) Roof Tray System introduces greenery to the urban landscape by greening building rooftops and is designed to address the environmental concerns of many urbanised cities with limited green spaces.
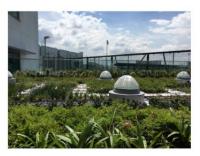

Block 93A Jalan Dua

Block 756A Bedok Reservoir View

Block 410 Fernvale Residences

United World College University

Importance of Issue

Limitations of Current Uses:

Current rooftop garden uses are constrained by several issues including dirty lifts, overflowing dustbins, littering, illegal smoking, and disruptive noise caused by inconsiderate visitors, often late at night, which disrupts residents' sleep. While more research has been conducted on rooftop gardens in Western countries, there is limited study of this landscape typology in Singapore. Rooftop projects also place added pressure on a building's water supply, necessitating the installation of water sources or carrying water from inside the building. Weather exposure, with high temperatures and strong winds, limits the types of plants that can thrive in these conditions. Inadequate storage facilities on rooftops make it challenging to store gardening equipment, soil, fertilizer, and maintenance tools. Furthermore, rooftop access is restricted to authorized personnel approved by the town council, with mandatory security vests and escort requirements, due to safety concerns related to the elevated nature of rooftops, which pose a risk of falling. Furthermore, rooftop spaces or rooftop gardens run the risk of having stagnant water that can result in mosquito breeding and spread of insect borne diseases.

Importance of Issue

Unique Aspects:

Rooftop spaces offer a host of unique advantages, including breathtaking panoramic views, an urban oasis away from city crowds, abundant natural light that enhances well-being, a sense of privacy and exclusivity for intimate gatherings, remarkable versatility for diverse activities, contributions to sustainability through rooftop gardens, a refreshing and distinct ambiance with an open-air atmosphere, the ability to complement community centers by providing informal gathering places, and the efficient utilization of urban real estate in densely populated areas, ultimately enhancing social interaction and community vibrancy for all generations.

Importance of Issue

How does it differ from Community Centres?

Rooftop spaces distinguish themselves from community centers in multiple ways:

- Their informality and spontaneous nature, offering impromptu gathering spots and relaxation areas, as opposed to the structured programs of community centers
- Their elevated location providing scenic views and an escape from urban surroundings, contrasting with ground-level community centers
- Their smaller scale, often catering to specific residential complexes for a more intimate neighborhood-centric atmosphere;
- The unique outdoor ambiance they provide with elements like fresh air and natural light, compared to the controlled indoor environment of community centers
- The encouragement of spontaneous interactions, in contrast to the planned activities of community centers; the potential for privacy and exclusivity for smaller gatherings or personal contemplation, while community centers are open to the public
- Their adaptability for various purposes, as opposed to community centers with predefined spaces
- Their role as complementary social spaces extending community centers, and their efficient use of urban space, in contrast to separate community center structures requiring dedicated land
- Finally, their localized focus, fostering a strong sense of community among residents in specific areas, whereas community centers serve broader neighborhoods or communities.

Target Audience

Our target audience consists of HDB residents, with a particular emphasis on fostering connections between younger and older generations to enhance social cohesion within the HDB community. This focus is essential because communities serve as vital support networks, providing a sense of belonging and facilitating the development of meaningful relationships. Specifically, we are directing our efforts towards residents in the Bukit Batok Area, including West Crest @ Bukit Batok and West Terra @ Bukit Batok. We recognize the growing trend of reduced face-to-face interactions among neighbors, as more residents turn to online platforms for community engagement, resulting in fewer high-intensity interactions such as sharing meals or assisting with childcare. Additionally, some residents face challenges in connecting with individuals from different age groups due to varying interests, language barriers, and time constraints. Facilitating intergenerational interactions is crucial, as research shows that these relationships can significantly improve the health and well-being of both younger and older individuals. For older adults, engaging with younger generations can provide a sense of purpose, reduce feelings of depression and anxiety, and enhance cognitive function. Given Singapore's aging population, promoting such interactions becomes even more critical to support the well-being of the elderly.

The project will start off targeting the specific community of Bukit Batok but plans to further expand and utilising its aspects and apply them to other community nation wide, allowing for unique community rooftop spaces for all residents of HDBs.

Research Findings

Primary Research:

Notable Quotes from an interview with different residents of Bukit Batok, regarding interaction within the community and Bukit Batok Communal Spaces:

1. Do you interact often with residents outside your age group in your neighbourhood? Why or why not?

I chat with most of my neighbours who are older than me on my way to school or in the evenings but **do not hang around** with them as **I work long hours** and **neither have the time or energy for prolonged interactions.**

No. **Hardly any opportunities** or time.

2. What do you think are some barriers to interaction between you and the residents (including those of different age group) living in your neighbourhood?

Different interests, **language** barriers and **time**

The **lack of purpose**, **common topics** and the **individual lifestyle** of each and everyone.

3. Being a long-time resident of Bukit Batok, what are some aspects of the town that you think is unique to this area? (E.g. its people, environment, natural/ manmade features)

Its well-maintained, **peaceful** and very **clean**. The **Park** is a **huge asset** as is the **Little Guilin**

Research Findings

Primary Research:

Notable Quotes from an interview with residents of Bukit Batok, regarding interaction within the community and Bukit Batok Communal Spaces:

4. Do you feel connected to the residents living in your neighbourhood? Why or why not?

In a **very small way**. The **frequency of our paths crossing**, in the lift, on the way to the carpark, chance meeting at the coffee shops bring some connectivity in our daily/ weekly routine.

The **closest, next-door neighbours are more connected** as the regularity of meeting are higher and more often. There are some **common issues**, growing kids, weddings etc…that **bind the relationship** to a greater extent.

5.What kind of activities do you think can help you get to know the residents living in your neighbourhood, especially those of different age groups, better?

Block **parties**, **celebration** of festivals

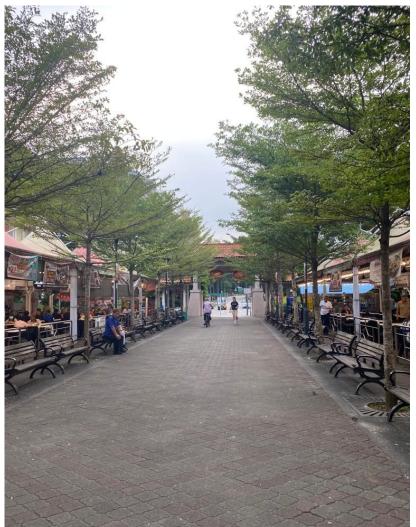Bukit Batok Park

Little Guilin

Current Bukit Batok Spaces

Neighbourhood centres lined with trees and benches

Current Bukit Batok Spaces

1. Most have limited facilities to carry out any activities
2. Designs are fairly simple and lack a diversity of colours or special unique aspects that may be more attractive to residents.
3. Sparse greenery and flora apart from some trees, none that really stand out or can be identified to be unique to the area.
4. Not much design wise to suggest that the communal spaces are unique to Bukit Batok, most just look like any other spaces in Singapore
5. Playground does look interestingly designed and unique to other playgrounds in Singapore but colours used appear dull and uninviting.

Research Findings

Secondary Research:

How are rooftops used for community spaces now?

City Vue @ Henderson – Sky bridges and vibrant MSCP garden
- The rooftop features a hard court, playground, and pretty manicured gardens

588 Ang Mo Kio – Family-friendly rooftop garden
- With its brightly-coloured playground for tots and a seniors' fitness corner, the garden is great for family time for residents.

Research Findings

Community Desires:

According to The New Paper (TNP) of Straits Times

On Aug 23, retired coffee shop worker Chng Rui Feng, 70, was heartbroken when he saw notices by the Housing Board (HDB) asking residents to clear their plants and flower pots on the rooftop of the carpark at Goodview Gardens, Block 395A Bukit Batok West Avenue 5, by Sept 12 as they were "illegally placed".

Residents told TNP that over 50 of them, from blocks 383 to 395, had accumulated over 2,000 plants over the past 17 years as the top level of the eight-storey car park had always been empty of vehicles.

Their hope was for the garden to stay. And on Aug 26, their plea was heard.

Ms Low Yen Ling, an MP for Chua Chu Kang GRC, said in a Facebook post that she had convened a meeting with HDB, the National Parks Board (NParks) and Chua Chu Kang Town Council and proposed the idea of converting the rooftop into a community garden for the residents.

Research Findings

Takeaway:

Inspiration can be taken from current designs of rooftop spaces such as the 588 Ang Mo Kio rooftop space which is family friendly, we can design our space such that the fitness area is accessible to all ages such that young and old can interact whilst exercising, however our design will improve on what currently exists by providing a space that is tailor made and designed to be unique to that community and something that is both aesthetically pleasing and functional, allowing for a space that can be comparatively more attractive and intriguing for residents of all ages to gather and interact in as it is unique to their community and home.

Proposed Solution: Bringing Back the Bukit Batok Spirit

Bukit Batok Kampong Spirit: An important part of Singapore's treasured heritage, the kampung (village) spirit refers to a sense of community and solidarity. Life in a kampung was mostly harmonious and it was not uncommon for people to readily offer their neighbours food, help and support.

Key Elements we wish to incorporate:
Mutual support and care, reminiscent of the kampung spirit where neighbors assist one another and show empathy during times of need; the cultivation of **strong social bonds**, characterized by a profound sense of belonging and familiarity among community members, fostering deeper relationships that go beyond casual interactions; the promotion of **sharing and generosity**, as seen in the traditional practice of sharing resources, whether it's meals, tools, or event resources, emphasizing a willingness to help without expecting reciprocation; the organization of **community events**, festivals, and celebrations to unite residents, nurture a sense of belonging, and create opportunities for interaction and bonding; and finally, the fostering of **respect for elders**, encompassing not only reverence for their wisdom but also actively seeking their guidance and providing care for the elderly in various ways.

Proposed Solution: Bringing Back the Bukit Batok Spirit

The Minor Designs:

1. Green Design:
An aspect of the space is its vibrant green design that encompasses various elements. A thoughtfully designed garden showcases local flora, echoing Bukit Batok's history as a forested region. Vertical farming units harness modern agriculture techniques to engage residents in sustainable practices, and captivating green domes create a comfortable microclimate for gatherings and relaxation. When designing this we have kept the idea of biophilic design in mind so as to create something similar yet useful

2. Personalized Community Design:
Residents are given the power to shape their community space. They can actively participate in deciding the types of plants to be cultivated, the colour schemes to be used, and even the creation of murals that depict the area's history and identity. This participatory design approach enhances social interactions and cultivates a sense of ownership.

Proposed Solution: Bringing Back the Bukit Batok Spirit

The Major Designs:

1. Enhancing Social Interaction

Community Event Area/Open Space Area:
The space will be introducing regular intergenerational community events. These events, ranging from cultural festivals to workshops, will offer opportunities for people of all ages to connect, share stories, and learn from each other. The aim is to recreate the close-knit relationships that once thrived in traditional kampongs. Furthermore by holding events at the rooftop space, more and more individuals will be exposed to the location and therefore be more aware of its presence and purpose to the HDB. Events such as "Block parties and celebration of festivals" can be held as according to an interview with a resident such events can help with getting to know residents of different age groups better. When there are no ongoing events, residents can use the open space for picnics together or sports such as tennis.

Central Seating Area with Table:
A seating area around a round table at the centre of the rooftop symbolises our plan for a connected and united community. Given its location at the heart of the rooftop, it invites people to come round and chat and relax. The table provides a platform for both casual discussions and enjoyable game sessions between members of all age groups. This dynamic environment supports intergenerational bonding while fostering mental agility.

Proposed Solution: Bringing Back the Bukit Batok Spirit

The Major Designs:

2. Community Sharing

Community Pantry:
To cultivate a spirit of sharing and caring, a community pantry is established. Residents can contribute non-perishable food items, promoting a culture of mutual support and addressing potential food insecurity within the community.

Community Bookshelf and Magazine Stand:
A community bookshelf and magazine stand serves as a hub for knowledge exchange. Residents are encouraged to contribute their own books and magazines, complete with labelled categories. This initiative not only promotes reading and exploration of different genres but also sparks conversations around shared interests.

Proposed Solution: Bringing Back the Bukit Batok Spirit

The Major Designs:

3. Healthy Living

Exercise Corner:

For the health-conscious, an exercise corner offers fitness equipment. This addition caters to diverse wellness preferences, encouraging active lifestyles and providing space for exercise enthusiasts to connect.

It also serves as an ideal spot for people of all generations to come together and prioritise their health and well-being.

Older residents can share their fitness experiences and knowledge with younger individuals, fostering a sense of mentorship and mutual support.

Families can engage in group workouts, setting a positive example for younger members and strengthening family bonds through shared physical activities.

Scheduled group fitness classes and events can encourage participants of varying ages to exercise together, promoting social interactions while staying active.

Proposed Solution: Bringing Back the Bukit Batok Spirit

Considerations:

Promotion and Prototyping:
Advertisements preceding the rooftop space's opening generate excitement and anticipation among residents. To demonstrate the concept feasibility, a prototype based on the history of Bukit Batok was created. This prototype could take the form of a diorama, showcasing the evolution of the area from forested land to a thriving community hub.

Bottom-Up Community Cooperation:
The Kampong Haven project's success hinges on the bottom-up cooperation of its residents. Through town hall meetings, surveys, and workshops, the community's input is actively sought, ensuring that the space truly reflects their desires and aspirations.

Proposed Solution: Bringing Back the Bukit Batok Spirit

Revitalising Bukit Batok's Flora through Biophilic Design:

Key Principles:

1. **Natural environment**: The natural environment focuses on features of the natural world incorporated into an office setting. Basic things like earthy colours, sunlight, plants, and images of animals and nature.
2. **Natural shapes**: Natural shapes are lines and forms that occur in nature. Notable examples include arches and vaults, recreating rock shelves, water paths, and other things that naturally occur.
3. **Natural patterns**: Similar to natural shapes, natural patterns deal with patterns and processes that occur in nature. This could be shown through the erosion of rock over time, the growth of plants, and the use of rhythm and scale.
4. **Natural light**: Sunlight is healthy, and biophilic design emphasises light and space. Light helps merge the inside and outside using elements of warmth and different shapes.
5. **Plants**: Focus on natural plants, imagery, or plant colours. The idea here is to create a relationship between the office and the natural elements it is incorporating.
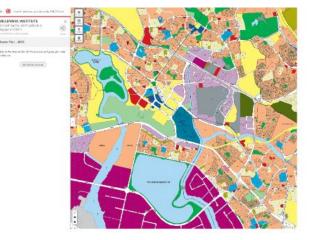6. **Human-nature relationship**: The final element involves recreating the relationship between humans and nature. Biophilic design ties all of the previous elements together. By doing this, a place will focus on specific themes like order, safety, complexity, curiosity, mastery, control, affection, exploration, discovery, and awe.

Proposed Solution: Bringing Back the Bukit Batok Spirit

Revitalising Bukit Batok's Flora through Biophilic Design:

We intend to revitalise the flora of Bukit Batok and pay homage to its history as a forested area by utilising flora that is native to Bukit Batok's forested areas and incorporating it into Bukit Batok's current urban landscape and design. Bukit Batok was initially a mostly forested area in the 80s, but in recent years has had much of its flora and greenery removed to build housing estates or other important infrastructure, as shown by the land use maps.

Bukit Batok Land Use
Map 1980

Bukit Batok Land Use
Map 2003

Proposed Solution: Bringing Back the Bukit Batok Spirit

Revitalising Bukit Batok's Flora through Biophilic Design:

Some plants we intend to incorporate include some which are nationally threatened plant species found in Bukit Batok. A, Athyrium accedens (habit); B, Athyrium accedens (close up of a plantlet growing out from an adventitious bud at the base of a pinna); C, Caesalpinia sumatrana; D, Morinda rigida

Proposed Solution: Bringing Back the Bukit Batok Spirit

Unique Design Aspects:

Environmental Psychology
It is a study of human relations and behaviours within the context of the built and natural environments.
For example, some principles of design comprising balance, proportion, symmetry, and rhythm can introduce a sense of harmony.
Colours, on the other hand, have a very simple logic behind them, the warmer the colour is, the more compact space becomes. They can also evoke feelings of comfort or stimulate communication. Light depends greatly on the function. A dim light suggests a gloomy space while a bright light defines a bigger animated appearance. Natural light stimulates production and recovery.

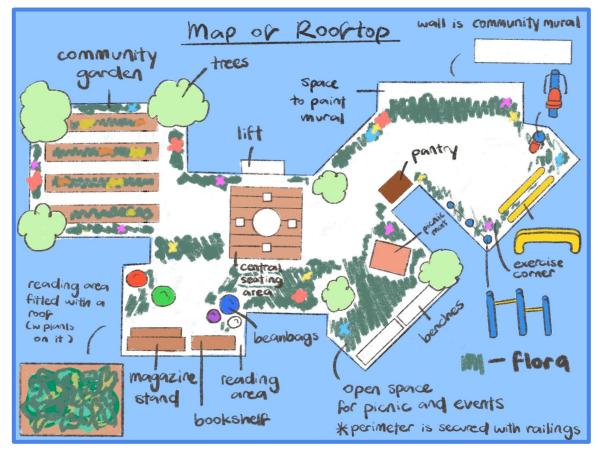Red: brings heat to a space – can be powerful, high energy and passionate
Yellow: warm colour that can be associated with happiness, creativity, energy, fun and innocence, that can recreate the colours of sunlight
Green: gives a soothing, calming feel if not overdone because it relates back to nature and harmony, may also connote positivity and luck
Blue: relates back to nature and blue spaces like the ocean and sky, evoking feelings of serenity, calm and freshness
Brown: close to nature (like wood) that depicts strength, stability, comfort and warmth

These colours will be used in the design to stimulate certain emotions, feelings and improve well-being overall.

Land Use Map

Physical Prototype Frontal View

Rooftop element

Panty and community mural

Fitness area

Pantry

Community garden

Central seating area

Reading area, community bookshelves and magazine stands

Prototype Top View