An aerial photograph of the Springleaf Precinct. The image shows a mix of greenery, existing buildings, and a road network. A large green field is prominent in the center, with several blue-roofed structures. To the right, a road curves through the area, bordered by trees and existing residential or commercial buildings. The background shows a dense urban area with various buildings and more greenery.

Planning for Springleaf Precinct

Urban Redevelopment Authority

June 6, 2022

Site Context

1. Bounded by Seletar Expressway, Mandai Road, and Upper Thomson Road, the 33-hectare Springleaf site has been zoned for mixed commercial and residential, park, and reserve site in URA's Master Plan since 2014. Leveraging on improved accessibility in this area after the opening of Springleaf MRT station in 2021, we are planning to utilise the site for about 2,000 new dwelling units and more nature-based recreation opportunities to the public.

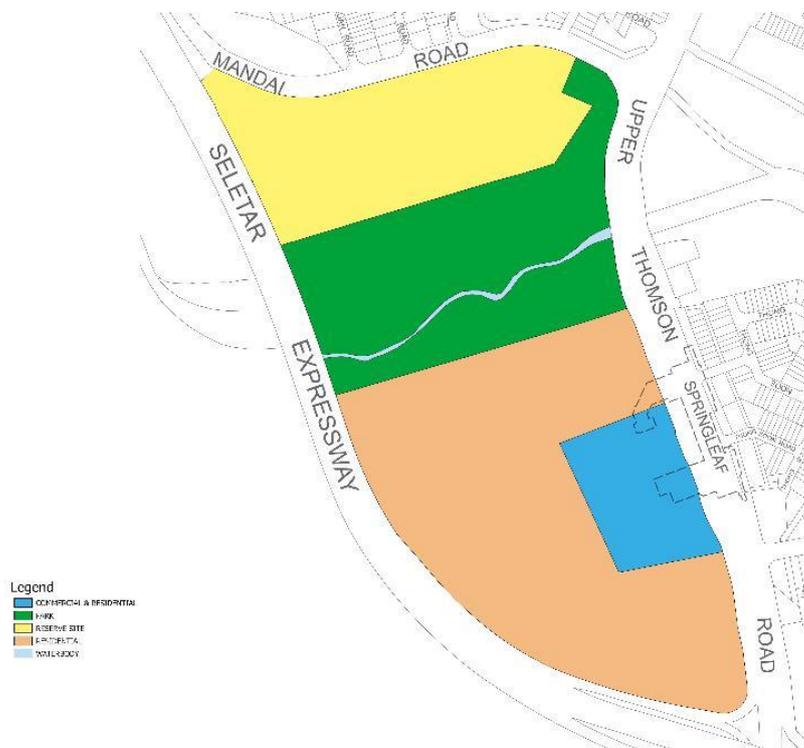


Figure 1: Master Plan 2019

2. The Springleaf site is located between the Central Catchment Nature Reserve (CCNR) and Upper Seletar Reservoir to the west, and Springleaf Nature Park and Lower Seletar Reservoir to the east. This area was part of the Nee Soon Swamp Forest (NSSF) before the construction of Seletar Expressway. Today, the site is predominantly forested with a low-rise urbanised area on the edge of the site along Upper Thomson Road, where the new Springleaf MRT Station and buildings of heritage significance like the former Seletar Institute and the former Nee Soon Post Office are situated. See **Annex I** for a brief historical background of the area.



Figure 2: Site Context of Springleaf (Source: URA)

3. The forested portions of the site, also known as Springleaf Forest, is characterised by lush vegetation and is home to a rich variety of native flora and fauna, including threatened and endangered plant and animal species. It is also ecologically connected to the CCNR and NSSF, with Sungei Seletar as the sole hydrological outlet from both the Upper Seletar Reservoir and the NSSF into the Lower Seletar Reservoir downstream.

Environmental Baseline Study

4. Given the sensitivity of the site, URA commissioned an environmental baseline study in 2018 to better understand the types of landscapes and habitats and flora and fauna species within Springleaf Forest.
5. The environmental baseline study revealed that the core area of the freshwater swamp is home to a variety of flora and fauna species. In particular, several flora species, such as *Aglaia yzermannii*, are found only within Springleaf and NSSF. The most ecologically sensitive areas were identified and classified as Significant Conservation Areas (SCAs). See **Annex II** for the types of landscapes and flora and fauna species.

Consultancy Study for Conceptual Biodiversity-sensitive Ideas

6. Considering the findings from the environmental baseline study, URA engaged a multidisciplinary team comprising architects, professional ecologists, landscape architects and others to explore potential ideas for biodiversity-sensitive development within the Springleaf site. Examples of these ideas include:
 - a. Designating the Significant Conservation Areas (SCAs) and the immediate surrounding areas as 'No-Go Zones'
 - b. Limiting development to existing urbanised and less sensitive areas

- c. Keeping building footprints small to minimise habitat loss
- d. Designing buildings with greener facades to minimise bird strikes
- e. Enhancing ecological connectivity between habitats and creating new habitats within Springleaf Forest through targeted tree planting
- f. Integrating Active, Beautiful, Clean (ABC) water design features into waterways and drainage infrastructure to maintain hydrological integrity
- g. Introducing new shared habitat typologies, e.g. Tree Cottages, i.e. houses raised on stilts within the forest that allow wildlife to have continued mobility within the habitat on the forest ground.

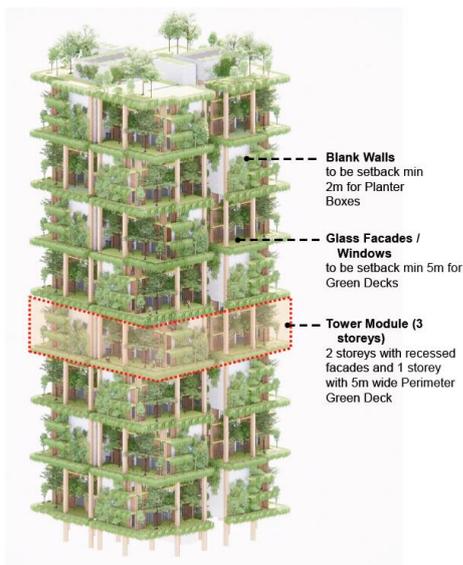


Figure 3-1: Greener facades to minimise bird strikes (Source: MKPL Architects)

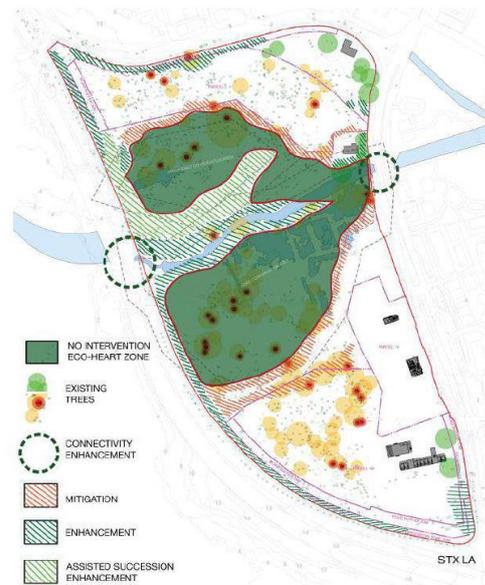


Figure 3-2: Designating SCAs and immediate areas as 'No-Go Zones' and targeted tree planting within habitats (Source: STX Landscape Architects)

Environmental Impact Study

7. Based on these conceptual ideas, the consultancy team conducted an EIA in 2020 to better understand the potential environmental impacts of the proposed precinct masterplan which could be used to inform future development plans. An Environmental Management and Monitoring Plan (EMMP) detailing recommended mitigation measures and a broad framework to guide future EMMPs was also prepared as part of the report.
8. Overall, the study revealed that the environmental impact of the team's proposed precinct master plan and conceptual design could be minimised after taking mitigation measures into account. Such mitigation measures include safeguarding an additional 30m buffer zone beyond the SCAs for an extra layer of protection and to enhance connectivity between Springleaf and adjacent forests through targeted reforestation or revegetation of corridors, such as the SLE underpass and Sungei Seletar riparian vegetation. See **Annex III** for a summary of the impact assessment for the construction and post-construction phases, before and after mitigation measures.

Integration of Heritage Elements

9. Recognising the historical value of this area, URA also asked the consultants to explore incorporating existing buildings of heritage significance into the future development envisioned. The consultants proposed integrating these existing buildings meaningfully as communal and recreational spaces. For example, the former Seletar Institute buildings has been reimagined as a mix of residential flats and communal spaces forming the community heart of the

development, while the former Nee Soon Post Office is integrated with the surrounding greenery to form a public park.



Figure 4-1: Artist impression of classroom block at Former Seletar Institute as residential flats (Source: MKPL Architects)



Figure 4-2: Artist's impression of Post Office Park (Source: MKPL Architects)

Engagements with Stakeholders

10. From scoping the environmental baseline study through the planning and consultancy study, URA had engaged industry experts, academics, nature and heritage expert groups on a regular basis to take in feedback and suggestions to envision a nature and heritage-sensitive development. This included 5 separate engagements sessions in the last three years as part of the consultancy study. Feedback and ideas from these sessions, such as targeted tree planting to regenerate the existing swamp forest areas within Springleaf and reducing the number of Tree Cottages, have been incorporated by the consultants into their conceptual design and its impacts studied in the EIA.

Key Ideas for Future Development Plans

11. In response to the consultancy study, EIA findings, and feedback from stakeholders, URA intends to adopt the following key ideas as we review the development plans for the new estate in Springleaf:
 - a. Keeping the Significant Conservation Areas and buffer zones as the proposed future Nee Soon Nature Park to provide the public more nature-based recreational options
 - b. Retaining and integrating parts of the former Seletar Institute and Nee Soon Post Office buildings into future developments
 - c. Channelling development towards existing disturbed grounds and less sensitive areas
 - d. Designing buildings with greener facades to minimise bird strikes



Figure 5: Planning and development strategies to balance development needs with nature conservation (Source: URA)

Feedback on Consultancy Study and EIA Report

12. The full EIA report for the Springleaf Master Plan consultancy study is available on URA's website [here](#). Members of the public may provide feedback from 6 June 2022 to 4 July 2022.

Annex I

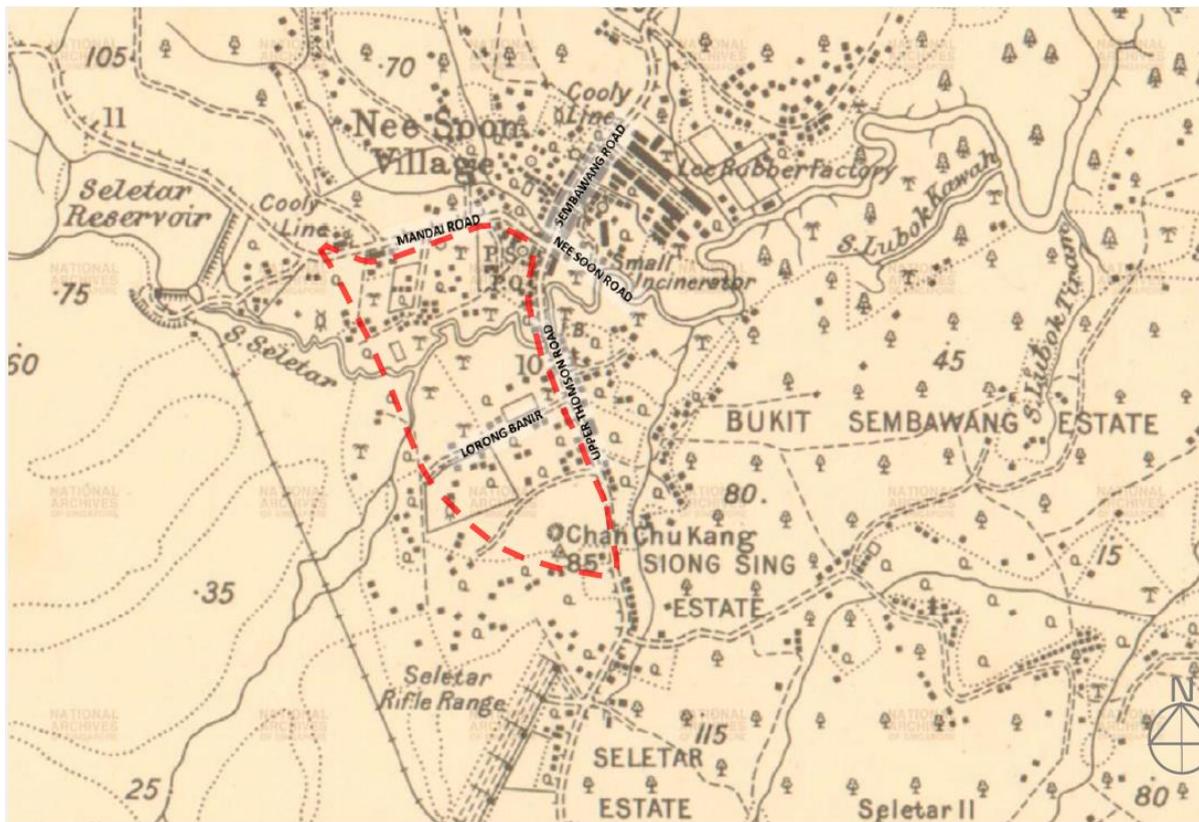


Figure 6: 1938 Map of Nee Soon Village and Chan Chu Kang (Source: Singapore Land Authority)

1. This area was part of the former Nee Soon Village which served as a commercial centre in the North till the early 1980s. Nee Soon Village was named after Mr Lim Nee Soon who was one of the pioneers of rubber planting in Singapore. Nee Soon first acquired land around Sungei Seletar in 1905 for rubber planting, and by 1920s, most of the area were part of his rubber plantation with shophouses, dwellings, rubber factory and businesses lining the main roads. As the village became concentrated, amenities began to expand southwards. In 1965, Upper Thomson Secondary School, an integrated secondary school offering both Chinese and English education was completed along Upper Thomson Road.
2. The area began to decline when resettlement of Nee Soon Village to Yishun New Town began in the 1970s. By 1977, batches of residents had started to move out and this lasted till the early 1990s. In 1988, Upper Thomson Secondary School was relocated to Yishun New Town and its premises were taken over by the Seletar Institute, one of the four original centralized institutes that was introduced in Singapore in the late 1980s. However, due to falling enrollment, Seletar Institute ceased operation in 1998. Nee Soon Post Office also ceased its operations in the 1990s as the bulk of population moves to Yishun New Town and new post offices were established there.
3. Today, the former Nee Soon Post Office and Seletar Institute continue to serve as a reminder of the area's rich heritage. The former Nee Soon Post Office is a 2-storey colonial style post office building with a pitched roof and wide overhanging eaves, and is an iconic structure at the junction of Mandai Road, Sembawang Road and Upper Thomson Road. Similarly, the former Seletar Institute with its T-shaped classroom block remains prominent along Upper Thomson Road with its fair-faced brick end wall and windowsills.

Annex II

1. The Springleaf precinct primarily contains forested areas, known as the Springleaf Forest, which is broadly fragmented into northern and southern areas separated by Sungei Seletar. A variety of landscapes can be found within the district, for example, Swamp Forest, Secondary Forests, and Scrubland.



Figure 7: Existing Landscapes within Springleaf (Source: STX Landscape Architects)

2. The heterogeneity of habitats in Springleaf Forest contributes to the high flora and fauna diversity on site. In the baseline study, 211 species of flora were encountered in the forest. Of these, 138 (65%) were native to Singapore, with 70 of the native species listed as Vulnerable (31), Endangered (21), or Critically Endangered (CR) (17). Two CR species, *Agelaea macrophylla* and *Elaeocarpus obtusus ssp. apiculatus*, were found throughout the entire Springleaf Forest, while other CR species are locally abundant at different sections of the forest.
3. 296 species of fauna were encountered in the baseline study. Of these, 52 species are of conservation significance, which included charismatic fauna such as the Sunda pangolin and the smooth-coated otter. Many of the conservation significant fauna utilized the entire Springleaf Forest (with the exception of fish and crustaceans, which only utilized the main stream and the swamp forest), though to different extents.



Figure 8-1: Smooth-coated Otter (Source: Max Khoo)



Figure 8-2: Sunda Pangolin (Source: Max Khoo)

Annex III

1. Sections 5, and 6 of the EIA report discuss the methodologies used for impact identification, prediction and assessment on environmental parameters including biodiversity, hydrology, air quality and airborne noise during the construction and operational phases of the development.
2. Based on broad parameters for the proposed development and using the Rapid Impact Assessment Matrix (RIAM) methodology recommended under NParks' Biodiversity Impact Assessment guidelines, the following predictions were made for impacts without any mitigation:
 - Construction phase impacts - 1 Major, 3 Moderate, 8 Minor and 19 Slight Negative Impacts (see Figure 9-1)
 - Post-construction phase impacts - 3 Major, 5 Moderate, 13 Minor and 27 Slight Negative Impacts (see Figure 10-1)
3. Significant impacts, those rated as major or moderate, relating to potential impacts on the Young Secondary Forest, Native Fauna and the Central Catchment Nature Reserve include:
 - Loss of flora and fauna
 - Loss of ecosystem functions
 - Loss of ecological connectivity
 - Forest edge effects
 - Introduction of invasive species
 - Change in groundwater levels
4. However, the EIA presents a series of mitigation measures which comprises avoidance, minimisation, restoration and offsets that are designed to bring the impacts down to acceptable levels. Some of the mitigation measures designed towards protecting the sensitive receptors, that will provide consequential benefits, include:
 - Protection of the Significant Conservation Areas and establishing 30 m buffer zones as a further layer of protection.
 - Dwelling units planned within existing urbanised or disturbed ground areas as far as possible, rather than high value forest.
 - Tree Cottages and walkways raised on stilts, to avoid impact on the forest ground, within the secondary forest zone.
 - Safeguarding as much greenery as possible within the development sites, by requiring conservation of mature trees and the endangered/critically endangered tree species, as well as implementing a landscape planting guide to maintain the green/forested character of the site.
 - Connectivity between Springleaf and adjacent forests enhanced through targeted reforestation or revegetation of corridors, such as the SLE underpass and Sungei Seletar riparian vegetation, buffer zones, as well as areas within the developed parcels.
5. With mitigation in place, predicted residual impacts are reduced as follows:
 - Construction phase impacts – 1 Moderate, 5 Minor and 18 Slight Negative Impacts (see Figure 9-2)
 - Post-construction phase impacts – 2 Moderate, 6 Minor and 19 Slight Negative Impacts; and 6 Slight and 2 Minor Positive Impacts (see Figure 10-2)

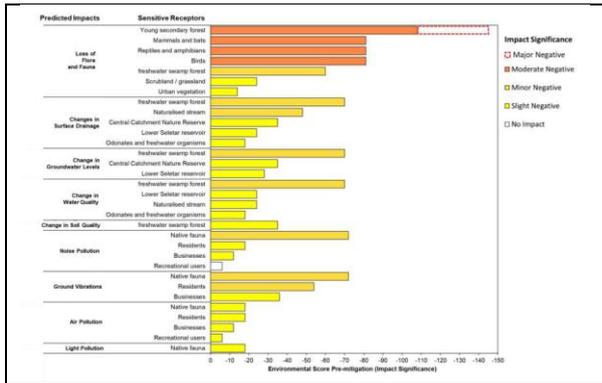


Figure 9-1: Predicted Impact Significance as translated from Environmental Scores following the RIAM methodology, for construction phase impacts prior to mitigation measures (Source: DHI)

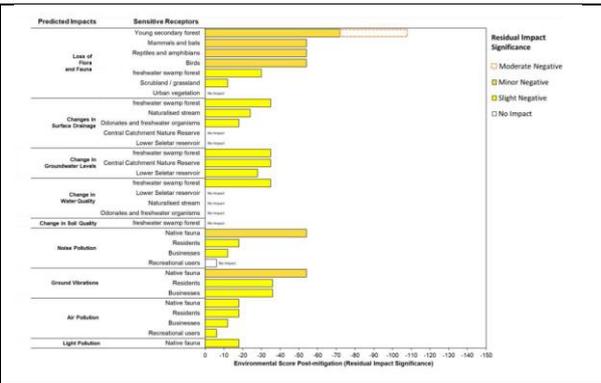


Figure 9-2: Predicted Impact Significance as translated from Environmental Scores following the RIAM methodology, for construction phase impacts after mitigation measures (Source: DHI)

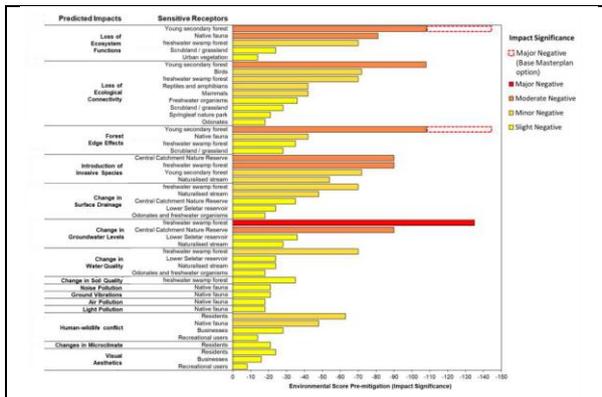


Figure 10-1: Predicted Impact Significance as translated from Environmental Scores following the RIAM methodology, for post-construction phase impacts prior to mitigation measures (Source: DHI)

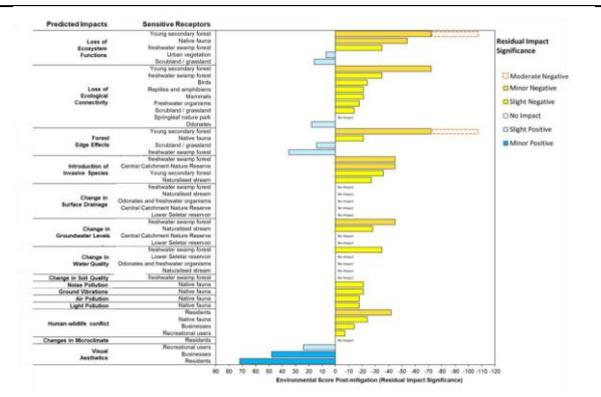


Figure 10-2: Predicted Impact Significance as translated from Environmental Scores following the RIAM methodology, for post-construction phase impacts after mitigation measures (Source: DHI)

6. Only 3 Moderate residual impacts¹ are still identified after mitigation is integrated. These are all related to the Young Secondary Forest and involve loss of flora and fauna, loss of ecosystem functions, and forest edge effects. However, assuming a scenario where the number of Tree Cottages is reduced, these Moderate Negative residual impacts can be reduced to Minor Negative impacts, given that the extent of secondary forest clearance is further minimised. The final locations of the remaining Tree Cottages and supporting infrastructure would need to be carefully surveyed at implementation stage.
7. The consultant's conceptual plan has put in place detailed guidelines for the development parcels at design, construction, and inhabitation stages, to manage impacts within the private parcels. For example, impacts within the development parcels can be reduced through implementation of the recommended avoidance, minimization, and/or restoration mitigation measures.
8. It is anticipated that Springleaf Precinct will be developed in stages, enabling feedback and assessment of earlier stages to inform and shape later phases of development. The land around Springleaf MRT Station is expected to be developed first. Sufficient time should be allowed between the different stages of development, to enable close monitoring of outcomes of the key strategies and assumptions.

¹ Residual impact is the impact that is predicted to remain after mitigation measures have been designed into the intended activity.