Supplementary Material S1

Study-visit itinerary and documentary mapping

This supplement makes the contextual programme record and the revised article's source assignments inspectable. Part A identifies activities reported in the available daily summaries. Part B documents the focused mapping prepared during revision on 18 September 2026. The records do not constitute interviews, an implementation audit or a causal dataset.

A Study-visit programme

The programme year is 2025. Dates and page numbers below refer to the supplied daily training summaries (86 PDF pages, counted from the first page). Summaries cover 16–28 November and do not establish the full travel period or a return date. The table reports programme activities; optional group visits do not establish the attendance of each author. Institutional types describe the setting rather than verifying every speaker's affiliation.

Date 2025	Programme entry	Institution or site category	PDF pages
16 Nov	Arrival and Changi airport	Transport setting and built greenery	1–4
17 Nov	Training-centre planning and greening lectures	Professional education and agency briefings	5–13
18 Nov	CleanTech and biodiversity-related briefings	Industrial and environmental innovation setting	14–19
19 Nov	URA City Gallery; Singapore Botanic Gardens	Planning institution; botanical garden	20–26
20 Nov	Kampong Glam; Fort Canning	Urban public space; park management	27–31
21 Nov	Biodiversity lecture at SMU	Higher-education setting	32–36
22 Nov	Sentosa; Kampung Admiralty; Jewel Changi	Recreation; mixed-use and building greenery	37–43
23 Nov	Optional group visits including Henderson Waves, Mount Faber and Botanic Gardens	Green links and garden sites; attendance varied	44–48
24 Nov	NTU one-north lecture; Gardens by the Bay	Education; managed garden attraction	49–54
25 Nov	Environmental governance lecture at NTU one-north	Higher-education setting	55–60
26 Nov	Green-building lecture; NUS SDE4	Building and campus demonstration	61–67
27 Nov	Whampoa; Bishan–Ang Mo Kio; Punggol Waterway	Neighbourhood public space; water–park projects	68–77
28 Nov	NParks lecture and closing; Central Catchment; Bukit Timah Rail Corridor	Agency briefing; conservation and corridor sites	78–86

B Revision stage documentary mapping

The unit is one public web record. Fifteen records were selected from the manuscript's primary policy sources for explicit actor, instrument or application content across the six functions. Fourteen concern Singapore and one is the Shanghai plan. This list is the complete focused mapping set, not the full bibliography and not an exhaustive

search. Sources outside it support background and interpretation. Multiple pages from one agency are not independent corroboration.

Assignment rule: include a dimension only where the record explicitly describes its function. An actor or instrument must connect at least two functions across the cited source set for an L1–L5 grouping. D1 strategy; D2 spatial integration; D3 delivery; D4 stewardship; D5 information; and D6 participation. Provision means a stated rule or direction. Report means an institutional description of a programme or practice. Neither category demonstrates outcomes. Page update dates identify the inspected version where an original publication year is absent.

S01 Government of Singapore. City in Nature
Reference in revised article: [13]. Dimensions: D1, D2. Grouping: L1.

Locator and version: City in Nature strategy areas; page updated 25 March 2026.

Extraction: Government of Singapore links conservation and urban greening through national strategy.

Evidence boundary: Policy direction; project implementation is not established.

Public source: https://www.greenplan.gov.sg/key-focus-areas/city-in-nature/

S02 Urban Redevelopment Authority. Long-Term Plan
Reference in revised article: [36]. Dimensions: D1, D2. Grouping: L1.

Locator and version: Long-Term Plan overview; page updated 8 September 2026.

Extraction: URA describes the planning horizon and its role in anticipating future land needs.

Evidence boundary: Planning architecture; implementation continuity is not measured.

Public source: https://www.ura.gov.sg/land-planning/long-term-plan/

S03 Urban Redevelopment Authority. Master Plan
Reference in revised article: [37]. Dimensions: D1, D2. Grouping: L1.

Locator and version: Master Plan overview; page updated 17 June 2026.

Extraction: URA connects medium-term development guidance with permitted land use and density.

Evidence boundary: Formal planning function; site compliance is not audited.

Public source: https://www.ura.gov.sg/land-planning/master-plan/

S04 Urban Redevelopment Authority. Landscaping for Urban Spaces and High-Rises (LUSH)
Reference in revised article: [38]. Dimensions: D2, D4. Grouping: L1.

Locator and version: Greenery guidance for sports and recreation development; LRA and design requirements; page updated 23 June 2026.

Extraction: URA specifies landscape replacement and design requirements with maintenance considerations for the stated development category.

Evidence boundary: Category-specific guidance; no universal compliance or performance claim.

Public source: https://www.ura.gov.sg/guidelines/development-control/development-control-handbooks/non-residential/sr/greenery/

S05 Urban Redevelopment Authority. Rail Corridor (Central) Reopens to Bring Nature, Heritage and Recreational Experiences Closer to Singaporeans
Reference in revised article: [35]. Dimensions: D2, D6. Grouping: L2.

Locator and version: Rail Corridor Central reopening announcement, 22 March 2021.

Extraction: URA and NParks report improved corridor access alongside habitat-sensitive design.

Evidence boundary: Agency project account; ecological and access outcomes are not independently tested.

Public source: https://www.ura.gov.sg/news/media/pr21-05/

S06 National Parks Board. Nature Parks and Reserves Dos and Don'ts
Reference in revised article: [42]. Dimensions: D2, D6. Grouping: L2.

Locator and version: Nature parks and reserves rules; opening times and group permits; updated 29 September 2025.

Extraction: NParks assigns routes, activities and visiting conditions to different protected spaces.

Evidence boundary: Published use rules; compliance and benefit distribution remain unmeasured.

Public source: https://www.nparks.gov.sg/visit/when-visiting-parks/etiquette/nature-parks-reserve-dos-donts

S07 Public Utilities Board. Bishan–Ang Mo Kio Park
Reference in revised article: [43]. Dimensions: D2, D3. Grouping: L3.

Locator and version: Overview of Kallang River at Bishan–Ang Mo Kio Park; page updated 30 March 2026.

Extraction: PUB identifies collaboration with NParks and a park landscape accommodating flood conveyance.

Evidence boundary: Project configuration; full operating cost allocation and contracts are absent.

Public source: https://www.pub.gov.sg/Public/Places-of-Interest/Our-Reservoirs-and-Waterways/Bishan-Ang-Mo-Kio-Park

S08 Centre for Urban Greenery and Ecology. About CUGE Programmes
Reference in revised article: [44]. Dimensions: D4. Grouping: L4.

Locator and version: About CUGE Programmes; page updated 19 November 2025.

Extraction: NParks' CUGE describes workforce training and professional programmes.

Evidence boundary: Capacity provision; skill attainment or effects are not evaluated.

Public source: https://cuge.nparks.gov.sg/about-cuge-programmes/

S09 Centre for Urban Greenery and Ecology. Landscape Company Register Requirements and FAQs
Reference in revised article: [45]. Dimensions: D3, D4. Grouping: L4.

Locator and version: Landscape Company Register requirements and FAQs; updated 19 November 2025.

Extraction: CUGE links company registration and qualification requirements to government procurement eligibility.

Evidence boundary: Eligibility condition; provider performance is not established.

Public source: https://cuge.nparks.gov.sg/landscape-company-register/lcr-requirements-and-faqs/

S10 National Parks Board. NParks Rolls Out New Model of Greenery Management for Parks and Streetscape That Leverages Suite of Digital Tools Developed with Landscape Industry
Reference in revised article: [46]. Dimensions: D3, D4, D5. Grouping: L4.

Locator and version: Maintenance tender and Maven 2 paragraphs; published 29 March 2023.

Extraction: NParks links contractor duties, inspection referrals and digital work processes in an announced management model.

Evidence boundary: Agency announcement; no independently measured cost or risk reduction.

Public source: https://www.nparks.gov.sg/news/news-detail/nparks-rolls-out-new-model-of-greenery-management-for-parks-and-streetscape-that-leverages-suite-of-digital-tools-developed-with-landscape-industry

S11 Government Technology Agency of Singapore. The Inside Story of How NParks Mapped 500,000 Trees in Singapore on TreesSG
Reference in revised article: [47]. Dimensions: D4, D5, D6. Grouping: L4.

Locator and version: TreesSG development account, 23 May 2018.

Extraction: GovTech describes tree records, public information and system-development difficulties.

Evidence boundary: Institutional narrative; issues described are not a systematic failure audit.

Public source: https://www.tech.gov.sg/technews/the-inside-story-of-how-nparks-mapped-500000-trees-in-singapore-on-treessg/

S12 National Parks Board. Community in Bloom: A Nationwide Gardening Programme
Reference in revised article: [48]. Dimensions: D2, D4, D6. Grouping: L5.

Locator and version: Community in Bloom programme and support; updated 25 June 2026.

Extraction: NParks describes help with community garden establishment and management.

Evidence boundary: Programme support; sustained or representative participation is not demonstrated.

Public source: https://gardeningsg.nparks.gov.sg/get-involved/cib/about/

S13 National Parks Board. Friends of the Parks
Reference in revised article: [49]. Dimensions: D2, D6. Grouping: L5.

Locator and version: About Friends of the Parks; updated 24 March 2026.

Extraction: NParks describes community involvement around specific parks and responsible use.

Evidence boundary: Programme design; decision influence and continuity are not measured.

Public source: https://fotp.nparks.gov.sg/about-fotp/

S14 Urban Redevelopment Authority. Public Engagement for Master Plan 2025
Reference in revised article: [50]. Dimensions: D1, D6. Grouping: L5.

Locator and version: Master Plan 2025 public engagement; updated 15 May 2026.

Extraction: URA lists engagement channels for public input into planning.

Evidence boundary: Consultation channels; participant totals do not demonstrate influence.

Public source: https://www.ura.gov.sg/land-planning/master-plan/master-plan-2025/public-engagement/

S15 Shanghai Landscaping and City Appearance Administrative Bureau. 15th Five-Year Plan for Ecological Space Construction and Urban Appearance and Environmental Optimization in Shanghai
Reference in revised article: [21]. Dimensions: D1–D6. Grouping: Shanghai mapping.

Locator and version: Section II items 1–3; VI item 15; VII item 16; VIII; dated 30 July, posted 26 August 2026.

Extraction: The issuing Bureau states policy commitments corresponding to the five groupings in Table 2.

Evidence boundary: Public policy intentions; project implementation and effects remain unverified.

Public source: https://lhsr.sh.gov.cn/zcqfzgh/20260814/bb4f4dcc-ff7b-44cf-a950-2cc6737b1e38.html

C Source and grouping checks

S01–S04 support L1; S05–S06 support L2; S07 supports L3; S08–S11 support L4; and S12–S14 support L5. Sources can contain additional dimensions: S04 includes maintenance, although L1's core is strategy to spatial rules; S14 adds planning participation to the site-and-care arrangements of S12–S13. S15 supplies Shanghai's policy correspondence, not independent corroboration of Singapore. This mapping does not reconstruct undocumented original coding or claim coding reliability.