Green Infrastructure Checklist 1: Handover checklist²

1. General site information ¹						
Site Name/Identification and stage/phase if multiple stages:						
Attach map; highlight the defined WSUD elements.						
Overall stormwater design objectives:						
Overall landscape/ecological/social design objectives (i.e. added value of GI device):	}					
Specific purpose of any parts of the scheme (e.g. recreational, cultural, biodiversity):						
Period of developer maintenance (defects liability pe	riod):					
Contact person/s on site and their contact details:						
Landscape contractor/s (installation and maintenance	e):					
Assessment Date:		As	ssessor/s:			
Check	Yes/ No	#3	Corrective action	Date fixed		
General	110					
Design approval checks satisfactory?						
Construction inspection checks satisfactory?						
Asset information						
As-built plans and survey submitted?						
Key changes from planned to 'as built'?						
Proprietary product information submitted?						
Asset listed on asset register or database?						
Maintenance information						
Maintenance Plan submitted identifies: Mown areas (min/max height, Level of Service) Landscape/ecology areas (safe access, key functions, and agreed Level of Service; Specialist contractors needed, e.g. trees/public orchards, living roofs, wetlands, proprietary devices (cartridge filters), devices needing confined entry permits to maintain; Specific pest plant or animal control required (e.g. for ecological covenants).						
Record of inspection and maintenance post-construction, specifying any reactive maintenance. Council /CCO has reviewed safety associated with maintenance, specifically a road safety plan.						

¹ This section and the reminder of this page should be filled out <u>before</u> going to site to assess handover compliance.

 $^{^2\,} Adapted\, from\, Green\, Infrastructure\, Checklist\, c753\, from\, CIRIA\, SUDs\, Manual\, (\underline{www.ciria.org})$

³ # if any 'yes' or 'no' requires more information, a reference # should be placed here to a note on the reverse of the sheet

2.	Individual Device inspection (confirms individual devices are established, identifies defects and corrective actions)
	C = critical failure requiring corrective action before acceptance

	Vast				
Check	Yes/ No	#4	Corrective action	Date fixed	
Date of last rainfall event (mm) Visits are ideally viewed during or immediately after	a rain ev	vent; d	or a rainfall event simulated using water trucks		
Device is safe to maintain under agreed plan Access (including vehicle parking) is suitable.				С	
Inlets are clear; self-cleaning. If deciduous trees are present, is specific maintenance agreed in autumn?				С	
Outlets /overflows are clear, accessible, visible.				С	
Design plant cover healthy, consistent with approved design.					
Trees upright, firm with sound form (wind resistance) and sited or physically protected from vehicle damage and in mown grass, from mowing.					
Do any areas require irrigation in the short or medium term until established? Note by whom.					
Acceptable weed cover, no pest weed species, and low potential weed invasion.					
Design water detention volumes can be achieved (not overfilled; batters not encroaching). If yes, give reason (design or construction).				С	
Channeling or erosion of bed or side slopes or preferential flow, or ineffective flow-spreading devices. If yes, give reason (design or construction).					
Evidence of floating mulch or rapid build-up of sediment.				С	
Permeable/porous surfaces are draining effectively, protected from sediment sources and non-design loading, no pugging or unacceptable compaction.					
Growing media are fit for purpose; meet design depths and volumes. Bioretention media are aerobic within root zone (check with soil corer).				С	
Permanent water levels are consistent with the approved design. Under drains, if present, are working; drainage inspection present if required.				С	
Suitability for adoption (circle applicable outcome))				
			Acceptable: Good overall condition, low risk		
NOT Acceptable: Critical or Major defects or minor defects but high risk of remedial works being required – Not acceptable		Acceptable: Minor defects – acceptable subject to minor works			
without substantial repair works (indicate, with reasons, whether cost should fall to developer or adopting body)			Acceptable: Good overall condition, moderate risk of remedial works/maintenance required, No critical defects – acceptable subject to minor works		

⁴ # if any 'yes' or 'no' requires more information, a reference # should be placed here to a note on the reverse of the sheet, preferably with a photo and/or reference to the site plan and/or device 'as built' plans

Green Infrastructure Checklist 2: Individual device cyclic maintenance⁵

Date and time:							
Assessor (name):							
Weather: Rainfall in the last 24 and 48 hours:	Yes / No	o (n	nm) Drought Yes / No				
Asset Information:							
Site plan or 'As built' available	Yes / No	Yes / No					
Storm water values: design performance	Target infi	Treatment Area: Target infiltration rate (mm/hr): Max. ponding depth (mm):					
Values of the device affected by, or dependent on, specific maintenance (circle applicable values)		Aesthetic / Safety / Security or separation / Biodiversity Cultural (harvesting, rongoa, place-making, food, shade)					
GPS Location provided: Yes / No	Maintenar	nce	history available: No / Yes (give reference)				
Who maintains the device? (cyclic & reactive):							
Cyclic Maintenance Checks	Yes / No	#	6 Corrective action	Date fixed			
Maintenance Plan covers safe access and operation, Cyclic and Reactive Maintenance.	Yes / No						
Site safe access protocols are current. Potential hazards to maintenance staff and public are managed.	Yes / No		Do not start work until site is safe				
Mown areas – minimum and maximum grass height and density meet level of service.	Yes / No						
Pretreatment – sediment accumulated.	Yes / No						
Inlets are clear; unblocked (free of litter, plants, sediment).	Yes / No						
Inlets in good condition, functional (e.g. kerbs).	Yes / No						
Plants healthy with >80% cover (or design cover).	Yes / No		Planting / vehicle exclusion / sediment removal 7				
Aesthetic requirements met (no damaged plants).	Yes / No		Pruning / weeding / re-staking / mulching				
Plants meet sight line and edge clarity specifications.	Yes / No						
Irrigation functional if present.	Yes / No						
Acceptable weed cover and no pest weed species.	Yes / No						
Is follow-up weed control required?	Yes / No		Mulching / target herbicide / hand-pull / planting				
Is specialist tree management required?	Yes / No						
Treatment Area Is the design capacity maintained?	Yes / No						
Erosion absent: No channeling or preferential flow (inlets, outlets); mulch or plants cover device (as designed).	Yes / No						
Infiltration within design range; flow-spreading devices effective.	Yes / No						
Outlets/Overflow clear with no obstruction.	Yes / No						

⁵ Adapted from Green Infrastructure Checklist c753 from CIRIA SUDs Manual (<u>www.ciria.org</u>) and ARC Stormwater Compliance Investigation Form ⁶ # if any 'yes' or 'no' requires more information, a reference # should be placed here to a note on the reverse of the sheet, or photograph can be entered here. In many cases, enough information is in the description of corrective action needed.

 $^{^{\}rm 7}$ Cross out the interventions that are not relevant or circle the interventions that are required

Recommended reactive maintenance (refer to # from page 1)
Recommended improvement maintenance to improve performance, life or asset condition (may refer to # from page 1)
Additional Comments or Site Drawing / Photograph

Checklist 3: Rain Garden Maintenance for home-owners8

Your raingarden helps improve water quality and reduce erosion of nearby streams and lakes; as stormwater runs through plants and soil, pollutants are naturally removed. Thank you for your help protecting our waterways.

General information	
Location (identification and GIS if appropriate)	
Specific purpose of any parts of the rain garden (e.g. screen or buffer, food, wildlife/biodiversity)	
Date of Assessment	
Name of assessor	

Additional Comments or Site Drav	ving / Photograph		

Check	Yes/No	If yes, do the following maintenance / corrective action	Date fixed
Is the rain garden safe to access?	Yes / No	Contact Council who will help identify what actions will make the site safe to access.	
Inlets – Has sediment accumulated?	Yes / No	Remove sediment at inlets; check sources of sediment and exclude or stabilize the sources.	
- Are inlets clear so water can flow in?	Yes / No	Remove any litter or debris; trim plants; Reinstate damage to inlets / flow spreading devices so they are functional.	
Plants – Are plants healthy & >80% cover?	Yes / No	Identify why plants have died (check soil); fix issue; replace with suitable plants and non-floating mulch or other erosion control if needed.	
- Are there areas of weeds or pest plants?	Yes / No	Remove all weed flower and seed-heads; pullout weeds or spot-treat with appropriate herbicide if necessary (find source of weeds).	
Basin – Are bare soils or erosion present?	Yes / No	Cover bare areas with non-floating mulch and plant new plants where necessary.	
Check ponding depth and basin area. Is the design capacity maintained?	Yes / No	Excess material may need to be removed; if removing more than mulch, confirm with designer or Council.	
Is water standing for more than 24 hours after rainfall (or slower than minimum infiltration rate)?	Yes / No	Your rain garden is not functioning as designed. Further investigation is required. Contact Council.	
Outlets/Overflow - Are these clear so there is no obstruction to flow and no erosion.	Yes / No	Remove any litter or debris; trim plants; Reinstate damage so overflow is functional.	

⁸ Adapted from Ramsay-Washington Metro Watershed District Rain Garden Maintenance Guide https://stormwater.pca.state.mn.us/images/f/f8/Rain Garden Maintenance Guide public use.pdf