# **GUIDANCE NOTE: BIODIVERSITY DESIGN REQUIREMENTS**

This Guidance Note is designed to support design consultants to:

1. achieve net gain for the University’s seven preliminary [Biodiversity Baselines](https://sustainablecampus.unimelb.edu.au/biodiversity/biodiversity-baseline-data-project)[[1]](#footnote-2) as per Target 2 of the Healthy Ecosystems Priority of the [Sustainability Plan 2030](https://about.unimelb.edu.au/__data/assets/pdf_file/0020/346214/Sustainability-Plan-2030.pdf)[[2]](#footnote-3),
2. support the University to meet the requirements of the [Nature Positive Pledge](https://www.unimelb.edu.au/newsroom/news/2022/december/university-signs-sustainability-and-biodiversity-pledge)[[3]](#footnote-4)
3. support best practice landscape design for biodiversity.

All designs for major landscaping works must be submitted to the University’s Project Manager for review by the Sustainability Manager.

Designs that do not demonstrate that they have met the requirements in the table below will not be approved.

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|  ***Biodiversity Requirements for Landscape Designs*** |
| **Requirement** | **Description** | **Resources** |
| **Achieve a net increase in biodiversity.** | Projects must achieve a net increase of biodiversity within their project’s footprint measured in accordance with the University’s Biodiversity Metrics (Refer to Biodiversity Assessment Guidance Note). Offsets must be catered for in designs (refer to Biodiversity Offset Proposal Guidance Note).Designs must quantify and demonstrate the calculated net increase for each metric compared with the calculated baseline and provide context on timelines for increases where increases are not instantaneous e.g. canopy cover.  | * Completed & approved Biodiversity Assessment
* Completed & approved Offset Proposal.
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| **Diverse, resilient, and structurally complex species palettes that can tolerate future climate.** | Landscape designs must incorporate species palettes that are diverse, resilient and provide complex habitat structures for on-campus biodiversity. Species palettes must include a diversity of species and avoid monoculture plantings. Species palettes must consider future climate andtolerances of candidate species. Refer to the Climate Resilience Guidance Note.Species palettes must include a variety of life forms (e.g. grasses, flowering plants, shrubs, trees) to create complex habitat structurefor on-campus biodiversity.Species palettes are encouraged to use a range of indigenous#, native\*, and exotic^ (non-weedy) species. Designs must provide rationale as to which of the above groups they choose to include or exclude in designs. For example, designs may choose to only use indigenous plants or incorporate a mixture of indigenous and native, or primarily exotic species may be more appropriate in certain situations. As a general rule, species palettes should comprise of at least 10% indigenous species and are encouraged to have a least 50% of species of native or indigenous origin.# Indigenous species are those with a natural range that encompasses the University's campuses. Where the use of purely indigenous species is inappropriate or may restrict the diversity of species included in species palettes, native species may be used. \* Native species are those found naturally within Australia. ^ Exotic species are those that do not naturally occur in Australia and come from other countries.Species palettes must be accompanied by plans or maps that document the location, quantity, and extent of species.  | * [Indigenous Plant Use Booklet by Zena Cumpston](https://nespurban.edu.au/wp-content/uploads/2020/08/Indigenous-plant-use.pdf)[[4]](#footnote-5)
* [Risks to Australia’s urban forest from climate change and urban heat](https://apo.org.au/sites/default/files/resource-files/2017-11/apo-nid136871.pdf)[[5]](#footnote-6)
* [Climate Assessment Tool](https://www.bgci.org/resources/bgci-hosted-data-tools/climate-assessment-tool/)[[6]](#footnote-7)
* [City of Melbourne Urban Nature Planting Guide](https://www.melbourne.vic.gov.au/community/greening-the-city/urban-nature/Pages/urban-nature-planting-guide.aspx)[[7]](#footnote-8)
* Ecological Vegetation Classes (EVCs) Indigenous species lists for campuses (contact Biodiversity Officer).

* [Burnley Plant Guide](https://girg.science.unimelb.edu.au/2022/04/21/burnley-plant-guide-online/)[[8]](#footnote-9)
* Refer to Section 15 for more requirements.
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| **Prioritise ground-level vegetation.** | As per Metric 1 (Plantable Area) of the Biodiversity Baseline Data Project, designs must prioritise the provision of ground level vegetation with unrestricted soil access. Ground level vegetation has the greatest capacity to support biodiversity. Projects are also encouraged to include Green Infrastructure (facades, walls and roofs).  | * [Guidelines of Biodiversity Green Roofs](https://www.melbourne.vic.gov.au/SiteCollectionDocuments/guidelines-for-biodiversity-green-roofs-2023.pdf)[[9]](#footnote-10)

* [Growing Green Guide](https://www.melbourne.vic.gov.au/SiteCollectionDocuments/growing-green-guide.pdf)[[10]](#footnote-11)
* Refer to Section 15 for more requirements.
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| **Provide non-living habitat components.** | Landscape Designs must also provide at least two non-living habitat components for biodiversity, such as:* Hollows and nesting boxes. Ensure structures are constructed out of well-insulated, durable, sustainable, and biodegradable materials.
* Water sources. Permanent and ephemeral ponds and bird baths. Avoid structures with vertical walls. Aim for structures with gradual sloping sides to enable wildlife to escape.
* Rocks for basking and seeking shelter.
* Logs and woody debris.
* Insect hotels. Hotels should be constructed from sustainable and biodegradable materials.
 | * [Arthur Rylah Institute Use of Nest Boxes – general guide](https://www.ari.vic.gov.au/__data/assets/pdf_file/0024/328191/Nest-box-fact-sheet-general-guide.pdf)[[11]](#footnote-12)
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| **Best Practice Biodiversity Sensitive Urban Design.** | Landscape Designs must demonstrate how they have considered the [five essential principles for Biodiversity Sensitive Urban Design](https://www.nespthreatenedspecies.edu.au/news-and-media/latest-news/biodiversity-sensitive-urban-design-the-future-of-cities):1. Maintain existing and create new resources for nature.
2. Support animal movement across the landscape.
3. Reduce threats to and disturbance of nature.

Landscape Designs must mitigate any potential long term ongoing impacts such as light pollution:* Light should only be added for specific objectives. The purpose of artificial lighting should be clearly stated, and consideration should be given as to whether it is required at all.
* Lights should be kept low to the ground, directed only to intended areas/objects and shielded to avoid light spill.
* The minimum number and lowest intensity of lighting should be used.
* Only light with no or little blue, violet, or ultra-violet wavelengths should be used.
1. Protect natural cycles and ecological communities.
2. Create opportunities for positive interactions between people and nature.
 | * [Biodiversity Sensitive Urban Design](https://nespurban.edu.au/wp-content/uploads/2019/01/Garrard_et_al-2018-Conservation_Letters.pdf)[[12]](#footnote-13)
* [National Light Pollution Guideline for Wildlife](https://www.dcceew.gov.au/sites/default/files/documents/national-light-pollution-guidelines-wildlife.pdf)[[13]](#footnote-14)
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1. [*https://sustainablecampus.unimelb.edu.au/biodiversity/biodiversity-baseline-data-project*](https://sustainablecampus.unimelb.edu.au/biodiversity/biodiversity-baseline-data-project) [↑](#footnote-ref-2)
2. [*https://about.unimelb.edu.au/\_\_data/assets/pdf\_file/0020/346214/Sustainability-Plan-2030.pdf*](https://about.unimelb.edu.au/__data/assets/pdf_file/0020/346214/Sustainability-Plan-2030.pdf) [↑](#footnote-ref-3)
3. [*https://www.unimelb.edu.au/newsroom/news/2022/december/university-signs-sustainability-and-biodiversity-pledge*](https://www.unimelb.edu.au/newsroom/news/2022/december/university-signs-sustainability-and-biodiversity-pledge) [↑](#footnote-ref-4)
4. [*https://nespurban.edu.au/wp-content/uploads/2020/08/Indigenous-plant-use.pdf*](https://nespurban.edu.au/wp-content/uploads/2020/08/Indigenous-plant-use.pdf) [↑](#footnote-ref-5)
5. [*https://apo.org.au/sites/default/files/resource-files/2017-11/apo-nid136871.pdf*](https://apo.org.au/sites/default/files/resource-files/2017-11/apo-nid136871.pdf) [↑](#footnote-ref-6)
6. [*https://www.bgci.org/resources/bgci-hosted-data-tools/climate-assessment-tool/*](https://www.bgci.org/resources/bgci-hosted-data-tools/climate-assessment-tool/) [↑](#footnote-ref-7)
7. [*https://www.melbourne.vic.gov.au/community/greening-the-city/urban-nature/Pages/urban-nature-planting-guide.aspx*](https://www.melbourne.vic.gov.au/community/greening-the-city/urban-nature/Pages/urban-nature-planting-guide.aspx) [↑](#footnote-ref-8)
8. [*https://girg.science.unimelb.edu.au/2022/04/21/burnley-plant-guide-online/*](https://girg.science.unimelb.edu.au/2022/04/21/burnley-plant-guide-online/) [↑](#footnote-ref-9)
9. [*https://www.melbourne.vic.gov.au/SiteCollectionDocuments/guidelines-for-biodiversity-green-roofs-2023.pdf*](https://www.melbourne.vic.gov.au/SiteCollectionDocuments/guidelines-for-biodiversity-green-roofs-2023.pdf) [↑](#footnote-ref-10)
10. [*https://www.melbourne.vic.gov.au/SiteCollectionDocuments/growing-green-guide.pdf*](https://www.melbourne.vic.gov.au/SiteCollectionDocuments/growing-green-guide.pdf) [↑](#footnote-ref-11)
11. [*https://www.ari.vic.gov.au/\_\_data/assets/pdf\_file/0024/328191/Nest-box-fact-sheet-general-guide.pdf*](https://www.ari.vic.gov.au/__data/assets/pdf_file/0024/328191/Nest-box-fact-sheet-general-guide.pdf) [↑](#footnote-ref-12)
12. [*https://nespurban.edu.au/wp-content/uploads/2019/01/Garrard\_et\_al-2018-Conservation\_Letters.pdf*](https://nespurban.edu.au/wp-content/uploads/2019/01/Garrard_et_al-2018-Conservation_Letters.pdf) [↑](#footnote-ref-13)
13. [*https://www.dcceew.gov.au/sites/default/files/documents/national-light-pollution-guidelines-wildlife.pdf*](https://www.dcceew.gov.au/sites/default/files/documents/national-light-pollution-guidelines-wildlife.pdf) [↑](#footnote-ref-14)