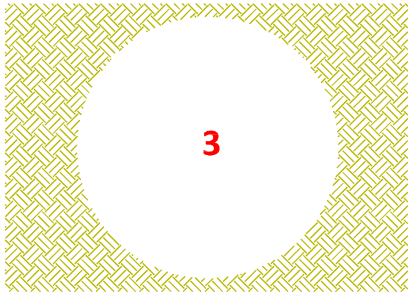
Indicative process and foundation detail for vertical deadwood habitat from felled or fallen trees

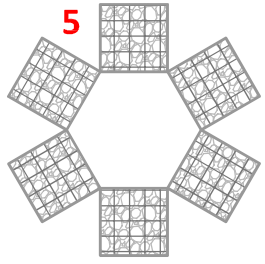
Notes

- Not drawn to scale
- Intended to be used for tree stem sections of 7-10m length and 1m min. dia, to give 5-8m height above ground (allowing for 2m burial depth)
- Re-erection of greater lengths will require deeper burial & at least one more tier of gabions!
- Only to be used following engineering advice
- This design uses 12no. 1m3 gabion baskets of ca. 1.7T filled weight each
- Weight of UK native hardwood stem is less than 1T per m3: 0.65-0.85T being the typical range
- For a stem of 1.2m Ø & 10m length, weight is found by Πr2LW: at 0.75T per m3 for this example, weight would be 3.6m3 x 0.75 = 2.7T
- At 9.8N per kg due to gravity, downward force on the example stem would be 26,460N (26.46kN)
- Wind pressure on a stem section of 8m2 surface area (8m above ground length x 1m Ø) at 53m/s-1 (F12, hurricane) is ≈ 13,500N (13.5kN)
- Thus the example stem section has almost twice the static mass of the plausible maximum wind-force
- Additional static mass of the gabions tight against the stem and locked into place by the surrounding soil confers additional stability

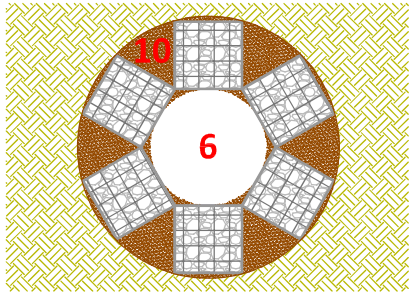
Receptor pit



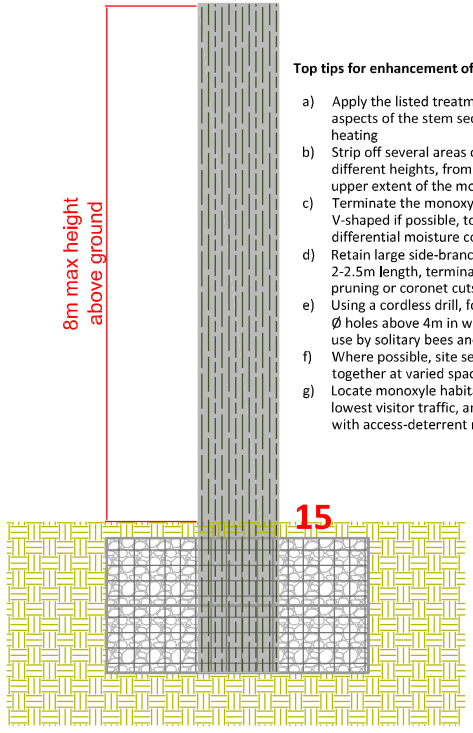
Lower tier of gabions



Gabions installed in receptor pit with monoxyle aperture

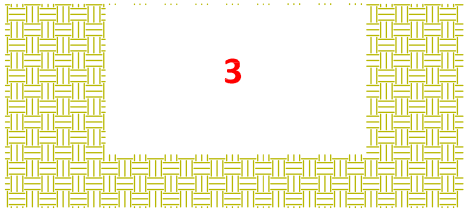


Re-erected tree shown installed with foundation section

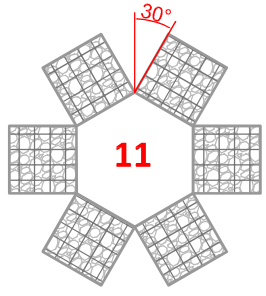


Top tips for enhancement of monoxyle habitat

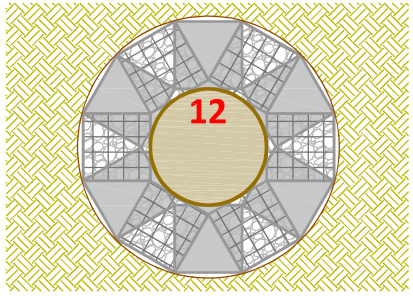
a) Apply the listed treatments on differing aspects of the stem section to vary solar heating
b) Strip off several areas of bark ca. 1m2 each at different heights, from ground level to the upper extent of the monoxyle
c) Terminate the monoxyle in a sloping cut, V-shaped if possible, to form a rain gutter for differential moisture conditions
d) Retain large side-branches >250mm Ø to ca. 2-2.5m length, terminating these with fracture pruning or coronet cuts
e) Using a cordless drill, form numerous 8-12mm Ø holes above 4m in well-spaced groups, for use by solitary bees and wasps
f) Where possible, site several monoxyles together at varied spacings of 5-15m
g) Locate monoxyle habitat zones in areas with lowest visitor traffic, and preferably enclose with access-deterrent native planting



Upper tier of gabions



Upper tier of gabions rotated by 30° (lower tier shaded)



Process

1. Identify stem section for re-erection into vertical deadwood habitat ("monoxyle")
2. Measure stem section diameter and cut to length, within the range 7-10m
3. Form circular receptor pit 2.3m deep with a width of stem Ø +2m
4. Separate and retain excavated topsoil and subsoil during formation of the pit
5. Insert and arrange lower tier of 6no. gabion baskets...
6. Leave a central aperture equivalent to stem dia.
7. Crane stem section into place and maintain in the vertical with the crane until installation complete
8. Adjust gabion baskets as required to lie hard up against the monoxyle
9. Backfill any gaps between edge of receptor pit and near edge of gabions with loose stone
10. Loose-tip subsoil between the outer spacings of the gabion baskets
11. Insert and arrange upper tier of 6no. gabion baskets, rotated ca. 30° to form 50% offset with lower tier
12. Adjust gabions to lock hard against stem section
13. Backfill any gaps between edge of receptor pit and near edge of gabions with loose stone
14. Loose-tip subsoil between the outer spacings of the gabion baskets
15. Apply retained topsoil across remaining pit aperture to match ground level
16. Finish with low-intervention native grasses, seeded with locally appropriate wildflower mix

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