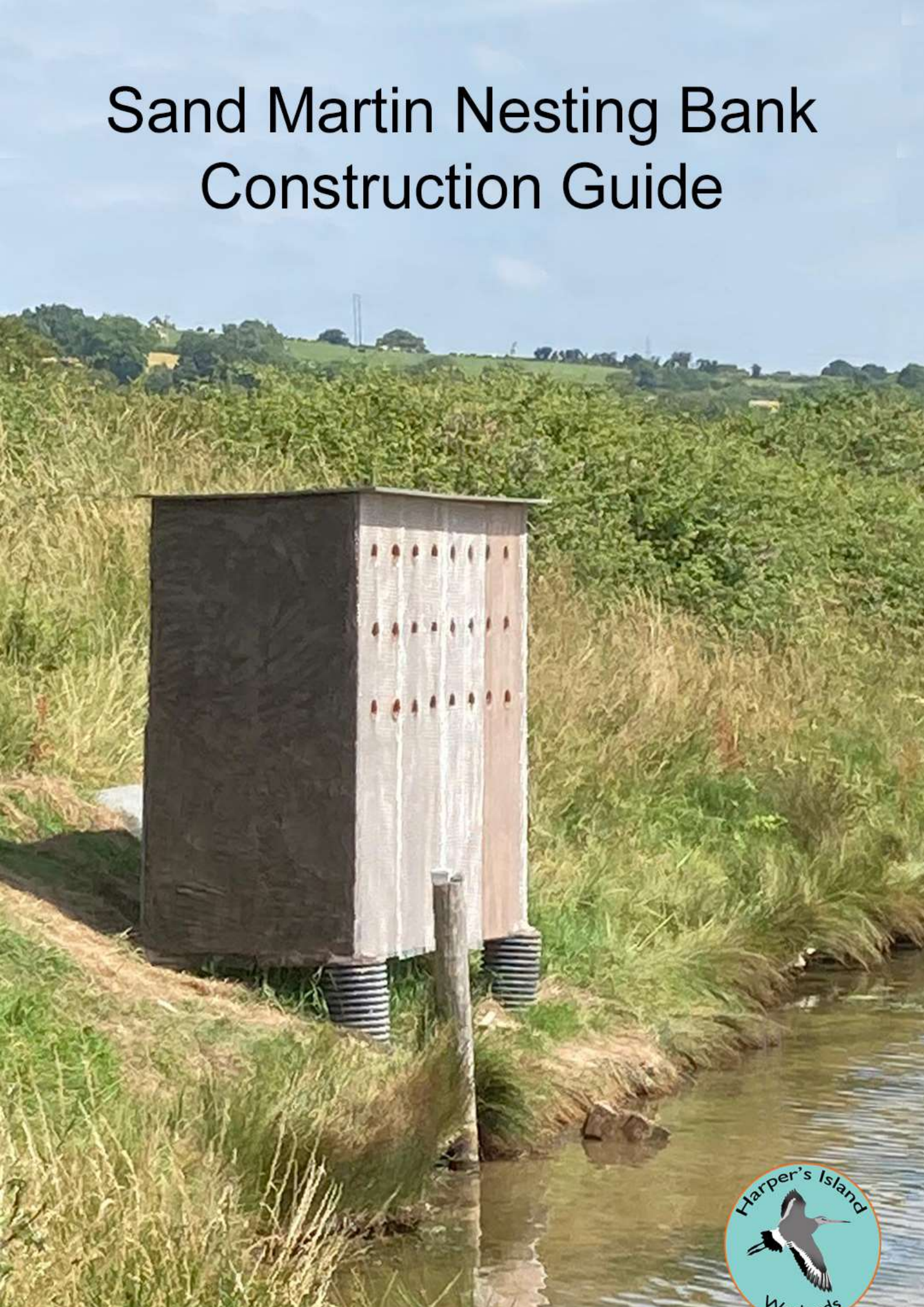
Sand Martin Nesting Bank Construction Guide



Introduction

We built our Sand Martin nesting bank in 2021 and it was used by the birds the following year. This guide describes our own design based on information on the construction of artificial Sand Martin banks found on-line. There are other designs out there which use different materials etc.

Materials

1. Marine Ply six 2440mm x 1220mm x 25mm (8ft x 4ft x 1inch) sheets.
   With the price of marine ply going up a cheaper alternative is cement board. This can also be plastered without the need for wire mesh.

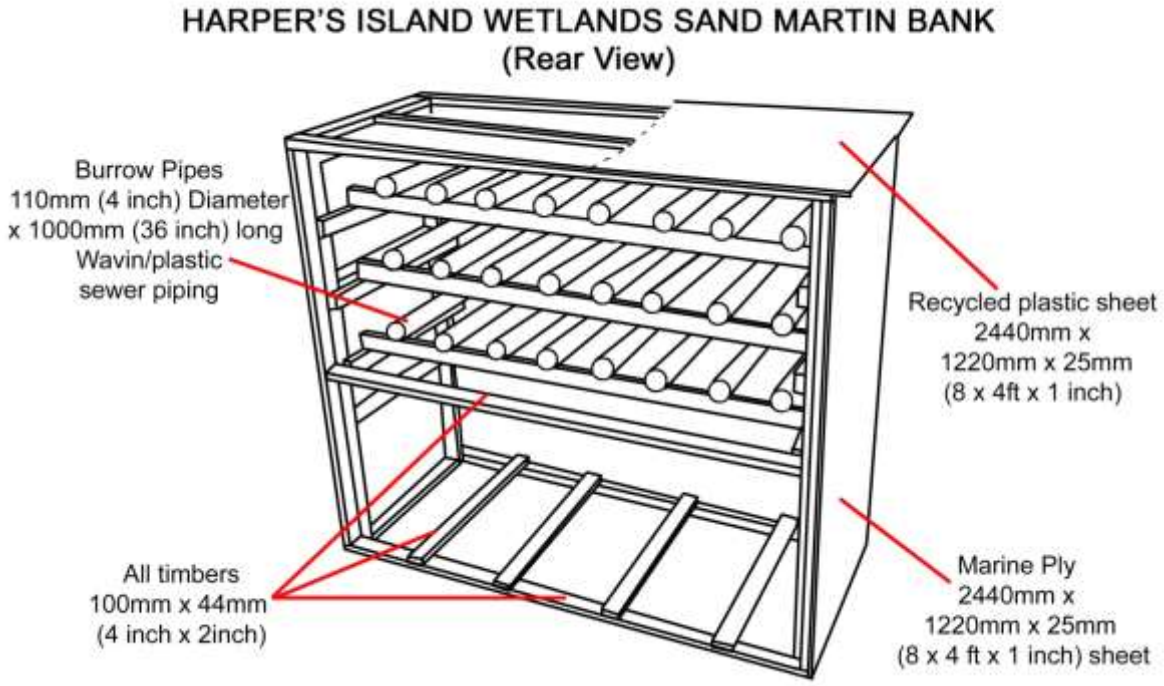
2. Recycled plastic one 2440mm x 1220mm x 25mm (8ft x 4ft x 1inch) sheet. Marine Ply can be used instead of the recycled plastic sheet.

3. 100mm x 44mm (4 inch x 2inch) deal timber
4. 110mm (4 inch) Wavin/plastic sewer piping.
5. 300mm – 380mm (12 – 15inch) plastic drainage pipe for support piles for the bank.
6. Builders mesh for front and sides to support plastering to give the bank a natural look finish.
7. Sand Martin looped call player (NOTE: License is required from NPWS to use this)
8. 12 Volt Car Battery to power the call player.

Locating the bank

Sand Martins like to nest over water with the lowest nest burrow approximately 1m above the water. The Harper's bank is facing south with the prevailing winds from the southwest but apparently there is no preferred direction but would suggest not straight into the prevailing winds to minimise rain getting into the burrows.

Construction



1. We did not have solid ground on which to build the bank so we cut and half buried 12 – 15inch/300mm – 380mm drainage piping in the four corners of the base footprint of the bank and filled them with concrete and inserted fastening bolts to make the support piles for the bank.

2. Once the concrete has set erect the frame for the Sand Martin bank using 100mm x 44mm (4 inch x 2inch) lengths of timber, starting by bolting the base to the concrete piles.

3. Attach vertically two sheets of marine ply to the front and one each vertically to the sides of the frame.

4. We used a 2440mm x 1220mm (8ft x 4ft) recycled plastic sheeting for the roof. Alternatively marine ply can be used for this.

5. Attach builders mesh to the front and sides of the bank to support plastering to give the bank a natural look finish.

6. Cut the 110mm (4 inch) Wavin/plastic sewer piping into 36 inch/1000mm lengths to make the burrow pipes.

7. The front of the bank is 2440mm x 2440mm (8 ft X 8 ft) .The nest holes need to be at least 300mm (12inches) apart both horizontally and vertically. The lowest burrows should be at least 1000mm (3ft) above the summer high water mark/ground. We put our nest holes in the upper half of the front of the bank.

8. Our design allows for three rows of eight burrows.

9. The back of the lengths of burrow piping needs to be angled up about 26mm (1 inch) higher than the front (about 5-10 degrees) to stop water that gets in the front from flooding the burrow. Drill a 12-14mm (1/2 inch) drainage hole in the bottom of the pipe just inside the front of the pipe.

10. The burrow pipes are mounted on 100mm x 44mm (4 inch x 2inch) horizontal timbers and secured to them using screws and galvanised banding.

11. Then plaster the front and sides to give the bank a natural look finish.

12. When plastering the front use some plaster to create a concrete lip at the burrow entrance so it half covers the entrance hole to keep the sand in.

13. Once all the burrow pipes are in place half fill them from the back with builder's sand and cap the back of the burrow pipes with plastic caps or wooden discs in our case. These need to be removable to allow cleaning out and refilling with sand between breeding seasons.

14. The sides and roof 1220mm (4ft) wide so that the pipes are enclosed in the box to keep them steady in the wind.

15. Finally secure two Marine Ply 2440mm x 1220mm x 25mm (8ft x 4ft x 1 inch) sheets horizontally on the back of the bank. Make sure these can be easily removed between breeding seasons to facilitate access to clean the burrow pipes and add sand where needed.

16. To keep rats and other mammals off the bank you can also attach lengths of 450mm (18 inch) aluminium sheeting or similar at a downward 45 degree angle around the base.

17. From the end of March we set up a looped recording broadcasting Sand Martin calls to attract arriving birds. We used Swift Call Boxes (swiftcallboxes@gmail.com) which we found great value for money and resulted in birds nesting in our artificial Sand Martin bank in its first year. It was powered by a 12 volt car battery. IMPORTANT: You will need a license from the National Parks and Wildlife Serve to broadcast.

For more information on looped recording broadcasting equipment:

https://twitter.com/MayoCorncrake77/status/1518196655564238849

https://www.pippahackett.ie/post/sand-martin-wall-design

swift-conservation.org

https://www.swiftconservation.ie/nest-box-advice/

Appendix 1.

Examination of Harper's Sand Martin Nests 19th November 2022.

After an incredibly successful first season, with all 24 nesting burrows occupied, we removed all nests from the nesting burrows in the Sand Martin nesting bank to have the burrows clean and topped up with fresh sand. We took the opportunity to record details of the nests.

- All 24 burrows had evidence of occupation.
- 20 nests were situated at the very back of the one metre nesting tunnels and four were situated 60 - 64cm from the front of the tunnels.
- The majority of nests were composed of dead grass/plant material with very few if any containing feathers.
- Only two nests had substantial amounts of feathers with one made almost exclusively of feathers. The feathers looked like gull feathers, probably feathers dropped by preening Black-headed Gulls.
- 21 nests were empty.
- One nest contained three unhatched eggs and two hatched egg shells.
- One nest contained a hatched egg shell.
- One nest contained a dead Sand Martin with full flight feathers. Possibly a juvenile based on pale edging to some of the visible flight feathers?
- 21 burrows had one nest cup and three had nests with two nest cups, one immediately in front of the other. The three doubles were made from dead grass/plant material.

Cleaning out the nesting burrows.

A nest at the very back of the nesting burrow.

A nest made from mostly feathers at the very back of the nesting burrow.

The nest made mostly of feathers.

Two nests one in front of the other.

22 of the 24 nests showing the variety of materials used.

There is thin buff edging to the visible primaries and secondaries suggesting a young bird?

Three unhatched and two empty shells in this nest.

For more information on Harper's Island Wetlands:

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https://www.facebook.com/harpersislandwetland