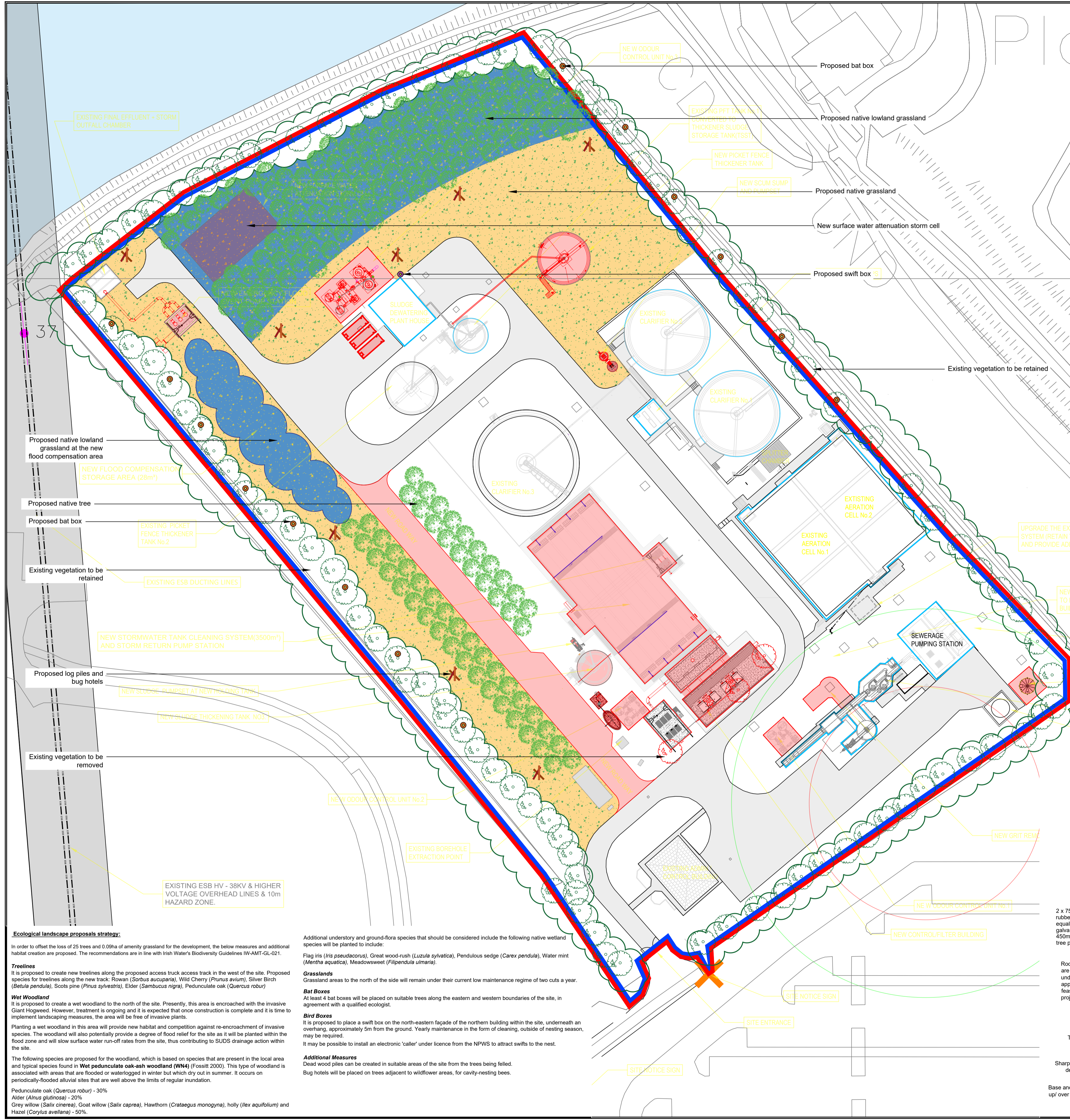
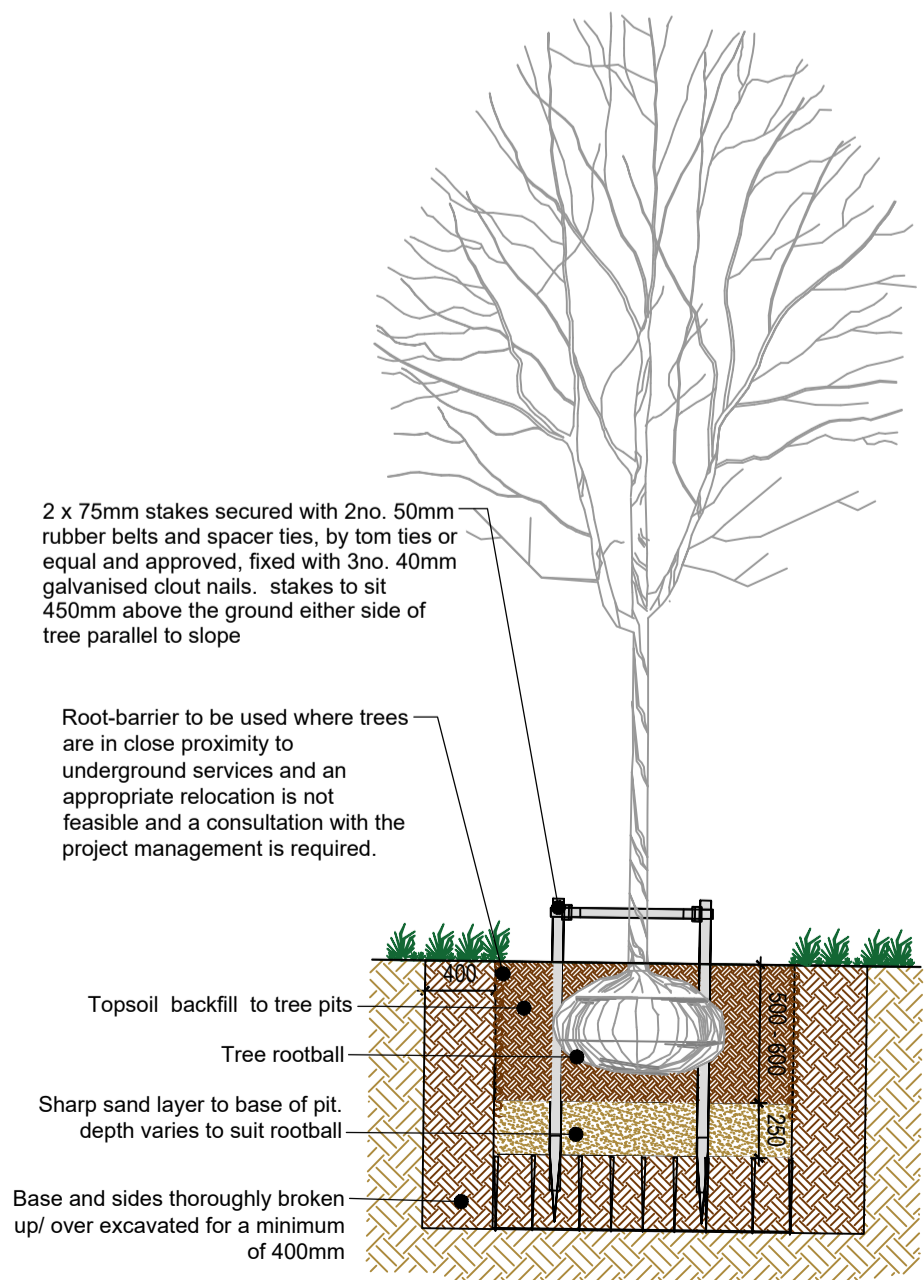


LEGEND

- SITE BOUNDARY
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- EXISTING VEGETATION TO BE RETAINED AROUND THE SITE BOUNDARY
- PROPOSED NATIVE TREE AT THE TREELINES AND WET WOODLAND (53 No.)
- PROPOSED NATIVE WET WOODLAND AND UNDERSTOREY PLANTING IN LOWLAND GRASSLAND (2,833 sq.m.)
- PROPOSED NATIVE LOWLAND GRASSLAND AT NEW FLOOD COMPENSATION AND NORTHERN AREA (3,521 sq.m.)
- PROPOSED NATIVE GRASSLAND (4,826 sq.m.)
- PROPOSED SWIFT BOX - INDICATIVE LOCATION
- PROPOSED BAT BOX - INDICATIVE LOCATION
- PROPOSED LOG PILES AND BUG HOTELS

PLANTING SCHEDULE							
Proposed native treelines	Specification	Spacing (m CTR)	Total no.	Comments	Establishment Maintenance Period 18 months	Management year 1.5-5	
<i>Betula pendula</i>	RB Feathered 1.5m tall	5	10	To be planted in groups of three of the same species	Defective (dead or dying) plants to be replaced after year 1. Monthly tasks: -Trees stakes/ties to be checked, rejected and removed if necessary -Water weekly during dry weather -Weed removal at base of tree -Fertilise at base of tree	Every 3 years: -Trees to be pruned as if necessary to be kept away from overhead lines. -Tree ties and staking to be removed at start of management period, if the tree are properly establishment	
<i>Pinus sylvestris</i>	RB Feathered 1.5m tall		10				
<i>Pinus avium</i>	RB Feathered 1.5m tall		10				
<i>Sambucus nigra</i>	BR Whip 1-1.2m tall		4				
<i>Sorbus aucuparia</i>	RB Feathered 1.5m tall		10				
<i>Quercus robur</i>	RB Feathered 1.5m tall		10				
Total:			54				
Proposed wet woodland	Specification	Spacing (m CTR)	Total no.	Comments	Establishment Maintenance Period 18 months	Management year 1.5-5	
<i>Alnus glutinosa</i>	RB Feathered 1.5m tall	5	22	To be planted in groups of three of the same species	Defective (dead or dying) plants to be replaced after year 1. Monthly tasks: -Trees stakes/ties to be checked, rejected and removed if necessary -Water weekly during dry weather -Weed removal at base of tree -Fertilise at base of tree	Every 3 years: -Trees to be pruned as if necessary to be kept away from overhead lines. -Tree ties and staking to be removed at start of management period, if the tree are properly establishment	
<i>Corylus avellana</i>	BR Whip 1-1.2m tall		12				
<i>Crataegus monogyna</i>	BR Whip 1-1.2m tall		12				
<i>Ilex aquifolium</i>	BR Whip 1-1.2m tall		12				
<i>Quercus robur</i>	RB Feathered 1.5m tall		34				
<i>Salix caprea</i>	BR Whip 1-1.2m tall		11				
<i>Salix cinerea</i>	BR Whip 1-1.2m tall	11					
Total:			114				
Proposed wet woodland (understorey)	Specification	% in mix	Area (m ²)	Planting density (plants/m ²)	Total no.		
<i>Carex pendula</i>	10cm pot	15	2833	1	425		
<i>Filipendula ulmaria</i>	10cm pot	25			708		
<i>Iris pseudacorus</i>	10cm pot	25			708		
<i>Luzula sylvatica</i>	10cm pot	10			283		
<i>Mentha aquatica</i>	10cm pot	25			708		
Total:			2834				
Proposed native lowland grassland	Sowing Rate (grams / m)	% in mix	Total Area (m ²)	Total No. (kg)	Comments	Establishment Maintenance Period 18 months	Management year 1.5-5
EC05 Wetland Wild Flora (Seasonally Flooded) as provided by wildflowers.ie	1.5	100	3521	5.28	To be sown on retained existing topsoil. If grasses are present, reduce to ground level to expose soil.	Follow all Ireland pollinator plant guidelines to achieve full sward	Cut 1-2 times per year as required
Proposed native grassland	Sowing Rate (grams / m)	% in mix	Total Area (m ²)	Total No. (kg)	Comments	Establishment Maintenance Period 18 months	Management year 1.5-5
WF03 Bird Attracting Wildflowers as provided by wildflowers.ie	1	100	4826	4.83	To be sown on retained existing topsoil. If grasses are present, reduce to ground level to expose soil.	Follow all Ireland pollinator plant guidelines to achieve full sward	Cut 1-2 times per year as required

TREE PLANTING DETAIL



Ecological landscape proposals strategy:
 In order to offset the loss of 25 trees and 0.09ha of amenity grassland for the development, the below measures and additional habitat creation are proposed. The recommendations are in line with Irish Water's Biodiversity Guidelines IW-AMT-GL-021.

Treelines
 It is proposed to create new treelines along the proposed access truck access track in the west of the site. Proposed species for treelines along the new track: Rowan (*Sorbus aucuparia*), Wild Cherry (*Prunus avium*), Silver Birch (*Betula pendula*), Scots pine (*Pinus sylvestris*), Elder (*Sambucus nigra*), Pedunculate oak (*Quercus robur*)

Wet Woodland
 It is proposed to create a wet woodland to the north of the site. Presently, this area is encroached with the invasive Giant Hogweed. However, treatment is ongoing and it is expected that once construction is complete and it is time to implement landscaping measures, the area will be free of invasive plants.

Planting a wet woodland in this area will provide new habitat and competition against re-encroachment of invasive species. The woodland will also potentially provide a degree of flood relief for the site as it will be planted within the flood zone and will slow surface water run-off rates from the site, thus contributing to SUDS drainage action within the site.

The following species are proposed for the woodland, which is based on species that are present in the local area and typical species found in **Wet pedunculate oak-ash woodland (WN4)** (Fossitt 2000). This type of woodland is associated with areas that are flooded or waterlogged in winter but which dry out in summer. It occurs on periodically-flooded alluvial sites that are well above the limits of regular inundation.

Pedunculate oak (*Quercus robur*) - 30%
 Alder (*Alnus glutinosa*) - 20%
 Grey willow (*Salix cinerea*), Goat willow (*Salix caprea*), Hawthorn (*Crataegus monogyna*), holly (*Ilex aquifolium*) and Hazel (*Corylus avellana*) - 50%.

Additional understorey and ground-flora species that should be considered include the following native wetland species which will be planted to include:
 Flag Iris (*Iris pseudacorus*), Great wood-rush (*Luzula sylvatica*), Pendulous sedge (*Carex pendula*), Water mint (*Mentha aquatica*), Meadowsweet (*Filipendula ulmaria*).

Grasslands
 Grassland areas to the north of the site will remain under their current low maintenance regime of two cuts a year.

Bat Boxes
 At least 4 bat boxes will be placed on suitable trees along the eastern and western boundaries of the site, in agreement with a qualified ecologist.

Bird Boxes
 It is proposed to place a swift box on the north-eastern façade of the northern building within the site, underneath an overhang, approximately 5m from the ground. Yearly maintenance in the form of cleaning, outside of nesting season, may be required.
 It may be possible to install an electronic 'caller' under licence from the NPWS to attract swifts to the nest.

Additional Measures
 Dead wood piles can be created in suitable areas of the site from the trees being felled.
 Bug hotels will be placed on trees adjacent to wildflower areas, for cavity-nesting bees.

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Project **Castletroy WwTP**

Title **Ecological Landscape Proposals**

Client **Irish Water**

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