

Blue infrastructure

3.149 The proposed development must seek to reduce flood risk through the incorporation of Sustainable Drainage Systems (SuDS).

3.150 The SuDS strategy must be an integral part of the green infrastructure. In addition to providing a drainage function, the SuDS features should also provide additional recreational and wildlife habitat benefits.

3.151 The SuDS strategy should follow the ‘four pillars’ of SuDS design:

- **Water quantity:** controlling the quantity of runoff to reduce flood risk and protect the natural water cycle;
- **Water quality:** managing the quality of the runoff to prevent pollution;
- **Amenity:** create and sustain better places for people; and
- **Biodiversity:** create and sustain better places for nature.

3.152 SuDS can take a variety of forms including permeable hard surfacing, storage features, rainwater butts, swales, attenuation ponds and soakaways. SuDS are to be designed within accordance with the Drainage Hierarchy contained within Approved Document H of the Building Regulations.

3.153 To the north, surface water runoff will discharge into the attenuation basins within Landings Green. Due to the high water table in this area, the water will eventually discharge into a nearby water course at, or below, greenfield runoff rates.

3.154 In the south, surface water runoff will be conveyed to a series attenuation basins via gravity using a primary network of underdrain swales. Swales must comprise of naturalised drainage channels with a ‘soft’ and varied profile, and

avoiding engineered, rectilinear forms. They shall be planted with a mix of amenity, wet meadow, and grassland species to enhance biodiversity.

3.155 The attenuation basins should be dual function, suitable for both attenuation and as a public amenity, with significant ecological value. The basins must incorporate an area of no less than 100sqm of meaningful contoured permanent water suitable for a wide range of aquatic mammals and breeding birds.

3.156 A viewing platform shall be delivered which marks the terminus of the Runway Corridor within Ryebank Park. The viewing platform must provide a slightly elevated position which allows open views over the ponds and linear park. The platform shall be a minimum 8x8m, of timber construction, and shall incorporate seating, interpretation panels and public art, allowing space for contemplation.

3.157 The semi-dry banks of the basins shall be seeded with a mixture of wet-meadow and grass species, and include native shrub planting. Importantly, the footprint and extent of the basin should not be easily identifiable by sharp or pronounced changes in planting or landform so that they sit comfortably in the landscape and appear as natural rather than man-made features.

3.158 Rather than fencing these spaces off, the basins should include shallow sloping sides designed in accordance with the RoSPA guidance, allowing residents to engage right up to the water’s edge without jeopardising their safety.

3.159 Headwalls and retaining walls must be constructed using appropriate materials consistent with the surrounding hard landscape palette, avoiding brick or bare pre-cast concrete walling. Gabions filled with flint rubble consistent with materials found in West Sussex are a preferred treatment and soft planting should be used to screen drainage infrastructure.

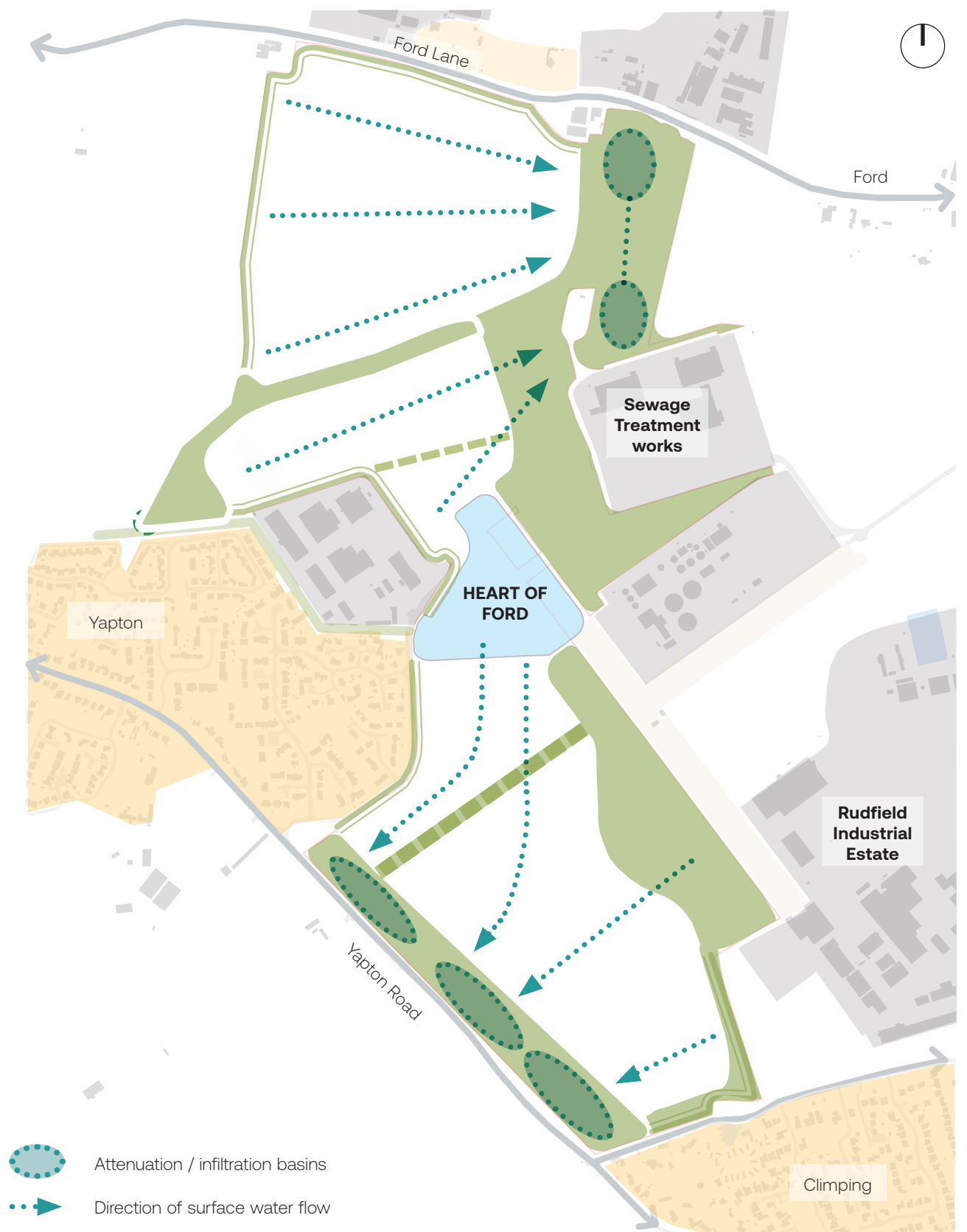


Figure 3.27. Indicative high level drainage strategy

Swales

3.160 Drainage swales will form a key component of the street scene within the southern neighbourhood, and their treatment will significantly impact on the character of the public realm. Cognisance of the character area in which the swales are located shall ensure that an appropriate treatment is applied. In all areas, however, heavily engineered forms must be avoided.

3.161 Swales shall be naturalised wherever possible, formed of a varied profile of 1:3-1:6 slope. The swale shall narrow and widen to create a naturalised appearance and allow for informal tree groupings.

3.162 Appropriate planting, including wet meadow species, shall be incorporated, avoiding mown amenity grass in favour of naturalised semi-wet habitats.

3.163 Trees shall be selected that are tolerant of intermittently dry and wet conditions, appropriate to swale conditions.

3.164 Permeability shall be maximised throughout the development and the swales must not be a barrier to movement. Culverted crossings shall be provided on clear desire lines, at junctions, and where green corridors intersect the road infrastructure.

3.165 Where culverts are required, their construction shall avoid bulky or pre-cast concrete engineered treatments and must be visually low profile, further softened by planting where possible.



Figure 3.28. Image examples of well considered and acceptable SuDS features

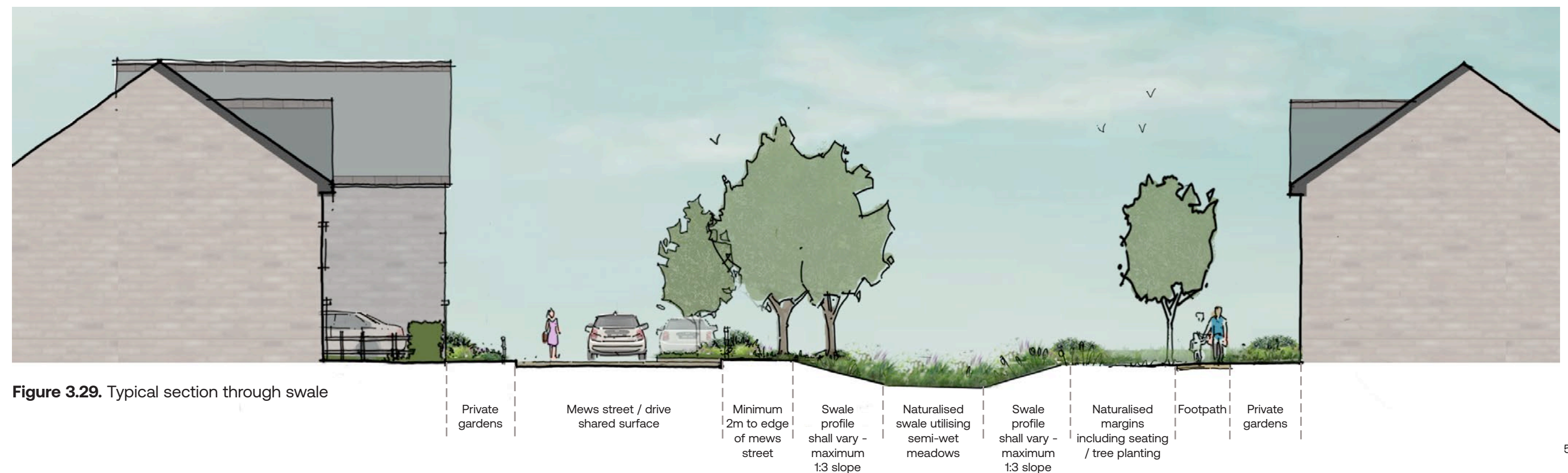


Figure 3.29. Typical section through swale

Biodiversity

Mitigation and enhancement

3.166 Proposals must aid in conserving and enhancing habitats for protected and valued species, as well supporting an increase in biodiversity.

3.167 The scheme proposes significant landscape enhancements, providing both a robust and attractive landscape setting to the new development, and a rich and interconnected network of habitats to integrate with, and improve, prevailing natural systems.

3.168 The provision of a mosaic of connected habitats along the site boundaries will contribute to the green infrastructure network on site, promoting the natural distribution of species.

3.169 The landscaping and ecological measures will provide a biologically diverse landscape. The bottom-up approach to improving the biodiversity on site, will ensure that the habitats on site can support a range of invertebrate species and provide other food sources, which will then in turn benefit fauna further up the food chain.

3.170 Native species-rich hedgerows, tree lines, orchard, grassland and wetland habitat will provide foraging, commuting, and sheltering opportunities for wildlife on site.

3.171 A sensitive external lighting scheme will be designed as part of the development to ensure that light spill on green infrastructure is minimised.

3.172 If protected species are found to be present on the site, appropriate mitigation must be put in place.

3.173 Trees within private ownership, e.g. in rear gardens, shall not count towards the site wide green infrastructure or biodiversity net gain (BNG) as the long term retention of these cannot be guaranteed.

3.174 Mitigation and biodiversity enhancement measures should include:

- Existing mature tree belts and hedgerows to be retained and enhanced;
- Hibernacula and bee bricks in appropriate locations throughout the development;
- Significant new tree planting throughout;
- Streets to be designed to include tree cover and planting, creating ecological movement corridors throughout the development;
- An interconnected network of green open spaces both within and to the wider area that vary from large areas of parkland and wetland areas to smaller pockets of wild flower planting and ecologically rich groundcover;
- Planting species that support a rich and varied biodiversity;
- Naturalistic landscape features, including log piles and bug hotels, that are intrinsically low maintenance and will develop in biodiversity in the long term;
- Rain gardens where appropriate, especially within the Canal Corridor park, with semi-aquatic planting species that tolerate intermittently dry conditions;
- The incorporation of bat and bird boxes both within the landscape design and integrated into the proposed buildings; and
- A naturalistic water management system that incorporates SuDS that are set within and are integral to the wider landscape framework.

3.175 Although the outline planning approval does not establish a fixed figure for BNG, the proposed development must provide a biodiversity net gain in accordance with Arun Local Plan Policy ENV DM5

3.176 A large proportion of the open areas shall comprise grass, wildflower and wet meadows. An assessment shall be made of the soil condition and nutrient composition to determine the most suitable species mix and long term maintenance regime. Ultimately, the implementation of naturalised meadows shall seek to maximise biodiversity and so, a long term maintenance strategy should involve, through cutting and removal of arisings, the reduction of nutrients in the soil.

3.177 Regular annual monitoring of the meadows condition and composition shall be carried out to ensure its long term success.



Wildflower meadow



Street trees



Species rich planting

Figure 3.30. Image examples of measures that can provide biodiversity enhancement