

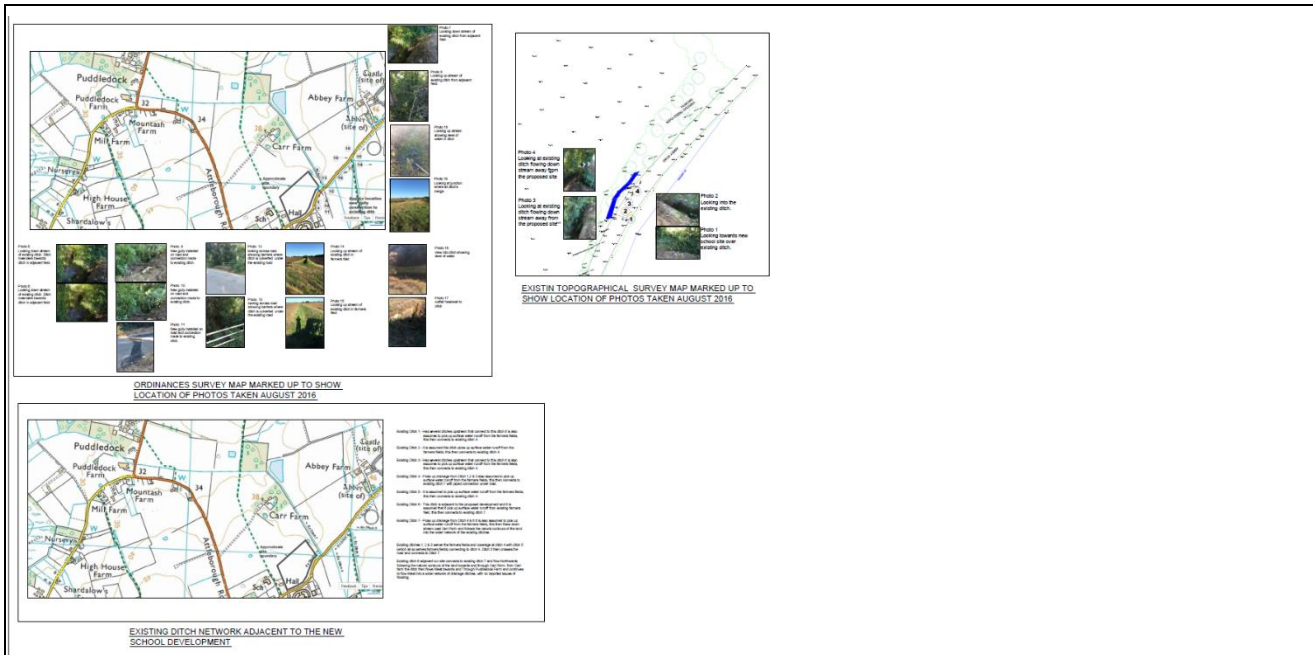
Norfolk County Council LLFA: Case Study

Site name: SEN School, Old Buckenham	District: Breckland District Council
Site Description: Provision of new Special Educational Needs (SEN) school facility. (Chapel Green School)	Scheme Developer: Children's Services, Norfolk County Council
Local Flood Risk: No risk affecting the site on Environment Agency Flood Maps was identified however local reports of flooding associated with maintenance of small watercourses close by. Level access for all abilities required and mitigation required. Including raising thresholds and finished floor levels with ground levels sloping away from sensitive locations to avoid entry / ponding of water.	Greenfield or Brownfield Development: Greenfield
Summary of Design Constraints: No infiltration possible due to ground conditions. All SuDS infiltration components are under-drained to a final attenuation basin. Discharge via flow control mechanism to a watercourse. Evidence was required to ensure watercourse is connected to the wider watercourse network. Site constraints required provision of offline overflow basin for some rainfall storm events to prevent significant surcharge of pipe conveyance network. Two of three basins have simple low toddler fencing, the largest basin with deeper water next to playground higher fencing provided following appropriate health and safety assessments.	Summary of Surface Water Drainage: SuDS provided via under-drained permeable paving, under-drained permeable asphalt, swale and attenuation storage basins planted with reed margins. SuDS quantity benefit: included / not included SuDS quality benefit: included / not included SuDS amenity benefit: included / not included SuDS biodiversity benefit: included / not included

Plans



Extract from Drainage Layout



Evidence of connection to wider watercourse network provided

Photos



a) Permeable car park spaces



b) Offline attenuation area with low fencing at front door of building



c) Under-drained permeable paving in outdoor dining area



d) Under-drained permeable asphalt sports facility



e) Main attenuation basin within two inlets, (silt in basin from jetting of pipe network on day of photograph)

h) Example of ground levels sloping away from sensitive locations

SuDS Standards achieved against relevant Non-Statutory Technical Standards for Sustainable Drainage systems

Non-statutory technical standards section headings	How the proposal achieved these
Peak flow control S2 (Greenfield)	The proposals calculated greenfield runoff rates and proposed to discharge at 5l/s to prevent blockage.
Volume control S4 & S6 (Greenfield)	<p>The discharge runoff rate of 5 l/s is higher than QBAR for the developed impermeable area but lower than QBAR of the whole site area. Hence it is unclear if any green spaces would runoff into the drainage system and has been included in the post development runoff volume calculations. 30% climate change has been allowed for within the post development runoff volume storage (30% climate change was the standard prior to the changes in national climate change guidance).</p> <p><i>The LLFA would now request clarification on how post development runoff volumes have been calculated and show they would function as intended to prevent an increased risk of flooding.</i></p>
Flood Risk within the development S7, S8 & S9	No areas would flood at the 3.33% AEP event unless within a structure designed to hold or convey water.
	No flooding is expected on the site at a 1% AEP flood event plus 30% climate change, unless it is within a structure designed to hold or convey water.
	The design considered a rainfall event in excess of a 1%AEP plus climate change and showed that there will be minimal impact to people and property. The school building has raised thresholds and ground sloping away to account for residual risk to the property and any utility plant.