D12 ~~LAND DRAINAGE, WATER CONSERVATION, FOUL DRAINAGE AND SEWAGE DISPOSAL~~AN INTEGRATED WATER STRATEGY

OBJECTIVES

D12/a To ensure that the development would not be at risk of flooding either from itself or surrounding watercourses, for up to the 1 in 100 year event including the forecast effects of climate change;

D12/b Not to increase the flood risk to surrounding properties and communities, particularly Oakington and Longstanton, or downstream areas;

D12/c To mitigate current flood risks affecting Oakington village;

D12/d To maintain where possible, practicable and sustainable the natural catchment areas;

D12/e To ensure that landforms and engineering works in any drainage scheme do not compromise the Fen-Edge character of the surrounding area by considering the landscape options available for the site;

D12/f To suggest an appropriate foul water drainage system and disposal method for the site;

D12/g To develop appropriate strategies for the management and maintenance of all water bodies and watercourses;

D12/h To determine the scope for water minimisation, conservation and recycling within the development, through layout and building design.

D12/i If the Northstowe development could have a direct impact on flooding at Longstanton, it will be required to mitigate existing flooding problems in the village.

LAND DRAINAGE, WATER CONSERVATION, FOUL DRAINAGE AND SEWAGE DISPOSAL

POLICY NS/24 Land Drainage, Water Conservation, Foul Drainage And Sewage Disposal

Surface Water Drainage

a) Surface water drainage will be by means of a sustainable drainage system to drain the town. This will comprise a series of

channels within green corridors through the town which will drain naturally to a main water holding area which will be developed as a linear feature of connected lakes along the western boundary of the disused St. Ives railway line. This will create a water park which will have a series of lakes and contain water at all times of the year. The surface water drainage system for Northstowe will only release surface water run-off into the water courses surrounding Northstowe at least at a rate no greater than if the site was undeveloped, and to a more demanding standard if this is feasible.

Foul Drainage and Sewage Disposal

b) The foul drainage and sewage disposal system for Northstowe will be designed to ensure that:

(i) Sufficient sewage treatment capacity exists ~~or is planned to be provided~~ before the occupation of any phase of development;

(ii) Any receiving sewage treatment works has sufficient capacity to ensure that untreated sewage is not discharged into any new or existing land drains, rivers or other water courses; and

(iii) Treated water leaving any sewage treatment works will not at any time exacerbate flood risk in any receiving water course.

Mitigating Flood Risk at Oakington

c) ~~Mitigating Flood Risk at Oakington including~~ Making allowance for the forecast effects of climate change in Oakington:

d) Flooding of Oakington will be mitigated by:

(i) A balancing pond~~, or series of ponds,~~ for Oakington Brook which would intercept potential flood water and surface water from the southernmost access road before it reaches Oakington village; and

(ii) If proven practicable, support for an Environment Agency promoted scheme to create, at an early stage in the development of Northstowe, a new channel between Oakington and Northstowe which will divert flood water away from Oakington Brook and Oakington village.

Mitigating Flood Risk at Longstanton

e) Flooding at Longstanton will be mitigated by a balancing pond for the Longstanton Brook upstream of the village.

f) **A new relief channel for the Longstanton Brook which follows the line of the Longstanton Bypass.**

Management and Maintenance of Watercourses

g) **All water bodies and water courses will be maintained and managed by a single organisation which will be publicly accountable to ensure that:**

- **(i) Flooding does not occur within the site of Northstowe;**
- **(ii) No additional discharge is made into surrounding water courses or onto surrounding land than that naturally discharging from the site in its undeveloped form;**
- **(iii) Water quality and levels are maintained within Northstowe's surface water drainage systems sufficient to support and encourage a natural fenland habitat;**
- **(iv) The managing organisation will be funded in perpetuity at the cost of the development.**

h) **No development shall be occupied until the written agreement of the local planning authority has been secured that a body with sufficient funding, resources and expertise to maintain and manage surface water drainage systems has legally committed to maintain and manage the surface water drainage systems for Northstowe in perpetuity.**

Water Conservation

i) **All development in Northstowe will incorporate water conservation measures including water saving devices, rainwater harvesting and greywater recycling. No dwelling shall be occupied until the local planning authority has agreed a strategy which will secure at least a 25% reduction in the use of piped water compared to the average water consumption for a development, at the time that planning permission is granted, which does not have water conservation measures whilst managing the recycling of water to ensure no adverse impact on the water environment and biodiversity.**

Surface Water Drainage

D12.1 The majority of the site drains naturally north-eastwards as ground levels fall towards the Fens. Draining Northstowe will be by means of a sustainable drainage system comprising a network of piped drains and open watercourses (greenways) taking surface water eastwards to a series of balancing lakes or lagoons parallel to the former St. Ives railway line to hold any surface water run-off within the site of Northstowe so that discharge into

existing watercourses will be controlled at a rate no greater than if the site was undeveloped. This will include a robust worse case scenario to determine the size of balancing ponds and could include swales, reed beds and other forms of filtration drainage within the development where practical.

D12.2 An extensive, multi-functional linear water park will be created at the eastern edge of the town as a foil to the built development, the character of which will both reflect the fen-edge location and complement the built form. This water park will also allow the creation of a diverse environment to provide both a visual and recreation amenity for the residents of the new town and surrounding villages as well as opportunities for biodiversity.

Foul Drainage and Sewage Disposal

D12.3 Anglian Water has advised that the flows from the development could be treated at Uttons Drove Sewage Treatment Works (STW) which would require upgrading. In addition during times of heavy rainfall there are existing problems draining into the River Great Ouse. Anglian Water is currently undertaking a study to investigate outfall options with a view to agreeing suitable outfall arrangements with the Environment Agency, Internal Drainage Board and the District Council. The foul drainage and sewage disposal systems for Northstowe must be available at all times to ensure that there is foul drainage and sewage disposal capacity to permit the continued development of Northstowe at a rate of 650 houses per year together with associated employment, recreation, community services, facilities and all other development required for this new town.

Mitigating Flood Risk at Oakington

D12.4 The Structure Plan requires that the development of Northstowe provides mitigation of flood risk to Oakington and should not exacerbate the existing flood conditions in Longstanton or any other part of the catchment area serving Northstowe. At Oakington the Beck Brook has been liable to flood and parts of the village have flooded as a consequence.

D12.5 The preferred approach is to manage existing flows in Oakington Brook by using a large balancing pond, or series of ponds, between the A14 and Oakington village which will be oversized significantly beyond that required to accommodate surface water from the new roads providing access to Northstowe. In addition, the Environment Agency is investigating the provision of a bypass channel to the north of Oakington village. If proven practicable, the development of Northstowe will contribute to the cost of any Environment Agency promoted scheme.

Mitigating flood risk at Longstanton

D12.6 The Structure Plan also requires that any additional flood risk elsewhere is avoided. For Longstanton this can be achieved by the surface water attenuation ponds and the creation of a new channel for the Longstanton Brook alongside the Longstanton Bypass. ~~which will be needed for the Hattons Road improvements.~~ Policies concerning foul drainage will ensure that flood risk from sewage treatment is avoided.

Management and Maintenance of Watercourses

D12.7 Northstowe's surface water drainage systems must be managed and maintained in perpetuity, during and beyond the lifetime of construction. The options for this responsibility are:

- The District Council;
- A water company;
- A publicly accountable trust.

D12.8 It is important to ensure that the body made responsible has adequate expertise and is financially stable in perpetuity. It will be the responsibility of the promoter of Northstowe to secure and fund a suitable management and maintenance body.

Water Conservation

D12.9 East Anglia is the United Kingdom's driest but fastest growing region and the Cambridge Sub-Region will be the fastest growing ~~part .~~part. Even allowing for the impact of climate change, careful husbandry of water resources will be crucial if the economic potential of the sub-region is to continue to be realised. The development of an entirely new town with a completely new infrastructure provides an almost unique opportunity to design water conservation measures into the infrastructure and buildings of the whole town in order to reduce the overall demand for water.

D12.10 Domestic water consumption alone offers significant opportunities for water conservation and an overall target of 25% reduction as compared to development for which there are no water conservation measures should be capable of being achieved. (Water metering alone can save up to 20% of domestic water use and water efficiency measures including greywater recycling and rainwater harvesting will make a target of 25% achievable, for example, average domestic water consumption: WC=30%, bath=24%, kitchen sink=12%, kitchen appliances=22%, hand basin=12%. Source: Building Research Establishment, March 2001).

D12.11 Not all rainwater can be harvested from development otherwise the natural environment will suffer drought conditions and therefore it is necessary to

strike an appropriate balance between water conservation and supporting the biodiversity at Northstowe. A strategy will be prepared and agreed by the local planning authority which will demonstrate how the dual objectives of water conservation and encouraging biodiversity at Northstowe will be met.