AN ARCHAEOLOGICAL EVALUATION AT WESTERN APPROACH BUSINESS PARK, SEVERNSIDE, SOUTH GLOUCESTERSHIRE

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Wessex Archaeology was commissioned by Redrow Commercial Developments Limited to undertake the archaeological evaluation of Plots 6010 and 6020 at the Western Approach business park, Severnside, South Gloucestershire (centred on ST 5530 8360). The evaluation comprised the excavation of four trial trenches, targeted on the footprints of proposed buildings. The fieldwork was undertaken during 20-29 May 2002.

The four trial trenches were each 30 m in length and 5 m wide, and were excavated in a series of steps to a maximum depth of 3 m. A sedimentary sequence typical of the Upper Wentlooge sequence was recorded in all four trenches, comprising greyish brown to olive grey clays, a double peat band, and greenish grey clays (Table 1, overleaf). Radiocarbon dating indicates that the peat here is of later Neolithic to Middle Bronze Age date (Table 2, below).

No features of archaeological origin were recorded in any of the trial trenches, and no finds were recovered. A programme of palaeoenvironmental sampling and assessment confirmed that pollen, diatoms and foraminifera survive within the upper peat horizons. Waterlogged plant remains and insect evidence were also recovered, but charcoal was present in only very small quantities. Charred plant remains were not present. The palaeoenvironmental data from the site suggests a potential sea level index point of Middle Bronze Age date (3151 ±45 BP at 3.69 m OD) and provides an environmental context for this.

PALAEOCHANNEL

The Upper Wentlooge sequence was largely cut away in one trench by a palaeochannel running its full length. Shells were noted in its infill (*Leucophytia bidentata*) indicating near-brackish water, typical of estuarine and mudflat conditions. Although the channel cannot be dated it clearly indicates active streams draining the area, probably in post-Roman to historic times.

WENTLOOGE SEQUENCE

The sequence exposed on site is summarised as Table 1. The depositional history here represents the typical development of salt marsh and reed swamp with rising sea levels, situated near the coastal margins (ie high in the tidal frame). Within this changing, low-lying environment, minor and subtle variations in relief have a significant effect upon local ground water conditions and vegetation. This is reflected in a mosaic of vegetation types that can be defined in the Severn Estuary, including mudflats, wet to dry salt marsh, grassland and freshwater fen (Gardiner *et al* 2002; Allen and Scaife 2001).

This sequence is typical and characteristic of the Wentlooge sequence in the Avon Levels. It compares well with a number of similar sequences (Table 2) recorded at Awkley Lane and Vimpenny's Lane (Allen and Scaife 2001; Gardiner *et al* 2002), Katherine Farm (Allen *et al* 2002), Cabot Park (Locock *et al* 1998; Locock 1999) and Avlon (Wessex Archaeology 2002). The overall interpretation of this sequence is well documented (eg Allen and Scaife 2001; Allen 1987, 1990a, 1990b; Allen and Rae 1987).

Pollen and diatom assessment showed that the lowest clays exposed and sampled (unit 3) were deposited over a terrestrial or very high salt marsh (estuarine) environment, with grassland, oak and hazel in the vicinity. No evidence of

Unit	*Summary*	*Characteristics*
Unit 0A	Dark brown peaty loam, cuts unit 1	Modern infilled rhine/watercourse, wet peaty loam (trench 4 only)
Unit 1A	Reddish brown Channel infill, within unit 1	Reddish brown silty loam with fine silt on interped surfaces, some weak silt laminations, boundary is visually indistinct but texturally clear and this contact exhibited a polished surface, due to hydrologically rising and falling along this surface. The two deposits (this and that below) having distinctly, but subtly different structural and textural properties (trench 4 only)
Unit 1	Dark greys brown to olive grey silty clay	Dark greyish brown to olive grey silty clay with weak medium blocky then prismatic structure, zones of Fe mottling, fine root and other bioturbations disrupting macrostructure, oxidation on interpedal surfaces. Grades into blue chromas with depth due to post-deposition effects, oxidation and hydrology. Typically *c.* 1.0 m depth
Unit 2a	Upper peat	Brown humified silt giving way to compacted *Phragmites* detrital fen peat clearly compressed giving clear horizontal structure
Unit 2b	Clay	Massive bluish grey silty clay with common vertical *Phragmites* roots
Unit 2c	Upper peat	Humified *Phragmites* peat, compressed.
Unit 3	Greenish-grey silty clay	Greenish-grey silty clay. Un-bottomed

Table 1: Summary of the Wentlooge sequence exposed at Western Approach Business Park, Severnside.

human activity, such as cereal cultivation, was present. Localised peat developed in *Phragmites* fen together with inorganic freshwater sediments, with marsh in the wider area and oak and hazel woodland on the drier influves and on marsh above the highest astronomical tides. Episodes of alluviation within the peat may be due to marine ingression (rising relative sea levels) and associated backing up of river systems. The top of the peat was slightly eroded and truncated by rising relative sea levels and change from high to low salt marsh conditions and increased direct tidal influence.

During later prehistory progressively rising sea levels caused ponding of freshwater river systems on the low-lying land of the Severn Estuary, resulting in the progressive accumulation of fen peat in these localised wet conditions. This peat accumulation occurred at rates at or exceeding those of sea level rise. However, there is widespread evidence for a final phase of marine inundation during the Late Iron Age and Roman periods that exceeded local peat growth, resulting in widespread alluviation and the development of marine transgressive salt marsh vegetation. Alluvial deposition was probably exacerbated during this phase by changes in agricultural practices and other land-use, resulting in greater wash-off into local river systems.

POTENTIAL SEA LEVEL CHANGE INDEX POINT

The stratigraphical change from organic fen peat to mineral sediments recorded here demonstrates that a marked environmental change took place locally. The presence of pollen and diatoms typical of saline habitats (salt marsh and mudflats) clearly indicates a marine or brackish water transgression. The Ordnance Datum heights (3.69 m OD) and radiocarbon dates (1530-1370 cal BC) for this contact, therefore, provide a useful potential sea level change index point, which could be related to regional models of eustatic change (cf Heyworth and Kidson 1982) and local relative sea level curves from Caldicot Pill (Scaife and Long 1994) and Porlock (Canti *et al* 1993). Although this contact is an erosion face, both pollen and stratigraphical evidence suggest that no significant quantities of the peat were lost.

In contrast, the contact at the base of the peat represents a retrogressive event at *c.* 3.24 m OD. This change from estuarine sediment to fen peat is clearly a response to regional change in relative sea levels. Use of this as an index point, however, assumes that there was no hiatus in sedimentation, with peat formation occurring immediately following cessation of mineral sedimentation, and also that there is no unrecorded

Site	Layer	mOD	Result	Calib'd (BC)	Description
Rockingham Farm		5.7	2850 ±40 BP, Beta-134902	1120-910	upper gleyed layer
SOILS IN MINEROGENIC SEDIMENT			***Later Bronze Age soils with archaeological activity***		
Katherine Farm	523	5.3-5.25	2778 ±55 BP, NZA-12725 2957 ±55 BP, NZA-12726	1070-810 1380-1010	Pale blue clay, incipient stabilisation horizon. Associated archaeological activity
Rockingham Farm	729	5.20-5.10	2810 ±70 BP, Beta-118379 3040 ±60 BP, Beta-118378	1210-820 1440-1100	Thin bands of organic material
Kites Corner	462	5.1	2610 ±70 BP, Beta-129554	930-520	Charcoal patch. Associated archaeological activity
Little Googs/ Kites Corner		5.1-5.2	2970 ±60 BP, Beta-134900 3350 ±60 BP, Beta-134901	1400-1020 1780-1510	Non humic soil
PEAT BANDS					
Cabot Park	162-4	4.5	3970 ±60 BP, Beta-125795 4170 ±70 BP, Beta-125794	2900-2300 2920-2580	Organic clay 'BARAS' charcoal – archaeological activity in vicinity
Seabank site	'BARAS'	4.7	3930 ±50 BP, Wk-5804	2580-2280	
Katherine Farm	525	4.85-4.75	5879 ±70 BP, NZA-12478 6866 ±50 BP, NZA- 12495	4910-4550 5790-5590	Dark bluish grey humic clay
Plots 6010/6020 (Unit 2)	**Top Bottom**	**3.69 3.24**	**3151 ±45 BP, NZA-15879 3917 ±55 BP, NZA-15880**	**1530-1370 2580-2270**	**Brown humified detrital fen (*Phragmites*) peat**
Avlon	Unit 2: 204	3.82-3.86	2900 ±60 BP, NZA-15587 3352 ±60 BP, NZA-15588	1320-920 1880-1510	Brown/black peaty silty clay with *Phragmites*
Avlon	Unit 4: 210	2.91-2.95	4073 ±55 BP, NZA-15616 3966 ±60 BP, NZA-15589	2880-2490 2900-2300	Brown/black humified *Phragmites* peat
FINE HUMIC LENSES			***Other pre-Late Bronze Age stasis horizons***		
Awkley Lane	107	4.61-4.46	R26327/2	no result	Dark grey (10YR 4/1) stonefree clay with up to 10% flecks of black material.
Vimpennys Lane	207	4.20-4.05	4182 ±55 BP, NZA-12527	2920-2610	Very dark grey (10YR 3/1) stonefree slightly silty clay, humic/organic layer

Table 2: Comparison of OD heights of stasis horizons (data from Allen and Scaife 2001; Allen et al *2002; Wessex Archaeology 2002; Locock 1999, 2001; Locock* et al *1998).*

loss of mineral sediments at this contact. Therefore, it can provide only a general index point for environmental change.

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