PART A: EVOLUTION OF THE ISLAND CHARACTER

3. THE NATURAL ENVIRONMENT

INTRODUCTION

- 3.1. Jersey, the most southerly of the Channel Islands, lies within the Bay of St. Malo, sheltered between the Cotentin and Brittany Coasts just 25km (15 miles) west of Normandy. The Island is situated on the continental shelf to the east of the 25m isobath. Included within its jurisdiction are the offshore reefs and islets of the Écréhous to the north-east, the Paternosters to the north-west and Les Minquiers to the south. The location is shown in Figure 1.
- 3.2. Jersey is the largest of the Channel Islands with a land area of 117 sq. km. (45 square miles) above high water mark and approximately 200 sq. km at low water. Within this area the Island encompasses a rich and diverse range of natural features and attributes created by the interaction of its location and topography, climate, geology and maritime influences. These physical influences are described individually below. It is the inter-relationships between them and cultural influences, described in the following chapter, which combine to create the unique character of Jersey.

TOPOGRAPHY

- 3.3. The Island is roughly rectangular in shape and is tilted from the north to south. The highest part is at Les Platons on the north coast which is more than 130m (400ft) above sea level. The whole of the north coast is bounded by a high wall of cliffs which rise steeply from the sea. Inland the flat tableland of the plateau dips gently southwards. This central plateau is dissected by deep sided valleys carved out by southward draining streams creating a remarkable complexity and variety in the inland structure and scenery. To the south, south-east and west the plateau and valleys terminate along the line of a fossil cliff, an ancient coastline of Jersey, which has been pushed back by comparatively recent accumulations of blown sand which form the flat, low-lying coastal plain stretching from Gorey in the east around to St. Aubin's on the south coast, and encompassing Ouaisné and St. Brelade's Bay, and the dramatic sweep of St. Ouen's Bay to the south and west. This coastline is characterised by a series of broad sandy bays set between rocky promontories, contrasting with the steep cliffs along the north coast of the Island.
- 3.4. The evolution of the Island's distinctive landform and topography is described in the following section on geological history.

GEOLOGICAL HISTORY

3.5. Geologically, Jersey has much in common with the adjacent French mainland of Normandy and Brittany comprising a range of hard ancient rocks. Over much of the Island the solid geology is mantled by thick deposits of comparatively recent age which mask the underlying topography. The solid and drift geology are illustrated in Figure 2.

Solid Geology

- 3.6. The oldest rocks in the Channel Islands are confined to the Bailiwick of Guernsey and do not outcrop on Jersey. The oldest rocks exposed on the Island belong to the Jersey Shale Formation, comprising silts, sandstones and conglomerates. These Brioveran sediments were deposited on the sea floor some 700-400 million years ago. They occur in a roughly rectangular area in the centre of the Island, extending eastwards from St. Ouen's Bay as far as St. Helier. The soft, sedimentary rocks are susceptible to erosion leading to the formation of the Island's largest bays at St. Ouen's and St. Aubins. They have also subsequently been cut by streams to form the deepest and most dramatic of the inland valleys of St. Peter and St. Lawrence. The rocks of the Jersey Shale Formation are best seen on the exposed intertidal reefs of St. Ouen's Bay where they extend from Le Pinacle in the north to La Corbière in the south, creating a very dramatic seascape.
- 3.7. The deposition of the Jersey Shale was followed by a period of intensive volcanic activity in the vicinity of the Island with the eruption and accumulation of a thick succession of rocks. The Jersey Volcanic Group is subdivided into three smaller units representing successive phases of volcanic activity; the St. Saviour Andesite Formation, the St. John Rhyolite Formation, and the Bouley Bay Rhyolite Formation. They occur in a broad diagonal band running across the eastern part of the Island from Fremont Point to Gifford Bay on the north coast to St. Catherine's Bay and Anne Port on the east coast. The complex outcrops and exposures of these rocks along the coastline are of great geological interest, and many have been identified as Geological Sites of Special Interest, including the intact lava flows preserved at Anne Port.
- 3.8. The volcanic phase was succeeded by an era of massive earth movements, known as the Cadomian Mountain Building Episode (approx. 650-500 million years ago). At this time the earth's plates were pushed together over the area where Jersey is now situated. The deformation and melting of the existing sedimentary and volcanic rocks resulted in complex intrusions of newer material. These plutonic, igneous rocks comprising gabbros, diorite and granites form the three prominent corners of the Island: in the north-west (St. Ouen's headland), the south-west (La Corbière Noirmont) and south-east (La Rocque Point). These rocks contribute much to the distinctive character of Jersey, forming in the north-west and south-west the high, rugged cliff line, while in the south-east the granite rocks, reefs and islets create dramatic intertidal scenery and an outstanding marine habitat. The colours of the granite are also very distinctive and include the fresh pinks of the north coast, grey pinks and orange of the north-west and pale to deep reds of the south-west, all of which are echoed in the older buildings, field boundaries, walls and boundary stones in their respective areas.
- 3.9. Jersey's igneous rocks have been quarried since the prehistoric period when they were used to construct the Neolithic Dolmens. In the eighteenth century numerous small quarries were opened on the granite areas across the Island to supply local building needs. Many of the older houses of Jersey were built with blocks of the coarse grained Corbière and St. Mary's granite, while the fine grained Mont Mado pink granites quarried at Handois were highly prized as a facing stone. The granites





Figure No. 1 Location Plan

of Mont Mado were also used as china stone and pottery glaze, both on the Island and exported to England. In the nineteenth century, quarrying was concentrated at a number of coastal quarries producing material mainly for shipment to Britain. Ronez Quarry, opened in 1890 supplied large amounts of granite for use as sets and kerbstone to England's Victorian towns and cities. Today, there are three igneous quarries still in operation; Ronez and La Gigoulande supply crushed stone for aggregate and La Saline supplies dressed and dimension stone.

- 3.10. Following the cessation of the earth movements which created these igneous rocks, the land began to rise and during this period Jersey formed part of the large mountain chain extending over much of what is now north-western France. These mountains were subsequently eroded by wind and rain leading to the formation of 'Conglomerate' deposits. The Rozel conglomerates which make up the north-east corner of the Island date from this period. This is the youngest of the major rock formations on Jersey and comprises beds of rounded pebbles held within a matrix of sandstones or mudstones. The distinctive appearance of the rock has given it the local name of 'puddingstone' and the red-brown rocks are a feature of the lower north-east coastline as well as being found in the buildings, walls and megalithic monuments in the area.
- 3.11. The deposition of the Rozel Conglomerate was followed by a long period (approx. 400-65 million years ago) which had left no record in Jersey's rocks. During this time earth movements in the vicinity placed major strains on the rock leading to a large number of fault lines developing across the area and it is likely that these fault lines subsequently influenced the alignment of the main inland valleys. The Tertiary Period (65-2 million years ago) saw the formation of the Atlantic Ocean and the first separation of the Continent from England and the opening of the English Channel. At this time the Channel Islands were situated on a plateau to the west of the coast of France, often surrounded by shallow seas which, over time, moulded the edges of the Island to a shape which can be recognised today.

Drift Geology

3.12. The youngest rocks on Jersey are of Quartenary Age and include sediments of both the Pleistocene (2 million years ago to 10,000 years before present) and Holocene (the last 10,000 years). They reflect the changing climates of the period which resulted in repeating glacial and interglacial episodes and associated sea level fluctuations. Although the glaciers never came as far south as Jersey, during cold periods the drop in sea level resulted in the Channel Islands being left stranded as small, high plateau on a vast open plain. These changes in sea level are recorded as wave cut platforms and notches, raised beaches, and sea caves around the Island's coastline. During colder periods the lower sea levels allowed early hunter gatherers to migrate across the plain from France. Archaeological evidence suggests that human occupation of Jersey continued sporadically from about 200,000 years ago to about 35,000 years ago. The last Ice Age which ended about 10,000 years ago had a profound effect on Jersey's present landscape character, with a range of drift deposits added to the Island's was established.

The extreme cold temperatures resulted in frost shattering of the solid rocks and the fragments weathered and moved downslope to accumulate in deposits of material known as Head. Head occurs at the foot of cliffs along the South-west, North and North-east coasts and beneath the blown sand at the bays of St. Ouen, St. Aubin, St. Clement and around the Royal Bay of Grouville. Inland, Head derived from loess deposits on the plateau surface mantles the sides of the main valleys. The other main Pleistocene deposit is Loess. This fine grained material is derived from deposits of silt washed out by the glaciers of northern Europe, blown across the frozen continental plains by cold dry winds and deposited to form the yellow blanket of highly fertile soils across Jersey's plateau farmland. The thickest areas of loess occur in the more sheltered areas in the centre and east of the Island with depths of 5m recorded on the coastal plain in St. Clement and on the eastern plateau near La Hougue Bie. Depths of loess thin out towards the western part of the Island.

- 3.13. The 10,000 years since the last ice age represent a warmer period known as the Holocene. During this time the sea level rose to its present level and the sandy beaches surrounding the coast were formed. Recent sediments of the Holocene include the peats and alluvium which occur as narrow deposits along most of the river valleys and at the mouths of the major valleys where they wash out onto the coastal plain. Smaller amounts can also be found within the bays of St. Ouen, St. Brelade and Grouville. These sediments are an important palaeo-environmental archive yielding information about past vegetation and land uses on the Island; for example at Quetivel Mill in St. Peter's Valley the peat contains a boreal forest pollen assemblage dating from approx. 9,600 years ago.
- 3.14. Holocene deposits of blown sand adjoins St. Ouen's Bay in the west, Grève de Lecq in the north. St. Brelade's, St. Aubin's and St. Clement's bays in the south and the Royal Bay of Grouville in the east. All are restricted to a relatively narrow coastal strip except at St. Ouen's Bay where the sand extends further inland and is banked up against the escarpment to depths of more than 15m forming the dune system of Les Blanches Banques which stretches up to 3km from the sea. The buried sand surface of the dunes is extremely important archaeologically containing an intact Neolithic landscape whilst the dunes themselves are an ecological resource of international significance. The sand deposits at St. Ouen's and Grouville have both been worked in the past, and sand extraction is continuing in St. Ouen's Bay. An earlier Pleistocene deposit of blown sand occurs on the hill top plateau just to the north of the airport.
- 3.15. Jersey thus possesses a unique range of rock assemblages. The study of the Island by the British Geological Survey (British Geological Survey 1989, Jersey. Description of 1:25,000 Channel Islands Sheet 2) notes that their importance to geologists lies principally in the magnificent coastal sections that expose rocks which preserve an intact record of local Precambrian and Palaeozoic events. In addition because the Islands lay to the south of the Pleistocene ice-sheets, the superficial drift deposits present interesting comparisons and contrasts with Britain and France. The States of Jersey Planning and Environment Department has recently identified 21 proposed Geological Sites of Special Interest (SSI) which will preserve and protect the most important and representative geological features on the Island. These are illustrated on Figure 3.





1.0	St. Helier Parish	8.0	St.Lawrence Parish
1.1	South Hill		None at present
2.0	St. Saviour Parish	9.0	St. Mary Parish
2.0	None at present	9.1	Crabbe and the Ile Agois
		10.0	St. Ouen Parish
3.0	St. Clement Parish	10.1	Grand Etacquerel & Petit Etacquerel
3.1	Le Croc and Le Nez points	10.2	Mont Huelin Quarry (L'Etacq Quarry Northwest)
3.2	Green Island	10.3	Le Pinacle
J. A.	Green bland	10.4	Le Pulec
4.0	Grouville Parish	10.5	Le Cotte a la Chevre
	None at present		
		11.0	St. Peter Parish
5.0	St. Martin Parish		None at present
5.1	Anne Port		
5.2	La Solitude Farm	12.0	St. Brelade Parish
		12.1	La Cotte de St. Brelade
6.0	Trinity Parish	12.2	Portelet Bay
6.1	Les Rouaux	12.3	Belcroute
6.2	Bouley Bay and Les Hurets		
6.3	L'Islet, Bouley Bay		
6.4	La Tete des Hougues		
6.5	Belle Hougue		÷
7.0	St. John Parish		
7.1	Giffard Bay		
7.2	Sorel Point		

Figure No.3 Proposed Geological Sites of Special Interest

SOILS

3.16. Most soils in Jersey are derived from the extensive drift deposits (loess, blown sand and alluvium). Only in limited areas on the north coast edge, north-west headland and south-west headlands and some of the steepest slopes of the valleys and escarpment are the soils derived directly from the underlying solid rocks. Here, the shallow acidic soils, do not retain water well and require irrigation if they are cultivated. They do however, warm up very quickly in springtime providing some of the earliest land for potatoes. On the most exposed edges of the Island the acidic soils are not cultivated and are clad with heath land. By comparison the soils derived from the drift deposits are deep, generally well drained but moisture retentive, silty or fine sandy loams and very fertile. These qualities combine to make them extremely attractive for agriculture. However, they are weakly structured and are liable to erosion unless carefully managed and protected, by the network of shelterbelts and hedgerows.

CLIMATE

- 3.17. The distinctive climate of Jersey contributes much to its special character, both in terms of the types of plants that thrive as well as creating the visual hallmarks of the landscape such as the exposed, windswept character of the north and west. While there is a strong oceanic influence and the Island is warmed by the Gulf Stream, the location of Jersey tucked into the gulf of St. Malo, means that there is also a continental influence. It is the combination of these twin forces and how they come together within an insular environment which creates Jersey's climate and distinguishes it from the other Channel Islands, and the mainland of France and the UK.
- 3.18. The prevailing winds are from the west and South-West and in the winter the north, with salt laden winds blowing for much of the year. These are responsible for the open, exposed character of St. Ouen's Bay and the windswept, virtually treeless north coast where only species that are tolerant of the harsh conditions created by the salt spray and exposure can survive. In contrast to these extreme conditions the mean daily air temperature in Jersey is 11°C and in theory provides an all year around growing season, although in practice this pattern is interrupted by occasional ground frosts between November and March. Jersey is the sunniest of the Channel Islands. The early, warm springs allow crops to ripen early by comparison with those in England, giving Jersey farmers a distinct climatic advantage which is reflected in the patterns of agricultural land use.

BIODIVERSITY

3.19. Tempered by the influence of the sea, Jersey's long summers and equable climate allows a number of plants and animals which are normally confined to the Mediterranean and Iberian regions to spread up the warm Atlantic coast and establish in the Island at the northern most limit of their range. Conversely, Jersey is also a southern outpost for many North European species. As a result of its geographical position and favourable climate, Jersey's variety of habitat types - ranging from coastal heaths and dunes through to deep wooded valleys and intricate farmed landscapes have enabled a unique mix of species, both natural and cultivated to thrive on the Island.

- 3.20. The Draft Biodiversity Strategy for Jersey (September 1995), recognises that the Island's sand dunes, maritime heath and the intertidal zone are habitats of International and British Isles importance cf.Annex
 1 of the EC Habitats Directive (European Commission, 1992). It identifies the Island's wetlands and woodlands as being of Jersey importance.
- 3.21. Some 22 prospective Biological Site of Special Interest (SSI) have been proposed representing the wealth of Jersey's natural environment. These are illustrated on Figure 4. Outstanding sand dunes systems are to be found at L'Ouaisné and Les Mielles. These systems are noted for their high biodiversity, with 406+ species being supported at Les Mielles. Although not extensive, Jersey heathland supports some rare heathland ecosystems, including maritime heath, lichen heath and dwarf shrub heath. The Jersey intertidal zone is unusually extensive owing to it s tidal range (up to 12 metres at spring tides). The intertidal zone is important because it supports high habitat and species diversity, including a range of birds. It also provides a nursery for many important fish and crustacea.
- 3.22. In terms of important species, eight are selected for priority attention and identified as being of British Isles importance (cf. British Red Data species lists). These species are:
 - Agile frog (*Rana da/matina*) absent from mainland Britain but Widespread in continental Europe, declining in Jersey.
 - Cirl bunting *(Emberiza cirlus)* British Red Data Book species but common in southern Europe. The decline of the UK population serves to increase the value of the Jersey population.
 - Dartford warbler (*Sy/via undata*) British Red Data Book species, declining in Jersey due to loss of suitable heathland habitat.
 - Blue-winged grasshopper (*Oedipoda caeru/escens*) common throughout Europe but absent from mainland Britain, occurs predominantly on sand dunes.
 - Jersey orchid (*Orchis laxiflora*) does not occur in the UK, but it is quite common in southern Europe, at the northern edge of its range in Jersey. It is a good indicator of the health of the traditionally grazed wet meadows on which it depends.
 - Jersey fern (*Anogramma leptophylla*) found at only 6-8 sites in Jersey, present in France but absent from UK.
 - Red squirrel (Sciurus *vulgaris*) these are one of the very few populations of this species which do not now live in competition with the introduced grey squirrel. They are a useful indication of the condition and health of the countryside.



<u>KEY</u>

- 1 Les Landes (SSI)
- 2 Eygpt (SSI)
- 3 St Catherine's Valley Wood (SSI)
- 4 Grouville Marsh (SSI)
- 5 Les Pres Dorments (SSI)
- 6 Noirments (SSI)
- 7 Portelet
- 8 L'Ouaisné (SSI)
- 9 St Peters Valley Wood (SSI)
- 10 La Lande Du Ouest (SSI)
- 11 Les Blanches Banques (SSI)
- 12 St Ouen's Pond (SSI)

OTHER PROSPECTIVE SSI

Le Harve De Scez Le Couperon Les Vaux De Lecq Bonne Nuit/Giffard Bouley Bay/Jardin D'Olivert Bouley Bay Trinity Valley Le Marais (St Ouen) Beaumont Waterworks Valley

3.23. The important role that traditional agriculture has played in shaping Jersey's landscape and maintaining the Island's rich biodiversity should not be overlooked. Ironically, further intensification of the agricultural industry could pose a major threat to the viability of the Island's ecosystems.

MARITIME INFLUENCES

- 3.24. The key marine influences on the character of Jersey are summarised below
 - Jersey's coastline is 90km long at high water mark the length of sea edge is an important influence on the Island's character and perceptions of character.
 - Jersey has the third largest tide in the world. On spring tides the difference between low and high tide can be as much as 12m.
 - The south and south-east coast have a very shallow, gently sloping shore profile and a very large intertidal area is exposed at low tide.
 - Jersey is located at the confluence of the cold, temperature (Boreal) and warm temperature (Lusitanean) marine biogeographical regions.
 - The warming influence of the Gulf Stream results in important biota associated with the warmer waters of southern Europe as well as species associated with the cold, northern waters of the UK.
 - Jersey experiences a unique current, anticlockwise in the Bay of St. Malo, and a residual capsule of water around Jersey.
 - The coastal edges experience very great variation in terms of aspect and exposure an important influence not just on the marine environment but also on the inland character.
- 3.25. It is the interaction of the natural environment, maritime influence and the cultural environment which combine to create the unique and special character of Jersey.

INTRODUCTION

- 4.1. Jersey has a wealth of historic interest, with a legacy of monuments rich in diversity and quality. The span of important archaeological sites stretches from the sea caves occupied by Palaeolithic hunters through to the military fortifications of World War II. The historic landscape of Jersey, the combination of field patterns, hedgerows, tree cover and settlement is very distinctive and is a product of not only the natural history and geological make up which have helped to shape the landscape, but also reflects the political and social history of Jersey with its legacy of French and English influence.
- 4.2. Jersey has not always been an island. Throughout most of the Palaeolithic period Jersey was a headland separated by a coast plain from mainland France. The hunter-gatherers of the Palaeolithic were free to utilise the flora and fauna which colonised the Island across the plain. During the inter-glacial periods of ice melt and sea level rise, Jersey became separated from mainland France. The most important Palaeolithic site in Jersey is La Cotte de St. Brelade, where there is evidence of the early activity of Neanderthal man on the Island. Among the remains found are bones of mammoth and rhinoceros, arranged in a pile as if the meat had been cold stored. It is believed that the animals may have been driven over the cliffs and then the meat taken back to the cave.

THE FIRST FARMERS (THE NEOLITHIC 4500-2000 BC)

- 4.3. It is thought that Jersey finally became isolated from mainland France around 4000 BC. Around this time the nomadic hunter-gatherer lifestyle of the Mesolithic period began to give way to settled agriculture and Jersey has been continuously settled from early Neolithic times (4000-3500BC). The Neolithic lifestyle was characterised by the cultivation of cereals, the domestication of animals and the introduction of pottery. The engineering achievements represented by the megalithic monuments, of which Jersey has probably the finest concentration outside the Carnac area of Brittany, are indicative of the high degree of economic, social and religious sophistication in Neolithic society. These stone monuments, known as Dolmens, are an important feature of the landscape of Jersey and contribute much to the Island's distinctive character, both visually and for the atmosphere of antiquity that they impart.
- 4.4. The landscape that confronted the earliest settlers was very different to the Island's landscape today. The interior would have been covered by a mixture of oak/hazel woodland, while the exposed coastal areas would have been naturally more open. This vegetation pattern was exploited by Neolithic man who confined himself to the lighter soils and grassy headlands of the coast. These areas, as well as providing the easiest grazing for livestock also allowed settlers to make maximum use of the resources of the littoral zone to supplement their diet. It has been suggested that there were two main centres of Neolithic settlement on the Island based around Mont Orgueil in the south-east and Le Pinacle in the

North-west. Although the farming system of the early Neolithic was predominantly pastoral, with bones of sheep, oxen and deer dating from this period found on the Island, there is evidence of arable agriculture at this time. Cereal pollen indicates the presence of cultivation around St. Ouen's Bay, and macrofossils of broad bean (*Vicia faba*) have been found at Le Pinacle.

- 4.5. During the Neolithic period arable agriculture gradually increased in importance. A form of "slash and burn" agriculture was practised in which the land was successively cropped until the fertility of the soil was exhausted and new land was brought into cultivation. This practice led to the first modifications of the interior woodland as farming spread inland from the coastal areas. Evidence of bracken invasion at this time would also have fuelled pressure for virgin land, to be brought into cultivation.
- 4.6. Although Jersey at this time was beginning to develop a cultural identity of its own, the Island was also open to the Continental and Atlantic influences which have played a crucial role in defining the Island's history. The range of influences is reflected in the archaeological record. While Jersey shared styles of pottery with parts of Normandy, the Megalithic tombs belong to an Atlantic tradition, with similar grave architecture found in Ireland, Brittany and parts of Wales. The passage graves of Jersey are of European importance and La Hougue Bie is undoubtedly the finest example. These burial places are thought to have been graves for elite lineages, as well as places for communal gatherings, symbols of power and territorial markers. The common evolution of building styles in grave architecture in Jersey, Normandy and Brittany from passage grave through to gallery grave, and later, stone cists, illustrates the shared cultural system. Further evidence of cultural exchange is provided by a study of stone axes from this period which found that 44% were from outside Jersey, with 16% from Normandy and 28% from Brittany. However, the distinctive "Jersey Bowls" dating from around 2000BC are evidence of a burgeoning separate cultural identity.
- 4.7. The ritual and burial sites of the Neolithic period in Jersey are concentrated around the coast, but as the Neolithic period gave way to the Bronze Age the increasing amount of archaeological material found away from the coast reflects the spread of agriculture into the interior of the Island.

WARRIOR FARMERS (THE BRONZE AGE 2000-600 BC)

- 4.8. It is believed that in the Bronze Age society became more stratified and specialised. Neolithic society had depended upon the mobilisation of manpower for public works, whereas Bronze Age society was characterised by displays of personal wealth and prestige. With the advent of metalworking in copper, gold and bronze it was wealth in metal, especially weapons of war that conferred status on the owner, who was likely to be part of the developing warrior aristocracy. Jersey's continuing integration into the Atlantic economy is illustrated by the gold tore found in St. Helier in 1889 which is believed to be of Irish origin.
- 4.9. The late Neolithic period had seen an accelerated clearance of woodland and by the end of the Bronze Age most of the Island's woodland is believed to have been modified by man in some way. The sea level in this period was very high and there seems to have been some abandonment in the south-east

18

of the Island, for example in the Grouville Bay area, a region that had been well utilised by Neolithic settlers. The combination of waterlogged soils and sand blow afflicting this area during the Bronze Age resulted in migration to higher ground.

THE INTERIOR TAMED (THE IRON AGE 600-20BC)

- 4.10. Although much has been written about the tribes of Gaul and the history of mainland France in the Iron Age little is known about Jersey during this period. Iron Age society was tribal and was often centred around a fort for protection. In Jersey Iron Age, settlement is predominantly coastal and took the form of earthworks based around hilltops, of which Câtel de Lecq is an example, defended settlements on lower ground, or promontory forts for which Jersey provided many ideal sites. An example of a promontory fort is the landbridge below Pinacle Rock which was cut off by a defensive earthwork in the Bronze Age and was occupied during the Iron Age. Excavations at Maitresse Îie, one of Les Minquiers have revealed the remains of the huts of seal hunters on the Island
- 4.11. Agrarian activity intensified during the Iron Age at this time and Paleo-botanical data show that wide tracts of the interior of the Island were farmed. Woodland removal became permanent and agricultural land which had scrubbed over with bracken was reclaimed in this period and there is also evidence that the accumulation of colluvium and alluvium in valley bottoms was a result of the impact of vegetation disturbance and soil erosion associated with farming.

ON THE PERIPHERY (THE ROMAN PERIOD 20 BC - 420 AD)

4.12. The Roman period made little impact on the Channel Islands and Roman evidence in Jersey is scant. Britain was providing refuge and assistance to Gaul in the first century BC which was being besieged by Julius Caesar. It is thought that the Channel Islands may have acted as a stepping stone during this exchange. Large hordes of Gaulish coins discovered in Jersey from this period would seem to be evidence for this, but the main trade routes between Gaul and the British Coast bypassed the Island. The only unquestionably Roman building in Jersey is the shrine at the foot of Le Pinacle, built to a Celtic-Roman design. The instability in the Roman Empire in the third and fourth centuries BC is reflected in the discovery of buried coin hoards from this period, a number of which have been found in Jersey.

THE EARLY CHRISTIANS (THE DARK AGES 420-911)

4.13. Anglo-Saxon invasion of Britain caused waves of Christian refugees to flee Devon, Cornwall and Wales for Brittany. These early Christians occupied the Channel Islands, including, it is believed, St. Helier in 543. The history of the seventh and eighth centuries in Jersey is almost undocumented but it is believed that the division of the Island into parishes occurred at this time. The ninth century was dominated by Viking raids on the Island. St. Mary's Parish became known as St. Mary's of the Burnt Monastery and the pre-historic tombs were rifled for treasure.

A FEUDAL ISLAND (THE MEDIEVAL PERIOD 911-1550)

- 4.14. In 911 the Viking chieftain Rollo became the first Duke of Normandy. The Channel Islands were probably added to the Duchy in 933 but it was only in the eleventh century that the Islands came under the full control of the Dukes of Normandy. Jersey remained at the centre of a unified kingdom until 1204, when King John of England lost control of continental Normandy. The Islands were officially recognised as British in 1259 and the development of Britain and France as separate nation states saw the Islands take on a new strategic importance which initiated the first great wave of fortifications, with the construction of Gorey Castle (Mont Orgueil) dating from this period.
- 4.15. Jersey's history of control by both France and England during the Medieval period has had a profound effect on the Island's subsequent development. Norman influence can be seen in land tenure, place names, and architecture, while English influence is reflected in Georgian fortifications and the development of the Island's mercantile trade.
- 4.16. **Farming and the landscape:** The feudal systems of agriculture and land tenure which accompanied Norman administration have had a major influence on the Jersey landscape. The *gavelkind* system of land inheritance, known as *partage* in Jersey, whereby land is divided between the male heirs, with a slightly higher proportion going to the eldest, led to the continual sub-dividing of holdings. This system accounts for the small average field size on the Island.
- 4.17. In common with most of Medieval Europe Jersey was administered under the feudal system in which grants of land (*fiefs*) were made to the king's nobles (*seigneurs*) who offered the peasantry strips of land and protection in return for a range of services which might include the gift of livestock, or the undertaking of some labour for their lord. In Jersey the nature of these feudal dues often reflected the geographical situation of the fief on the Island. For example a tenant on the Fief de la Fosse provided the ash of burnt seaweed, while some of the tenants of Samares owed salt. The land was farmed through the open field system whereby the cultivated land was divided into strips, the size of which was often based on how much land could be ploughed by one oxen team in a day. Later enclosure with earth banks and hedgerows have obscured almost all the open fields. Feudal dues persisted in Jersey long after they died out in Britain.
- 4.18. The best surviving example of open field agriculture is based around St. Ouen's Mill. Here the original strips have escaped enclosure and are still separated by earth balks. This site is now of the highest importance as a rare relic of Medieval farming practices. Evidence for open field agriculture in the rest of the Island can be found in place names. The area around St. Ouen's Mill is known as La Campagne which in French can be a term used to refer to open unfenced country. The place name Campagne also occurs in St. Martin and Grouville in Jersey. The areas outside the open field system were known as *landes* or 'waste'. These areas were grazed by stock which would also be turned onto the open fields after harvest to graze the crop residues under the *banon* system, whereby the arable fields became common land after harvest. Although *banon* was legally abolished in the eighteenth century, unofficial *banon* was still in operation at least until 1850.

- 4.19. The 'waste' areas, the rough grassland and scrub which were not cultivated were prized for the fuel and bedding they provided in the form of gorse and bracken. These areas were found around the coastal edges of the Island where farming was less viable. In 1225 a thousand trunks of trees were ordered to be cut in England and sent to Jersey and Guernsey, indicating a lack of appreciable woodland. The State papers of Elizabeth I in 1558 record that "timber...cannot be had in the isle". The 'common' rights to cut gorse and bracken as fuel were jealously guarded and throughout the Medieval period drift wood on the beaches was much prized.
- 4.20. **Buildings and Settlement:** In the Medieval period Jersey flourished and settlements of substantial granite houses were constructed. It is reckoned that there were over 2000 properties paying Hearth Tax in 1331. The place names of Jersey are indicative of the increasing settlement of the interior which accompanied Norman rule. Coastal names on the Island are Norse, such as *etacq* (cape), *mielle* (sand dune), *guet* (watch tower) and *dicq* (embankment), but the inland names, dating from the period of settled Norman civilisation, are French in form. The oldest Medieval centres of habitation were inland, near water and were often in or near a tributary valley, not in the main valleys which were the site of numerous water mills. Houses were built of the local granite and had similarities with the contemporary building styles of continental France. The round arches used in the Island's domestic architecture were, however, distinct to Jersey. Nucleated settlement along the lines of the English village was absent from Jersey. Nevertheless, the Island does have many hamlets named Ville followed by a family name, for example Villees Nouaux. These hamlets are believed to have been family units, formed by heirs building on their portion of land close to the family home.
- 4.21. The churches of Jersey are extremely ancient and are the oldest standing buildings in the Island. The exact dates of their construction is unknown but the fact that St. Helier, St. Brelade and St. Ouen are dedicated to obscure sixth and seventh century saints would suggest that the churches predate the arrival of the Normans. Many of Jersey's churches are mentioned in eleventh century charters but it is unclear whether these refer to the buildings still standing today or to earlier ones. The double naves and chancels, vaulted roofs and central steeples of unusual design, form a highly distinct style of architecture with no exact parallel elsewhere.

JERSEY ENCLOSED (THE POST-MEDIEVAL PERIOD 1550-1750)

4.22. The open nature of Jersey's landscape which had been created by successive generations of woodland clearance and farming dating back to Neolithic times was rapidly reversed in the seventeenth century as the open field system of farming disappeared and the growth of the cider industry saw the wooded area of the Island dramatically increase. Jersey was enclosed largely in the period from the end of the sixteenth century to the start of the seventeenth and the Island is notable for the survival of the open field system over large tracts until a relatively late date. Until the end of the sixteenth century enclosure had made little progress. By 1629 however, Jersey was described as "very much of small enclosures" and by 1673 so much land had been enclosed for orchards that

strict regulations designed to govern the planting of trees were introduced by the States. Whereas, the impetus for the rapid enclosure of the English landscape came from the Parliamentary Act in Jersey, it was the need to shelter the delicate apple blossom which led to the construction of large earthen banks topped with elm and thorn. A 1694 account of the Island described a sense of wooded enclosure that would be familiar to any traveller in the interior of the Island today.

"The whole Island, especially the more inland part, is so thick planted, that to one who takes a prospect of it from some higher ground, it looks like an entire and continued forest; though in walking through it, not a wood, hardly a thicket or coppice is to be seen, but many hedgerows and orchards" ¹

- 4.23. The Richmond Map of 1795 provides an accurate snapshot of the enclosed post-Medieval landscape. One of the most striking features of the map is the number of orchards. In St. Saviour Parish they cover at least 36% of the enclosed land. The extent of enclosure on the Island varied. Although St. Saviour was completely enclosed by the end of the eighteenth century the area of land which corresponds with the parish boundaries of St. Brelade was still very open.
- 4.24. As noted, the open field system of agriculture was in decline by the early seventeenth century. The changing economic and social structure of the Island meant that the system of mutual co-operation between lord and tenants was being undermined. The growth of the wage economy meant that workers could supplement their incomes in the seafaring and knitting industries. The States of Jersey were so concerned about agricultural neglect as a result of the knitting industry that in 1606 a law was passed which forbade knitting at harvest and vraicing times. Jersey's deep-sea fishing industry which had begun as long ago as the sixteenth century grew rapidly and reached its zenith in the nineteenth century. Jersey fishermen would set sail in spring for the cod grounds off Newfoundland and the adjacent coasts of North America then carry the salted fish to the Catholic countries of Latin America and the Mediterranean, returning to Jersey with exotic goods that had been traded for fish in time for the winter ploughing.
- 4.25. There were a number of other factors which served to undermine the basis of the feudal system. The need to control the fertility of the soil through the common manipulation of livestock grazing and the practice of leaving some ground fallow, which were integral components of the feudal system in other parts of Europe, was not so acute in Jersey where vraic provided a ready supply of nutrients. The introduction of coal from England and the growing amount of hedgerow timber meant that the right to take fuel from the common lands became increasingly insignificant. As late as 1631 the famous cartographer Speed remarked that "wood is very scant", but around fifty years later the planting of hedgerows and hedgerow trees had supplemented the traditional reliance on furze and gorse.

¹'Faile P. An Account of the Island of Jersey 1694

"the Ordinary fewell is wood, which groweth plentifully all ye Island over, not only in sett Rowes along the Highwayes, affoarding shade in Summer and shelter in Winter, but alsoe upon the fences and hedges, and is lopped once in every five or six years for fewell. Besides which the hedges are planted with white and blacke thorne and with willowes; and ye barren hills affoard firzes and ferne"²

THE AGE OF IMPROVEMENT (1750-1900)

- 4.26. This era in the Island's history was characterised by increasing contact with the outside world and improvements in the transport infrastructure of Jersey. The improvement in internal communications arose partly from the need to service the burgeoning export industry but was primarily a result of the strategic military importance of the Island during the wars with France which dominated this period. George III ascended to the English throne in 1760 and his reign was marked by almost continuous war with France. The attempted French invasion of Jersey in 1779 hastened the already planned building of the "Jersey Round Towers". These are often erroneously referred to as Martello towers, but predate their English counterparts. Rising tension in the 1830's saw a new spate of tower building to a Martello design. Jersey has four remaining Martello towers which were the last of their type to be built in Europe.
- 4.27. General Don, the Island's Lieutenant-Governor between 1806 and 1814, oversaw the construction of eighteen roads which linked all the minor complexes of lanes. Perhaps his most important road was the link between St. Helier and St. Aubin. The journey between the two had previously been negotiated by crossing the sands at low water. The very straight roads which contrast with the earlier winding lanes date from this period and villages such as Victoria Village and Le Carrefour Selous developed as halfway points on these routes. The improvement in communications was an important step in the development of the Island. The landscape of Jersey with its long south-sloping valleys made movement from east to west extremely slow. The ability to transport bulk loads of goods was to have major implications for the development of the potato industry. The improvement in the internal communications of the Island coincided with the expansion of the Island's external links to the outside world and the export opportunities this provided.
- 4.28. The 1795 Richmond Map shows St. Helier and St. Aubin roughly equal in size but in the first half of the nineteenth century St. Helier expanded rapidly to become the undisputed centre of the Island. Previously all the Islands architectural influences had come from mainland France but the influx of English immigrants, Jersey's increasing contact with Britain, and almost continuous war with France saw new houses built in late Georgian and Regency styles in the early nineteenth century. From 1700 the distinctive Jersey round arch disappeared and was replaced by straight-topped, unhampered doorways and windows; wooden staircases replaced stone tourelles and decoration in granite disappeared. As in earlier periods new housing development did not conform to a nucleated pattern. A late nineteenth century writer noted that;

² Falle P. An Account of the Island Jersey 1964

"What most strikes a visitor to the Islands is the manner in which their population is housed. In Jersey, small but comfortable farm houses are spread over the whole country, at short distances from one another...There are few cottages in the ordinary acceptance of the term, or that remind me of those so common in rural England."³

4.29. Although the cider industry was gradually overhauled by the potato as the mainstay of the Island's agriculture from the 1880's onwards, this had surprisingly little effect on the fabric of the landscape. This was primarily a result of the Jersey law of partage with land split between heirs on death but was also due to the fact that to rationalise the incredibly intricate pattern of landholding - in both the physical sense of the network of lanes, hedges and fields, and in the social sense of scattered and subdivided holdings - would have taken a massive restructuring of the Island's agriculture. From the nineteenth century, new plants began to arrive from previously unexplored parts of the world, and many of the new exotic species were planted in Jersey. Contemporary accounts record the planting of laurestina, bay, scotch fir, silver fir, Portuguese laurel, plane tree and evergreen oak.

MODERN JERSEY (THE 20TH CENTURY)

- 4.30. Jersey has seen great changes in this century, with the growth in both residential and seasonal populations, together with the gathering pace of agricultural intensification putting great pressure on the Island's landscape. The pattern of the Jersey countryside is still however, largely a product of the seventeenth century enclosure phase. Despite urban encroachment and pressures on the agricultural economy, the small scale intricate landscape designed around the apple crop, which has been maintained into the modern period, now represents one of Jersey's greatest assets.
- 4.31. This section has been sub-divided to cover the most important aspects of Jersey's history in the twentieth century under the headings of World War II, agriculture and development.
- 4.32. Word War II: The World War II Occupation had an important impact on Jersey's built and natural environment. The lack of fuel in 1944 led to the widespread felling of trees on the Island and many woodland stands are composed of regeneration dating back to this period. In addition, Hitler's orders that the Channel Islands be made impregnable, as part of his "Atlantic Wall" to the West of occupied France, led to a whole new phase of coastal defence based on the Western and South-western coasts of the Island.
- 4.33. **Agriculture:** Agriculture in Jersey has been affected by the general increase in intensification and specialisation which has characterised farming in the twentieth century. The pace of change has been slower than in some parts of the UK, but there has been a gradual decline in both traditional techniques and mixed systems of farming. Today, the agricultural economy is dominated by two elements: the Jersey Royal potato and Jersey cattle.

24

³ Shaw Lefèvre. Quoted in Kelleher P. The Roots of the Nineteenth Century Jersey 1995

Jersey Countryside Character Appraisal

- 4.34. The potato had been a staple of Jersey's agriculture throughout the nineteenth century but the acreage devoted to the crop rapidly expanded in the I880s with the development of the Royal Jersey Fluke variety. Jersey's favourable climate allowed the crop to reach maturity weeks earlier than British mainland crops and the Island's producers were able to dominate the market in early potatoes. Production peaked in the I930s, when around one third of the Island was put down to the crop. In the post war era, typically a quarter of Jersey's total acreage has annually been devoted to the early potato. In recent years there have been fears about such a heavy reliance on one crop and attempts have been made to diversify the arable sector, however the Jersey Royal is likely to continue to be a staple of the Island's agriculture as it has become a brand name distinct to Jersey.
- 4.35. The farmland of the Island includes an intimate mixture of crops covering the cultivated area. The tomato industry dates from the first years of this century and became a major source of income between the wars. Jersey's climate allows a major part of the crop to be grown in the open, although in recent years the crop has become less profitable with the total acreage declining and an increasing amount of the crop is now grown under glass. The post-war contraction of the potato industry was offset by the rapid increase in the acreage devoted to broccoli and other brassicas. These crops have recently become increasingly un-competitive against those produced in other European and increasingly, African countries. Until the mid 1950s a considerable amount of grain was still grown on the Island. The current acreage grown is a fraction of the former area but has been rising in recent years with increasing amounts of barley grown following potatoes, to be made into silage in late summer. Fodder maize is also becoming important as a silage crop on the Island. A particular feature of arable agriculture in Jersey is the practice of double cropping, with the favourable climate allowing two crops to be taken from the same piece of land in one growing season.
- 4.36. The Island's bulb and flower industry dates from 1864 when the first consignment of narcissi and double daffodils were sent to London. Although it was decimated by bulb eel worm in the early part of the century, the trade enjoyed a strong recovery in the I920s and 1930s. The need to maximise food production during the Occupation saw many of the bulb stocks lost, but the introduction of new varieties in the post-war period gave new impetus to the flower industry, most of which is now under glass.
- 4.37. The development of the Jersey breed of cattle dates back to the eighteenth century when the growing importance of butter as an agricultural product led to Channel Island cattle becoming increasingly sought after for their rich milk. As the Island herds began to be improved, laws were passed to protect the purity of the breed and it has been illegal to import cattle into Jersey since 1789. The Jersey dairy industry has changed markedly in the post-war years, with a trend towards bigger, more intensive herds. Even in the post-war period all Jersey's cattle were tethered, with the cow attached by a chain around her horns to a stake driven into the ground, which was moved three or four times a day. Although this system can still be seen in some parts of the Island most cattle are now managed through the use of electric fences, and more recently by a method known as "wintering" within purpose built dairy units. From its peak in the seventeenth century Jersey's wool industry declined rapidly. A few sheep continued to be kept on the cliffs and commons into this century but have now ceased to be a

25

part of the Island's agricultural economy. The former existence of numerous sheep pens, where the animals were collected for shearing is indicated by the place - names La Bergerie and Le Bigard.

- 4.38. Farming technology in Jersey changed little up to the Second World War. Potatoes were still planted and dug by hand, although the tractor was gradually replacing the horse. Vraic was still collected by horse and cart and the smallest and steepest côtils were considered worth cultivating. In the post 1945 era however, Jersey has not been immune to the intensification of agriculture which has had such a drastic effect on the British countryside. Synthetic fertilisers have replaced Vraic as the main source of fertility, the average field size has increased and many of the more marginal côtils have been abandoned and scrubbed up. Other post-war developments have seen the increasing use of glass and polytunnels in the horticultural industry and the seasonal use of polythene on the potato crop.
- 4.39. The structure of farming in Jersey remains very different to that in the UK. Farming in Jersey remains highly labour intensive in all sectors with hand labour still common for many tasks. One of the major checks on intensification has been the continuing fragmentation of holdings on the Island. A 1980s survey found that over a third of holdings had 5 or more separate parcels of land, while over half had three or more parcels. There is likely to be continuing pressure in coming years for the number of holdings to decline and for the amalgamation of fields to increase. These changes are manifest in the landscape by losses of the hedgerows and field boundaries. The effect of purposeful hedgerow removal has been compounded by Dutch Elm disease.
- 4.40. Agriculture in Jersey has a scenic importance out of proportion to its economic contribution to the Island and conservation of the scenic value of the agricultural landscape will be vital in ensuring the Island's future prosperity. The integrity of Jersey's unique agricultural landscape has come under attack from both natural and human factors in the twentieth century. The negative visual and environmental impacts generated by the agricultural and development pressures outlined include the post war development of glasshouses, protected cropping with polythene, the flooding of many of the interior valleys to satisfy increased water demand and urban encroachment on to farmland and marginal land.
- 4.41. **Development:** The twentieth century has seen both the internal infrastructure of the Island and its external links with the UK and the continent steadily improve. General Don's road building schemes in the early nineteenth century paved the way for the development of the St. Helier sea-front and by the early twentieth century all of the low-lying area of St. Helier around the harbour had been appropriated for building with parts of the adjoining escarpment also becoming built up.
- 4.42. In the 1920s the Devon Motor Transport Company established a fleet of buses which linked every part of the Island. Bus transport spelt the end for the railways which had been set up in the 1870s and linked the south of the Island from St. Aubin to Gorey Pier. Better internal transport and the arrival of the private motor car led to renewed development pressure on the southern sea-front in the inter-war years with many new homes and hotels constructed in this era. By the Second World War development stretched from Le Hocq in the south-east round to Beaumont. Similar shoreline development occurred at Rozel and Gorey. By comparison the pattern of development in the central and northern parishes remained highly dispersed.

- 4.43. In the post war period Jersey's population which had remained static at around 60,000 for many years began to expand and the tourist industry began to boom. The price of houses soared and the need to provide cheap housing for locals led to a growing number of housing estates, blocks of flats and village developments. The main area of development was the Upper Plateau around St. Brelade's Bay where the new Island airport had been completed in 1937. The Red Houses and Les Quennevais developments date from this post-war period of expansion around St. Peter. A range of building materials and styles has replaced the traditional use of granite in Jersey houses.
- 4.44. One of the key factors in Jersey's post-war prosperity has been the development of Jersey's financial industry and its role as a tax haven. The financial service industries and wealthy immigrants have been attracted by the Island's history of stable government and prudent financial policy. From 1957 to date the Island has managed to maintain the maximum rate of income tax at a modest 20%.
- 4.45 In recognition of the escalating pressures on Jersey's remaining natural landscape and agricultural land a Development Plan for the Island was commissioned in 1960. This was published in 1963 and became known as the Barrat Plan, after its author. Building development was brought under planning control and the pressures for expansion were directed into designated areas, with a policy of "village development" adopted for all the country parishes. The Island Plan has been reviewed and modified many times since 1963 but is still the basis of Jersey's Planning system. Over the centuries, previous development has seen most of the more favourable sites for housing already built upon. This has led to increasing settlement on exposed or previously unfavoured or marginal sites. This trend has threatened the environment of Jersey, both through visual intrusion on previously secluded rural sites, and through threats to the wildlife which had managed to survive in areas formerly under utilised by humans.
- 4.46. The current Island plan sets a strong presumption against development in the countryside through implementation of its Green Zone and Agricultural Priority Zone Policies. Notwithstanding this, a certain amount of rural land has been lost to "essential need" development owing to a population increase which had not been anticipated. These developments include Category A Housing sites, schools, hospital extensions, playing fields and the like. A recent study revealed that a total of 285v ergées of agricultural land was lost to development during the Plan Period (this includes land lost to recreational uses such as golf courses and leisure and recreation areas). Most of this development occurred on agricultural land surrounded by, or adjoined by existing built up areas or within village envelopes.
- 4.47. Of equal concern is the changing nature of agricultural development. As agriculture has intensified, its use of larger and more sophisticated machinery has increased, resulting in hundreds of the traditional stone outbuildings being rendered redundant for agricultural use. They have been replaced by new, large industrial type sheds and packing stations, constructed with modern and cost effective materials which are not indigenous to the Island.
- 4.48. The interaction between human and natural influences over thousands of years of continuous occupation in Jersey has created a unique landscape. The Island's archaeology is characterised by internationally important remains from all the major periods of European history. Key sites including the Palaeolithic sea caves, the Medieval open field system at St. Ouen, the megalithic monument of La

Hougue Bie, the unique "Jersey Round Towers" of the Georgian era, and the coastal defences dating from the German Occupation. The Island's important archaeological and historical heritage has been recognised in the identification of some 49 proposed Ancient Monument SSI by the States of Jersey. These are illustrated in Figure 5.

- 4.49. The intimate, small-scale structure of the Island's agricultural land is highly distinctive and has been shaped by the political, social and economic history of Jersey. Of central importance has been the Island's former ownership by both France and England and its subsequent strategic importance as an English Island off the French coast. The Norman French legacy in Jersey includes the influence of the feudal system, both in terms of landscape artefacts and systems of land tenure, the high hedges and cider varieties and the rounded arch. English rule has bequeathed to the Island the Georgian domestic and military architecture, as well as the mercantile trade and export industry of the Island. As well as the acculturation of influences from both France and England the, Neolithic Jersey Bowls, idiosyncratic church designs, and unique coastal towers are all example of a separate Jersey identity.
- 4.50. The interplay between natural/human and internal/external influences has created a landscape and historic environment which is highly distinctive, visually appealing and one of the Island's greatest assets.

