

## CHAPTER 2 – THE DEVELOPMENT OF THE LEEDS LANDSCAPE

### Introduction

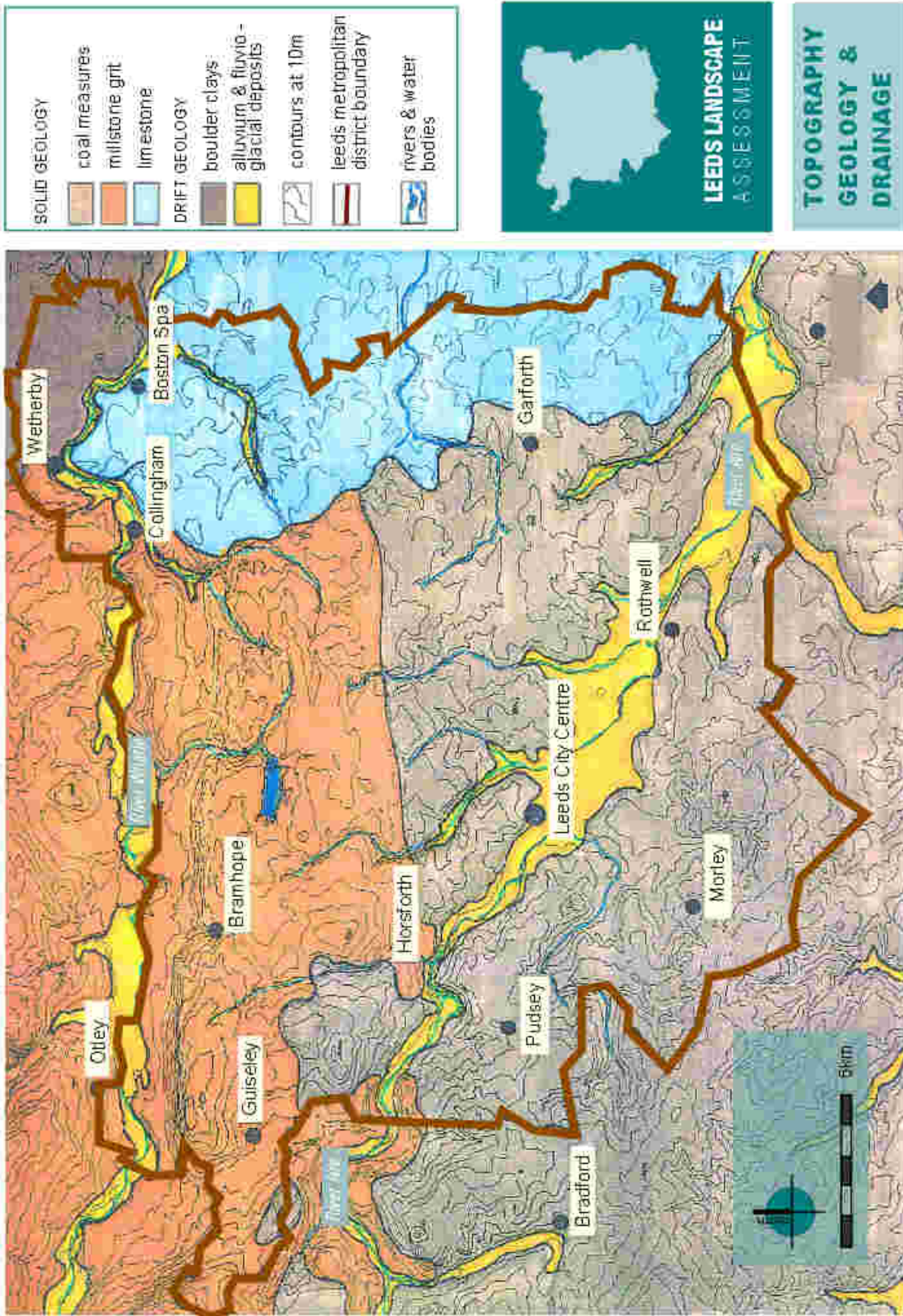
- 2.1 The present day landscape of the Leeds area is a product of the physical and human influences that have shaped its basic structure and appearance. The underlying geology and the processes of erosion and deposition have had a profound effect on the landscape, influencing not only landform, soils and vegetation communities, but also the human activities dependent upon or affected by them. In turn, and of particular significance to the Leeds district, is the influence of man's activities in changing natural vegetation patterns to suit human needs and introducing manmade elements into the landscape.

### Physical Influences on the Landscape

- 2.2 The underlying geology of the area around Leeds comprises three principal rock types, all of which have influenced the nature of the landscape. These are the Millstone Grit and Coal Measures of the Upper Carboniferous Period and the Magnesian Limestone strata of the later Permian Period. Additionally, there is a small area of Triassic Sandstone in the extreme north-east of the District.
- 2.3 The Millstone Grit strata are located in the north-western and north-central parts of the District and are exemplified by a thick, coarse sedimentary rock composed generally of alternating layers of sandstones and shales. They were laid down about 300 million years ago and form the typical ridge and valley scenery well seen in the crags and edges at Otley Chevin, Harewood and elsewhere. The ridges are all escarpments due to the underlying dipping rocks. When the dip is gentle, there is a marked difference between the slope on the two sides, for example to the north and south of Harewood village. In certain cases, the steepness of the escarpment resulted in the layers of shale being unable to support the weight of their sandstone capping. In such cases, for example below Surprise View on the Otley Chevin, large slices of rock have broken away and slipped down the slope, to form hummocky and broken ground at the foot of the slope. The various Millstone Grit beds have been given local names relating to their area of origin or influence, as in Bramhope Grit, East Carlton Grit, and Guiseley Grit.
- 2.4 The Coal Measures deposits, which represent a continuation of, and overlay the Millstone Grits, occupy the southern and central parts of the Leeds District. The main area of the city itself, extending westwards to include Pudsey, is underlain by Lower Coal Measures strata while the more resistant bedrock of the southern part of the city, taking in Middleton and the higher outlying urban areas of Morley and Rothwell, is the more extensive Middle Coal Measures.
- 2.5 The alternating sandstone-shale sequence is still apparent, but the sandstones are thinner and finer grained than in the Millstone Grit strata and there is a persistent element of coals and accompanying scatearths. The thinner and less coarse nature of this rock type as compared with Millstone Grit, results in a comparative absence of edges or scarps and a more rounded, rolling topography. This pattern of landform has been further influenced by faulting which has taken place, which has in many places controlled erosion and produced rectilinear drainage patterns, dividing the Coalfield into square blocks and producing rounded sandstone features rather than long ridges.

- 2.6 The younger Permian rocks forming the Magnesian Limestone stratum east of Leeds rest on the older Carboniferous rocks with a well defined unconformity. These Permian deposits dip gently to the east and occur as a narrow strip occupying the eastern part of the district. The unconformity is visible within the landscape, for while the limestone ridge runs from north to south, the ridges on the sandstone beds of the Millstone Grit and Coal Measures areas run from west to east and abut against the limestone. They are also characterised by a softer more friable texture and a yellowish or reddish brown colouration. There are various small outliers of Magnesian Limestone deposits separated from the main north-south trending formation, one of which occurs at Whinmoor, to the east of Roundhay in urban Leeds. Much of the Magnesian Limestone belt gives rise to a gently rolling landscape characterised by productive intensively farmed agricultural land. Where relic unimproved grassland occurs, this is characterised by a rich and diverse flora.
- 2.7 The geomorphology of the area, particularly the Aire and Wharfe Valleys has been influenced by the effects of glaciation during the Pleistocene period. Features such as till or boulder clay and the morainic drift along the Wharfe Valley are relics of glacial activity and reflect stages in the retreat of the ice. At each standstill position of the glacier, meltwater from the ice carried forward quantities of stones and sand and deposited them as spreads of gravel in the valley in front of the moraine. These now form the sand and gravel deposits which have been worked around Otley and Pool. Where the main river valleys approach the Vale of York, some of these were obstructed by ice in the Vale and diverted. The original course of the River Wharfe for example originally flowed from Wetherby towards the north east, but was diverted towards the south east to cut the winding gorge which now runs alongside Thorpe Arch. Elsewhere, river action has had a significant influence in shaping the Leeds landscape. Alluvium found in the Aire and Wharfe valleys for example has had an influence on land cover and land use, being very variable in composition, from clay, and silty, to gravely loam, often several feet thick.

Figure 1 (overleaf) summarises the nature of the underlying geology of the area and how this relates to topography.



### **Human Influences on the Landscape**

- 2.8 Human activity is the most significant force for environmental change and the natural and physical components of the Leeds landscape have been undergoing a process of alteration ever since the area became populated by early nomadic hunters some 10,000 years ago.

#### *The first 9,000 years*

- 2.9 The presence of these Mesolithic hunter-gatherers in the Leeds area is well attested by finds of their flint tools and it is possible that the area was well utilised by these people over a period of some 4000 years. Even at this time, the landscape was being adapted, with woodland clearance, the establishment of temporarily improved areas of grazing in the uplands, and 'longer-lived' settlement sites in the lower river valleys all possibly occurring. During the successive Neolithic, Bronze Age and Iron Ages, the farming economy developed and changed under the influences of climatic change, social organisation and technological advance. In the Leeds district, evidence for these changes is slight, although sites do exist, for example, in Hawksworth, where a number of probable Bronze Age burial monuments survive as earth works. Due to the lack of evidence and through analogy with other regions, it can be assumed that the population within the Leeds area at this time occupied largely dispersed, small settlements in a rural landscape of arable and pasture with large areas of woodland. Within this landscape, there was probably a very small number of important communal sites each serving as a 'focus' for a large area of the surrounding countryside.

- 2.10 Aerial survey over the last twenty years has produced evidence of a significant change in the Leeds landscape, beginning probably in the Iron Age and continuing for some 1000 years until some time after the cessation of direct Roman government. This change comprised the increased use of ditches and banks to bound settlements, stock pens, 'fields' and trackways with the landscape possibly appearing as one extensively cleared of woodland and occupied by single farmsteads. These farms were typically spaced about one kilometre apart, many having an associated field system and ditched trackways leading out between the enclosed fields to the open pastures and woodland.

This landscape also included a small number of additional features, including an important defensible hill fort at Barwick in Elmet and some of the series of dykes which run generally east to west across the line of the Roman Road at Aberford. For some 200 years after the Roman period, it is likely that the same Celtic population continued to live in much the same manner as it had for the previous 500 years. There is little evidence remaining from this period, although two upstanding monuments can be tentatively attributed to it, one of which is the linear bank and ditch, Grims Ditch, between the River Aire near Swillington and Whinmoor.

#### *The last 1200 years*

- 2.11 The physical form of the man-made landscape owes more to the changes wrought in the last 1200 years from the mid-Anglo-Saxon period onwards, than it does to the first 9,000 years. Between the eighth and the twelfth century, changes in farming practices and land management had led to a shift from the more dispersed settlement to nucleated villages and to the establishment of the large 'open' field systems associated with them. By the twelfth century, it seems that a radical reforming of the landscape had been achieved, a process which resulted in the establishment of most of the villages which exist in rural areas today.
- 2.12 The ancient townships of the Leeds area were largely established by the late 10th century, when the township comprised a population and its associated exploitable territory, which commonly included unenclosed arable lands, pasture, meadow, woodland, common and waste. The township community, whilst subject to ecclesiastical law and rules imposed by a higher government, was a self-regulating body acting at a local scale for the common good. This

township division persisted with little change until local government re-organisation in the 1870s and even then, in rural areas, the new framework of civil parishes perpetuated many of the former township boundaries. Many modern administrative divisions are still marked by boundaries adopted as much as 1000 years ago, with some following the line of yet earlier, visible landscape features. For example, part of the civil parish boundary between Barwick and Thorner follows the ancient township boundary, which in turn utilised a former Roman road. Part of this boundary is still followed by a public footpath, whose unusual width, although much overgrown, reflects its original function as a military road.

- 2.13 Over this landscape of villages and fields were superimposed two additional administrative systems. These were firstly an ecclesiastical system of parishes, usually coincident with one or more townships, with a church at the parish centre and secondly a manorial organisation which was not always so directly related to the township framework. The parish structure was largely in place in the Leeds area by the 11th century and remained relatively unchanged until the urban growth of the industrial period. The ownership of land and the attendant manorial framework, however, were subject to continual change. This changing pattern of ownership and tenurial organisation through the Middle Ages and later, led amongst other things, to the unusually large number of 17th-18th century park estates, which still survive in the belt from Harewood in the north, through Bramham and Parlington, round to the south-east side of the District at Ledston and Temple Newsam. Today, features such as manor houses, moated buildings, gardens, castles, mills, fishponds and deer parks still survive from this time. With the increased wealth of the post-medieval period, many estate landscapes were modelled primarily for aesthetic or leisure purposes, rather than economic gain. Hence the 17th and 18th centuries saw the appearance of the landscape gardener, and the re-modelling of extensive landscape vistas in keeping with the romantic ideals of that age. Park estates and gardens in the Leeds area include work by Lancelot Brown, Humphrey Repton, John Wood and William Etty amongst others.
- 2.14 During the 18th and 19th centuries the natural resources of the Leeds area, such as coal and sandstone, were increasingly exploited by landowners within their estates as, for example, by the Gascoigne family in Parlington and Garforth. Other important industries in the Leeds area included textile manufacture, ceramics, chemicals, leather, engineering and machine manufacture. Some of these industries were deliberately sited away from population centres either because of noxious effluent or the need for clean water. Also the need for water, as a power source or for some other industrial purpose, meant that much of the early Industrial period development was concentrated along the stream and river valleys on the urban fringe, particularly the Lower Aire valley. The industrial revolution and its accompanying population growth led to a vastly increased rate of change in the urban areas.
- 2.15 The most marked changes of all have probably come in the post-war years, with the large scale rebuilding of inner urban areas, migration of population to the rural villages, the increasing scale of road transport facilities and ever larger scale of industrial enterprises. Modern Leeds and the countryside around it is a product of all these changes, which have been superimposed on a landscape which has been evolving steadily for many hundreds of years.
- 2.16 The post-war planning system has played a key role in influencing the nature of the changes we have seen throughout the Leeds landscape. This influence has come through the development control process and the control of the use of land, with approximately two-thirds of the district being designated Green Belt. The Green Belt is designated in order to check the growth of built-up areas, prevent neighbouring settlements from merging, preserve the special character of Leeds and its surrounds, retain easy access to open country and assist urban regeneration.