

Neutral Citation Number: [2012] EWHC 1643 (QB)

IN THE HIGH COURT OF JUSTICE

QUEEN'S BENCH DIVISION

ADMINISTRATIVE COURT

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 20/06/2012

Before :

MRS. JUSTICE LANG

Between :

THE QUEEN

on the application of

- (1) **THE MANCHESTER SHIP CANAL
COMPANY LIMITED**
(2) **PEEL HOLDINGS (LAND AND
PROPERTY) LIMITED**

Claimants

- and -

ENVIRONMENT AGENCY

Defendant

Peter Village QC and Stephen Whale (instructed by **Clyde & Co.**) for the **Claimants**
Gordon Nardell QC and Christiaan Zwart (instructed by the **Regional Solicitor,**
Environment Agency) for the **Defendant**

Hearing dates: 31 May & 1 June 2012

Judgment

Mrs Justice Lang:

Introduction

1. The Claimants seek judicial review of the decision of the Defendant, as expressed in a letter dated 21 December 2010, to classify the sluices on the Manchester Ship Canal (“the Canal”) as “formal flood defences” when producing Flood Maps and designating Flood Zones, and to assess flood risk on the hypothetical assumption that they have failed in a closed position.
2. The Canal is a 36 mile long navigable canal for sea-going vessels from the River Mersey estuary to the centre of Manchester. The water level on the Canal is regulated by five sets of sluice gates, which allow ships to pass along the Canal via five sets of ship locks. The sluice gates automatically adjust up and down, in response to water sensors, to control the flow of water, on a continuous basis. They can also be adjusted manually.
3. The Canal is vested in the First Claimant, pursuant to the Manchester Ship Canal Acts and Orders 1885 to 2009. The First and Second Claimants are part of the Peel Group of companies. The Second Claimant owns some 300 acres of land in the vicinity of the Canal, within the local authority areas of Salford and Trafford. Much of this land is either developed or potentially available for development.
4. Under the Government’s Planning Policy Statement PPS25 “Development and Flood Risk”, and under the Defendant’s own policies, formal flood defences are to be disregarded when assessing flood risk. The Defendant has interpreted the policies to mean that the sluice gates should be assumed to have failed in the closed position, preventing water from passing along the Canal. The result is that land adjacent to the Canal, including land owned by the Claimants, has been designated as Flood Zone 3a (“high probability” of flooding) when it would otherwise have been designated as Flood Zone 2 (“medium probability” of flooding), if the sluices had been assessed on the basis that they were in operation and opening as required.
5. Designation in Flood Zone 3a adversely affects the value of the land because it reduces its development potential. When allocating land for development, local planning authorities are required to apply the Sequential Test, first considering whether land is reasonably available in Flood Zone 1; then whether land is reasonably available in Flood Zone 2; and only considering the suitability of sites in Flood Zone 3 if there are no reasonably available sites in Flood Zones 1 and 2.
6. The Claimants complain that the practical effect of designation in Flood Zone 3a is demonstrated by the Pomona Island development, in Trafford, adjacent to the Canal. Pomona had been identified as a potential residential location for 1500 dwellings in the draft Trafford Core Strategy in June 2009. Once the Defendant classified the area as Flood Zone 3, the residential allocation was removed entirely by the local planning authority (save for the 546 units in respect of which planning permission had already been granted and could not be revoked).

The Canal

7. The following summary has been prepared after consideration of the witness statements of Mr Nears, Strategic Planning Director of Peel Holdings (Management) Ltd and Mr Lukey, Area Flood and Coastal Risk Manager for the South Area of the North West Region of the defendant. I have also considered the following documents: Wallingford: *Manchester Ship Canal: The Future of the Upper Reaches*; Halcrow Group Ltd: *Manchester Ship Canal Company Hydraulic Modelling Study Final Report*; Jeremy Benn Associates: *Manchester Ship Canal Modelling Report Final*; Det Norske Veritas: *Sluice Gate Reliability on the Manchester Ship Canal*; *Manchester Ship Canal Company Water Level Control: Operational Protocol*.
8. The Canal is a navigable canal for sea-going vessels and carries approximately 7,000,000 tonnes of freight per year. The Claimants hope to increase its throughput by the development of water, road and rail terminals on the canal side. They believe the Canal provides a cost-effective sustainable alternative to delivery of freight by lorries, reducing road congestion and carbon outputs.
9. The Canal was constructed between 1887 and 1894 between Manchester and the River Mersey estuary at Eastham. It incorporated parts of the River Irwell and the River Mersey above Latchford (the Upper Reaches), and a new watercourse was constructed between Latchford and Eastham (the Lower Reaches).
10. By an elaborate system of locks, sluices and weirs, water levels are controlled to enable safe navigation of sea-going vessels along the Canal. The five sets of locks lift ships a total of 19m above the mean tide level of the estuary.
11. The water level in the Upper Reaches of the Canal is regulated by 4 sets of locks with associated sluices and 2 weirs. The sluices enable waters coming into the Canal from the Rivers Irwell and Mersey (among others) to be passed down the Canal in a regulated manner. The Upper Reaches include:
 - a) Mode Wheel Locks (including 4 sluice gates) which control the water level in the Mode Wheel Point;
 - b) Barton Locks (including 4 sluice gates), which control the water level in the Barton Pond between Barton Locks and Mode Wheel Locks;
 - c) Irlam Locks (including 5 sluice gates) which control the water in the Irlam Pond between Irlam Locks and Barton Locks;
 - d) Latchford Locks (including 3 sluice gates) which control the water level in the Latchford Pond between Latchford Locks and Irlam Locks;
 - e) Woolston Weir which contributes towards the control of the water level in the Latchford Pond;

- f) Howley Weir, which can affect the volumes that Woolston Weir can handle in extreme tidal events.
12. In the Lower Reaches, the water level is regulated by the Weaver Sluices (8 sluice gates) in the Eastham Pool between Latchford Locks and Eastham Locks. They enable the waters coming into the Canal from the Rivers Weaver and from the Upper Reaches to be passed down the Canal in a regulated manner.
13. Eastham Locks connect to the Mersey Estuary and allow sea-going vessels to enter and leave the Canal in a regulated manner.
14. In addition to the Rivers Irwell and Mersey, main rivers such as the Salteye Brook, Sinderland Brook and River Bollin run into the Canal in the Upper Reaches and the River Weaver in the Lower Reaches. A large number of outfalls, including storm water outfalls, also discharge into the Canal.
15. In the Lower Reaches the Canal also receives water from two other sources:
- a) when high water at the Weaver sluices is above the top of the gate, the River Mersey will overtop the sluice structure into the Canal. In these circumstances there will also be overtopping of lock gates at Eastham;
 - b) a set of what are referred to as ‘storm gates’ are fitted at Eastern Locks. They are designed so that when closed they prevent the River Mersey flowing into the Canal when it is predicted to be at a higher level than the Canal.
16. Under normal flow conditions, the sluices’ automatic control system is designed to control the water levels within the Canal to enable safe navigation of ships. In achieving this, water levels are regulated so that the risk of flooding is also minimised. In all but the most extreme low rainfall conditions there will be sluices operating on a regular basis at all locations, apart from Latchford where they do not operate until flows down the River Mersey exceed 140 cumecs. Under normal operation, not all the sluice gates are in use at any one time.
17. The water level control is achieved by the control system continuously monitoring the water level and comparing this to a set point in the computer software. The sluice gate opening is adjusted, either raised if the measured water level is above the set point, or lowered if the water level is below the set point. The set point can be adjusted remotely. The water levels are monitored by ultrasonic sensors, which have a triple back up.
18. The sluices consist of vertical steel counterbalanced roller gates operated by machinery located on a gantry above the sluices. The gantry sits on masonry piers which transfer all loading onto a masonry base. The gates are about 9.14m in width and open to a height of 3.05 m.
19. The sluices are operated by an electric motor driven gear box. The sluices are electrically powered and normally operate in automatic control mode. Each location

- has two independent power supplies with an automatic changeover if one should fail. If this should occur this is notified to the Port Operations Controller as a fault condition by the Supervisory Control and Data Acquisition (SCADA) system, and the maintenance team is alerted.
20. There are 3 levels of backup for the operation of the sluices, which have to be put in place by operators on site:
 - a) mains electrical power supply in manual control mode;
 - b) hydraulic drive;
 - c) manual operation with a winding handle through the main gearbox.
 21. Data is collected by the SCADA system monitoring the status of the system and reporting faults. These include gate positions; water levels; gate availability; power supply in use; position discrepancy; switch gear faults; motor overload; triple validation of the water level sensors; loss of communication with the SCADA system, and hand gear sensor to be in place.
 22. Since the water level in the Canal is continuously monitored, any abnormal increase in water levels would be identified by the SCADA system alarming at the Control Room, and by the Port Operations Controller whose task is to actively monitor weather conditions and water levels in the Canal. The water levels are monitored by checking the SCADA system outputs which show the water level trend along the Canal, by CCTV located at each sluice, by discussion with the operators who attend to operate the locks to allow vessels to pass through and by discussion with ships' pilots and captains.
 23. In potential flood conditions, all sluices can be opened, automatically or manually, and the sluice opening can be raised above the usual 2.44 m limit. Mobile maintenance teams are available at all times to attend sluice sites.
 24. The reliability of the sluice operation along the Canal has been the subject of detailed technical assessment by the Claimants:
 - a) H.R. Wallingford: "*Manchester Ship Canal: The Future of the Upper Reaches*";
 - b) Det Norske Veritas: "*Sluice Gate Reliability on the Manchester Ship Canal*".
 25. Both reports demonstrated the high reliability of the sluices for the following reasons:
 - a) each set of sluices incorporates some redundancy in the form of multiple individual sluice gates;
 - b) there is redundancy at each location in terms of the monitoring systems to detect water levels and the state of operation of the sluice gates;

- c) there is redundancy at each location in terms of the systems for operating the gates including the operation of purely manual unpowered control;
 - d) the sluices are used in routine Canal operations to maintain the operating water levels, which indicate a level of testing that far exceeds typical dedicated flood defence systems.
26. For a site with 4 sluice gates, the assessment showed:
- a) 92.8% probability of all 4 sluice gates opening;
 - b) 99.11% probability of at least 3 sluice gates opening;
 - c) >99.25% probability of at least 2 sluice gates opening;
 - d) >99.25% probability of at least 1 sluice gate opening;
 - e) < 0.75% probability of all 4 gates failing to open.
27. In mapping Flood Zones, the Defendant assesses the extent of a flood from rivers with a 1% (1 in 100) chance of happening in any year.¹ Applying that test, the Claimants' technical assessments concluded that the annual probability of all of the sluices failing to operate in a 1% probability flood was less than 0.01%, which they classified as "very low". The Defendant did not dispute these assessments.
28. In practice the Canal has not flooded in over 100 years of operation. The width (60m) and depth (9m) of the Canal far exceed that of the natural river channels that it replaced. The size of the Canal, combined with the hydraulic structures, improved the flow of the rivers in its vicinity, thereby reducing the risk of flooding.
29. In 1981, H.R. Wallingford: "*Manchester Ship Canal: The Future of the Upper Reaches*" stated:
- "The Act of Parliament approving construction of the Canal imposed an obligation on the Manchester Ship Canal Company not to worsen the flood risk but in fact the construction of the canal improved the flow capacity of the waterway so that for the last ninety years there has been no significant flood risk between Manchester and Warrington. At each lock large sluices were constructed and these have been able to pass even the largest floods downstream to Runcorn where sluices at the mouth of the River Weaver pass them safely into the estuary."
30. In 2005, the Halcrow Group Limited prepared a "*Hydraulic Modelling Study*" which considered flood risk in the Canal. It concluded:

¹ The Defendant also assesses the extent of a flood with a 0.1% (1 in 1000) chance of happening in any one year.

“the sluicing capacity on the canal was sufficient to pass most flood flows and endure most tidal events without widespread overtopping of banks on either the canal or the lower Mersey. Potential flood risks have, however, been identified in a number of areas, including a reach of the River Irwell upstream of Trafford Road Bridge. The canal itself is predicted to flood during fluvial events downstream of Barton Swing Bridge and in the Latchford pond and around Eastham during tidal events.”

31. In 2009, Jeremy Benn Associates prepared the “*Manchester Ship Canal Modelling Report*” for the Defendant. Its flood estimates were approximately 30% higher than in the Halcrow report. Its conclusions were as follows:

“If climate change materialises in the manner currently predicted and leads to the estimated 20% increase then water levels in the canal would increase during the flood event with 1% chance of occurring in any one year (100 year return period).

...the existing standard of flood protection along the Manchester Ship Canal is generally above the 0.5% annual probability (200 year return period) flood equivalent except in the vicinity of Salford Quays, Saltey Brook confluence and the largely uninhabited Thelwall floodplain near Rixton junction. More widespread inundation of properties would be expected during the flood event with a 0.1% chance of occurring in any one year (1,000 year return period flood event)”

The decision

32. In its letter of 21 December 2010, Mr Ashcroft, Area Manager on behalf of the Defendant, wrote to Mr Nears stating:

“As part of our ongoing discussions on managing flood risk in relation to the Manchester Ship Canal we have been reviewing our approach to producing flood maps. Over the last few months we have considered the views and evidence you have put to us and involved colleagues throughout the organisation including our Director of Flood Risk Management, David Rooke. I can now confirm the approach we intend to take to producing a Flood Map for the Manchester Ship Canal.

Our Flood Map shows “Flood Zones” and “Areas Benefiting from Defences”. As elsewhere, the Flood Zones for the Manchester Ship Canal will show the predicted extent of flooding ignoring the presence of defences. In addition to their navigation function, the sluice gates adjacent to the lock systems along the canal play an important part in managing water levels in potential flooding situations. As such they function as “defences”. The Flood Zones will therefore show the area that would be at risk of flooding if the sluice gates were closed and did not function. The Areas Benefiting from Defences outline will show the areas that benefit from the operation of the sluice gates within the area at risk in a 1%

flood or a 1 in 100 year flood event. This approach to the Flood Map is consistent with the Government's Planning Policy Guidance (PPS25) and Environment Agency national processes.

We plan to finalise these flood maps during December and publish them on our website in early February. We will send you a copy of the draft maps shortly and would welcome comments on the details.

The Flood Zone map is an initial, screening tool depicting possible flood risk. As such, the Flood Zone map represents the beginning of the process of understanding flood risk and forms only one input to planning decisions. The work you have been undertaking over the summer and autumn is aimed at producing compelling evidence regarding the actual risks of the sluice gates on the ship canal. The Water Level Management Protocol, once finalised, will form an important source of evidence that we will take into account in our advice to local planning authorities and developers regarding flood risk."

33. This is the decision which the Claimants challenge in this application for judicial review.

The statutory framework

34. The Environment Act 1995 ("EA 1995"), s.1, established the Defendant as a body corporate for the purpose of carrying out functions transferred or assigned to it by or under the Act. By s.4, the Defendant's principal aims are to discharge its functions "so to protect or enhance the environment, taken as a whole, as to make the contribution towards attaining the objective of achieving sustainable development".
35. S.6 provides that the Defendant shall exercise general supervision over all matters relating to flood and coastal erosion risk management, in accordance with Part 1 of the Flood and Water Management Act 2010. It has strategic responsibility for flood risk and flood protection under the aegis of the Department of Environment, Food and Rural Affairs ("DEFRA").
36. Flood defence functions under the Water Resources Act 1991 and the Land Drainage Act 1991 were transferred to it, by section 2(1)(a)(iii) EA 1995. Mapping is covered by s.105(2) Water Resources Act 1991(2) provides:

"For the purposes of carrying out its flood defence functions the [Agency] shall from time to time carry out surveys of the areas in relation to which it carries out those functions."
37. The Defendant is a statutory consultee for regional and strategic flood risk assessments, carried out pursuant to Government policy set out in PPS25. It is also a statutory consultee for planning applications where it provides flood risk information and comment on the scope of site-specific flood risk assessments.

38. Neither party referred to, or relied upon:
- a) Directive 2007/60/EC, on the assessment of flood risks;
 - b) The Flood Risk Regulations 2009 No. 3042, which implemented the Directive, and required the Defendant to carry out flood assessments and mapping;
 - c) The Flood and Water Management Act 2010.

Government policy

39. Government planning policy on development in areas at risk of flooding was published in *Planning Policy Guidance ("PPG") 25* in July 2001, following public concern at a series of major flood events and growing awareness of climate change as a likely cause of increasingly extreme and unpredictable weather patterns.

40. The principles in PPG25 were summarised in its Foreword:

“This guidance states that:

- the susceptibility of land to flooding is a material planning consideration;
- the Environment Agency has the lead role in providing advice on flood issues, at a strategic level and in relation to planning applications;
- policies in development plans should outline the consideration which will be given to flood issues, recognising the uncertainties that are inherent in the prediction of flooding and that flood risk is expected to increase as a result of climate change;
- planning authorities should apply the precautionary principle to the issue of flood risk, using a risk-based search sequence to avoid such risk where possible and managing it elsewhere;
- planning authorities should recognise the importance of functional flood plains, where water flows or is held at times of flood, and avoid inappropriate development on undeveloped and undefended flood plains;
- developers should fund the provision and maintenance of flood defences that are required because of the development; and
- planning policies and decisions should recognise that the consideration of flood risk and its management needs to be applied on a whole-catchment basis and not be restricted to flood plains.”

41. The policy was explained in more detail under the heading “Sustainable Development and the Precautionary Principle”:

- “9. Historically, development has taken place in both river and coastal flood plains. .. However, the growth of built development within flood plains over the centuries has increasingly required engineering works to defend properties against the risk of flooding....
10. Flood risk involves both the statistical probability of a flood occurring and the scale of the potential consequences. ... While flood defence works can reduce the risk of flooding, they cannot eliminate it. For example, a flood bank designed to contain a particular level of flood will be overtopped by one that is more severe. Flood risk is also expected to increase over time as a result of climate change. It is important that those who plan and occupy development in flood risk areas are aware of the remaining risk, despite the presence of flood defences, and the steps that they should take in the event of a flood....
11. Continued construction of hard-engineered flood defences to protect development in areas exposed to frequent or extensive flooding may not be sustainable in the long term....
12. ...Potential damage from flooding is both uncertain and unpredictable but it can be significant and, in the case of soil loss, potentially irreversible. Because of this the Government considers that the objectives of sustainable development require that action through the planning system to manage development and flood risk should be based on the precautionary principle.

The precautionary principle

13. “Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” This precautionary principle, stated in the Rio Declaration in 1992, is particularly relevant to dealing with the hazard of flooding. Its application acknowledges the uncertainty inherent in flood estimate and, by proceeding from the known facts and taking a precautionary approach to uncertainties, enables more open and better-informed decisions to be made.... In accordance with the precautionary principle, local planning authorities should, therefore, follow the sequential approach....”
42. Accordingly PPG25 introduced a sequential test, operating by reference to the Flood Zones depicted on the Defendant’s “indicative” flood plain map. Development plans, and individual planning decisions, were to favour development in lower flood risk zones in preference to development in higher risk zones.
43. The Defendant submitted that the “precautionary principle” referred to in PPG25, and subsequently followed in PPS25, was the rationale behind the sequential test and the disregard of flood defences for the purposes of flood risk assessment.

44. At my request, the Defendant provided me with an explanation of the “precautionary principle”, as set out in a “*Communication from the European Commission on the precautionary principle*”, dated 2 February 2000. It refers to the adoption of the “precautionary principle” in what is now Article 191(2) of the Treaty on the Functioning of the European Union, and in international environmental policy, and compares it to “other general notions contained in the legislation, such as subsidiarity or proportionality” (p.9).
45. The Introduction explains:
- “A decision to take measures without waiting until all the necessary scientific knowledge is available is clearly a precaution-based approach.
- Decision-makers are constantly faced with the dilemma of balancing the freedoms and rights of individuals, industry and organisations with the need to reduce or eliminate the risk of adverse effects to the environment or to health.
- Finding the correct balance so that proportionate, non-discriminatory, transparent and coherent decisions can be arrived at, which at the same time provide the chosen level of protection, requires a structured decision making process with detailed scientific and other objective information. This structure is provided by the three elements of risk analysis: the assessment of risk, the choice of risk management strategy and the communication of the risk.
- Any assessment of risk that is made should be based on the existing body of scientific and statistical data. Most decisions are taken where there is sufficient information available for appropriate preventative measures to be taken but in other circumstances, these data may be wanting in some respects.
- Whether or not to invoke the Precautionary Principle is a decision exercised where scientific information is insufficient, inconclusive, or uncertain and where there are indications that the possible effects on the environment, or human, animal or plant health may be potentially dangerous and inconsistent with the chosen level of protection.”
46. The Government replaced PPG25 with *Planning Policy Statement (“PPS”) 25*, first published in March 2006. The substitute version of PPS25 was published in March 2010. PPS25 continued to apply the same principles as before.
47. The “Key Planning Objectives” at paragraphs 5 & 6 state:
- “5. The aims of planning policy on development and flood risk are to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without

increasing flood risk elsewhere and where possible, reducing flood risk overall.

6. Regional planning bodies (RPBs) and local planning authorities (LPAs) should prepare and implement planning strategies that help to deliver sustainable development by:

Appraising risk

- identifying land at risk and the degree of risk of flooding from river, sea and other sources in their areas;
- preparing Regional Flood Risk Appraisals (RFRAs) or Strategic Flood Risk Assessments (SFRAs) as appropriate, as freestanding assessments that contribute to the Sustainability Appraisal of their plans;

Managing risk

- framing policies for the location of development which avoid flood risk to people and property where possible, and manage any residual risk, taking account of the impacts of climate change;
- only permitting development in areas of flood risk when there are no reasonably available sites in areas of lower flood risks and benefits of the development outweigh the risk from flooding;

Reducing risk

- safeguarding land from development that is required for current and future flood management eg conveyance and storage of flood water, and flood defences;
- reducing flood risk to and from new development through location, layout and design, incorporating sustainable drainage systems (SUDS);
- using opportunities offered by new development to reduce the causes and impacts of flooding...”

48. PPS25 requires all planning bodies to apply a sequential risk-based approach to development. Paragraphs 16 and 17 state:

“LPAs allocating land in LDDs for development should apply the sequential test (see Annex D and Table D.1.) to demonstrate that there are no reasonably available sites in areas with a lower probability of flooding that would be appropriate to the type of development or land use proposed. A sequential

approach should be used in areas known to be at risk from other forms of flooding.

17. In areas at risk of river or sea flooding, preference should be given to locating new development in Flood Zone 1. If there is no reasonably available site in Flood Zone 1, the flood vulnerability of the proposed development (see Table D.2, Annex D) can be taken into account in locating development in Flood Zone 2 and then Flood Zone 3. Within each Flood Zone new development should be directed to sites at the lowest probability of flooding from all sources (see Annex C) as indicated by the SFRA.”

49. An important footnote to paragraph 17 states:

“Flood Zones are defined in Table D.1. Annex D. The Flood Zones refer to the probability of flooding from rivers, the sea and tidal sources and ignore the presence of existing defences, because these can be breached, overtopped and may not be in existence for the lifetime of the development.”

50. Annex D provides:

D1 The risk-based Sequential Test should be applied at all stages of planning. Its aim is to steer new development to areas at the lowest probability of flooding (Zone 1).

D2 The Flood Zones are the starting point for the sequential approach. Zones 2 and 3 are shown on the Environment Agency Flood Map with Flood Zone 1 being all the land falling outside Zones 2 and 3. These Flood Zones refer to the probability of sea and river flooding only, ignoring the presence of existing defences.

D3 Regional Flood Risk Appraisals ... will refer to Environment Agency Flood Maps and will utilise further information such as Strategic Flood Risk Assessments to allow flood risks to be taken into account in a broad regional context ...

D4 Strategic Flood Risk Assessments (SFRAs) (see Annex E) will refine information on the probability of flooding, taking other sources of flooding (see Annex C) and the impacts of climate change into account.

D5 The overall aim of decision-makers should be to steer new development to Flood Zone 1. Where there are no reasonably available sites in Flood Zone 1, decision makers identifying broad locations for development and infrastructure, allocating land in spatial plans or determining applications for development at any particular location should take into account the flood risk vulnerability of land uses and consider reasonably available sites in Flood Zone 2, applying the Exception Test if required. Only where there are no reasonably available sites in Flood Zones 1 or 2 should the decision-makers consider the suitability of sites in Flood Zone 3, taking into account

the flood risk vulnerability of land uses and applying the Exception Test if required.

- D6 Within each Flood Zone, new development should be directed first to sites with the lowest probability of flooding and the flood vulnerability of the intended use matched to the flood risk of the site, e.g. higher vulnerability uses located on parts of the site at lowest probability of flooding.”

51. The Flood Zones are defined in Table D1:

Table D.1: Flood Zones

(Note: These Flood Zones refer to the probability of river and sea flooding, ignoring the presence of defences)

Zone 1 Low Probability

This zone comprises land assessed as having a less than 1 in 1000 annual probability of river .. flooding in any year (<0.1%)...

Zone 2 Medium Probability

This zone comprises land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding (1% – 0.1%) ...

Zone 3a High Probability

This zone comprises land assessed as having a 1 in 100 or greater annual probability of river flooding (>1%) or a 1 in 200 ..

Zone 3b The Functional Floodplain

This zone comprises land where water has to flow or be stored in times of flood.”

52. If, following application of the Sequential Test in Annex D, it is not possible for the development to be located in zones of lower probability of flooding, the Exception Test can be applied. Paragraph 19 states:

“The Exception Test is only appropriate for use where there are large areas in Flood Zones 2 and 3, where the Sequential Test alone cannot deliver acceptable sites, but where some continuing development is necessary for wider sustainable development reasons, taking into account the need to avoid social or economic blight and the need for essential civil infrastructure to remain operational during floods ...”

53. Annex C sets out “Forms of Flooding” in categories: ‘Flooding from Rivers’, ‘Flooding from the Sea’; ‘Flooding from Land’; ‘Flooding from Groundwater’; ‘Flooding from Sewers’ and ‘Flooding from Reservoir, Canals and other Artificial Sources’. At C9 it states:

“Flooding from Reservoirs, Canals and Other Artificial Sources

Non-natural or artificial sources of flooding can include reservoirs, canals and lakes where water is retained above natural ground level, operational and redundant industrial processes including mining, quarrying and sand and gravel extraction, as they may increase floodwater depths and velocities in adjacent areas. The potential effects of flood risk management infrastructure and other structures also need to be considered. Reservoir or canal flooding may occur as a result of the facility being overwhelmed and/or as a result of dam or bank failure. The latter can happen suddenly resulting in rapidly flowing, deep water that can cause significant threat to life and major property damage. ...”

54. Annex E sets out the “general principles” to be applied in the “assessments of flood risk [to] inform the decision-making process at all stages of development planning”. These include the Regional Flood Risk Appraisal and the Strategic Flood Risk Assessment, which will inform Local Development Documents, and site-specific Flood Risk Assessments. Of particular relevance here are the following principles in E3:

“consider both the potential adverse and beneficial effects of flood risk management infrastructure including raised defences, flow channels, flood storage areas and other artificial features together with the consequences of their failure;”

“consider and quantify the different types of flooding (whether from natural and (sic) human sources and including joint and cumulative effects) and identify flood risk reduction measures, so that assessments are fit for the purpose of the decisions being made;”

“include the assessment of the remaining (known as ‘residual’) risk (see Annex G) after risk reduction measures have been taken into account and demonstrate that this is acceptable for the particular development or land use;”

55. The Glossary in the “*Practice Guide*” to PPS25 includes the following definitions of terms used:

“Annual exceedance probability The estimated probability of a flood of given magnitude occurring or being exceeded in any year. Expressed as, for example, 1 in 100 chance or 1 percent.”

“Flood defence Flood defence infrastructure, such as flood walls and embankments, intended to protect an area against flooding to a specified standard of protection.”

“Flood map A map produced by the Environment Agency providing an indication of the likelihood of flooding within all areas of England and Wales, assuming there are no flood defences. Only covers river and sea flooding.”

“Flood risk management measure Any measure which reduces flood risk such as flood defences.”

“Flood Zone A geographic area within which the flood risk is in a particular range, as defined within PPS25.”

“Precautionary principle Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

“Standard of protection The design event or standard to which a building, asset or area is protected against flooding, generally expressed as an annual exceedance probability.”

Environment Agency policies

56. In March 2010, coinciding with publication of amended PPS25, the Defendant published its *“Flood and Coastal Risk Management Risk Mapping Strategy 2010-2015”*. The Guidance explains that, in addition to the Flood Zones map, required for planning purposes to give effect to PPS25, the Defendant also now publishes a National Flood Risk Assessment which takes into account flood defences when assessing risk, and therefore provides a more accurate assessment of the probability of flooding. However, for the purposes of this claim, the court is solely concerned with the more limited Flood Map prepared for use by planning authorities.
57. On 29th July 2003, during the currency of PPG25, the Defendant published its *“Flood Mapping Strategy”*. Its aim was to give effect to PPG25 by mapping Flood Zones, disregarding flood defences. However, in order to provide planning authorities with data on the actual probability of flooding, it decided to add to the base Flood Map the location of all known flood defences. Relevant extracts are set out below:
 - “4.3 PPG25 uses a sequential method for assessing risk across the floodplain. Flood risk assessments may be required for proposed developments, particularly for those within the extreme flood outline (0.1% annual probability event). The LPAs and developers are now looking to us as experts on flood risk to provide clear advice to incorporate into their flood risk assessments for a particular site. In our support of PPG25, we will provide quality-assured data and information to LPAs on the probability of flooding within the extreme flood outline, so that they can assess the

potential impacts of a development. We will also support LPAs and developers to develop strategic and local flood risk assessments.”

...

“Government Planning Policy

8.1 To support the planning process and the implementation of PPG25 ..., we will provide planning authorities with information on flood risk. Both PPG25 ... define flood risk as the probability of a flood occurring, and categorise flood risk areas into three flood zones. ...

8.2 PPG25... states that “flood zones should be identified from Agency flood data ignoring the presence of flood defences. LPAs should, with the Agency, identify those areas currently protected by defences and the standard of protection provided by those defences”. We will use our modelled flood outlines ... to determine the flood zones for the current year ignoring the presence of defences or any manmade structures, such as road and railway embankments, which could act as defences. This will provide an indication of the maximum extent of flooding should these manmade features be overtopped or breached ...

...

8.3 The flood zones are indicative of the natural undefended floodplain (i.e. without defences) and their purpose is to indicate whether flooding could be an issue in an area ...

...”

“Mapping of Flood Risk with defences

8.10 The existing IFM illustrates the natural floodplain ignoring the presence of defences so the actual probability of flooding is not clear. We need to improve the quality of flood mapping and illustrate the location and benefits of flood defence systems and residual flood risks. This will be the focus for our future flood mapping programme.

...

8.15 In order to illustrate the best estimate of actual flood risk, we will develop a new Flood Map for England ...to illustrate the probability of flooding, taking into account the presence and effect of flood defence systems. The Flood Map will replace the IFM on the Internet and it will illustrate:

The flood zones for PPG25 ...

The location of all known flood defences (where this information is available);

Areas benefiting from flood defences during floods with an annual probability of occurrence of 1% for fluvial This will be determined using modelled flood outlines where available.

The flood zones will be the underlying data layer (or base map) upon which other layers of data are added to illustrate other information (e.g. depth of flooding, RASP risk assessment, vulnerable areas) to illustrate current flood risk)”

58. The Defendant published its “*Guidance for Identification of Areas Benefiting from Flood Defences and Producing the Flood Map*” in July 2005. Relevant extracts are set out below.

“1.1 ... A feature of the Flood Map is that it shows the flood plain differentiated into two levels of flooding likelihood. The floodplain is described on the website as “the area that would naturally be affected by flooding if a river rises above its banks, or high tides and stormy seas cause flooding in coastal areas”. The two parts of the floodplain are described as:

- The area that could be flooded, if there were no defences, from the sea by a flood that has a 0.5% or greater chance of happening each year, or from a river by a flood that has a 1% or greater chance of happening each year. This area is equivalent to PPG25 Flood Zone 3 in England.
- For brevity, the area is here termed the “without defences” flood area.
- The additional extent of an extreme flood from rivers or the sea, also assuming the absence of defences. These outlying areas are likely to be affected by a major flood, with up to 0.1% chance of occurring each year. This area is equivalent to PPG25 Flood Zone 2 in England.
- For brevity, the area is here termed the “extreme flood area”.

A further intent of the Flood Mapping Strategy is to show on the Flood Map two additional features: flood defences and areas benefiting from flood defences. National criteria defining how these features shall be identified have been prepared and agreed; they are included here as Appendix A.”

“7 Defence Identification

7.1 General

There are two basic types of defence to identify:

- Defences that one would wish to show on the Flood Map, in accordance with the ABD Criteria.
- Defences that will not be shown on the Flood Map but nevertheless change the 1% AP fluvial ... flood risk area from that shown as the without defences flood area on the published Flood Map. Information on these defences is needed as it will help in the identification of areas benefiting.

...

7.2 Formal Defences

The terms “formal defences” and “formally designated defences”, used in the ABD Criteria have the same meaning. They refer to structures that directly limit the spread of flooding, and, primarily because of this function, are owned and/or maintained by their respective owner ...

The structures are likely to encompass those types that would, in accordance with the ABD Criteria, be added to the Flood Map, viz:

- Raised walls, including demountable walls
- Embankments, including coastal dune and shingle ridges
- Barriers and barrages
- Flood storage areas created by a structure or structures ...
- Land pumping stations.

These structures may exist in fluvial, tidal or lowland situations. Other than dune and shingle ridges, natural ground is not a defence.

7.3 De facto Defences

De facto defences are structures that perform the same basic function as formal defences, in that they directly limit the spread of flood water, but in their case flood defence is a secondary or indirect purpose. The structures would be thought of as part of the built infrastructure of an area. They are likely to encompass:

- Raised walls, such as alongside a highway where it borders a river, or as a boundary to property.
- Embankments, such as road and rail embankments

- Water supply reservoirs where a formal agreement for flood control is in place.”

59. The Glossary includes these definitions:

“Area Benefiting from Defences The area that is protected by a defence or defence system against flooding at the 1% annual probability fluvial event and 0.5% annual probability tidal event, assuming all defences remain intact and function perfectly.”

“Defence Term embracing both formal defence and de facto defences.”

“De facto defence A structure that provides a flood defence function but for which flood defence is a secondary or indirect purpose.”

“Formal defence A formal defence asset that directly limits the spread of flood water and, primarily because of this function, is owned and/or maintained by its present owner, regardless of whether this is the Environment Agency, another authority or a private owner.”

60. The Defendant published its *“Criteria for Identification of Areas Benefiting from Flood Defences”* in July 2005. It provides as follows:

“3.4 State of the Catchment or Tidal Area

All areas shall be considered as in their present-day “real-life” state, with existing development and surface land form.

...

By considering the present “real-life” state, the assessment will take into account the possible obstruction or direction to flow of flood water offered by the built environment as well as the similar effect provided by flood defences.

However, in so doing, the intent shall be not to over-complicate the assessment. Thus in general the obstruction to flow of flood water offered by buildings, boundary walls, fences and the like can be ignored.

Exceptions can be made if local Environment Agency staff consider certain buildings or walls will provide secure barriers to the flow of flood water and thus act as de facto defences if they have a material effect on the spread of flood water, though openings through the embankments must be taken into account.

Existing embankments, bridges and other features crossing a river floodplain shall be taken as in-place, giving their combined effect on flows and flood levels along the river.”

“3.5 Flood Defences

The assessment shall consider all existing flood defences as being in place and acting together to control flow and limit flood spreading. The effect of defence elements individually shall not be considered.

The defences may be in any ownership ... They shall include formally designated defences and can include de facto defence structures where these are recognised by local staff as being secure in limiting the extent of flooding....

3.6 Mapping Flood Defences

Whilst de facto defences shall be incorporated into the assessment of areas benefiting from defences, they shall not be mapped in the Flood Map.

The flood defences that shall be shown on the Flood Map are those structures that are formally maintained as defences and whose purpose is to limit the spread of flood water over the land. As such, the structures will be:

- Raised walls, including demountable walls.
- Embankments, including coastal dune and shingle ridges.
- Barriers and barrages.
- Flood storage areas created by a structure of structures (here it is the flood storage area and the water retaining structure that shall be mapped as flood defences, not outlet control sluices and the like).
- Land drainage pumping stations.

...

Structures whose purpose is to aid normal operation rather than provide flood protection shall not be mapped as flood defences. Examples are weirs, sluices controlling normal water levels, locks, trash screens and offshore breakwaters.

...

3.7 Condition of Flood Defences

Flood defences and other operating structures shall be assumed to act perfectly. There shall be no consideration of operational or structural failure, nor of blockage.”

61. The document considered in the preceding paragraph -“*Criteria for Identification of Areas Benefiting from Flood Defences*”, July 2005 – was edited and re-issued on 19 January 2011, under the title “*Criteria for Identification of Areas Benefiting from Flood Defences for inclusion in the Flood Map*” Operational instruction 301_05. I was informed by Mr Nardell that the reason for the editing was to provide a “plain English” version. The changes in wording were not intended to indicate any change of policy. Therefore I conclude that no weight should be attached to the differences in wording. Relevant extracts from the revised version are set out below:

“Flood Events:

Consider the following flood events when defining ABDs for the Flood Map:

1 in 100 annual probability (1% AP) fluvial flood...

When considering the 1% AP fluvial flood, assume a worst case scenario...

State of the catchment area ...:

Identification of ABDs shall consider the present day state of a catchment ... area, taking into account the possible obstruction or diversion of floodwater offered by infrastructure and the built environment, as well as effect of flood defences.

Take into account infrastructure and the built environment when assessing the “without defences” flood extents for the Flood Map. This condition also includes the basic river and coastal infrastructure, such as:

- ...
- structures whose purpose is to aid normal operation rather than provide flood protection. Such structures include weirs, sluices, lock, trash screens and offshore breakwaters;

Flood Defences to include in the ABD assessment

Flood defences to consider can be categorised as:

- formal defences and
- de facto defences

Formal defences are structures formally maintained as flood defence. The primary purpose of those structures would be to limit the spread of flood water over land.

Example structures are:

- raised walls, including demountable walls;
- embankments, including coastal shingle ridges;
- barriers and barrages;
- engineered or controlled flood storage areas, created by a structure of combination of structures;
- land drainage pumping stations

De facto defences

De facto defences are other structures that provide secure barriers to the flow of flood waters, in the manner of a formal flood defence, but for which this flood defence function is a by-product, perhaps unintentional, of their primary purpose... Water supply reservoirs may be included where formal agreement for flood control is in place.

...

Condition of Flood Defences:

Assume that flood defences act perfectly during flood events. This includes opening or closing flood gates and the like where this is intended.

There shall be no consideration of:

- Operational or structural failures; flood risk allowing for the probability of structural failure is assessed by the National Flood Risk Assessment (NaFRA) methodology. This element of the Flood Risk Mapping Strategy is separate from the identification of ABDs;
- failures due to blockage;
- flooding due to seepage through flood defences or their foundations.

This criterion is adopted so that the Flood Map has a clear objective basis. Including breaching scenarios introduces elements of subjective judgement into the Flood Map which are not desirable.”

62. On 31 March 2006, the Defendant published its policy number 131_06 entitled “Flood Map” which provides as follows:

“This policy defines what is included on the Flood Map.

The Flood Map comprises the following data:

1. Flood Zones

Flood Zones are areas which could be affected in the event of flooding from rivers ...

Flood zones ignore the presence of the following types of flood defence and structures:

- Raised walls and embankments
- Barriers, barrages and gates
- Engineered or controlled flood storage areas
- Pumping stations

Other infrastructure, including bridges, culverts, engineered channels and bypass channels, and embankments (e.g. railway or road embankments) that are not flood defences, is included in all modelling and mapping of flood zones (apart from our national generalised modelling produced in 2004).

The Flood Zones policy statement details the purpose and development of flood zones.

2. Flood Defences

The Flood Map shows the location of the following types of flood defences:

- Raised walls and embankments
- Tidal barriers and barrages
- Engineered or controlled flood storage areas
- Pumping stations

All other types of flood defences or structures, or natural or manmade infrastructure, including bridges, culverts, engineered channels and bypass

channels, embankments that are not flood defences, and natural washlands, are not shown on the Flood Map.”

63. On 31 March 2006, the Defendant published its policy number 132_06 entitled “Areas Benefiting from Flood Defences, and Flood Areas”. It provides:

“Areas benefiting from flood defences

Areas benefiting from flood defences are defined as those areas which benefit from formal flood defences in the event of flooding from rivers with a 1% (1 in 100) chance in any given year. ... If the defences were not there, these areas would be flooded.

In mapping areas benefiting from flood defences, we assume that flood defences and other operating structures act perfectly and give the same level of protection as when our assessment of the area was carried out....If the defence needs to be operated (for example, a flood gate) then an assessment of an area benefiting from flood defences assumes that the defence will be appropriately operated.”

“Explanatory Note

Background

Flood defences do not completely remove the chance of flooding. They can be overtopped by water levels which exceed the capacity of the defences. They can be breached if the condition is inadequate or conditions are harsh. Some defences – such as flood gates – can fail to operate, or manual operation may not be put into effect...

Types of Flood Defences

We may map areas benefiting from the following types of flood defence:

- Raised walls and embankments
- Tidal barriers and barrages
- Engineered or controlled flood storage areas
- Land Drainage Pumping stations

We will not map areas benefiting from other infrastructure, such as bridges, culverts, engineered channels and bypass channels, and embankments that are not flood defences, as these structures are included in modelling and mapping Flood Zones. This does not mean that these structures cannot reduce or increase flood risk.”

64. In August 2007, the Defendant published policy number 541_05 entitled “*Flood zones*” which provides:

“Policy

Flood Zones show areas of land that could flood from rivers and/or from the sea. They identify the extents over which flooding could occur, if the flooding is not constrained by flood defences.”

“Purpose

Flood Zones are designed for strategic spatial and development planning purposes in England. The definition of each Flood Zone originates from .. (PPS 25) ... We are not required to map the outer boundary of Flood Zone 3b...”

“Objectives

1. To ensure a consistent approach to production, amendment and communication of Flood Zones
2. To ensure that only appropriate data are used for production of Flood Zones and that its source and quality are recorded.
3. To ensure that Flood Zones meet the requirements of planning policy; in particular, that Flood Zones are:
 - Not constrained by formal raised flood defences
 - Consistent and reliable
 - Defensible and auditable
 - Probability-based
 - Precautionary.”

“Background

...

We interpret PPS25 to mean that flooding is not constrained by formal raised flood defences. Therefore the Flood Zones ignore the effect of defences in reducing the probability of flooding but do not underestimate the extents of flooding where defences *increase* the area potentially at risk.

Other types of flood defences or infrastructure (whether or not their primary purpose is flood alleviation) such as engineered river channels, bypass channels, culverts and bridges are considered as existing infrastructure for the purpose of

Flood Zones. In principle this means they are included when modelling and mapping Flood Zones. This principle also applies to embankments that are not flood defences, although any pathways through the embankment should be taken into account.”

Grounds for judicial review

65. The Claimants’ first ground was that the Defendant had failed properly to interpret, apply or have regard to its own policy when it classified the sluices on the Canal as formal flood defences, and based its Flood Zone assessment and mapping on the assumption that the sluices would fail and remain closed. In the claim form, the Claimants alleged that the decision was irrational.
66. In the alternative, in its second ground, the Claimants’ submitted that even if the sluices had been correctly classified as formal flood defences under the Defendant’s policy, the Defendant erred in law by:
 - a) failing to take into account a relevant consideration, namely, the minute risk that all four sluice gates in any one sluice would fail to open. The sluice operating mechanisms have extensive back-up and they have not failed in over a century. There was agreed evidence that the probability of all four sluice gates in one location failing to operate and therefore remaining closed, in a 1 in 100 year event, was less than 0.01%;
 - b) insofar as it did take the agreed evidence into account, it was irrational and disproportionate to conclude that the flood risk should be assessed on the basis that all the sluice gates might fail in the closed position;
 - c) insofar as its conclusion was in accordance with its policy, it adopted an inflexible approach, slavishly adhering to its policy, which was inconsistent with the approach adopted in respect of other watercourses.
67. The Defendant’s response to the Claimants’ first ground was that it had applied its guidance lawfully and rationally, taking into account all the relevant information obtained during lengthy exchanges with the First Claimant before it made its decision. It concluded that the sluices were “formal flood defences” because the flood defence function of the sluices was as important as its navigational function: in Mr Nardell’s words, they have a “bi-fold primary function”. The structures listed in the policy were illustrative, not exhaustive. Whether these particular sluices were to be regarded as flood defence structures was a question of fact and degree for the Defendant’s expert judgment.
68. In response to the second ground, the Defendant submitted that Government policy takes a precautionary approach which assumes all flood defences, mechanical or fixed, will fail. The Claimants had not challenged that policy in their claim for judicial review. It was a “moot point” whether the Defendant should, or could, depart from Government policy in mapping individual areas “and not for determination in these proceedings”. The evidence demonstrated that the Defendant had contemplated

making an exception for the sluices, but eventually concluded that, in line with the precautionary principle in PPS25, the “worst case” undefended scenario ought to be applied, namely, that the sluice gates fail to open. The evidence of a reduced residual risk of sluice failure could be considered at a subsequent stage, when Areas Benefiting from Defences (“ABDs”) were mapped by the Defendant and flood risks assessed by the local planning authority, upon an application for planning permission.

Conclusions

Ground 1

69. The role of the court in considering whether a decision-maker has acted lawfully in accordance with policy has recently been considered in a planning context by the Supreme Court in *Tesco Stores Limited v Dundee City Council* [2012] UKSC 13. Lord Reed (with whose judgment Lord Brown, Lord Hope, Lord Kerr and Lord Dyson agreed) said, at [17] – [21]:

“17. It has long been established that a planning authority must proceed upon a proper understanding of the development plan: see, for example, *Gransden & Co Ltd v Secretary of State for the Environment* (1985) 54 P & CR 86, 94 per Woolf J, affd (1986) 54 P & CR 361; *Horsham DC v Secretary of State for the Environment* (1991) 63 P & CR 2319, 225-226 per Nolan LJ. The need for a proper understanding follows, in the first place, from the fact that the planning authority is required by statute to have regard to the provisions of the development plan: it cannot have regard to the provisions of the plan if it fails to understand them. It also follows from the legal status given to the development plan by section 25 of the 1997 Act. The effect of the predecessor of section 25, namely section 18A of the Town and Country (Planning) Scotland Act 1972 (as inserted by section 58 of the Planning and Compensation Act 1991), was considered by the House of Lords in the case of *City of Edinburgh Council v Secretary of State for Scotland* 1998 SC (HL) 33, [1997] 1 WLR 1447. It is sufficient for present purposes to cite a passage from the speech of Lord Clyde, with whom the other members of the House expressed their agreement. At p.44, 1459, his lordship observed:

“In the practical application of sec. 18A it will obviously be necessary for the decision-maker to consider the development plan, identify any provisions which are relevant to the question before him and make a proper interpretation of them. His decision will be open to challenge if he fails to have regard to a policy in the development plan which is relevant to the application or fails properly to interpret it.”

18. In the present case, the planning authority was required by section 25 to consider whether the proposed development was in accordance with the development plan and, if not, whether material considerations justified departing from the plan. In order to carry out that exercise, the planning authority required to proceed on the basis of what Lord Clyde described as “a proper interpretation” of the relevant provisions of the plan. We were however referred by counsel to a number of judicial dicta which were said to support the proposition that the meaning of the development plan was a matter to be determined by the planning authority: the court, it was submitted, had no role in determining the meaning of the plan unless the view taken by the planning authority could be characterised as perverse or irrational. That submission, if correct, would deprive sections 25 and 37(2) of the 1997 Act of much of their effect, and would drain the need for a “proper interpretation” of the plan of much of its meaning and purpose. It would also make little practical sense. The development plan is a carefully drafted and considered statement of policy, published in order to inform the public of the approach which will be followed by planning authorities in decision-making unless there is good reason to depart from it. It is intended to guide the behaviour of developers and planning authorities. As in other areas of administrative law, the policies which it sets out are designed to secure consistency and direction in the exercise of discretionary powers, while allowing a measure of flexibility to be retained. These considerations point away from the view that the meaning of the plan is in principle a matter which each planning authority is entitled to determine from time to time as it pleases, within the limits of rationality. On the contrary, these considerations suggest that in principle, in this area of public administration as in others (as discussed, for example, in *R (Raissi) v Secretary of State for the Home Department* [2008] QB 836), policy statements should be interpreted objectively in accordance with the language used, read as always in its proper context.

19. That is not to say that such statements should be construed as if they were statutory or contractual provisions. Although a development plan has a legal status and legal effects, it is not analogous in its nature or purpose to a statute or a contract. As has often been observed, development plans are full of broad statements of policy, many of which may be mutually irreconcilable, so that in a particular case one must give way to another. In addition, many of the provisions of development plans are framed in language whose application to a given set of facts requires the exercise of judgment. Such matters fall within the jurisdiction of the planning authorities, and their exercise of judgment can only be challenged on the ground that it is irrational or perverse (*Tesco Stores Ltd v Secretary of State for the Environment* [1995] 1 WLR 759, 780 per Lord Hoffmann). Nevertheless, planning authorities do not live in the world of Humpty Dumpty: they cannot make the development plan mean whatever they would like it to mean.

20. The principal authority referred to in relation to this matter was the judgment of Brooke LJ in *R v Derbyshire County Council, Ex p. Woods* [1997] JPL 958, at 967. Properly understood, however, what was said there is not

inconsistent with the approach which I have described. In the passage in question, Brooke LJ stated:

“If there is a dispute about the meaning of the words included in a policy document which a planning authority is bound to take into account, it is of course for the court to determine as a matter of law what the words are capable of meaning. If the decision maker attaches a meaning to the words they are not properly capable of bearing, then it will have made an error of law, and it will have failed properly to understand the policy.”

By way of illustration, Brooke LJ referred to the earlier case of *Northavon DC v Secretary of State for the Environment* [1993] JPL 761, which concerned a policy applicable to “institutions standing in extensive grounds”. As was observed, the words spoke for themselves, but their application to particular factual situations would often be a matter of judgment for the planning authority. That exercise of judgment would only be susceptible to review in the event that it was unreasonable. The latter case might be contrasted with the case of *R(Heath and Hampstead Society) v Camden LBC* [2008] 2 P & CR 233, where a planning authority’s decision that a replacement dwelling was not “materially larger” than its predecessor, within the meaning of a policy, was vitiated by its failure to read the policy correctly: read in its context, the phrase “materially larger” referred to the size of the new building, compared with its predecessor, rather than requiring a broader comparison of their relative impact, as the planning authority had supposed. Similarly in *City of Edinburgh Council v Scottish Ministers* (2011) SC 957 the reporter’s decision that a licensed restaurant constituted “similar licensed premises” to a public house, within the meaning of a policy, was vitiated by her misunderstanding of the policy: the context was one in which a distinction was drawn between public houses, wine bars and the like, on the one hand, and restaurants, on the other.

21. A provision in the development plan which requires an assessment of whether a site is “suitable” for a particular purpose calls for judgment in its application. But the question whether such a provision is concerned with suitability for one purpose or another is not a question of planning judgment: it is a question of textual interpretation, which can only be answered by construing the language used in its context. In the present case, in particular, the question whether the word “suitable”, in the policies in question, means “suitable for the development proposed by the applicant” or “suitable for meeting identified deficiencies in retail provision in the area” is not a question which can be answered by the exercise of planning judgment: it is a logically prior question as to the issue to which planning judgment requires to be directed.”

70. Although the legal and factual context of this case differs from that in *Tesco Stores Limited*, I consider that the principles helpfully expounded by Lord Reed are applicable to my task of deciding whether the Defendant acted unlawfully in classifying the sluices as formal flood defences under its policies.

71. The Defendant's case was that both its policies, and the decision in this case, were consistent with PPS25.
72. PPS25 envisages a multi-stage approach to flood-risk assessment. Identification of the Flood Zones by the Defendant is at the initial stage. It is a relatively crude risk assessment tool because it disregards flood defences and postulates a worst-case scenario. Nor does it distinguish between the level of risk in different locations within the Flood Zone. By a process of continuing assessment, at both regional and local planning authority levels, a more realistic assessment of flood risk in the area is produced which does take account of flood defences and all other ways in which flood risks may be effectively managed. This exercise is informed by the Defendant's mapping of Areas Benefiting from Flood Defences. Finally, the Flood Risk Assessment, required when a particular planning application is being considered, provides a detailed assessment of risk in specific sites under consideration. The Defendant is consulted and advises at all stages.
73. The Defendant's initial identification of Flood Zones is the basis upon which the Sequential Test is applied at every subsequent stage thereafter. Once an area is designated as Flood Zone 3a (as in this case), PPS25 provides that local planning authorities should only permit development where there are no reasonably available sites in Flood Zones 1 or 2, subject to the limited Exception Test. Where land has been designated Flood Zone 3a, the more realistic risk assessment which local planning authorities are entitled to carry out at a later stage is unlikely to lead to a decision in favour of development unless the Exception Test applies.
74. The rationale behind this approach is that, by application of the precautionary principle, future development should be steered away from high flood risk areas wherever possible. Even where adequate flood defences have been or could be constructed, they may not be sustainable in the longer term, given the uncertainties of climate change and availability of resources.
75. The impact of Flood Zoning and the Sequential Test on development is illustrated by the story of the Pomona Island development. In June 2009, Trafford Metropolitan Borough Council's draft Core Strategy identified Pomona Island as a strategic location for a mixed use development to provide up to 1500 residential units and commercial use. However, after it was designated as Flood Zone 3a by the Defendant, and assessed in the Strategic Flood Risk Assessment, the Council's January 2012 Trafford Core Strategy reversed its previous decision. It concluded:

"The main outcome of the SFRA and associated Sequential Testing of the Strategic Locations, undertaken in accordance with national guidance, is that Pomona Island is not a preferred location for residential development. For this reason, neither this Policy nor Policy SL1 makes an allowance for this location to contribute towards the Council's housing land target, above what has already been permitted by way of the outstanding full planning permission for 546 residential units on part of Pomona which does not expire until May 2012."

76. The Second Claimant could not fulfil the Exception Test in respect of the Pomona Island development because other development sites in a lower risk Zone were available.
77. I turn to consider the steps which PPS25 requires the Defendant to take. The Defendant's primary task is to draw up a Flood Map. The Flood Map is intended to provide "an indication of the likelihood of flooding within all areas of England and Wales" (Glossary).
78. The probability of flooding is demonstrated by Flood Zoning. A "Flood Zone" is defined as "a geographic area within which the flood risk is in a particular range, as defined within PPS25" (Glossary). Table D.1. classifies land into Flood Zones 1, 2, 3a or 3b, by reference to the probability of flooding. The Flood Map should indicate any area which falls within Flood Zones 2 and 3 (with Zone 1 being all the land outside Zones 2 and 3) (D2).
79. The Flood Map should provide an indication of the likelihood of flooding "assuming there are no flood defences" (Glossary); "ignoring the presence of defences" (Table D.1.); "ignoring the presence of existing defences" (D2).
80. The term "Flood Defences" is defined in the Glossary as "Flood defence infrastructure, such as flood walls and embankments, intended to protect an area against flooding to a specified standard of protection".
81. Having regard to the definition, I consider that the term 'Flood Defences' in PPS25 is intended to refer to structures whose purpose is to protect against flooding. It is not intended to refer to structures which have a different function even though they may also assist in flood protection. In my judgment, the phrase "intended to protect" indicates the purpose is flood protection. The very words "flood defence" and the reference "to a specified standard of protection" (a defined term in the Glossary) also indicate that these are constructions which are designed for flood protection.
82. PPS25 acknowledges that "Flood Defences" are not the only form of protection against flooding. PPS25 envisages there will be others too, defined in the Glossary as:
- "Flood risk management measure Any measure which reduces flood risk such as flood defences."*
83. There are several references in PPS25 to other forms of protection against flooding, e.g. Strategic Flood Risk Assessments "will be widened to consider the impact of flood risk management infrastructure on the frequency, impact, speed of onset, depth and velocity of flooding within the Flood Zones considering a range of flood risk management maintenance scenarios."
84. PPS25 does not include practical examples of "Flood Defences" to aid interpretation. The Practice Guide refers at p.159 to the example of watertight flood gates in York,

and at p.160 to flood defences such as flood banks and flood defence walls. It distinguishes “other infrastructure acting as a flood defence” such as road and rail embankments.

85. PPG25, which also used the term “Flood Defences”, did provide examples (emphasis added):

- “9. ... the growth of built development within flood plains over the centuries has increasingly required engineering works to defend properties against the risk of flooding....
- 10 ... While flood defence works can reduce the risk of flooding, they cannot eliminate it. For example, a flood bank designed to contain a particular level of flood will be overtopped by one that is more severe... It is important that those who plan and occupy development in flood risk areas are aware of the remaining risk, despite the presence of flood defences...
11. Continued construction of hard-engineered flood defences to protect development in areas exposed to frequent or extensive flooding may not be sustainable in the long term....”

In my judgment, these examples support the view that the term “Flood Defences” is intended to refer to structures whose purpose is to protect against flooding.

86. The Defendant, in its policies, has interpreted the term “Flood Defences” in PPG25 and PPS25 in a similar way. In its ‘*Flood Mapping Strategy*’, published in July 2003 during the currency of PPG25, it distinguishes between “formal defences” and “de facto defences”, on the basis that flood defence is the primary purpose of “formal defences”, but not of “de facto defences”. These terms are defined in the Glossary as:

“De facto defence A structure that provides a flood defence function but for which flood defence is a secondary or indirect purpose.”

“Formal defence A formal defence asset that directly limits the spread of flood water and, primarily because of this function, is owned and/or maintained by its present owner, regardless of whether this is the Environment Agency, another authority or a private owner.”

87. The distinction between “formal” and “de facto” defences has been maintained in the Defendant’s policies ever since, up to the most recent revision of “*Criteria for Identification of Areas Benefiting from Flood Defences*”, dated 19 January 2011, which has revised the definitions without altering their meaning:

“Formal defences are structures formally maintained as flood defence. The primary purpose of those structures would be to limit the spread of flood water over land.”

De facto defences are other structures that provide secure barriers to the flow of flood waters, in the manner of a formal flood defence, but for which this flood defence function is a by-product, perhaps unintentional, of their primary purpose...”

88. Although the purpose of the policies mentioned above is to provide guidance on identifying those flood defences which should, or should not, be included in the “Areas Benefiting from Flood Defences” (ABDs) assessment, it is clear that the classification of defences is intended to mirror that used for the purpose of mapping Flood Zones. The policy is that the “formal defences” which fall to be disregarded, pursuant to PPS25, when mapping the Flood Zones in the base map will subsequently be shown on the Flood Map, in the second layer, as ABDs, marked by hatching. The “de facto defences” do not fall to be disregarded, pursuant to PPS25, when mapping the Flood Zones in the base map and so they will not be shown on the Flood Map, in the second layer, as ABDs.
89. The policies on mapping ABDs list the types of flood defences and structures which will be treated as “formal defences” and those which will be treated as “de facto defences”. The policies on mapping Flood Zones list the same flood defences and structures, further confirming that the policies are consistent with one another. See, for example, policy number 131_06.
90. The Claimants relied in particular upon the policies which specifically state that sluices controlling normal water levels would not be mapped as flood defences. Both the “*Criteria for Identification of Areas Benefiting from Flood Defences*” and the “*Guidance for Identification of Areas Benefiting from Flood Defences and Producing the Flood Map*”, published in July 2005, state:

“Structures whose purpose is to aid normal operation rather than provide flood protection shall not be mapped as flood defences. Examples are weirs, sluices controlling normal water levels, locks, trash screens and offshore breakwaters.” (emphasis added).

On the evidence before me, there is no doubt that the Canal sluices are “sluices controlling normal water levels”.

91. It is also significant that none of the policies lists sluices among the formal defences to be disregarded. Mr Nardell suggested that the single reference to “gates” in policy number 131_06 includes “sluice gates”. It is correct that each sluice on the Canal has a number of sluice gates. Moreover the principal definition of the word “sluice” in the Shorter Oxford English Dictionary is:

“A structure on river, canal etc. with an adjustable gate or gates by which the volume or flow of water is controlled; a gate in such a structure.”

However, I was convinced by Mr Village’s submission that it was inconceivable that the authors of these policies, with expertise in hydraulics, would inaccurately use the

word “gate” to describe a “sluice” or “sluice gate”. Particularly when sluices are expressly referred to elsewhere in the policies. It seemed far more likely that “gate” was intended to refer to a “flood gate”, a term used, for example, in policy number 132_06.

92. The Defendant submitted that the lists of structures which are, or are not, to be treated as flood defences are not exhaustive. They are merely illustrative and they should not be strictly construed as if they were the words of a statute. Mr Nardell submitted that the classification into ‘formal’ or ‘de facto’ defences was a question of judgment for the Defendant.
93. In my judgment, in drawing up its policies, the Defendant was intending to define and categorise, as best it could, those structures which are, or are not, to be treated as “formal” or “de facto” flood defences, in order to give clear guidance, and to achieve consistency in flood mapping across the country. These objectives are expressed in policy number 541_05:

“Objectives

1. To ensure a consistent approach to production, amendment and communication of Flood Zones
3. To ensure that Flood Zones meet the requirements of planning policy; in particular, that Flood Zones are:
 - Not constrained by formal raised flood defences
 - Consistent and reliable
 - Defensible and auditable”

94. Ms Kate Marks, National Office, Head of Flood and Coastal Risk Mapping and Modelling, in her email dated 15 October 2010, confirmed that the Flood Zone mapping had to be “a nationally consistent product”.
95. In concluding that the Defendant’s policies are intended to define and categorise flood defences, between “formal” and “de facto” defences, I have also had regard to the purpose of these policies. As I have already described, the mapping of Flood Zones triggers the Sequential Test, which in turn steers new development away from the higher risk Flood Zones at all stages of the planning process. Since Flood Zoning may have a drastic impact upon future development, it is appropriate that both PPS25, and the Defendant’s own policies, are careful to limit the extent of the flood defences which are to be disregarded when mapping Flood Zones. Both are required, by EU law, to apply the precautionary principle in a proportionate way (see the ‘*Communication from the European Commission on the precautionary principle*’, cited above), to strike a balance between risk avoidance on the one hand, and economic development on the other.

96. This approach on the part of the Government and the Defendant should not be misconstrued as minimising the importance of effective flood risk assessment, precautions and prevention. It is important to distinguish between the specific function of Flood Zone mapping, which is relatively narrow in scope, and the wider function of flood risk mapping, in the Flood Map and the National Flood Risk Assessment, which assesses the probability of flooding, taking all relevant factors into account. The Defendant's current strategy, as set out in its '*Flood and Coastal Risk Management Risk Mapping Strategy 2010 – 2015*' is to replace the Flood Map with mapping developed using "probabilistic methods". The Strategy document states:

"... we mapped flood risk in a way that did not enable the range of flood risk for a particular location to be understood, and did not take into account all the factors which could affect that risk.

Our Flood Map shows an outline of an area at risk, but not the distribution of risk within that outline. An area is either at risk from a flood of a particular magnitude, or not. This way of looking at mapping is an example of what is sometimes called a deterministic approach. The Flood Zones are an example of this approach...

....

We have begun using a way of assessing risk that provides a far more realistic understanding of how likely an area is to flood. With this method, we can now talk about the *distribution* of the likelihood of flooding within an area. In other words, we can predict the likely extent of flooding in much more detail. This method is an example of what is sometimes called a probabilistic approach."

The Strategy document then declares its intention to "stop using the Flood Zones as our primary source for communicating the chance of flooding to the public but continue to use it to support local planning authorities in their development planning role (to support Planning Policy 25..)"

97. Returning to the Defendant's policies on 'formal' and 'de facto' defences, plainly the lists of structures are not exhaustive: the Defendant might have to assess a structure which does not fall precisely within any of the categories previously listed. But where the Defendant has stated, as a matter of policy, that a particular type of structure will not be treated as a formal defence, it has already exercised its judgment in respect of the structure in question, and incorporated its judgment in the policy. It cannot lawfully depart from its own policy without a legitimate reason. This principle is "a legal standard" and "a requirement of good administration": per Laws LJ in *Nadarajah & Anor v Secretary of State for the Home Department* [2005] EWCA Civ 1363, at [68].

98. Mr Nardell submitted that the Defendant was entitled, in the exercise of its discretion, to classify these particular sluices as formal defences because their function has

always been to protect against floods, as well as to aid navigation in the Canal. He referred to various provisions in the Manchester Ship Canal Act 1885 in support of this submission. In my judgment, these provisions merely showed that the Company was required to ensure that the construction of the Canal did not either create a flood risk or interfere with existing arrangements for the escape of flood waters. There was nothing in the Act to support Mr Nardell's submission that the original purpose or function of the sluices was to protect against flooding. On reading the internal emails disclosed, it does not appear that the Defendant relied on the Act when making its decision.

99. I accept Mr Village's submission that the evidence shows that the sluices, together with the locks and weirs, were designed, and have since been maintained, to control the water levels along the Canal, enabling safe navigation of sea-going vessels along the Canal. This was a feat of engineering since the five sets of locks lift ships a total of 19m above the mean tide level of the estuary. Applying the wording of the policy, these are "sluices controlling normal water levels".
100. The evidence does demonstrate that the sluices make a valuable contribution to flood reduction because of the continuous regulation of water levels. In accordance with the Defendant's policies, they can properly be described as "de facto defences" since they "provide[s] a flood defence function but ... flood defence is a secondary or indirect purpose" and "flood defence function is a by-product, perhaps unintentional, of their primary purpose".
101. However, in my judgment, the sluices cannot properly come within the description of "formal defences", namely:

"Formal defence A formal defence asset that directly limits the spread of flood water and, primarily because of this function, is owned and/or maintained by its present owner, regardless of whether this is the Environment Agency, another authority or a private owner."

"Formal defences are structures formally maintained as flood defence. The primary purpose of those structures would be to limit the spread of flood water over land."
102. On the evidence, the sluices are not owned or maintained by the Claimants for the purpose of providing a formal defence against flooding. Their primary purpose is to regulate water levels in the Canal, not to limit the spread of flood water over land.
103. In my judgment, the Defendant's internal emails indicate that its officers did not give adequate consideration to the distinction between 'formal' and 'de facto' defences.
104. My conclusion is, therefore, that the Defendant failed properly to interpret, apply or have regard to its own policy when it classified the sluices on the Canal as formal flood defences, and based its Flood Zone assessment and mapping on the assumption that the sluices would fail and remain closed.

105. Furthermore, for the same reasons, it was irrational, in a *Wednesbury* sense, for the Defendant to conclude that the sluices came within the descriptions of “formal defences” as set out in its policies.

Ground 2

106. Since the Claimants have succeeded on Ground 1, they do not need to pursue Ground 2. However, in case the claim goes further, I have set out my conclusions on Ground 2 also, proceeding on the alternative basis that the sluices are ‘formal defences’ under the Defendant’s policies.
107. The Claimants alleged that the Defendant erred in:
- a) failing to take into account a relevant consideration, namely, the minute risk that all four sluice gates in any one sluice would fail to open;
 - b) insofar as it did take the agreed evidence into account, it was irrational and disproportionate to conclude that the flood risk should be assessed on the basis that all the sluice gates might fail in the closed position;
 - c) insofar as its conclusion was in accordance with its policy, it adopted an inflexible approach, slavishly adhering to its policy, which was inconsistent with the approach adopted in respect of other watercourses.
108. It is common ground that the Claimants were given the opportunity to make informal representations and submit evidence to the Defendant whilst it was considering how to map the Canal.
109. The Defendant disclosed a number of internal emails which candidly revealed the exchanges of views and deliberations among its officers, leading up to the decision. The final word in the Defendant’s deliberations is set out in an email from Ms Kate Marks, National Office, Head of Flood and Coastal Risk Mapping and Modelling, dated 15 October 2010 which reads:

“The Flood Zones as described in PPS25 are deterministic outputs and undefended in line the precautionary principle. They are designed to be a ‘worst case’ undefended scenario to provide initial knowledge that is then built upon with further residual risk analysis and local knowledge of conditions through mechanisms such as the EA ABD product, and SFRA work by the local authority. However, this knowledge is in addition to the Flood Zones, and unless it strictly meets the requirements of the Flood Zones products, should not be used to update it.

I understand that you feel you’re a ‘special case’ and however the Flood Zones, which is a national product, doesn’t (and in fact shouldn’t) accommodate special cases. Following your logic, it could be argued that the Thames Barrier is also a ‘special case’ being a well maintained structure with a low risk of failure, but

that isn't treated as a special case either and the Flood Zones for London show the undefended scenario in line with the rest of the country.

If we therefore decided to take a special case in one location, what this would then mean elsewhere is a) increased cost to the UK taxpayer because we would be forced to re-run flood zones all over the country in order to maintain its status as a nationally consistent product and b) it would undermine the objectives and therefore confidence of PPS25 because it would not represent the precautionary worst case scenario.

As per your initial discussions with Iain from December last year ... I would like to reiterate the point that **the undefended scenario for the sluice gates is that they are closed.** ...in your discussions with key partners you can bring in the additional information you and they have on risk such as the ABD which I hear assumes the gates work as designed and I understand that for the Manchester Ship Canal then the whole of Flood Zone 3 would also be shown as an ABD when it comes to publishing the data on our website. You may wish to focus your discussions with partners therefore on the different evidence base you have for theoretical (Flood Zones) risk, vs. you (and your partners') enhanced evidence base for a reduced residual risk based on operating rules and likelihood of failure."

110. In my judgment, it is apparent from the internal emails disclosed to the Court that the Defendant did take into account the agreed evidence that the risk of failure of the sluice gates was remote when making their decision. However, it correctly concluded that, under PPS25 and its own policies, it had to be assumed that the formal flood defences had failed when mapping Flood Zones. So the reliability of the sluice gates was not a relevant factor at that stage of the assessment.
111. It is clear from the emails that the Defendant did apply its mind to the question whether, for Flood Zone mapping, the sluice gates should be assumed to be open or closed, wholly or partially.
112. On the assumption that these sluices were formal flood defences, Ms Marks was correct to conclude that, in accordance with the policies, it has to be assumed that the sluices fail to operate. The sluices prevent flooding by opening, thus allowing high waters to pass safely down the Canal. The worst case scenario is that the sluices cannot be opened, as the water would then be trapped in the pond created by the locks and the sluice, and it would eventually overflow the banks of the Canal. Ironically, on this scenario, the sluices and the locks artificially create a flood since, if they did not exist, the water could flow freely down the Canal.
113. The Claimants contended that this was irrational and disproportionate in a *Wednesbury* sense. In my judgment, the Defendant applied the policies correctly; it is the policies which have resulted in the outcome which the Claimants consider to be irrational and disproportionate. The Claimants have not challenged the lawfulness of the policies in this claim for judicial review.

114. In my judgment, the Defendant was required to apply PPS25 on the mapping of Flood Zones, which considerably limited the scope of its discretionary powers. As a public body administering a sizeable project, it was desirable in the interests of good administration for it to issue its own policies setting out the way in which it would implement PPS25. It was required to adhere to its own policies, unless there was a legitimate reason to depart from them. On the other hand, it should not apply its policies with a rigidity which excluded the possibility of exceptions. It would also be acting unfairly if it was capricious or arbitrary in deciding whether to allow exceptions in individual cases.
115. The emails showed that the Defendant considered whether it should treat the Canal as an exception to its policy, as requested by the Claimants, because of its unique characteristics, and taking into account that the risk of flooding was very low. Ms Marks concluded that there were no grounds upon which to make an exception, and if the Canal was treated as a special case, this would undermine the national consistency of the Flood Zones and the Flood Map. In my judgment, this conclusion cannot be impugned as unlawful.
116. The Defendant did consider the Claimants' case that other sites had been treated differently and more favourably and it acknowledged privately that there were inconsistencies in the way it was applying its policies. Mr Lukey said in his witness statement that this debate had prompted a review of other comparable sites. Unfortunately for the Claimants, the Defendant has since concluded that the Upper Thames sluices should also have been categorised as formal flood defences. Judging from the summaries I have been shown in relation to other sites, in the '*Manchester Ship Canal Flood Risk Mapping Comparable Study*' (2010) and an internal paper called 'Summary of approaches' by Tilak Peiris, who led the team responsible for producing the Flood Map, there may have been inconsistencies in the application of the policy, although I accept that it is not possible to reach a firm conclusion in the absence of the detailed assessments, as each site assessment is fact-sensitive. Judging from the internal emails, the Defendant's staff experience genuine difficulty in correctly understanding and applying the policies to specific sites. I do not consider that this provides a sufficient basis upon which to conclude that the decision in this particular case was unlawful.
117. For the reasons set out above, the Claimants have failed to establish Ground 2 of their claim.

River/Canal

118. After the hearing, but before judgment, I asked the parties for submissions on a further issue, namely, the appropriate way to assess a canal under PPS25 and the Defendant's policies when conducting the Flood Zoning exercise.
119. The Flood Map "only covers river and sea flooding" (Glossary), not flooding from the other sources set out in Annex C. This is confirmed elsewhere in PPS25:

- a) “The Flood Zones refer to the probability of flooding from rivers, the sea and tidal sources” (paragraph 17, FN 6)
- b) “These Flood Zones refer to the probability of sea and river flooding only” (D2).
120. The other sources of flooding set out in Annex C (e.g. flooding from artificial sources such as canals), are to be assessed at a later stage, in the Strategic Flood Risk Assessments (see D4).
121. The same distinction between river and sea flooding and flooding from other sources was made in PPG25, paragraph 30. It was anticipated that local assessments of flood risks from other sources would be required in addition. The special characteristics of canals were recognised in paragraphs 37 and 38.
122. The Defendant’s policy 541_05 confirms that Flood Zones only cover flooding from rivers and the sea and advises that navigation channels should be treated as part of the infrastructure:
- “Flood Zones show areas of land that could flood from rivers and/or from the sea. They identify the extents over which flooding could occur, if the flooding is not constrained by flood defences.
- ...
- Flood Zones do not provide information on flooding from groundwater or other sources.
- State of the catchment/tidal area
- Identification of ABDs shall consider the present day state of a catchment/tidal area, taking into account the possible obstruction or diversion of flood water offered by infrastructure and the built environment, as well as the effect of flood defences.
- Take into account infrastructure and the built environment when assessing the “without defences” flood extents for the Flood Map. This condition also includes the basic river and coastal infrastructure, such as:
- river and navigation channels, even if they have been purposely engineered to aid flood alleviation”
123. The Defendant’s policy 301_05, re-issued in January 2011, under the heading ‘de facto defences’ treats water supply reservoirs (another example of an artificial structure) as part of the infrastructure, where flood control agreements are in place.
124. In the course of internal discussion among the Defendant’s officers, Mr Hunt, Flood Risk Mapping Technical Specialist, said in an email dated 7 April 2010:

“I have always considered canals as infrastructure and therefore should remain in place and operated in whatever way they are normally to determine the flood zone.”

125. Ms Shirley Greenwood, FCRM Policy Adviser Mapping and Modelling, in an email dated 13 April 2010, agreed that the Defendant’s policy was to treat all watercourse ‘channels’ as ‘infrastructure’ which are modelled to remain in normal operation when mapping Flood Zones. However, she distinguished between the watercourse itself and the hydraulic structures on the watercourse, and concluded that “flood defence sluices, gates etc.” on a watercourse which protect from flooding should be disregarded when mapping Flood Zones, consistently with the treatment of other flood defences.
126. A somewhat different approach was adopted in a draft “Question and Answer” document which states:

“Why have we decided to map this information now?”

In its upper reaches, the Manchester Ship Canal is formed from the rivers Irwell and Mersey. It is an important strategic watercourse draining a large portion of the Greater Manchester area. It also plays an important part in managing flood risk in the surrounding areas. As part of our role as the lead body for flood risk management it is crucial that we develop a good understanding of flood risk from the Manchester Ship Canal just as we do from other large watercourses.”

127. Counsel for the Defendant, in their written submissions, developed this approach further (on instructions), arguing that the Canal should be treated as if it was a river for the purposes of the policies, because it receives the flow of several rivers in the vicinity and “has tidal interactions in its lower section”. In order to give effect to the purpose of PPS25, namely, to map fluvial flood risk, it is “proper and sensible” to include it.
128. The Claimants submitted that it would assist both parties to have guidance from the court on this matter. Even if the Defendant is entitled to map the Canal as though it were a river, the fact that it is plainly a canal is a further reason why its sluices ought not to be regarded as formally maintained flood defences.
129. In view of the subtle differences of approach identified above, it is unclear to me what the basis of the Defendant’s decision was; whether due regard was given to the various policies when making the decision; and whether the Defendant had in mind the distinction between Flood Zone mapping on the one hand, and ‘probabilistic’ mapping in the Flood Map and the National Flood Risk Assessment on the other, when it concluded that it was important to assess flood risk from the Canal. As this issue only emerged after the hearing, and I am quashing the decision on other grounds, I think the fairest and safest course is for me not to reach any conclusions on it.

Summary of conclusions

130. The Claimants' application for judicial review is allowed on Ground 1 only.