The Emergence of Mapping, Planning in England and the Early English Colonies

Prof Alan Peters
Faculty of the Built Environment
alan.peters@unsw.edu.au

In the English-speaking world, the emergence of modern post-medieval mapping coincided with the emergence of modern land markets. Maps were found, very quickly, to be a useful tool in defining the extent of land and thus in adjudicating land disputes between owners. They soon became part of a proto-planning system used to envisage, to describe and to talk about future growth. Naturally maps became an important way to describe land legally and envisage future uses of land in English colonial settlement, first in Ireland and then in the New World. Maps were not only used in the Settlement of Ireland but in financial disputes about the pace of colonization. As the English cast their territorial net more widely, so map-makers and then surveyors became proto-urban designers laying out towns, and their uses, in increasing detail and across the globe. This is true first in the original American and Caribbean colonies which experienced rapid European settlement, but later true through much of empire, including towns that were never meant to have much in the way of European settlement. Map making had two distinct but related roles. On the one hand it defined private property where none had existed. On the other it provided the basis for “planning” the future of development, although that word was not used in the modern professional sense at the time.

**Keywords:** maps; colonial history; town surveys

**Introduction**

In England, the emergence of post-medieval mapping (in other words, post the production of mappae mundi) coincided with the early emergence of modern commercial land market. Maps were found to be a useful tool in defining the extent of land and thus in adjudicating land disputes between owners. As a result maps soon became part of a proto-planning system used to envisage, to describe and to talk about future growth. Naturally maps became an important way to describe land legally and envisage future uses of land in English colonial settlement, first in Ireland and then in the New World. Interestingly, maps were not only used plan the Settlement of Ireland but also in financial disputes about the pace of colonization there. As the English cast their territorial net more
widely, so map-makers and then surveyors became proto-urban designers laying out towns, laying our plats and their uses, in increasing detail and across the globe. This is true first in the original American and Caribbean colonies that experienced rapid European settlement, but later true through much of empire, including towns that were never intended to have much in the way of European settlement (for instance Norwood 1945, xxxvii). Mapping in the English colonies was not everywhere the same. Where land was scarce and potentially valuable - the Caribbean islands being a prime example - the surveyors were brought in early. Where land was more plentiful and outside the boundaries of towns - most of the mainland America colonies and Newfoundland - the need to define the exact terminus of ownership was less pressing.

This paper is divided into two geographically separated but substantively related topic areas. The first concerns the history of English mapping in the context of a modern land market. It turns out that in England a modern commercial land market began to emerge in the late 1200s. However, it is probably only by the time of Elizabeth I that the land market had begun to look something like the one we have today. For much of the early period of land market development, maps were relatively unimportant in defining land or ownership or use. Written surveys were the way land ownership (the term is used broadly here - at the time of the Domesday Book rights to land were newly feudal and the concept of “ownership” does not capture that tenure) and use had been documented from the time of the Domesday Book (1086) through at least to John Stow’s famous 1603 A Survey of London. Darby (1977) and Fleming (1998) provide commentary on the Domesday Book and English mediaeval legal custom. Stow’s 2005 survey was not the last of the sort. However, by the middle 1600s the technology and sophistication of maps meant that survey’s were of less important. Barber (2007) provides extensive treatment of how maps replaced written surveys. It took considerable development of mapping technology and geographical knowledge for maps to become integral to the idea of land ownership, particularly to legal arguments about land ownership and use. In England, the great advances in the technology of mapping started under Henry VIII and continued on until the middle of Elizabeth I’s reign. During this period maps took on the number of roles with parallels to the roles of maps in modern urban planning. Beyond defining ownership and use, there were used to analyze urban problems, to define footprints and lots, to envisage new development be it residential or infrastructural, and to provide the basis for urban design. England was not completely unusual. Maps were used for similar purposes elsewhere (but not everywhere) in Europe. But under Henry VIII and then under Elizabeth I England became a leading user of maps for public administration and what we today would call urban planning (Barber 2007).

The second topic area covers the spread of maps and map making from England to its new found colonies. The big improvements and map making technology that started in the 1400s were very largely associated with Spanish, Portuguese and then Dutch colonial expansion. From the very beginning improvements in mapping and mapping technology were part of European colonial expansion. By the time the English started colonizing (first Ireland and then the New World of North America and the Carribean) the technology of maps had improved considerably. Also, by this time, maps were thoroughly integrated into English legal and administrative arguments about land ownership and use. The result is that very soon after the English started colonizing, maps started being used for a much wider range of purposes than mere navigation or the defining of coastlines. They were used to plat the newly conquered lands, to lay down towns, to define infrastructure, and they were used as one of the bases for legal arguments about land. This process started in the Tudor conquest of Ireland, in particular the settlement of the Plantations in what is now Northern Ireland.
And it carried on into the conquest of in North America, the Atlantic, and the Caribbean. By the early 1600s the pattern had been set with colonial surveyors having the task of defining land and ownership. The major exception is Newfoundland which saw quite early colonization. The first English mission there may have been John Cabot’s in 1496. Newfoundland was then claimed by the Portuguese. In 1583 Sir Humphrey Gilbert landed in St John’s and took possession of the island for Elizabeth I. As a result of this history the colonization of Newfoundland was quite different from that undertaken later in North America. However, even outside Newfoundland the pattern was far from uniform. Where land was plentiful or not seen as particularly valuable there was little need to define the special bounds of ownership. But where there was less land and it was seen as potentially valuable the spatial bounds of land were defined in detail. There are exceptions to this pattern, and those exceptions became more prevalent as British colonial ambition expanded.

The paper ends in the late 1700s in the laying out of towns in what was now a much more global empire. By this time the technology and paraphernalia of mapping had improved dramatically and the role of the colonial surveyor was reasonably well defined. Nevertheless, the Ordnance Survey of England and Ireland was still years off and thus modern mapping based on a mathematically-derived national grid had not yet started (it had in France). That would change in the early 1800s.

Map-making and the private land market in England and its colonies

The first step in creating a modern English land market was Edward I’s 1290 passing of Quia Emptores. This statute stopped subinfeudation - the practice of sub-letting land but without passing on the full feudal obligations of that land to the tenant. Practically the statute required that buyers assume all tax and feudal obligations of the original tenants (Pollock and Maitland, 1968). The net impact was to hasten the demise of feudalism and to encourage a more modern, commercial view of land. It reinforced the impact of the Magna Carta which both limited the absolute sway originally claimed by feudal overlords and provided “Rights of due process, inheritance, and protection from excessive taxation are among the most significant which developed during [the] era” (Arundel undated, 1).

We know that by the late 1400s land ownership and rights to use had become the source of considerable legal dispute. In response to problems in the land market and in the courts adjudicating this market, Henry VIII passed three major real estate acts. The most important was the Statute of Uses which outlawed secret land sales. Complementing this was the Statue of Enrollments which, for all intents and purposes, established conveyancing. Elizabeth I passed various acts in the 1570s and 1580s mostly to fix problems with conveyancing. Then until the Victorian era there was little new English legislation to do with real estate. Thus by the late 16th century most of institutions central to the operation of a modern land market were in place.

One of the earliest English maps that dealt with land-use issues describes the rights to grazing in various fields - the 1430 map of Pinchbeck Fen in Lincolnshire (Mitchell and Crook, 1999). This is at best a proto-land-use map. It is fundamentally unclear the extent to which the map regulates land-use or describes current land-use. While the boundary between survey and prescription was blurred in this early map, it is also important not to understate the legal importance of later maps. There are examples of maps that appear to have been drawn specifically for dispute settlement. A very early instance is Ralph Treswell’s 1585 Map of Lands between Piccadilly and Oxford Street, attempting to
clarify grazing rights in an area new the contemporary Oxford Circus (see Barber 2013, 75 for a reproduction). It is possible that 1515 was the first time that a map was shown in a court of law. This was in a case about a dispute over the damming of the River Ouse to power the water mills of the Abbot of Ramsey. The damming let to the flooding of neighbouring fields. The court ordered the Abbot to remove the dams. It is likely that the impact of the map illustrating the problem had a direct impact on the verdict. Soon after maps started appearing in other court cases and by the end of then 16th century were fairly common in court proceedings (Mitchell 2006, 213).

Slowly maps were becoming ingrained as evidence in land disputes. In 1622 Sir Thomas Phillips commissioned cartographer Thomas Raven to produce maps of the London Companies (an Irish Plantation) (Phillips 1928). The maps formed part of the evidence submitted by Phillips to Charles I against the London Companies that they were not implementing their legal obligations to implement the Plantation of Londonderry (see http://www.bbc.co.uk/history/british/plantation/companies/lc02.shtml).

It was in the 16th century that people began to realize the domestic importance of mapmaking and to understand that the more accurate a map the more useful it was. Advances in instrument making, particularly in the Low Countries, meant that by the late 16th century reasonably accurate maps were in the grasp of map makers (Wilford 2001). Henry VIII’s break with the Church of Rome during the 1530s meant that there was a serious threat of invasion of England by the Holy Roman Emperor, Charles V. In preparation for an attack Henry VIII commissioned a survey of the English coastline and its defences. A generation on there are what are essentially modern looking maps of the nation. In 1664 Gerard Mercator published a series of detailed maps of the British Isles (Crane 2003). By the reign of Elizabeth I maps were being employed as tools of government. This was encouraged by the Lord Burghley, the Queen’s chief advisor and Treasurer, and the Privy Council which made it clear that local authorities were expected to submit maps and plans of their proposals where appropriate. It is clear that Burghley found maps very useful to his work. Many maps were annotated by him. There are also records of sketch map entirely in his own hand (Margey and Andrews 2011). By the late 16th century cartography was becoming embedded in the work of government. The Great Yarmouth map drawn anonymously in 1570 is a good demonstration of these tendencies. The map is adapted to demonstrate the proposed harbour works to the Privy Council (see http://www.bl.uk/onlinegallery/onlineex/unvbrit/g/001cotaugi00001u00074000.html). The map has becomes an adjunct to a financial and, in this case, military argument for the need to upgrade the port.

The Mercator maps mentioned above were followed by Christopher Saxton’s survey of England and Wales, carried out between 1574 and 1578, and supervised Lord Burghley. Saxton produced 34 county maps - this was the first systematic survey of the Kingdom and Principality. There is evidence that Burghley used this atlas as an aid to policy (see http://www.bl.uk/onlinegallery/onlineex/illmanus/roymanucoll/c/001roy000018d03u00024000.htm l.) Maps had become more accurate both in terms of their spatial accuracy and in terms of the geographical elements they described. They had also become “national.” Precisely because of this maps started to take on civilian rather than merely military or exploratory functions. They had become aids to policy and dispute resolution, not only in the chambers of the central state, not only in London, but also at the local level in the British regions.
Beyond this maps were being used in the provision of what today we would call planning permissions. Thus we have John Carter’s for a row of houses outside the City walls and not along a highway described in John Carter’s ground in Stepney containing eight akers, two roodes and seven perche measured in June 1671, drawn anonymously (reproduced in Barber 2013, 69), or a plan to develop royal mews north of St James Palace Proposals made and agreed on Betwene Richard Frith of St Martins in the Field, And the several respective Trademen hereunto subscribing, produced in 1688. Similarly The Ground Plot of Arundell House and Gardens, 1678, describes a proposed redevelopment of the London home of the Duke of Norfolk (partially reproduced in Barber 2013, 77).

More generally, in 1559 a town plan had been drawn by Wm Cunningham for Norwich. Around the same time a town plan had been drawn for London. And in 1574 Richard Lyne engraved a plan for Cambridge (reproduced in Moreland and Bannister 2010, 41). From this time on the pace of town plan production, especially for London, increased: Valegio (1580), Norden (1593), Münster (1598) and then John Speed (1610-11 in his The Theatre of the Empire of Great Britaine) all drew plans. Since London grew rapidly, there was a constant need to update maps. Moreover, the Great Fire also created a need for new map-making. Darlington and Howgego (1963) cover this period of expanded map production in considerable detail in their Printed Maps of London, Circa 1553-1850.

By the late 1700s there were mapped town plans for most of the major cities of Europe, many of the smaller cities of England, and many of the new towns of the New World and indeed some new towns in the old world (the important examples here are the towns of the Irish Plantation in what is now Northern Ireland). One of the first for Sydney, Australia, a relatively late colonial capital, was a new iconic map drawn by Lesueur in 1802 Plan de Ville Sydney, Capitales Colonies Anglaises, aux Terres Australes, in François Péron’s Voyage de découvertes aux Terres australes (1775-1810). Similar sorts of plans exist for many of the early capitals of the Caribbean, Canadian, South African, Indian and Austral-Asian colonies. Even quite tiny colonial centres had town plans. For example Jamestown, capital of the south Atlantic British territory St. Helena, has one: J.N. Bellin’s 1764 Petit atlas maritime: Recueil de cartes et plan des quatre parties du monde etc. includes Plan de la forteresse et bourg de l’Isle Ste Helene (see http://www.bweaver.nom.sh/maps/bellin2.htm). It is important to understand that town plans were not regulatory or even prospective layouts, in other words, they were not land-use maps or zoning maps as we would understand these today. They were a description or survey, often quite rudimentary, of what was there on the ground.

By the middle of the 16th century maps were being used to help in the analysis of urban problems. The anonymously produced Plan of the Borough High Street, Southwark, 1542 (partially reproduced in Barber 2013, 48) was commissioned by Henry VIII to identify monastic and other religious precincts in Southwark, in an attempt to resolve a set of interconnected religious and social problems. By the time of the response to the Great Fire more than a century on, they were being commissioned and used to provide background information to the urban design proposals for the rebuilding of London that emerged from that tragedy. Most important was Wenceslaus Hollar’s map of John Leake’s survey of the damage. This is partially reproduced in Barber (2013, 45-6). In 1676 John Ogilby and William Morgan published A Large and Accurate Map of the City of London from Westminster and Southwark. This was a very large scale (high resolution) map, at the time by far the highest resolution and most accurate map of its kind. The map represented a dramatic movement forward in the quality of town plans. It was created with the support of City merchants and was
supervised by Robert Hooke (Barber 2013, 58). It described London ten years after the fire and it helped solidify the role of mapping in describing development.

The 1500s and 1600s proved a time of rapid development in English map making and in the domestic use being made of maps. This period coincided with the solidification of a commercial land market. Unsurprisingly maps were being used as aides in dealing with that land market. This period also coincided with early English colonial expansion. Again unsurprisingly, the uses of maps in England were soon transplanted abroad. As we have already seen, by the 1600s town plans were being drawn of colonial outposts. And maps were being used to guide development of and in legal disputes about development in the colonies.

**Map-making and the new colonies: Bermuda, Jamaica and elsewhere**

In England written surveys and then maps became key both to legitimating ownership when ownership was in some doubt and to regulating the land market and thus ownership and use once a commercial the land market had come into existence. By the time of rapid English colonial expansion the English elite were accustomed to using maps to define, regulate and argue about property. Maps had already been put to good use in the conquest of Ireland and it was therefore to be expected that maps would continue to be used as an aid to conquest and settlement, probably most comprehensively in Edney’s (1997) work on mapping in India between 1765-1843. It is however, important to note great variability in the application of the new mapping technologies available in the home country. Edney (2009) writes: “Land surveying in colonial New England [ ] remained largely unaffected by the new instrumental technologies introduced into old English property mapping in the seventeenth and eighteen centuries.” For a survey of the variability of (cadastral) property mapping in the colonies see Kain and Baigent (1992, chapter 8).

Much like the Domensday book after the Norman Conquest, surveying and mapping asserted the rights to land of the new colonial masters; and provided the basis for the taxation of that land. Surveying and mapping legitimated the new order. While this argument is essentially correct - and has been made in various colonial contexts - the use of surveying and mapping was at least as important in those places with no pre-existing indigenous populations or where pre-existing populations no longer existed. Presumably in these places there was no need to assert a new colonial order or to legitimate the new colonial owners of land.

Bermuda is the pre-eminent example here. The islands had originally been claimed for Spain and probably had shipwrecked Portuguese fishermen living on them for a limited time; however, the islands were uninhabited when colonized in 1609 by the English. Besides the shipwrecking there was no sign of a pre-existing population of any sort. Barbados is a slightly more complex example. It did have a pre-existing Amerindian population but by the time of the arrival of the first British settlers in 1627-1628 the island was empty of human habitation. In both instances, mapping’s primary purpose was not to assert colonial legitimacy but to define land for modern capitalist ownership. The primary purpose of mapping was to create property from “mere” land. Of course, with such property came taxes and the larger interest of the state.

Early English colonial map-making had two distinct but related roles. On the one hand it helped create private property where none had existed. On the other hand it provided the tools necessary
to manage land and regulate the uses of land. As a byproduct of this, and only in places with a pre-existing population, would the creation of property from “mere” land also mean the assertion of ownership and control by the new colonial masters.

Thus Bermuda was laid out very early and very carefully, in this case by the London mathematician and surveyor Richard Norwood. We know how the survey was accomplished, not only from the resulting survey, map and the colonial record (his platting proved controversial as it benefitted both himself and the governor, see Laughton 1895) but because Norwood kept a journal (the journal was however, much more concerned with Norwood’s religious life than his survey and is a somewhat unreliable source of commentary on method) (Norwood 1945). The early territories in what is now the United States typically were not platted in this detail. And the other Atlantic island colonies were mostly not laid out with the same care as Bermuda. Certainly Barbados was not. In the case of St Helena in the south Atlantic - a way station between England and Cape Town with few prospects for development - even less so. In 1657 Oliver Cromwell granted the English East India Company a charter to govern the island and settlement started a year later. The quality of colonial platting appears to be related to the total amount and perceived value of land after development.

The creation of property from “mere” land is most apparent in Richard Norwood survey and map, contracted by the Somers Isles Company (the Somers Isles was an early alternative name for Bermuda). The company was formed in 1615 and had a royal charter for the commercial development of the islands. For a short time prior to that the Virginia Company and then the Crown had run the islands. Norwood probably arrived in Bermuda at the end of 1613 and his map was finally published in London in 1622. The survey divided and defined the Somers Isles into nine equally-sized administrative districts comprising a public territory and eight “tribes” or as they sometimes called today “parishes”. The tribes were defined areas of land provided to the shareholders (at that time called “adventurers”) in the Somers Isles Company. The tribes were then divided into lots. In 1631 the now famous London mapmaker, John Speed, then used the Norwood survey as the basis of his new map, engraved by Goos and published in Amsterdam. That map was to become the standard map of Bermuda during the seventeenth century and was copied widely (see Julie Sylvester and Anthony Pettit 2005).

Norwood’s was not the first map of Bermuda; that distinction lies with the Peter Martyr map of 1511; moreover, there were a number of maps published in the period between the Matyr map and the Norwood map. The special place of the Norwood survey and resulting maps is that they created new private property that was spatially well-defined for the Company shareholders. It did this comprehensively (that is almost all Bermudian land was surveyed and allotted).

On Carribean islands the English colonizers also used maps to define their ownership of land, though this tended to be considerably less comprehensive than found in Bermuda. This was because it was undertaken by individual landowners. During the 1500s and 1600s wealthy landowners in England had discovered the importance of maps as a way of protecting their interests. Many commissioned “estate maps”. These defined ownership by defining boundaries; it appears that the purpose of the commissioning was to more precisely define the spatial bounds of ownership. These estate maps were often used in legal disputes about land. However, the maps came to have further functions: defining land uses, hamlets, villages and roads on the estate. Thus estate maps soon became part of the land management of large estates.
After the Munster rebellion in Ireland, Francis Jobson and three other surveyors mapped approximately 500,000 of newly forfeited land in the counties of Cork, Limerick, and Waterford. In form this 1586/7 survey was no different from the English estate maps being generated across the Irish sea (Andrews 2007). But in practice they asserted ownership by the new colonial masters over the newly conquered - thus they are what connected English estate mapping to the estate mapping undertaken in the New World.

Estate maps proved popular in parts of the new world, both as a way of defining ownership and managing use. Jamaica probably had the largest number of “plantations maps” in the Caribbean. These started early on as a means of defining ownership, for instance Francis Inians’ 1665 plat of his own property, Vine Plantation. But by the 1700s plantation maps had become as much concerned with the internal spatial organization of the plantation as with defining its external border. The Jamaica Plantation Maps are brought together in a beautiful volume by Higman 1988. Fig 3.1, p.20 has the Inian plat quite different in its quality and intent to say the much later 1794 Plan of Worthy Park Estate, Fig 4.19, p. 203. As in England the need to define ownership had slowly transformed itself into something more - maps provided the basis for managing and “planning” land, although of course he word “planning” was not used in the modern professional sense at the time. By the 1700s surveyors were laying out the new towns of the colonies using the same techniques as the estate and plantation maps. At this point the colonial surveyor had become more than the creator of property from land; he had become an urban land-use planner and designer.

By the early 1700s at any rate, and across the world, English colonial administrators were using surveyors to lay out new towns. The origins of these sorts of maps can be traced back to the maps laying out the new towns of the Irish Plantation. Across the English world, surveyors were not making town plans as traditionally understood. As much as anything, and to use the jargon of our time, they were master planners and urban designers, whether we are talking about accommodating the fast growth of 18th century Dublin (Ó Cionnaith 2012), or about the settlement of the new towns of British North America (Bosse 1989), or about quasi-military settlement of Sydney, Australia (for instance, as in A Survey of the Settlement in New South Wales, New Holland engraved by A Dulton and L Poates in 1792). Maps had become the technological base of their craft.

While surveyor-general maps did not have the precision or legal status that modern land-use or zoning map would have, they did indicate where things should be, and also where things currently were. While they did not have the legal force that land-use and zoning maps in most of the Anglo world have today, in other words, they did not have force in and of themselves, they did have force as part of a military or quasi-military colonial investment in land and development. Thus Dulton and Poates’ map of Sydney was, in function, quite unlike Lesueur’s more famous town plan that followed it.

Conclusions

The modern capitalist land market began to emerge in England prior to modern mapping and as a result of quite distinct social and economic forces. However, as soon as maps were used in land ownership and land use disputes their usefulness was clear and their integration into the institutions of the land market were fast. Just as this was happening English colonial expansion was starting. The technology of mapping useful in adjudicating an emerging land market in England became crucial to
defining property, ownership and use in the new colonies. Sometimes this meant transforming empty land into property; mostly it meant defining the rights of the new colonial possessors.

**Timeline**

Domesday book, defined land ownership (and taxation) after Norman Conquest - 1085

Magna Carta, provided due process, including in land disputes - 1215

Quia Emptores, ended subenfeudation - 1290

Pinchbeck Fen map used to define/regulate land use -1430

Possible first use of maps in legal case - 1515

Saxton’s survey of England, used as basis of infrastructure and quasi-planning decisions -1574-1578

Conveyancing reformed 1570s-1580s

Treswell’s map, possible first time map specifically drawn for use in court proceedings -1585

Irish plantation maps - 1622

Stow’s non-mapped Survey of London -1603

Bermuda colonized - 1609

Norwood’s map of Bermuda - 1622

Vine Plantation map, Jamaica - 1665

Great Fire of London leading to various new analytical maps, urban design regimes and then town plans - 1666

Sydney cove map by Dulton and L Poates - 1792

Worthington Park Estate map - 1794

**References**


