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William C. Baer[a]
[a] Department of Policy and Planning, University of Southern California, Los Angles, CA, USA

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RESEARCH PAPER

The Seven Dials: "freak of town-planning", or simply ahead of its time?

William C. Baer*

Department of Policy and Planning, University of Southern California, Los Angles, CA, USA

A 300-year-old discarded urban design – the Seven Dials – has recently shown fresh life in London. This paper contrasts its star-like, radiating streets with London's more typical quasi-grid pattern in the seventeenth century, and with London squares. The Dials concentrated a sense of mixed use that was common along London streets, whereas squares were purely residential. Assorted squares were created many times in London in subsequent centuries; the Dials were never imitated. The market judged the Dials a design failure, but through historic preservation, it has recently achieved commercial success. Might today's urban designers reconsider the Seven Dials' configuration for new development? Preliminary suggestions are offered.

Keywords: Seven Dials; residential development; commercial development; London; seventeenth century

Introduction

In exploring the early development context in which the Seven Dials was created, I will discuss some of the design notions that were "in the air" and on the ground in Europe at the time, the motivations of developers, and the limited English government regulations concerning building at the time. These latter regulations did not much pertain to streets; consequently, builders and speculators were important in shaping street layout and thereby crafting much of early modern London's morphology for residential and commercial uses. Development (usually one or two stories high, sometimes with cellars) was underpinned by a quasi-grid of streets. London streets were often more symbolically a rectilinear grid than an actual grid. There were also a few squares, and the unique Seven Dials, characterized by Sir John Summerson (1988) as "that extraordinary freak of town-planning" (p. 28; but see Booth 1985, pp. 390–394), although more recently lending his name to its preservation. In addition to the historical background and setting for these new London designs, the paper will also discuss the design potential in the Dials' once-discarded, now rediscovered mixed-use development. My intention is not to revere the Seven Dials for its 300-year history. Rather, I hope to stimulate present day designers to further explore the Seven Dials for any promise it might possess for tomorrow's urban development, although improvements are greatly needed.

Background

That London lagged behind the Continent in urban design up to the seventeenth century is well established. At the outset of the 1600s, the Lowland cities of Antwerp and Amsterdam had long been regulating urban development in elementary ways heavily influenced by protection of public health and safety, besides laying out canals for port-related economic

*Email: baer@usc.edu

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development that then virtually *dictated* the plan for streets and buildings into an integrated circulation system (Tijs 1993). Non-canal cites like London had more options for a street system's layout, but did not self-consciously reflect upon its importance to circulation and residential setting. In 1561 Philip II of Spain had selected Madrid to be his seat of power and to exemplify the ideal capital city that through orderly urban design would signify to the world the underlying orderly political power of an emerging state. By contrast, the English Crown and Parliament had long been associated with London and Westminster, no matter how unregulated their development. Henry IV of France in the early 1600s sought to impress a still uneasy populace after the ruinous Wars of Religion with his states' domination and control, although he lacked the funds to do so. He chose urban design projects, where comparatively small amounts of state *seed* money, and non-costly state imposed design controls and covenants might nonetheless stimulate considerable new building by the private sector. At first English authorities abhorred such an inducement to more urban investment – they sought to discourage new building of any sort (Baer 2007a, 2007b).

Elizabethan London in the late 1500s was viewed by City officials, the Crown, and Parliament not as a latent opportunity for design improvements, but as an impending disaster, not just because of its un-orderly growth but also for its attraction of the poor from all parts of the realm, and its periodic plagues. Little thought was given to how the design of one house might conflict with its neighbors, or how collectively each contributed for better or worse to the neighborhood ensemble. Sir Francis Bacon had explained the Tudor thinking thus: "Houses are built to live in, and *not to look on*; therefore let *use* be preferred before *uniformity*" (Montigu 1825, Vol. 15, p. 147). Visually the result was a jumble, even if built in the Tudor style. However, the Elizabethan mind-set had no thought of publicly guiding urban growth through more aesthetic and salubrious design. Rather, the London solution was a complete building *prohibition*, and related proclamations ordering both rich and poor out of town (Hughes and Larkin 1964–69, II, pp. 466–468, Baer 2007b).

The juxtaposition of considerable house variation side-by-side along a street fell into disfavor by the time of the early Stuart kings. Opposite preferences emerged in England, seeking a Continental regularity and uniformity instead of the independent, organic yet "misshapen" style, now thought not so good for so great a city as London (Howell 1657, Harrison, 1981, Vol. 1). Precision by more uniform street fronts of houses along somewhat wider and straighter streets was sought, (Rosenau 1972, Lubbock 1995), encouraged by James I's royal building proclamations beginning in 1605 with his order – in the supposedly limited cases that building would be allowed – to construct only with brick for fire safety and aesthetic reasons. Other proclamations followed that were concerned with uniform design along the street face (Brett-James 1935, Larkin and Hughes 1973, Larkin, 1983).

Builders did not immediately embrace these building proclamations. They thought them too costly for consumers' pocketbooks. After decades of episodic regulatory enforcement of the proclamations, and of builder resistance, James' approach was finally widely accepted following the great fire of 1666. A further evolution in design regulations was set down in the Re-Building Acts after that fire, the prelude for the look of Georgian London (Ayres 1998). With those Acts, Parliament rather than the monarch extended and crystallized the design precepts. The Acts called for houses of the "Least sort" ("sort" being an official designation with prescriptive sizes for houses) to front mere streets and lanes (perhaps 8–10 ft wide); houses of the "Second Sort" to front more important streets or lanes "of Note" (perhaps 10–30 ft wide); while houses of the "Third Sort" fronted "High and Principal Streets" (perhaps 30–50 ft). City officials designated *(post hoc)* the major streets because width was not the sole criterion in determining, say, high and principal streets (18 Car. 2. c. 3[1667]; 19 Car. 2. c. 3[1670]).

English contributions to urban design, while sometimes influenced by Continental examples, were also very much the product of the market place seeking higher returns for urban investment. These influences led both to minor design triumphs such as London squares, and to a seeming design mistake such as the Seven Dials. As Donald Olsen put it for the eighteenth century, although his tenor fits seventeenth-century London (which he did not examine) just as well: "London rarely attempts to *look* like a great city, being content to be one" (Olsen 1964, p. 4, emphasis added).

Failing to regulate street layout

With the Re-Building Acts there was now a system for recognizing the worth of a street once it became developed, but there were still no public or government requirements at a street's beginnings *for influencing* its layout, width, and connection to the larger circulation system. The building proclamations of James I, Charles I, Charles II, and even the Re-Building Acts never touched those aspects. That omission may not have mattered much in 1600, still highly dependent upon walking for getting around, but London grew from approximately 200,000 people in 1600 to over 550,000 by 1700, and the use of carts for goods, and carriages for people became more extensive. By the mid-century, London's old, narrow streets, and the even narrower gates to the inner city from the West End – Ludgate and Newgate – caused long queues and traffic jams from coaches and carts squeezing through in their trips back and forth (Graunt 1676, p. 29), Keene 2001, pp. 35–36). Traffic circulation was becoming a major concern. While new houses were being provided to meet the population growth, the new streets that they abutted were still being laid out and connected to the existing street system without public oversight or concern. Streets could begin piecemeal in the most casual fashion (unlike, say, canals). These "embryo streets" in London often started out as former footpaths or wheelbarrow passageways to individual houses (Leech 1996, p. 206, Porter 1998, p. 94) and in turn some of these had used earlier field boundaries or property lines (Kingsford 1925, pp. 7–31, 136–140). New alleys and courts were often carved into an existing site when a single, large older house and grounds was demolished and replaced with multiple small houses sited on both sides of the alley, or, as Daniel Defoe noted, the site turned into "even … whole streets of houses" (Strype 1720, II, p. 438, Defoe 1991, p. 297). In one example in 1638, a builder had blithely set about building a number of houses before he had secured a critical easement through the gardens of neighbors for access, in this case, to and from Covent Garden, which easement Inigo Jones, Surveyor of the King's Works, after inspecting the site and development plans, thought the neighbors would not grant. (SP16/400/180, 26 October 1638), SP16/410/218, 31 January 1639). In all, as the Reverend Garrard wrote in 1637, this unregulated type of subdivision, with its narrow alleys, had made the older dark wooden London a virtual "timber town" of tight passageways. John Evelyn, upon the Restoration in 1660 complained of "misshapen" houses still present in London set along "narrow and incommodious" streets" (Knowler 1739, 23 March 1636–1637; Evelyn [1661] 1930, p. 8). Nevertheless, London developers on their own initiative increasingly laid out more regular streets as the century progressed, both in the poorer suburbs of east London and in the richer ones in the West End, and even in London's inner core rebuilt after the great fire (Power 1978, Smuts 1991).

An increasing influence on street layout was urban economics. While as early as the Renaissance, design criteria saw streets as a generative element of urban form (Lillebye 2001), London's urban land market continued to see streets as signifying economic value. The prospect of financial returns to private investors guided most of the city's design and fabric. Since medieval times properties had been priced by the front-foot along the street.

The broader and busier the street, the higher the price of land, and usually, the better the house built on it (Phillips 1667, Keene 1989, 1996). "Better" houses on "principal" [wider] streets, i.e. those streets that were "places of show" as James I's Privy Council had put it, were synergistic – positive, reinforcing redundancies that added value at the outset, and protected it over the longer term.

Streets and shopping as an influence on urban design

Street design was also important for shopping, because shops desired locations on major streets to capture the most foot traffic ([Barbon] 1685, p. 22). Traditionally, London stores and shops had been built on the ground floor of residences along these streets (Moxon 1695, pp. 129, 156, Dodd 1843, pp. V, 385–389). Yet for a period during the seventeenth century this mixed use strung along streets declined in popularity, as the London forerunners of modern shopping malls made their first appearance (Baer 2007c). These newer developments ("exchange" was a common term for them) collected a multiplicity of shops on one or two floors under one roof, and one management, with common covenants and restrictions in tenant leases for how shopkeepers were to conduct their businesses, much like the lease provisions of today's malls. These shops were open 12 to 14 hours, and the exchange's premises lit at dusk, providing a joint visual and visceral regularity in the shopping experience more difficult to achieve through separate owners along *un*lit streets. The result was a physically safer, covered, and more sheltered shopping area than the streets. It was cleaner and more pleasurable for shopping because there was no horse manure, dust, mud, and stench from the unpaved streets that dirtied the mixed-use shopping experience (SP14/49/9). Collectively, development of five such "malls" in London at their peak in the late 1600s captured a substantial proportion of all shops (Baer 2007c, Figure 1).

Nevertheless, towards the end of the century, these exchanges lost their cachet. Moreover, the exchanges' cramped interior spaces had by then become too small and obsolete for expanding businesses. Lack of "parking" for the growing use of carriages on inner London's narrow streets where malls were situated, as well as the fickle consumer's penchant for new shopping locales, caused merchants to depart these exchanges. They left not for newer exchanges but for locations along newer, wider streets more apt to be paved and lit at night, and in more suburban locales closer to where their prime customers now lived (Defoe 1969, ii, Part II, pp. 162–163). Perhaps this more suburban drift of shops toward the end of the century was part of the thinking behind the Seven Dials' mixed-use development, as will be shown.

Builders' choice of development pattern and the absence of open space

As London grew in size toward the end of the sixteenth century, the growing value of residential urban land urged its more intensive use – the row house (terrace housing) was the result, making its early appearance in the late 1500s (Leech 1996). Row housing along streets was appealing due to its lower costs from sharing side-wall costs with neighbors (18 Car. 2. c. 3[1667], 19 Car. 2. c. 3[1670]) and also lower costs by squeezing in more units per block with minute rear yards, often quickly filled by sheds and privies. Lower housing costs made them affordable to a larger percentage of households, thereby increasing the builder's chance of a quick sale or lease.

Row housing was the type that James had in mind when requiring more uniform appearance of street faces, but his proclamations did not consider the cumulative crowding of block upon block of row housing, even when it was built of brick and conformed to James'

street face dimensions. There was no publicly required open space. Perhaps that omission was based on naively believing that more stringent proclamations would stop building altogether, although London continued to grow. Until the 1630s, most of London's open space was the accidental heritage of remaining parcels of undeveloped land (Moore-fields and Covent Garden's square being notable exceptions). Increasingly, however, these left over spaces themselves were being filled with new housing.

Together with London's rapid and ever denser growth had risen the public's consciousness about the crowded urban setting. People began complaining about in-fill development from "covetous and greedy" builders who sought to "fill up that small remainder of Air in those [open] parts with unnecessary and unprofitable Buildings" (McKellar 1999, pp. 195–197, Longstaffe-Gowan 2001, pp. 186). It was private developers, however, who best, albeit mildly, responded to both the Crown's desire for more orderly urban development, and to the public's need for a "small remainder of Air" in ever-denser London. Long-term landlords and developers began using private covenants to ensure orderly development, and to provide limited open space in the form of squares. However, both were aimed only at the upper classes.

Squares were never mandated by public regulation. Developers, or the underlying wealthy landowner, "volunteered" them in the pursuit of greater profit because occupants were willing to pay higher prices per house in a square (Nesbit 1843, p. 387). The square maximized efficient use of open space by agglomerating it in the center, rather than allowing dribs and drabs in backyards (Harvey 1987, p.165, Summerson 1988) and still permitted row housing often to a more stately design. Squares thereby attracted the aristocracy, and also the gentry who sought the prestige from neighbors of the upper class, and because, presumably, only the wealthy could afford these locales (Booth 1985, p. 395, Lawrence 1993, p. 95). Not that squares provided greenery – at first they were paved or graveled. Grass, gardens, and trees were first introduced in the eighteenth-century (Lawrence 1993, p. 94) when squares were also fenced off to keep out the general public. Although squares' evolution and history need not be rehearsed here (Lubbock 1995, McKellar 1999, pp. 193–207, Longstaffe-Gowan 2001), suffice it to say that approximately 50 squares had been built by the mid-eighteenth century; about 100 by a century later; and as many as 200 by the early twentieth century ([Knight] 1851, Chancellor 1907, p. xi). These squares and the covenants that were an essential part of their success, continued to evolve into the eighteenth and nineteenth centuries (Olsen 1964, Booth 1985, pp. 381, 383–384). Even so, London's quasi-grid pattern of blocks of row houses with no open space was the prevailing design in the suburban surrounds, and squares were the exceptions.

The London semi-grid, and variations

Since developers, not public regulations, dictated street configuration, and since builders were guided more by the prospect of profit from a design than any acclaim for the design *per se*, we explore how developers appraised various design schemes in late seventeenth-century London (Booth 1985, p. 396). Three examples are used, showing not only an outline of their different designs (see Figure 1) but more importantly for developers the different percentages of basic land uses from these designs.

Illustrative quasi-grid development

The first example is a randomly chosen portion of London located near-by the other two and selected to represent their same size – approximately 25-acres or a little over 10 hectares).

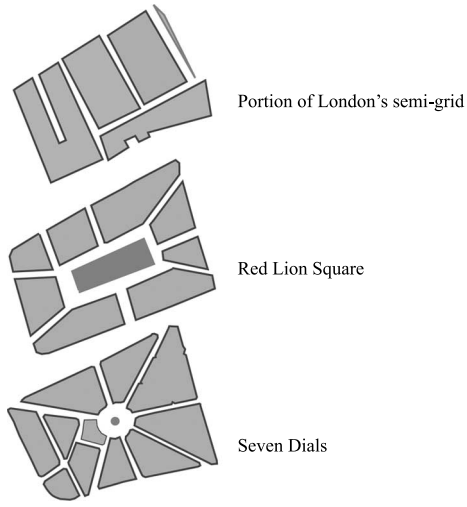


Figure 1. Illustrative diagrams of three types of development in late seventeenth-century London.

It is not known how or who laid out this area; perhaps several builders did it sequentially, nor is it known whether it was strictly residential or had some mixed-use development. It was configured in the common quasi-grid, with roughly parallel streets, and intersecting ones at approximately right angles, with row houses edging the streets. This area was otherwise undefined, bleeding into its surrounds amorphously without distinguishing characteristics or edge definition.

This area's intended occupant market was probably toward the low end of those who could afford a new home, one of average quality built for average incomes or slightly below (Baer 2000). By contrast, both Red Lion and Seven Dials, as discussed next, were probably more expensive to layout than the conventional grid because they required a critical mass of assembled land to ensure completion of the design, rather than conventional but small incrementally added pieces, hence were intended for a clientele with somewhat higher incomes. New houses in these latter two areas were directed toward the upper end of the "middling sort" (approximately the upper third-quarter of the income spectrum, while some squares aimed at the top quarter).

Red Lion Square

This second development's builder, Dr. Nicholas Barbon [1640–1698], the "Dr. of Physic" and later Member of Parliament, was hailed as London's "Great Builder" (McKellar 1999, Millard 2000, pp. 123–129). His aim was profit, not necessarily good design, so his Red Lion Square layout intended to maximize financial gain. Indeed, he had originally not thought to include a square, but clashing with the Society of Gray's Inn (another of the four Inn's of Court for legal training) over open space made him reconsider, turning to a square in response to their objections (McKellar 1999, p. 198). His square's *eight* radiating streets, some of them diagonally like the Seven Dials, seemed reluctant to sacrifice too much street frontage even for the square. As typical of squares, development was strictly residential without mixed use of shops on the bottom floor of any of the houses. We lack descriptions of how it looked upon completion, but John Strype (1720, Vol. 1, p. 254) said 40 years later that this development was still a large

place, with "graceful buildings on all sides which are inhabited by Gentry and Persons of Repute", the square enclosed by a high fence, "with Rows of Trees, Gravel Walks, and Grass Plats within; all neatly kept for the inhabitants to walk in." Red Lion Square eventually suffered decline and deterioration over a century later, but at a slower pace than the Seven Dials (Knight 1844, p. 200, Besant 1911, p. 451). In the late nineteenth or twentieth centuries some of it was re-platted, new buildings constructed, so today commercial and office uses share the area with residential uses.

Seven Dials

The third example, the Seven Dials, had seven radiating streets from a core about a quarter mile away from Red Lion Square. Its developer, Thomas Neale (sometimes spelled without the final "e") [1641–1699] had been a royal servant, Master of the Mint, and later, also a Member of Parliament with Barbon, and was sometimes referred to as "The Great Projector" for his lottery schemes on behalf of royal revenue (Thomas 1983). The Seven Dials (and Red Lion Square) were set apart from the more ordinary quasi-grid environs by a surrounding street forming the edge of the development within which the houses were contained and giving a slight sense of separation from the rest of the city. The Seven Dials will be described more fully shortly, as that is this paper's prime focus, but the immediate purpose is to provide some base comparisons of the three areas.

Note that unlike the first example of conventional London development, both Red Lion Square and Seven Dials and were laid out by different but *single* developers, with sole control over the entire premises, able to orchestrate a unique design, unconstrained by having to develop the area piecemeal, with other small-scale builders. Neither was a conventional real estate investor; both were noted persons in their day, becoming Members of Parliament in their latter years, both seeking premiums over conventional returns on real estate development by choosing unconventional designs.

Summary comparisons

Although earlier base maps are somewhat inaccurate, England's official Ordnance Survey of the three areas here in 1878 captured their layout accurately before any re-platting took place (City of London: Ordnance Survey 1878, 034 and 035).[1] Table 1 shows results from various measurements of areas devoted to different land uses. No great disparity is revealed between the three areas' land uses despite Red Lion Square devoting about 8% to the central square itself, when the other two areas had none. On the other hand, even slight dissimilarity may nevertheless be the difference between profit and loss, especially if "good" design commands higher prices per lot. The largest differences were in street frontage available for houses. Both unconventional developments had about a 35% greater street frontage for building sites than mere coincidence from a more conventional grid-like arrangement would have allowed, their designs choosing different means to provide it.

The profit objective guided both design decisions to create novel development that would attract prospective lessees and entice them to live there. Note that the Seven Dials had more area in streets but gained no extra housing by going without a square. Its triangular block tips were awkward and inefficient for house sites. Did Neale think that additional street face *per se* as a design feature yielded additional profit? We know that square developers charged more for inner streets (Booth 1985, p. 392).

Table 1. Comparisons of three-street and residential configurations of about the same total area in late seventeenth-century London residential development.

	Area comparisons in percents so as to abstract them from particular dimensions (25 acres, or slightly more than 10 hectares)[a]				
London Area	Total area as a percent of the grid portion area	Percent of particular area in housing	Percent of particular area in streets	Percent of total area in dedicated open space	Street face as a percent of the grid area's street face
(1) A grid portion of London[b]	100	75	25	0	100
(2) Red Lion Square	100	73	20	8	140
(3) Seven Dials[c]	103	71	29	0	137

Notes:

[a] A plus or minus difference up to, say, 0.02 may be due only to measurement error.

[b] A portion of London developed about the same time as Red Lyon Square and Seven Dials (as measured from the center of London) in an approximate grid pattern, but otherwise randomly chosen other than that its total size was measured on a map to match Red Lion Square's size.

[c] Seven Dials is slightly larger than Red Lion Square.

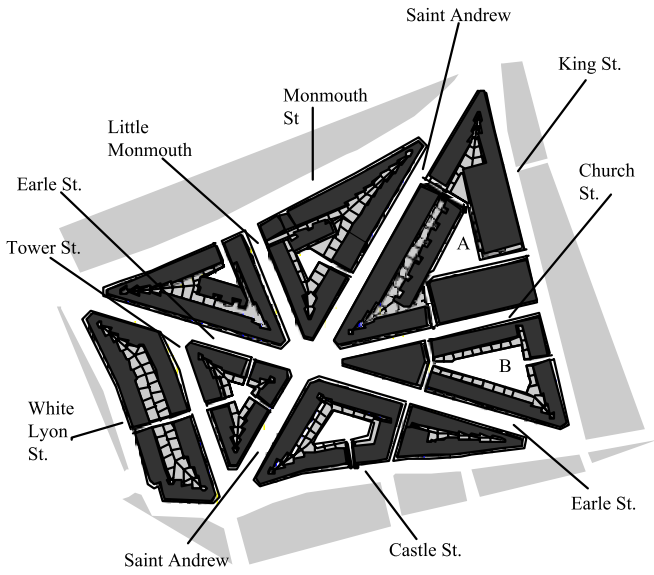
Source: City of London Ordinance Survey (1878).

The Seven Dials in detail

Evolution of the layout

The Seven Dials captured the urban intensity of London's busy parts, yet writ small. In 1690, at King William III's urging, Neale was granted a lease on a large piece of open land for housing – but one already surrounded by development of, at best, mixed quality – the land known as "Marshland" and previously used for grazing (Booth 1985, p. 391 Fig. 4 and p. 392 Fig. 5). Any development there could no longer be *suburban*: it was no longer on the city's periphery, but closer in, a large-scale "*in-fill*" development. Nor was it to become strictly residential, like a square. Rather, Neale made it of mixed use, at least at its core. Perhaps he hoped to capture some of the shops and stores that were leaving the exchanges, although it would seem not a suburban enough location to please many shop owners. Perhaps the Dials' faltering success was in part due to its not being large enough to wholly embody, isolate and protect the new community it created. Instead of encouraging peripheral up-grading outside the Seven Dials, it was instead degraded by its older, declining urban surrounds. While Neale had proposed to build within two years, and had arranged with four other gentlemen to invest with him to manage a loan of £16,000, he subsequently had to borrow another £5000, so perhaps he had less funds for development than he had first anticipated. Neale settled on the final subdivision scheme in 1694 (*Survey of London,* 1914, Vol. 5., Part II, pp. 12–14), and then, following customary practice, leased out the building sites to builders (not selling them the freehold). Construction began with some 14 builders commencing work. He was forced to sell the land and leases by 1695, however, perhaps because he was undertaking other development near by (Thomas 1983, pp. 32, 35).

We have two versions of the development – a draft, and the final product. The draft (Figure 2) was prepared in 1691 and submitted for building approval to Christopher Wren, the King's Surveyor of Works (and in effect, London's "plan checker"). This first plan showed *six* radiating streets from a central intersection, with 282 houses facing the streets, 5 facing alleys, and 29 facing interior courts (*Survey of London,* 1914, Vol. 5, Part II, Plate



Row-houses are shown to better facilitate comparison with Fig. 3, whose source map was too small a scale to show individual parcels. The narrow parcel lines can be seen on the un-built portions in the backyards. Enlarged details for Block A and B are shown in Fig. 4. Note the fewer streets and more elaborate passageways into block interiors than as finally built (Fig. 3).

Figure 2. Adapted from Thomas Neale's original proposal in 1691 to Christopher Wren, Surveyor of Works.
Source: *Survey of London* (1914) Vol. 5, Part II, Plate 39.

39), some 316 houses in total. Across the eastern perimeter street and outside the "Dials" area, more houses and a church were proposed (not shown here).

Why radiating streets instead of a square? We do not know, but possible influences are numerous. At the simple developer level of profit-seeking, both plans seemed premised on believing that since street frontage was necessary and valued by the market, maximizing street frontage should maximize profit (Booth 1985, p. 392). Barbon's slightly earlier Red Lion had eight streets radiating from a square, but his central square downplayed the sense of streets radiating from it. To the immediate southwest of the Dials was an earlier, small, irregular eight-street intersection, and to the southeast an irregular six-street intersection, both the geographic happenstance of other decisions but perhaps seminal to Neale's thinking (Strype 1720, ii., Bk VI facing p. 85). Neale's final development, had not six but *seven* radiating streets (see Figure 2). Some of the street names were changed between the original proposal and the final subdivision, and sometimes again up to the early twentieth century. Neale's aesthetic inspiration to harness a radiating street layout to financial ends also might have been inspired by Christopher Wren's and John Evelyn's own plans for London right after the great fire, both of which showed radiating streets. Paris and its *Place des Victoires* initiated in 1685 might also have influenced Neale (CDP & HBC 1997a, p. 3) although it was not completed until 1695, after Neale began). The *Place des Victoires* is a public "square" with a circle at its center. Neale's circular monument and intersection of seven radiating streets was less grand than these other Baroque designs, however. The Dials' streets were more intimate in scale, their width a mere 40 ft, their intersection more an oval than a circle. The overall building design was then accomplished by accompanying lease agreements with builders that called for them to construct brick houses two-to three-stories high, set close to the streets, with tile roofs, proper glazing, and attics and cellars (CDP & HBC 1997b, p. 6).

Most of the houses in the Dials overlooked not a square but merely other houses across narrow streets. Houses sited toward the seven-street inter-section overlooked its monument

and mini-roundabout. The overall effect was not the slight relief from the city granted by a square, but rather an increased urban "densification", albeit along straight and orderly streets. In the middle of the roundabout the 40 ft-high sundial was placed, built by England's leading stonemason, Edward Pierce. At the top of this dial were six sundial faces on a hexagonal, the column itself becoming the seventh dial, symbolically casting its own shadow as a gnomon at the intersection.

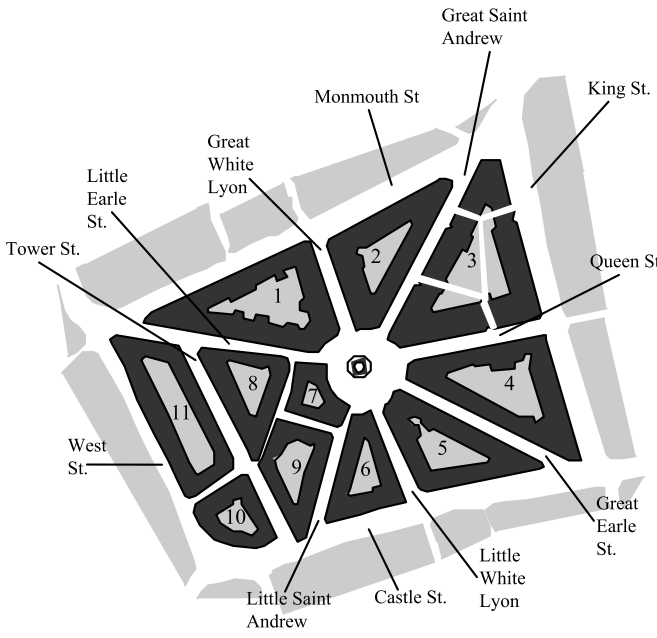
Financial gain from more street frontage was probably a reason for adding the seventh street, but that additional street allowed an ingenious name for a publicity-seeking development. Of course the name connoted the seven streets radiating from the core, but why seven, especially for sundials? Seven does not divide nicely into the 24-hour day and six (or eight) does. Used allegorically, however, seven often denotes "completion or perfection (especially in echoes of biblical phraseology)" or symbolically represents the Seven Hills of Rome, or any of a number of other "sevens", e.g. the Seven Sisters (OED). Whether putting "seven" in the name was only a *post hoc* rationale for adding a street, it did increase, perhaps maximized, street frontage. The revised effort gained 10% more street frontage by eliminating many houses on block interiors facing a court, and replacing them with the more expensive street frontage houses.

Interaction of design and market analysis

Examining the parcel layout more closely suggests that Neale made a rudimentary market analysis of the type of demand, by income group, his project would respond to. His ground rents for building sites ranged from 5s. [shillings] to 12s./front foot depending on where and which street it was located (*Survey of London* 1914, Plate 39; Thomas 1983, p. 31). Builders took their cue from ground rents as to the house quality and size their site could support. The radiating streets were not equally prestigious according to the ground rents charged. Neale also showed this difference by using the names "Great" and "Little for streets such as Great St. Andrew, that in effect "entered" the project from the northeast down to the monument, and then "exited" as Little St. Andrew, out and down towards the less fashionable southwest periphery (see Figure 3).

Besides the seven radiating streets, Figure 3 reveals five small blocks created by alleys in the southwestern part (blocks 7, 8, 9, 10 and 11) where only two blocks were in the original proposal. Their short lengths, only more or less at right angles, seem to re-introduce ancient London's jumble into otherwise more orderly development. Some interior alleys were kept (block 3 in Figure 3), as were some courts although reduced in size. Smaller lots were involved in this change, suggesting that Neale, sensing London's increasing vacancy rate, adjusted lot size to remain competitive. Nevertheless, we know that the same subdivision principles for different sized building sites were employed as on his draft version (Booth 1985, p. 393, Bieda, n.d. [c.1988]).

While the more expensive houses were grouped toward the northeast, away from the additional alleys and small blocks added toward the southwest in the final project (compare Figure 2 with the streets and higher ground rents mentioned above), the triangular block layout required sprinkling or pepper-potting mixtures of lot sizes (Booth 1985, p. 393, Tiesdell 2004). This is shown in Figure 4, which is a detailed blow-up of a portion of Figure 2. It reveals the large but peculiarly shaped building sites leading back from the corner along each street with only about a 20 ft depth, but growing progressively larger towards the middle of the block where they had 40 or 50 ft depths. Some lots were larger still, having more than the normal 20 ft frontage. For example, at the southwest end facing White Lyon Street there were lots with 15 ft frontages and 37 ft deep, but at least one lot,



This depiction doesn't show individual lots, or how the block interiors were developed due to the quality of Strype's map. Note the alleys in block 3. Presumably there were a few small houses in its interior, and in the other larger blocks, but not detailed by the cartographer. (Blocks 1, 4, & 5, are shown as having alleys in John Roque's map, drawn between 1737 and 1745).

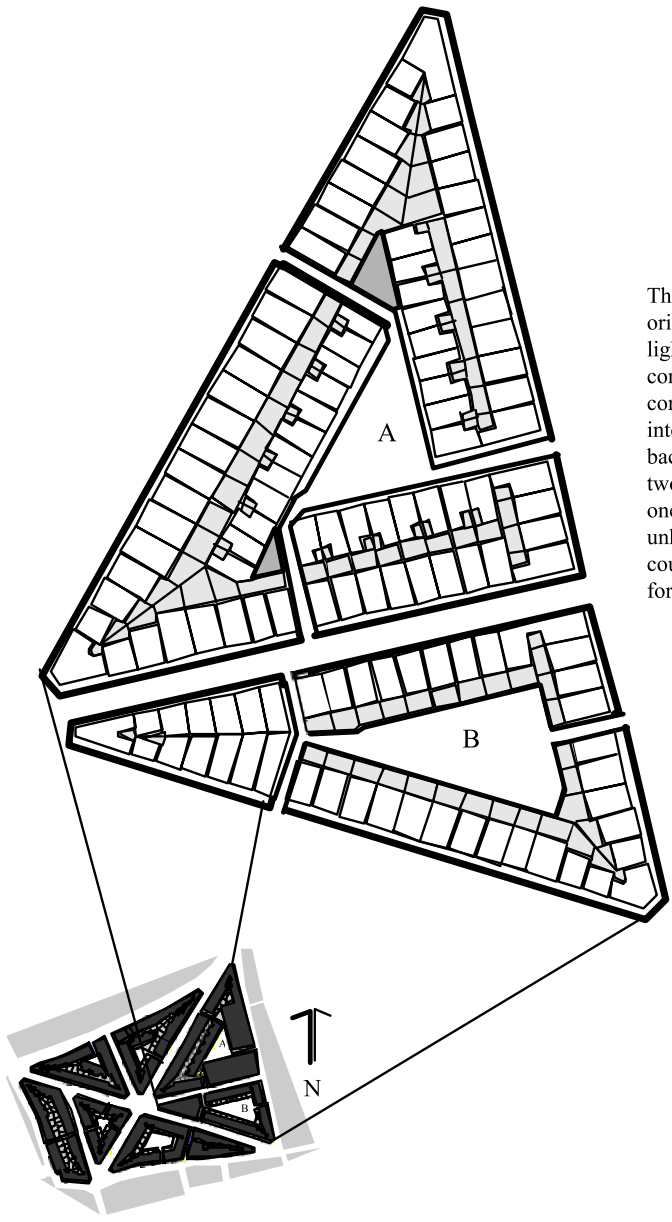
Figure 3. Thomas Neale's Seven Dials as eventually built out by 1720.
Source: Adapted from Strype, J. (1720). *Survey of the cities of London and Westminster* (2 vols). London.

facing Monmouth, was only 14 ft by 17 ft, Thomas (1983, pp. 30–31) tells us, and given the triangular block arrangement in the final version, no doubt many other lots had similar cramped dimensions. The larger blocks also had narrow 10 ft alleys leading to their interiors with still more but usually smaller houses off a shared court. Backyards were peculiarly shaped and minuscule for corner parcels, growing progressively larger toward the middle of the blocks, but still only about 20 × 20 ft (probably to be used for out-houses and privies), while houses in the interior of the block had but postage stamp backyards.

Market acceptance and rejection

Public reaction to the Seven Dials' strikingly different design seems to have been ambivalent. At first it was regarded as one of London's "great public ornaments", the identity of the surrounding area immediately established by its layout. But was notoriety enough to make a successful development? Many of the sites stood vacant for years, only four streets being completed by 1708; the remainder finished around 1710, although this delay also might have been due to London's high vacancy rate then. While many of the Dials' early inhabitants were gentlemen and lawyers, others were well-to-do people in building and other manual trades (Strype ii, 1720; Thomas 1983, pp. 32–34). A bit of "social planning" in the covenants excluded the trades of "Common Brewer, Butcher, Melter of Tallow, Soapboyler or a tobacco maker" to minimize fire risk, and so that they would not practice their noisy and malodorous trades there. Potentially high vacancies soon advised ignoring some of the details in the covenants: a variety of trades located there in fact (Thomas 1983, pp. 32–34, CDP and HBC 1997b, p. 7).

The area soon deteriorated. "The houses were progressively divided into lodgings, and the area became increasingly commercialized from the 1730s and the 1740s" (Weir 1842, p. 264). There were at least three reasons for this decline: (1) the novelty of the design



This figure reveals Neale's original parcels (and backyards in light grey). Note especially the configuration of those at and near the corners, and the lesser houses in the block interiors with their 'postage stamp' backyards. He apparently proposed two types of common areas, the small ones in dark grey (proposed use unknown) and then the alleys and courtyards for access, and perhaps for horses and carriages.

Figure 4. Enlarged northeast portion of Neale's original proposal, Blocks "A" and "B" in Figure 2, showing the lots, backyards, common areas, and courtyards.

wore-off while its "confused and cramped" nature for day-to-day living endured; (2) the project's new owner, James Joye, sold off the blocks separately in the 1730s, with no one then legally being able to enforce Neale's restrictive covenants (CDP & HBC 1997a, p. 6, 1997b, p. 7); and (3) as the last open space to be developed in the locale, it was already surrounded by houses, some of 50 years old, and beginning to decline. The land immediately to the south, for example, once residential, had increasingly been taken over by coachmakers and smaller shops for ancillary trades. By mid-eighteenth century, the Seven Dials

was said to have been "given over to the haunts of criminals." The larger area in the nineteenth century became "predominantly commercial and industrial" and was next to one of London's most notorious "rookeries" (slums), although some of the Dials' inhabitants still had an air of "shabby gentility" and a number of printing presses, booksellers and circulating libraries (Knight 1842, vol. 3, p. 264, Besant, 1925, CDP & HBC 1997b, pp. 7, 9).

Physical integration of different social classes in residential areas had been common the century before, but even by the seventeenth century the trend was toward segregating different classes by street, the square emphasizing this trend (Smuts 1991). By contrast, Neale's need to squeeze out parcels of varying size better integrated the development socio-economically. Small and large lots necessitated by sharp angles from triangular blocks, and thus cheaper and more expensive houses were arrayed along the same streets. Neale's mix might have been another reason why the quality and prestige of the Seven Dials declined comparatively quickly by the mid-eighteenth century, as London headed for more economically segregated neighborhoods. For all these reasons, the Seven Dials' repute as a good place to live could not compare with London's squares.

Recent history

The Dials suffered a pronounced decline, then loss of respectability, and finally, infamy as part of a slum area for some 200 years, this despite a number of its buildings being listed for architectural and historical interest. Although the Dials occupied prime central London land, investors withheld funds, anticipating government-assisted renewal of first, nearby Covent Garden, and then, the Seven Dials area. It was declared a government "Housing Action Area with Outstanding Status within the Covent garden Action Area in the mid-1970s" although no official enhancement plan was forthcoming until the idea for a private charitable effort to fully showcase the Seven Dials' potential emerged (Bieda, n.d. [c.1988]; CDP & HBC 1997a, p. 10).

The result was founding the Seven Dials Monument Charity. Their first action in 1989 was to recreate the sundial pulled down in 1773 as a first step in mobilizing support for a larger charitable effort (Summerson, n.d. [c. 1988]). Extensive public and private investment has subsequently occurred, guided by the Seven Dials Charity's *Environmental Handbook,* a model of how to do historic preservation (CDP & HBC 1997a). Rather than reproducing black and white photographs here, colored pictures of how the area looks today (including its shops and restaurants) are found on the Internet, the charity for the Dials' restoration providing some additional recent history (see www.sevendials.com, and other websites for the Seven Dials, accessed 13 June 2009).

Conclusions and next steps

The Seven Dials – Summerson's "freak of town-planning" – has now become a success, helped in this re-generation by its long history. Possessing a number of late seventeenth- and eighteenth-century buildings, all overlaid with an equally rich remodeling during later periods, the area was ripe for interesting and successful historic preservation. That historic boost cannot be denied, but I am not calling for a faithful but artificial attempt to recreate an historical design. Does not the Seven Dials also embody an underlying viable model, one not dependent upon history for its success? Might designers today look as well to the Dials' basic "bones" as to its historic "membrane"?

The times may now be ripe in the United States and elsewhere in the world for a re-creation of the sentiments and guiding aesthetics of its development, along with some

improvements. Its original character and effect were mixed. Being a "one off", unique creation, there have been no subsequent refinements of the basic concept. Just as with the mixed success of Covent Garden, London's first square, it was the "*scheme rather than its realization* that initiated the sequence of squares in London" (Zucker 1959, p. 200 emphasis in original) so the Seven Dials might be still more in the scheme stage than its full realization. In the design sense of an age captured by the Baroque, the Seven Dials was an unfortunate: "combination of architectural pretension and homeliness of scale … a grand Baroque idea carried out [in] miniature" (CDP & HBC 1997b, p. 3). With its mixed use, it may have been the forerunner, again writ small, of the more recent grand idea like the Potsdamer Platz in Berlin, a public and private undertaking at a very large scale. While not aspiring either to the grand Baroque or today's Potsdamer development that contains "cities within a city" (Dawson 2002, p. 78), might today's designers for private undertakings find that the Seven Dials smaller street and block pattern have valuable aspects latent in the basic design? Would grafting modern-day technology to the design's 300-year-old concept result in hybrid vigor?

Consider some possibilities. Enclosed malls are old hat; street shopping once again in vogue. Open space as relief from density is being provided in ways other than by large and separate front and back suburban yards, or in private squares; it is now planned in as parks and common areas at the start of new development. But the semi-suburban effect is still often bland. The Seven Dials' overall configuration is certainly not that. It emphasizes higher density and mixed use, the antithesis of urban sprawl; its multiple but narrow streets, with managed rather than prohibited traffic help create exciting street life; its buildings only moderately high, create a human scale of intense urban character.

Blending income classes

The Dials' previous socio-cultural integration of different economic classes went against the social grain at the time of ever more economic segregation. Today, its mixture of different types of housing side-by-side due to different-sized parcels might work. Its building sites of different sizes and configuration offer design opportunities to successfully *integrate* a mix of residential uses: houses, apartments, and condos, of different sizes; and therefore integrate a mixture of housing costs without contrivance. Economic variety would be "explained" as the market product from inherent design constraints rather than more artificial results from government mandates for "inclusionary" dwelling types (see, e.g. Meyerson 2002) or from other attempts at "social engineering." Today, "inclusionary" units often get stuck in the least attractive place in a project, clustered or segregated due to their lower rents, rather than "pepper-potted" throughout the project (Tiesdell 2004) as the Dials' configuration would allow.

Circulation

Whereas streets in squares are different from "normal" blocks, nevertheless they were usually placed at right angles, and still fit into the larger rudimentary urban grid of the city. One could pass *through* the development without hindrance. By contrast, the Seven Dials with its radiating streets from a single core monument and mini-roundabout did not harmoniously fit the larger pattern of streets. It thwarted circulation through the development to other areas. Narrow sidewalks and streets also make pedestrian *and* automobile traffic intense. The Seven Dials Monument Charity has spent considerable time examining alternatives for automobile and foot traffic to provide an interesting but safe mix. The tight

automobile roundabout at the monument, given the seven-street intersection's small circumference, has suggested that if traffic is not excluded altogether, a series of one-way streets with "V" (rather than "U") turns at the sharp intersection could ameliorate the roundabout's most anti-pedestrian threat, yet still accommodate some traffic penetration to the core (CDP & HBC 1997b, pp. 27–41). For a modern-day development, however, the intersecting streets need not be all the same width: some could be narrower, even mere pedestrian *walkways,* while keeping the multi-pathway node, adding variety for residences and shops, while reducing automobile conflicts.

Street and block design

Street patterns also resurrect old issues in design (Jacobs 1993, p. 3, Lillebye 2001). Is the street the primary, pattern-shaping force in urban design, the residual land becoming the blocks; or does the configuration of the blocks shape the overall form, while the residual becomes the streets? The Dials' proportion of land in blocks and streets are more equal than conventional grids and emphasizes street frontage, thus presenting these issues anew. Perhaps its star-like configuration of streets is the very thing for an exciting urban node in a larger but otherwise unremarkable and featureless residential development. The prospect of providing a *monument* at the core intersection of streets – it need not be a sun-dial – should appeal to designers and developers alike.

Returning to the three forms of development, not now focusing on the open space advantages of the square but rather on the commercial potential of the Dials, recall that the gird accommodates residential, commercial, and mixed use, but has no particular focus point in its design. Squares historically have rejected commercial development, being all-residential, and quietly focused *inward*, centered on the square – not so much by virtue of the street system as by the attraction of limited open space at the core. However, squares basically keep the grid and its link to the larger circulation system, with minor variations. By contrast, the Dials kept the city's commercial development, indeed perhaps emphasized it at the intersection (although less so than in an exchange). To that end the Dials' radiating street system can be seen not only as radiating out from a core monument, but also becoming "rays" of *attraction*, dramatically pulling people *in* from the periphery to a center. This is important from a commercial standpoint, becoming the physical manifestation of "retail gravitation" used by analysts of commercial centers. While the smaller layouts required by triangular blocks hinder a large anchor store – the typical attraction of traditional malls – the design can overcome that to a certain extent.

Spatially intensifying commercial use at the development's core

Given the comparatively narrow street width of the Dials, and the mixed use at the seven street intersection (or fewer streets if some are pedestrian walk-ways only), the effect concentrates an unusual number of shops at the core, aggregating more (but smaller) stores' within a shorter distance than is possible by wider, four-way street intersections, with stores leading back from the corners. Any such "magnetism" at the core would appeal to today's shopping developer, especially so if the stores were placed in *two-storied* development. *Bridges* or walkways *above and across* the narrow streets close to the core would allow foot traffic to look down on the peopled intersection below, further partaking of the energy of the intensely urban intersection, while easily connecting some of the blocks on the second level. Small shops could even be located on parts of these bridges as was done on London Bridge and is still done today on the *Ponte Vecchio* in Florence.

An exciting core and novelty in layout

Modern commercial development has been blessed with the insipid. Typically symmetrical, repetitious, rectangular layout of stores is found in shopping malls and strip development alike. It may be efficient in store layout, but efficiency does no good if customers, grown weary of so much repetition, are not attracted in the first place. Moreover, the efficiency is in each store, but strung out side-by side along only a few corridors means comparative sprawl of shops, as anyone who has had to walk from one end of a large shopping mall to another discovers. By contrast, the Seven Dials' sometimes-triangular designs, along with its maze of interior alleys and an occasional court, allow interesting store and restaurant configuration and placement. Small shops tucked in at unexpected nooks or crannies become delightful surprises. Stores in today's Seven Dials are experimenting with the existing space and layout as left to them by a 300-year old design, with perhaps mixed success. Today's designers should examine these possible pros can cons first-hand in London. Designed afresh, a similar pattern might overcome any basic obstacles, while creating new delights of its own. Finally, the Dials' radiating streets with stores primarily at the node create more of a central place than in shopping mall sprawl, more like a classic downtown writ small.

For reasons such as these – an old design reconfigured and novelistically inserted in a new era of development – the Seven Dials' concept, with modifications, could emerge from having been a peculiar seventeenth-century effort at urban design, to becoming the next new thing in twenty-first century urban form.

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Note on contributor

William Baer is Emeritus Professor of Policy, Planning, and Development, at the University of Southern California, Los Angles. He is using modern planning and real estate techniques and outlooks to bring unexamined facets of urban development to historians' attention; and to also convey that history to today's practitioners.

Abbreviations

18 Car. 2. c. 3[1667]; 19 Car. 2. c. 3[1670] = Regnal year, particular reign [Charles], chapter number of legislation.

SP16/400/180 (26 October 1638); SP16/410/218. = State Papers [microfilmed handwritten documents of English government]. The first number is that of the reign, in this case, Charles; the second is the page number, the third is the item, the last is the date (if known).

Note

1. The author is grateful to a reviewer of an earlier version for suggesting this means of measurement, because it substantially changed the area comparisons from earlier, less exact maps, and these altered some of my earlier conclusions as well.

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