

Making a Metropolitan Landscape: Reading Spatial Coherence at the Periphery of Lyons, France 1812–1994

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I Design professionals often characterize contemporary western urban peripheries as chaotic and question the capacity of architects and planners to bring spatial coherence to the rapidly changing urban areas of Europe and the U.S. This characterization does not advance our understanding of how urban edges develop, however, and rests on a limited evaluation of their appearance in contrast to idealized pre-industrial urban forms, rather than on their intrinsic qualities per se. Moreover, it carries an implicit nostalgia for those forms that relies on their tacit acceptance as models of reference. The inherent bias it displays against contemporary development denies to cities their vital role as loci of change.

Urban morphology holds great potential for the study of continually expanding edge of western cities, as Anne Vernez Moudon has pointed out in her defense of the interdisciplinary potential of the field.¹ The geographers and historians advancing the body of research, however, have shared some of the prejudices of architects and planners in their evaluation of the contemporary urban edge, and contemporary urban areas in general. As Vernez Moudon underlined, urban morphological research has focused primarily on historic

European cities. When geographers and historians have ventured beyond description and analysis to the operational field of prescription, it has generally been in the defense of conservation and preservation.

This focus on the past has compounded what Vernez Moudon identifies as a positivist criticism of the perceived weak predictive powers of city building theory. One can argue that it is illusory to attempt to model such a complex human endeavor as the making of cities, and that morphology's humanistic underpinnings are in fact its strength. It remains true, however, that coming to terms with contemporary morphological forms remains an important task that must be addressed if urban morphology is to be relevant to the making of cities, and not just to their analysis. The Italian architect Aldo Rossi, arguably the most influential architect with the Krier brothers in diffusing the methodology among design practitioners, eventually distanced himself from typological and morphological analysis as a design tool. For him such studies could not constitute an end in and of themselves and indeed ran the risk of generating a new design myth that, like functionalism, would limit the experiential freedom of young architects.²

Nonetheless, Rossi was instrumental in the resurgence of interest among design and planning professionals in traditional urban form. This interest coalesced initially around his work, and that of the Krier brothers in the 1970s, but continues to influence contemporary debates on the future of cities. Certainly in Europe, I would argue that the city continues to be conceived by planners and architects alike as an artifact in history. The interest in Rossi's and Krier's work was initially fueled by the rejection of the heroic aspiration and collective ambitions of early and mid-20th century modern architecture and urbanism as implemented in the post W.W.II building booms in Western Europe and the United States. To revalorize the past in the 1970s, was to condemn urban renewal and high rise housing ghettos. This condemnation is still expressed today. Architects and urban designers continue to bear with ambiguity the legacy of modernism. Many argue for traditional forms while remaining unable to stem contemporary development pressures and processes. The New Urbanism movement in the United States is a clear illustration of this ambiguity, and these designers cloak contemporary development patterns in traditional formal dress.

To focus on the past, to reject the most recent past and the present, however, is to deny to the present the change that is otherwise celebrated and documented so exhaustively for the past. For design or planning, this is paralyzing as a basis for action. For the field of urban morphology, this is marginalizing as a relevant body of knowledge for architecture and planning. To prevent this marginalization, three strategies are necessary.

First and foremost, urban morphologists must extend their concept of historic continuity into the present as they study the evolution of urban form. Modernism and the transformations of urban fabric that it has generated cannot be exceptionalized in urban history. We have to demonstrate

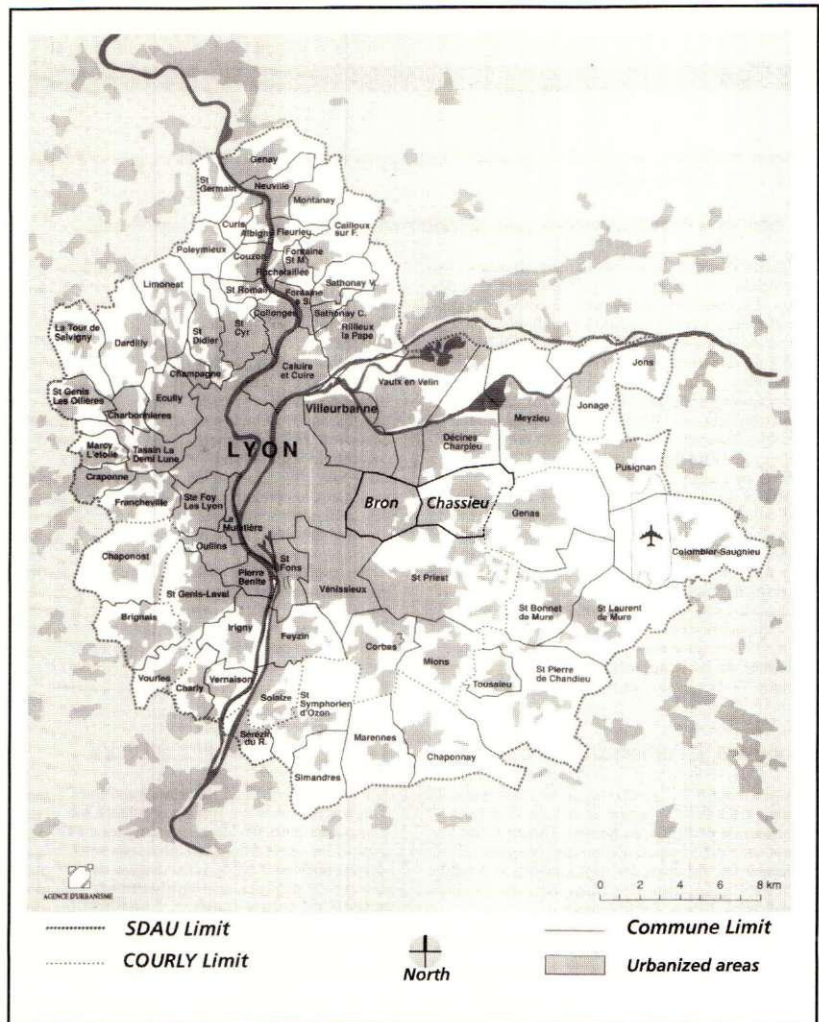


Figure 1. Lyons metropolitan area indicating COURLY and communes limits (Agence d'Urbanisme 1991)

that the basic methodological framework that is common to the different traditions of urban morphology can serve to describe and explain contemporary forms. In so doing we will engage new geographic sites: the contemporary urban edge, contemporary ex-urban conditions, as well as the de-industrializing and, in the US, abandoned historic centers. We also need to engage new temporal sites: the very recent past of the last decades in addition to the post W.W.II era.

Second, recent change must be represented as a result of a dynamic and positive process. This means that we have to celebrate contemporary forms of change and acknowledge

them to be as culturally rich and valid as those in the past. We cannot deny to the present the very processes of change that we valorize in other historic eras. The first step in this celebration is to map the present. The scale and dispersed quality of new development on the edge, as well as the lack of historical documentation due to its recently urbanized character, present daunting technical tasks. The scaling up and down of maps has now been tremendously simplified by the availability of computer imaging and data processing technology, however. In addition, many cities are in the process of digitizing parcel level data. The increasingly straightforward translation operations between media, between hardware and software, and between spatial and statistical data, opens tremendous possibilities for visualizing and analyzing contemporary urban conditions. It is increasingly easy to track change backwards or forwards in time. The wide variety of reproducible mediums available promises to enrich the representation and presentation of the cartographic record that is fundamental to morphological research.

Third, the theories of urban morphology that are being developed must identify broad principles that are common through history to the present and so can inform decisions in the present. Focus must shift away from elaborate taxonomies and typologies of form to broad principles of form making that are flexible enough to accommodate the wide range of disparate conditions that we encounter within and across cultures and geographic areas. The objective is not to predict or prescribe, but to understand the dynamic processes so that as designers and planners, we can operate strategically rather than deterministically.

For the urban theory to be dynamic, it must integrate human agency in its categorization of form. It must leave room in the urban equation for the creativity of the individual, an ultimately unquantifiable given that is at the heart of the life and richness of cities. The creative spark of its inhabitants and its builders is what allows cities, ultimately to escape the control of the historian and the planner, and retain the capacity for invention and adaptation.

Il. The doctorate research presented in the following paragraphs is entitled “Making a metropolitan Landscape: urban form and urban change at the periphery of Lyons, France 1812–1994.” The thesis repre-

sents an attempt to implement these three strategies in the morphological analysis of two villages at the periphery of Lyons. The urbanization of Bron and Chassieu serves as a geographic and temporal frame to map the evolution of the constitutive elements of their urban form: the street and block network, the property or parcel matrix, and the building fabric. The maps that record physical change are supplemented by a historic narrative through which the components of change are categorized: parcel size, land tenure, land use, land operations (assembly, subdivision), and land transactions. Together, these provide an account that emphasizes the process of transformation of what is now the urban edge of the metropolitan area of Lyons. The research takes advantage of GIS and document imaging computer technology to map the changes. It proposes a broad descriptive and analytic framework that provides a dynamic account of the spatial coherence of the transformation of a metropolitan periphery.

Temporal and Geographic Site

At the periphery of Lyons, development in the last 20 years has been dispersed and of low density, seemingly unrelated to previous historical development in the city, and of a type more often associated with suburban expansion in the United States. Drawing on the work of the British and French schools of urban morphology, the research seeks to identify the coherence that underlies today’s disparate landscape.³ It seeks also to present these changes in the continuity of urban form making in Lyons over the last centuries, as the city has grown into the countryside.

The metropolitan district of Lyons is the second largest in France, with a population of 1.2 million distributed over 55 *communes*. Lyons proper has a population of 413,000. Bron and Chassieu are adjacent to each other along the principle axis of growth and transportation to the east of the city. (See Figure 1) Both were largely agricultural communities until well into the 20th century and are exemplary of urban conditions found at the edge of French cities today. Bron, with population of 40,600, is situated on the first ring of *communes* beyond the core city. Chassieu, with 8,600 inhabitants is situated just beyond Bron in the second ring of development.

In the early 19th century, each *commune* was composed of several hamlets, dispersed along the principal farm roads or



Figure 2a. The Nationale through Bron: farm houses and mixed use highrises along major road.



Figure 2b. Auchan hypermarché off the highway in Bron.



Figure 2c. Single family house in residential subdivision in Chassieu.

the 18th-century highways. The hamlets were surrounded by agricultural fields and, in Bron, by several large farming estates. Within their boundaries today, one finds spatial conditions that are ubiquitous in the U.S.: isolated office parks and retail centers, shopping malls, old farmhouses and new high-rises juxtaposed along major roads, extensive single family residential subdivisions and a dominating highway infrastructure. (See Figure 2a–c)

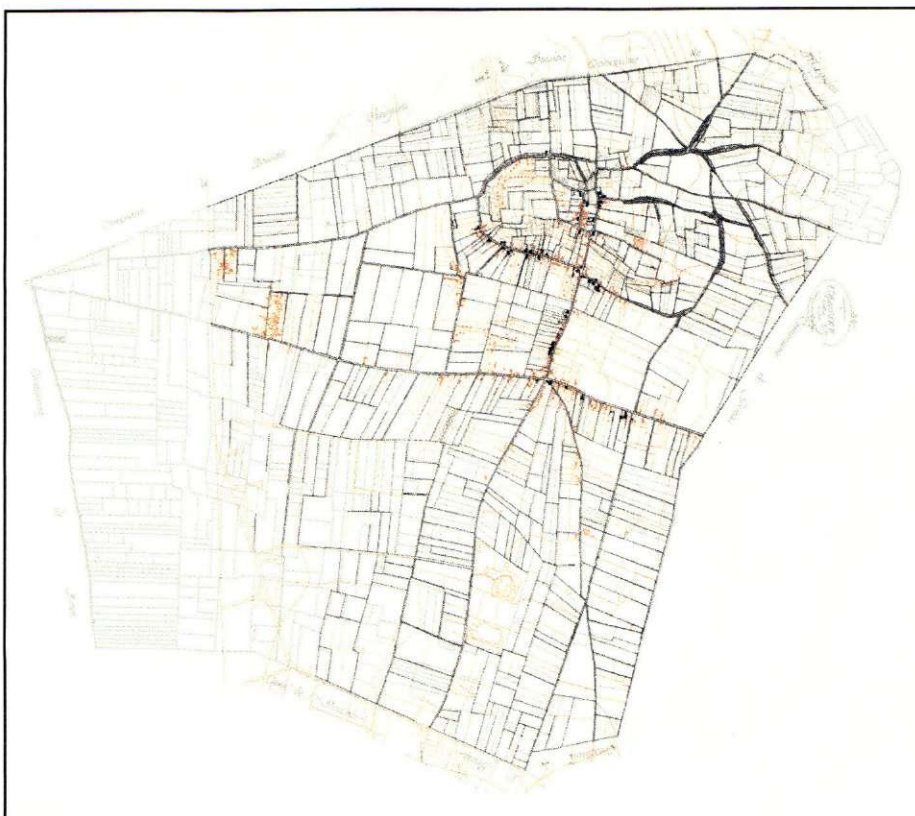
Mapping Change

As all urban morphologists know, the task of mapping historical change is generally daunting and always painstaking. This research takes advantage of different GIS and illustration softwares to facilitate this essential component of the research. In addition to the resolution of the technical difficulties of scaling and reproduction, the use of computer technology made it possible to experiment with ways in which to represent morphological change.

Rather than simply providing a record of past conditions, the cartographic analysis was intended to identify the areas where changes in the parcel matrix and building fabric had occurred. Two scanned parcel maps were superimposed, each representing one end of a selected time interval.⁴ The attributes of each map were then sorted in a GIS program and the results color coded to distinguish between elements that were persisting (black), no longer existing (gray) and new (red), so that the three conditions were simultaneously legible on one map. (Figure 3, 4 and 5 present the maps created for Bron and Chassieu) The resulting composite maps thus compresses two historic records and three analyses in one representation. The attributes of the composite maps can also be sorted to create separate maps that isolate persisting and new elements, providing a typological reading of persistence and change for each time interval. The representation proposed makes it possible to read the changing city as a dynamic and differentiated landscape in which distinct areas undergo alternating periods of stability and change. The maps produced are temporally dense and provide both a locational and the typological account of change for each time interval. They have the added advantage of being manipulated at different scales without having to be redrawn.



Figure 3.
Bron 1812–1947
Composite map of urban
landscape change.

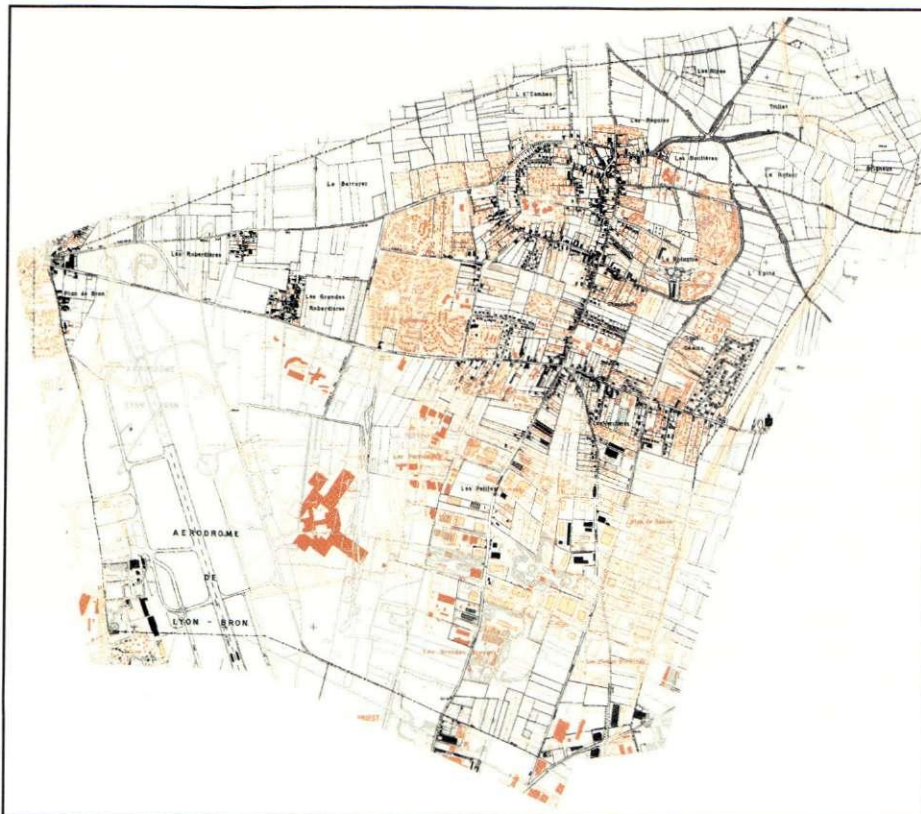


Chassieu 1812–1961
Composite map of urban
landscape change





Figure 5.
Bron 1969–1994
Composite map of urban
landscape change



Chassieu 1969–1994
Composite map of urban
landscape change

Legend
No longer existing
landscape elements
Persisting landscape
elements
New Landscape
elements



Broad principles: spatial coherence of the land division structure

The maps created served as cartographic record for a descriptive narrative of change that provided an account of land tenure and use, as well as the modes of transaction and land operations involved. It was found that broad characterizations could be made about the associations between these factors and the size of the parcels in Bron and Chassieu⁵ Very different conditions of tenancy and use as well as mode of transaction and land operation were associated with small, medium or large properties, providing a sense of spatial and temporal coherence to the processes of change.

Large parcel tenure

The most critical association with parcel size was tenure. The spatial armature of the land divisions structure provided in effect a reading of the social armature of a particular urban landscape, because different ownership categories were associated with different parcel sizes. At the beginning of 19th century, large parcels in Bron consisted generally of persisting feudal holdings or leased farms owned by the mercantile bourgeoisie of Lyon seeking to establish land holdings. In the course of the 19th century, these properties were in almost every case sold for institutional or military use to the state, in effect transferring these holdings into public ownership, in which they have remained. One property, for example, was sold as the site of the psychiatric hospital, which persists to this day as a large scale public domain in this area, after successive renovations and extensions. (Figure 6)

The other large property constitutes the core of the land holdings that were sold to the army to create a new airport. (Figure 7) With the construction of a larger airport further out of the city, this land has been transferred from military to metropolitan district ownership and is being redeveloped in part for commercial use but also for new public uses such as a convention center. The existence such a large parcel of land in public hands in what is now close proximity to the city heightens the role and power of the public sector in shaping urban growth in the periphery of Lyon. Recognizing this, the district planning authorities are offering the new subdivided parcels for long term leases, rather than sale.

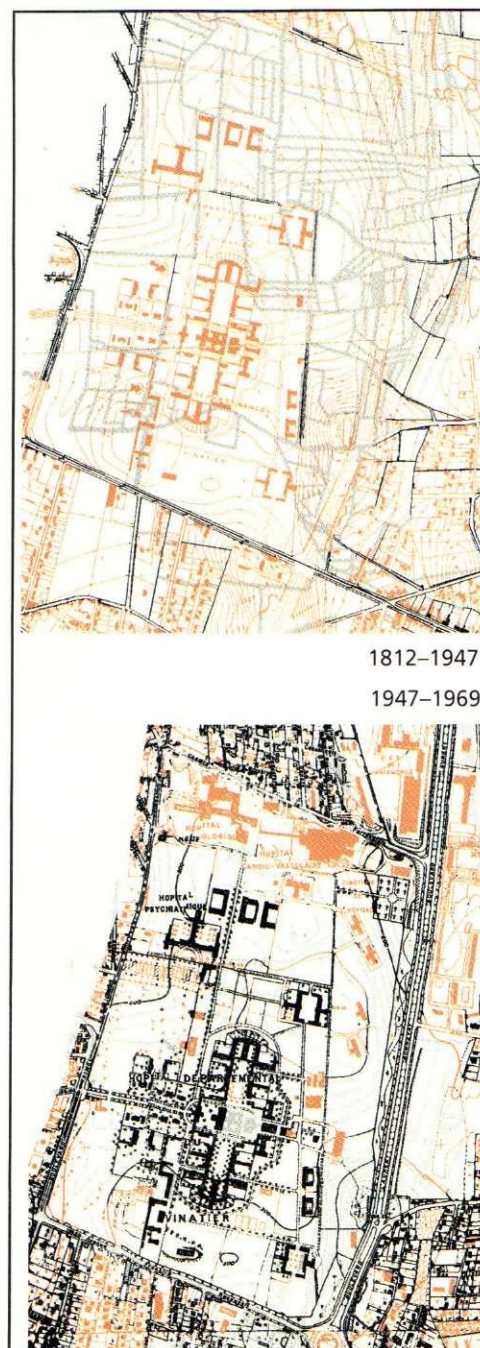


Figure 6. Bron 1812-1969
Persistence of large parcels



Figure 8. Bron 1812-1994
Large parcel subdivision

The examples of large parcel change given above call attention to how institutional ownership tends to fix uses in an urban area.⁶ It also underscores the relative instability of uses associated with a technology, notably transportation technology. Fast evolving technologies render such sites obsolete within a relatively short time frame. In the case of the airport, however, while the use has changed, tenure has remained within the public domain.

It is important to emphasize the association of public and private actors of wealth, power and authority with large parcel size because different economic interests, and intellectual and design references will inform the actions of the actors transforming large parcels, compared to those transforming small parcels. Different time frames and space making strategies will shape the landscape of the periphery based on pre-existing conditions of parcel size and tenure.

Small parcel stability

The different periods of stability associated with the small parcel fabric in Bron and Chassieu confirm the importance of size in differentiating urban growth. Between 1920 and 1950, in response to a high demand by working class families for lots on which to build modest houses, the farmers of Bron proceeded independently of one another to subdivide their field parcels into very small lots for sale, in straightforward orthogonal patterns. (Figure 8) Once established, the small parcel landscape of private property that was produced during these years has been extremely stable as a morphological system, although with time it has changed demographically. It persists to this day and is highly likely to continue to do so, unless land values should suddenly skyrocket. This tendency of small parcels to long term stability suggests that the numerous residential subdivisions of the last 20 years that have overnight transformed



Figure 8. Bron 1812-1947
Small parcel creation

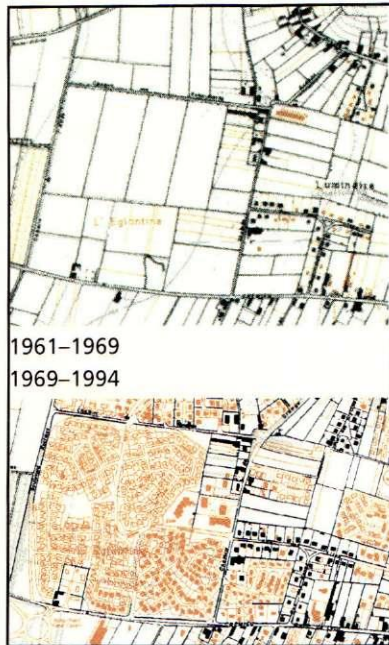


Figure 9. Chassieu 1961–1994
Land assembly followed by subdivision

villages such as Chassieu from agricultural hamlets to bedroom suburbs are not likely to go away any time soon, however much we may lament their existence. (Figure 9) Designers, planners, and theoreticians must acknowledge this new landscape as the baseline for the future city and gauge what forms of redevelopment such a small parcel landscape will support over time.

The staggered nature of change in small and large parcels suggests the need for continued quantitative research that might allow planners to identify and target locations of imminent change within metropolitan areas according to the state of the parcel fabric, in order to focus conservation or development initiative.

Processes of change

Large and small parcels are subject to different redevelopment pressures, or processes of change over time. They can support different types of land operation that will have continuing impact on the way specific areas of the city will evolve. Change in small parcels is more likely to be episodic and incremental over time, constrained by property limits. (Figure 10) Small scale assembly is possible as land values

rise in high traffic areas, but only extraordinary measures can overcome the incremental quality of this change. The powerful exercise of state authority that was necessary to carry out urban renewal projects in the both Europe and in the US attest to this.

Large parcels can of course either persist as large holdings and we have already shown examples of this, or in turn be subdivided, resulting in a radical transformation of the scale and texture of an urban area, even when the redevelopment is contained within the boundaries of the original parcel. The contrast of the large scale and relatively short time frame of the redevelopment of large parcels to the incremental nature of change in small parcels also bears continued qualitative and quantitative research.

III In Bron and Chassieu, 200 years of change have brought about the creation of a two tiered landscape of large parcel public tenure and small parcel private ownership. Doubtless many western cities, within the bounds of their cultural specificity, could sustain such a reading. This kind of broad generalization is intended to be just that—broad and general. It is nonetheless subject to subtle and not so subtle variations and exceptions, local circumstances that distinguish cities from one another across cultures or historic intervals. The simultaneous consideration of the general and the exceptional allows a reading of contemporary urbanization as a highly articulated, rather than chaotic or indiscriminate landscape. The generalizations presented in my research square with the much of the research within urban morphology, and indeed will surprise few who have pursued this field of study. The morphological analysis of the Les Halles Quarter in Paris from the 14th century to the present by André Chastel and Françoise Boudon, for example, makes clear distinctions between large and small parcel change.

In the paragraphs below, I have offered some thoughts on the value these generalizations about urban morphology might have for designers and planners as a starting point for continued research and discussion.

1. The broad generalizations that can be derived from urban morphological study make possible a reading of urban form that stresses the general coherence, rather than arbitrariness, of change over time. This is important, because our evaluation of

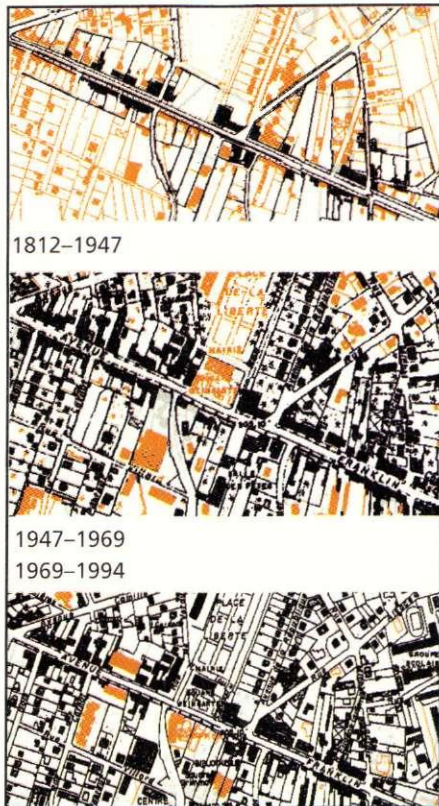


Figure 10. Bron 1812–1994
Small parcel redevelopment

today's urban conditions is obviously colored by our interpretation of these conditions. An interpretation which stresses continuity and constants can diffuse alarmist rhetoric in favor of a lucid appraisal of what it is possible and not possible for planners and designers to achieve. To understand the processes of change validates the transformations that are taking place, and at the same time empowers designers and planners by forcing them to address change on "its own terms," rather than through ideological preconceptions about what is right or wrong, ordered or disordered.

2. The structuring elements of morphology are straightforward: the street and block network, the parcel matrix and the building fabric. The tendency exists within urban morphology, however, to limit research to elaborating taxonomies of forms as if they were self-perpetuating geometries. If instead the analysis is based on the form/tenancy tandem, as proposed in my research, human agency is introduced in the descriptive

narrative and the actors of change expressly identified. The cadaster is thus a tremendous synthetic representation of the city that collapses the material and cultural landscape onto a two-dimensional record that can be analyzed synchronically as well as diachronically. The political and social dimensions of culture, development dynamics and urban form can be considered simultaneously. By associating actor and parcel type, it is possible to identify where designers can exert control as a function of over whom they can exert authority or influence.

The public owner of a large parcel, for example, will generally collaborate closely with planning agencies to conserve or develop the property, under a common public mandate. Likewise, the developer of a large tract of land, acquired intact, or assembled from small holdings, will likely find himself in some negotiated arrangement with the public sector, as development and infrastructure costs are allocated between them and political fallout is mitigated. In the United States, the developer will take the initiative and the planner will often find himself on the defensive, his power to exert control limited by the strength of the real estate market and political demands to support economic development. In France, the public sector will often take the initiative and can guide the form of development more directly, although economic development also constitutes a prime objective.

It is far more difficult, however, to exercise direct control over the future development and redevelopment of privately owned small properties in market economies where the rights of private property are a cornerstone of society. Speculation is the planner's nemesis because he loses control over the direction of urban growth. Yet it can also be considered to generate legitimate profit for a property owner. Recent Supreme Court rulings in the United States, for example, have tended to uphold the rights of the property owner against that of the public sector. Control over the small property landscape is therefore subject to local political acceptability, and must generally rely on indirect controls such as zoning or design guidelines. Carrying this line of discussion further, one might consider that a democratic society must allow a range of individual autonomy with regard to the use and ownership of land. The interwar "pavillons de banlieue" of Bron, and the post-war residential subdivisions of the United States and France, so often maligned as bastions of petty bourgeois interests may, in a different interpretation, actually constitute the foundation of a democratic landscape. That public policy to create mortgage

subsidies for single family housing was a key factor in the explosion of low density suburbs on both sides of the Atlantic does not invalidate this interpretation, and in fact, may reveal how a democratic state can in fact reinforce itself.

3. Traditional planning has tended to rely on land use as both the expression and the instrument of the economic rationality that is to be achieved for a city to thrive. With a more precise knowledge of whom as well as where, planning agencies can choose to husband their regulatory efforts, and target development or conservation policy more precisely. For example, zoning categories in French planning law recognize differences in urban morphology as a basis for control of urban growth. There are two basic categories: urban and agricultural, determined by density and building fabric as much as use. These basic categories are supplemented by an assortment of special districts designations that are subject to tighter planning control. The urban or agricultural designations enables generalized oversight over the private market, while the special districts establish public/private partnerships in which the public sector assumes leadership. In the United States, in contrast, zoning is based on a generally post facto land use designation. No special acknowledgment is made of a zoned areas existing morphological characteristics. Density and site coverage of new buildings are specified, but politically charged negotiations between public authorities and private developers are the norm since the latter generally request variances to “as of right” build out allowances. These two examples illustrate of course how cultural assumptions about the role of public and private actors, and about private property, inflect the processes of change in different countries. Nonetheless, in both cases, one could speculate that a greater understanding of relationships between parcel size and ownership might serve to target districts or establish new zoning categories.

The targeting of planning regulation relies on identifying the relative stability or instability of the different morphological districts that make up the building fabric. Conditions of ownership and the distinct parcel configuration of such districts, may be the most significant factor in evaluating stability. Further research could identify generalizable tendencies toward stability or change in the urban morphologies found in different cities. The small parcel residential fabric of Bron has persisted beyond the first generation of owners,

although buildings and the socio economic level of families have changed. These areas remain districts of individualized private property, and constitute a fabric of detached houses and gardens that has accrued value. All signs point to a stability of the formal, social, even political landscape. Yet in the United States, where the liquidity of the mortgage market is well established, the redevelopment of the first ring of interwar suburbs has already begun. Private developers are assembling the parcels within entire blocks in order to introduce higher density housing or even commercial development. Other forms of redevelopment are incremental: homeowners are purchasing one or two modest bungalow parcels, razing the existing construction and replacing it with expensive residences that are disproportionately large to those of their neighbors. The social makeup of older neighborhoods is being challenged and planners are finding themselves caught in political battles between the neighborhoods and the newcomers, between stability and change.

Urban morphologists know that use is the most fluid of the determinants of urban form in the long term scheme of things. Planning or design initiatives that seek to preserve or develop existing fabric may have to rely more on controlling the parcel matrix and building coverage than on use. Of course, this makes the planner’s work more difficult: political and social agenda are made explicit. Economic rationality based on highest and best use cannot be invoked as a neutral determinant of policy. However, while the transparency of design and planning agenda may render change more controversial, one can argue that it may also foster a more truly democratic process of urban development.

IV. By providing an understanding of the internal coherence of how urban forms evolve, the methodological tools proposed allow us to view the contemporary landscape with more equanimity. It is ours: we have made it from the cities we have inherited. More importantly, it allows us to evaluate this landscape with an eye to how it will continue to change. Urban form cannot be understood a-historically. The historic cast of the methodology supports the projective cast of the design and planning tools. We can thus actively begin considering the *future* of the industrial park, of the residential subdivision, of the mall and of the strip... which are changing even as we speak.



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Notes

1. Moudon, A. V. (1997). "Urban morphology as an emerging interdisciplinary field." *Journal of the International Seminar on Urban Form* Volume 1: pp. 3–10.
2. Merlin, P., Choay, F. Ed.s (1988). *Morphologie urbaine et parcellaire*. Saint-Denis, PUV.
3. The research presented builds on the work of the British geographers working in the tradition of M. R. G. Conzen, and of French architectural and urban historians, notably André Chastel, Françoise Boudon and Bernard Rouleau, who have conducted landmark studies of the constitution of urban form in Paris. (Conzen, 1960; Conzen, 1978; Conzen, 1990; Boudon, 1975; Boudon, 1977; Rouleau, 1975;)
4. For Bron and Chassieu, key intervals were analyzed, from a pre-urbanization base line provided by the Napoleonic cadastral maps of 1812. Because the villages remained agricultural until the mid 20th century, no new maps were made and transactions were simply recorded on the original cadaster. The intervals selected were based on the availability of urban maps indicating parcel and building footprints. The next comprehensive maps for the communes date from 1947 and were created as part of the general reconstruction effort. These were updated in 1969. Since the production of these maps correspond to major shifts in planning policy, these intervals effectively frame a particular period of urban history that proved appropriate for the description of the change that occurred. For Bron, the intervals are 1812–1947, 1947–1969, and 1969–1994. For Chassieu, the intervals are 1812–1961, 1961–1969, and 1969–1994.
5. The distinction between large, medium and small parcels is a relative one, based on a visual appraisal of historic and current maps which distinguish between the three ranges. Parcel sizes within each range might be different in different countries or for different periods of urbanization. In Bron and Chassieu, small parcels vary between 150m² or 0.02 hectares and 500m², or 0.5 hectares and are square or rectangular in shape. The medium parcels are also regular and rectangular or trapezoidal in shape, varying from 0.5 to 5 hectares. Large parcels tend to be irregular in shape, generally have more than four sides, and vary in area between 5 hectares and 66 hectares. My own evaluation conformed closely to contemporary categorizations used by planners of the Lyons metropolitan district, the COURLY.
6. This has already been noted in the concept of fringe belt developed by M. R. G. Conzen.