

# An Arrow-Cycle Interpretation of the Redevelopment of Stockholm's Central Business District

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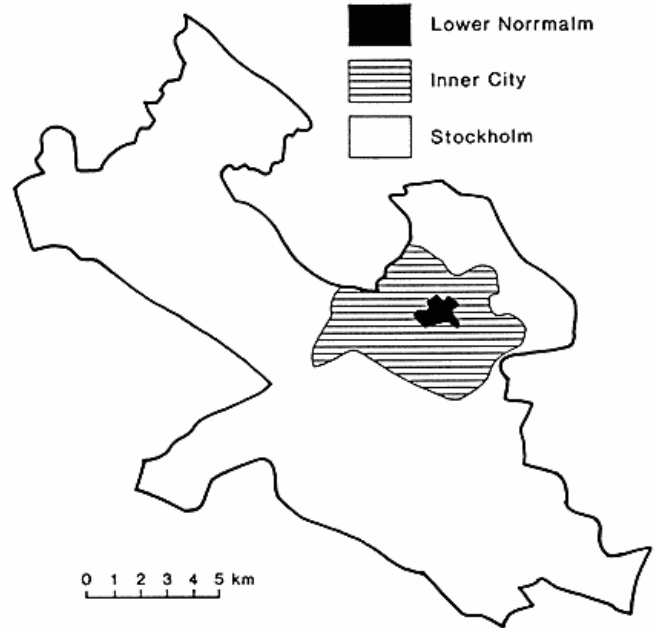
*The core of Stockholm's central business district, Lower Norrmalm, underwent a process of total renewal during the post-war period. This study asks if this renewal process may be interpreted as a manifestation of a logic of cyclicity inherent to the economies of regions and nations. First, time series over construction activity are presented for three geographic levels: Stockholm, the inner city and Lower Norrmalm. Then the observed booms and slumps are analyzed in the following contexts: construction activity on the national scale, transportation and urbanization, and finally, economic and spatial restructuring. Developments on Lower Norrmalm during this period seem to have been part of a regional and national building cycle, and were moulded by adaptation to transportation needs and rapid economic restructuring. But the local effects of these forces would have been very different were it not for the mediating and actively orchestrating roles assumed by local institutions.*

**Keywords:** *Urban redevelopment, building cycles, economic restructuring, spatial restructuring*

*"[T]ime's arrow and time's cycle is, if you will, a 'great' dichotomy because each of its poles captures, by its essence, a theme so central to intellectual (and practical) life that Western people who hope to understand history must wrestle intimately with both - for time's arrow is the intelligibility of distinct and irreversible events, while time's cycle is the intelligibility of timeless order and lawlike structure. We must have both." Stephen Jay Gould, *Time's Arrow, Time's Cycle**

## Introduction

The core of Stockholm's central business district, Lower Norrmalm, underwent a process of near total renewal which by fits and starts stretched over the period from the early 1950s to the early 80s. The implementation of city plans for the renewal of Lower Norrmalm during this period entailed demolition of hundreds of buildings (over three-quarter million square meters of floorage), construction of the underground hub, a car tunnel and over 1.5 million square meters of new non-residential floor space,



**Map:** *Municipality of Stockholm, inner city and Lower Norrmalm.*

and a planned though not entirely completed expansion of the total traffic area by a factor of more than five (Stockholms kommun 1981, Sidenbladh 1981). The background, process and results of this renewal have been described and debated in studies and memoirs, most notably by Hall (1985), Larsson (1977) and Sidenbladh (1985). More recently, Clark and Gullberg (1991) have sketched an analysis of this mega-event from the three perspectives of building cycles, rent gaps and structures of building provision.

The purpose of the present article is to study the renewal of Lower Norrmalm primarily from the standpoint of the first of these three perspectives. How can the process be interpreted in the light of what we know about fluctuations in urban development? What do time series data at different levels of geographical aggregation tell us? Can the renewal project be explained as a manifestation of a logic of cyclicity inherent to the economies of regions and nations? What about the arrow of planning, action, volition, power?

The idea of cyclicity underlies thought concerning a wide variety of social and natural phenomena. In our efforts to create order in our observations, time offers a fundamental category of analysis, and the search for rhythm is one which holds the promise of possibly identifying order and structure in reality. Thus it is not surprising to

find an extensive literature on rhythms and pulsations of various aspects of cities (e.g. Gottlieb 1976, Harvey 1978, van den Berg et al. 1987, Barras 1987, Young and Schuller 1988).

In the literature, one can discern two broad categories of urban studies based on notions of cyclicity. One concerns fluctuations of certain variables over time, commonly demographic (e.g. size of cohorts) or economic (e.g. volume of different types of investment in capital formation). These are often based on national data, though there seems to be a growing interest in regional and metropolitan based studies. The other type is based on a geographic notion of life cycle. Here belong 'stage models' of neighborhood change and the associated models of waves of urbanization - suburbanization - desurbanization - reurbanization.

Rather than focus on a specific variable, these studies include social, demographic and economic variables, focusing instead on a specific place over time. Both of these perspectives are of relevance in interpreting the renewal of Lower Norrmalm, since the major investment in built environment it represents can be associated to fluctuations in construction activity on a larger geographic scale, as well as to a 'revitalization' stage of 'the life cycle' of urban areas. First, time series over construction activity are presented for Stockholm, the inner city and Lower Norrmalm. Then the observed booms and slumps are interpreted in the following contexts: construction activity on the national scale, the role of transportation and urbanization, and finally, economic restructuring and spatial restructuring. While each interpretation contributes to better understanding of the major renewal process, they also underscore Roberts' (1991) recent warning against granting independent ontological status to the heuristic fiction of the cycle analogy - a leap of the intellect which implies denial of time's arrow, the uniqueness of events constituting the process and the import of will and interests (collective and individual) in the process.

**Construction Activity in Stockholm and on Lower Norrmalm**

The broad strokes of change in construction activity on Lower Norrmalm, in the inner city, and in the whole of Stockholm from 1908 to 1983 are shown in figures 1 to 5. Figures 1 and 2 show change in completions of non-residential floorage (100's of square meters; office, commercial, industrial, warehouse, garage and public institutional

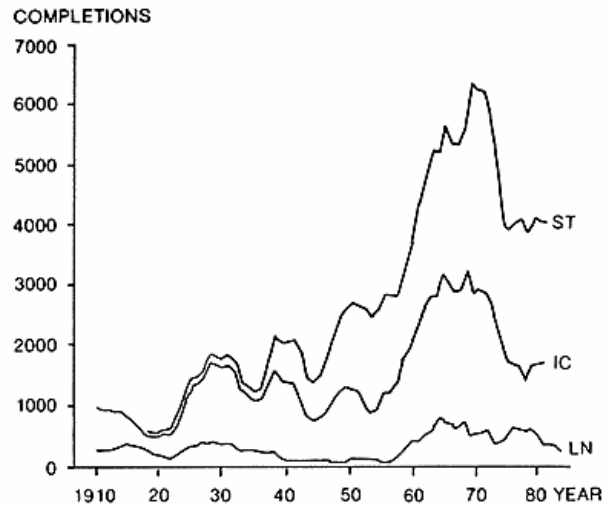


Figure 1: Non-residential completions (number of premises 1908-1927, hundreds of square meters 1928-1986), five year moving averages; Lower Norrmalm (LN), the inner city (IC), and Stockholm (ST). Sources: Stockholm Statistical Yearbooks and Stockholm Statistics Office.

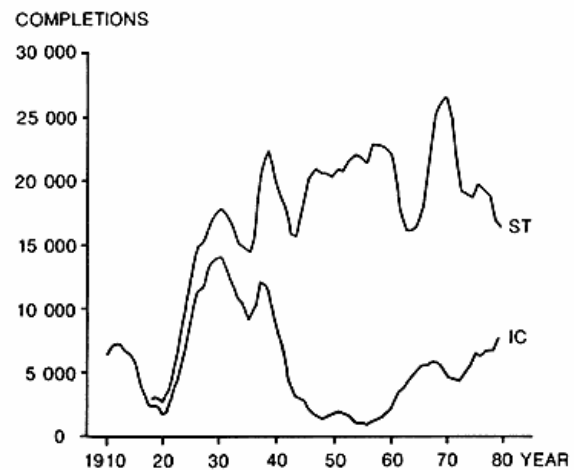


Figure 2: Residential completions (number of rooms, including kitchens, 1908-1981), five year moving averages; the inner city (IC), and Stockholm (ST). Sources: see figure 1.

space) and residential units (number of rooms) for the three geographical areas. Five year moving averages have been used to filter out short fluctuations. Deviations from linear trends are shown in figures 3 and 4. Finally, figure 5 zooms in on the thirty-five year period from 1949 to 1983, showing annual change in demolitions, non-residential building permits (incomplete series) and non-residential completions in the central business district (CBD).

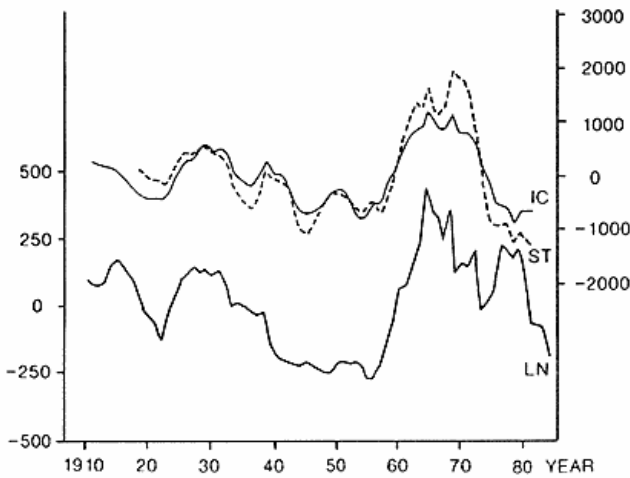


Figure 3: Non-residential completions, five year moving averages, deviations from linear trend; Lower Norrmalm (LN, left scale), the inner city and Stockholm (IC, ST, right scale). Sources: see figure 1.

First it can be noted that while Stockholm and its inner city experienced weak but evident upswings in non-residential construction, peaking around 1928, 1938 and 1950, the central business district experienced a longer period of stagnation during the 30s, 40s and early 50s. This does not reflect a lack of interest among developers to invest in the area. There was such interest, but it was thwarted by the municipal building authority, which did not want piecemeal construction to take place in an area where more comprehensive plans were in the making. Public debate on these plans contributed to the indecision of administrative and political bodies, and as long as no plan was passed, very little construction took place. The most marked upswing during the entire period for all three geographical levels began in the late 50s, reached a high level around the mid 60s, and endured right up to 1970, after which occurred a precipitous drop in Stockholm and the inner city. In the case of Lower Norrmalm, though the decade got off to a shaky start, the need to fill sizeable holes of demolition with unfinished development projects combined with the momentum of the overall goal of CBD renewal entailed continued high output throughout the 70s, with decline setting in after 1978.

Concerning residential construction activity, it is not surprising to find an insignificant level of activity in the central business district. More interesting is to note that upswings peaking around 1938 and 1950 occur simultaneously with upswings in non-residential construction. During the early postwar period there was a constantly

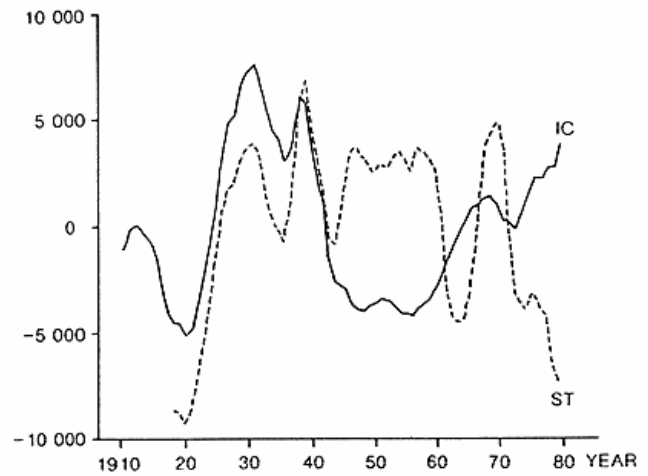


Figure 4: Residential completions, five year moving averages, deviations from linear trend; the inner city (IC) and Stockholm (ST). Sources: see figure 1.

high output in the suburbs, while the inner city experienced stagnation. During the early 60s however there occurs a shift: residential construction declines steeply in Stockholm on the whole (or, to be more exact, in the inner suburbs) - now apparently in competition with non-residential construction, which booms - but increases rapidly in the inner city (and in the outer suburbs, outside the area represented in the figures). While total residential construction peaked again around 1969 in connection with the 'million program' (one million completed dwellings in Sweden 1965-74), followed by steady decline during the 70s, the inner city continued to experience steady growth in residential construction.

Looking more in detail at the renewal process on Lower Norrmalm, figure 5 charts annual data on demolitions and non-residential building permits and completions. The first rise in completions and demolitions belong to the 'tunnelbana' (underground) period, when Slussen to the south and Hötorget to the north were joined via the new hub of the underground system, 'T-centralen', completed 1957. The greater part of the stretch of tunnelbana in the CBD area was constructed close to the surface in open pits, thus determining the sequencing of developments above ground. After ratification of the first two sub-area plans in 1953 there occurred a rapid increase in the volume of building permits for developments above the underground structures. A new round of development followed the passing of two more sub-area plans in 1959 and 1960 and a new general plan for the central business district, 'City 62', with

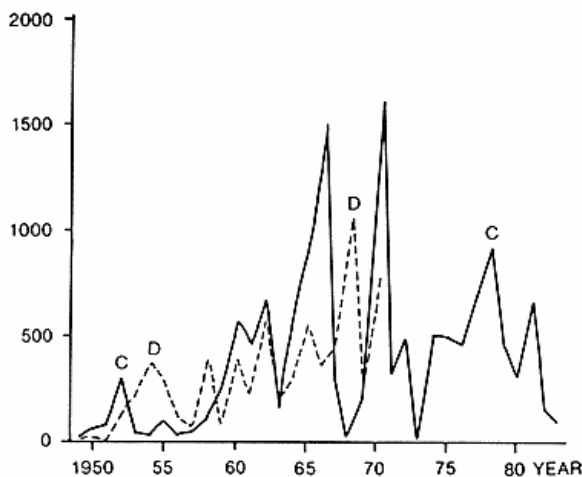


Figure 5: Non-residential completions (C), building demolitions (D) [ $= 100$ 's of non-residential square meters + (number of residential rooms / 4)]; Lower Norrmland, 1949 - 1983.

permits peaking in 1963 and completions peaking in 1966. This is a period of following up on underground related developments and anticipating car tunnel developments. A third round is associated with the car tunnel, anticipated already in a 1946 plan, more decidedly articulated and sanctioned in 'City 62' and effectuated through another general plan, 'City 67', and two more sub-area plans from 1968 and 1969. During the 70s, construction activity was primarily directed towards the filling of holes. When a new CBD plan, 'City 77', was presented, redevelopment activity was limited to tidying up, and the renewal process had for all practical purposes already run out of steam.

### The National Building Cycle

There are at least two good reasons for comparing regional time series with national data. First, factors contributing to fluctuations on the national scale may be central also to explanation of regional and local fluctuations. Second - more frequently neglected though no less significant - regional and local events and developments may be central to explanation of variation on the national level. As Lewis put it, "unless attention is paid to the local origins of a building cycle, the conclusions reached through arguing in aggregative terms may be quite invalid" (1960, p.520). Regional disaggregation of construction data may for instance disclose considerable regional variation which, in the aggregated terms of national data, appears as a period characterized by relative stability. Furthermore, there "can be no

national building boom without there being at least one local boom" (Lewis 1960, p.533), and our understanding of a national boom or slump can only be enhanced by study of the local booms or slumps which comprise it.

Long time series of construction activity in Sweden have been compiled and analyzed by Lars Pettersson (1987, 1988, 1990). Figure 6 shows development of total construction activity (A) and residential construction activity (B) since the mid 19th century. Especially the curve for total construction activity suggests interpretation in terms of long waves or Kondratieffs of circa 70 years duration, with a break point around 1920. These cyclical tendencies are above all based on development blocks associated with investment in and diffusion of transport technologies; railways before and automobiles after 1920 (Pettersson 1990).

Pettersson's spectral analysis reveals cyclical tendencies with wavelengths of both 7-12 years and, somewhat less accentuated, 22-25 years. The shorter Juglars or 'major cycles' have been well documented in a number of countries and are commonly associated with supply-side production lags; in other words, a 'cobweb' process endogenous to construction activity. The longer Kuznets cycles, solemnly declared a thing of the past by Abramovitz in 1968, are related to demographic cycles and are thus more pronounced in capital formation which is population sensitive, e.g. residential construction. Pettersson tailors an argument that if one brackets the interwar period, during which levels of construction activity were largely determined by the exogenous shocks of two wars and a great depression, there is evidence of Kuznets cycles also during the postwar period, especially in residential construction activity.

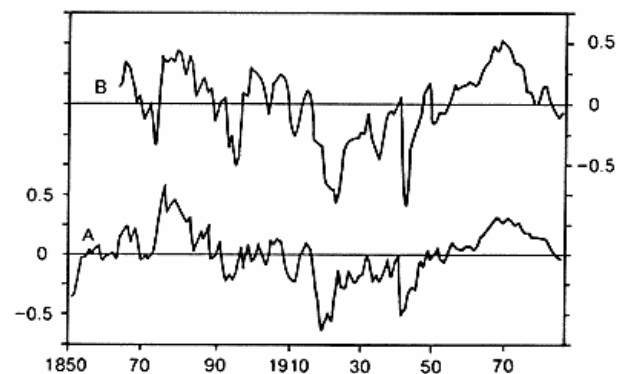


Figure 6: A: Total construction activity in Sweden B: Residential construction activity in Sweden (volume, log values, deviations from linear trend). Source: Pettersson 1990.

The Stockholm series over residential construction activity renders limited support to Pettersson's argumentation for longer Kuznets-like fluctuations during the postwar period. The major exception is the poor fit with the national record in the early 60s. The marked trough in the Stockholm series however does not reflect a low level of construction activity in the Stockholm region, but rather its concentration to the outer suburbs, outside Stockholm. Another deviation is the marked rise in residential completions in the inner city during the 70s, in direct contrast to the city-wide and nation-wide slump. This reflects a phase of reurbanization.

The Stockholm data on non-residential construction suggest interpretation of the period prior to the 50s in terms of Juglar cycles rather than Kuznets cycles. But, how much of this apparently systematic pattern is simply due to the exogenous shocks of two wars with a depression in between rather than an endogenous mechanism is difficult to say. The postwar data on the other hand certainly does not lend itself to explanation in terms of 'major cycles', contrary to findings in both England (Barras 1983) and the United States (Grebler & Burns 1982). Against this background it becomes interesting to ask why Stockholm experiences such a long postwar cycle in non-residential construction, with a long upswing from the mid-50s to the late 60s followed by an equally long downswing.

We have previously argued (Clark & Gullberg 1991) that the particular structure of building provision which dominated during the renewal process (the nerve and power center of which originated through political appointment and controlled the plan and development process, administering linkages with ex-users, demolition firms, construction firms, financiers, new users and the public), had a long braking distance and may thus have contributed to 'overshooting' by keeping the transformation process rolling beyond early signs of waning demand and falling returns. Similarly, one could argue that the historically specific structure of building provision had a long starting distance as well, resulting in the standstill in construction in the central business district from the mid 30s to the mid 50s (see figures 1 and 3). In terms of cyclical theory this argument resembles Chatterjee and Hasnath's line of reasoning that some of the fluctuations commonly considered the product of cyclical mechanisms "can be more appropriately considered as structural breaks" in the sense that they "reflect purposeful policy decisions taken at the political level" (1991, p.51). They point out that broad trends

in the political sphere are generally disregarded in econometric analyses, though there is reason to believe they are highly influential in investment decision-making.

On the low geographic level of Stockholms central business district one can argue that there was a structural break 1951, when the Lower Norrmalm Delegation was established and the political ideology of a strong local government controlling urban development came to be effectively implemented. The Delegation was equipped with both a powerful toolbox (e.g. zone expropriation, municipal site leasehold) and a strong sense of legitimacy at a time when the social-democratic welfare state enjoyed political hegemony, especially in the field of land policy, housing policy and urban planning. To some extent this may be related to a national structural break around the same time (identified by Krantz and Nilsson 1978) which entailed among other things a marked increase in public investments.

A turning point came in 1971 with the 'battle of the elms', a grassroots reaction to what was perceived as poor urban architecture being pushed onto Stockholmers by an alliance of public and private sector bigwigs. This is not to say that the demise of the dominant structure of building provision was uninfluenced by economic factors, or that booms and slumps can be explained entirely in terms of politics and structures of building provision. Clearly, for instance, the precarious economic situation of Swedish municipal governments today leaves little room for the same degree of active involvement and investment in major urban development projects and constitutes a significant background to the recent forms of 'negotiation planning'. But equally clear is that in the context of the early 70s, the idea of a new equivalent to the Lower Norrmalm Delegation and exertion of its powerful tools would not have met with the same consensus as it did in the 50s and early 60s.

Concerning this political aspect of construction activity there is a high degree of correspondence between the national and the local Stockholm level of analysis. The Lower Norrmalm Delegation had its national counterpart in social-democratic land and construction policies. There is also a fair degree of correspondence between the Stockholm and the national data on non-residential construction. Restrictive policies towards speculative building and other forms of regulation have reduced the role of undulating mechanisms. Perhaps interpretation of the national data has something to gain from expanding analysis to include also the political ideological aspect emphasized by Chatterjee

and Hasnath and evident in the case of the Lower Norrmalm renewal project.

### The Transport-Building Cycle and Urbanization

Diffusion of transport technologies and investments in transport infrastructure constitute a fundamental force behind patterns of land use and the development of urban settlement. A truism, yes, but one the details of which continue to elude capture and the effects of which penetrate everyday life in both liberating and frustratingly imprisoning ways. In the intellectual history of long waves, new transport technologies form an essential link between fundamental inventions (steam engines and steel; electricity and the combustion motor) and their developmental impact on investment volumes. As mentioned above, the two long waves evident in the national data on construction activity can be seen as a railroad based wave followed by an automobile based wave. According to such an interpretation, the decline of the 70s (both locally and nationally) reflects the ebbing of development associated with the automobile. "Most of the stimulus to road and residential construction as well as industrial and commercial construction activity around the old cities, and usually also in their central areas, which automobilism entailed had by this time dissolved" (Dahmén & Carlsson 1985, p.64, my translation).

But transport technology is also an important factor behind Kuznets swings. Isard (1942a, 1942b) showed how upswings in the annual increase in railroad mileage (and electric streetcar mileage, and passenger car registration) are followed by upswings in building activity. Six cycles were identified between 1825 and 1933, varying between 14 and 20 years (averaging 18); one canal cycle, three railroad cycles, a streetcar cycle and a car cycle.

On the urban scale, transport technology furthermore influences the spatial pattern of urban development (Adams 1970). The connections between the spread of transport technology and the intensity and form of urban development underlies the common practice of periodizing urban history according to dominant means of transport. In his magnum opus on the history of Stockholm's settlement, Johansson (1987) uses vehicles to distinguish between different periods of development: the steamboat and railroad age (1850-1910), the streetcar and bus age (1910-1950) and the car and underground age (1950-).

In reference to figures 1 and 2 it is interesting to note that the streetcar network expanded most rapidly during the

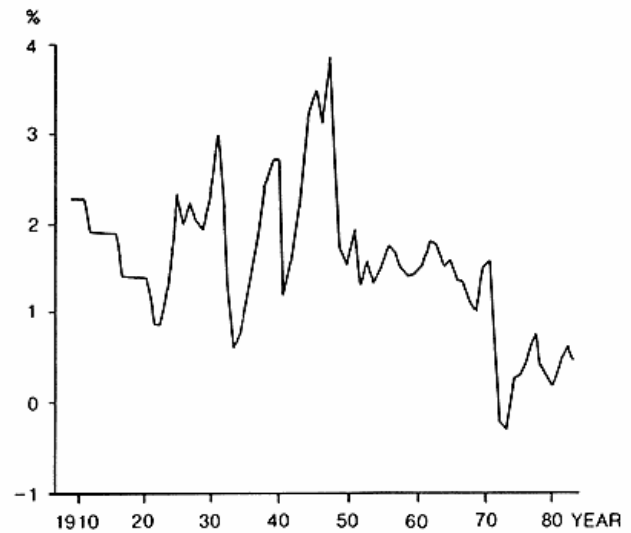


Figure 7: Population growth rates, Greater Stockholm, 1908-1983. Average annual rates 1908-10-15-20-22 (data missing for intermediate years), annual rates 1923-1983. Source: Stockholm Statistical Yearbooks.

periods 1907-1914 and 1923-1930, and bus lines were rapidly extended during the period 1923-1930 (Holmberg 1947). Following Isard, these may be related to the peaks in residential construction around 1912 and 1930, and the 1922-30 upswing in non-residential construction. The second interwar peak around 1938 may from this perspective be seen as associated with renewed bus expansion 1936-39 and increased automobilism.

The renewal of Lower Norrmalm takes place during the car and underground age of Stockholm's development. In this context one can distinguish between direct and indirect impact of the diffusion of the underground network and automobilism. The direct impact is visible in figure 5, where the 1957 and 1963 peaks in building permits and the 1960-62 and 1966 peaks in completions are physically immediately related to the construction of the underground, and the 1969 peak in permits and the 1970 and 1978 peaks in completions are directly related to the construction of Klara tunnel for car traffic. Indirectly, the increased accessibility made possible by the diffusion of the underground network and automobilism throughout the city region entailed increased potential land rent in, and thus increased economic pressure to reinvest in, the central business district. This is especially true of the underground, with 'T-centralen' rendering Lower Norrmalm the definite status of regional nucleus - in a very physical sense similar to the narrow channel of an hourglass.

Volumes of investment in transport infrastructure and in building are sensitive to population change, both in terms of young cohorts in family building ages, and in terms of urbanization. Figure 7 shows the rate of change in population in Greater Stockholm from 1908 to 1983. Note the increase in population growth during the 20s, and recall the strong upswing in residential construction during this period (figure 2). Note the valley in the growth rate during the 30s, with a new peak 1938, and the similar development in residential construction. Likewise from 1938-45. After the 1945 peak of almost 4%, the growth rate drops and stabilizes between 1.5 - 2%, while residential construction remains at a stable and high level. Finally, note the decline of the 70s, in both population growth (indeed, negative 1972-73) and construction. In contrast, a comparison of population growth rates and non-residential construction (figures 8 and 1) gives a weaker impression of relation, though the interwar period and the 70s do show similar tendencies. It seems however that an explanation of the long postwar upswing in non-residential construction cannot be as simply couched in demographic terms as in the case of residential construction.

### **Economic Restructuring - Spatial Restructuring**

The Stockholm region experienced considerable economic restructuring during the postwar period. Between 1950 and 1980, employment in the service sector increased dramatically. For instance, employment in health care increased by 312%, in education by 260% and in firm oriented services by 202%, as compared to a 55% increase in total employment in the region. During the same period, industrial employment dropped 20%. The fall was greatest in the consumer goods industries, which lost 66% of their 1950 employment level (SOU 1989:69). This economic restructuring was even more marked in the central part of the region (Stockholm and neighboring central municipalities), which experienced a 37% decrease in industrial employment during the period. At the same time, a process of concentration to fewer and larger units took place in all branches of the economy.

These developments in the economic life of the region put entirely different demands on the built environment, demands which the existing CBD could not meet. In the case of Lower Norrmalm, the local authorities decided early on not to accept a spontaneous solution to these new demands, but rather form its own solution and encourage,

not to say enforce, adaptation to it by individual agents. The main motivation for this strategy in the 50s was to avoid drift of and further deterioration in the CBD. But already in the 60s the major renewal project came to be motivated also in terms of competition with other city regions, anticipating the general shift in urban governance from managerialism to entrepreneurialism during the 70s and 80s observed by Harvey (1989; for an interesting application of Harvey's analysis in a Scandinavian context, see Andersen 1991).

The renewal of Lower Norrmalm can thus be seen as an effort not only to accommodate modern modes of transport, but also to accommodate the new demands of economic restructuring on the built environment. The changes in employment and land use on Lower Norrmalm during this period make the above regional figures turn pale by comparison. Industrial employment fell by 81% here between 1960 and 1975 (Martin 1983). On properties directly affected by the renewal of Norrmalm as of 1963, office and commercial employment rose from 55% before renewal to 98% after renewal, while industrial employment fell from 25% to 0%. On properties redeveloped as of 1968, total floorage increased by a factor of 2.4: industrial floorage all but disappeared (-98%) while office and commercial floorage increased by factors of 2.6 and 2.9. At the same time, concentration is reflected in the drop in number of firms from 924 to 532. The number of banks, insurance offices and property management firms increased however from 65 to 91 (Stockholms Kommun 1973).

Even without the guiding hand of the Lower Norrmalm Delegation, the impact of economic restructuring would have meant closure or relocation for many of the relatively small industrial firms on Lower Norrmalm. A counterfactual argument may be made that considerable spatial restructuring of the built environment on Norrmalm would have taken place anyway, as private developers and property firms attempt to accommodate new office and commercial demands of powerful economic interests. In this sense, insofar as economic restructuring is governed by cyclical mechanisms, Lower Norrmalms renewal may also be interpreted as an effect of these mechanisms. But, in a counterfactual history void of the Lower Norrmalm Delegation, a more spontaneous solution to these demands would certainly have resulted in a less orchestrated renewal consisting of a number of smaller redevelopment projects, for better or worse. Deindustrialization of the area would have progressed more slowly, as would have con-

centration and rationalization of commercial activities, for better or worse. The new and effective types of offices and retail stores would have located to a greater extent in other parts of the inner or outer city, for better or worse. What we see today on Lower Norrmalm cannot be reduced to a local outcome of economic restructuring on a larger scale, even if it clearly was reshaped under the influence of these conditions. An explanation of what we see today in the built environment of Lower Norrmalm must include as pervasive generative factor the sway of local political agents and structures of building provision. But on the other hand, without the forces of economic restructuring, the renewal of Lower Norrmalm could not have been so thorough, and would arguably have closed shop already in the late 50s after the opening of the underground.

### Conclusion

Construction activity in Stockholm shows a pattern over time (as cycle) similar to that of the country on the whole. With the exception of the 1970s, the renewal of Lower Norrmalm also fits well in the national picture. A closer look at the Norrmalm case brings into relief the role of institutional structures of building provision as regulators of construction activity. This aspect can help explain both the delayed downswing on Lower Norrmalm as compared to the region and the nation, and the relatively long duration of the postwar building cycle in Sweden as compared to the U.K. and the U.S.

An analysis of local investments in transportation infrastructure in Stockholm in relation to construction activity supports Isard's notion of transportation diffusion as central to building cycles. The renewal of Lower Norrmalm involved adaptation to new types and volumes of transport, resulting in a radical increase in transportation area. Also, the renewal process itself was regulated largely according to the timing and placing of two major transportation investments: the underground hub, T-centralen, and Klaratunnel for car traffic. Furthermore, the rapid urbanization associated with the diffusion of the underground and automobilism brought with it increased pressure on the CBD, whereby the alternative to massive reinvestment was CBD drift.

Perhaps an even more powerful force in the drama of Lower Norrmalm's renewal was the rapid postwar restructuring of economic life which pervaded regionally, nationally and globally. The intensity and exhaustiveness of this transformation process was much greater on the local scale

of Lower Norrmalm than on the regional or national scale. From a mix of economic activities and land uses, the Lower Norrmalm area became homogenized into an office and commercial district with good provision of transport facilities. That this is a local expression of economic restructuring on a higher scale is evident. But were it not for the dominant structure of building provision on Lower Norrmalm at the time (as arrow), headed by the Lower Norrmalm Delegation, the local locution of restructuring on a greater scale would certainly have been very different.

### Acknowledgement

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centration and rationalization of commercial activities, for better or worse. The new and effective types of offices and retail stores would have located to a greater extent in other parts of the inner or outer city, for better or worse. What we see today on Lower Norrmalm cannot be reduced to a local outcome of economic restructuring on a larger scale, even if it clearly was reshaped under the influence of these conditions. An explanation of what we see today in the built environment of Lower Norrmalm must include as pervasive generative factor the sway of local political agents and structures of building provision. But on the other hand, without the forces of economic restructuring, the renewal of Lower Norrmalm could not have been so thorough, and would arguably have closed shop already in the late 50s after the opening of the underground.

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Construction activity in Stockholm shows a pattern over time (as cycle) similar to that of the country on the whole. With the exception of the 1970s, the renewal of Lower Norrmalm also fits well in the national picture. A closer look at the Norrmalm case brings into relief the role of institutional structures of building provision as regulators of construction activity. This aspect can help explain both the delayed downswing on Lower Norrmalm as compared to the region and the nation, and the relatively long duration of the postwar building cycle in Sweden as compared to the U.K. and the U.S.

An analysis of local investments in transportation infrastructure in Stockholm in relation to construction activity supports Isard's notion of transportation diffusion as central to building cycles. The renewal of Lower Norrmalm involved adaptation to new types and volumes of transport, resulting in a radical increase in transportation area. Also, the renewal process itself was regulated largely according to the timing and placing of two major transportation investments: the underground hub, T-centralen, and Klaratunnel for car traffic. Furthermore, the rapid urbanization associated with the diffusion of the underground and automobilism brought with it increased pressure on the CBD, whereby the alternative to massive reinvestment was CBD drift.

Perhaps an even more powerful force in the drama of Lower Norrmalm's renewal was the rapid postwar restructuring of economic life which pervaded regionally, nationally and globally. The intensity and exhaustiveness of this transformation process was much greater on the local scale

of Lower Norrmalm than on the regional or national scale. From a mix of economic activities and land uses, the Lower Norrmalm area became homogenized into an office and commercial district with good provision of transport facilities. That this is a local expression of economic restructuring on a higher scale is evident. But were it not for the dominant structure of building provision on Lower Norrmalm at the time (as arrow), headed by the Lower Norrmalm Delegation, the local locution of restructuring on a greater scale would certainly have been very different.

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To Anders Gullberg I owe many thanks, for helpful critical comments, data, and encouragement.

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centration and rationalization of commercial activities, for better or worse. The new and effective types of offices and retail stores would have located to a greater extent in other parts of the inner or outer city, for better or worse. What we see today on Lower Norrmalm cannot be reduced to a local outcome of economic restructuring on a larger scale, even if it clearly was reshaped under the influence of these conditions. An explanation of what we see today in the built environment of Lower Norrmalm must include as pervasive generative factor the sway of local political agents and structures of building provision. But on the other hand, without the forces of economic restructuring, the renewal of Lower Norrmalm could not have been so thorough, and would arguably have closed shop already in the late 50s after the opening of the underground.

### Conclusion

Construction activity in Stockholm shows a pattern over time (as cycle) similar to that of the country on the whole. With the exception of the 1970s, the renewal of Lower Norrmalm also fits well in the national picture. A closer look at the Norrmalm case brings into relief the role of institutional structures of building provision as regulators of construction activity. This aspect can help explain both the delayed downswing on Lower Norrmalm as compared to the region and the nation, and the relatively long duration of the postwar building cycle in Sweden as compared to the U.K. and the U.S.

An analysis of local investments in transportation infrastructure in Stockholm in relation to construction activity supports Isard's notion of transportation diffusion as central to building cycles. The renewal of Lower Norrmalm involved adaptation to new types and volumes of transport, resulting in a radical increase in transportation area. Also, the renewal process itself was regulated largely according to the timing and placing of two major transportation investments: the underground hub, T-centralen, and Klaratunnel for car traffic. Furthermore, the rapid urbanization associated with the diffusion of the underground and automobilism brought with it increased pressure on the CBD, whereby the alternative to massive reinvestment was CBD drift.

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