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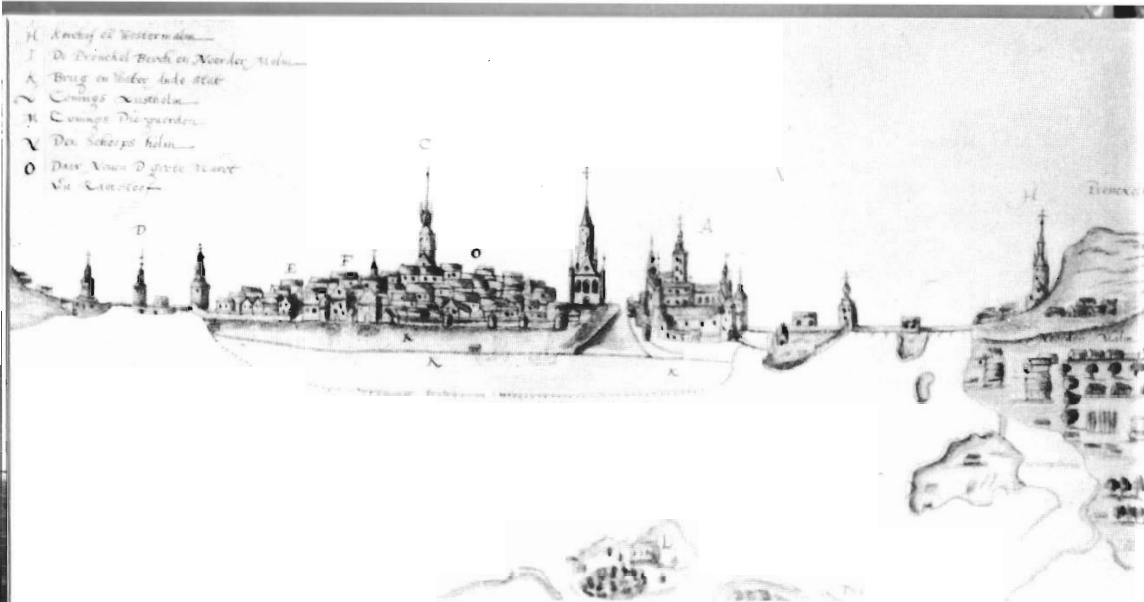
(KTH)

STOCKHOLM ARCHITECTURE AND TOWNSCAPE

Arkitekturbiblioteket, KTH

Fob*Andersson
100 44 Stockholm

Bokförlaget Prisma · Stockholm



Waterfront view of 16th century Stockholm. Elaborate Renaissance spires make a vigorous silhouette for the Castle, the churches and the towers guarding the bridge abutments. Drawing c. 1590, in Rijksarchief, Harlem.

The emergence of Stockholm

The medieval city, c. 1250–1640

Opinions differ concerning the origins of the name of Stockholm and the manner and date of the first settlement, but it is widely agreed that the development of Stockholm as a fortified city after the mid-13th century is connected with the establishment of a firmer national organisation and with the growth and evolution of Baltic trade. Stockholm became one of the many trading towns round the Baltic. It consolidated the strategically important outlet of Lake Mälaren and was a vital entrepôt for exports from the Bergslagen mining region.

Thus by the time Stockholm is first mentioned

as the capital of Sweden, in the 1430s, it had been developing for almost two centuries along lines typical of the Baltic trading towns. But it was also a royal city with a fortified castle, in the protection of which the predominantly German burgher population pursued their trades. The evolution of Stockholm also reflects the tensions between the mercantile interests of the town and, on the other hand, considerations of military strategy and national politics.

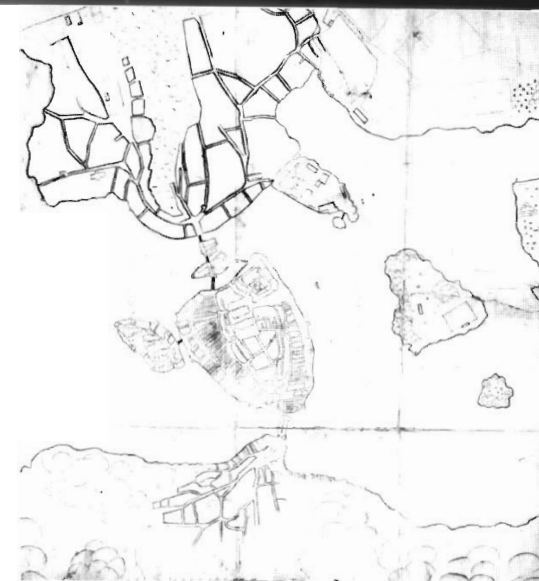
To all intents and purposes, the medieval town was enclosed by the water, on the island of Stads- holmen, pent up in a gradually expanding circle

of walls and fortifications. The first town wall was an on-shore fortification at a level where the island rises in a distinct terrace above the flatter beaches. The two succeeding systems of walls were more in the nature of outworks, a combination of walls, piling and towers. The final stage came in the Vasa period, when the city spilled out over both the earlier walls. The fortifications were concentrated on the strong points guarding the bridge abutments and the castle, which was expanded into a more palatial residence.

Stockholm was growing rapidly. We have to imagine incessant building activities, a town with many simple, temporary timber buildings side by side with larger, more solid stone constructions which were gradually enlarged. To begin with, the urban fabric inside the wall was relatively sparse and open, concentrated round the square on the crest of the island, which included a town hall and a civic church. Buildings appearing further south included a Dominican friary. A couple of large complexes were also erected outside the walls – the Franciscan friary on Riddarholmen and the Clarissan convent at Norrmalm.

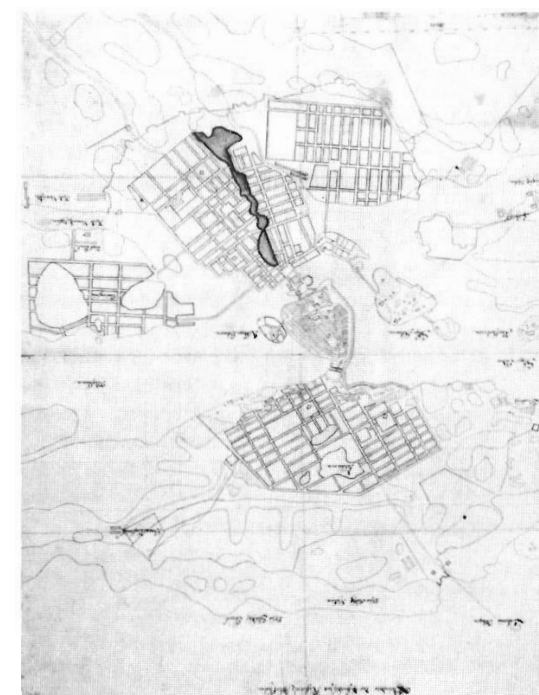
There soon came new phases of development involving a substantial infill of the earliest settlement and expanding it along the shoreline outside the walls, partly on reclaimed land. Thus a series of narrow, densely built-up strips with alleys at right angles to the waterfront developed on both sides of the island during the second half of the 14th century and in the 15th. Outside Stadsholmen, in the suburbs (*malmarna*) and on Helgeandsholmen, there developed an ancillary settlement in the form of gardens, mills, a leper hospital etc., together with timber houses.

Under the town laws of the 14th century, both public and private building activities came under the control of officials appointed by the mayor and council, but there was also a royal bailiff whose task was to keep an eye on city development. Later during the Vasa period the Crown took more of a lead in giving the city an appearance appropriate to its status as the capital of an expanding Baltic power.



The medieval structure prevailing until the streets were extensively redrawn. This is the oldest map of Stockholm, dating from the early 1620s.

A mid-17th century map showing gridiron plans in the suburbs, bounded by the city toll barrier.





View of the city from Kastellholmen. Skeppsbron is now a line of impressive façades and aristocratic palaces lining the shores of Norrmalm and Blasieholmen. Engraving (1693) by Willem Swidde after a drawing by Erik Dahlbergh.

The capital of the Great Power 1640–1720

Sweden's successful participation in the Thirty Years' War made Stockholm the capital of a realm with extensive territories south of the Baltic.

The organisation of the medieval city had been sufficient to hold the ring in matters of building within the city's own limited sphere of interest. But extensive changes were called for now that Stockholm had become a permanent capital with an additional population of politicians, military and government officials, as well as an expanding intellectual élite. The 17th century was a period of population growth and building development unequalled in the pre-industrial history of Sweden. At the same time a procedure was evolved in the capital for interlocking the growing royal initiative in matters of urban development, prompted by national objectives, with civil initiatives

prompted by local and private interests. This was achieved through the office of the Governor General, the first holder of which was appointed in 1634, at the same time as the city acquired a Building Commission. The provision of technical expertise for measuring, mapping and planning was no less important.

The extensive planned development which began in the 1620s and was pursued most vigorously during the governorship of Klas Fleming in the 1630s and 1640s was based on Renaissance ideas of regularity. It involved dividing both the renewed parts of the City Island and most of the suburbs into rectangular street networks. Very probably, the main streets of the gridirons laid out for different parts of the suburbs were intended as spokes in a circular masterplan for the expanding capital, with the Castle as its central



View of Gustav Adolfs Torg, Norrbro and the Royal Palace. The monumental design of this area materialised during the Gustavian epoch. Lejonbacken, the system of ramps leading up to the north entrance of the Palace, was not completed until the 1830s. Watercoloured etching by J. F. Martin, c. 1800.

point. Masonry buildings in keeping with the pretensions of a great power and an expanding nobility were rapidly constructed right next to the old town, and before long the face of Stockholm was completely transformed.

Architects, as well as the Governor and the City Engineer, had an important part to play, and Tessin the Elder and Jean De la Vallée served both Crown and City as court architects and, respectively, City Architect and Mayor of the College of Offices and Building.

Royal initiatives in city development took on the aspect of Baroque stage management, but most such projects remained on paper or materialised as temporary festive arrangements. Even so they have left their mark on subsequent discussions of urban development, as for example in the case of De la Vallée's scheme, in 1654, for a

monumental street from the Castle through Brunkeberg towards Brunnsviken.

Stockholm in the Great Power Period became "more regular" than most European capitals. The old urban nucleus mostly remained the territory of the propertied burgesses, while in the new districts adjoining the Castle the Crown had donated a large number of plots for the nobility to build their palaces on. Artisans and the poorer classes were relegated to the outlying areas, where timber remained a widely used building material. Building operations culminated during the 1660s and 1670s, but they ground to a halt in the reign of Charles XI, due to the extensive resumption by the Crown of property formerly granted to the nobility, and during the long wars in which Sweden again became involved.

The bourgeois city 1720–1840

The forms of urban development established in the Great Power Period were continued in the 18th century, but with an increasing amount of civic and private initiative as the royal power declined. A wealthy middle class with international connections took over some of the leadership from the nobility. Private property rights became a more powerful factor governing urban change.

But the division of powers between national and city government had been regularised in such a way that developments for the most part proceeded harmoniously. From 1718 onwards, building matters in the city were more strictly directed by the City Architect. The authority of this office was asserted with outstanding vigour and competence by Johan Eberhard Carlberg, by whom it

was occupied between 1727 and 1773.

The weakening of central controls confirmed by the exclusion of the Building Statute from the Code of 1734. The city building by-laws, the first of which (1725) was based on De la Vallée's ordinances from 1686, became the sole building regulations applying in the city. Thus the high standard of public building control was not based on draconian justice so much as on the authority of schooled professionals.

The main public building venture of the 18th century was of course the Royal Palace, which in turn did a great deal to influence private building. But the efforts made to improve the city's practical amenities are not to be underestimated either. The waterfronts were made available for transport by means of land reclamation and the construction of quaysides, and a new lock gate was constructed to bridge Söderström. The bridging

of Norrström was a more complicated assignment and was not finally accomplished until the Gustavian period brought a resurgence of royal initiative.

The population grew fairly rapidly between 1720 and 1760, but events stagnated until about 1830. New buildings were put up in the suburbs, following the generously proportioned gridiron plans of the 17th century, but most of this development took the form of extension and infill of the existing fabric. The gardens contracted and a stone city grew up with an increasing proportion of tenement buildings.

Industrial facilities such as textile factories and sugar mills became part of this urban structure. Some of them occupied former palaces of the nobility, but others were constructed on the outskirts. Also on the fringe of the city, the wealthier classes had built themselves suburban residences

and summer retreats, and these now became more firmly integrated with the general fabric of urban settlement.

The industrial city 1840–1915

The first half of the 19th century was a period of stagnation and fairly limited building enterprise, following Sweden's loss of Finland and the last of its Baltic territories. State initiatives were mainly confined to such outlying amenities as hospitals, prisons, barracks and scientific institutions. The coming of the Industrial Revolution transferred the main initiative to the city and to individual representatives of enterprise and associations, at the same time as liberalism came into its own.

Public efforts were mainly concerned with improving standards of hygiene and utilising new transport technology. The cholera epidemics of

Norrmalm from the tower of Jakobs (St. James') Church. In the early years of the 19th century the stone town of Lower Norrmalm had become congested. Attic storeys and courtyard building had been added to the 17th century palaces, but the precincts surrounding Kungsträdgården retained their patrician status. Drawing (1845) by C. S. Bennet, now in Uppsala University Library.



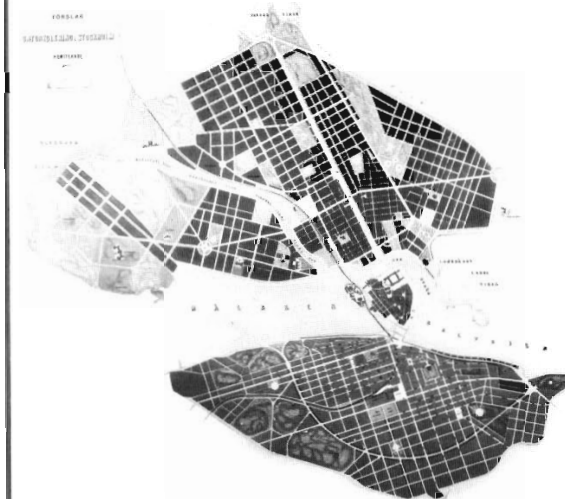
The intersection of Karlavägen and Sturegatan. The esplanade system is taking shape, but some of the military outbuildings of Ladugårdslandet has yet to be demolished for the new landscaping. Wood engraving (1883) by O. Mankell in Ny illustrerad tidning.





Folcker House at Brunkebergstorg, designed by G. T. Chiewitz, 1848. The metropolitan scene which evolved round about Brunkebergstorg towards the middle of the 19th century was cast in a Parisian late Empire vein. This building, whose amenities included a watermain and a shopping arcade, was converted at the turn of the century to house a bank and the Swedish Association of Engineers and Architects. Demolished in 1970. Lithography.

New street plan proposed for the suburbs in 1866 – the Lindhagen Plan. Synopsis of the lithographed principal maps.



the 1840s and 1850s accelerated the construction of sewers, watermains and hospitals. During the canal and steamboat epoch, when both factories and summer residences extended along the shores of Saltsjön and Lake Mälaren, harbour and lock gate improvements, land reclamation and the construction of docks became the principal building assignments. The coming of the railway during the 1860s made heavy inroads on the central districts of the city as well. And at the same time the street network was improved by means of paving and gas-lighting.

But the most important change was industrialisation, as a result of which the city had to accommodate a much larger working population than before. Whereas between 1820 and 1850 the population rose by a mere 20 % to about 95,000, by the turn of the century it had more than tripled.

This revolutionary transformation made the old division of powers between national government, corporative authorities and private persons untenable. The complex co-ordination of all the various building enterprises called for planning, which in turn had to be conducted on a modern economic and legal basis. The development of banking was one important prerequisite, and the 1862 local government reform and the 1874 Building Statute were important staging posts in the transformation of development policy.

The first moves towards replanning occurred within the old scheme of things, at the instance of the Governor General, and in 1863 the Magistracy instructed the City Engineer to prepare a scheme. But the City Council, the new municipal authority in Stockholm, emphatically asserted its authority in the matter of city development and, bypassing both the King's representative and the City Engineer, put a municipal committee in charge of the entire planning process. The strong man on this committee was a lawyer by the name of Albert Lindhagen, assisted to begin with by a skilful engineer, F. W. Leijonhank.

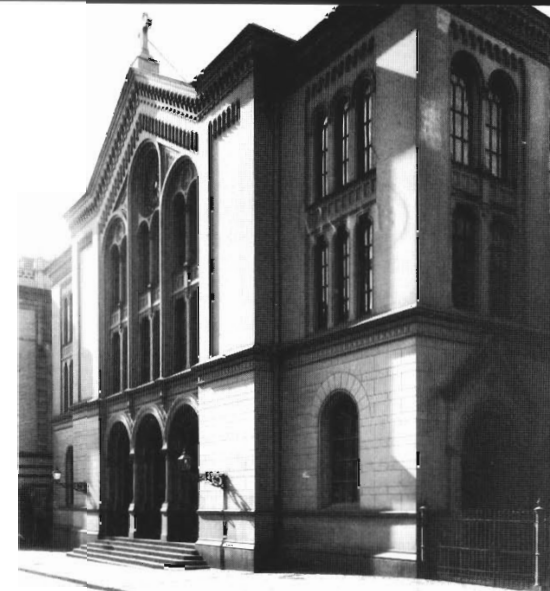
Contemporary principles of hygiene made light, air and greenery important components of urban development. But beyond this point, opin-

ions diverged as to how exactly the good city was to be constructed. Anglophile engineers and financiers such as J. H. Palme, a bank director, pleaded for the garden city, but in the event, Stockholm followed the example of the great imperial cities of the Continent – St. Petersburg, Vienna, Paris and Berlin. Those cities are based on a classical tradition of rectangular street blocks integrated within a large-scale system of street axes and plazas. The wide street perspective was to be planted with trees – the Esplanade System – and was to interact with public parks and monumental buildings.

Stockholm, however, was not governed by an imperial autocracy, and Lindhagen's ambitious plans were pared down as regards the system of avenues and esplanades. There would not have been so many parks either if the topography of Stockholm had not included intractable outcrops of bedrock.

The gridiron system made it easy to follow from the existing planning pattern and also to lay out new streets and building lots at high speed across the suburbs. The builder-contractors immediately organised themselves to fill the urban plans with tenement buildings on the grand scale permitted by the new Building Ordinance. A "Gründer" period of hectic speculative development gathered speed, just as on the Continent, coming to a hectic climax in the 1880s and at the turn of the century, with calamitous depressions in between. It was primarily the well-to-do portion of the population that was catered for, while the great mass of the workers settled in the older and increasingly dilapidated mass of buildings and in the secondary tenements created in the courtyard buildings of the new development and in outlying areas.

Needless to say, industrialisation also meant a great deal of factory building both in the city and elsewhere, but a succession of new institutions, such as banks and insurance companies, schools, museums, free churches and various amusement establishments also meant new building assignments.



Blasieholm Church, 1864, designed by Gustaf Sjöberg. This church was built at the instance of a preacher, G. E. Beskow, and it served as a preaching centre with no parish of its own. The auditorium was lined by galleries supported by slender iron columns, and the design was modelled on the famous contemporary Metropolitan Tabernacle in London. Blasieholm Church was demolished in 1964, but the site remained undeveloped until 1977.

Sabbatsberg Gas-holder, 1884–1885, designed by V. Karlson and P. E. Werming. The municipal take-over of gas supplies was manifested by this red pressed-brick building, based on American and German examples and preceded by an architects' competition. Demolished in 1970.



The esplanade city was still a pedestrian city where most people were concerned, but with the construction of tramways, from the 1870s onwards, a process began which was finally to burst the bounds of the closed city. At the same time a clear differentiation began to appear within the urban fabric. Central functions gravitated more and more towards Lower Norrmalm, while factories and workers' housing formed enclaves segregated from the more well-to-do districts.

With the construction of detached homes, part of the population seceded from the domains of the city. As the suburbs acquired tram services, the garden city alternative excluded from the city itself materialised both in the form of urban sprawl and in the systematically laid-out plutocratic communities of Djursholm (1889) and

Saltsjöbaden (1891). An urban region of interdependent but administratively segregated units began to take shape. In between there were residual areas retaining the administrative characteristics of the countryside but functionally part of the city.

In settlement terms, these areas were stamped by the city's road and rail communications with the outside world, which cut straight through them. In addition there was the network of communications with the new suburbs, in which boat services also played an important part to begin with. Along these routes there now grew up a variegated settlement which was not subject to any planning supervision and had to accommodate everything which the city planners were unable to predict or find room for. As time went on,

the city administration was to find these fringe areas a troublesome heritage.

The tramway city 1915–1945

As part of the general exodus from the old way of life during and after the First World War, development changed direction. The idealists of the 1890s had already rejected the tenement city of the liberal "Gründer" epoch, but the change in building patterns at that time had been prompted mainly by aesthetic and patriarchal considerations.

The decade preceding 1914 witnessed the incorporation of the parishes to the south and northwest (Brännkyrka 1913, Bromma 1916),

which was to mean such a great deal for subsequent development. The tramways made it possible for extensive housing projects to be undertaken in the hitherto untouched areas of the old suburbs and for modern suburbs to be established on newly acquired land. The time was now ripe for the garden city and the home-owner movement, which started as a national programme.

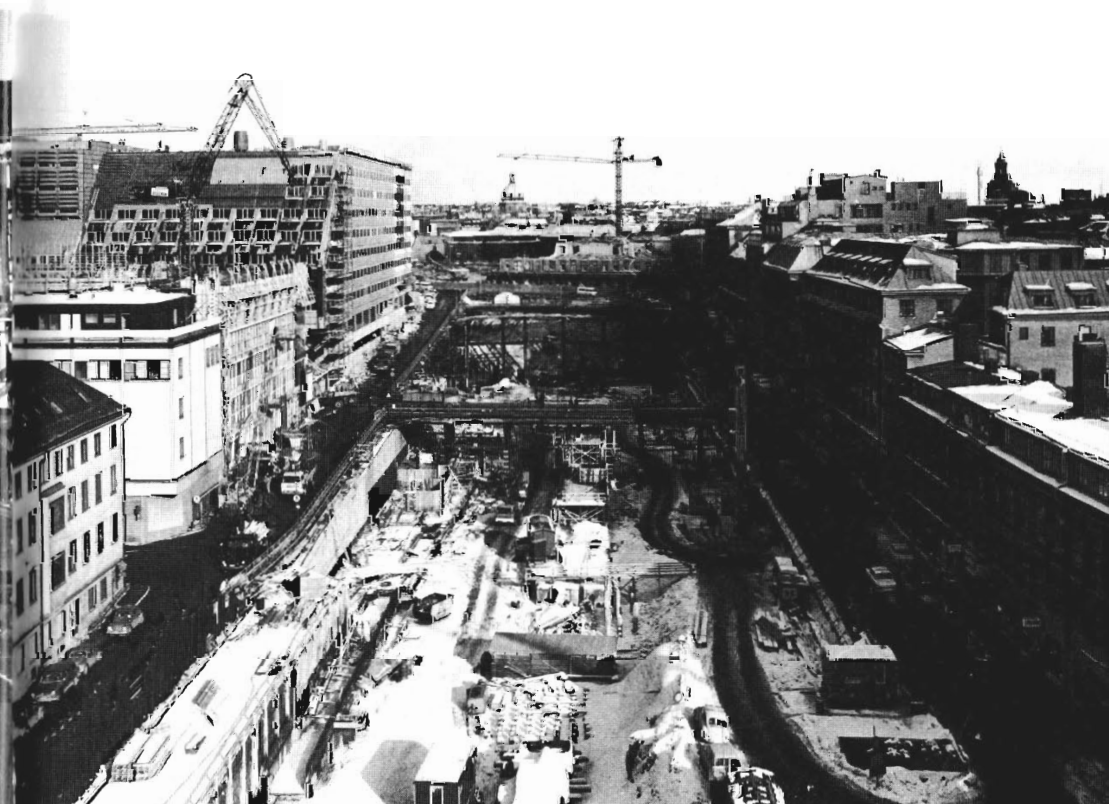
But the housing crisis of the war years showed that far more extensive public initiatives were called for. In the course of two decades, the foundations were laid of what were to be the essentials of development policy in the welfare society: town planning legislation, municipal land acquisition, site leasehold conveyancing, housing co-operatives and council housing.

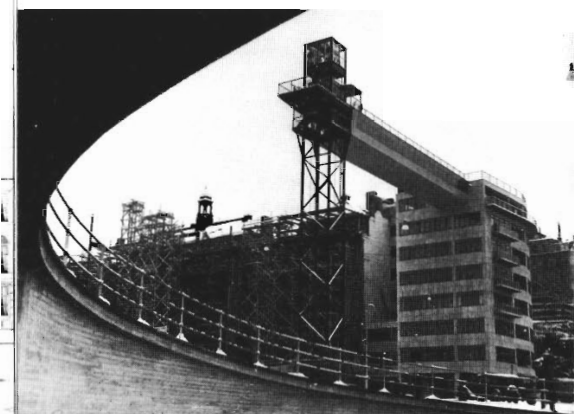
For a number of troubled years following the

Paving Djurgård Bridge with wooden blocks during construction work on the tramway. In the distance can be seen the wide esplanade of Narvavägen, not yet fully developed. 1897.



The Klara Tunnel under construction. This urban clearway and access route forms part of the immense subterranean logistical system for the new City development. Drottninggatan crosses the site on a temporary flyover, and Kulturhuset (the Stockholm Cultural Centre) is rising on the left. 1970.





Slussen, designed by T. William-Olsson and completed in 1935, and rebuilding work in progress on the KF (Swedish Co-operative and Wholesale Union Society) headquarters. Both buildings epitomise the technological optimism of the 1930s.

19th century street-block interior at Birger Jarlsgatan-Surbrunnsgatan, photo c. 1970. Renewal of the tenement areas in the stone city for long remained an unsolved problem. Complete redevelopment proved practically unfeasible for economic and social reasons. The 1970s and 80s have gradually adopted better alternatives, like rehabilitation and upgrading of the courtyards.



end of the war, private building enterprise was paralysed and municipally subsidised building was organised as an emergency measure. But as the twenties wore on, a new building boom exceeded that of the turn of the century. In the old industrial areas of the inner suburbs, speculative tenement development was more intensive than ever before.

At the same time this period, combining traditionalism with a search for new alternatives, witnessed urban construction which, above all in the co-operative and municipally subsidised housing areas, achieved qualities which have rarely been surpassed. Those ideals, influenced by Camillo Sitte and Raymond Unwin, were represented by the architect Per Hallman, Stockholm's first Town Planning Director.

Suburban expansion and the coming of motorism thrust communications questions into the foreground. Technical radicalism was given more and more scope during the interwar years, with the construction of the Hammarby Canal, the re-routing of the railway to the south and, above all, the big road and bridge construction projects represented by Slussen, Västerbron and Tranebergsbron. Bromma Airport was opened in 1936.

Inner city renewal became an acute problem and a comprehensive approach to the growth of Stockholm was adopted in the first masterplan in 1928, drawn up by the new Town Planning Director Albert Lilienberg. A group of militant architects, accompanied by art historians Gregor Paulsson and Gotthard Johansson, asserted the functionalist view of modern urban design, influenced mainly by German developments in the 1920s. The enormous housing drive of the late 1930s, when national government housing finance policy began to take effect, gave them an opportunity of putting their optimistic programmes into practice. Plans were drawn up for a similar reconstruction of inner city tenement areas, but little came of them.

Meantime, however, the architecturally less pretentious programme of the home-owner movement unfolded under the energetic leader-

ship of the Stockholm Estate Development Department under Axel Dahlberg.

Suburban tramways were laid out, and there was already talk in the 1920s of an underground railway, the first stage of which was constructed beneath Södermalm. Finally, in 1944, the City Council passed the resolution on a complete underground system which was to have such a thoroughgoing effect on subsequent urban development.

Capital of the welfare state 1945–1970

The Second World War witnessed a growing determination to make the objectives of the democratic *folkhem* a more essential factor of urban development. The Social Housing Commission drew up a programme for the abolition of the

type of housing characterising the inner suburbs. The large new housing estates to be constructed, under the leadership of public housing utilities, on virgin land alongside the underground railway system were to be organised in social units, complete with communal amenities for the physical and cultural welfare of their inhabitants.

Renewed building legislation and housing finance (1946–1947) gave muscle to the public control of building, at the same time as the local authorities augmented their staff of planning officers. A masterplan was presented in 1952.

Vällingby, intended as a more independent type of suburb in which homes were combined with workplaces and amenities, was designed under the leadership of Town Planning Director Sven Markelius. Municipal control of the implementation process was accomplished through the establishment of AB Svenska Bostäder, one of

Vällingby Centre, officially opened in 1956, was a great success. Pictured here are the original central amenities, with the underground railway passing underneath and surrounded by slab-and-point housing. A great deal of the parking space has since been built over, for commercial purposes.





Three-storey lamellar houses of the 1940s in Årsta. Due to a thinning out and ageing of the population, as well as traffic conditions, the ribbon of residential suburbs from the forties and fifties presents problems of renewal which are every bit as difficult as those of the inner city. Energy-saving measures and infill development form part of the 1980s program for revitalisation.

The rebuilding of Norrmalm began without any clear view of the historical value of the earlier fabric, with the result that many notable buildings were hastily sacrificed. A different situation prevailed, however, in 1977, when Immanuel Church was demolished. Comprehensive inventories had been compiled of the remaining building stock the inner city, and those in charge were fully aware of the value of this free church. It was the survivor of E. G. Sjöberg's two large tabernacles (cf. p. 15) and one of the most memorable buildings of the free church movement, erected by the principal congregation of the Swedish Missionary Society in 1856. Its demolition was an act of public vandalism.



the three municipally owned housing corporations founded in 1947.

But the unexpectedly rapid growth of motorism outstripped these objectives, greatly enhancing the mobility of a large sector of the population within the Stockholm region. It also lent additional force to demands for a radical reconstruction of the city centre, a process which had begun with the underground railway, as well as demands for large external traffic arteries. Stockholm became the nucleus of an urban region extending far beyond the municipal boundaries and requiring a co-ordination of development planning. A regional plan was presented in 1958, and this work was taken further in a debated outline plan from 1966 and in subsequent planning.

Motorism and the tremendous housing expansion of the outer city made possible the residential thinning-out characterising the fifties and sixties. As a result, Stockholm has to all intents and purposes abolished the centuries-old torment of overcrowding. The final phases of the type of urban expansion inaugurated by Vällingby and Farsta took place in the southwest and northwest on land acquired by Stockholm from neighbouring municipalities and from the Crown, but also outside the city boundaries by means of inter-municipal co-operation. The latest park-and-ride suburbs (Hallunda and Fittja) resulted from the development of Järfvafältet and, to the south of Stockholm, the expansion of Botkyrka.

This outward expansion has pre-empted most of Stockholm's building resources. Inner city housing renewal projects were only partially realised. The most essential change undergone by the inner city has affected the commercial and administrative City centre and its traffic machinery. This transformation was all the more drastic, expensive and complicated, and it proceeded to the accompaniment of an increasingly critical debate.

Whereas the authors of the City renewal were able with impunity to obliterate more than three centuries of architectural history in Lower Norrmalm, the momentous decision was made in 1965



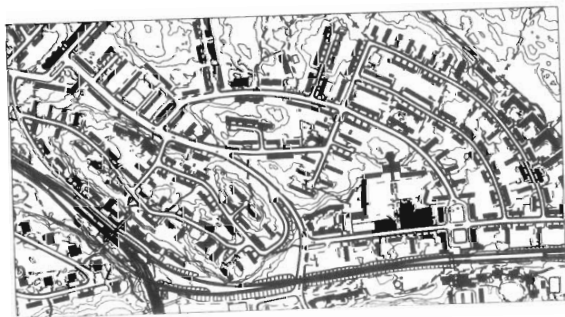
The changing housing market of the 1970s, with vacant flats in the suburbs, forced producers to bow to the wishes of housing consumers by giving them a more variegated choice. This is reflected by the most recent phases of the Järfvafältet development. Akalla, for example, offers low-rise apartments as well as the ordinary slab blocks.

that the entire Old Town was to be preserved and restored. Extensive renovations have taken place there under both private and municipal auspices. In the Södermalm area too, the Municipality has restored areas of pre-industrial buildings, especially Mariaberget.

It was not until the 1970s that attention began to focus seriously on the immense stock of housing from the 1880s and the turn of the century, with improvements to dwellings, façade renovations and courtyard clearances. Consequently a new wave of speculation has engulfed these districts, bringing gentrification for those wealthy enough to stay put.

Municipal planners and the representatives of public housing utilities have played a dominant part in the tremendous building efforts of the post-war era. During the 1960s this enormous production apparatus tended more and more to be controlled by its own objectives, becoming less and less subject to civic and political influence. The optimism of the introductory phase, repre-

sented by Vällingby and Hötorgscity, steadily declined during the ensuing period, a process dramatically highlighted by the world-famous battle of the elm trees in Kungsträdgården in 1971. The economic downturn and the constraints of the 1970s and 1980s have prompted a reappraisal of the policy of basing urban development exclusively on expansion and new construction. Stockholm is now fully built up, and so the 1980s are bound to be a decade of renewal and supplementation. Residual areas of outlying suburbs are now being filled in with housing, frequently in the form of service flats for elderly people, and new day nurseries have been built in large numbers. Industrial and transport zones are being converted into housing areas, above all on Södermalm. Hotels and offices have been built on a large scale and the shunting yards of the Central Station are now being built over. Energy conservation has prompted new departures in the design of office buildings and housing. Stockholm is a city where building and rebuilding never stop.



THE HAMMARBYHÖJDEN AREA

Narrow-block housing buildings with social ambitions

It was perhaps a twist of fate that the most centrally located parts of the land newly purchased by the City outside of its old boundaries should also be among the most broken and undulating parts. It was for this reason that in spite of their good communications with the centre of the City they were unsuitable as locations for the garden city developments which began to gain speed during the 1910's and the 1920's. And this was how the 'housing-block' suburbs, which in time would be called the middle-City areas, ended up closer to the City-centre than the somewhat older garden city developments.

At the beginning of the 1930's it had become obvious to the City authorities that the building of pure, detached single-family houses – which until then had dominated housing construction outside of the old City boundaries – would not be sufficient to solve the problem of Stockholm's housing shortage. The conclusion was that even land in the outer parts of the City must be utilized for the construction of blocks of flats on a large scale. The Hammarby and Traneberg areas with their broken, rocky terrain seemed to be

admirably suited to Functionalism's ideal of multi-family housing blocks located in attractive natural surroundings.

The land at Hammarby had been bought by the City in 1917 so as to be able to build the new Hammarby canal. Industrial activities grew up adjacent to the road and the intention was that the first real 'housing-block' suburbs would be built on the higher land in the south part of the area. In the autumn of 1930 a town plan was approved which had 15 metre deep three and four-storey lamellar blocks, but times were bad and no construction work was started.

Building with delays and difficulties

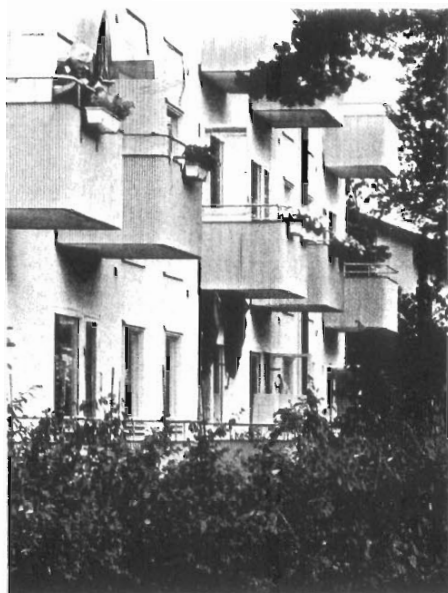
In 1931 a building contractor intimated his interest – but only on condition that the town plan was revised on the basis of a proposal from Ragnar Östberg. This proposal had contained three-storey 10 metre deep narrow-blocks in a plan pattern which had unmistakably classicistic features. The City agreed, but after a time the building contractor lost interest and withdrew from the scene. During this time the City's ar-



The 1930's



Rock outcrops and clumps of fir-trees have been retained.



Flourishing plants on a balcony.

chitects had once again revised the plan and the blocks had been made still narrower and the town plan more truly functionalistic. By the spring of 1935 a new building contractor had been found and construction work could at last begin.

The delay meant that Hammarbyhöjden did not become the forerunner of Traneberg where a town plan had been approved as early as 1932 and building had begun immediately afterwards. Instead Hammarbyhöjden became the first place in the outer-City area to have large-family blocks built with government financial support. These were designed for the non profit-making housing company Familjebostäder by Wolter Gahn. In general most of the buildings in the first narrow-block areas were built by private companies, often by small building firms for themselves. Up until the 1950's more

than 4 000 flats were built at Hammarbyhöjden, of which as many as 90 per cent were two rooms and a kitchen flats or smaller.

Small-scale building

Building construction work was small-scale and was carried out in a craftsman-like fashion. The narrow three-storey buildings had only two staircases and were easy to place without disturbing the surrounding nature, and because of the through-going flats the buildings could be more freely oriented. Rock outcrops and trees were retained even very close to the buildings and the yards had more of the character of untouched woodland than gardens. The higher parts of the area were skilfully utilized so as to provide attractive views – not least from the balconies which were very widely used here. The road net-

The Hammarbyhöjden area



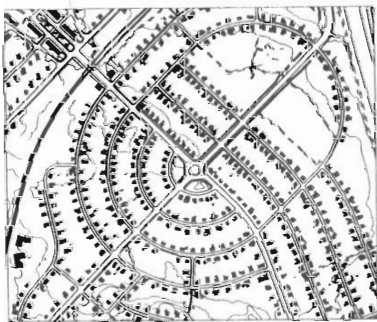
Hasselquistvägen, one of several streets which gently follows the terrain.

work followed the terrain. There was light-coloured smooth plaster on the exteriors and light saddle roofs.

To quote from the Building Committee's annual report in 1937: "The white town at Hammarbyhöjden has grown further and further into the woods where the blocks are built on the rocky

ridges or in valleys. It is a completely new type of town which is taking form and it is equally far removed from the old town's compact buildings and regular street network as from the scarcely less stiff lamellar blocks mechanically lined in an unchangeable orientation. Nature has used its authority and set its stamp on the development."

The 1930's



THE TALLKROGEN AREA

Detached single-family houses in a strict plan form

The construction of small, detached single-family houses or 'cottages' by the City itself had been begun in 1927 in the Olovs-lund and Pungpipan areas. The intention was that the City should provide favourable loans – paid in the form of building materials, drawings and instructors – and that the amount to be paid 'in cash' was to be in the form of the building work carried out by the tenant-owners themselves. In this way workers' families could to an increasing extent also be given the possibility of acquiring a 'home of their own' in the City's garden city developments. Of the construction costs – which in the 1930's were in the region of 10 000 Swedish Crowns – 90 per cent could be financed by a loan from the City and the rest be covered by the tenant-owners' own work.

The scheme worked well from the very beginning and soon new areas for small houses were being made available in Åkeshov and Enskede. The areas of this type which were built during the 1930's included Tallkrogen and Hök-mossen to the south and Eneby and Norra Ångby to the west of the City.

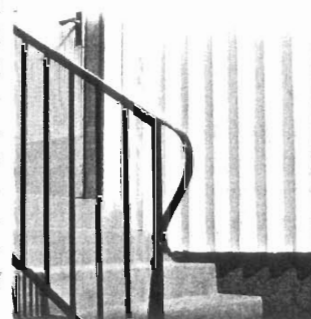
A stadium filled with houses

Construction work was begun in the Tallkrogen area in the spring of 1933 on the basis of a very individual plan. As in the case of the other garden city developments, the earlier organic road system had been replaced here by more classicistic road patterns. The town plan form for Tallkrogen was that of a huge sports stadium with streets which ran like the runners' tracks in an athletics stadium.

The houses which were built here were, for the first time, single-storey. "A modernization of our old, honest, Swedish farm cottages", as one newspaper put it. The house-type was subsequently enlarged and then had a bathroom, a kitchen and three rooms. The single-storey houses filled the inner parts of the 'stadium', while two-storey houses were built further out. The one and a half-storey house-type which had been popular until now was not used at all in Tallkrogen.

The pioneers of prefabricated building

Altogether around 950 small, single-family houses were built





in the Talkrogeri area. All of them had been built by the tenant-owners themselves using the City's own system which, after initial trials with different constructions, was ready in 1930. The walls were delivered in the form of completed units with the doors and windows already mounted in position, the chimneys were built of concrete blocks with the flues already cast in them, and the roof-trusses arrived on the site ready for erection.

While the first of these small, single-family houses had had something of the 'old-fashioned cottage' character, with the arrival of Functionalism the houses were given a new architectural expression where the forms became stricter and the colours lighter. The houses were built in rows quite close to the roads thus allowing for open

The same house-types were built in unified groups in the area.

Vertical timber panelling painted in light colours such as white, grey and beige – and the red tiled roofs – contribute to the unity of the area.

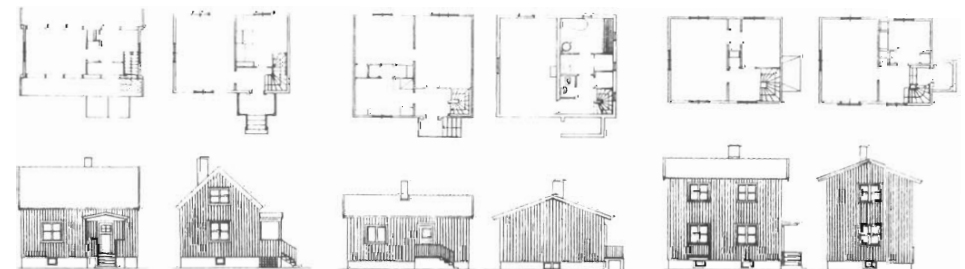


Every minute of free time was spent on the building work and often the whole family took part.

spaces with profuse greenery behind the houses in the centre of the groups. The road spaces were held together visually by unity in the building materials and the choice of colours for the exteriors and by hedges which had grown together.

During the 1930's some 3 000 'small-cottage' houses were built in different places around the City.

The most common house-types in the detached single-family house areas were the 1 1/2, 1 and 2 storey house-types. All the houses had a cellar and it was here that the W.C. and the bathroom were located.



A city to live in

Housing areas 1870–1985

During the years surrounding the First World War, Stockholm's building problems came to be unambiguously termed *the housing question*. This marked the final acknowledgement of housing supply as a matter of public concern, the immediate responsibility of local and national government, and it gave rise to a series of initiatives in the form of legislation, credit facilities, tenancy regulations and support for co-operative housing organisations. Extensive land acquisition has enabled the city to plan and control the development of large housing areas and, starting in the mid-1930s, to take the lead through municipal housing utilities.

For centuries past, the housing need had been such a permanent feature of Stockholm life as to be almost taken for granted. At the coming of the Industrial Revolution, Stockholm as a city to live in was not so much the Venice of the North as a second Naples, in which the conditions for the great mass of the population was indescribably crowded and squalid. Morbidity and mortality rates were exceptionally high by northern European standards. It was common for several households to share one apartment, and also for families to take in lodgers. There could be anything up to a dozen people living in one small room.

The housing boom during the closing decades of the nineteenth century, which peaked at the beginning of the 1880s, rather perpetuated than eliminated the distress. Speculative builders reserved their attentions for the up-market sector. The indigent majority spilled over into the small tenements of courtyard buildings and, even more so, into older districts which consequently turned into slums. At about the turn of the century, workers and craftsmen – especially building workers – with minds of their own were able to shape their own housing environments on the fringes of Stockholm by joining forces in co-operative housing organisations. This type of development, in common with the workers' homes resulting from the initiatives taken by industrialists and philanthropic foundations, was a mere drop in the ocean. Population growth outstripped building production and conditions grew more overcrowded than ever. A couple of housing surveys at about the turn of the century, when the ranks of the utterly homeless acquired terrifying proportions, laid bare the true wretchedness of the situation and helped to change the course of housing policy.

This accounts for the heavy emphasis in Stockholm on the production of cheap homes of minimal dimensions, as well as the determination to renew the compact stone city by a more spacious structure of modern buildings. A naive lust for



Vidängen, Traneberg (541), tenements for "less affluent, large families". Photo c. 1940

vengeance on the nineteenth century is also part of the picture. Although during the incipient phase of public housing policy both housing types and urban structure in Stockholm really had few counterparts elsewhere, it is unfortunate that they should have set the tone of things for the country as a whole.

Garden city ideas were already mooted in the discussions during the 1860s, but they were rejected in favour of massive tenement blocks. Single-family houses were relegated to the outlying suburbs, where even working-class flatted buildings were given towers and glass verandahs. Soon after the turn of the century, however, the garden city ideas were revived as a principle of housing development in Stockholm through the own home movement, this time with national and local government support.

Until the mid-1930s, then, single-family housing appeared to be the most significant alternative to the tenements of central Stockholm. Detached homes dominated the suburban municipalities, and the estates acquired by Stockholm in

the newly incorporated parishes were extensively developed on the same lines. The City "Small Home Bureau" effectively promoted inexpensive types of single-family dwelling which could be partly self-built.

This line of housing policy in Stockholm, however, gradually petered out. Functionalism, combining the nineteenth century view of urban hygiene – light and air – with modern technical radicalism, favoured the rented flat. The low-rise apartment building, which was made an object of study in architects' competitions and official inquiries, became the standard volume of the thirties and the war years, the preferred design being narrow three- or four-storey buildings in which the apartments would receive ample daylighting from two points of the compass. Attention was concentrated on the inexpensive, minimal dwelling and its lay-out. The surroundings were of secondary importance.

A feeling for the urban district as a social unit developed during the Second World War, when Anglo-Saxon planning ideas finally took root. The synthesis between those ideas and the spirit of the thirties aroused international interest. Housing estates now came to be built up as neighbourhood units, grouped round a school and shopping centre and with carefully designed play facilities and open spaces. Many of the qualities thus created have been shattered by motorism, which has turned the open fabric into a liability. A period of tentative formalism was followed by a reversion to more precinct-based, self-enclosed development, one of the aims being to exclude the hazards and noise of vehicular traffic.

Högdalen, one of the suburbs in south Stockholm. Photo 1959.



Municipal planning and housing in Stockholm have been inspired by very high ambitions, in terms of both quality and quantity. During the inter-war years, building output fluctuated heavily with the trade cycle, but the total increase of about 100,000 dwelling units is impressive. The record came in 1939, when output exceeded 11,000 new homes. During the post-war years, until the mid-1970s, municipal housing production averaged more than 6,000 dwelling units annually, at the same time as development in the outlying municipalities escalated steeply. Agreements with those municipalities have enabled municipal housing utilities in Stockholm to develop Bollnäs, Jakobsberg, Jordbro and Fittja on the lines of the subway suburbs.

The big new urban districts of the 1950s were an achievement fully deserving the international attention they received. Before passing judgement on the immense building production which then followed, one has to bear in mind that the minimum space objective was no longer considered sufficient; flats were now being made more spacious and better-equipped. At the same time, by uninterruptedly increasing the stock of large apartment buildings over three decades, the city has perpetuated the type of dwelling inherited from Tenement-Stockholm. Housing production has been relatively undifferentiated, offering few alternatives. A handful of collective housing projects or apartment hotels have resulted from individual initiatives. Home-hunters in a position to choose have preferred the detached and terrace houses of neighbouring municipalities. Public efforts have included surprisingly little use of tenants own initiatives. During the 1960s especially, the unrestrained dominance of producer viewpoints, even in municipal and co-operative housing, led to results of such perversity in social and environmental terms that one is bound to question their "utility".

Stockholm entered the 1970s as a fully built-up city which no longer had any virgin soil for development but, on the other hand, did not have any real housing shortage either. It only remained to conserve, renew and supplement the dwelling environment which had been created already. This called for a radical readjustment of the apparatus of building and planning. The tenement blocks of the old inner districts had not been improved by more than half a century of unremitting criticism, but they had been made worse by plans presupposing complete renewal and by the neglect and decay which this entailed.

The 1970s now began with an upsurge of gentrification and eye-catching façade refurbishment, accompanied by speculative housing investments. Flaking yellowish-grey rendering was replaced with garish plastic colours. Marble sinks and painted joinery were replaced with stainless steel and laminates and hard-up tenants with opulent tenant-owners. The new multi-family blocks on the extreme

periphery were still not quite finished when they were turned down by discerning, moneyed residents in favour of the terraced fields of the outlying municipalities and the modernised flats in the city centre.

Through a combination of national and local government efforts, more socially-minded measures were now taken to transform the housing mix of the inner city, improve its technical standards and make it more accessible to the disabled. Initially this involved a disregard for the qualities of the old environment and the preferences of the people living there. More and more lessons have been learned with the passing of time. Service flats and enclaves of new development have been inserted in the gaps left by factories and shanties, and developers have begun learning the art of integrating new buildings with the old inner-city precincts without ruining the environment or the people who live in it.

But Stockholm again, in the 1980s, is facing a new wave of housing distress, as money-makers invade the housing market and even the City Hall, depriving people with low incomes, especially the young, of access to rental flats to reasonable costs. The housing question is never eliminated in an expanding capital city.

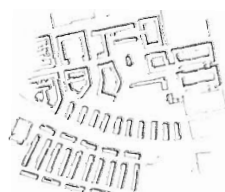
Development patterns
in Stockholm housing
areas 1880-1980.
1:25 000.



Vasastan, kvarteren Midgård, Sleipner, Gullvivan and Blåklinten. 1885-1910 (524)



Rödabergsområdet, west part. 1914-25 (528)



Helgalunden. 1913-30 (530)



Gärdet. 1929-50 (538)



Hjorthagen. 1935 (539)



Gröndal. 1944-46 (554)



Reimersholme. 1942-46 (414)



Vällingby. 1950-55 (546)



Skärholmen. 1963-68 (552)



Minneberg. 1984-87 (559)

urban community, incorporating work places, housing and amenities.

The Vällingby group is a mobile development, with low-rise buildings deployed so as to form open courtyards, very often in meandering loops. These alternate with distinct high-rise constellations. The outer zones include single-family terrace and linked housing.

Mörsilsgatan, point blocks 1953 architect P. Hedqvist, terraced houses 1954-56 architects Höjer & Ljungqvist for AB Svenska Bostäder.

These low tower blocks have grey pebbledash façades, and the apartments helically grouped round a central stairwell with a two-roomed flat on each point of the compass and each flat a quarter of a storey higher or lower than its neighbour. The southern slope is developed with three storey terraced buildings.

547 *Strandliden Hässelby Strand, 1956-57 architects J. Curman, N. Gunnaritz for AB Svenska Bostäder.*

The theme of "the city on the water" has not been pursued in suburban development along the shores of Mälaren. On the contrary, pains have been taken to reserve shoreline areas for outdoor recreation purposes. Here the principle has been relaxed so as to bring the homes right down to the waterfront. A green walkway passes along the very edge of the water, and the lower storeys of the buildings fronting it are split-level studio flats. The straight lines of buildings climb the slope by stages, presenting plain, horizontally emphasised façades of plaster and asbestos cement sheets.

548 *Farsta comprehensive plan 1953, built 1953-61.*

The post-war suburbs to the south of Stockholm have tended to be low-status areas compared with the western sector. But in Farsta, on the whole, a suburban group has been successfully created on a level with Vällingby, and actually with a predominance of large apartments. The variable terrain and vegetation, as well as contact with the waters of Mägelungen and Drevviken,



Hässelby Strand, Strandliden 547

Farsta, Kv. Hjälmo 548





Tanto 549



Bredäng 550

Danviksklippan and Henriksdalsberget 543, 551



contribute to the environmental qualities.

Kvarteret Hjälmo, 87 Farstavägen, 1959–61 architects Backström & Reinius for HSB.

Great care has been devoted to the outward fashioning of these 16-storey tower blocks. Each floor comprises a one-room flat, two three-room flats and two larger flats combined with rental spare rooms.

549 Tanto development plan 1960, built 1962–66 architects Å. Ahlström, K. Åström for Svenska sockerfabriks AB on the site of a sugar mill.

One of the most conspicuous examples of the formalism which emerged towards the end of the 1950s, when the scale and volume of development were meant to impart townscaping dignity to a functionally conceived development plan. Five large buildings form an amphitheatre-like constellation on sloping ground facing south. The lowest of them is nine storeys high, the tallest fifteen. The concave fronts derive their character from the horizontals of the prefabricated concrete balconies, with white marble facings to contrast with the dark grey gable ends. Viewed as a whole, a townscape in which the buildings themselves determine the scale and dramatise the view – a sculpture symbolising the enjoyment of sunshine and the view, even if the blinds are down.

School and pre-school amenities are on the bottom floors. To segregate pedestrian and vehicular traffic, the buildings have been made to face inwards, overlooking continuous parkland and play spaces, while traffic and parking facilities are kept on the outside.

550 Bredäng planned 1961–62 by the City Planning Dpt and Höjer & Ljungqvist architects. Bredängsvägen, 1963–65 architects C.-E. Sandberg for AB Svenska Bostäder and B. Näsval for Svenska Riksbyggen.

In these groups of uniform eight-storey slab blocks, the organisational demands of the building industry have interacted with formalism more overtly than in the case of Tanto. The planning principle is simple. The parallel blocks are distrib-



Farsta Centre 805

Suburban centres

It was in the suburbs of the tramway epoch that the first efforts were made to gather shops into centres, so as to give the otherwise diffuse suburban structure the beginnings of a townscape. But it was not until the neighbourhood planning of the 1940s that more deliberate attempts were made to group housing areas round a nucleus – a “community centre” – which was to combine commercial, social and cultural amenities and a place where people could gather for communal activities during leisure hours.

In the subway city, an attempt has been made to establish the new, peripheral districts as more independent units, with workplaces an essential component of their centres. Scale and design, however, have been determined by the commercial elements, and it has proved difficult to achieve and maintain the social and cultural activities that were also intended. A three-stage scale was used: “neighbourhood centres” providing local services, “district centres” and “inter-district centres”.

There was also a vision of regional centres, the amenities of which were to attract people from several different areas. Nearness to subway stations was an important consideration.

Whereas the early centres imitated the character and proportions of the small-town market square, post-war designs have aspired more to the somewhat transient diversity of the bazaar and the fair. American patterns were adopted early on. Shop buildings were sometimes presented in simple terms, while at other times they were given a more contrived masquerade architecture or an oppressive monumentality. The ideal of the 1970s and 1980s has been a permanently temperate environment consisting of indoor piazzas and covered malls, an approach which has also been tested in the refurbishment of older shopping centres. Otherwise the latter tend to exhibit a process of dilapidation and depletion, which in recent years has also come to affect social and cultural amenities.

**798 Höglandstorget and Smedslättstorget
Bromma, 1922 respectively 1926.**

These two squares share the classicist ethos of the detached housing suburb of the twenties, with its variegated pale colour scheme. The shops are grouped round oblong, English-style squares with trees and lawns in the middle. The squares still have their tramstops, but the shops are getting thin on the ground.

**799 Årsta Centre 1943–53 architects E. & T.
Ahlsén for Riksborgen on the initiative of Uno
Åhrén.**

Both the functional design and the architectural vocabulary of this complex bear witness to lofty ambitions. The civic centre, comprising public library, theatre and committee rooms, provides an accent which is echoed by the cinema building on the other side of the square, while the shops in between, occupying the ground floors of two-storey blocks, are less in evidence.

The whole complex is grouped round a square, to which the concrete and rendered façades present painted surface decorations. Wood and red brick, with the pointing painted to produce large-scale patterns, make an inviting, vigorous impression. Unfortunately this complex was divorced by through traffic from the restaurant and the shops fronting on the opposite side of the street. A



Smedslättstorget 798
Årsta Centre 799



**805 Farsta Centre 1956–62 architects Backström
& Reinius.**

Motorised access played a more critical part in the planning of Farsta than in Vällingby. This centre, occupying a valley cleft, is surrounded by two large parking fields while the subway passes

to one side, carried on viaducts. Loading and unloading operations take place below ground. The elongated, convex piazza is surrounded by department stores, shops and offices, in between which there are pedestrian streets with wide canopy roofs leading out to the parking spaces. The windowless upper storeys of the low-rise buildings are curtain-walled, with lace-patterned concrete elements, shiny brown teak, or coffered sheet metal. The NK department store and Folksam insurance company's office block (719), gravely monumental in their granite cladding, stand aloof from the surrounding Vanity Fair.

SKARPNÄCK

(abridged information from Wikipedia)

HISTORY

Archaeological findings, such as a hill fort and stone circles near Flatensjön, indicate that Skarpnäcksfältet and nearby areas were populated by vikings as early as the 10th century.

Skarpa, a cottage of the Årsta property, was first mentioned in the will of Duke Valdemar in 1318, where it was listed as one of his donations to Uppsala domkyrka. Skarpa derives from the word skarp (English: sharp), and is believed to have indicated the soil quality, which was heavy loam. It is believed that the small village of Skarpa by, with the Skarpa cottage, also consisted of three homesteads dating as far back as the 13th century.

Eventually, after shifting ownership repeatedly, in 1922 the property was sold to the Stockholm Municipality.

SKARPNÄCK AIRFIELD

The Skarpnäck Airfield was constructed on Skarpnäcksfältet around 1940. Originally intended to be a reserve airfield for the military, those plans were soon abandoned, and in 1943, Stockholms Segelflygklubb (English: Stockholm's Sailplane Association) moved its operations to

the airfield. The airfield was commonly used for other activities, including balloon flying, races such as the 1948 Stockholm Grand Prix, baseball and greyhound racing.

The airfield became a centre for alternative society movements. In August 1950, the International Union of Socialist Youth, together with the Swedish Social Democratic Youth Association, organized a week-long international tent camp, in which Tage Erlander (prime minister of Sweden), participated. During the United Nations environmental conference in 1972, which took place in Stockholm, thousands of hippies, environmental activists and leftist activists gathered in a large tent camp at Skarpnäck Airfield, organized mostly by the Hog Farm and other Woodstock veterans.

SKARPNÄCKSSTADEN

In September 1980, the Stockholm Municipality decided that a large residential area called Skarpnäcksstaden (English: The Skarpnäck City) would be constructed on the airfield. The baseball and greyhound-racing facilities remained and were included in the new residential area, but the greyhound-racing was closed in 2006 in favour of a football field of artificial turf.

ARCHITECTURE

The construction of Skarpnäcksstaden began in the early 1980s. This was a few years after the

finish of the million programme which was heavily criticized for the buildings' lack of aesthetics.

Thus, with the planning of Skarpnäcksstaden, time was spent to assure that the mistakes of the million programme were not repeated. The area was to move away from the mass production-style of the million programme, instead focusing on a variation of houses and apartments. Skarpnäcksstaden was intended to be a complete small town in itself, with housing, workplaces and schools. In all, the classical elements of a small town inspired the design of Skarpnäcksfältet greatly, for instance in the structure of blocks with streets, squares and courtyards.

The characteristical orange-red brick buildings of Skarpnäcksfältet have received international attention, partially because the relatively large area consists of exclusively such buildings.

The subway station "Skarpnäck" is the southern terminus for the green line 17. The station was opened on 15 August 1994, making it the hundredth station in the Stockholm metro. As of 2011 it is still the newest station in the system.

7 Hammarby Sjöstad, Stockholm, Sweden

Few cities have done as much to put the idea of a sustainable circular metabolism into practice as Swedish cities, and Stockholm is the leading case. This city's different municipal departments and agencies have sought to coordinate their work, and to take a comprehensive material and resource flows approach. Stockholm's new urban ecological district, Hammarby Sjöstad, is the best demonstration to date of these efforts and the successful outcome now being commonly described as the "Hammarby model."

Hammarby Sjöstad provides an extremely powerful example of how this metabolic flows view can manifest in a new approach to urban design and building in a new dense urban neighborhood. From the beginning of the planning of this new district, an effort was made to think holistically and to understand the inputs, outputs, and resources that would be required.

Once understood as a system of resource and material flows, the designers of Hammarby found ways to connect these flows, with substantial energy and conservation benefits. For instance, about 1,000 flats in Hammarby Sjöstad are equipped with biogas stoves that utilize biogas extracted from waste water generated in the community. Biogas also provides fuel for buses that serve the area. Collection of solid waste in the neighborhood happens through an innovative vacuum-based underground collection system that allows efficient separation of organic, recyclables, and other wastes. Combustible waste is burned

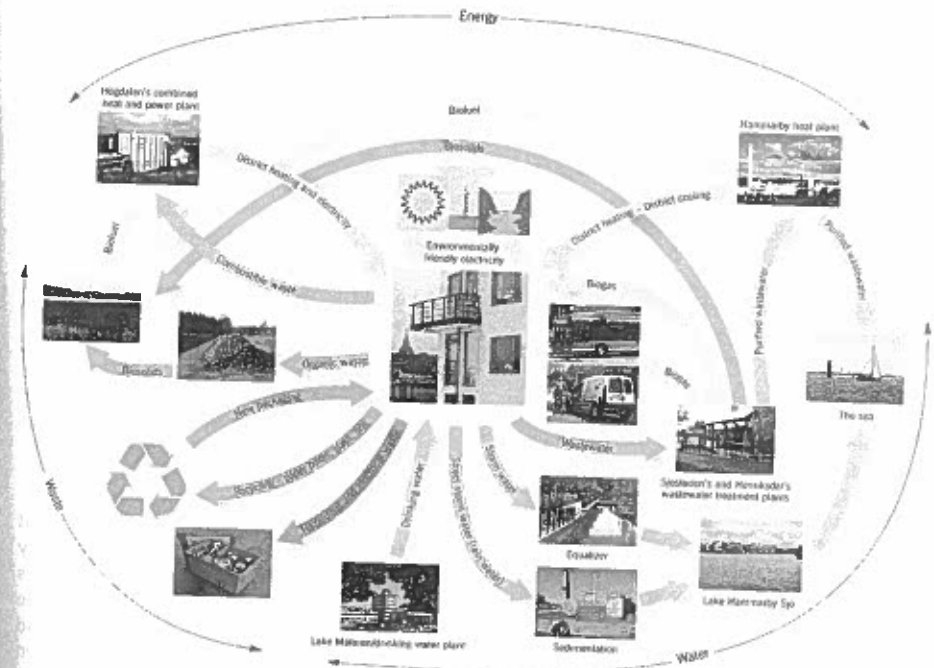


Figure 9 Systems approach to designing resource flows at Hammarby.

Source: Courtesy of Erik Freudenthal.



Figure 10 Tram stop in Hammarby, Sweden.

and returned to the neighborhood in the form of electricity and hot water, the latter delivered through a district heating grid. Storm water from streets is directed into a special purification and filtration system, and runoff from buildings and other living areas is channeled to the neighborhood's green features (wetlands and green roofs).

There are many other important features at Hammarby that reduce energy demand and carbon emissions. Most important perhaps is the close proximity to central Stockholm and the installation (from the beginning) of a high-frequency light rail system (the Tvärbanan) and an extensive pedestrian and bicycle network. There are also thirty car-sharing cars distributed throughout the neighborhood. These transportation alternatives make it truly possible to live without a private automobile.

Hammarby Sjöstad represents exemplary urban sustainability in other ways as well. Located on former industrial land, it is a positive example of extending the city of Stockholm through relatively dense brownfield development. When fully built out, the district will accommodate some 25,000 residents and 10,000 jobs, in a mixed-use design that emphasizes physical and visual connections to the water (Hammarby Lake). Substantial restoration of shoreline biotopes and habitat has occurred, and a land bridge provides pedestrian access to a nearby forest. Environmental education has also been emphasized and there is an impressive on-site environmental information center, the Glashuset. Here classes are taught and ecology displays can be found, and the structure itself incorporates and demonstrates a number of green technologies (including a fuel cell, green rooftop and photovoltaic panels). All in all, Hammarby represents an especially valuable new example of sustainable community development, requiring a degree of interdisciplinary and intersectoral collaboration that is unusual in most cities.

8 Kronsberg Ecological District, Hannover, Germany

This model ecological housing district is Hannover's newest growth area. Designed and built as a model development for the 2000 World Expo, it incorporates almost every urban sustainability or ecological design element imaginable. The sustainability dimensions begin with its basic form: relatively high-density, multi-family housing, sited along a new line of the city's tram system (with three very accessible new tram stops), and with a car-minimal grid street pattern. The entire district is a traffic-calmed (30 km restricted) zone, with extensive bike lanes and onsite car sharing providing additional alternatives to the automobile. A parking space ratio of 0.8 per apartment was set to reduce parking space needs. The district's new town hall takes sustainability as a key theme. This building is constructed from sustainable materials, with PVs on its rooftop, and houses social service offices, meeting space, and a library specializing in the environment.

The district captures and contains all stormwater onsite through an innovative system of treatment bioswales that feed into two long stormwater retention boulevards, serving also as important green features and delightful pathways (see Figure 11). The Germans refer to this as the *Mulden-Rigolen-System*, or gully and trench system. Through this stormwater collection system and a number of other water design elements, water is present and made visible in this community. Other sustainability features include extensive use of green rooftops, green courtyards and water features, and community gardens.

The district was designed and built with attention to green space and landscape. During construction, more than 60 ha were reforested and a soil management plan was created to guide the reuse of excavated soil. The Kronsberg district has 5–10 percent more open green space than conventional urban areas. There are five transverse green corridors and a hilltop woodland surrounding the development



Figure 11 Natural stormwater collection system at the Kronsberg Ecological District, in Hannover, Germany. Source: Photograph by Timothy Beatley.

Translation of the building code, as it appears on the map “Stockholms Stadsbyggnadsordning”

- “Gamla Stan”** - The Old Town has a core of medieval pattern with dwindling long streets and alleys. (Study-visit: *The Old Town*)
- “Stenstaden”** - The Inner City (litt. “The Stone City”) is characterized by enclosed blocks of equal height with buildings from different times. It consists of the classical city’s strict network pattern, the freer form of the large-courtyard houses, and contains some remnants of earlier plans as well as newer additions. (Study-visit: *Södermalm*)
- “Äldre Förstad”** - Older outer city, has 3-4 storey housing in a pattern reminiscent of the large-courtyard houses.
- “Villastad”** - Literally “Villa city”, has free-standing villas and a street network that is often irregular as it is adapted to the terrain. Plots vary greatly in form and size as a result.
- “Trädgårdsstad”** - Garden City, with a stricter street pattern than the villa areas. The classification includes as well classical Garden City areas as other small housing areas. (Study-visit: *Tallkrogen*)
- “Stenstadens Krans”** - The inner city rim is characterized by high multi-family housing in a decidedly open composition. The terrain is often uneven and hilly.
- “Smalhusstaden”** - Narrow-Block Housing areas consists mostly of 3-story houses placed parallel to each other in open plan patterns, but also similar houses placed group-wise around courtyards into neighborhood units. (Study-visit: *Hammarbyhöjden*)
- “Tunnelbanestaden”** - The Subway City, contains “ABC-Staden” (“ABC” stands for “Working, Living, Centre”, a sort of complete-life content), group-housing areas, row- and attached houses, and point-block buildings. The category also contains the more large-scale suburbs of the 1960s and -70s. (This rather wide category that roughly corresponds to the million housing homes outside of the city. Study visit: *Farsta* and *Sätra*)
- “Nyare Stadsenklav”** - Newer inner-city enclave – areas from the 1980s and 1990s with multi-family housing following a pattern drawing from the traditional inner city. (Study Visit: Can be seen west of Medborgarplatsen on Södermalm)
- “Nyare Kransstad”** - Newer city rim, built in the periphery of the inner city with a more open plan than the inner city to benefit for local conditions, while inspired by traditional city plans.
- “Institutionspark”** - Large, free-standing buildings placed in a park or otherwise according to the site’s conditions. For instance different Campuses.
- “Verksamhetsområde”** - Industrial areas, including harbor areas, terminals for public transport, office areas as well as industries. The office areas are often planned in a pattern with enclosed blocks.

Stadsbyggnadskaraktärer



GAMLA STAN



STENSTAD



ÄLDRE FÖRSTAD



VILLASTAD



TRÄDGÅRDSSTAD



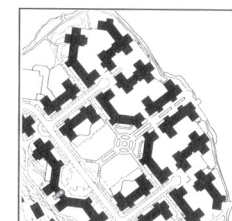
STENSTADENS KRANS



SMALHUSSTAD



TUNNELBANESTAD



NYARE STADSENKLAV



NYARE KRANSSTAD



INSTITUTIONSPARK



VERKSAMHETSOMRÅDE

