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→ SURVEY OF THE SWEDISH APARTMENT

A REPORT ON ALL MULTI-RES HOUSING APPROVED IN THE STOCKHOLM REGION IN THE RECORD YEAR OF 2017

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SURVEY OF THE SWEDISH APARTMENT

Grön BoStad Stockholm
Samverkan för hållbar stadsutveckling

RIKSBYGGENS JUBILEUMSFOND
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INTRODUCTION

Survey of the Swedish Apartment is a report that summarizes the findings of a two-year research study by Secretary, a Stockholm-based architecture office directed by architects Karin Matz and Rutger Sjögrim, and planner and architectural theorist Helen Runting.

This report summarizes the findings of research undertaken by Secretary between 2018 and 2019, whereby we collected and analyzed architectural drawings (plans, sections, and elevations) of all multi-res housing (*flerfamiljsbostadshus*, a term we choose to translate as "multi-resident" (shortened to "multi-res") housing in order to acknowledge household structures beyond the nuclear family, including one-person households) that received a building permit (*bygglov*) in the Stockholm region (defined by the borders of the County of Stockholm, *Stockholms län*), in the "record year" 2017, the height of a recent building boom. The primary purpose of the report is to fulfil reporting responsibilities in relation to two funding bodies, Grön BoStad Stockholm at the Royal Institute of Technology (*Kungliga Tekniska högskolan*, KTH), and Riksbyggens Jubileumsfond Den Goda Staden, which supported this research.

Survey of the Swedish Apartment is structured by way of three analytic perspectives, namely: the whole, the average, and the example. Tables, diagrams, maps, text-based descriptions, and/or illustrations provide an account of the distribution, disposition, quantities, and qualities of the 14,546 apartments that were approved in the Stockholm region in 2017. Our aim is to give a critical glimpse into a future that is rapidly becoming the present, as it is being built around us. This is a future that we (all) approved: a building permit is required in Sweden to construct a new building, or make changes or additions to existing buildings, under a range of circumstances. A complete set of architectural drawings are submitted with the application, which are stamped when approval is granted. These drawings can be obtained through a public information request, and this mechanism was used to produce The Archive of Building Permits, upon which the present study is based.

An extended analysis, which is accompanied by a complete set of drawings from The Archive, will be published in the book *The Apartment* (*Bostadsatlas*) in early 2020.

Illustrative plan taken from The Archive of Building Permits (Secretary, 2019) providing an example of an approved building permit (*bygglov*).

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METHOD

Using methods we describe under the rubric of "lo-fi (quite)big data" analysis, and situated within the broader field of practice-based research in architecture, through this work Secretary has sought to contribute to a"quantative architectural criticism" of the near future, and to design, build, and disseminate archival documentation of a city that is being built as we speak...

→ 2.1 THE FUTURE OF THE RECENT PAST: AN ARCHIVE FOR THE COMING TWENTY-TWENTIES

Architecture is a "thing" (a job and a field of knowledge, a technology for organizing stuff, and an environment we live in) that inevitably shapes and molds the human lives that it comes into contact with. In this lies architecture's emancipatory potential, for the individual, the collective, and the population at large, and it is because of this capacity that architecture matters, to all of us. Deeply. We should pay close attention to architecture. We should follow its every move. And we should be particularly on our toes when it comes to 2017, a year in which architecture shaped more lives than ever in the Stockholm region. In the daily and professional press, 2017 has subsequently been referred to as "The Record Year" (*Rekordåret*).

In 2015, the Swedish National Board of Housing, Building, and Planning (*Boverket*) announced that whilst 29,000 new dwellings had been built in Sweden in 2014, closer to 70,000 new dwellings would be required per year 2015-2020, and 50,000 dwellings per year 2020-2025, if Sweden were to feasibly house its projected population.[**1**] In January 2016, the Swedish Government responded with a series of reform measures in line with an updated prognosis that increased this number to 70,000 per year 2016-2025.[**2**] These developments, which were driven in part by a wave of immigration that was abruptly stopped with the closure of Sweden's borders later that year, precipitated widespread calls for action in relation to an emerging "housing crisis" (*bostadsbristen*).

From an architect's perspective, the mood between 2015 and 2017 was one of jubilance and burn-out. The sectoral reports (*branschrapporter*) of Architects Sweden (*Sveriges Arkitekter*) chart the ensuing journey in their titles—from

"A Unique Chance to Advance" (*En unik chans att flytta fram positionerna*) in 2015 to "Architects Have Become a Scarce Commodity" (*Arkitekter har blivit bristvara*) in 2016 to "Towards New Markets" (*På väg mot nya marknader*) in 2017, the market analysis of which was ominously titled "The Locomotive Slows" (*Dragloket saktar in*) to 2018's "A Dip in the Curve, Or a Deep Plunge?" (*Hack i kurven eller djup nedgång?*) with market analysis ambiguously titled "A Return to Normal" (*Tillbaka till normalläge*).[**3**]

In 2019, it seems that "plunge" might in fact be more likely than "dip": the present rate of housing construction is down by 11% compared to last year, and the construction of tenant-owned apartments (*bostadsrätter*) is down by 65% compared to the "record year" of 2017.[**4**] To be fair, the dizzying end of the "good times" has in fact left many actors reeling in Sweden—from the 7,000 construction workers who have lost or are projected to lose their jobs in the period 2018-2020,[**5**] to the countless architects also facing redundancy,[**6**] to the developers who have nervously put projects on ice that are equivalent to 9,000 rental apartments nationally,[**7**] to the 71,000 people actively waiting for a rental apartment in the Stockholm Housing Agency (*Bostadsförmedlingen*) queue who will still likely not get a contract this year.[**8**]

But what did the "record year" of 2017 leave us for a present—what kind of future did we approve, when those 156 building permit applications were stamped by the their respective muncipalities? What kind of distributed living environment do those 14, 546 apartments constitute? In constructing an archive of the present, we hope to contribute to a critical discussion of the near past in the near future. We see the construction of the archive as a design research task as much as it constitutes a quantative analysis task, and as contributing to a practice we have begun to think of in terms of a "quantitative architectural criticism."

→ 2.2 CREDITS, PLEASE!

Whether you want to live in it, draw in it, build it, analyze it, or critique it, "architecture" is an activity best done with others. From a feminist perspective, *ethical citational practices*—the rigorous acknowledgement of the intellectual and practical friendships and support that inform a given work—are a crucial part of producing knowledge that can be called "new." As philosopher and architect Hélène Frichot, an important intellectual friend in relation to our work, comments, "Even seemingly novel concepts admit some genealogy, they don't arrive from nowhere. All concepts are smudged with the dirt of many hands... ."[**9**]

The idea that planning permission can act as a window onto the city of the near future, which is one of the key premises of this "Survey," has its roots in an earlier public art project, *Bygglovsboken*, undertaken by the authors of this report along with Joël Jouannet, Ola Keijer, Sara Liberg, and Markus Wagner, working as the architectural collective Svensk Standard (additional members of which include Fredrik Andersson, Mattias Beckman, Anders Berensson, Caroline Ektander, Kristin Gausdal, Daniel Johansson, Martin Losos, Andreas Nordström, and Kristina Sundin).

Bygglovsboken took the form of a book and a public program; it was produced in response to a competition arranged by Eva Bonniers donationsnämnd, a foundation for public art, in 2014. Svensk Standard was one of ten winners awarded a budget of 30,000 Swedish crowns and the opportunity to exhibit their work in the exhibition EVA! at the Royal Swedish Academy of Fine Arts (*Kungliga Konstakademien*) in Stockholm. *Bygglovsboken* aimed to act as a neutral reference document, describing itself as an "uncurated catalogue of undoctored floor plans and sections, from the 51 multiresidential developments that were given a building permit within the City of Stockholm [in 2014]."[**10**]

The public program comprised of three public discussions of the material: the first was held in English, and took place between architect and editor Jack Self, architect and philosopher Hélène Frichot, economic historian Erik Bengtsson, and architect and anthropologist Jennifer Mack; the second was held with three Swedish architects Petra Petersson, Erik Stenberg, and Björn Wiklander; the third conversation was between Svensk Standard and the general public. All of these events were held in late 2015. The book was distributed for free to visitors to the exhibition, to staff and students at the KTH School of Architecture in Stockholm, and to those who asked for a copy afterwards. "Survey of the Swedish Apartment" builds on this earlier project in terms of both an interest in compiling a complete set of apartment plans and some of the categories used to structure the data. Instead of a neutral evidence base, however, the present project aspires to provide a critical and quantitative analysis of its material, and to explore new (critical-quantitative) methodologies for architectural criticism in the process.

Bygglovsboken, Svensk Standard, 2015.

Bygglovsboken, the second of three discussions, Svensk Standard, 2015.

Rather than simply compiling a database that gives an overview of current conditions, we are interested in producing an archive that can politicize those conditions. This orientation is one that aligns with a broader "archival" moment in architectural research. It is perhaps no surprise that architects and other actors have recognized the need to formulate a new politics of the archive in the face of a renewed cybernetic impulse for rapid digitization, the rise of "big tech" through corporate ownership of "big data," as well as the advent of "fake news." A potent example of such critical archival work exists in the pioneering studies of the Forensic Architecture research agency, which have been theorized by Eyal Weisman and disseminated via the group's exhibition work, globally.[**11**]

At home, though, in Stockholm, we are also situated within an ecology of practices that avail themselves of archival technologies in order to expose and challenge

power relations within the built environment. These include the activities of "Mapping the Unjust City" (*Vem äger staden?*) through Maryam Fanni, Elof Hellström, Åsa Johansson, Sarah Kim, and Paula Urbano; "Arkitektur-revisionen" through Arram Eckerbom, Adam Ulveson, and Mathew Newton; as well as the 3D-printed archive of prefabricated panel building systems prepared by José Hernandez in association with the work of curators Pedro Alonso and Hugo Palmarola, and the teaching and research activities of Helena Westerlind, which have been shown in the exhibition "Welfare Panels: Building Systems of the Swedish Million Program," curated by Erik Stenberg and Helena Westerlind at Tensta konsthall in Stockholm in 2018, and in "Flying Panels: How Concrete Panels Changed the World," curated by Alonso and Palmarola with Carlos Mínguez Carrasco at ArkDes, Sweden's national center for architecture and design, in Stockholm in 2019-2020.

One cannot discuss "credit" without touching upon the financial flows that physically sustain intellectual labor. The economics of the project, in other words. And as Katrine Marçal reminds us, "Regardless of the seductive elegance of mathematics, we can't get away from the fact that at its core economics is based on the human body. Bodies that work, bodies that need care, bodies that create other bodies... And a society that can support them."[**12**] The research described in this report took approximately 1,400 lived hours in total to produce. One third of those hours were made possible through the financial support of Grön BoStad Stockholm at KTH, in particular through Erik Stenberg, who has also spent many hours of his own sharing his knowledge about the history of Swedish residential architecture with us, and acting as an important intellectual friend in this work. Just under a fifth of the total hours were made possible by a research grant from the foundation Den Goda Staden, which is managed by Riksbyggen, a Swedish housing company that is owned by the building unions, housing associations, and other cooperative associations. We note that we have also made a number of unsuccessful applications for funding for this project (namely to ARQ, Ivar och Anders Tengboms fond, and the Centrum för boendets arkitektur at Chalmers University of Technology). This is a big project, and not something that could be done in halves, and as such, half of the time taken to complete it (some 700 hours) has fallen into the category of unwaged labor, and work on evenings, weekends, and in snatched moments between other things, a common condition of research undertaken outside of the academy. This adds a personal and political urgency to the dissemination of our findings.

→ 2.2 LO-FI (QUITE)BIG DATA

The research that is summarized in this report is situated within the emerging field of "practice-based research" within architecture and in Sweden. Architect and researcher Anna Sundman and her colleagues at Theory Into Practice describe this category of work as one whereby "architectural practitioners use the tools and methods of architecture in order to undertake research studies, or where through the application of architects' methodologies and tools, an innovative, socially relevant development of the architectural discipline is made possible."[**13**] To undertake research within practice is to use the tools of the practitioner—the trained capacities that come from repeatedly *doing*, from again and again confronting the same specialized tasks. This is often discussed in terms of a situated, embodied, tacit, and reflexive knowledge. The boundary between academic research and practice-based should not, however, be read in terms of a neat split between theory and design, and we note that the present work has also been informed by a research education, through a doctoral degree within architecture theory, whereby theoretical reflection has been conducted alongside analysis, collation, and design, as a parallel line of inquiry, by all three researchers.

Practically, the study proceeded as follows:

- The 26 municipalities belonging to the County of Stockholm (*Stockholms län*) were contacted via email using a contact list obtained from the County, and asked to supply, under public information law, a full set of the drawings and documents (*kompletta handlingar*) submitted with approved applications for building permits (*bygglovsansökningar*) for multi-res housing (*flerfamiljsbostadshus*) for 2017.
- As these packages of documents arrived, some digitally and some manually, over the following six months, they were saved into a file structure that ordered the material by municipality.
- This initial raw data, which comprised of 166 building permit packages, from the 23 municipalities that reported having received such applications, was distributed equally between the three researchers, and an initial review of the raw data was conducted, with the purpose of understanding the scope of the material that made up the packages.
- A spreadsheet was then composed that contained 77 parameters, which were decided by Secretary in several internal workshops, in response to ongoing ad hoc discussion in the office, and in conversation with Grön BoStad's Steering and Project Committees. A second review of the raw material was conducted, and data on the 77 parameters was recorded for the 166 building permit packages in the spreadsheet.
- The spreadsheet and its parameters, along with preliminary findings, were reviewed in an all-day internal workshop based on an ongoing ad hoc discussion in the office about deviations and patterns that we had observed in the data. Some parameters were removed from the spreadsheet, and others were added, and a final spreadsheet was composed that comprised of a total of 114 parameters. A number of document packages were also removed due to the exclusion of several categories of housing (namely, assisted living facilities and attached single-family housing), giving a total of 156 building permits.
- The material was divided up again between the three researchers, and the final review was undertaken over a period of approximately 6 months. In total, 17,784 pieces of data were manually inputted into the spreadsheet, which accounted for 329 buildings and 14,546 apartments.
- This data was then formatted, anomalies were checked, and cross-referencing functions were added to the spreadsheet. All diagrams were generated using Microsoft Excel, and all maps were drawn using Adobe Illustrator.
- The data was analyzed over a 1-month period in line with a schedule of presentations of preliminary findings that were arranged for the relevant funding bodies and academic institutions, whilst at the same time two conference papers, this report, and the book were being written.

In this project, we deliberately employed "the trained eye" of the architect and the planner in reading what we have come to think of as "(quite)big data." What we mean when we talk about "reviewing" the "material" above comprised of sitting at a computer, opening .pdf files of architectural drawings (which were often scans of physical documents, because of the stamp that is used to approve permits, and thus sometimes of compromised quality), "counting" things that needed to be counted, measuring things (using the scale tools in Adobe Acrobat), and zooming in and out of the drawings in order to try to identify patterns and anomalies in the basic organizational structures of apartments and buildings. The excel spreadsheet acted as a space of notation, and in complex permits, a second spreadsheet was created in order to calculate room areas. At times, we also downloaded promotional material, in particular about the dimensions of apartments (*bofaktablad*) from the promotional websites associated with the particular developments. At times, we needed to return to the municipality for further drawings, but note that the

planner's perspectice has not formally been addressed as part of this study (we didn't discuss the nature of the material with the planners we contacted). We would like to extend our deep gratitude to all of the planners (*bygglovshandläggare*) and administrative staff who so professionally assisted us in this task.

The things that we have in particular sought to understand through this review process, which are reflected in the parameters of the study, are:

- The location of the project in the region, municipality, and surrounding area;
- The actors involved in the application for planning permission, and the categories of ownership that define the projects;
- The form of the buildings making up the project, and their disposition on the site;
- The number, area, and arrangement of apartments and other premises within the buildings, including the stairwells and access provisions; and
- The disposition of functions within apartments.

Through ongoing ad hoc discussions, as well as the workshops, we developed a set of "concerns." These concerns also informed the parameters that we investigated, and are used to structure the coming analysis. These can be explained in terms of the following critical and normative questions, which are motivated by a desire to disprove a worst-case scenario:

- Are apartments getting smaller?
- Are apartments getting darker?
- Is everything that we build designed for one-person households or nuclear families?
- If the typologies and floor plans of Swedish modernism still constitute the dominant norm, have they mutated, under the conditions we might term "the late Welfare State"?
- Are very few actors, operating within the same networks of consultants, designing and building the vast majority of Stockholm's housing?
- Are some municipalities failing to deliver new housing at all, in the midst of a housing crisis?
- Are we approving more tenant-owned (bostadsrätt), and thus private, housing than rental housing?
- Have functions that were previously located outside of the apartment moved to the interior?
- Is the perimeter block becoming hegemonic with respect to urban structure?
- How commonly are minimum standards challenged and even broken, and what form(s) do these deviations take?

The nature of this work process means that a degree of incorrectness can be expected in the data. These are partly due to the subjective nature of many of the decisions taken within the analysis (an intentional consequence of our method of employing the trained eye), the speed at which the data had to be processed (in part, an economic question), the quality of the plans (due to the scanning process, and varying drawing standards and conventions), and the large amount of data (17,784 entries) that were manually entered into the spreadsheet by three researchers. That said, we note that between our two different measures of the number of apartments (14,546), we located a deviation of only 16 apartments. We understand that performing the analysis manually like this may seem counterintuitive, and that a programming solution may have offered a faster and more reliable method, but we believe that the discursive and critical functions of this "lo-fi" approach to "(quite)big data" outweigh those efficiency gains.

We note that many of the parameters included in the dataset are yet to be analyzed, and that we hope in time to have the opportunity to represent and disseminate the bulk of the data. An extended analysis, which will be accompanied by a complete set of architectural drawings from the Archive of Building Permits, will be published in the book *The Apartment* (*Bostadsatlas*) in early 2020.

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ANALYSIS PART ONE: THE WHOLE

Survey of the Swedish Apartment aims to design and disseminate archival documentation of a city that is being built as we speak. What is this city? What form does it take?

A total of 14,546 apartments were approved in the year 2017 in the Stockholm region, contained within 347 building volumes, approved through 156 building permit applications. In total, 845,846 square meters of living space (*bostadsarea*, or *BOA*) was approved.

Three municipalities within the Stockholm region did not report any planning approvals for multi-res housing in 2017, these were: Salem, Danderyd, and Vaxholm. We note a pronounced correlation whereby municipalities in which the population maintains a high median income have low (or in a number of cases, zero) planning approvals for multi-res housing (see Map 4). Two of the municipalities that did not approve any multi-res housing are in the top four wealthiest municipalities.

The City of Stockholm approved 44 planning applications, containing 302,872 square meters of living space (*BOA*), a staggering 36% of the total approved living space in the region. The City of Stockholm accounted for 4,844 apartments, or 33% of all apartments, approved in the region. It was by far the leading muncipality in the approval of multi-res housing. Stockholm, along with the three muncipalities of Järfälla, Sollentuna, and Sundbyberg, forms a group that accounts for 55% of the total living area approved within the Stockholm region, and 52% of the total number of approved apartments.

Of the 156 building permit applications addressed in the study, 101 were for tenant-occupied housing (*bostadsrätt*), and 38 were for rental housing (*hyresrätt*). The rental housing that was approved maintained a wide geographic spread across the region.

In general, approved housing tended to be located along key transportation corridors. This correspondence is clearly seen in Map 3, which shows that the distribution displays a radial pattern following key commuter train, subway, and road connections out of Stockholm. This is a positive fin-

ding, we believe, with respect to planning goals for sustainable urban development.

In looking at the size of the apartments that were approved, we note that 25% of all approved dwellings were studio apartments (*1:rok*), and 39% were one-bedroom (*2:rok*), together comprising 64% of all apartments in the region. Further, under Swedish regulations (set out as requirements in Boverkets Byggreglar and as standards in SIS's "Building design—Housing—Interior dimensions"), one-bedroom apartments (*2:rok*) that are *55 square meters and under* are intended to house a one-person household (this affects the minimum size of the bedroom and storage requirements, which are both allowed to be smaller when an apartment is intended for one person). A staggering 80% of all one-bedroom apartments (*2:rok*) considered in the study were found to be under this limit. This means that in total, 56% of the housing approved in the Stockholm region was intended for one-person households in 2017. This equates to 334,133 sqaure meters or 40% of the living area (*BOA*) that was approved in the Stockholm region. To our knowledge, there are few (if any) legal hindrances to one-person apartments being inhabited by more than one persone (rental contracts can specify a maximum, but is certainly not always the case). The risk for the creation of conditions of future overcrowding is, in our view, high. A similar limit applies to studio apartments (*1:rok*) of *35 squares meters and under* (whereby the minimum length of the kitchen bench is shorter, and the requirement to accommodate a possible separate sleeping area is suspended). We found that 76% of all studio apartments (*1:rok*) were 35 square meters and below.

These observations about the size of apartments lead us to conclude that minum requirements and standards are acting as the norm and the average in housing production. This is of serious concern for the quality of our future living environments. We address the issue of the "average" in the following chapter.

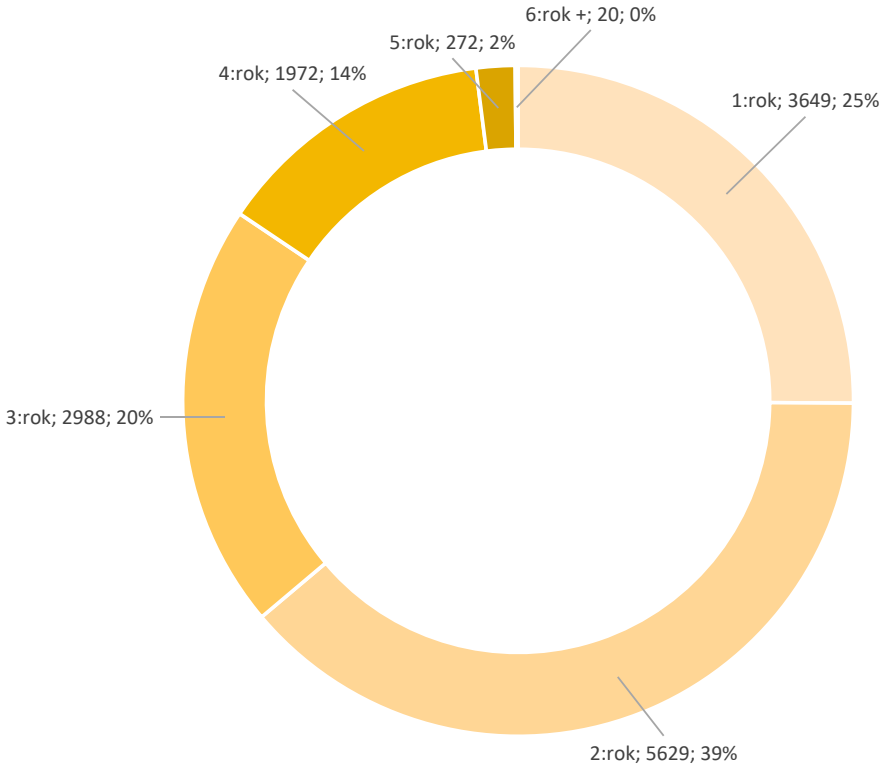


FIG 1
SIZE OF APARTMENTS (NUMBER AND PERCENTAGE OF TOTAL NUMBER) STOCKHOLM REGION, 2017

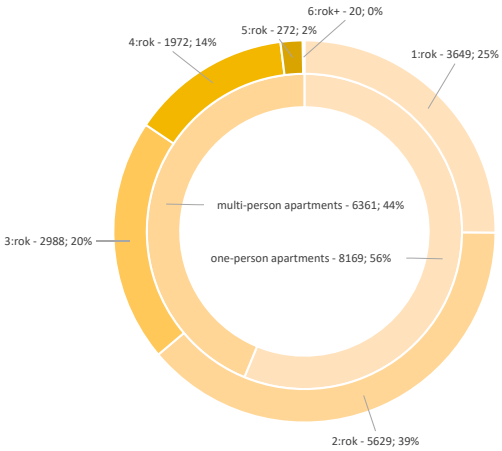


FIG 2
SIZE OF APARTMENTS (NUMBER AND PERCENTAGE OF TOTAL NUMBER), STOCKHOLM REGION, 2017

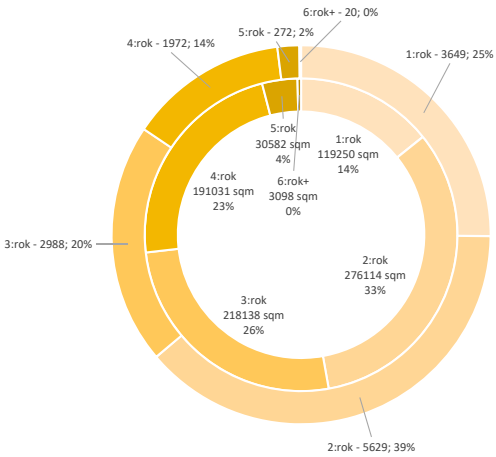


FIG 3
NUMBER OF APARTMENTS (OUTER RING) & SQM AREA OF LIVING SPACE (*BOA*), ACCORDING TO SIZE (INNER RING), STOCKHOLM REGION 2017

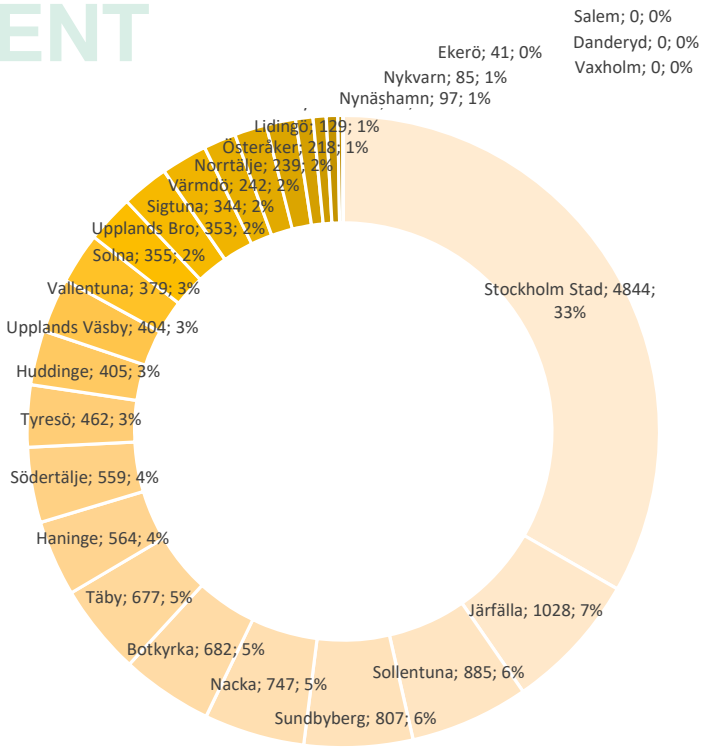


FIG 4
TOTAL NUMBER OF APARTMENTS APPROVED PER MUNCIPALITY, STOCKHOLM REGION, 2017

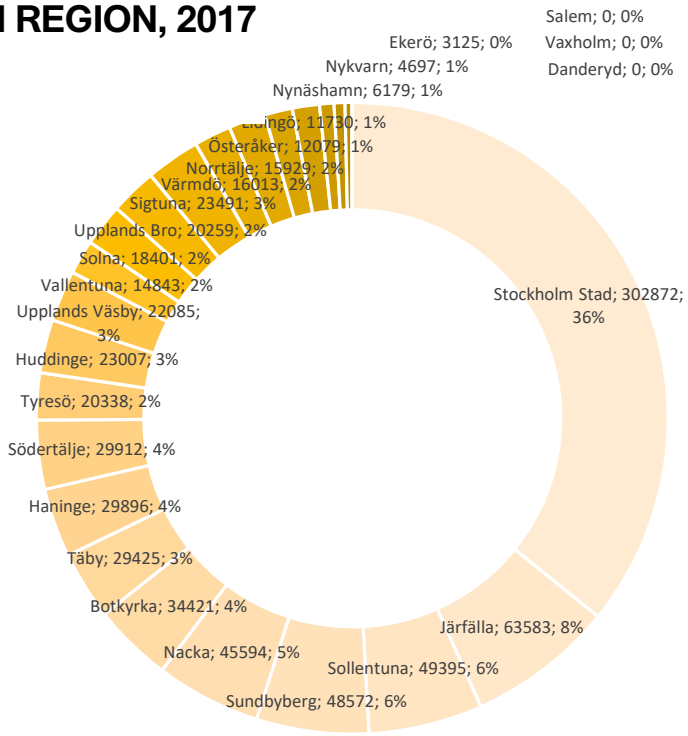
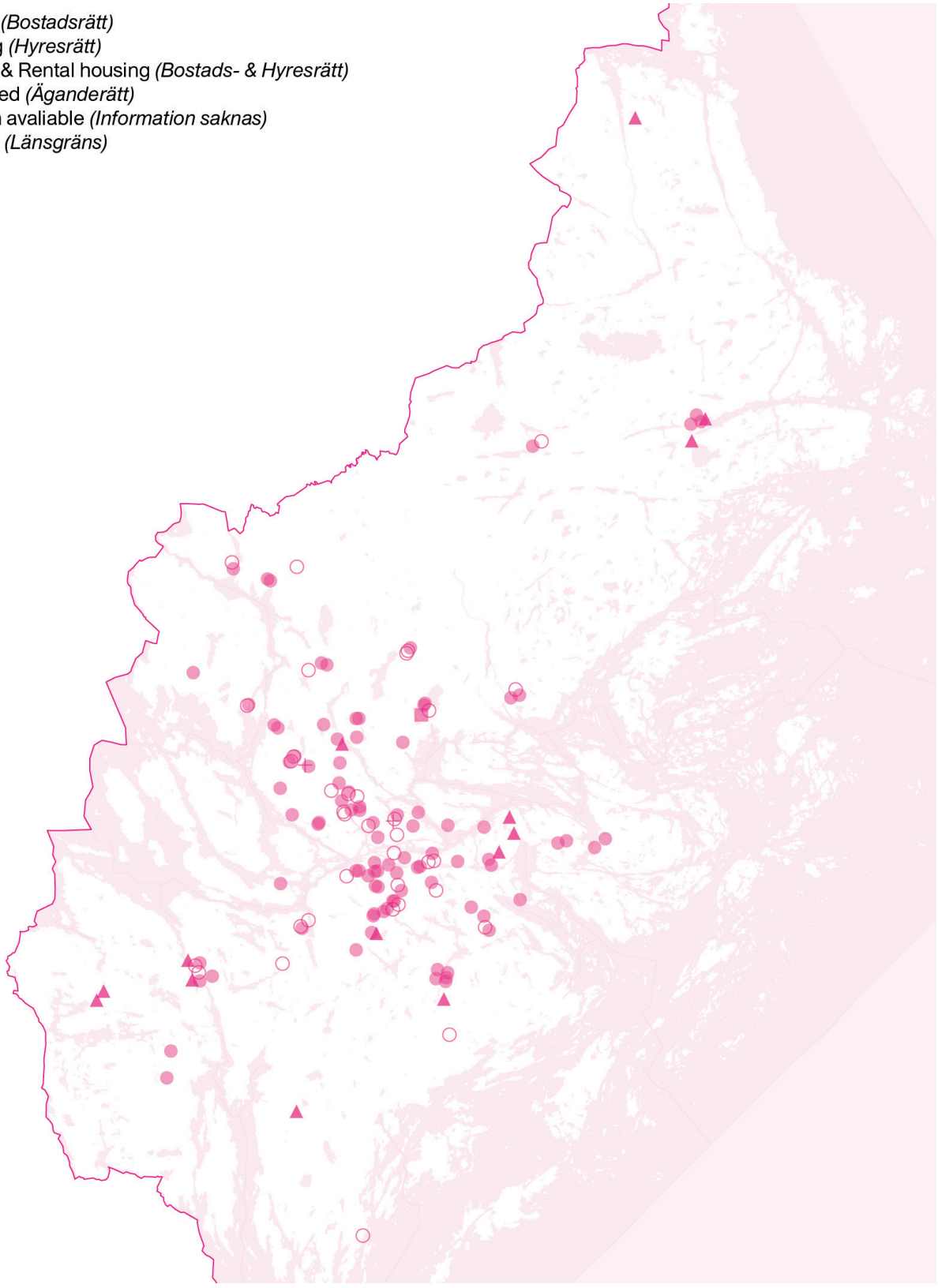


FIG 5
TOTAL LIVING SPACE (*BOA*) APPROVED PER MUNCIPALITY IN SQM, STOCKHOLM REGION, 2017

MAP 1 DISTRIBUTION OF APPROVED BUILDING PERMITS FOR MULTI-RES HOUSING IN THE STOCKHOLM REGION, 2017, BY TENURE TYPE (*UPPLÅTELSEFORM*)

- Tenant owned *(Bostadsrätt)*
- Rental housing *(Hyresrätt)*
- Tenant owned & Rental housing *(Bostads- & Hyresrätt)*
- Owner Occupied *(Äganderätt)*
- No information avaliable *(Information saknas)*
- County Border *(Länsgräns)*

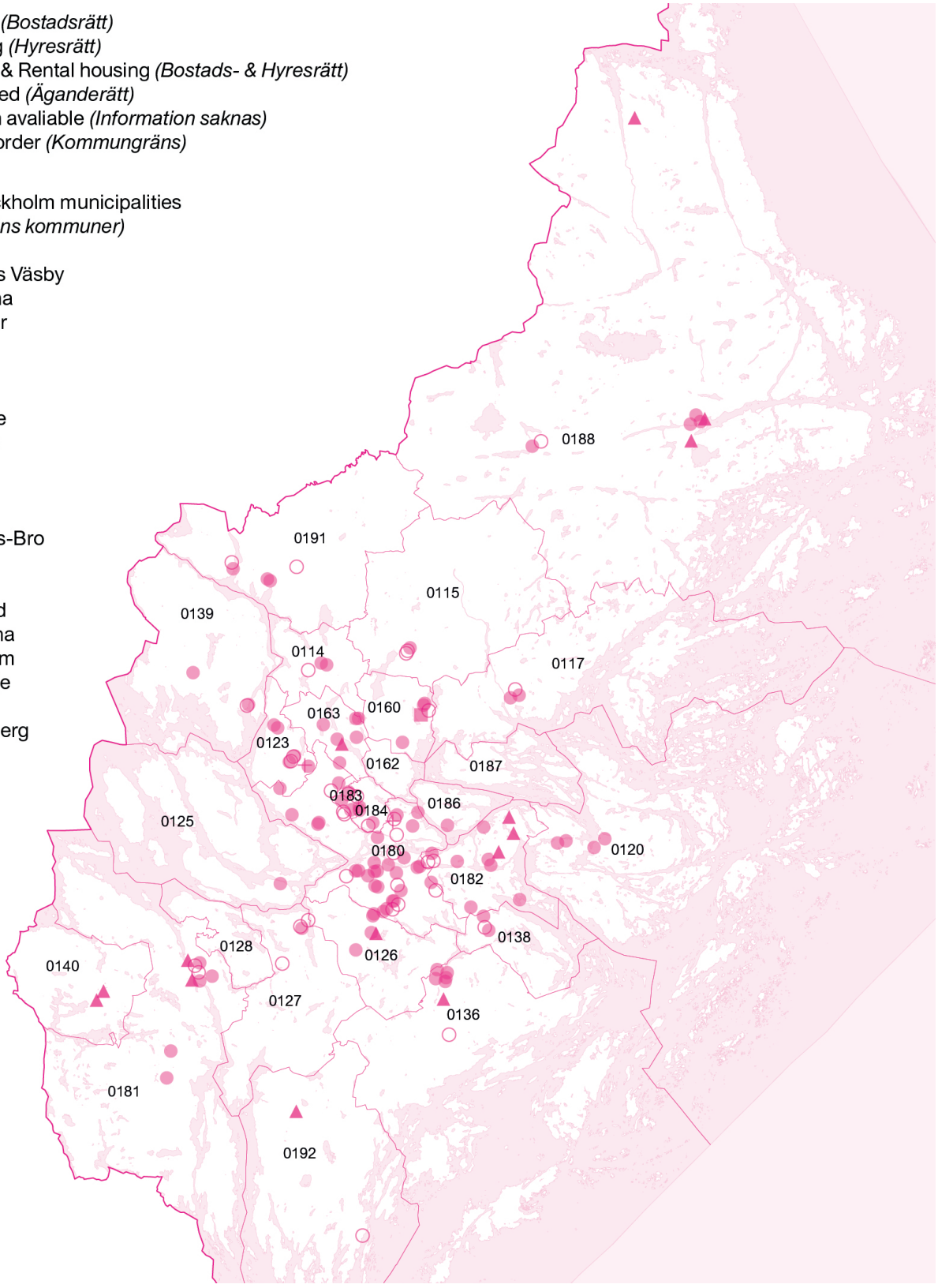


MAP 2 DISTRIBUTION OF APPROVED BUILDING PERMITS FOR MULTI-RES HOUSING IN THE STOCKHOLM REGION, 2017, BY MUNCIPALITY

- Tenant owned *(Bostadsrätt)*
- Rental housing *(Hyresrätt)*
- Tenant owned & Rental housing *(Bostads- & Hyresrätt)*
- Owner Occupied *(Äganderätt)*
- No information avaliable *(Information saknas)*
- Municipality border *(Kommungräns)*

County of Stockholm municipalities
(Stockholms läns kommuner)

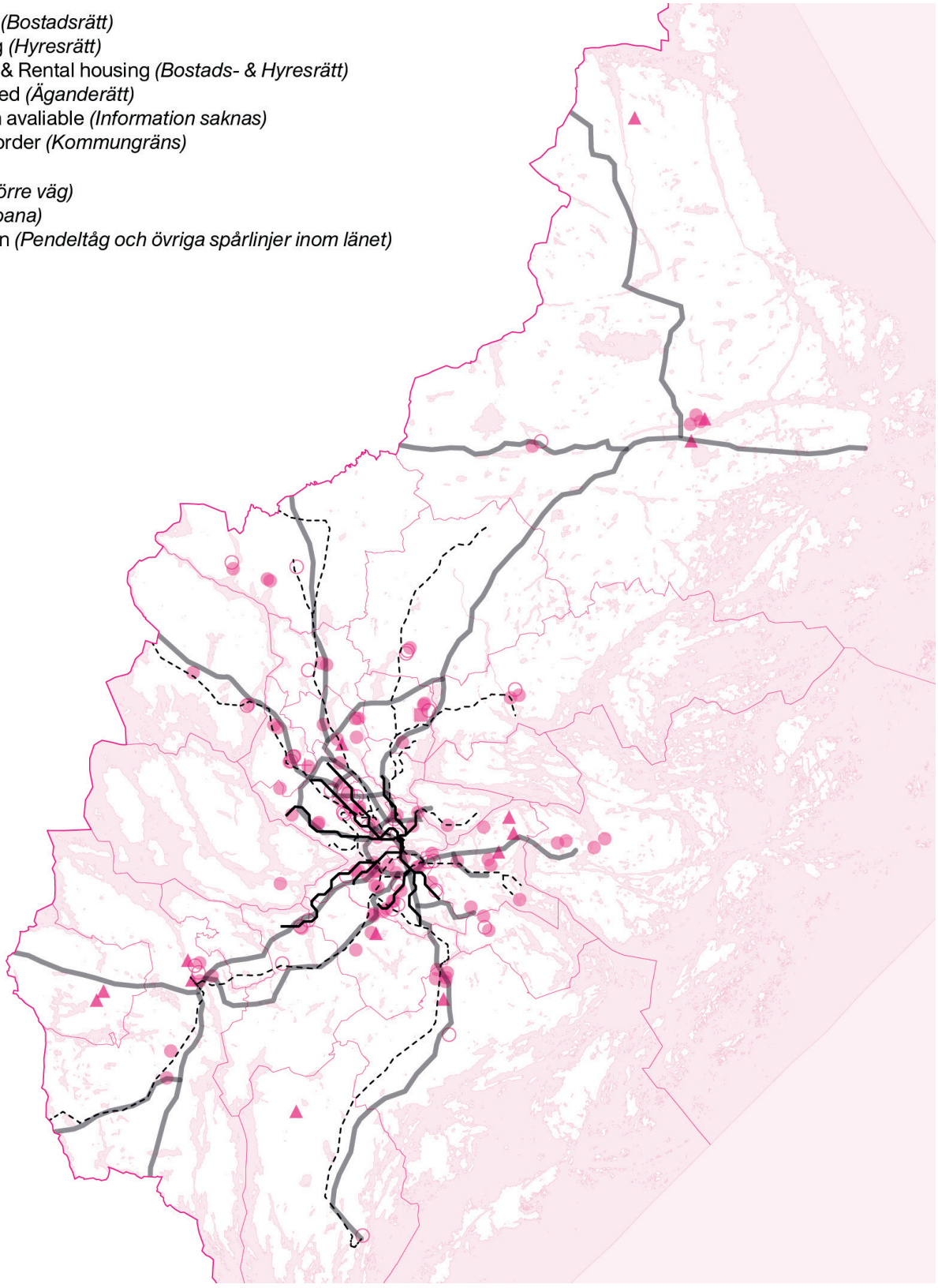
0114 Upplands Väsby
0115 Vallentuna
0117 Österåker
0120 Värmdö
0123 Järfälla
0125 Ekerö
0126 Huddinge
0127 Botkyrka
0128 Salem
0136 Haninge
0138 Tyresö
0139 Upplands-Bro
0140 Nykvarn
0160 Täby
0162 Danderyd
0163 Sollentuna
0180 Stockholm
0181 Södertälje
0182 Nacka
0183 Sundbyberg
0184 Solna
0186 Lidingö
0187 Vaxholm
0188 Norrtälje
0191 Sigtuna



MAP 3 DISTRIBUTION OF APPROVED BUILDING PERMITS FOR MULTI-RES HOUSING IN THE STOCKHOLM REGION, 2017, WITH TRANSPORTATION CORRIDORS

- Tenant owned *(Bostadsrätt)*
- Rental housing *(Hyresrätt)*
- Tenant owned & Rental housing *(Bostads- & Hyresrätt)*
- Owner Occupied *(Äganderätt)*
- No information avaliable *(Information saknas)*
- Municipality border *(Kommungräns)*

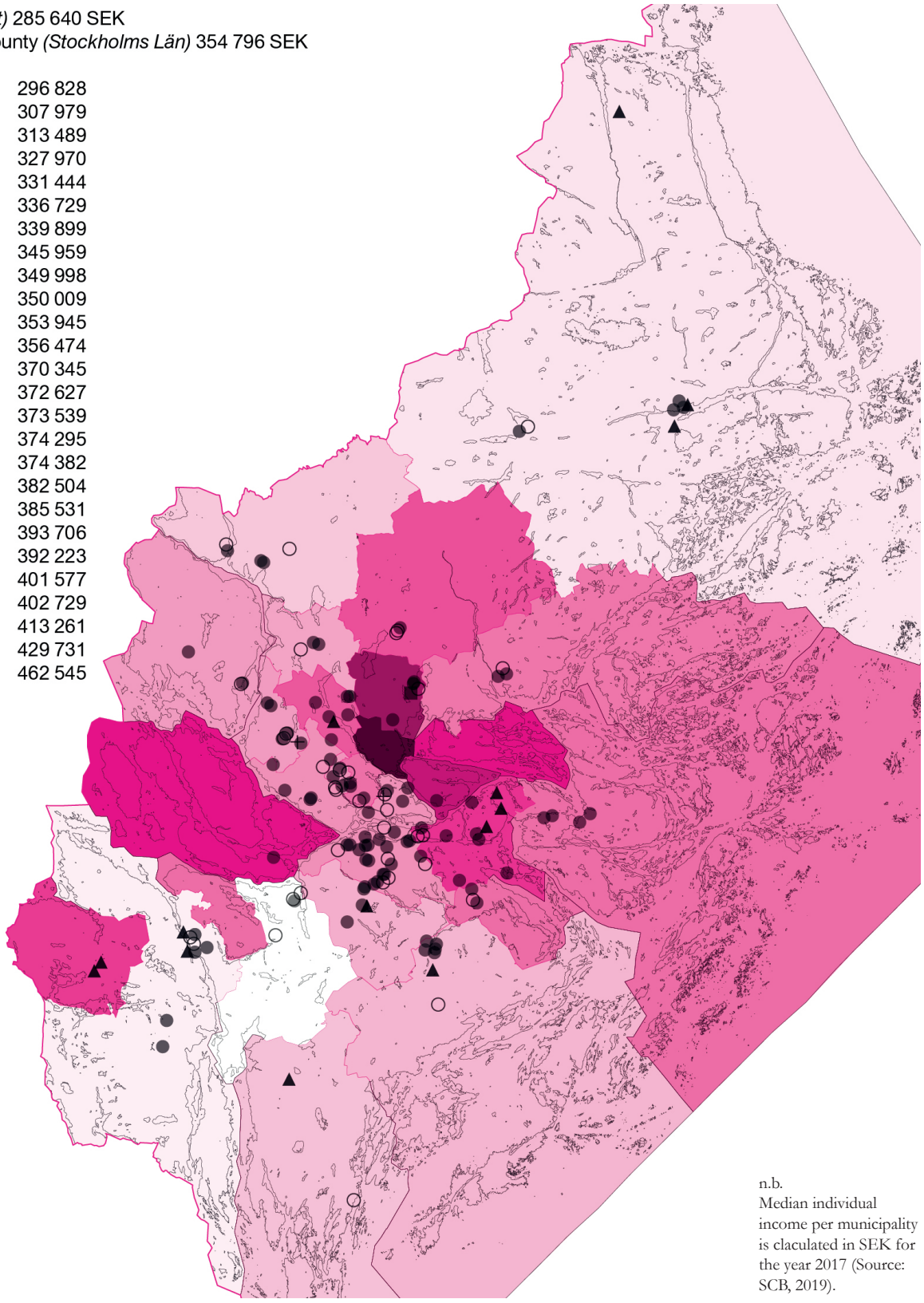
- Major road *(Större väg)*
- Metro *(Tunnelbana)*
- Commuter train *(Pendeltåg och övriga spårlinjer inom länet)*



MAP 4 DISTRIBUTION OF APPROVED BUILDING PERMITS FOR MULTI-RES HOUSING IN THE STOCKHOLM REGION, 2017, WITH MEAN INCOME LEVELS

The Country *(Riket)* 285 640 SEK
The Stockholm County *(Stockholms Län)* 354 796 SEK

Botkyrka	296 828
Södertälje	307 979
Norrtälje	313 489
Sigtuna	327 970
Nynäshamn	331 444
Haninge	336 729
Huddinge	339 899
Upplands Väsby	345 959
Järfälla	349 998
Upplands-Bro	350 009
Sundbyberg	353 945
Stockholm	356 474
Österåker	370 345
Solna	372 627
Värmdö	373 539
Tyresö	374 295
Salem	374 382
Sollentuna	382 504
Vallentuna	385 531
Nacka	393 706
Nykvarn	392 223
Ekerö	401 577
Vaxholm	402 729
Lidingö	413 261
Täby	429 731
Danderyd	462 545



n.b.
Median individual income per municipality is claculated in SEK for the year 2017 (Source: SCB, 2019).

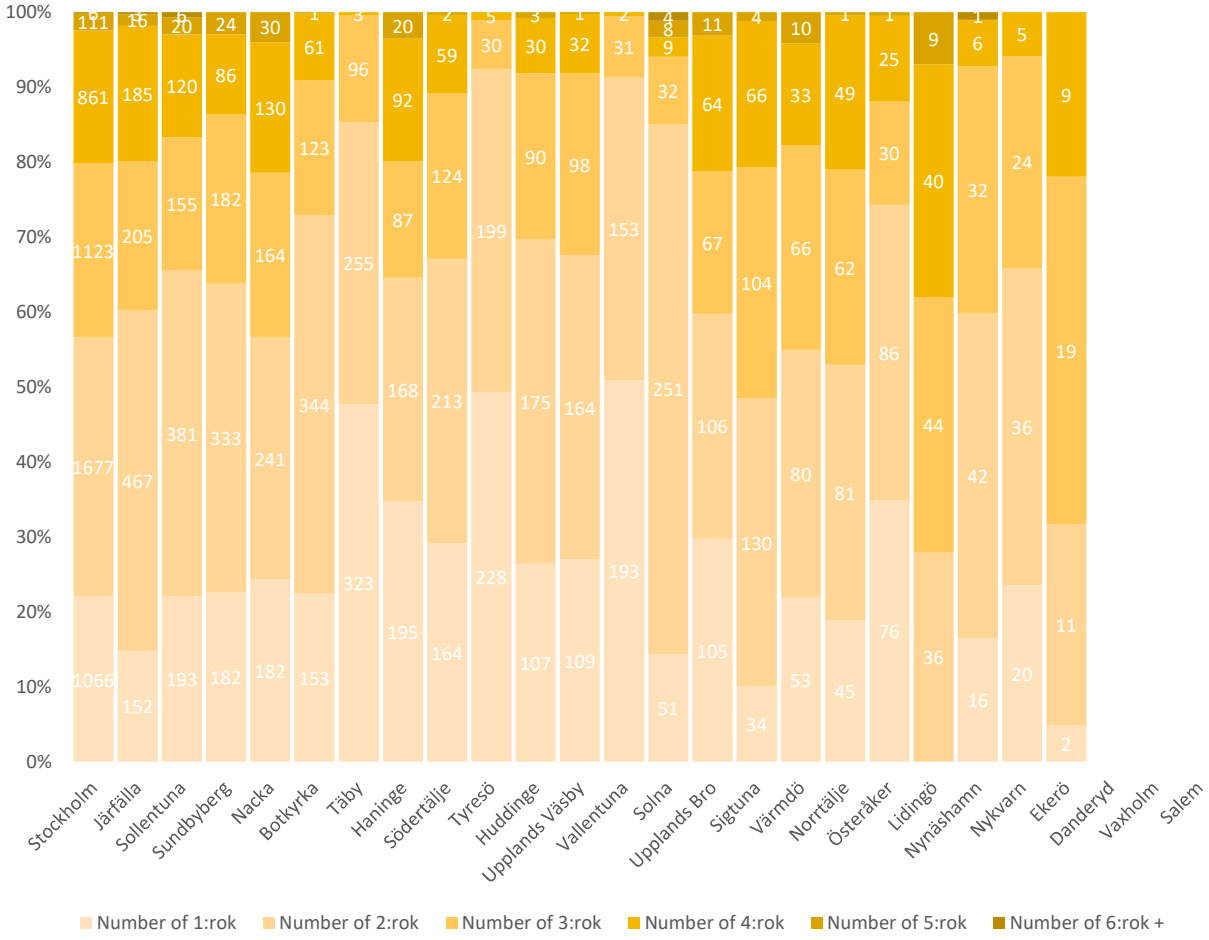


FIG 6 SIZE OF APPROVED APARTMENTS BY MUNICIPALITY, STOCKHOLM REGION, 2017

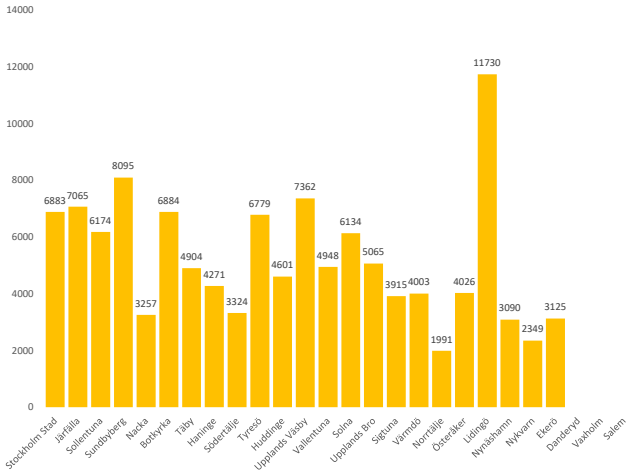


FIG 7 TOTAL LIVING AREA (*BOA*) PER APPLICATION (SQM), STOCKHOLM REGION, 2017

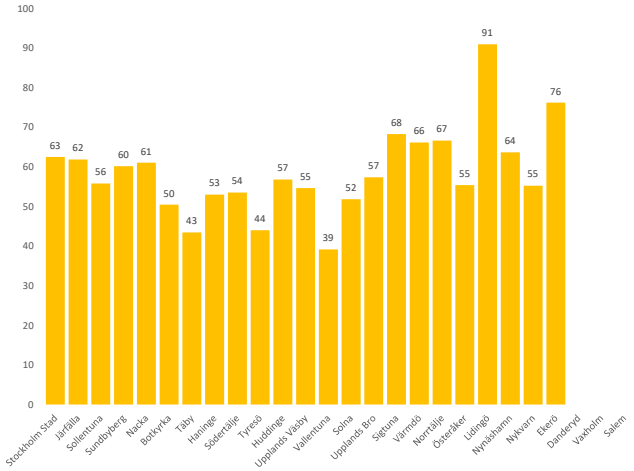


FIG 8 AVERAGE LIVING AREA (*BOA*) PER APAPRTMENT (SQM) PER MUNCIPALITY, STOCKHOLM REGION, 2017

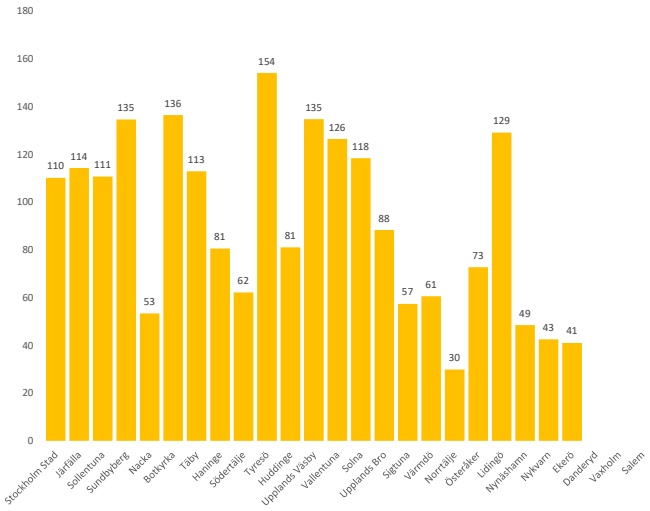


FIG 9 NUMBER OF APARTMENTS PER BUILDING PERMIT APPLICATION, BY MUNICIPALITY, STOCKHOLM REGION, 2017

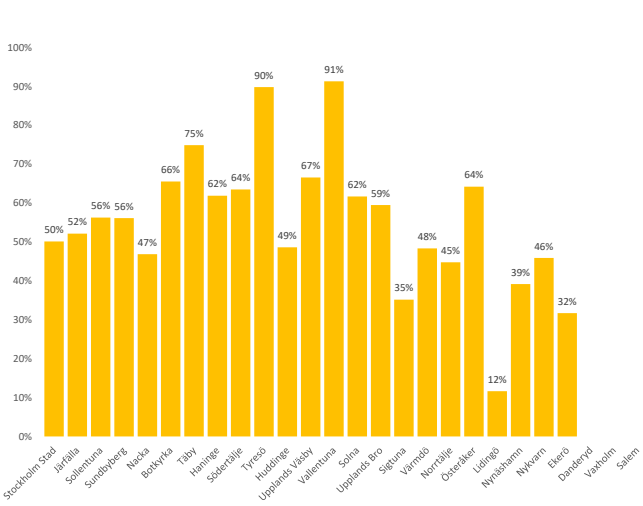


FIG 10 PERCENTAGE OF APPROVED APARTMENTS INTENDED FOR ONE-PERSON HOUSEHOLD, STOCKHOLM REGION, 2017

MUNICIPALITIES

ARRANGED ACCORDING TO NUMBER OF APARTMENTS APPROVED THROUGH MULTI-RES BUILDING PERMIT APPLICATIONS IN 2017

Name	Number of apartments	% of total	Total living area	% of total	Number of approved applications	% of total	Number of apartments per permit	Total apartment area per permit	Average area per apartment	Number of apartments for 1 person	% of total
Stockholm County	14546		845846		156		94	5422	58	8169	56%
City of Stockholm	4844	33%	302872	36%	44	28%	110	6883	63	2428	50%
Järfälla	1028	7%	63583	8%	9	6%	114	7065	62	536	52%
Sollentuna	885	6%	49395	6%	8	5%	111	6174	56	498	56%
Sundbyberg	807	6%	48572	6%	6	4%	135	8095	60	453	56%
Nacka	747	5%	45594	5%	14	9%	53	3257	61	350	47%
Botkyrka	682	5%	34421	4%	5	3%	136	6884	50	447	66%
Täby	677	5%	29425	3%	6	4%	113	4904	43	507	75%
Haninge	564	4%	29896	4%	7	4%	81	4271	53	349	62%
Södertälje	559	4%	29912	4%	9	6%	62	3324	54	355	64%
Tyresö	462	3%	20338	2%	3	2%	154	6779	44	415	90%
Huddinge	405	3%	23007	3%	5	3%	81	4601	57	197	49%
Upplands Väsby	404	3%	22085	3%	3	2%	135	7362	55	269	67%
Vallentuna	379	3%	14843	2%	3	2%	126	4948	39	346	91%
Solna	355	2%	18401	2%	3	2%	118	6134	52	219	62%
Upplands Bro	353	2%	20259	2%	4	3%	88	5065	57	210	59%
Sigtuna	344	2%	23491	3%	6	4%	57	3915	68	121	35%
Värmdö	242	2%	16013	2%	4	3%	61	4003	66	117	48%
Norrtälje	239	2%	15929	2%	8	5%	30	1991	67	107	45%
Österåker	218	1%	12079	1%	3	2%	73	4026	55	140	64%
Lidingö	129	1%	11730	1%	1	1%	129	11730	91	15	12%
Nynäshamn	97	1%	6179	1%	2	1%	49	3090	64	38	39%
Nykvarn	85	1%	4697	1%	2	1%	43	2349	55	39	46%
Ekerö	41	0,3%	3125	0%	1	1%	41	3125	76	13	32%
Danderyd	0										
Vaxholm	0										
Salem	0										

Name	Number of apartments	Number of 1:rok	% of total	Number of 1:rok = 35 sqm or less	% of 1:rok	Number of 2:rok	% of total	Number of 2:rok = 55 sqm or less	% of 2:rok	Number of 3:rok	% of total	Number of 4:rok	% of total	Number of 5:rok	% of total	Number of 6:rok +	% of total
Stockholm County	14546	3649	25%	2779	76%	5629	39%	4520	80%	2988	21%	1972	14%	272	2%	20	0,1%
City of Stockholm	4844	1066	22%	768	72%	1677	35%	1362	81%	1123	23%	861	18%	111	2%	6	0,1%
Järfälla	1028	152	15%	138	91%	467	45%	384	82%	205	20%	185	18%	16	2%	3	0,3%
Sollentuna	885	193	22%	165	85%	381	43%	305	80%	155	18%	120	14%	20	2%	6	0,7%
Sundbyberg	807	182	23%	95	52%	333	41%	271	81%	182	23%	86	11%	24	3%		
Nacka	747	182	24%	145	80%	241	32%	168	70%	164	22%	130	17%	30	4%		
Botkyrka	682	153	22%	125	82%	344	50%	294	85%	123	18%	61	9%	1	0%		
Täby	677	323	48%	319	99%	255	38%	184	72%	96	14%	3	0%				
Haninge	564	195	35%	160	82%	168	30%	154	92%	87	15%	92	16%	20	4%		
Södertälje	559	164	29%	162	99%	213	38%	191	90%	124	22%	59	11%	2	0%		
Tyresö	462	228	49%	140	61%	199	43%	187	94%	30	6%	5	1%				
Huddinge	405	107	26%	27	25%	175	43%	90	51%	90	22%	30	7%	3	1%		
Upplands Väsby	404	109	27%	80	73%	164	41%	160	98%	98	24%	32	8%	1	0%		
Vallentuna	379	193	51%	175	91%	153	40%	153	100%	31	8%	2	1%				
Solna	355	51	14%	2	4%	251	71%	168	67%	32	9%	9	3%	8	2%	4	1%
Upplands Bro	353	105	30%	113	108%	106	30%	105	99%	67	19%	64	18%	11	3%		
Sigtuna	344	34	10%	19	56%	130	38%	87	67%	104	30%	66	19%	4	1%		
Värmdö	242	53	22%	10	19%	80	33%	64	80%	66	27%	33	14%	10	4%		
Norrtälje	239	45	19%	44	98%	81	34%	62	77%	62	26%	49	21%	1	0%		
Österåker	218	76	35%	76	100%	86	39%	64	74%	30	14%	25	11%	1	0%		
Lidingö	129					36	28%	15	42%	44	34%	40	31%	9	7%		
Nynäshamn	97	16	16%	16	100%	42	43%	22	52%	32	33%	6	6%			1	1%
Nykvarn	85	20	24%			36	42%	19	53%	24	28%	5	6%				
Ekerö	41	2	5%			11	27%	11	100%	19	46%	9	22%				
Danderyd	0																
Vaxholm	0																
Salem	0																

(1:rok = studio apartment; 2:rok = one-bedroom apartment; 3:rok = two-bedroom apartment; 4:rok = three-bedroom apartment; 5:rok = four-bedroom apartment; 6:rok + = five(or more)-bedroom apartment)

TABLES 1 & 2 COLLATED DATA FROM THE ARCHIVE OF BUILDING PERMITS: APARTMENT APPROVALS BY MUNICIPALITY

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ANALYSIS PART TWO: THE AVERAGE

How can we talk about the emerging city as a whole? What does it mean if the minimum becomes the average? What does architecture look like at the scale of the population? In this section of the analysis, we turn to the average as a tool for understanding the future city.

If we were take the average values from our dataset and design a multi-res housing project that would embody the average of those values, it would look a little like the following:

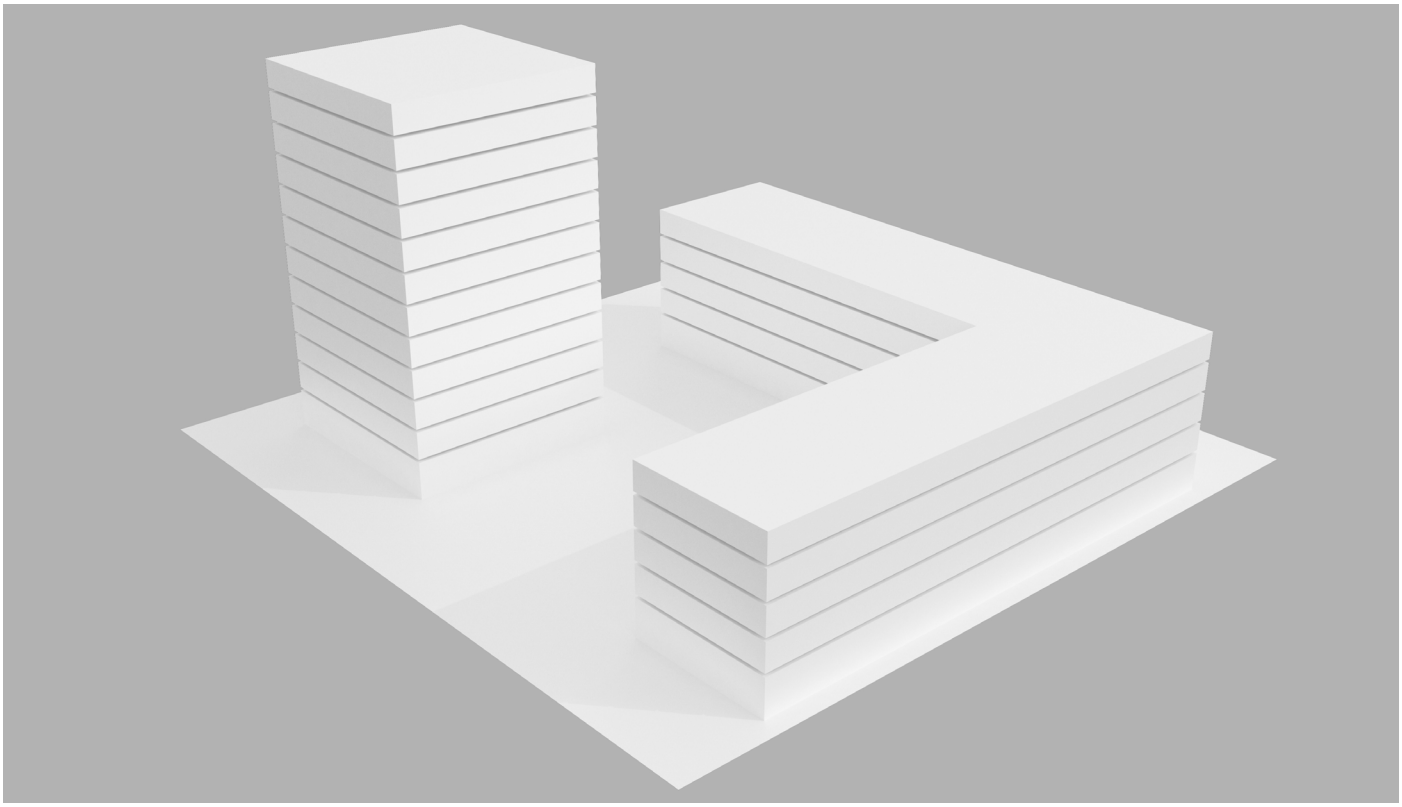
The average approved planning application for multi-res housing in the Stockholm region at the height of the recent building boom, 2017, comprises of two volumes: a small tower block of maximum 12 storeys (*punkthus*) and a slab building of maximum 6 storeys (*lamellhus*). The average plot size is 4,984 square meters, and the Coverage Area Ratio (*andel bebyggd mark*) is 40%. The buildings have an average depth of 14 meters, and the longest facade is on average 52 meters.

These two volumes accommodate on average 94 apartments. Of those 94 apartments, 25% are studio apartments (*1:rok*), 39% are one-bedroom apartments (*2:rok*), 21% are two-bedroom (*3:rok*), 14% are three-bedroom (*4:rok*), 2% are four-bedroom (*5:rok*), and 0.1% are five-bedroom or larger (*6:rok+*). As such, if you live in this development, you likely like in a one-bedroom apartment (*2:rok*).

The average size of an apartment in this development is 56 square meters, but on average a a one-bedroom apartment (*2:rok*) is, you are reminded, intended for one person and 49 square meters. The average ceiling height is 2.57 meters, and the average depth of the deepest apartment is 7.3 meters. There is a 19% chance that the majority of the apartments in the building have arranged the kitchen in a line of cupboards and food preparation spaces that adjoins storage for coats and cleaning equipment (we call this The Wall of Everything, and address this in Part 3). If you were to live in one of these apartments, you would likely live within the City of Stockholm, and your apartment would likely be tenant-owned (*bostadsrätt*).

Welcome to Stockholmshuset. And to the Stockholm region in the coming 2020s.

TABLE 3 STOCKHOLMSHUSET: THE AVERAGE OF ALL APPROVED MULTI-RES HOUSING, STOCKHOLM REGION, 2017



General info

Total floor area (BTA)	8832
Living area (BOA)	5457
Commercial area (LOA)	187
Built area (BYA)	1681
Plot size	4984
Number of apartments	94
Average size of apartment (sqm)	58
Average number stories	7
Number of buildings	2
Tower block (punkthus)	1
Slab block (lamell)	1
Cieling height (m)	2,57
Depest appartment (m)	7,3

(areas in sqm)

1:rok (studio apartments)

Number of aparments	24
Average size (sqm)	33

1:rok of 35 sqm, or less

Number of apartments	18
Average size (sqm)	31

2:rok (one-bedroom apartments)

Number of aparments	36
Average size (sqm)	49

2:rok of 55 sqm, or less

Number of apartments	29
Average size (sqm)	31

3:rok (two-bedroom apartments)

Number of aparments	19
Average size (sqm)	73

4:rok (three-bedroom apartments)

Number of aparments	13
Average size (sqm)	97

5:rok (four-bedroom apartments)

Number of aparments	2
Average size (sqm)	112

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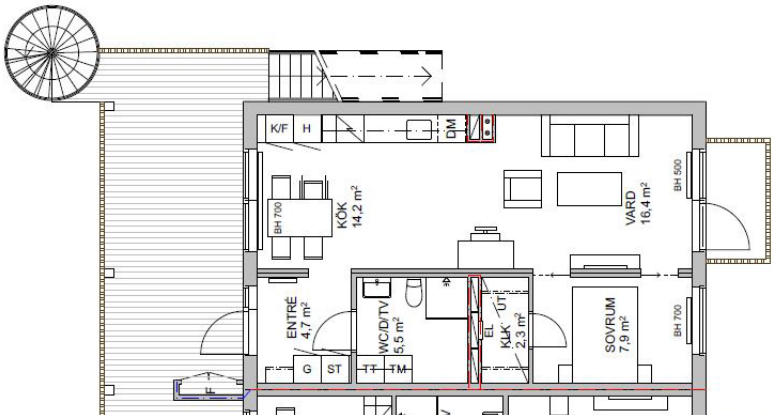
ANALYSIS PART THREE: THE EXAMPLE

Shifts in the whole and the average bring about effects that resonate at multiple scales, affecting everything (even the kicthen sink). Adjustments in the height or depth of volumes, in where we locate housing, or in how we treat communal spaces affect the interior; shifts in the interior in turn affect the building. We hear a lot about changing lifestyles restructuring the city, but how are our changing building norms restructuring us?

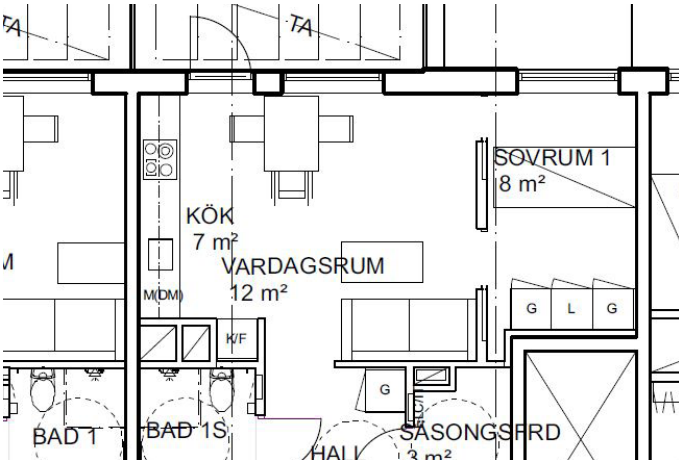
Something has happened to the kitchen...
Something has happened to the bedroom...
A door is not (just) a door...
The living room is multi-tasking, intensively.

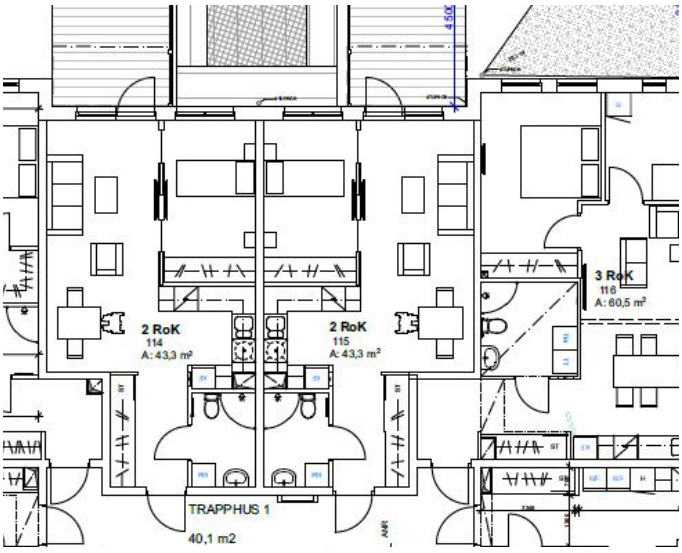
The apartment has become a commodity object that is increasingly situated within the realm of the market. As any practicing architect knows, this means that it is subject to both the demands of speculative capital ("make more money out of less resources" might be an adequate slogan in this respect), but also to the ongoing pressures of mortgages, which sees indebted inhabitants also experience new kinds of time pressures, including what Mark Fisher has termed "time poverty."[**14**] As the German theorist Joseph Vogl writes, "Economic time is measureless, empty, indeterminate, proleptic, and abstract; historical times are full, concrete, particular, irreversible, and limited… the limitless time demands of capitalist processes impose themselves on the existence of finite things and beings, manifesting there as a kind of futuristic pressure... 'the future becomes urgent'; it weighs on the present and makes its presence felt by mortgaging lived and livable time periods."[**15**] The increasing time pressure that is being put on subjects and off-loaded onto living environment has spatial consequences. We have previously identified a tendency towards the production of smaller apartments; but we would like to augment that finding here by pointing to a more complex phenomenon: the "densification of the interior" that is resulting in "spatial multi-tasking" (*samutt-nytjande*), whereby the functional intensity of spaces within the apartment is being increased, by removing functions (access) and overlapping them, in ever more complex choreographies of time in space...



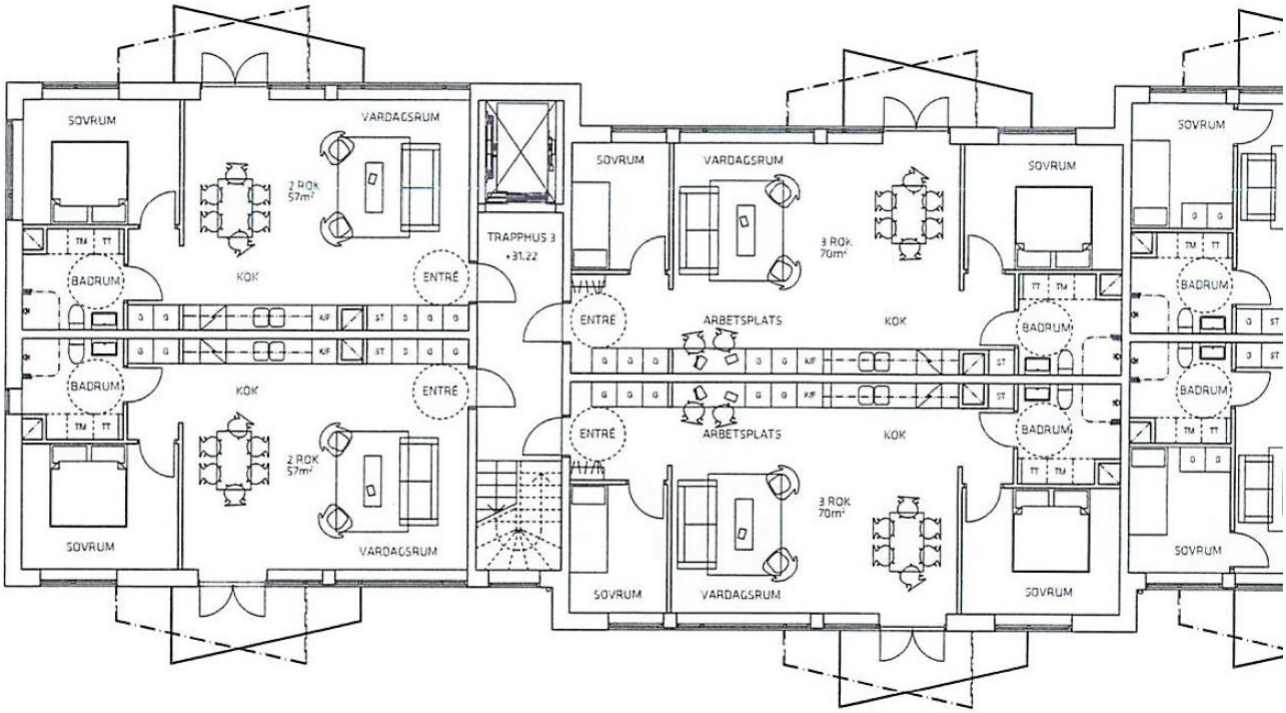
BORROWED ACCESS

Illustrative plans taken from The Archive of Building Permits (Secretary, 2019). In all three plans, if you locate the master (the only) bedroom, note the use of two sliding doors in order to access the room. This allows the bed to be accessed from two sides, while minimizing the depth of the bedroom. The circulation around the bed is thus relocated to the loungeroom, effectively interweaving the bedroom with the loungeroom, and creating a zone of the loungeroom which is used to access the balcony, the bed, and the couch simultaneously. We describe this in terms of "borrowed access" (*samcirkulation*).



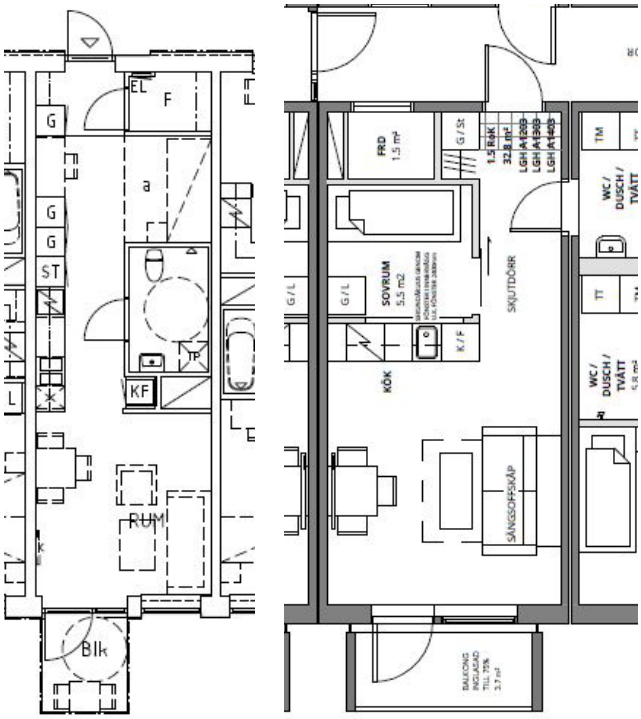


SURVEY OF THE SWEDISH APARTMENT



THE WALL OF EVERYTHING

Illustrative plans taken from The Archive of Building Permits (Secretary, 2019). In 19% of the approved building permits that made up our dataset, we note that the majority of apartments took on a linear form, whereby kitchen cupboards, food preparation surfaces, the oven, the stove, and the fridge were arranged serially, eventually also adjoining other storage (for coats and cleaning equipment, for instance) and even study and workspace functions in order to form one long "wall." This wall generally abuts a similar wall in the adjoining apartment, allowing water and air insfratructure to be rationally distributed throughout the building as a whole. This arrangement occurs in apartments of varying sizes, and not just in smaller studio apartments (*1:rok*) as one might expect. We call this The Wall of Everything (*Kökshallsväggen*). This Wall departs from both modernist kitchen layouts (with their tendency to follow the contours of a separate room) and postmodern kitchen layouts (where kitchen islands acted as secondary eating spaces and fulfi a representative function). This seems to evidence a newly "infrastructural" treatment of food preparation.



SECOND-HAND LIGHT

Illustrative plans taken from The Archive of Building Permits (Secretary, 2019). In deeper buildings with long and narrow apartments—often studio apartments (*1:rok*)—accesed by either a central corridor or an external access balcony (*loftgång*), daylight is a scare commodity. One solution that we have repeatedly witnessed is the placement of sleeping alcoves (*sovalkov*), and even closed bedrooms, in the center of these "tubes." Beyond making these bedrooms dark, this also locates sleeping quarters in close proximity to bathrooms, an infrastructural package in the center of the apartment that they attach to. Light is at times provided via a high window onto the kitchen or living room, or from the corridor that transects the apartment. On one hand, the prevalence of this solution can be read as an indication that bedrooms are intended to be used as dark spaces for sleep only; on the other hand this constitutes a disturbing reminder of the sacrifices that are being made in order to achieve a high number of small apartments in deeper building volumes (something we have come to think of as "the densification of the interior."

→

CONCLUDING COMMENTS

"Answering the question 'what is required of a dwelling' may seem relatively easy. One could express it in a few words... a healthy and sunny position and sufficient air and space for those living there. A separate room for each individual to sleep in, shared space where all can gather, preferably also somewhere in the fresh air, as well as a quiet corner for study. In addition, convenient and sufficient space for cooking and the appropriate aids to make the work easy, as well as sound hygeinic facilities that will enable good personal hygeine. None of these demands are, after all, unreasonable..." [16]

Space is a tricky term: it is something that has measurable dimensions and extents within the physical world, something that can imagined, and beyond this something that can organize our inhabitation of the world as embodied subjects. To make things worse, whilst we can produce space, space "positions" us right back: where we are in space determines to some extent our place in the world, in the sense of not only where but who we are. Space is a powerful technology, which at its darkest can be used to control and discipline us in an exploitative fashion; at the same time, at its most utopian, it is a tool that can be deployed in order to (borrowing the terminology of Michel Foucault) "produce ourselves as free."[**17**]

The modernists worked actively with both sides of this coin: as the space of the home became increasingly rationalized throughout the twentieth century (as it demanded less from its inhabitants in terms of capital and labor, and delivered more in terms of heath and recreation), it became a central technology in the production of both the self (the individual), the collective (the family, the class, the lifestyle), and the population (the citizen). Of course, a degree of healthy scepticism should be reserved with respect to how open that (mass)production of self and society really was,[**18**] but the idea that "the home" is an organizational architecture that on one hand takes (capital, labor) and on the other hand gives (time, freedom, the conditions for health) remains pertinent today, in 2019.

Survey of the Swedish Apartment has presented findings from the Archive of Building Permits. Through it, Secretary attempts to show how residential living space is fundamentally shifting: it is intensifying, shrinking, swelling, and coagulating. Through this short report, we seek to initiate a debate, by way of the question: What is reasonable, permissible, and desirable when it comes to the architectural technology of the apartment and the life that we share within it?

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