SCHOOLS AT ‘FRONT ROW’
Public buildings in relation to societal presence and social exclusion

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ABSTRACT
In analyses of affordances and opportunities in different neighbourhoods it is found that access to public buildings and a well-functioning public space are of outmost importance. This is found to be especially important in neighbourhoods having a population with fewer resources, areas often discussed in terms as ‘deprived’ or ‘excluded’, concepts that alludes to the phenomenon of segregation. Presence or visibility of key facilities manifest power situations and relations, and, may be seen as symbols of society at large and even extensions of society affecting tendencies of social exclusion and inclusion. It is argued that amenities, and what they represent, materialized through architecture, are important not only for those who use these facilities but also for others. These institutions are in a low-intense way continuously reminding of the larger society and signal coherence with such larger community.

In this study we investigate how the location of schools performs as a result of spatial location in combination with spatial configuration, creating different degrees of accessibility and presence locally. More specifically, we investigate to what extent institutions for education are located centrally in the area, visible for both locals and non-locals, and to what extent they are situated at ‘front row seat’ from a configurative perspective. We draw from ideas discussed by Hillier (2009), Vaughan (2013), Legeby et al. (2015), and Peponis (2017).

First, the most central paths and spaces are identified in the studied district, establishing the integration core. Then, the location of schools are analysed in relation to this. Apart from establishing the most central paths and how this structure relates to the schools, we add information of the size and content of the catchment area of each school, including distance between residential buildings and schools. This allows for a detailed mapping of variations in access to schools within the neighbourhood, and establish presence or absence of these institutions in the neighbourhood, argued to have implications both for pupils (and their families), as well as for others. Finally, income levels are superimposed to reveal to what extent there is diversity of different socio-economic groups within each specific catchment area.

The results show that there are two different logics at work in the district of Gottsunda, having different social implications; preschools tend to be more deeply located in the structure, having more limited catchment areas but a strong relation to housing units, while compulsory schools are located in proximity of the integration core and thus more present in the neighbourhood at large. Moreover, the location of the schools in combination with the configurative properties is found to reproduce residential segregation patterns rather than creating interfaces between social groups. We argue that urban design and architecture could be more efficiently used when trying to create more equal living conditions and address social exclusion if we have higher awareness of the social implications of what is located at ‘front row seat’ in a neighbourhood.

KEYWORDS
spatial configuration, presence of society, continuous city, equal living conditions, social exclusion

1. INTRODUCTION
The aim of this paper is to contribute to the understanding of the importance of conditions in built artefacts, buildings and cities, for social processes that form and reproduce society, including developing norms and attitudes. Core questions relate to segregation, exclusion and unequal living
conditions and how this in turn is related to urban design and planning. The main focus is how
accessibility to urban resources is influenced by urban form and spatial organisation and it is
discussed both what facilities visible in public space may signal and what it implies for people who
use these facilities or just pass them. Schools are used as an example since schools are important
institutions and an amenity highly important in relation to what living conditions and life chances a
neighbourhood provides its residents and users.

Schools may be seen as facilities representing a type of societal function with great importance for the
local community, especially in areas having a population with limited resources. What position they
are given in the urban fabric also indicates what space and visibility, and thus, priority, is given to
children and young people. Moreover, schools are argued to have a key function as they provide a
potential arena for different social groups to create awareness of others and to interact, aspects
important in cities characterized by residential segregation (Young 1996). This idea that schools
potentially function as a space that different social groups may share has been studied earlier in
Stockholm through diversity analysis of the pupils at different schools according to where they live
(Legeby 2013, 285-300). More precisely, what is studied is to what extent and how schools are visible
in the area of Gottsunda, what urban logic their location follows, and the implications this may have
for everyday life and social processes. The study will shed light on how different configurative
properties distribute access to societal resources, and in this particular case, access to education
institutions. In addition, it will set this in relation to how this interface between public space and
public amenities is characterised by aspects of the architecture of the buildings.

The paper starts with a description of the ongoing urban planning that the municipality is conducting
as well as how segregation may be addressed that has relevance from an urban design perspective. To
this, we add a discussion on schools and how such institutions may be seen as an ‘extension of
society’ and even represent society locally. School facilities play a role beyond their role as
facilitators for education. Methods, urban model, and data is described. Results from the analyses
showing schools in the district are presented and discussed. Schools are used as an example of how a
societal institution is made visible and accessible to different degrees – as a result of distribution in, of,
and through space (Koch 2007), with the aim to discuss the ‘presence of society’ in
socioeconomically disadvantaged neighbourhoods. The paper finishes with a discussion about how
representation of society is expressed and reflected through urban design. We argue that an increased
awareness of how the identity and relation to society at large is influenced by how collective resources
and municipal facilities in particular are made present in neighbourhoods, has a potential to inform
urban design and planning practice in order to more efficiently address segregation.

2. ACCESS, REPRESENTATION AND SEGREGATION

Architecture and urban design contribute to a distribution of possibilities and opportunities for
different types of uses and activities. Depending on what is invested in the built environment, certain
social groups or subcultures are given a ‘right’ to be in the city, or conversely, some groups are
disfavoured. We argue this influences the image of what the society or the city is, since it signals who,
or which groups that are excluded or included. Urban design creates the configurative properties of
the built environment. Urban form shapes the variations in centrality and periphery and hence,
influences the relation between different functions, movement patterns as well as the perception of the
city, and thus, it influences what activities and social processes that are encouraged and what
processes are inhibited. This means that urban form has a very direct relation to everyday practices,
habits, how space is perceived, and to social processes (Marcus 2018). An increased understanding of
what conditions that urban design creates, the opportunities and limitations, is hence fundamental in
order to take the social dimension into consideration in planning and building. Not least is this
relevant in Gottsunda-Valsättra where the planning programme and the action plan emphasises the
social outcomes.

To change a negative trend: the example of Gottsunda-Valsättra

The planning programme for Gottsunda-Valsättra (2018) focuses upon strengthening the area from a
social perspective and to counteract segregation. The area has a large share of residents with fewer
resources and have relatively lower education and income levels compared with the municipality at
large. Social exclusion has increased and there is a problem with overcrowding, an increased risk of
being exposed to criminality, and there is a difference between how men and women are able to use
public space (Planning Programme 2018, 20). Furthermore, the municipality state that the district is
characterized by negative associations regarding a perceived lack of security (Planning Programme,
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2018, 22). There are also many qualities identified that are important assets to build on for the future. The intention is to increase education levels and support encounter between people, both among residents but also encounters between residents and non-residents (Planning programme 2018, 7). The programme state that a new compulsory school is needed. A need that in October 2018 became even more urgent as the well-functioning school of Gottsunda (500 pupils) burnt down as a result of vandalism. In parallel to the Planning Programme, the municipality has launched an Action Plan for Social Sustainability where similar aims are formulated (2018b, 3) and where especially the conditions for children and young people are prioritised.\(^1\)

The Planning Programme (2018) formulates four comprehensive aims for Gottsunda-Valsättra; increased security and well-being; a continuous city; more urban life and increased societal presence, and, to build on diversity as well as local strength and energy. These formulations indicate that practice is influenced by what the researchers brought to the table. The research project gave the opportunity to further develop and problematize concepts such as ‘societal presence’ and ‘continuous city’. The intention was to specify what it means for this area, and in addition, add a power perspective to matters brought up in the programme.\(^2\)

Identity and reputation of a neighbourhood

It is problematic when an urban district gets a negative reputation. There is a high risk that criminality and problems related to social deprivation are reinforced while other positive events are not reported. In reality, there are multiple and parallel narratives and conceptions of which few reach a larger audience. A one-sided reporting from a neighbourhood risks to result in a difference between the so called inside- and the outside perspectives, and things tend to be polarized (Lilja 2011). Maria Vallström highlights the importance of officials being aware of how they contribute to reputations so that they do not unnecessarily reproduce a negative image in their practice, e.g. use negative associations, preconceptions or stereotypes, when describing certain neighbourhoods in daily conversations or in official documents (Vallström 2015, 33-34). There is a risk that disfavoured areas may be associated or even identified with territorial stigmatization, as what Wacquant describes as “reserved for the urban outcasts”, a label that could be very long-lasting (2008, 237-241). When negative images gain traction in an area, it could pose a challenge for positive development. Negative images, but also what is represented in an area, may affect segregation- and gentrification processes (Zukin 2010; Clark 2014; Glass 1964). Hence, the built environment in itself influences how an area is perceived. Urban design and architecture are powerful tools for creating general access to various functions and facilities as well as create visibility of certain functions that may be associated with how society value certain things. Urban design and architecture communicate who and what is allowed to be represented in public space; what is visible and easy accessible and what does the architecture of the buildings communicate?

Perspectives on segregation and societal presence

Segregation is about separation and is essentially a spatial concept. In this project, space is not seen as a neutral background. How we design and form the city has great impact upon how segregation is reproduced or challenged in everyday practices (Hillier & Hanson 1984; Legeby 2013). The residential segregation in Uppsala is evident. Gottsunda-Valsättra is a disfavoured area and pronounced disparities appear in terms of income and education levels as well as ethnic background compared with the city at large. Residential segregation is one important aspect of urban segregation (Andersson & Magnusson et al. 2001). Other perspectives include segregation in public space and the consequences it might have (Legeby 2013). Hillier suggests that cities may be described as mechanisms generating contact (Hillier 1996, 174). The street structure, configuration, how blocks are formed and how buildings are located in relation to streets, spaces and paths, influence to what extent and how we may share public space and share collective resources. It influences to what extent we may meet people from different parts of the city, people with different backgrounds, different classes, or to what extent it could be a diversity in terms of age, gender, interests or disabilities. Urban space in itself can be associated with conditions that correspond to intensity and diversity. This has importance from a social sustainability perspective as it affects the potential for a mix of local residents and non-residents. Not least, the spatial configuration creates a diversity of different

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1 Focus area 3 in the Action Plan.

2 Articles related to power and societal presence are published in an anthology of the Decode project (Koch et al. 2019a; Legeby et al. 2019). One article addressing 'continuous city' is published in PLAN (Legeby 2018).
characteristics and conditions that are advantageous for different types of activities as well as for different types of land use. Taken together, this has an impact upon the character of urban life that emerges locally, what social processes are supported and what living conditions are created.

Tonkiss (2013), and Kershen & Vaughan (2013), highlight how urban design may contribute to making the practicing of different religions visible in different parts of a city. Kersher and Vaughan (2013) studied how religious practices are expressed and how it provides a potential to bridge social groups. By being co-present with other people in public space in the city or in public institutions, we can gain awareness of other people and their living conditions. Inversely, what is not being represented in the city but rather located in a segregated position or hidden from the main paths and places as discussed by for example Koch (2010).

Zukin emphasises the importance of providing arenas for constantly on-going processes where different group identities can emerge and solidarities among those who share space can grow. Such routinized everyday practices form attitudes and norms that in turn affect society at large (Zukin 1995; Giddens 1984). Identities may be further integrated into society at large, in a public culture (Zukin 1995, 11, 253). Zukin argues that this implies being co-present in public space is more than just ‘being in the city’; actively or passively participating in social processes with other people and with different groups in society implies that sharing public space with others is central for ‘being in society’.

We argue that access to resources and equal living conditions, as well as how the public and urban resources are present in a neighbourhood, is related both individual and societal power. The spatial organization, through the arrangement of borders and connections, creates possibilities and constraints for urban life as well as what social ideals are allowed to be expressed in a city. What a power perspective adds to this is that people’s affordances and opportunities to overcome an unequal distribution of resources are different as different citizens are studied (Legeby 2013, Legeby, Koch & Marcus 2016). Hence, accessibility to urban resources in itself becomes a matter of power. Even though this study is limited to schools as a result of the size of the study, we argue that schools constitute a representative example and as such, allows for a depth in the forthcoming discussion.

Presence, or absence, of various urban resources have a very direct link to what living conditions are created in a neighbourhood, and is therefore possible to link to social exclusion and inclusion. What are the visible signs indicating that a neighbourhood is part of a larger whole? The importance and potential of what is made visible, accessible and present in public space, both when it comes to buildings and what they represent as well as the specific activities taken place there, has importance for social processes, understanding and awareness of other social groups and it communicates what society at large signals to a certain neighbourhood. Locating buildings within easy access and/or high visual accessibility, is one way to emphasise the building or a certain function is seen as important in society. Hence, it is possible, through architecture, to point out what degree a certain institution or function is accepted (or established) in society. It could even communicate what society ‘suggests’ we should do, whether it is to consume, park our cars, educate ourselves or exercise? Such questions have been discussed in research by for example Thomas A. Markus (1993) and Kim Dovey (2008), Michel Foucault (1986), Nicole Kalms (2014), Carin Bergström (2015), and Katharina Bonnevier (2003).

Historically, it has been a way to manifest power and importance in society, and we can compare with how religious buildings, royal buildings, governmental buildings, or bank institutions have been given priority in our cities over time (Markus 1993, see also Koch et al., 2019b regarding Uppsala/Gottsunda). This includes how buildings for technical and energy facilities (electricity, gas etc.) initially in Sweden were located centrally and were designed by prominent architects, but over time has moved to peripheral locations and in buildings with less ambitious architecture (Ekelund 2010). In contrast to this, the emergence of subcultures is often favoured by a more segregated location (Williams 2011); subcultures look for ‘back stage’ locations. In a Swedish context, and related to culture and equal living conditions, this has been discussed in Koch et al. (2017).

The city may be understood as a pedagogical space, an arena that forms for example young people as John Peponis has highlighted (2017). He argues that the city, as a physical environment with a particular spatial morphology, supports processes of growing up (Peponis 2017, 222). That environments encourage users to make them to one’s own through everyday practices is also highlighted in a study of the presence of culture in Stockholm (Legeby et al. 2016; Koch et al. 2017).

3 Compare with now commonly used concept of ‘nudging’, from behavioural science and economy. It amounts to an idea that one wants to support and encourage individuals to act in a specific way, or take decisions in a certain direction that favours welfare. Concept coined by Richard Thaler, 2008.
Places in the city, and movements between different attractors, shape what you will see as a child or as a youth and it affects how one meets and understands society. One may read and understand what is on the one hand common or generally accepted, and on the other hand, what is resistance or subcultures (Williams 2011), what is keeping society together, what fosters social cohesion but at the same time, it defines what are peculiarities, variations, and diversity (Koch 2007). This constitutes and denotes various power relations and highlights norms and attitudes. In the Swedish context, Björn Andersson (2002) has described the character of public life of young people. Young people are more or less directed to use public space for developing their networks, identities etc. Such places are important both for forming their own identities as well as forming their relations to different places and other groups or individuals who are co-present at such places (2002). Even though Andersson does not discuss the city as being a pedagogical environment, we see many connections to how Peponis (2017) sees Athens, as a space of affective, cognitive and social exploration that supports the formation of self during adolescence.

Both what are common features and what are deviations may develop into both positive and negative associations, either as contributing to a larger whole, or even foster conflicts. What is difficult to access or more difficult to perform in a city, is to be understood as less appreciated by society at large, or at the very least as either not of common concern or part of ‘everyone’s’ daily life. It is important to acknowledge that the effects of what is communicated through for example limited accessibility depend on how location and expression correspond with role and status in contemporary culture at large. To be less accessible could be a sign of status; it could be interpreted as an expression for the right to be private or to maintain the need of intention or ability to absorb knowledge about a place (Koch 2017). The perspective in the current argument is, however, along the lines of Iris Young who highlights the importance of different social groups being visible in the city but also visible for each other since it fosters an awareness of each other’s living conditions (1995). Allowing for different groups to be visible in public space may result in an acceptance for certain practices and through that gives different groups and/or different identities the right to use the city and reproduces their right to be part of society, defining and formulate who will be socially included in a society. Young elaborates on how social groups may be conceptualized and argues that they emerge from the way people interact, emphasising that a social group is possible to identify as a collective of persons who differentiates from others by cultural forms, practices, specials needs or capacities, often related to power or privilege (Young 2012 [2000]). Fran Tonkiss (2013) emphasises the importance of allowing for different groups to be visible in the city. The city need physical places allowing for different groups and different practices. We argue that buildings, places or facilities that afford or even signal certain practices thus become part of the ongoing negotiation of social inclusion and exclusion. This contributes to defining who is part of society and what practices are allowed, that in turn may be related to questions of power.

In these ways, the paper further develops the concept ‘societal presence’, a concept first introduced by Legeby et al. (2015) exploring segregation in Gothenburg, where methods were developed for mapping and comparing living conditions within a city. Societal presence concerns how spatial configuration, defined by architecture and urban design, contributes to on the one hand making facilities and everyday practices accessible and visible, and on the other hand separating (hiding) facilities and activities. We argue that ‘Societal presence’ is a concept that corresponds to social exclusion and inclusion, and can be linked to social sustainability and that neighbourhoods having residents with fewer resources are depending on collective resources to a higher extent why it is of great concern to clarify conditions. In this context we explore accessibility to urban resources in two different ways; on the one hand by studying resources in terms of what is within access locally, what resources are available for those living, working or for other reasons are in Gottsunda–Valsätra. On the other hand, we explore to what extent society is represented locally through for example schools, associations, either as contributing to a larger whole, or even foster conflicts. What is difficult to access or more difficult to perform in a city, is to be understood as less appreciated by society at large, or at the very least as either not of common concern or part of ‘everyone’s’ daily life.

If something is difficult or easy to do and whether this is interpreted and described as desirable from reading the urban fabric, should not be confused with if someone is actually doing something. On the one hand, there are tendencies that things easy accessible constitute and contribute to everyday practices, but on the other hand, when things really are difficult to do, or get access to, a situation emerges that in fact is attracting some specific practices or a special social group. This does not necessarily need to be criminality, but it could be various subcultural expressions or actions of resistance that are important parts of a democratic society and are important for the development of a person’s independency (jfr. Williams, 2011).
The presence of public service and institutions constitute an important aspect for a kind of continuous presence and representations of society. Beside public buildings, how public parks and places are managed and looked after, how long it takes before things are being repaired, also adds up to how the local environment is managed. This expresses how society cares for the local environment and sends signals to residents and non-residents (Amin 2008). In relation to this it is relevant to explore what architecture and urban design communicate and signal, e.g. what is placed on ‘front row seat’ in the urban fabric? What does society, through architecture, encourage us to do and who is given a right to be seen and take place in public space? In this study public amenities have been seen as a kind of ‘extended arm of society’, and that the municipality has great control of, e.g. schools, health care institutions, libraries, but it could also include public transportation, sport facilities or culture institutions. To what extent there is access to these types of resources and how present the facilities are as a result of urban design and architecture, we intend to link to questions of representation, power and equal living conditions.

Schools in particular are a concern of many people, children, youth and their families return and use these places on a regular basis. Their presence in public space also remind people not directly related to schools of a certain function (in this case education), and indicate that there is a potential resource and amenity available if needed. It also reminds everyone that ‘society’ cares for children and youths, their education, and their place in society—‘we are here and we care’—but also that this care is considered an important and shared concern. Presence of public buildings could also be associated with how society at large sees upon different neighbourhoods, whether or not society is investing in them or not.

More specifically, we use school buildings and their location since schools may be seen as institutions typically representing society. We investigate to what extent schools are localized in proximity to residential buildings, and to what extent school buildings are located in proximity of highly integrated paths and streets (the so-called integration core), accessible and visible for non-residents. It is argued that school buildings are of particular importance in areas with residents having fewer resources, especially in Gottsunda since education levels are comparatively lower than average and identified as something that the municipality addresses and wants to increase.

3. METHODS, APPROACHES AND DATA

Space syntax methodology is used in order to capture configurative properties in space. By combining such spatial analysis with GIS-data of where education institutions and housing units are located it is possible to map the relations between these two functions as well as the relation between schools and the spatial system and more specifically the relation to the streets forming the integration core in a city or a neighbourhood. By analysing where the schools are located in a neighbourhood, what is placed next to them and what architectural character these buildings have, it is revealed how society relate to schools which communicates something about the status of education. By studying architectural features of these buildings, it is further indicated how important schools and education have been over time in society and how their ‘internal’ function as sites of pedagogy and caretaking of children is symbolically and spatially related to society both locally and at large.

Accessibility to preschools and compulsory schools is measured from residential units, illustrating what affordances are provided locally, as well as accessibility to the schools from the street network using PST (Ståhle et al., 2005). In accessibility analyses, distance is measured both as metric distance through the pedestrian network and is measured as topological distance, i.e. number of change of directions, capturing for example orientation and intelligibility aspects. These distances are also used to illustrate the catchment area of each school. The differences that appear as the metric and the topological distance are compared is interesting to highlight. Moreover, it is investigated whether the education buildings are centrally located – here defined as well integrated spaces using space syntax – as this denotes to what degree school buildings are located at ‘front row seat’.

5 Distance is measured according to how often one need to change direction, turn around a corner, to move from one space covered by a ‘visibility field’ to the next, a basic accessibility measurement according to space syntax theory (Hillier & Hanson 1984).
Several urban models have been used in this project, however most of the results in this paper draws from analysis based on an axial map representing the pedestrian network. In addition to the spatial model, also data about land use, public and commercial service as well as data about the residential population has been provided by the municipality and organized in a way that makes it possible to use in combination with configurative analyses. The municipal data has been prepared in order to enable accessibility analyses and catchment area analysis (using PST). Data about income levels has been provided by Swedish Mapping, Cadastral and Land Registration Authority.

Figure 1. The Gottsunda-Valsättra area with school buildings highlighted in red.

The axial map was first drawn for Gottsunda-Valsättra. In a later phase, it was extended to cover the whole municipality where parts of an axial map from around 2014 made by Spacescape was used as a base but thoroughly modified by researchers at KTH in 2018 as part of the research project. The axial map is drawn considering space as accessible if there are formal paths leading to/through them, while the scale of objects or boundaries that delimit the spaces the axial lines represent have not followed exact path boundaries but rather larger scale material boundaries. Especially in certain functionalist areas this provides a somewhat simpler axial geometry adhering closer to the conceptual definition of the axial map in *The Social Logic of Space* (1984). Additional review is required to guarantee quality of the municipal map if the model is to be used for more comprehensive analyses. This is especially needed for area far from Gottsunda-Valsättra since they have not been undergone to the same extent.
4. RESULTS: SCHOOLS AT ‘FRONT ROW SEAT’?

Accessibility to schools

Within the studied area, there are six compulsory schools and thirteen preschools. The result shows that the accessibility to preschools from residential buildings is high in the whole urban district. The majority of the residential buildings have less than 300 metres and less than three turns to the nearest preschool. However, the area around the two streets Cellovägen and Gitarrvägen (south of Gottsunda Centre), has high access as the metric distance is analysed but poorer as the number of turns is analysed (topological distance). This indicates that urban form provides a complicated path for residents to preschools and the distance may be perceived as longer.7 In a similar way the single-family houses north of August Södermans väg, are spatially separated seen from a topological perspective while it is not that evident when looking at the analysis of metric accessibility. This indicates that there is a risk that the distance between the various smaller housing units will be perceived as large while for certain functional purposes, walking distance remains comparatively short (in meters) in parts of the system. As the configurative properties generally have higher influence on walking flows in daily life, the configurative properties contribute to separate the single housing units spatially from the multifamily buildings. There are few linkages between the areas and they function as different spatial systems inhibiting movement between the areas, revealing barrier effects.

The analysis of accessibility to compulsory schools, that are significantly fewer in the area, still indicates high accessibility. Many residential buildings even have two schools within one kilometre walking distance. Noticeable, accessibility measured as number of turns, shows again that areas south of Cellovägen and Gitarrvägen are spatially segregated in the neighbourhood at large, as the single-family area in the north.

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7 Distance measured as number of turns/steps, or angular change, corresponds to perceived distance (Hillier & Hanson 1984; Hillier 1996; Peponis 2012).
Figure 2: Accessibility to preschools schools (distance measured as steps).
To explore the location of schools in relation to central or main paths, we start with a configurative analysis of the street network in itself. The most integrated paths and streets in Gottsunda-Valsätra at two different scale levels are identified, the area’s so called integration core (Hillier et al., 2007). First, the local core as the reach of the analysis is limited to the local context, and secondly, the core on a district level, taking into account a larger context including the district of Gottsunda-Valsätra (that corresponds to the programme area). In combination, these analyses also indicate the extent to which the integration patterns form pervasive centralities (Hillier, 2009) or are central only in certain contexts, indicating whether their position communicates similar or different things for people moving in the area for different reasons or with different degrees of local understanding—or if their location express different roles locally as compared to in a larger context. The integration core picks up the main street through the area, Hugo Alfvéns väg, the north-south path next to Gottsunda centre, Bandstolsvägen, Slipstensvägen-Flakvägen through Valsätra area, and the north-south going pedestrian path west of Bäcklösa School (see figure below). Parts that distinguish as segregated in the fabric are Solistvägen-Dirigentvägen in the south, and the single-family houses around Sjutomtavägen in the north. These areas may be described as being positioned deep in the structure and are thus characterized by low accessibility. Taken together this analysis increase the understanding of barrier effects and the ‘continuous city’.

The relation of the preschools and the compulsory schools to the integration core is analysed, revealing to what degree the education institutions are present (or absent) in the district for people
living in, using, or visiting the neighbourhood. Highlighting preschools, the analysis shows that four of the schools are located adjacent to the integration core on the local scale, and that three still are located in proximity of the core on the district level. Five out of six compulsory schools are in direct proximity to the core on the local scale but only three at the district level. This means that the compulsory schools have a much more visible location in comparison with preschools. The central part of the Gottsunda-ValSATra area is in general higher integrated in comparison with the southern part. None of the schools are however located along what comes forward as the main street in the area, Hugo Alfvéns gata, neither from a performative nor a configurative perspective, and from a symbolic perspective (typically planned to be the main street). This street constitutes the display window of the area, and there is a high flow of people along this street, both pedestrians and vehicles. Noticeable, today this street is characterized by an absence of buildings and housing units, instead, what is up front are parking spaces and parking garages. Gottsunda Centre constitutes an exception as commercial activities are dominating the impression. Hence, what is placed on ‘first row’ in this neighbourhood is then car parking, generous spaces for vehicle traffic, narrow sidewalks and commercial activities by the centre. The green areas next to the main street primarily mark the interfaces between the different clusters of housing units and have a character of constituting a buffer zone, rather than inviting people to use them.
Character of the school buildings

Looking at the character of the architecture of the school buildings in Gottsunda-Valsätra, it is rather modest (clearly distinguishing from schools from the first half of the twentieth century). The architecture has borrowed attributes commonly used for residential buildings; one story buildings, low key facades, discrete entrances, and similar materials used as in the residential buildings from the same era, thus, these buildings are not intended to achieve a more prominent impression than the residential buildings surrounding them. Moreover, many of the schools have a surprisingly private (or introvert) character with discrete or multiple entrances, signalling that they primarily are for people who already find their way, and thus not invites others, ‘strangers’. Even if schools need to prioritize its pedagogical purpose, to be a facility primarily for teaching (for teachers and pupils), and are not public facilities in the sense that anyone can be there like in a park, a square, or a public library, their primary purpose could be balanced with the fact that schools as public buildings signals an identity. They are communicating ideas about society and about ourselves, and schools are public buildings serving the citizens. If using a simplified metaphorical description; to ‘turn one’s back’ towards its neighbourhood as many of these buildings do, is rather different from communicating ‘being open for a dialogue’ with society even though it does not mean that everyone is allowed to actually enter the building. Today, school buildings are commonly seen to constitute a great potential for being facilities serving multiple purposes besides teaching, also in Uppsala municipality. However, most likely this would require architectural modifications, especially how entrances and spaces may be partitioned or divided in sections to secure that ordinary teaching is not being disturbed or hindered by other uses taking place for example in evenings or in the weekends. In such trade-off, also the pupils’ understanding of themselves in relation to society is influenced. Separation through architecture is in this context a key aspect but at the same time, the whole scale of accessibility needs to be addressed; accessibility at the neighbourhood level to the accessibility in to the specific building.
Figure 6: Preschools and compulsory schools in Gottsunda-Valsäter.
**Income diversity in the catchment areas**

As a complement to the analyses above the catchment areas of the schools are analysed and to what extent this catchment area covers households having different income levels\(^8\). The analysis reveals that income levels are higher in the southern part of the area and that units in neighbouring areas have even higher levels. In the north of the district, the catchment area of the compulsory schools covers three different income levels within 1000 metres\(^9\), while other schools only cover two or one category. This indicates to what extent the schools have a potential to become a place where households having different income levels may encounter each other. However, since there is a free choice of schools in Sweden, it is difficult to draw conclusion whether the schools will have a mix of income groups or not. Nevertheless, only the fact that the school is located where there are few or many different income groups in its surrounding could have an effect anyway since the pupils (and their families) move to and from the school and are thus contributing to the local public local life.\(^{10}\)

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\(^8\) Income levels for households, spending power. Data from 31 December 2014, Swedish Mapping, Cadastral and Land Registration Authority.

\(^9\) Buildings in light grey in the figure.

\(^{10}\) In this study data of the pupils has not been available. In analysis of Stockholm, most schools were found to attract a large share of people living in proximity in spite of the fact of the ‘free choice of schools’, (Legeby 2013).
5. CONCLUSIONS & DISCUSSION

An overall conclusion of the results is that many of the compulsory schools are located adjacent to paths and streets that are highly integrated and in this capacity central and visible in the neighbourhood. Contrary to this, the preschools follow another spatial logic in that they are located deeper in the system, i.e., a few steps away from the most integrated spaces. Hence, the preschools have a closer spatial relation to residential units that surrounds them and they are not directly exposed along the main paths. This implies that the location of these institutions contributes to a presence of society locally and that the relationship between preschools and housing is emphasised by urban design and planning. In addition to this, it is noticeable that the majority of schools have a very direct relation to green areas and parks. From this we can draw a conclusion that during the era when these schools were built, the residential and recreational relations were more important than for example, the relation to the main streets that in a performative and symbolic way connects an area to the city as a whole and the larger society. Moreover, this typically is in line with ideas related to neighbourhood unit planning, implying that schools primarily are the concern of the residents, rather than that schools are public and of a concern of the larger society. Such an approach appears to have been a common guiding principle for schools during the first half of the twentieth century when school buildings more typically were located up front along neighbourhood’s main streets, functioning as a representative of the local in relation to the larger city, or the other way around, a representative for the larger city at the local level.
It is suggested, that depending on how school are located and positioned in relation to on the one hand the neighbourhood and to the integration core, and on the other hand, in relation to residential buildings, it is likely that this creates and reproduces a perception that schools are either a concern of families/residents (a more private character taking a subordinated role in relation to its surroundings), or, primarily a concern of the city or the larger community, (a public institution taking a prominent role in relation to its surrounding).

In Gottsunda-Valsätra it is possible to conclude that no schools are visible from the main arterial street going through the area, however several of the compulsory schools are still in proximity of the integration core on several scale levels. The main street is further also characterized by an absence of culture and religious facilities, commercial activities, production, and sport facilities. Rather, such facilities are primarily concentrated to Gottsunda Centre that has developed into a node for the south of Uppsala municipality with a catchment area reaching beyond the neighbourhood itself. The commercial activities are dominating the centre and will, together with car paring, inevitably be the focus of attention for a visitor, even though it is also possible to find for example culture facilities, a library, health care and an indoor swimming pool in the centre but these facilities are further away from the main entrance. So people visiting the centre (and primarily not visiting the neighbourhood) may receive a rather biased presentation of Gottsunda-Valsätra.

Moreover, the frequent use of cul-de-sac streets in the area and an ambiguity regarding which streets are leading to where (for example loop streets or weakly constituted paths), result in a situation that it is primarily people with good knowledge of the structure of the area or with a very specific errand who gets in to other parts of the neighbourhood. This could be compared with what McMorrough calls a point effect, directing and limiting activities to a centre but that such phenomenon rarely generates urban life or movement flows to its surroundings (2001, 198). Urbanity, according to McMorrough, decrease as privatisation of for example shopping environments increases, even though these centres often are organised to mimic the city. At the same time, it is possible to see that the network in Gottsunda-Valsätra can be very flexible, open, and rich for those who have good knowledge about the area. This we argue reinforces the differences between those who have knowledge and those who lack knowledge about the local neighbourhood (regardless if they are residents, people who work in the area or are frequent visitors). This implies that to what extent a presence of society through schools or other amenities and services may be perceived, is strongly connected to how well one knows the area. Furthermore, the internal fragmentation of the neighbourhood could imply that residents living in one specific unit may find high access to a school but that this does not necessarily becomes an important part of the identity for Gottsunda-Valsätra, depending on to what extent other units have been part of how the area is understood as a whole. We argue that schools in particular is a kind of amenity that can be used for the purpose of making society more present locally in an area. Especially, schools are useful to signal societal cohesion and inclusion in areas where tendencies of exclusion appear. Such institutions, the buildings and the ongoing activities, communicates that society sees this as an area worth investing in. Where these institutions are localized, what accessibility and visibility that they will get, is then crucial for how strong these effects may be, if it is communicated to the residents only, or also, to people not living in the area.

6. REFLECTING COMMENT: SOCIETAL PRESENCE AND THE CITY AS PEDAGOGICAL ARENA

Referring to Peponis’ idea (2017) about the city as place of pedagogical functions it is relevant to question what may be learned about society from living, working, visiting, or growing up in Gottsunda-Valsätra. What living conditions are created and what is communicated through urban design regarding what society is and represent? What and who are prioritised within the area and how prioritised is Gottsunda-Valsätra in relation to other districts in Uppsala municipality for example in terms of investments in the built environment? It is relevant to question how urban design interventions may influence identity processes, both regarding what society is and how identities emerge in relation to this. Even if this study is highly limited it is possible to see that the analyses and discussions presented here have a potential to increase the understanding about relations between people and places and that it is possible to inform the planning practice in a more accurate way about what effects and consequences modifications of the network structure may have as well as effects from localization of amenities and services in a neighbourhood such as Gottsunda-Valsätra and that

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11 This is developed in: Suburbs and power, in the Proceedings of the 12th Space Syntax Symposium. Koch, Legeby & Miranda Carranza (Koch et al., 2019b).
are proposed in the Planning Programme. With a forthcoming initiative to build a new compulsory school, aspects related to presence of society could be taken into account. It concerns both the design of the building and the localization of the school in relation to the (future) street network. The location of school buildings, both existing and planned, will be affected by the modifications of the network since this will affect the configurative properties of the different spaces and streets. Hence, the integration core pattern may shift, segregated parts may be more integrated, or some parts may stay spatially segregated. Constitution is about to change, especially along the main street through the area where car parking will be replaced by housing units. The structural changes formulated in the Planning Programme are rather limited why accessibility to the existing schools and their position will be relatively unchanged, but their role in relation to new additions shifts. The new housing units are not planned to have the same strong relation to preschools and compulsory schools as earlier. Green areas that today constitute the main street will be replaced by buildings (with the exception of Lina Sandell’s park). Taken together, this will have great impact of the character of the neighbourhood, and a significant effect on what will be exposed on the ‘front row’ and what will be the shop window of the area in future.

In this type of planning situations, we see three questions that arise and can be used to identify so called secondary effects or secondary benefits: 1) how is the public society represented and what will be communicated about society through the new development? 2) How will the presence of society change in a wider context as new uses and buildings are added in the area, also affecting the internal constitution and internal relations? 3) How will the image of societal priorities and norms alter as the accessibility changes, both in terms of visible and physical accessibility in Gottsunda-Valsättra in future as proposed in the Planning Programme?

This paper has discussed schools from a perspective of segregation and accessibility and the relation to ‘presence of society’. It has been done in a way that both illustrates the importance of highlighting such questions, and illustrates possibilities to address them in a way that has relevance for architecture and urban design; the approach could inform and guide the design and planning processes. The city and the built environment has been described as a materialized pedagogical arena that not only informs about society, but also has inherently pedagogical functions where norms, attitudes, and priorities are communicated. It signals what the public is and represents, for whom it is designed as well as who is invited to be part of the city, and, in its extended implication and practice, in society. This discussion may reach to a wider understanding of ‘society’ and how we should allow it to be present in everyday practices. This is of particular importance for neighbourhoods that are structurally disfavoured and struggling with situations of exclusion. In such neighbourhoods, local accessibility to urban resources has great importance for what living conditions are created and is strongly affecting life chances. What affordances are provided that enables people to take advantage of what the city offers and enables people to be part of processes forming societal norms and attitudes in society. But the physical presence of these resources, and the pedagogical effect thereof, additionally support or hinder realisation of such affordances. With a stronger awareness of the importance of these aspects and a direct connection how they relate to architecture and urban design will result in a more informed practice that more efficiently can address social sustainability including equal living conditions and segregation.

ACKNOWLEDGEMENTS

The study ‘Interface Gottsunda’ is part of the research project Community Design for Conflicting Desires, Decode, financed by Vinnova, Sweden’s Innovation Agency. The paper also draws from result from the project Interactive Plattform carried out in Upplands Väsby and financed by Vinnova.

REFERENCES


12 Compare with for example Koch et al. (2012) discussing primary and secondary benefits.
Proceedings of the 12th Space Syntax Symposium


Övers: Lotus.


Proceedings of the 12th Space Syntax Symposium


