The street: a key component for a less segregated city

Paper presented at:

The Past, Present and Futures of the High Street

The Adaptable Suburb Project. Conference in London at UCL 28 April 2014

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This paper was presented at the conference THE PAST, PRESENT AND FUTURES OF THE HIGH STREET at University College London, 28th April 2014, hosted by Laura Vaughen, Sam Griffiths, Patrick Rickles and the Adaptable Suburbs project team at UCL. The conference marked the completion of the EPSRC/ESRC funded project on Adaptable Suburbs: A study of the relationship between networks of human activity and the changing form of urban and suburban centres through time, which has sought to explore the influence of social interactions, urban form, and movement flows on the vitality and adaptability of smaller town centres.

"The street: a key component for a less segregated city" is part of the research project Dela[d] Stad / Divided City carried out by the School of Architecture at The Royal Institute of Technology, 2013-2014. The aim of the research project Divided City is to demonstrate and operationalise urban research in the city of Gothenburg and through that bridge research and practice. The city of Gothenburg has initiated the project based on an identified need to address these issues. The School of Architecture at KTH, the Swedish National Board of Housing, the City of Gothenburg and Mistra Urban Futures intend to explore methods and approaches in studies of the four neighborhoods that are included in the national Urban Development Initiative.

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ABSTRACT

As a counteraction to social segregation and exclusion, the local government in Gothenburg, Sweden, has declared that the unequal life chances found in the city need to be levelled out. In particular, the poor conditions found in districts that today are socially disadvantaged are of great concern. During the last four decades, a number of anti-segregation initiatives have been carried out in these districts but in spite of these far-reaching efforts, the situation remains highly problematic.

Recent urban research examining ways that architecture and urban design can contribute to a less segregated city highlights especially the importance of the everyday urban spaces that make up city—public spaces such as streets, squares, parks, and so on—as it is there that various social processes decisive for integration processes take place. What is within easy access as we go about our day-to-day routines is highly significant, as is with whom we potentially share the street; both are of the utmost importance for matters related to social exclusion. Thus, the street—along with other public urban spaces—becomes an important arena for interplay between citizens and for processes of recognition of 'the other.' The interplay that may come about is found to be related to the configurational properties of these public spaces.

In order to transfer new knowledge from academia into practice about the role urban design can play in these matters, an initiative was implemented in the city of Gothenburg as an example. This research initiative identifies and describes affordances that are relevant from a social perspective in a comparative manner. The aim is to transform research knowledge into operational tools for urban planning and design practice that include the identification and development of typical descriptions, measurements, and indexes that can be useful in various planning situations or in the process of evaluating new proposals. The collaborative setup of the project, incorporating both practice and research, has led to intense discussion within the planning organization of Gothenburg, where new ideas about organizing and handling its different data sets and how the results of urban analysis can be integrated within the planning department and into participation processes. In this sense, the project has found a genuine interest in the kind of support that research can offer when addressing issues related to social sustainability in urban design and planning.

Keywords: segregation, unequal living conditions, configuration, co-presence, Place Syntax Tool

INTRODUCTION

Anti-segregation initiatives and urban design

Areas characterized by social exclusion in Gothenburg are located in the outer city and were part of an urban expansion that took place primarily from the 1940s onwards. A national initiative called Urban Development has identified four areas in Gothenburg that face particular problems related to social exclusion: Bergsjön, Hjällbo, Gårdsten, and Norra Biskopsgården[1] (Swedish Government 2007; Arbetsmarknadsdepartementet 2008). In total, fifteen areas are included in the national initiative, a programme focused on development, exchange, and the dissemination of knowledge. The aim of the Urban Development initiative is to improve living conditions in areas characterized by exclusion, to decrease socio-economic differences within cities and regions, and to reduce the number of areas characterized by evident exclusion.

Many of the so-called segregated or excluded areas developed during a period characterized by extensive urban expansion and were part of a Swedish welfare-state initiative (Folkhemmet/'The peoples' homes'). Norra Biskopsgården was developed between 1956 and 1963, while the other three areas were part of the Million Homes Programme[2]: Bergsjön between 1965 and 1972, Hjällbo between 1967 and 1969, and Gårdsten between 1969 and 1972. The design principles of these areas were strongly influenced by neighbourhood-unit planning ideals. This means that they have been organized as spatially demarcated enclaves dominated by housing, and traffic is differentiated: walking and biking routes are in principle separated from those travelled by cars, and in some cases even the tram is separated from streets and pedestrian paths.

Figure 1. Neighbourhoods in focus.

1 The criteria are an employment rate less than 52%, more than 4.8% of the population living on social allowances (long-time dependency), and a qualification rate for secondary school lower than 70%. In addition to this, there must be a population of four thousand people or more.
2 The Million Homes Programme was an initiative to construct one million housing units within ten years between 1965 and 1974 in order to meet the extreme housing shortage that resulted from rapid urbanization in Sweden.

A simplified description of the Swedish area-based anti-segregation interventions over time is that initially (1970–1980), there was a focus on improving the outdoor environment, with specific attention to the needs of children, and towards the end even some radical interventions were launched, including the partial demolition and reconstruction of housing units. During the 1990s the segregation problems intensified in the metropolitan areas and changed character as many refugees arrived in Sweden and in these neighbourhoods. The anti-segregation initiatives now had a stronger focus on civil society—namely, conducting participation projects, prioritizing schools and education, supporting local associations, and so on (Olsson & Törnquist 2009). The literature in Sweden and internationally that gave rise to this changed focus treated the increased polarization in society as a social phenomenon, and the concept of a divided city was frequently used (e.g., SOU 1997:118; Magnusson 2001; Feinstein 1992). Strategies within architecture and urban design were more or less confined to addressing what was described as a problematic homogeneity of housing types and a problematic homogeneity in letting and ownership that was highlighted in various key planning documents (comprehensive plans, etc.). In spite of an explicit aim of loosening up housing segmentation, very little happened in this respect either in the so-called segregated districts or in the city as a whole. The housing segmentation instead remained basically unchanged during this period.

Research within the architecture field points out that the design of these neighbourhoods or housing estates poses an obstacle to integration processes (Hillier & Hanson 1984; Hillier 1988; Hanson 2000). More specifically, the design has been found to have an impact on behaviour that is disadvantageous for social life and solidarity processes: there is a ruptured interface between locals and non-locals, and public space does not offer the potential for 'bumping into people,' 'dropping in,' or 'popping round.' Hence, casual and informal social arrangements are not supported but are instead replaced by pre-planned and formal arrangements, and further—highly relevant for the Swedish context—the information field of public space is changed, implying that personal experiences of different parts of the city become limited; consequently, opinions to a larger extent are formed by media (Hanson 2000, 114–115). The disabling effects of the urban transformation have been highlighted in a Swedish context (Klasander 2003, 2005; Schulz et al. 2004; SOU 2005:29; Marcus 2007; Olsson & Törnquist 2009; Legeby 2010, 2013), as well as in an international context (Hillier & Hanson 1984; Peach 1996; Varady 2005; Vaughan 2005, 2007). It has been argued that the configuration of urban space can create either closeness or distance between citizens and between resources in a city. Public space is therefore seen to play a key role in the matter of segregation because it can be designed either to optimize processes that bring people together, supporting movement and co-presence, or to inhibit such processes (Hillier et al. 1993; Vaughan 2007; Marcus 2010; Legeby & Marcus 2011). What is noticeable is that in spite of more than forty years of anti-segregation initiatives, the problems related to segregation and exclusion remain, and the character and the physical structure in these neighbourhoods stand more or less unchanged. What we see in Gothenburg is that these areas even today are designed as inward-oriented enclaves with very weak spatial (and social) relations to their surroundings; as a consequence, exchange between people in different parts of the city is poorly facilitated (described, for example, in Hillier 1988).

We suggest that the shift in focus that architectural research presents—from residential segregation to segregation in public space —allows anti-segregation initiatives to address the problem from a perspective that foregrounds architecture and urban design in a much

more precise way (Legeby 2010). The basis for this claim is that public space (streets, parks, squares) is seen as highly important places for facilitating certain social processes. The potential public space has to support various social processes has been found to relate to certain spatial properties (Hillier & Hanson 1984; Hiller et al. 1993; Hillier 1996). Earlier research in Södertälje and Stockholm on urban segregation and social sustainability confirms this (Legeby 2010, 2013; Marcus & Legeby 2012). Much empirical space syntax research highlights the correlation between integration and movement, but here we argue that movement should be seen as a mediator for co-presence that can result in other social processes rather than being the aim in itself. This aligns very closely with the ideas originally set out in space syntax theory (Hillier & Hanson, 1984).

Dela[d] Stad

The research project discussed in this paper, Dela[d] Stad[3] aims to demonstrate and operationalize urban research about the social dimension of urban design and urban planning in the city of Gothenburg. Furthermore, the research project aims to identify analytical methods, tools, and approaches that can support more socially sustainable planning and urban design practice. The city of Gothenburg has initiated the project based on an identified need to address the matter of exclusion from an urban design perspective, and it is financed by the Swedish National Board of Housing through Mistra Urban Futures. The project intends to explore methods and approaches that can be applied in the daily practice of urban designers, planners, and other professionals.

The results demonstrate that different neighbourhoods afford users unequal access to urban resources and amenities, and that the four areas in focus have considerably poorer access to such resources than the three reference areas do. Moreover, some of these inequalities have to do with configurational properties (related to distribution in, of, and through space; see, for example, Koch 2004) and are thus a result of the way these areas are designed. In addition, Dela[d] Stad has identified that the basic information needed in order to implement such tools and approaches is missing from the municipality, and a great deal of work has been about designing and organizing a proper database and a spatial model of the city. This means that the threshold for launching and testing such analytical methods is most likely considerable in most municipalities. In spite of all the statistics and data found in Sweden, making this information available to and usable by those who on a daily basis work with municipal urban planning has proved very complicated; many hindrances arise in the process of creating a relevant database that is detailed enough for spatial analyses and thus can produce results that inform urban design.

METHOD

The work in the research project Dela[d] Stad is organized around three themes. The first focuses upon spatial analysis, foregrounding social aspects, and aims to establish which analyses are relevant in practice, as well as applicable given the available data. The second theme aims to identify analyses that reveal the most effective interventions from a social perspective; this has to do with evaluating proposals. The third theme analyses how the

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3 Dela[d] in Swedish has a double meaning: it can mean either 'divided city' or 'shared city.'

social dimension within urban design is addressed and described in certain key documents and policies. Moreover, it aims to identify those who might benefit from the knowledge that this research project can provide.

From various policy documents such as Urban utveckling, Comprehensive Plan 2009, Municipal Budget 2013, Vision Älvstaden 2012, Social Konsekvensanalys 2011 (SKA) and surveys sent to experts working at the municipality of Gothenburg, aims and means have been identified that are relevant from the socio-spatial perspective. There is often confusion between means and ends, and obviously a distinct line cannot always be drawn. Especially when discussing urban development, we confront the challenge of translating different forms of representations such as texts, statistical tables, and maps. Various representations are found throughout the process; these range from basic descriptions of the current state and documents problematizing the current state including policies for change, to drawings that direct the concrete implementation of such policy. Several of these documents, moreover, have the status of formal institutions, such as the municipality's budget (2013), its comprehensive plan (2009), and many subsequent detailed plans.

The process of translating representations of different kinds is far from a simple matter. Our work identifies three major languages of this kind that are also highlighted in early space syntax theory (Hillier & Hanson 1984): natural languages, mathematical languages, and morphic languages. However, given that all these, not least morphic languages, remain rather elusive notions, we have here chosen a simpler classification: natural languages (primarily texts), numerical languages (primarily statistics), and geometrical languages (primarily maps).

Examples of the aims expressed in the key documents are creating more equal life chances for the citizens across the city, decreasing the social gaps in the city, and counteracting xenophobia and discrimination in everyday life situations. Typically, when translating such aims (formulated as texts) initially expressed in numerical languages (statistics) into geometrical languages, it is essential to understand the social consequences of geometry (e.g., of maps); thus, there is a need to link social processes to certain architectural design components. In this case, the identified processes that can support these aims are, for example, increased exchange between districts, populated public spaces with a mix of people, higher visibility of social institutions, and increased access to workplaces. This draws attention to urban public spaces—streets, parks, squares—as crucial arenas facilitating processes that may ultimately lead to increased social integration. This has led to a rather different focus on the segregation matter within architecture and urban design that before was discussed mostly in terms of policies about forms of letting and house types.

Hence, this approach arrives at an understanding of the street and of the everyday life activities that take place in public space as key factors for counteracting urban segregation. If we can build the city so that more equal living conditions are achieved and public spaces allow several groups in society to share space, to experience 'the other' in a daily life situation, and to participate in forming public culture, this may lead to an increased recognition of and the potential for processes of solidarity (Zukin 1995, Franzén 2009, Collins 2004). Such urban processes, we argue, can be influenced through various architectural design components, such as increased spatial integration, increased constitution, a densification of strategic public paths in terms of activities, entrances, and so on (Hanson 2000, Vaughan et al. 2005, Marcus 2010, Legeby 2013). Especially important are those streets (or paths) that link an area (typically with high spatial centrality) to its surroundings, performing a func-

tion similar to that of a 'high street' (Vaughan et al. 2010) or a 'foreground network' (Hillier et al. 2009). From this point of departure, the project Dela[d] Stad especially explores the ways that geometric languages (representations) can not only inform the planning process in terms of the current situation in neighbourhoods but can also evaluate the social consequences that certain changes in urban form—changes of the spatial configuration and the urban structure—may have. Our focus is thus to test how knowledge from research about the social consequences of design components and design strategies (analysed through various tools and methods) can be useful in practice and to evaluate the effectiveness of such interventions.

Through various workshops, discussions with experts, and surveys sent to experts at the municipality of Gothenburg, we have evaluated the proposed socio-spatial analysis methods. Within the first theme, we tested the effectiveness of the socio-spatial analysis methods to diagnose a neighbourhood, partly based on space syntax theory and methods (Hillier & Hanson 1984), in combination with the Place Syntax Tool (Ståhle et al. 2005, Marcus 2010). Within the second theme, these results are used to identify appropriate interventions and to evaluate their effectiveness. The most important research question is which socio-spatial analysis methods are useful from the perspective of data availability, time, complexity (need for knowledge), and readability (whether they are communicative and easy to interpret). An analysis of other methods used by the experts further allows us to describe these specific socio-spatial analysis methods in relation to other methods, such as Gåturer (walking trips with citizens), interviews with focus groups, and statistical analyses.

RESULTS

Difficulties preparing for socio-spatial analysis

One aim of the project was to investigate the kinds of problems municipalities may face when implementing socio-spatial analysis. This section presents the main findings from the procedure in Gothenburg.

First, a model of the city is needed for spatial analysis, and in this project an axial line model was developed. The municipality had a model of the central and mid-central part of Gothenburg that the consulting firm Spacescape had made as part of a commission[4]; the project was allowed to use this as a starting point. The axial map was adjusted to the current social questions in focus; then it was built larger so as to cover the whole municipality, as well as relevant parts of neighbouring municipalities.

Second, data about urban amenities relevant to socio-spatial analysis were identified and collected in a database. Early in the project, one department agreed to assist in setting up the database in house and from the beginning of the project organized the collected data into a suitable GIS format following the standard found in the city of Gothenburg. This is a great advantage, since there will be no phase of transforming and adjusting data from academia to practice; instead, all data will be available to the municipality from the start. The data that are normally useful in socio-spatial analysis were requested, but for various reasons only a selection of the relevant data was available—data about the locations of public services (schools, libraries, health care facilities, playgrounds, etc.) were available, as well

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4 Mellanstadens utbyggnadspotential: ett planeringsunderlag. Februari 2013.

as information about commercial services (grocery stores, restaurants, cafés, etc.). These data are arguably relevant and are available at a detailed level (i.e., address points). But important information, including data about residential and working population was not made available on a detailed level for the project, nor was it available for employed at the planning department. Instead, data were organized in squares of 100×100 metres; these units have been used in lieu of more detailed information. This information is not as detailed as that used in past research, and this means that very short radii cannot be applied in accessibility analysis (especially important in analyses focusing upon urban form). Discussions have been initiated about how to solve this problem within the municipality, including how data can be handled while taking into account privacy and other concerns. Before a comprehensive mapping of Gothenburg is carried out, it is highly recommended that data of higher resolution be used, preferable on a property level that can be distributed to address points (discussed in Legeby 2013).

It needs to be emphasized that the process of building a model and a relevant database is time consuming and calls for high precision, but as this is done the start-up costs for new projects diminish tremendously.

Results in the four neighbourhoods

To compare the different areas, we used various geometric representations. First, polar diagrams show multiple performances in one and the same diagram. The sum of these performances can be read as an index, ranking the areas relative to one another and to the three reference areas. At the same time, the overall index is subdivided, and each variable can be read separately. Variables that score low in comparison with other areas signal a need for further study of that specific aspect. The polar diagram can thus be used to arrive at a better problem description.

However, differences within the area are invisible using this method, and we should therefore be careful when interpreting the polar diagrams. To see differences within areas, we used thematic maps showing one variable at the time, such as centrality, accessibility to various services, density, and accessibility to workplaces within various radii. But to understand how a specific place functions as public space, whether it is likely to be populated, and if so whether it serves a variety of people, we needed to include more than one variable in the analysis. We therefore developed what we call a line analysis in which we analysed the characteristics for a sequence of segments in support of various social processes.

Urban spaces with high social potential (i.e., the potential to function as public meeting spaces) are those that have high spatial centrality, are likely to be populated (by both locals and non-locals), and provide opportunities for 'eyes on the street' because they are constituted spaces (Hanson 2000). In one such analysis, we distinguished between segments that perform well locally (R6), those that perform well globally (R50), and those that do both (local and global). In addition, we distinguished between the accessible services within one kilometre: daily life services (elementary school, daily shopping), services for youth (more focused on high school and sport), and commercial and cultural services (culture, shopping). Some segments (axial lines) have access to all three categories within one kilometre and have both a high local and global integration. This makes these streets most likely to be visited by different groups of people for different reasons—people from the area itself but also from other areas further away. We used another representation that incorporates elevations of a sequence of segments in which the above-described outcomes are quantified

and summarized, including topological data. This analysis detects discontinuities in, for example, constitution or centrality along a sequence of segments. This can be helpful in detecting on a detailed scale what kind of intervention is needed and where.

A comparison of the analysed areas illustrates considerable differences in terms of access to important urban resources and amenities, confirming a situation of manifest unequal living conditions (figure 2). It is of great concern that the poorest conditions are found where the residents are socio-economically most disfavoured and where unemployment rates are high. The situation in the three reference neighbourhoods is essentially more favourable. A more specific analysis shows that the conditions important for chances in the labour market (Åslund et al. 2010; Legeby 2013) prove poorest in Bergsjön, exemplified by, for example, low access to workplaces and proportionally poor access to the city centre by public transportation.
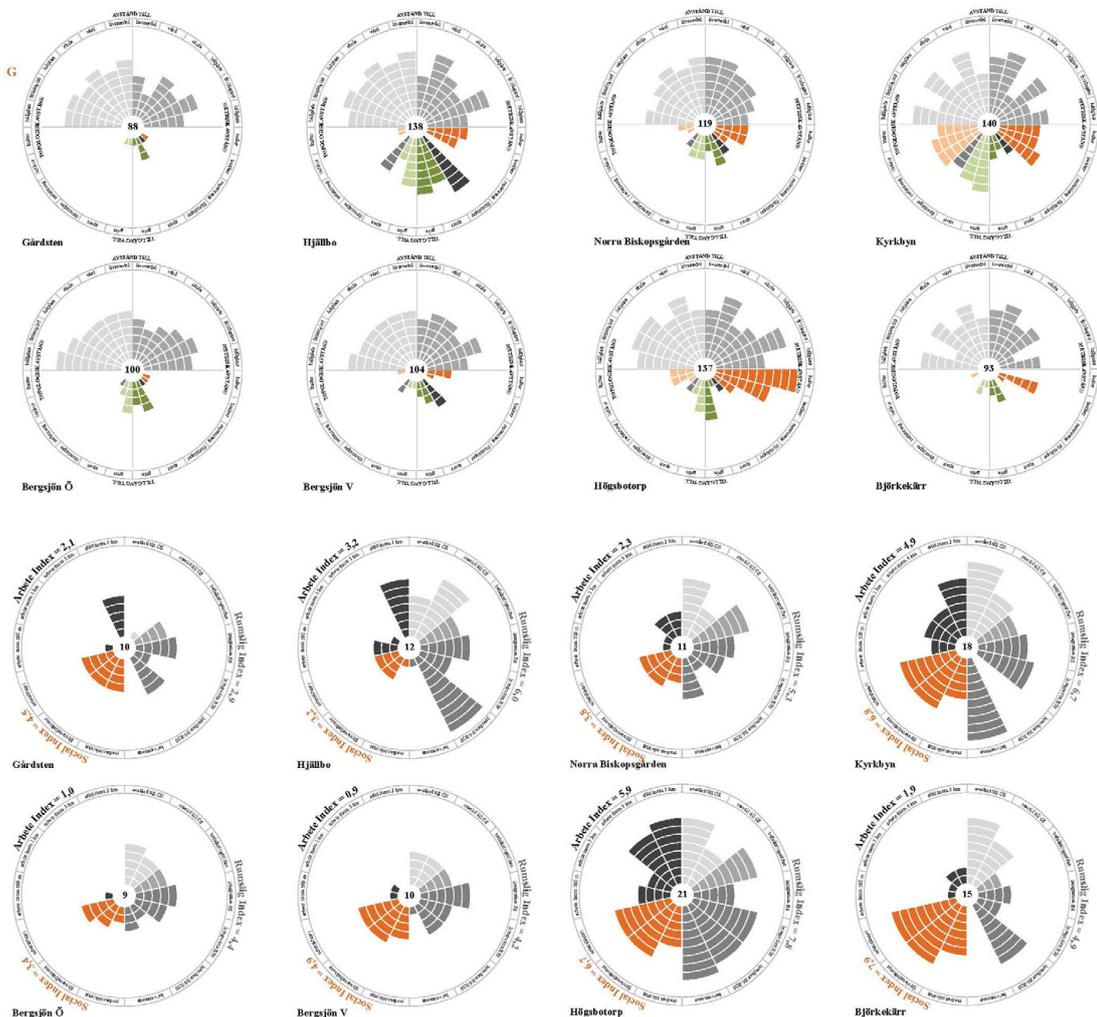

Figure 2. Access to urban amenities and aspects important for opportunities in the labour market.

But within Bergsjön, too, differences can be found that are not shown in the polar diagrams. The thematic maps are thus an important complement to the polar diagrams for representing these internal differences. The map showing access to workplaces within three thousand metres (walking distance) of each address makes obvious that the eastern parts of Bergsjön have better access to workplaces than the western and southern parts do (figure 3).

To change this unequal distribution, one can either add workplaces locally or make existent workplaces elsewhere more accessible.

Figure 3. Thematic map illustrating access to workplaces.

To study the connection between the western and eastern parts of Bergsjön, we analysed the sequence of segments that connect two squares with public transport nodes—one in the west and the other in the east. The analysis reveals clearly the large variation from segment to segment in all three variables considered: betweenness, constitution, and the mix between night and day populations (figure 4). Adding new connections or addresses at strategic points could improve the continuity of the line or, in other words, heal these missing links.
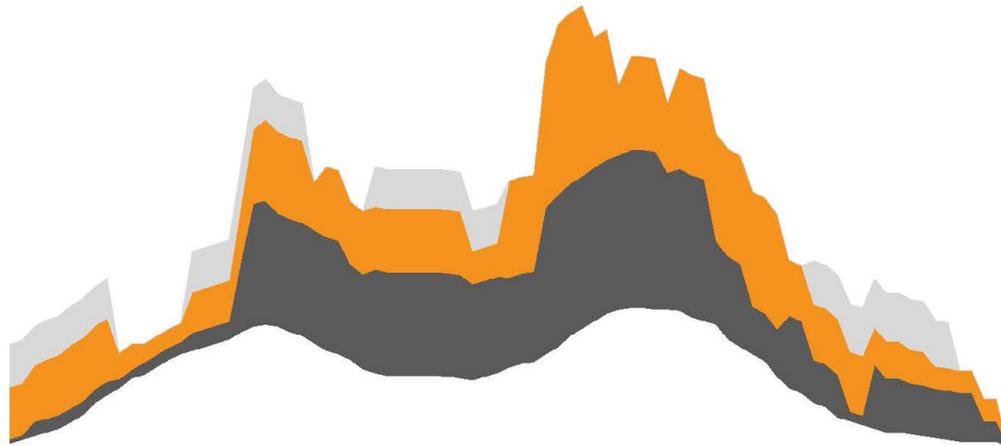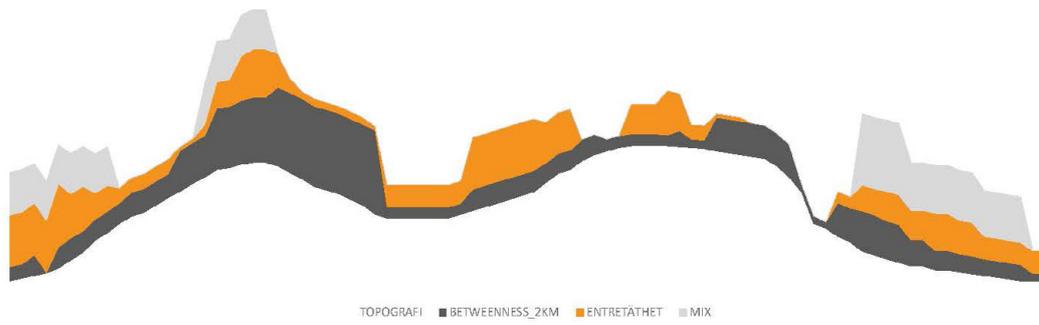
Figure 4. Line analysis: East-west section in Bergsjön illustrating topography, betweenness, constitution, and mix between residents and non-residents. Current situation and situation according to proposed interventions.

This would result in a stronger public axis connecting both sides of Bergsjön, and that, in turn, would provide better access to workplaces in the western part of Bergsjön (figure 5).

Figure 5. Thematic map illustrating access to workplaces according to proposed interventions.

Access to urban resources is clearly dependent and influenced by configurational properties; it is therefore possible to change this access through urban-design interventions. However, we also must conclude that, in comparison with the reference neighbourhoods, these improvements represent only moderate advances. In other words, the spatial conditions in Bergsjön are so far behind those in the reference areas that it will be difficult for them to catch up. On the other hand, we did not include secondary effects of the proposed interventions, such as an increased population density as a result of the added dwellings along the discussed east-west connections or new workplaces that might be attracted to this better integrated line.

The usefulness of socio-spatial methods

The results of this investigation have been presented at workshops for experts employed by the city of Gothenburg and other key stakeholders, and the project has met with strong interest regarding the methods and the representations, as well as regarding the approach itself. However, the project has also encountered strong scepticism from some. Primarily, the discussion has been about whether the analysis shows a correct representation of these neighbourhoods and whether the methods have the capacity to show something different from what might be arrived at through other means, such as interviews, gå-turer (i.e. a systematic 'walk-and-talk' with people who know the area), and focus groups. The analysis of a specific question concerning the usability of different methods shows, however, a clear pattern. For problem definition, methods other than the socio-spatial methods that we present can be used, but when it comes to translating these into spatial interventions and evaluating these interventions, the socio-spatial methods we propose constitute an important addition. One important finding from the workshops is that there is a lack of knowledge among many of the participants about network analysis and modelling. Further, the interest in discussing theories has been surprisingly low. This combination might be a reason why workshop participants found it difficult to interpret the analyses.

DISCUSSION AND CONCLUSIONS

The project is not yet finished (as of spring 2014) so the conclusions are preliminary, but we here highlight four main aspects of it.

• Building a relevant database involves many different processes and actors, an organizational challenge that in spite of a collaborative attitude proves rather complicated to carry out. Problems related to this are difficulties collecting data, a lack of relevant data (in this case, for example, we lack data about the building stock—building heights, floor area, and the size of apartments on a property level), a lack of understanding of how data need to be aggregated, and difficulties making data available owing to security concerns (in this case, true of our population data). We conclude that statistics and data are normally not originally organized in a way that facilitates either their direct use in detailed spatial analyses or, more specifically, their use with a spatial model (e.g., an axial map). Data collection is not only time consuming, but it involves many different departments that need to be willing to collaborate and that need to be informed about the importance of the data's spatial accuracy. There is also a need for collaboration with neighbouring municipalities, given that administrative boundaries do not match the functional regions.

• The lack of knowledge and lack of experience applying the socio-spatial theories and methods feeds back to the project; we conclude that an important prerequisite to using

methods and knowledge applied in research is developing those methods—rather, the representations—and making them more communicative and readable for a new audience not familiar with such representations. Moreover, education is needed for a better understanding of both the usefulness and the limitations of the methods; this can result, on one hand, in continued developing analyses for Gothenburg in house; on the other hand, employees within Gothenburg city can be more precise when engaging consultants in the future. Increased knowledge about how to build an accurate database in terms of the types of data, aggregation levels, and so on, is important if actors are to apply the socio-spatial analysis methods proposed.

- We identify an urgent need for more accessible, informative, and operative geometric representations throughout the entire planning process. We conclude that today such representation is to a great extent a lost instrument that contributes to confusion in this process rather than to efficiency. As we have seen, a change in this direction has implications throughout the whole process and concerns most of the practices involved, from the collection and sorting of basic data to the development of descriptive maps and their analysis into drawings that can be used to concretely implement physical change. It has therefore been a central aim of this project not only to suggest new procedures and forms of data management but also to propose new and hopefully more informative and communicative maps for internal and public debate on future urban development—that is, geometric representations in the form of maps that can help better identify problems and support better informed political debate on what to do, and finally drawings that actually capture the operative dimension of politically determined interventions. We simply identify a missing language in current planning processes that we deem critical to their success. This project has aimed to contribute to the development of such a language specifically adapted to the practical planning process.

- From an architectural perspective, we identify public space as a key space for facilitating important social processes that can support social integration. An important prerequisite for this is that there be some spaces in each neighbourhood with the potential to attract enough intensity and a mix of people (i.e., locals and non-locals), thus creating an arena for co-presence enabling various social processes. The spatial potential of a neighbourhood is crucial in terms of the opportunities created for residents. What is often missing is a dense network of high-centrality spaces—typically, a high street or something that performs in a similar way—namely, spaces that have the ability to distribute amenities through space in an efficient way and to connect the neighbourhood to its surrounding areas and to the city as a whole so that on a larger scale, a continuous and socially connected city may be created. The four areas we studied can better be defined as islands placed in spaces in the so-called background network (separated from the high-street network). Furthermore, there is comparatively poor access in them to public institutions. Hence, 'society' is visible only to a limited extent to those using public space in these areas; this is a matter of great concern and reinforces the character of exclusion from society. Analyses show that the public space in these areas does not afford residents the conditions and opportunities important for integration processes, and this is partly a result of the urban design of the areas and of their position in the urban network as a whole.

To sum up, the Dela[d] Stad project establishes that the four areas in focus are disadvantageous because they afford their inhabitants comparatively poor access to urban amenities and services (this is true irrespective of which socio-economic group lives there). The applied methods and tools illustrate that the living conditions and access to urban resources

prove poorer there than in the reference areas. Public space in these areas is identified as an important arena for social processes that in the long run may counteract urban segregation and is therefore identified as a key architectural component. Missing links, an interrupted interface between the local and the global scales, and discontinuities in the network of urban spaces are properties that result in a less socially sustainable city and are of greater concern in areas where people with fewer resources live than they are in other neighbourhoods.

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Mistra Urban Futures is a unique international center for promoting sustainable urban futures, with its headquarters in Gothenburg, Sweden. We believe that the coproduction of knowledge is a winning concept for achieving sustainable urban futures and creating FAIR, GREEN, and DENSE cities. It is funded by the Mistra Foundation for Strategic Development, the Swedish International Development Agency (SIDA), and seven consortium members.

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