Unbundling Stockholm: The networks, planning and social welfare nexus beyond the unitary city

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Abstract

This paper focuses on the extent to which recent infrastructure-oriented urban developments in Stockholm concord with various aspects of the ‘splintering urbanism’ thesis of Graham and Marvin. This contextualisation allows us to extend their work empirically and conceptually. In the first instance, we study a particular case of the decline of a unitary networked city (in an urban context largely absent from their book). In the second instance, we develop their notion of ‘unbundling’ to capture not just core changes in the organisation of infrastructure provision, but an overarching disjunction of the established nexus between networks, planning and social welfare in the city. This disjunction operates through interlinked transformations concerning, for example, privatisation and outsourcing in network services, separation of infrastructure planning from broader urban planning, contradictions between the environmental and social mandates of infrastructure, and a (prospective) curtailment of the redistributive, social role of essential network service provision. We conclude nonetheless that this ‘destructive’ moment of unbundling has not so far been pursued by more explicitly ‘creative’ urban fragmentation strategies, due largely to the vestiges of a socio-political consensus based around redistribution and equality. In this respect, the Stockholm case pleads for a conception of ‘splintering’ as a dynamic and multi-stage process which is not only always ongoing, unstable and incomplete, but also non-linear and open to resistance/regulation.

1. Introduction

“Stockholm deserves its place... because it [i]s a small European capital city that... set a distinctively different course” (Hall, 1998, p. 842).

For more than a century, access to utility networks and services such as water, energy and telecommunications has been viewed as an essential ingredient of urban cohesion in Europe and elsewhere (Tarr and Dupuy, 1988). Indeed, these public services were frequently part of the very foundations upon which European welfare states were constructed and sustained. The dismantling of these arrangements is comprehensively recounted and analysed in Graham and Marvin’s ‘splintering urbanism’ thesis. Their work on ‘the modern networked city in crisis’ shows clearly how urban infrastructure came to be ‘de-idealised’ in many cities and increasingly configured in relation to changing political economies and forms of urban governance (Graham and Marvin, 2001). The subsequent exploration of links between the ‘splintering’ of the urban condition and the ‘splintering’ of technical infrastructures offers a powerful global vision of the incisive centrality of network service provision to urban development. They provide a number of useful conceptual devices for thinking through the changing configurations of this provision – ‘modern infrastructural ideal’, ‘unbundling’, forms of ‘infrastructural bypass’, ‘premium networked spaces’ – and for critically evaluating their socio-spatial consequences. Their critical argument is widely illustrated with numerous examples of ‘neoliberalising’ infrastructure policies drawn from the UK, the US and the Global South. What is required now is more understanding of how other urban contexts, notably in Europe, converge with or diverge from ‘splintering’ developments. In the process, this should help to interpret plausibly more intermediary and/or ambivalent situations where the shift from infrastructure as cohesion to infrastructure as fragmentation is either ongoing or has perhaps not yet even taken place.

In this paper, I build on the work of Graham and Marvin, taking their thesis as a heuristic theoretical framework for understanding specifically the ongoing and dynamic processes involved in this shift towards splintering urbanism. I examine a number of these processes as they have emerged and evolved in recent years in the context of the Swedish capital city of Stockholm. This empirical focus offers at least three particularities of interest: Stockholm can be said to have been developed as a unitary networked city with municipal responsibilities for network service provision and for
planning and welfare based upon a tradition of administrative decentralisation; it has seen recent municipal policy shifts often involving infrastructure; the Stockholm context also reflects wider national reforms in the domain of both network services and tensions in the orientation of welfare state policy.

In exploring the relations between urban infrastructure change and urban transformation in Stockholm, the article has three main objectives. First, it extends analysis of the splintering urbanism thesis empirically by focusing on a Northern European urban context which is notable by its absence from Graham and Marvin’s work. Second, it extends some of the theoretical debates opened by their work concerning the nature and extent of the demise of a unitary networked city model, local unbundling of infrastructure networks, relations between urban planning and infrastructure development, and the social implications of urban infrastructure reforms. Third, it evaluates the usefulness and limitations of the splintering urbanism thesis for analysing the types of processes at work in the Stockholm context.

The paper is subsequently organised into six sections. In the next section, we interrogate in more detail the rise and fall of the unitary networked city, particularly as outlined in the ‘splintering urbanism’ thesis. This unpacks some of the rationales behind both the ‘modern infrastructural ideal’ and its apparent demise, and allows us to begin to situate these theoretical observations within an urban context marked by an established continuity between decentralised networks, planning and welfare policies (Section 3). We then focus on the extent to which the notion of a unitary networked city has become problematised in Stockholm through the emergence of three particular forms of ‘unbundling’, relating to a declining public management and control of infrastructures (Section 4), a disintegration of combined infrastructural and broader urban planning (Section 5), and a decaying mandate of infrastructural welfare ensuring household accessibility to essential network services (Section 6). The conclusion sums up the arguments and discusses some of the implications of this unbundling of the networks-planning-welfare nexus.

2. From unitary to ‘unbundled’ networked cities: deconsolidating infrastructure, urban planning and social cohesion?

Graham and Marvin discuss the rise and fall of the networked ‘unitary city’ in Chapters 2 and 3 of Splintering Urbanism, compellingly exploring the ways in which infrastructure was at the heart of modernist planning attempts at unifying and homogenising urban space and promoting cohesive city building: “A pervasive age of technological optimism became concretised in grand technological visions for cities realised through integrated infrastructural and urban planning” (Graham and Marvin, 2001, p. 45). This integrated planning prevailed through much of the 20th century, contributing in the post-war period to the creation of unitary networked cities of social, economic and political coherence. The ‘keynesian infrastructure planning’ of municipalities and (especially) States was inherently tied in to wider societal objectives of welfare provision and socio-economic redistribution, in which “the democratisation and diffusion of infrastructure were critical to the emergence of a national sense of cohesion” (Graham and Marvin, 2001, p. 74). As natural monopolies, network services such as water, energy, telecommunications and transport were thus also intrinsically universal, public goods to be rolled out and delivered fairly homogeneously to all, thus benefiting from economies of scale. They were financed often by a complex series of cross-subsidies between richer and poorer user groups, areas or sectors, which ensured equalities of access. The services also commonly produced certain externalities, impacting notably upon the environment. There were therefore powerful economic, social and environmental factors sustaining the belief that some form of public management and regulation was the most appropriate and efficient means of network service provision (Graham and Marvin, 2001, p. 77–81).

This general model of the networked city (sketched out only very broadly above) began to be problematised from the 1960s onwards by a series of undermining processes. Graham and Marvin’s account of the ‘collapse of the integrated ideal’ convincingly shows how in many Western contexts an amalgam of paradigm shifts in urban planning and governance, political economy and social critique combined to overhaul the ‘modern infrastructural ideal’:

“Ideas of the unitary nature or ‘wholeness’ of both cities and urban infrastructure networks are unravelling. Territorially driven policies and politics that try to use networked infrastructures to redistribute between the circuits and spaces of the metropolis are starting to appear at odds with the wider transformations under way” (Graham and Marvin, 2001, p. 136; see also Brenner, 2004).

This represented nothing less than the withdrawal of network service provision from the mandate of the welfare state leading to “a loss of the redistributive, social role implied by public monopolies” (Little, 1995, p. 9; quoted in Graham and Marvin, 2001, p. 102; see also Musterd and Ostendorf, 1998), i.e., a curtailment in the scale of social ‘safety nets’ of essential services for the most precarious groups. The outcome has been a rise of more differentiated ‘infrastructural consumerism’ supporting ever increasing socio-spatial inequalities in service access and use.

The comprehensive, rational planning aspirations (which notably supported the combined planning of infrastructure networks and cities) are also in demise. Graham and Marvin note the shifts in urban planning practices away from plans to projects, from utopianism to pragmatism, and to entrusting other institutional actors with infrastructure provision, all within a changing political economy now dominated by compelling logics of privatisation and liberalisation (Graham and Marvin, 2001, p. 103–104). These shifts are all symbolic of the radical transformation of the notion of ‘public interest’: the ‘modern infrastructural ideal’ was above all constructed on a belief that universal, equitable and public provision of basic services benefited everybody within a territory, as a glue which bound together a coherent social group; this belief has slowly evaporated in recent times as consensual decision-making has given way to a more liberal doctrine of individual choice and delimitation of state power in which basic services are no longer primarily viewed as public goods. Private sector firms and operators have then become increasingly prevalent in urban infrastructure markets introducing logics of financial accountability and rates of return to previously uncommodified service delivery. Cities have become ‘strategically crucial geographical arenas’ for accumulation, economic development and inter-urban competition (Brenner and Theodore, 2002), with urban actors looking predominantly outwards for advantage rather than inwards for harmony. These logics are reinforced by the ‘internationalisation’ of networks and operators (McGowan, 1999), demanding global-local rather than intra-urban connectivity (through, for example, the rise of excludable ‘premium networks’ for the most lucrative users), and globalising financial flows between a varied array of investors and infrastructure managers (instead of articulating investments and costs through territorially focused cross-subsidies). Overall, the transformation frequently involves a double decoupling process, separating operationally the localised provision of services from delocalised responsibility and liability (not to mention any form of political accountability), and economically the prices paid by local consumers from the actual costs of service provision (and therefore the rates of return produced).

We can however question whether these trends towards ‘decollectivisation’ and consumer differentiation must constitute the rule
everywhere. The perseverance of local and national regulation and the emergence of forms of resistance are two political means of limiting ‘splintering’ tendencies (Graham and Marvin, 2001, p. 387–403). Yet one of the inevitable limits of the splintering urbanism argument is its abiding focus on the generalised regressive mediums and outcomes of fragmentation which screen the heavily contextualised ways both in which splintering comes about to differing extents through time and across space, and in which city and state actors continue to impose their (varying) ethos in the domain of urban infrastructure provision (see Öffner, 2000; Lorrain, 2000; Lorrain, 2005). Patrick Le Galés has argued that most western European cities in general have been relatively spared in terms of polarisation tendencies compared to cities in other parts of the world (Le Galés, 2002). It is notable in this regard that Graham and Marvin exclude virtually any reference to cities in Northern (or indeed continental Western and Eastern) Europe (Graham and Marvin, 2001, p. 385). This can be partly explained by a relative lack of detailed empirical research into urban infrastructure developments in this particular context (though see Guilverg and Kajser, 2004; Summerton, 2004, for more recent work in this direction), but it also undoubtedly reflects more widespread ideas that Nordic cities have developed more egalitarian and redistributive societies than almost anywhere else in the world.1 They just do not seem to fit into the dominant (anti-) neoliberal vision which has captured much of current urban geography and urban studies. Their legacies of a broad socio-political consensus around essential public service provision for social redistribution merits further consideration in order to question whether any decay must inevitably lead eventually to urban splintering or whether out of the vestiges might be constituted a new form of unitary networked city somehow sustaining similar broad goals of social equality as before. We explore this unresolved tension in the context of developments in Stockholm over the next sections.

3. Networks, planning and welfare on a municipal level

The Swedish version of the unitary networked city was supported to a large extent by the decentralisation of many of the responsibilities and mandates associated with urban and welfare policies to the municipal scale. Municipal self-government has long been administratively important in Sweden. The 290 Swedish municipalities have a wide remit including education, childcare and elder care, social services and urban planning.2 Municipalities hold for instance a planning monopoly over their territories3 and often own a substantial proportion of the land within their boundaries (around 70% in the case of Stockholm4). Furthermore, the Swedish model of local government gives municipalities the right to collect income tax from their citizens.5 More than 90% of the budget of the City of Stockholm (with a population of around 770,000) is derived therefore from municipal taxes and rents, with only a small percentage originating from the national state (City of Stockholm annual report 2005). In terms of social welfare, the municipality, through its district councils, offers vital financial assistance (ekonomisk bistånd) to all who meet its individual needs assessments, based on factors including income, household size and number of children. This assistance can cover not only housing rents, food and clothing allowances, and travel permits, but also water and heating charges (because these are included directly in the rent of apartments) and electricity bills.

National level regulations and reforms in the field of network services have set the overall regulatory context for infrastructure provision, particularly in the last 15 years or so as the government has liberalised the telecommunications and electricity markets (in keeping with or in anticipation of European directives) and adjusted water sector regulations (notably to reinforce environmental protection).6 But it has traditionally been at the municipal level that actual service provision has been managed and controlled. Many Swedish cities gathered together their water, energy, transport and communications activities under public subsidiary entities with a view to coherently providing these services to their citizens and more efficiently managing and maintaining the networks. Stockholm was no different, and developed the Stockholms Stadshus AB municipal holding company as a public structure revolving around separate subsidiary operations.7 A complex cross-subsidy system was put in place internally, whereby each subsidiary company would pay the central holding company a form of fee, plus a proportion of its profits (if any), which Stadshus could then redistribute in part to any of its companies in deficit. This was the unitary networked city in action, Swedish-style.8

In sum then, national policies and objectives guide and broadly orient socio-economic goals, but it is on a municipal level that many of the political and financial decisions have traditionally been made which have concretely affected urban and social cohesion in Stockholm. Over the next three sections, we explore how the networks-planning-social welfare nexus at the heart of the unitary networked city ideal in Stockholm has come under increasing pressure and we analyse the extent to which the individual components of this nexus are being differently ‘unbundled’ or destabilised from prior integrative arrangements which tended more often than not to promote cohesion.9

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1 Analyses of urban segregation and social exclusion in Nordic cities have proliferated (see, for example, Andersen, 1998; Andersson, 2006; Brännström, 2004; Härsman, 2000; Wessel, 2000), but such processes appear to be heavily contextualised. They are important within specific urban contexts, but within comparative, cross-national perspectives, become relatively benign compared to the harsher fragmentary dynamics underway in, for example, UK, North American, and especially Global South cities (Stahre, 2004; see for example Soja, 2000; Marcuse and van Kempen, 2000; Body-Gendrot, 2000; MacLeod et al., 2003).

2 Between the national and municipal levels there are 18 county councils whose main remit concerns health care, although Stockholm County Council (covering the 26 municipalities of the Stockholm region) also manages public transport services and regional planning strategy.

3 The Planning and Building Act of 1987 actually withdrew the requirement for formal national government approval of municipal planning decisions and allowed state interference only in the case of planning decisions which opposed specific legally defined national interests. For a more detailed presentation of the Swedish planning system than can be provided here, see for example the COMMIN project, 2007.

4 Source: City of Stockholm Planning Administration official, interview, October 2007.

5 Municipalities in Sweden receive therefore a higher local tax revenue as a proportion of GNP than municipalities in any other OECD country. However, state redistributive policy obliges the relatively richer municipalities of the Stockholm region to contribute to the budgets of relatively poorer municipalities elsewhere in the country to the tune of 700 euros per capita per year (Härsman and Olsson, 2003; Andersson et al., 1997).

6 For a more in-depth view of national level regulation of network services in Sweden, see Boucher-Hedenström (1998).

7 These included Stockholm Vatten for water and wastewater services, Stockholm Energi for electricity and heating services, and Stokab for fibre optic telecommunications. There are now seventeen operations, including the City’s three housing companies (Svenska Bostäder, Familjebostäder and Stockholms hem) plus companies representing diverse fields from leisure activities such as theatre and sport, through tourism, to the car park management entity. As we shall see in Section 4, Stockholm Energi no longer exists.

8 The cities of Gothenburg and Malmö operate a similar municipal bolog structure.

9 Analysis is based on in-depth qualitative research carried out in Stockholm in the spring of 2005, supplemented by further fieldwork in October 2007. This included a series of more than 30 interviews with local, metropolitan and national actors (including representatives of service providers, regulators, consumer associations and local and regional government) as well as analysis of relevant documents and plans.
4. Unbundling infrastructures: dismantling the Stadshus?

“I think that the Conservatives that are now in the City Hall, they are asking themselves what shall the City work with. They should work with schools, education, taking care of children and elderly people. And everything else can be sold out…” (City of Stockholm Planning Administration official, interview, October 2007).

From a homogeneous conception of network service ownership, management and delivery by subsidiary companies of the municipal Stadshus holding organisation, the role of the municipality has changed much in the last 15 years or so with regard to providing these services to its citizens, and now varies between sectors. Indeed, from a situation in which water and wastewater, electricity and district heating services were owned and managed entirely by the municipality more or less in the same way, each service has now developed a differing form of infrastructural governance (see Table 1): a public monopoly for water and wastewater services, fully liberalised electricity provision, and a private-public holding company for district heating. These three forms of infrastructural governance are subject to varying degrees of regulation (see Table 1). It is in the electricity sector where extra-local regulatory policies and organisational modalities exert strongest control over local developments as national and European liberalisation dictates competitive service provision over distribution networks with tariffs decided by the Nordic energy exchange. Stockholm Vatten operates within the framework of national water acts which have set regulations on municipal ownership of infrastructure, cost–price tariffs for consumers and environmental protection, but it is otherwise relatively free of national level supervision. Finally, the Fortum Värme district heating company operates locally in Stockholm with relatively little regulatory interference from the national level.

It is a complicated task to understand fully the rationale behind these recent changes, particularly the highly significant local disengagement from energy service provision, and why this was not contested. Interviews with the main actors illustrated that there has been no single defining moment or event which led to change, but rather there was (and still is) a complex mix of factors which gradually created the socio-political conditions for transformation.

Both Social Democrat and Conservative majorities have been implicated in the privatisation, so the shift overrides simple political ideologies. Nevertheless, the changing position of municipal Social Democrats has a central role here, as they moved in just a short space of time from opposing any reform to a non-oppositional stance (or perhaps even implicit support). Specifically, there was a brief flirtation with selling shares in Stockholm Energi to Yorkshire Electricity early in 1994 when the Conservatives held a majority in the City Hall. When the Conservatives lost the municipal elections later that year, the Social Democrat mayor Mats Hulth broke the agreement to prevent the loss of control of energy provision by paying a ‘penalty’ of 200 million SEK to the UK company (Former head of Stockholm Energi, interview, March 2005; Former mayor of Stockholm, interview, March 2005). This illustrates the (short-lived)

strength of feeling at the time among left-leaning municipal actors that energy in Stockholm should not be provided by market-driven companies.

Another change of majority in the municipality 4 years later, however, saw the beginnings of a privatisation in earnest. Stockholm Energi was merged with the Finnish state energy company IVO to become Birka Energi, with City ownership reduced to 50%. Nevertheless, at this stage within Birka Energi, “it was the City which was really the strongest owner”, driving strategy and pursuing developments (Former head of Stockholm Energi, interview, March 2005). But the impulsion of the Conservative majority to sell off the whole operation grew in strength, so that in 2002 the Finnish company (renamed as Fortum) acquired the whole of Birka Energi and has continued since to be the main electricity provider in the capital. The City of Stockholm received 14.5 billion SEK for its 50% stake in Birka: “Everyone agreed at that time that the price was right – the City received the last penny that it was worth” (Financial adviser, interview, May 2005). When the Social Democrats subsequently returned to power in 2002, they did nothing to reverse the privatisation and accepted the situation, realising “that they could use this money for other politically perhaps more interesting purposes” (Fortum official, interview, March 2005). It was also at this stage in 2002 that electricity and district heating services were unbundled from being delivered by the same company, due largely to “a political compromise” about “keeping some political influence” in the heating operation (Financial adviser, interview, May 2005).

Although the opportunity for change was thus partly created by national level regulatory reforms (the 1996 electricity market liberalisation), the key motives and decisions came firmly from municipal level actors framed by changing political influence, political compromise and local budgetary pressures. We now consider two distinctive management situations in essential network service provision in Stockholm: municipal disengagement from the district heating operation and the continuing public management of water. Until recently, the two services represented contrasting Stockholm visions of how to manage essential network services, but these visions are in flux and could well converge more in the near future.

4.1. Heating Stockholm from Helsinki

“The impacts that Fortum businesses have on the welfare of societies can be measured by monetary flows between the company and its stakeholders” (Fortum annual report 2005, p. 38).

District heating covers between 70% and 75% of heating demand in Stockholm, so there has traditionally been a need to ensure that accessibility and affordability of the service for households is high, particularly in dense, central areas where heating alternatives are...

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10 There is yet another form in the case of broadband telecommunications which we do not have the space to discuss here. In this sector, the City has been involved for many years as a dark fibre provider through its Stokab subsidiary. More recently, this has been complemented by the work of its main housing company Svenska Bostäder in developing a broadband deployment strategy for municipal apartment buildings. In both cases, however, this intervention occurs purely on the infrastructure side, with customers then purchasing actual broadband services from (mostly) private providers.


12 Approximately 22 million euros at current rates (1 SEK = 0.11 euros).

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13 The Finnish state owns slightly more than 50% of the shares in Fortum, but “it is run as a private company” (Fortum official, interview, March 2005).

14 Both Conservatives and Social Democrats understood that the electricity sector had been liberalised and that there was a regulatory authority and framework in place to handle consumer issues. This was not the case in the heating sector which would still therefore require some municipal involvement.

15 Both these services constitute de facto technical monopolies. There are of course alternative, autonomous solutions to obtaining access to water and energy (wells, septic tanks, heat pumps, etc), but these are, unsurprisingly, more common in less dense parts of the Stockholm region than in the actual city. There are more ready, albeit generally more expensive, alternatives to networked heating (electric heating, boilers, geothermal systems) than networked water in urban Stockholm, which may help to explain why the municipality has up to now kept the latter in public hands while being willing to divest control of the former.
not readily available.\textsuperscript{16} This has been problematised by the divestiture of the former municipal provider Stockholm Energi and the subsequent quasi-privatisation of the district heating service. This service is now operated by AB Fortum Värme samägt med Stockholms stad, a co-owned private-public venture between Fortum and the City of Stockholm, which came about in 2002 when Fortum bought out the City’s 50\% stake in Birka Energi. Although the City now only has a 9.9\% equity stake in the operations, it managed to negotiate in the deal a 50–50\% influence with Fortum\textsuperscript{17} “to keep track of developments” (Fortum Värme official, interview, March 2005). In spite of this ‘influence’, however, according to other interviewees, the municipality has less and less effective control, competence and just plain interest in energy (Former head of Stockholm Energi, interview, March 2005; housing company officials, interviews, April–May 2005). The result has predictably been constantly increasing prices for households for district heating services.\textsuperscript{18}

The Stockholm situation of rapid increases and high prices can be explained in large part by the way in which Fortum Värme price their ‘product’. It is clear that in district heating provision (and to some extent also in electricity) Fortum takes advantage of the quasi-monopoly position it holds in the market. It owns and manages the sole infrastructure over which the service is offered in the whole of central Stockholm: “district heating is an extremely profitable business in general, and especially in densely populated areas where there are very large synergies of scale” (Financial adviser, interview, May 2005). Furthermore, one commentator has suggested that Fortum is “in a position to pass the costs of electricity production onto district heating customers in order to be more competitive in the electricity market” (Arola, 2005a).\textsuperscript{19} Furthermore, in the heating sector the competitors of Fortum Värme are not other district heating suppliers, but other techniques of delivering heating to households. The fact that these alternatives have been heavily taxed in recent years for environmental reasons “means that the basic business idea of district heating is to price the product according to highly taxed fuels and then to use low tax fuels as much as possible, such that the profitability of district heating has increased significantly” (Financial adviser, interview, May 2005).\textsuperscript{20} When combined with effective municipal disengagement from the service in Stockholm, this has permitted Fortum Värme to re-adjust their pricing strategy to fit the market they have an effective monopoly over, while referring to a so-called home-heating market as though households could switch at no cost from one technology to another:

“What’s happened is that our pricing has become more market-oriented, so we now price our products compared to the alternatives. This could be boilers, heat pumps, maybe pellet burners, electric heating . . . So what we do is to see the local background where we set the prices. Is there a market there?” (Fortum Värme official, interview, March 2005)\textsuperscript{21}

In Stockholm, price increases in district heating have been widely criticized as a rupture with tradition: “If we had a cost-based pricing system as it was 15 or 20 years ago, then of course the prices could have been much lower in the Stockholm system because the synergies of scale are extremely high in this system. But we don’t have that, and nowadays it’s market-based pricing” (Financial adviser, interview, May 2005).\textsuperscript{22} Even a former mayor now accepts that selling the municipal energy company “was a wrong analysis.

\begin{table}
\centering
\begin{tabular}{|c|c|c|}
\hline
Ownership/governance & Regulation & Profits (destination) \\
\hline
Water and wastewater & National water acts (municipal ownership of infrastructure, cost-price tariffs for consumers, environmental protection) & Forbidden \\
Broadband & Market-led regulation on national level (PT5) & Stadshus holding company (from Stokab operations) \\
District heating & Weak regulatory body (STEM-EMI) & Shared between Fortum and municipality according to terms of agreement \\
Electricity & Regulatory body weak but becoming stronger (STEM-EMI) & Network company and service providers \\
\hline
\end{tabular}
\caption{Current organisation of network services in Stockholm}
\end{table}

\textsuperscript{16} District heating is ‘the generation and distribution of hot water in a pipeline system for the collective heating of buildings. The heat is generated in boiler stations or in CHP (combined heat and power) plants. Hot water distribution is carried out through a network of pipes. There are two pipelines: a supply pipe and a return pipe for returning the cooled water to the district heating plant’ (Swedish Energy Agency, 2004, p. 36).

\textsuperscript{17} Both parties have the same number of representatives on the board of Fortum Värme and there is an alternating chairman.

\textsuperscript{18} Although there is a general trend across Sweden for prices to be higher in those municipalities which have privatised the service than in municipalities which have kept the service in public hands, households in Stockholm have seen the sharpest rises and have the highest prices in the whole country (Nils Holgersson, 2005).

\textsuperscript{19} The unbundling of electricity and district heating in the Stockholm region has not, in this case, removed the possibility for the application of cross-sectoral compensations.

\textsuperscript{20} In this way, environmentalism and profit-making have gone hand-in-hand as the political will to promote the lesser-polluting district heating sector against fossil fuel-based alternatives has meant that there has been “an increasing window of opportunity for high profitability in the district heating sector” (Financial adviser, interview, May 2005).

\textsuperscript{21} Even if Fortum Värme defends the rising district heating prices as comparable to alternative heating methods and as subject to high taxes, everyone else we talked to admitted that they were too high (including the co-owner, the City) compared to other municipality district heating businesses in the vicinity of Stockholm, and that Fortum Värme were making considerable profit out of this. The consequences of these rising prices are necessarily rising rents, but in the short term, housing companies too must usually absorb some of the extra cost as the negotiated rent increases for the year do not cover all the heating price increase (Svenska Bostäder official interview, May 2005; Familje Bostäder official, interview, May 2005). Monetary flows involving Fortum do indeed have an impact on societal welfare.

\textsuperscript{22} Interestingly, Fortum is not present in the district heating sector of its market in Helsinki, where the service is owned and run by the municipal company Helsinki Energy with a heating market share of over 90\%. Yet, in spite of this even greater monopolistic situation than Fortum enjoys in Stockholm, prices are much lower. Indeed, the difference in the price of district heating supplied by Fortum elsewhere in Finland (around 450 SEK/MWh) and in Stockholm (around 770 SEK/MWh) is substantial, and difficult to explain solely by the higher taxes in Sweden.
With the price increases, I think it was a bad idea to sell...” (Former mayor of Stockholm, interview, March 2005). Another interviewee suggested that the whole of Fortum’s strategy for Stockholm was oriented around its requirement to recuperate at all costs the 14.5 billion Swedish crowns it paid for the municipal energy company (City of Stockholm Planning Administration official, interview, May 2005). This is achieved by their demand for a 12% rate of return “which no business has, least of all a monopoly business” (Former head of Stockholm Energi, interview, March 2005). Yet it is precisely because Fortum holds a monopoly in areas such as district heating in Stockholm that the company has generated ‘staggering’ profit margins such as the 32% operating margin for just the first nine months of 2005 (Arola, 2005b). Financialisation of urban infrastructure is therefore all the more attractive under monopolistic market conditions, especially when local regulation of these conditions has either very limited power or actually works in the direction of private operators through a form of risk-sharing. From the start, Fortum saw its investment in Stockholm as “a low-risk, lucrative project with short-term, demonstrable profitability” (Graham and Marvin, 2001, p. 97). It has effectively, with the blessing of the City of Stockholm, commodified a previously public good for financial reward. Indeed, the shareholder agreement between Fortum and the City of Stockholm states specifically that the jointly owned company should be operated as “a profitable, business-driven company on market conditions” (Financial adviser, interview, May 2005). “At the end of the day, our task is to distribute the energy and to make a profit, that’s all” (Fortum Värme official, interview, March 2005).

4.2. Saving Stockholm water

“It is quite clear that a publicly-owned water business is a better option since no profit is charged to the consumer. I think everyone will agree on this” (Stockholm Vatten official, interview, April 2005). “The City politicians want our company to be more effective, so we have to slim the organisation and run faster by separating our core business and our other activities, some of which can be outsourced” (Stockholm Vatten official, interview, October 2007).

Contrary to district heating, water services in Stockholm still fall under public management through the municipal company Stockholm Vatten (part of Stockholms Stadshus AB). These services are widely recognised to be both of a very high standard and relatively inexpensive to consumers. The ‘natural’ public monopoly structure was officially outlined in the Public Water and Wastewater Plant Act (VWA) of 1970, which also made it illegal to make a profit from a water supply enterprise. Costs not directly linked to the operation of supplying water and managing wastewater in the municipality cannot be added to water tariffs. Stockholm Vatten’s activities are thus financed entirely by the rates and fees earned from the sale of these services with no additional subsidies or taxes. As a result, not only is the water and sanitation service charge set at a reasonable level for all customers (constituting less than 3% of the total average rents paid by Stockholm tenants), but the large financial surpluses of Stockholm Vatten garnered at the beginning of the decade forced them to reduce water rates by 3.5% from March 2004: “We found that we had to decrease our prices, because we had too much money” (Stockholm Vatten official, interview, April 2005). Furthermore, consumers were reimbursed a total of 300 million SEK during 2006, equivalent to a third of the annual fee of each consumer, “as a result of the company’s favourable financial position” (Stockholms Stadshus AB annual report, 2006, p. 26). Water provision in Stockholm has therefore been sufficiently reliable and inexpensive to make it ‘invisible’ to the majority of households who take it for granted (Lannerstad, 2002).

Price cuts, reimbursals, high quality service... And yet campaigners and activists took advantage of Stockholm Water Week in August 2007 to organise a series of public meetings to highlight what is being seen as a major change in Stockholm water policy. Following the change in political majority in the City Hall in 2006, Stockholm Vatten is being targeted by “new owner directives for long-term work aimed at enhancing efficiency and rationalising our operation” (Stockholms Stadshus AB annual report, 2006, p. 26). The company has thus been internally reorganised in the last year (see Fig. 1) involving a ring-fencing of operations concerning the production and distribution of drinking water for Stockholm and neighbouring Huddinge and the creation of a new subsidiary concerned with the commercial provision of drinking water to other neighbouring municipalities and sideline business such as biogas production. The company has also outsourced its research and development division meaning that it must now buy any research on the open market. These developments are emblematic to some of ‘neo-liberal winds’ and the beginnings of a ‘sneak privatisation’ (public meeting flier, August 2007) whereby most if not all of Stockholm Vatten’s operations will end up being outsourced. Furthermore, “rationalisation” has meant the redundancy of more than 100 company staff, budget cuts for network maintenance in 2007 of 100 million SEK and decreasing planned investments (Stockholm Vatten officials, interview, October 2007: Gustafsson, 2007). For a former Managing Director of Stockholm Vatten, “such short-term political cost reductions within the political cycle are wrong” (Former Managing Director of Stockholm Vatten, interview, October 2007).

5. Dissociating infrastructure and urban planning policy

As we saw in Section 3, Swedish municipalities have traditionally held a planning monopoly over their territories, and this remains the case. But where land use planning and infrastructure planning once went hand-in-hand for the Stockholm municipality, the infrastructure unbundling trends described in the previous section appear to be part of a broader municipal tendency towards a dissociation of the two. Just as Graham and Marvin identified the demise of comprehensive planning strategies in the shift away from the unitary city ideal, so the diminishing mandate of the City of Stockholm in the domain of network services casts doubt on the continuing coherence and rationality of both infrastructure planning and urban development as a whole in the Swedish capital. Two forms of dissociation, in particular, are having subtle, yet important, repercussions on urban change.

5.1. Planning without the networks

First, there is the question of creeping privatisation and the ways in which infrastructures are moving beyond the realm of the municipality. In Gullberg and Kajser’s (2004) terms, the two constituent parts of ‘city building’, the ‘landscape of networks’ and the ‘landscape of buildings’, have in Stockholm become somewhat disconnected. In interviews, city planners in Stockholm clearly highlighted the more efficient organisation and manage-

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23 This was reinforced in Stockholm by the high technical standard of the system, which would necessitate relatively low levels of maintenance and reinvestment, meaning that “the shareholders are free to take out the profit” (Financial adviser, interview, May 2005).

24 The 2007 Water Service Act confirms a requirement for public ownership of infrastructure, but does not prevent private or public-private entities from seeking operational or maintenance contracts for service provision to municipalities. The Act also opens up possibilities for municipalities to offer the commercial sale of water services to other municipalities, while continuing to not make profit from service provision on their home turf.
ment of urban policy during the period before any de-municipalisation tendencies. The planning of new districts or the renewal of existing neighbourhoods in the city was an easier task in the 1980s and 1990s when network management was also an important municipal remit (City of Stockholm Planning Administration official, interview, May 2005). The City official in charge of drafting a new municipal energy plan speaks about ‘knowledge’ differences before (during the ‘golden days’) and after the disarticulation of urban and energy network policy:

"Energy is a non-question within the City. It wasn’t always like this, but nowadays it is. When the energy company was split from the City, the City was also split from its knowledge. All the knowledge went to the energy sector, and we thought we don’t need the knowledge because the knowledge will be there and they will cooperate. And now they are going further away, and they go away with the knowledge. And when you talk about energy with people, they start to discuss a lot of things that the City cannot even decide on, because they’re back in the golden days when energy was within the City. But that is not the way to do it anymore. We can’t plan like before, because we can’t decide on prices, we can’t decide on how the electricity should be done...there are a lot of things that we cannot decide on, which we could decide on before” (City of Stockholm Planning Administration official, interview, March 2005).

The major recent municipal-led project to build 20,000 flats in Stockholm between 2003 and 2006 forced this official to "try to get the connection back" between planning issues and energy issues, arranging meetings between Fortum and planners initially “just to let people on both sides get to know each other” (City of Stockholm Planning Administration official, interview, March 2005). This renewed contact has not stopped, however, the emergence of intra-municipal tensions on the question of energy provision as a result of the profit-oriented strategy of Fortum. Energy is high up on the agenda of most of the municipal housing companies. Indeed, Stockholmshem has become so fed up with the high prices of Fortum Värme that they have threatened to bypass the Fortum network and produce heating from a plant of their own. We thus have an intra-municipality conflict in which one of the subsidiary companies of the City is actively contesting the services provided by another co-owned subsidiary company of the City!

Likewise, the emblematic Hammarby Sjöstad project has also been affected by a changing relationship between local authorities and network service provision. When work started in the mid-1990s, planners were able to build on the fact that the City of Stockholm owned the water, energy and waste companies who had been instructed by municipal politicians to work together with the planners on a neighbourhood-level recycling model for the whole project:

25 This urban regeneration initiative conceived in the early 1990s as part of Stockholm’s failed bid for the 2004 Olympics has transformed an old port and industrial area just to the south of the city centre into a contemporary residential and work area which will host some 13,000 apartments by 2015. In recent years, it has been a cornerstone both in the municipality’s plan to build 20,000 new apartments and in the vision of creating an emblematic ‘sustainable’ district which would boost the visibility of Stockholm on the global stage (see Munday, 2004).
"I don’t think it would have been possible today, when we only still have one of them, and the other two are more or less private. That has impacts on the planning and the type of solutions we are working on." They were based on a kind of integration between those three companies, and that everyone should look at the total result and not just by company. And today it’s much more split up, where they are just looking at their own company again” (City of Stockholm Planning Administration official, interview, May 2005).27

On a more technical level, municipal network planning could be efficient and comprehensive when this meant consolidating the cables and pipes of municipal companies within one public infrastructure: “Here in Stockholm, it’s very clear that they’ve started with everything being part of the city. In the same tunnel for the subway they tried to utilise this efficiently for electricity and water and everything. But then when it has been split up to separate owners, it becomes very narrow down there and it’s not easy to split the tunnel up. What’s yours and what’s mine? Who is going to pay for what? So you can see a lot of administrative problems when you split up something that’s been started as common municipality services” (Fortum official, interview, March 2005).28

In summary, a number of planning difficulties have resulted from the decreasing articulation between urban policy and infrastructure policy in Stockholm. The short-term objectives of energy companies oriented above all towards financial viability and value-for-money, plus the increasing uncertainty around the future organisation of Stockholm Vatten, contrast starkly with the need for the municipality to meet medium- and longer-term goals for housing provision and land use planning in the face of continued population growth.

5.2. Greenwashing the urban fabric?

A second form of dissociation between urban and network policies in Stockholm can be represented by considering the contradictions at work within the Hammarby Sjöstad regeneration project introduced above.

On a first level, one of the cornerstones of this project came to be the creation of a recycling model based upon tailored localized infrastructural configuration for all housing developments (Fig. 3). Yet the focus of this new ecologically oriented ‘technological sublime’ (Nye, 1994; cited in Graham and Marvin, 2001, p. 45) has arguably decentered the original urban planning aims of the project as a whole. At the outset of this scheme in the mid-1990s, objectives concerning ‘social integration’ were explicitly included (alongside environmental sustainability goals), with a significant proportion of the rental apartments to be built to be accessible to low-income households. As the Hammarby project went on, however, and the city council changed majority in 1998, “the integration side of things became lost in the project development” (City of Stockholm integration department official, interview, May 2005). From a 50–50 private–municipal housing company split, the scheme has shifted towards a split of over 70–30 in favour of the private sector, as the City, under the impulsion of the Conservatives, which has a monopoly on land ownership decided to sell land at Hammarby Sjöstad to the highest bidder – a complete u-turn on what the project was supposed to be about in the first place (see also Vestbro, 2005). The Hammarby Sjöstad project is now packaged as a self-contained ‘ultra-modern’ residential development, in which its admirable ‘sustainability’ goals for making use of natural energy sources and recycling waste and wastewater gloss over a relative lack of ‘social sustainability’ in municipal housing policy (City of Stockholm integration department official, interview, May 2005). The contribution of the project to providing much needed affordable inner city rental housing is therefore likely to be limited.29 The project appears instead more like an exemplar of tendencies towards a ‘greenwashing’ of urban (networked) space, as the politically attractive ‘sustainable development’ label is slapped across any and every urban regeneration scheme with little concern for the inherent contradictions in policy goals.

A second point highlights that such ecological models present in the development of ecoquarters in many urban regions are founded on the use of alternative, decentralized technologies, which allows socio-technical ‘bypass’ of traditional centralized water and energy networks. The Hammarby Sjöstad project has been constructed as an exemplar ‘sustainable urban development’ showcase within which a ‘post-centralized network’ ideal is intrinsically incorporated for ‘green’ water and energy service provision. This represents nothing less than a return to the modernist rationales of infrastructure as harbinger of ‘emancipatory futures’ and of inter-city competition for the construction of “the most awesome infrastructure networks” (Graham and Marvin, 2001, p. 47) and sustainable architecture. Such a model might be environmentally

26 A concrete example of differences in negotiations between those with a municipal company and those with a private company is that planners in the Hammarby project proposed building on land up to only 100 m from both Stockholm Vatten’s local wastewater treatment plant and Fortum’s local energy production plant. While the former company agreed to this proposal, the latter strongly objected demanding a 400 m gap for security reasons. It took over a year and a cost of more than 20 million SEK before municipal politicians validated the planning proposal: “but that is very typical of what is happening when it’s private and not a company run by the municipality” (City of Stockholm Planning Administration official, interview, May 2005).

27 A more recent interview with one of the planners in charge of the Hammarby project confirms these impressions: “I think it would have been much easier to still be working with Stockholm Energi. Because I can compare those people who were formerly working for Birka and now work for Fortum. They are much more keen to keep their own costs down. Earlier when we were both owned by the City, we were colleagues, and working with the same wallet. Now they’re just working for their company. They have no feeling for the community, for the planning, for the municipality. Not the way it used to be. They have their new owners in Finland” (City of Stockholm Planning Administration official for Hammarby Sjöstad, interview, October 2007).

28 The Fortum official mentioned, for example, cases of appropriation of empty electricity pipes by engineers of the municipal telecommunications company Stokab “so when our guys came there years later to use this pipe that they saw on their drawings was empty, it was already used for fibre cable” (Fortum official, interview, March 2005).

29 One revealing statistic is that there is now approximately the same proportion of the population receiving social assistance in Hammarby Sjöstad as in the rich district of Östermalm (between 1.0% and 1.5%), compared with 5.7% in the city as a whole.
sustainable on a local level, but we can seriously question what the implications are for wider social solidarities on an urban scale if traditional integrated socio-technical systems, which depend intrinsically on widespread use and financial cross-subsidies, begin to fragment in this way. In this regard, it might well be viewed as a clean-cut ‘secessional network space’ or a form of ‘spatial selectivity’ by the municipality geared to affluent middle-class families sensitive to ecological issues (Graham and Marvin, 2001; Jones, 1997). This crowning infrastructural ‘environmentalisation’ is already on the agenda more widely across the city, as the individualization of measurement and billing of essential network services for ‘ecological’ reasons is likely to be introduced in Stockholm, thus undermining specific network solidarities which went a long way to ensuring quasi-universal affordability of services (HGF tenants association, interview, May 2005).

This section has illustrated the increasing presence in Stockholm of the trends in the transformation of urban planning practice in the post-unitary city noted in Section 2. Shifts from plans to projects, the emergence of pragmatic rationales over utopianism, and divestiture of infrastructure provision to other actors (Graham and Marvin, 2001, p. 103–104; see also Khakee, 2005) are mobilised in the Swedish capital as privatisation, pragmatism and a focus on smaller-scale planning projects all work in parallel towards an increasingly fragmented urban fabric in which the municipality no longer has full control over the infrastructure networks it used to use as a tool of coherent and redistributive city planning. This highlights how new urban planning orientations can lead to a questioning of the existing modalities and roles of infrastructure, in particular under increasingly dominant environmental logics: “the dimension you can’t argue against!” (HGF tenants association, interview, May 2005).

6. Decaying infrastructural welfare? The social implications of changing essential service provision

The third element in the networks-planning-welfare nexus of the unitary networked city was concerned with ensuring fairly universal, affordable services to all, notably through a combination of municipal network service provision and the definition of water, electricity and district heating as essential services which redistributive welfare measures should cover if necessary in the case of low-income households. Section 4 showed the ongoing unbundling and privatisation of network services in Stockholm. In this section, it is necessary to study the extent to which infrastructural change has diminished the affordability to households of these services, with a view to exploring the more fine-detailed nature of any underlying tensions tied up with recent change in terms of social and financial cohesion.

Recent national level reports into Swedish network service provision have concluded quite generally that sectoral reforms have usually led to increased prices for consumers, but without going into any empirical detail in terms of actual household accessibility or affordability (see SOU, 2005). Yet the overall price of the ‘bundle’ of network services for households in Stockholm has increased over the last decade by approximately 35% (see Fig. 4) and seems likely to continue to increase. As the graph suggests, most, if not all, this increase is directly due to rising energy prices, especially in the last 5 years. District heating prices for households have risen by almost 45% in the period 1996–2006, with much of the increase coinciding with the period since municipal divestiture. Electricity prices have also risen by over 45% in the same period, as tariffs have become more closely tied in to the Nordic energy exchange, which in turn is heavily influenced by the unpredictable nature of hydro-electric production in the Nordic countries. Over the same period, however, the Swedish Consumer Price Index (CPI) has, by comparison, increased by only 10%. Clearly then, if there is an increasing burden on the budgets of Stockholm households and of the municipality due to essential network services, it is energy prices which are largely responsible.

Price increases are just one part of the story though. From a social perspective, more important is the proportion of household income taken up by these essential services for different types of household in different areas of the city. In order to calculate these figures, we have used two sources of data: the research conducted by the Nils Holgersson association on the prices of network services in Stockholm (Nils Holgersson, 2006), and local authority statistics on household disposable incomes on both the municipal and individual district levels and by different household make-ups. Table 2 offers some figures summarising the social fabric of

![Fig. 4. Rising prices for Stockholm households of the network service bundle, 1996–2006. Source: Nils Holgersson (2006).](image-url)
Stockholm and comparing its two most contrasting districts in terms of average household incomes. Östermalm is a fairly ‘bourgeois’ central district, while Rinkeby-Kista is located on the northern periphery of the city and has a housing stock largely built during the ‘Million’ programme. With the former having both an average household income which is almost double that of the latter district, and a proportion of population with no income which is half that of Rinkeby-Kista, we can see signs of socio-spatial income-based segregation in Stockholm. Although this can be relativised by the observation that the average annual income in Rinkeby-Kista is still around 20,000 euros, the high proportion of residents with no income suggests that income distribution is extremely varied within districts.

Using these figures for household income as a base, and as a summary of the situation, Table 3 shows the network service prices for a typical Stockholm apartment and the percentage of average household disposable income that these prices represent in the city and the two districts (broadly speaking between 4.5% and 8.5%). It is quite striking that, on this very general level, the proportion of income taken up by water and energy for a household in Rinkeby-Kista is almost double that for a household in Östermalm. In the latter case, the cost of essential network services makes up a small part of household budgets. In Rinkeby-Kista, it is clearly still not a major part – “I don’t think you can refer the problems of lower-income households to this issue. Every expense is important of course, but it’s not a big issue as far as I can see” (HGF tenants association official, interview, May 2005) – but it is nevertheless not as negligible as in Östermalm. These are figures for average households, though, so to gain a better picture of the ‘social significance’ of these essential services, we need to differentiate households within districts as well as between districts.

Table 4 shows, therefore, the proportions of average household disposable income taken up by network services divided by eight different types of household, again for the city as a whole and the districts of Rinkeby-Kista and Östermalm. This table allows us to shed light on the diversity of household situations within districts in terms of affordability of water and energy services which are masked by the overall district averages in Table 3. For example, there is a substantial difference among Rinkeby-Kista households between couples with older children and persons living alone. While the former spend just 3.80% of their disposable income on these essential services, the latter must give over 12.83% of their income. In effect, in spending well over 10% of their income just on energy, these 14,000 single person households in Rinkeby-Kista meet the recognised UK definition of households suffering from ‘fuel poverty’ (Defra, 2004).

We also gain a glimpse of the importance of social benefits in the form of child allowances for all Stockholm households. This is undoubtedly one of the reasons why couples with at least one child under the age of 18 in all Stockholm districts spend a smaller proportion of their income on water and energy than couples without children.44

In summary, these figures show that it is single person households without children that pay the highest proportion of their income for essential network services in all districts and in the city as a whole due to the lower disposable incomes of these households. This proportion which varies between 7% for Östermalm and almost 13% for Rinkeby-Kista (with a Stockholm average of 9%) is actually far from negligible, and more than we might have anticipated. The sheer number of these households in Stockholm (66% of all households, nearly 40% of the total population) ensures that the question of service affordability remains quite important overall, even if within this particular household group it is likely that there are great variations between ‘richer’ and ‘poorer’ individuals. Indeed, we should recall that Table 2 highlighted that 8.2% of the Stockholm population has no income and that this proportion reaches almost 20% in Rinkeby-Kista. With energy service prices in particular having risen faster than income levels (in a trend which may well continue), it is clear that the proportion of disposable income given over by households to paying for energy has greatly increased, and that this hits ‘poorer’ households far harder than ‘richer’ ones. This level of importance in household expenditure reaffirms the notion that there is a very real social (and socio-spatial) significance to accessibility and affordability of essential network services. Furthermore, this raises the issue of the continuing viability for the municipality and its district councils to financially compensate for any household affordability problems. If all municipal, private sector and consumer interest interviewees denied the issue of decreasing accessibility and affordability of essential network services, it was primarily because they identified the role of social welfare in assisting lower income households to meet their water and energy needs. But in the face of drastic price rises for electricity and heating, the increasing numbers of households requiring some financial assistance (City of Stockholm annual report 2005), and growing public sector budget constraints, the municipality is highly unlikely in the medium- and longer-term to be able to continue to provide the same level of assistance as before.55

### Table 2

| Statistics on the social fabric of Stockholm and two of its contrasting neighbourhoods |
|---------------------------------|---------------------------------|------------------|
|                                 | Stockholm                       | Rinkeby-Kista    | Östermalm        |
| Population                      | 782,885                         | 45,705           | 61,593           |
| Immigrant population (%)        | 27.0                             | 74.5             | 17.3             |
| Unemployment (%)                | 3.7                              | 5.4              | 2.6              |
| Proportion of population        | 5.7                              | 17.1             | 1.0              |
| receiving social assistance (%) | 260,500                          | 182,600          | 325,900          |
| Average annual income per person (SEK) | 8.2                              | 18.9             | 9.0              |

| Source: USK, figures for end of 2005. |
|---------------------------------|---------------------------------|------------------|
|                                 | a First and second generation immigrants. |
|                                 | b Joint employment income (excluding those who earn no income). |
|                                 | c Persons with no declared income from economic activity. |
|                                 | d USK figures, provided by personal communication. |

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44 There are, in addition, interesting gender-based spatial differences. For example, there is a quite substantial difference between income proportions spent on these services by single fathers with young children (3.69%) and single mothers with young children (6.13%) in Östermalm. Yet the proportions for the same types of households in Rinkeby-Kista are identical (8.27% and 8.26%, respectively). Although the actual numbers of single mothers far surpass numbers of single fathers, this may suggest that single fathers in Östermalm have generally higher incomes than either single mothers in Östermalm or single parents as a whole in Rinkeby-Kista.

55 Neither does the municipality actually want to continue to provide the same level of assistance. Its annual report states explicitly that its more workfare-oriented policy was “to halve the number of adult recipients of benefits by the end of 2006 with the point of reference set at the 1999 level” (City of Stockholm annual report 2005, p.15).
Total service price for a 67 m² apartment (SEK)\(^a\)

<table>
<thead>
<tr>
<th>Service prices (SEK/m²)</th>
<th>Stockholm (% of average household disposable income)(^b)</th>
<th>Rinkeby-Kista (% of average household disposable income)(^b)</th>
<th>Östermalm (% of average household disposable income)(^b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water and sanitation</td>
<td>23</td>
<td>0.58</td>
<td>0.80</td>
</tr>
<tr>
<td>Electricity</td>
<td>72</td>
<td>1.82</td>
<td>2.51</td>
</tr>
<tr>
<td>District heating</td>
<td>150</td>
<td>3.80</td>
<td>5.23</td>
</tr>
<tr>
<td>Total</td>
<td>245</td>
<td>6.20</td>
<td>8.55</td>
</tr>
</tbody>
</table>

Source: adapted from Nils Holgersson (2006).

\(^a\) The average apartment size is 67 m² according to Nils Holgersson, which gives an annual service charge of 16,415 SEK (approx. 1785 euros). The totals in this column are used to estimate the percentages of average household disposable income.

\(^b\) Average household disposable income represents income from work plus any social benefits and minus taxes.

7. Conclusion: unbundling dynamics, urban instability and ‘almost existing neoliberalism’?

The aim of this paper has been to explore links between infrastructure change and urban transformation in Stockholm through a focus on the extent to which recent infrastructure-oriented urban developments concord with various aspects of the ‘splintering urbanism’ thesis of Graham and Marvin. By concentrating in particular on the apparent deconsolidation of the networks-planning-social welfare nexus (and interlinked transformations to each of its components) which was at the core of the unitary networked city, we were able to analyse the ongoing, dynamic, unstable and always incomplete process of ‘splintering’ as it is contextualised in the Swedish capital. In this respect, Graham and Marvin’s analytical framework proves particularly useful for the study of the nature and the extent of the splintering process. Its contextualisation has allowed us to extend Graham and Marvin’s work both empirically and conceptually. In the first instance, we have studied a particular case of the demise of a unitary networked city in action (in an urban context largely absent from their book). In the second instance, we developed their notion of ‘unbundling’ to capture not just core changes in the organisation of infrastructure provision (associated with privatisation and a rise of market-based logics) but also related changes concerning, for example, the separation of infrastructure planning from broader urban planning, the contradictions between the environmental and social mandates of infrastructure, and the (prospective) curtailment of the redistributive, social role of essential network service provision. This complex series of unbundling dynamics at work in Stockholm threatens to open the city up once and for all to the “gleaming new glocal infrastructural fixes of contemporary capitalism” (Graham and Marvin, 2001, p. 418) and its by-products of increasing inequality, polarisation and bypass.

This broad-based unbundling appears then to epitomise the ‘destructive’ moment of ‘roll-back neoliberalism’ that Peck and Tickell (2002) see as a first stage in the neoliberalisation of space (see also Brenner and Theodore, 2002). I would argue that this unbundling stage has to be viewed more distinctly from the explicit splintering dynamics which can be associated with the more ‘creative’ logic of ‘roll-out neoliberalism’. This may be less apparent (up to now) in the context of Stockholm if we go by the types of socio-economic trends that Peck and Tickell or Brenner and Theodore view as consistent with this second stage (see Peck and Tickell, 2002, p. 394–395; Brenner and Theodore, 2002, p. 364–366).
is not yet sufficiently clear that what will result from the unbundling stage will definitely be a second-stage logic of ‘roll-out’ splintering, even if there is the threat of this as discussed above. As Brenner and Theodore note, there is no linear transition from a ‘welfare city’ to a ‘neoliberal city’ (Brenner and Theodore, 2002, p.375). What is clearer is that the city of Stockholm will continue to be a “strategically crucial geographical arena” for the playing out of political struggles over the articulation of networks, planning and welfare issues, and that this will require understanding of the ‘contextual embeddedness’ of these struggles (Brenner and Theodore, 2002).

If Stockholm currently manifests more of an ‘almost existing’ than ‘already existing’ neoliberalism, it is primarily because of the vestiges of a socio-political consensus based around societal reproduction through redistribution and equality (see also Stahre, 2004). The continuing existence of welfare assistance (even in reduced form) for lower-income households that can include the payment of water and energy bills is one part of this. Another is the relative social and political unacceptability of particularly regressive tendencies in network service provision – disconnections of households, customer discrimination, socio-spatial differentiation in service provision – that are emblematic to Graham and Marvin of splintering urbanism in the UK context for example.

These vestiges should give us hope, but examples abound indicating that this consensus is being quite rapidly eroded (see also La Vie des Idées, 2006). The selling off of the municipal energy company and the subsequent financialisation of energy services such as district heating, the outsourcing of Stockholm Vatten activities other than its ‘core business’, the transformation of an urban regeneration housing project into a ‘premium’ eco-networked neighbourhood for affluent Stockholm households, and the beginnings of decreasing affordability of essential network services and the curiously stoical attitude of the municipality towards rising prices are, individually and collectively, symptomatic of a gradual and ongoing ideological reorientation of urban development in the Swedish capital. Most seriously, in a context of infrastructure financialisation, the Stockholm context is not spared from murky money flows: social assistance pays for rent increases which pay for heating price rises which effectively transfer Swedish public funds to private shareholders in Finland. The limited response of the municipality (co-owner of the heating company) to this suggests that it is almost willingly captive to the neoliberal logic.

In short, the undermining of the unitary networked city through ongoing unbundling processes reinforces the more general instability of Stockholm at the current time, caught between its legacy of social democratic welfare for the folkhem (people’s home) and its promised role as Swedish and Nordic capital within global circuits of exchange. This instability is reflected at once discursively in the opposing liberal-inflected versus left-leaning posturing of politicians, lobbyists and activists, politically in the quadrennial exchange of majority power in the city hall (itself an illustration of the wavering doubts of the Stockholm electorate), and also spatially in certain aspects of urban development. Further transformations will undoubtedly be watched with great interest within and beyond the folkhem.

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