



Climatic city: Two centuries of urban planning and climate science in Manchester (UK) and its region

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ABSTRACT

This paper traces the history, and current challenges, of climate science and urban design in Greater Manchester, UK. The Mancunian metropolis is a remarkable example of a 'climatic city', one that shapes its climate as much as it is shaped by it. From the efforts to control smoke and clear slums in the 19th century, to today's race to be at the forefront of 'green' and 'sustainable' cities, climate is a central actor in Manchester's history and will likely be so in the near future. We analyse the continuities and inflections of this history of climate science and urban planning in the metropolis by drawing on historical material and interviews with key local stakeholders, to understand the natural, social and political construction of this singular 'industrial ecology'. Ultimately, we ask whether stakeholders in the Greater Manchester area can overcome existing challenges to go towards a greener, more resilient and sustainable city.

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Introduction

This paper traces the history, and current challenges, of climate science and urban design in Greater Manchester, UK. The Mancunian metropolis is a remarkable example of a 'climatic city', one that shapes its climate as much as it is shaped by it. From the efforts to control smoke and clear slums in the 19th century, to today's race to be at the forefront of 'green' and 'sustainable' cities, climate, in relation to planning, is a central actor in Manchester's history and will likely be so in the near future. We analyse the continuities and inflections of this history of climate science and urban planning in the metropolis by drawing on historical material and interviews with key local stakeholders. Ultimately, we ask whether stakeholders in the Greater Manchester area can overcome existing divisions regarding what actions to take.

We are indebted to Williams' city profile in *Cities* (Williams, 1996), and we aim to build and expand on this foundation, by looking at how Manchester, as a metropolitan area and not just as a city, is addressing the challenges of the 21st century. Williams' paper described the city at the end of a phase of painful de-industrialisation, highlighting efforts to harness the service economy and reshape the image of Manchester as a dynamic, post-industrial city. We pick up from there and analyse how the city-region is

moving ahead with this post-industrial agenda, and how strategies focusing on the climate-planning nexus are at the heart of visions of the future.

We draw upon a combination of urban regime theory and ecological modernisation to frame our understanding, developed in four sections. Firstly, we situate Manchester's approach to urban climate and design within its wider historical and contemporary socio-political and natural context. Secondly, we look at the production of climatic knowledge in the city by government and private sector actors. We then look at the outcomes of this research in a third part, before moving onto a conclusion in part four.

Shaping the climatic city: a socio-natural sketch

Manchester is commonly known as the cradle of industry, but less so as one of the birthplaces of a scientific understanding of urban climates. As a 'shock city' (Platt, 2005), emerging from the industrial revolution, Manchester generated high amounts of pollution. Tocqueville spoke of a 'new Hades', Engels of its 'satanic mills'. Many other cities have shaped their climate through industrial emissions, but Manchester's specificity resided in the combination of this manufactured climate, political regime, and a range of innovative responses. We draw here on the concept of urban regime (Lauria, 1997; Logan & Molotch, 1987; Molotch & Logan, 1984; Mossberger & Stoker, 2001) to describe the socio-political structure of government and governance of the city, whereby the boundaries between public and private interests are fluid, and

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coalitions are formed between these in order to drive an agenda of 'city grandeur' and economic growth. This takes the shape of boosterism, grand public works projects, and more generally of a discourse of propaganda and mobilisation of the 'masses', as well as attempts to silence dissent regarding the social, political and environmental consequences of growth.

The laissez-faire city regime, characteristic of Victorian Britain as a whole, was geared towards low-cost government and personal enrichment. Authorities were reluctant to intervene to enforce what little regulation there was. As a result, industrial Manchester grew fast, from 77,000 people in 1801, to 316,000 in 1851. In 1901, the population of Greater Manchester had reached 2,149,000, not far from today's 2½ million, with a much changed distribution: the original city centre had a population of only 30,000, but lay at the heart of a sprawling metropolis (Douglas, Hodgson, & Lawson, 2002, p. 239). While the population increased fourfold in the first half of the 19th century, the urban area grew sevenfold.

By 1880, a modern, essentially metropolitan city, had emerged (Williams, 1996, p. 204), with a relatively compact core (Manchester, Salford and adjacent districts), and an outer ring stretching about 16 km from the centre, defining a complex, polycentric conurbation (Geddes, 1915; Freeman in BAAS, 1962; Barlow, 1995; White, 1980, pp. 380 and 390). This conurbation scale makes sense when looking at the nexus of climate and planning in Manchester, as it forms an integrated economic unit and a coherent ecological area, for instance from the point of view of watershed dynamics. This scale also introduces another fundamental element: the tendency towards administrative fragmentation and complexity in a polycentric conurbation (Fig. 1).

Air, water, public health and the science of sanitation

From the late 18th century the coal and textile industries took off, the latter availing of the humid climate and soft water (Malet

in White, 1980, p. 17), and the city's location on the Mersey–Irwell river basin. Coal was transported by barge to serve growing needs: by 1840, a million tonnes were being burnt in the city every year (Platt, 2005). Combined with humidity, this caused deadly smog, especially in the crowded tenements of Ancoats, the world's first industrial slum, already affected by water-borne diseases such as cholera. Nearby Salford would come to be described as 'the classic slum', giving its name to a respiratory disease, 'Salford chest' (Malet in White, 1980, p. 21). As late as 1935, inner-city Manchester averaged little more than 2½ h of sunlight per day, (Crowe in British Association for the Advancement of Science (BAAS), 1962, p. 36). In contrast, wealthier citizens moved to airy, green inner suburbs such as Didsbury, then with the advent of rail travel, Victoria Park (1837), and further afield Altrincham and Alderley Edge. The rich also settled upwind of industrial emissions on Eccles Old Road, quickly dubbed 'Millionaires' row' (Malet in White, 1980, p. 22). The difference in mortality rates, from 1 to 4, between these areas, seemed to prove the validity of this approach.

Alongside tainted air, water features prominently as a threat in this early history. The gradual paving over of the Mersey–Irwell river basin, the dumping of waste in the watercourses by mill owners, combined with instances of faulty dam design led to a succession of increasingly devastating floods. In 1852, the Holmfirth dam gave way, causing massive destruction, essentially in working class districts. Destructive floods increased in frequency, leading the public to realise that these were not simply 'acts of God', but man-made disasters, with socio-spatially specific effects (Platt, 2005, p. 57).

Manchester's very existence as an industrial city was linked to its climate, both as a benign influence and advantage, on the one hand, and a force for destruction and disruption on the other. In turn, the city shaped these climatic givens, by channelling and polluting watercourses, and filling the air with smoke. Manchester was the first city to witness such an intricate merging of 'natural'

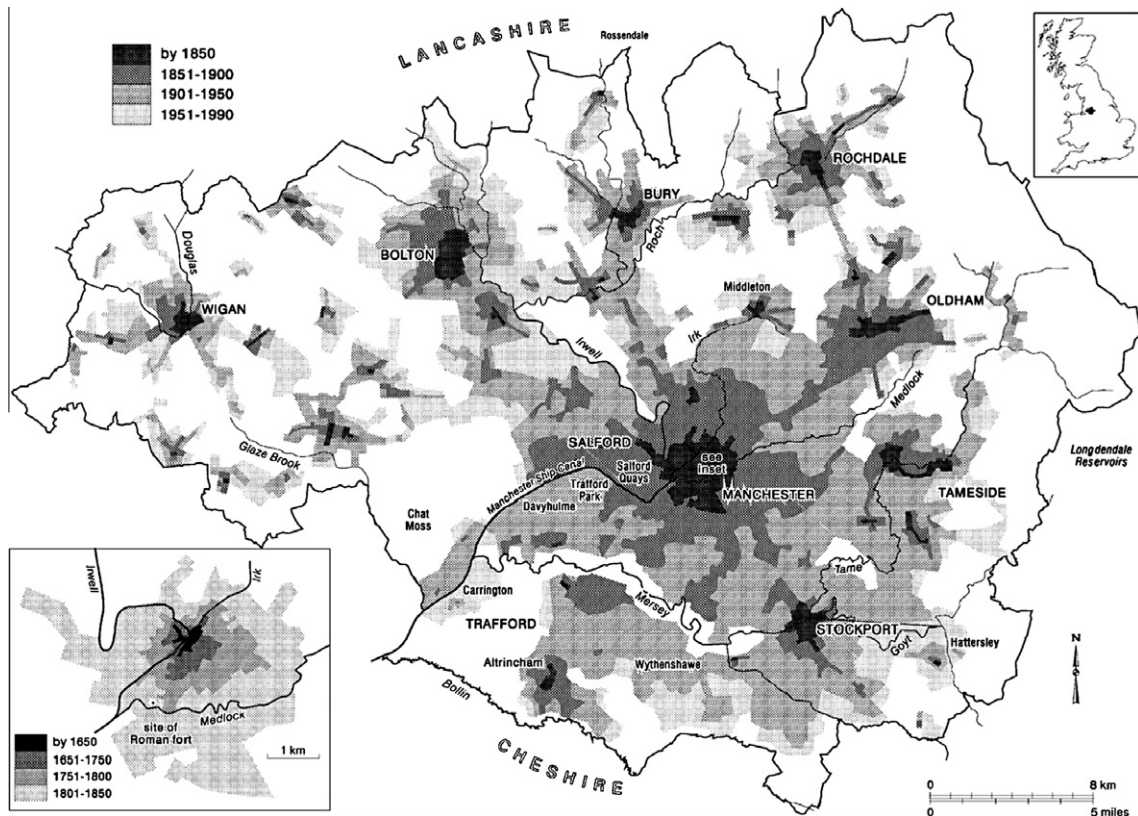


Fig. 1. Growth of the built-up areas of Greater Manchester.

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